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Introduction

As a student or advisor, how do you know what area of psychology is right for you or your advisee? Psychology offers a wide range of career opportunities and for many students, it a challenge to focus on a particular area of interest. It is hoped that readers of this handbook will find thoughtful discussions about how prepare for many of the career opportunities available to psychologists. Each chapter discusses the nature of a particular sub-field of psychology, how to prepare for a career in that sub-field, what professionals do within the sub-field, opportunities for employment, and the attributes needed for success in the sub-field.

Without much in the way of formal training, most academic advisors are expected to help students discover the range of options available to them, and to consider the consequences of their choices. However, given that psychologists specialize in a host of different areas within the discipline, there may not be an experienced advisor available who can help a student explore their particular area of interest. This book is intended to help both students and advisors to understand more about the many different sub-fields of psychology.

Organization of the book

This handbook consists of two volumes. In this Volume, the chapters provide advisors and students with information about how to prepare for a career in one of the many sub-fields of psychology as well as allied disciplines. In the companion volume, also available on this website, there are chapters that provide the reader with ideas on how to organize the advising process, advising students with a wide range of special needs, using the advising process to promote both curricular and extra-curricular activities, what to say in an advising session, and how to assess advising.

This book is intended to serve as a reference tool for advisers in psychology as well as students in the discipline. In this volume, each chapter will address the most critical questions (and answers of course!) that students interested in pursuing the various sub-fields of psychology may have. Because we all specialize in this discipline, we often do not know those questions (or their answers) for sub-fields other than our own; however, our advisees often have interests that span the discipline and beyond. Thus, this Handbook is unique in that experts in advising and experts within each sub-field have contributed to the chapters.

Section 1: Advising Students about Making the Broad Decisions

The book begins with three chapters that address how student should go about making the faculty who insist that students will not find decent jobs in the field without a graduate education do a disservice to those who may well thrive in the job market.

Job Opportunities with a BA/BS in Psychology

In the opening chapter, Donna Stuber, Kristina Thielen, Dana Evans, and Jeremy Lyne outline suggestions for advising students not pursuing a graduate degree. They also review the most vital skills employers desire, examine what students can do to ensure they can land a job after graduation, and evaluate the job outlook for psychology baccalaureates.

MS/MA, MSW, PhD, PsyD, EdD –what’s the difference?

In their chapter, John Ault and Steve Barney attempt to disentangle the myriad options for advanced degrees that lead to human service careers. Their assertion is that choosing a degree path should be weighted with knowledge and understanding about the potential career options that would become available with that specific degree. Looking at the degree/profession’s training model, time to completion, funding options, accreditation, licensing requirements, and job projections could be of benefit in matching students’ individual strengths and weaknesses with compatible and complimentary career aspirations. The authors hope to avert students pursuing a specific type of advanced degree only to discover the program and profession is far from what they had envisioned.
Preparing Students for Graduate School
In the final chapter in this section, Lisa M. Bauer and Jeanette Altarriba discuss the steps involved in preparing for admission to graduate school in the field of psychology. Helpful tips and advice concerning issues such as requesting letters of reference, cultivating relationships with mentors, teachers, and advisors, establishing career goals and working towards those goals, the importance of gaining research and clinical experience, and identifying relevant co-curricular activities are reviewed within the contents of this chapter. The authors provide a well-rounded overview of the main points to be considered while pursuing an undergraduate education that can aptly prepare a student for a positive outcome in obtaining admission into a graduate program in psychology.

Section 2: Advising Students about Careers with a Basic Area of Focus
The field of psychology has been characterized as a hub discipline, which reflects that wide range of interests of psychologists. Basic psychological research explores fundamental things about human and nonhuman animal behavior. The second section of the book contains chapters that describe how to prepare for careers with a basic area of focus.

Biopsychology Advising
The section begins with a description by Jeffrey Stowell of the differences between fields related to biopsychology, followed by suggestions on where to find graduate programs in this field. The careers related to biopsychology are outlined generally, followed by recommendations for specific courses and other experiences that will help students prepare for graduate study. Finally, he shares some insights into life as a graduate student in biopsychology.

On the Origin of an Evolutionary Psychologist
Evolutionary psychology is the scientific study of human nature dedicated to discovering and understanding the psychological adaptations that evolved to solve ancestral survival and reproductive problems. Evolutionary psychology is not a specific topic of psychological study. Rather, it is a meta-theoretical perspective with which to view all psychological domains. Evolutionary psychologists focus on many and varied phenomena through an evolutionary lens, including the adaptive problems and evolved solutions associated with surviving, long-term mating, short-term mating, parenting, kinship, cooperation, aggression, warfare, and conflict between the sexes. In Chapter 5, Barry X. Kuhle describes the field and outlines steps the undergraduate student can take to become an evolutionary psychologist. Discussion focuses on college courses to complete, books and journals to read, conferences to attend, and websites to consult to learn more about evolutionary psychology.

Pursuing Careers in Physiological Psychology
In chapter 6, Alan Hughes summarizes Physiological Psychology and offers students advice on how to best prepare for a career in this area of psychology. Physiological psychology focuses on brain-behavior relationships, with a particular emphasis on animal models of memory, emotion, perception, and motivation. Given the highly interdisciplinary nature of the field, Hughes places a special emphasis upon the course work and research experiences that would position students to be competitive for admission to doctoral programs in Physiological Psychology and related fields. Physiological Psychology is often confused with several related fields such as behavioral neuroscience, neuropsychology, biopsychology, and cognitive neuroscience. These terms are often incorrectly used interchangeably so Hughes offers some important distinctions among these areas of psychology.

Advising Students on a Career in Neuroscience
In Chapter 7, Mark Zrull offers suggestions for the psychology major interested in training and working in the field of neuroscience. The chapter offers a very general description of neuroscience and comparison of the discipline to closely related sub-fields of psychology. There are suggestions for courses and experiences other than course work important for psychology majors seeking training and preparation for further training in neuroscience. An overview of jobs that a neuroscientist might seek follows a brief discussion of strategies for
identifying and choosing a graduate program in neuroscience. There are references and a pair of additional sources of information about neuroscience and education in neuroscience in the chapter.

Quantitative Psychology

In Chapter 8, Dena Pastor and Sara Finney describe a field of psychology unfamiliar to many in the discipline, which is the field of quantitative psychology. Quantitative psychologists have expertise in the methodological, measurement, and quantitative issues that arise in psychological research. Because of their widely applicable skills, quantitative psychologists are in high demand and usually paid generous salaries. Pastor and Finney describe different types of careers in the field and the kind of graduate training needed, as most positions require advanced degrees. In order to decide if a career in quantitative psychology is right for them, undergraduates are encouraged to assist faculty with research and also complete as many courses as possible in measurement, statistics, and research design. Even if students decide on a different career path, Pastor and Finney note that these experiences are still beneficial as they likely strengthen the student’s application for employment or graduate study in another domain.

Preparing for a Career in Psychological Clinical Science

In their chapter on preparing for a career in psychological clinical science, Marcel Bonn-Miller and Matthew Feldner provide an overview of the role of clinical science-focused psychologists as well as a description of experiences that would help students become top candidates for graduate programs in clinical science. Considerations regarding the selection of graduate programs and advisors are also discussed.

Scholarship of Teaching and Learning

In this chapter Corey Guenther introduces the Scholarship of Teaching and Learning (SoTL) as a growing sub-discipline of higher education, and discusses what psychologists specializing in SoTL typically do. Thereafter, he explores the type of educational preparation most common among individuals specializing in SoTL, as well as the type of careers often sought by psychologists with expertise in SoTL. Finally, Guenther discusses what distinguishes SoTL from other sub-disciplines in the field of psychology, and, provides valuable references, suggested readings, and web resources for those interested in learning more about SoTL as a scholarly discipline and career opportunities in the field.

Comparative Psychology

Janice Steirn, Kent Bodily, and Bradley Sturz provide information for students with interests in employment or graduate study related to Comparative Psychology. Comparative Psychology is a broad field that includes research focused on examining similarities and differences in psychological processes across species. This field covers such topics as predator-prey interactions and cognitive processes in non-humans. Given the breadth of comparative psychology, course work in a variety of areas is recommended. It is also important for students interested in Comparative Psychology to gain non-course related experiences working with non-humans in either a laboratory or applied setting. Such experiences should make students with interests in comparative psychology more viable candidates for graduate study and employment.

Cognitive Psychology: Examining the Mind

In their chapter, Kethera Fogler and Jennifer Perry describe how Cognitive Psychology has historically been defined as the study of mental processes and how this relatively new subfield of psychology has made a fundamental contribution to the field of psychology as a whole. The authors also discuss the types of jobs that are available to cognitive psychologists. Either teaching, conducting research, or both in academic settings is most common for cognitive psychologists, jobs can also be found in applied areas including website, workplace, or product design. Fogler and Perry conclude by discussing how to prepare for a graduate level degree in cognitive psychology and emphasize how research experience, methods, and statistics courses are highly recommended.
Advising Students Interested in Social Psychology
For students interested in social psychology, Melissa Beers and Kevin Apple write about graduate school and career options. Although the field of social psychology is highly competitive, this area of psychology is applicable to variety of fields. Coursework in social psychology combined with a strong foundation in research methods, data analysis, and research experience ensure students gain valuable skills. These skills will help students become competitive for either graduate study or an increasing number of careers in the public and private sector.

What to Know about Ethnic Minority Psychology
In this chapter, Matthew R. Lee discusses inclusion of diversity in the advising process, and a number of ideas to consider when facilitating students’ decisions about curriculum management and future careers. The chapter will also emphasize the importance of extracurricular programming and culturally-relevant resources that may exist online or off-campus.

Developmental Psychology: An Academic Journey of Life and Discovery
In order to assist prospective developmentalists in making more informed decisions regarding their future, Sara Villaneuva addresses several fundamental questions for students considering this popular field of study, including: What are the basic concepts studied in the field of Developmental Psychology? What are some current assumptions made in this field? What can students do with a degree in Developmental Psychology and what does it take? Finally, she describes how is this sub-field distinct from other related sub-fields?

Experimental Analysis of Behavior. In this chapter, Kelly Banna provides a brief overview of the experimental analysis of behavior (EAB), the basic science branch of behavior analysis. As a field, EAB is dedicated to discovering the basic principles that underlie learning, focusing on the role of contextual factors and consequences in shaping behavior change. This chapter describes questions commonly addressed by EAB, identifies the types of jobs held by experimental behavior analysts, and makes suggestions for pursuing graduate training in this field.

Section 3: Advising Students about Careers with an Applied Area of Focus
The field of psychology has much offer when psychological knowledge is applied to solving human problems and promoting healthy development. This section of the book addresses careers with an applied focus.

Clinical psychology: Is it the field for you?
This section of the book begins with a chapter by Jared Keeley that provides advice and background information for students interested in pursuing clinical psychology. Many issues in preparing for graduate study in clinical psychology are different from other areas of the field, including differentiating degree types (Ph.D. and Psy.D.), determining if a Master’s or doctoral degree is necessary for what you want to do, anticipating licensure requirements, and being aware of how the internship component of the degree may affect where you apply. While clinical psychology is the most popular degree in the field (accounting for approximately half of all doctoral degrees), it is also one of the most competitive, necessitating that students begin to prepare early and acquire a variety of experiences to enhance their chances of admission into graduate school.

School Psychology: Working with Children in the School Setting
In Chapter 17, Bob and Jenna Rycek describe the field of school psychology. A school psychologist generally works as part of team within a school setting providing services to children with learning, behavioral, and emotional issues. This chapter outlines the requirements and opportunities in this field of study.

What You Need to Know about the Field of Health Psychology
In their chapter, Monica Reis-Bergan and Jacqueline Belhumeur address four questions that those interested in health psychology will want answered. First, what kinds of jobs might a health psychologist obtain? Second, what degree is necessary to become a health psychologist? Next, What classes help prepare for graduate school in health psychology? And last, what are other related health fields?
Applied Behavior Analysis: An Exciting Career for Psychology Students

In chapter 19, Amy Polick describes the field of Applied Behavior Analysis (ABA) and the breadth of services that behavior analysts provide. Pulling from her experience as an academic advisor, Polick provides a list of the most frequently asked questions given by students and describes answers to these questions, which will help students who are interested in this field of study. Such questions include: What does a behavior analyst do? What do ABA services entail? And how do students prepare to become behavior analysts? The chapter is a great “go-to” reference for students seeking a career in ABA.

Industrial/Organizational Psychology

After defining I/O psychology, Tracy Zinn and Elizabeth Smith address the following questions: What kinds of jobs do people with I/O degrees have? What is the salary/job outlook for I/O psychologists? What credentials and training are needed to be an I/O psychologist? Do I want a master’s degree or a PhD? What is the difference between business I/O programs and programs in psychology departments? How do I choose a graduate program in I/O psychology? Are there particular courses/minors/majors that can help me prepare for graduate school? What other experiences should I have before applying for graduate schools? What about grades and GRE scores? How high do they need to be? Do I have to go to graduate school to go into I/O psychology, and what are some other fields that are related to I/O psychology?

Advising Future Legal and Forensic Psychologists

In this chapter, Doug Woody, a teacher-scholar in psychology and law, and Erin Coloroso, a practicing forensic psychologist, start with a description of the two primary options for students, research and practice. Next, their chapter provides recommendations for advising students in each of these two tracks, and they emphasize undergraduate preparations for graduate school, ways that career goals guide graduate education choices, and educational requirements as well as internship and licensure requirements for clinicians. They conclude with advising resources and the importance of entering these fields with awareness of the potential challenges ahead, whether these challenges are academic in nature or reflect the practical difficulties of conducting ethical and effective clinical work in legal settings.

Teaching of Psychology

In Chapter 22, Catherine Overson and Victor Benassi present several elements on which the undergraduate interested in the teaching of psychology might reflect when reviewing potential graduate programs. Students will come to understand that the teaching of psychology, unlike other areas of psychology (for example, development, social, sensation and perception, health, and personality) is not a specific specialty within the discipline of psychology. Because teachers of psychology hail from every specialty, students are encouraged to do well in a strong undergraduate curriculum in order that they become competitive candidates for entry into any graduate program. The authors discuss academic preparedness and present resources for choosing a potential graduate school. From there, the authors outline required academic credentials for teaching psychology in various educational settings, present resources specific to the teaching of psychology, and explore potential job settings and job descriptions for teachers of psychology.

Advising Future Community Psychologists

After defining community psychology, Rick Miller describes the interests and values of community psychologists. The chapter then lists helpful courses to take as an undergraduate student and provides advice on how to select a graduate program in community psychology. After describing the kind of jobs that are available to community psychologists the author lists sources where the advisor and/or student can learn more about being a community psychologist.

Advising Future Environmental Psychologists

In Chapter 25, Paul Bell describes the field of environmental psychology and related specializations such as ecopsychology and conservation psychology and the importance of basic and applied research training in their practice. He recommends a broad search of opportunities to study with faculty who conduct research in these specializations but whose training programs might be from a broader emphasis such as social or...
developmental psychology. Job opportunities range from academia to government agencies to numerous applied settings.

Gerontology
In chapter 12, Judith Sugar describes the advantages for psychology students of considering the fields of gerontology and geropsychology. With 10,000 American “baby boomers” turning 65 years of age every day, the opportunities for psychology majors to design and deliver services, products, training, and education for this growing population are limitless. Career options can be found in private industry, non-profit organizations, education, and government agencies, and entrepreneurial graduates will find a multitude of possibilities for creating their own businesses. From career paths and job choices to information on graduate programs and helpful resources, chapter 12 provides useful advice on how to prepare to enter the fields of gerontology and geropsychology.

Advising for Sport Psychology
In Chapter 26, Karen Appleby provides readers an overview of educational sport psychology, the career prospects in this discipline, and strategies to prepare for further education and employment in this field. The chapter begins with a brief introduction to the discipline and provides answers to common questions such as, what does a sport psychologist do and what jobs are available in this profession? Next, professional development strategies for students are presented, such as what resources are available that help explain the field of sport psychology and what type of undergraduate experiences would be valuable for a student who wants to enter this field. Finally, an overview of the credentials needed to be an educational sport psychologist and how to find a graduate program that is a good fit are provided.

Section 4: Advising Students about Careers Outside of Psychology
Not every psychology major goes into a psychology career. The fourth section of the book describes careers outside of psychology about which psychology majors may be interested.

Advising Students Who Want to go to Law School
Ryan P. Siney explains the path to becoming a lawyer and summarizes the broad roles that a lawyer fills for his or her clients. In contrast to the scientific study of human behavior, the practice of law is an art. Lawyers must often advocate for their clients’ positions without regard to the true state of nature that scientists generally seek. This makes the study of decision-making, judgment, communication, persuasion and social psychology important to the practice of law.

Advising the Pre-Med Psychology Major
Advising pre-med students goes well beyond discussions of courses and four-year plans. In this chapter, Peggy Abels addresses the issues faced by these students and offers advice on how to work with psychology majors that are interested in medical school and becoming a physician. During the advising process, pre-med students will likely have questions regarding topics such as academic and non-academic requirements, the MCAT, and the application process to medical school. This chapter outlines the basic information that is critical for academic advisors working with pre-med students.

Advising for Students Interested in Health Science Careers
In this chapter, Peggy Abels discusses tips and strategies for advising psychology majors who have an interest in pursuing a healthcare profession. These students will have specific questions and face additional challenges that will make them different from advising other students. The author focuses on career counseling, academic requirements, non-academic requirements, the professional school application process and other issues that will need to be addressed as part of the advising process in an effort to promote the success of these students.

The goal of this handbook is to provide undergraduate psychology majors and minors and their academic advisors with the knowledge and skills to navigate through and maximize their undergraduate education in a way that allows them to pursue a career in one of the many sub-fields of psychology or allied disciplines.
Acknowledgments

Jessica and I want to thank our authors for their generous and thoughtful contributions to this e-book. The authors have had firsthand experiences, and in their chapters they share their successes as well as the challenges in assisting students in choosing what area of psychology most interests them. Our goal is that the reader will be able to use this e-book in a very practical way to answer questions, generate ideas, and adapt the information to their special circumstances. I hope you will find that this book achieves its goal.

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Texas A&M University – Kingsville
February, 2015
1. Fostering the Future: Advising the Career-Seeking Baccalaureate

Donna Stuber  
Friends University

Kristina Thielen  
Boston University

Dana Evans  
Emporia State University

Jeremy Lyne  
Fuller Theological Seminary

Advising the Career-Seeking Psychology Baccalaureate

As faculty advisors, we are optimistic that students who pursue employment after graduation have the ability to interact well with others and are able to work in group settings utilizing integrative communication skills. Similarly, the students who opt for graduate school need to have equal (if different) skill sets, including attention to detail, the ability to self-motivate, and an unerring eye toward the next finish line. In addition to traditional “book learning,” we want our graduates--both those headed for the work force and those who are continuing their education--to be adaptive and flexible, to excel in fluid environments, to be able to follow directions, and to work both independently and under direct supervision. However, not all psychology baccalaureates are destined or desire to seek education beyond the undergraduate level (NCES, 2009). More importantly, faculty who insist that students will not find decent jobs in the field without a graduate education do a disservice to those who may well thrive in the job market. Here we will outline suggestions for advising students not pursuing graduate school, review the most vital skills employers desire, examine what students can do now to ensure they can land a job after graduation, and evaluate the job outlook for psychology baccalaureates.

Focusing on the Future

Most of us have heard the old adage that psychology graduates are a “dime a dozen” and cannot find jobs in the field without going to graduate school. Despite the evidence that nearly two-thirds of psychology graduates find jobs (Halonen, 2011; Landrum, 2009), this bias persists (“A Bachelor’s Degree...,” n.d.). In fact, psychology graduates possess skills that make them quite marketable and appealing to employers outside of the field of psychology.

According to the APA (2013), graduates with bachelor’s degrees in psychology often possess “good research and writing skills, are good problem solvers and have well-developed, higher-level thinking abilities when it comes to analyzing, synthesizing and evaluating information” (p. 3). These graduates often find successful employment in positions as diverse as administrative support, education, business, sales- and service-related industries, health and biological services, human services, and employment counseling. Law enforcement (e.g., corrections counseling and parole/probation officers) is also an option for psychology-based graduates, as the knowledge gained with a bachelor’s degree is an asset in criminal justice fields. The reason for such diversity is due to the psychology curriculum, which provides students with the flexibility and adaptability to get them started in the major, no matter which specific area they want to pursue. In addition to research, writing, and critical thinking, Halonen (2011) lists additional, ready-made marketable skills that psychology majors possess that appeal to employers, such as having greater insight into human behavior, being more adaptable and flexible in stressful situations, and understanding how to use and interpret data.
Students who have ongoing connections with their advisors have less difficulty in making these decisions and, thus, are more successful at understanding how their skills translate to the outside world (Ferris, Johnson, Lovitz, Stroud, & Rudisille, 2011). An example of a helpful advisor/student relationship may include the advisor recognizing certain personality traits within the student that would aid the transition from academia to employment. An outgoing student may do well in a sales or customer service occupation, whereas the more introverted student may find fulfillment in grant-writing or administrative positions. A student who has shown an interest in human growth and development or theories of human behavior may want to check into careers in healthcare professions as an activity aide at a retirement home or as a social services case worker.

Having multiple advising sessions throughout the undergraduate career is vital in helping students determine the paths they should take. History, ability, and aspirations should be taken into account as well. Ideally, time should be spent talking about goals and dreams, with the desire to discover the passions of the students, possibly even with personality and career tests. Overall, getting to know and understand the students is the most important factor in helping them decide if graduate school or immersion in the field is their best course of action.

Preparing for the Future

DeGalan and Lambert (2006) provide applicable insights into the employment prospects of psychology graduates. They state that, in the past, undergraduates seeking employment in their related field had to “make do with jobs that overly generalized their skills from psychology to simply ‘people’ skills” (p. xvi). This does not need to be the case.

Once an advisor has spent enough time with the students to have a clear understanding of the students’ goals, the task becomes one of ensuring they are well prepared to achieve those goals. This may involve suggesting a minor that complements their aspirations, assisting with internship placement in a facility or business that performs the desired vocation, and advice regarding the construction of a résumé and/or cover letter that highlights the students’ strengths.

When considering minors, many students may become complacent and simply choose a minor based upon a prior class in which they have done well. It is the advisor’s job at this point to guide the decision in such a way that the students emerge in the job market prepared for the positions they will be applying for. For instance, a student who is interested in a job working with at-risk youth, community corrections, or street outreach may benefit from a criminal justice or sociology minor. A student who is more interested in administrative work or sales might be a good fit for a business management or marketing minor. Those inclined toward the health professions may opt for a biology minor, and so on.

Considering internship sites is much like the process of choosing a minor: what placement has the best fit with the students’ goals? One of the most important factors in students obtaining jobs after graduation comes from the experience gained through internships or practicums. Internships allow students to integrate the skills learned in their majors with career-specific experience. The benefits of internships include early, relevant work experience, plus the opportunities to apply theories and concepts learned in class to the “real world,” to learn more about the professional environment, and to build self-confidence (“Internships,” n.d.). Internships can also lead to job offers after graduation. Because of the flexibility of the psychology degree, advisors should have a well-rounded stable of internship sites to serve their students. Although written for clinical psychology graduate students, Pincus and Otis (2008) provide an excellent step-by-step manual and comprehensive resource for obtaining an internship. This resource can be downloaded for free from http://www.psychzone.com/Intern_Guide.htm.

Résumés and cover letters are the final step in making sure that a student is ready to venture out into the work world. There are several templates available online, but sifting through the possibilities is likely to leave the students overwhelmed. As job markets and employer interests are not the same in different parts of the country, the best way to help graduates produce a successful résumé is by plumbing the contacts made with internship sites. Some employers may prefer a timeline-type résumé that focuses on experience and
relatable skills, whereas others may prefer résumés that more closely resembles a Curriculum Vitae (CV) and highlights education. The human resources manager that oversees internships will likely be the same person who receives students’ résumés.

Like the résumés, the cover letters should be personalized for the jobs for which the students are applying, highlighting the reasons the applicants believe they are a good fit for both the position and the company as a whole. Research of the target employer, whether online or by interviewing current employees, provides a firm foundation for the students to first ensure their own goals are in line with the company, and second that they are presenting their assets in a way that will be attractive to the company. Résumés are the overview, while cover letters pull that information into an accessible form for the hiring manager. Students should be reminded that the résumé and cover letter are marketing tools designed to pique an employer’s interest and to persuade him or her to want to learn more about them. Résumés are not “one size fits all” and that the position and target audience should dictate its length and content. The OWL at Perdue is an excellent resource to help students understand the difference between the CV and résumé and provides examples of each (https://owl.english.purdue.edu/owl/section/6/23/).

Moving into the Future
At best, faculty advisors need to keep pace with current and future career trends (Dingfelder, 2012). The job outlook for psychology baccalaureates is positive, largely because of the many job sectors in which their education is useful. There is a growing demand for psychological services in hospitals, schools, private businesses, social service agencies, and mental health centers, should the student be interested in the mental health field (US Department of Labor, 2011). Job growth in the field of psychology is expected to rise spurred by the demand for increased mental health services in private companies, alcohol and drug rehabilitation centers, social services agencies and schools (“Job Outlook For:…,” 2014). Although many positions require graduate degrees, entry-level assistant jobs at rehabilitation clinics and data analysis and gathering jobs are available to graduates with bachelor degrees. Those with teaching certificates can also teach psychology at secondary schools. The best suggestion for job seekers at any degree level is that they should stay abreast of career information and job listings. Web sites, such as PsychCareers (http://jobs.psychcareers.com) and APA’s online career resource (http://www.apa.org/careers/) list positions for every career stage including fellowships, internships, early career, and experienced levels and in a wide range of psychology disciplines.

Conclusions
An undergraduate psychology degree does not prepare students for specific jobs; rather, the skills developed through the major prepares students for a wide variety of positions. Psychology baccalaureates enter the job force with an assortment of skills beyond “understanding people.” Although the social and economic challenges have evolved, the market needs bachelor-level graduates. With the abundance of online career and job-hunting resources available, both advisors and students can easily stay current on career development resources.

References


2. Getting an Advanced Degree in Psychology: Which One is Right for Me?

Steve T. Barney  
Southern Utah University

John T. Ault  
Southern Utah University

Whether or not to pursue an advanced degree constitutes a life changing decision for a psychology major. Even though the bachelor’s degree in psychology offers many occupational opportunities, the doors open wider with master’s and doctorate degrees.

Before deciding to push forward, however, students should have a clear understanding of their real motives for continuing with additional education. Hopefully, this has occurred. If not, diligent self-exploration should precede, or at least accompany, the evaluation of the factual information provided in this chapter.

Advisors who explore student motives occasionally discover personal, subconscious needs that students erroneously anticipate fulfilling through their professional careers. Examples are: (a) victims of child sexual abuse who want to do professional weight loss counseling but who have no insight into the connection between their own obesity and past molestation; (b) persons with dependency problems who intend to counsel victims of domestic violence as a way to vicariously resolve their own feelings of inadequacy; (c) overzealous, recently recovering addicts who feel called to make up for their own lost years through doing early intervention therapy; and (d) persons who long to become the school guidance counselors they wish they had when suffering through traumatic events during their own elementary or high school years. Even if not as serious as these examples, motivational factors should be explored before attempting to match students with appropriate post-graduate education.

Ideally, students planning to do graduate work have developed an education, career, and life plan in a foundational undergraduate psychology course. If so, that plan should be reviewed and updated. If not, such a plan should be developed, preferably with the guidance of a department or faculty advisor.

Also ideally, students considering graduate school should have completed practicum and internship experiences in their intended fields of specialization. Daily career realities often differ dramatically from academic preparation for those careers. Discovering during graduate school, after becoming licensed or after obtaining a job, that an intended career is intolerably different from expectations can be devastating.

Assuming that these personal assessment activities have been successfully accomplished, the next step becomes one of discovering which graduate degree best fulfills students’ career goals and life mission. To help identify the best fit for students, the remainder of this chapter provides information about a variety of graduate degree programs, including the Master’s of Social Work (MSW), Master’s in Professional Counseling, Master’s in Marriage and Family Therapy, Doctorate in Philosophy (Ph.D.), Doctorate in Psychology (Psy D), and Doctorate in Education (Ed. D.). Each degree has a different philosophical and historical tradition. Each also differs on factors such as training model, time to completion, funding options, accreditation, availability of licensure, licensing requirements, and job prospects.1

1 For example, according to the US Bureau of Labor Statistics, the job outlook between 2010 and 2020 for mental health counselors and marriage and family therapists will rise 37%, much faster than average.
**Master’s Degree Training Programs**

While doctorate degrees are available in any discipline in which professionals work with clients, most do not include additional scope of practice for degrees beyond a Master’s. In many cases doctoral study is reserved for those interested in doing academic or high-level administrative work. This section reviews three programs in which master’s prepared students can qualify for licensure and work independently with clients.

**Master of Social Work**

There are two types of social workers: (a) direct-service providers who assist people solve problems, navigate social agencies, and facilitate clients’ progressions through social systems; and (b) those who specialize in diagnosing and treating mental, behavioral, and social issues. The latter are called clinical social workers (Licensed Clinical Social Worker, LCSW) and require licensure from state licensing agencies or boards [https://www.aswb.org/licensees/member-statutes-and-regulations/](https://www.aswb.org/licensees/member-statutes-and-regulations/). Both may require a graduate degree in social work, although, in most states, there are certifications for a Social Service Worker at a bachelor’s level. Direct-service social workers tend to work in hospitals, extended care facilities, and state agencies such as Workforce Services or Child and Family Services.

**Training Model**

Because many MSW programs have multiple areas of emphasis, programs may vary in the depth of clinical training students receive. Even programs that are accredited may not provide sufficient academic and practical experience with psychopathology and psychotherapy to instill full confidence in their graduates in doing therapy. Students who want strong clinical training may benefit from researching various programs and finding ones that suit their interests. As a profession, modern social work sprang from humanitarian needs to ameliorate social issues such as poverty, homelessness, and marginalization. There is a strong social-justice theme that transcends most social work programs. According to the National Association of Social Workers ([http://www.naswdc.org/pressroom/features/general/history.asp](http://www.naswdc.org/pressroom/features/general/history.asp)), “Americans enjoy many privileges because early social workers saw miseries and injustices and took action, inspiring others along the way”.

In America, early social workers were also trained as nurses to help physicians caring for their patients physically as well as socially. As such, there seems to remain a commitment to the Medical Model in terms of conceptualizing and intervening in mental health issues.

**Time to Completion**

MSW programs may range between 18 months and 2 years. Some accelerated programs boast completion in 12 months provided the student has a bachelor’s degree in social work (BSW) upon entering. In addition, many states require a 4,000 hour supervised training experience. The hours must be supervised by a qualified LCSW and must be completed within two years and cannot include hours accrued for education purposes.

**Funding Options**

Few, if any MSW programs offer assistantships. Some have paid practicums that are part of their educational curriculum, but students should not expect this to be the case. In addition to federal grants and loans, programs housed within traditional colleges and universities may have financial assistance programs for students, such as work study. Programs housed within private for-profit institutions seldom have these types of opportunities.

**Availability of Licensure**

Once graduated from a Council on Social Work Education (CSWE) accredited program, to become a Licensed Clinical Social Worker, students must complete an extended supervised clinical experience, often times 4,000 hours of clinical social work and mental health therapy training, and successfully pass a comprehensive examination (e.g., Clinical Examination of the Association of Social Work Boards). Clinical social workers are trained in individual, family, and group therapy; crisis intervention; intermediate treatment; and long-term treatment. Once licensed; clinical social workers can work in a variety of settings, including psychiatric...
hospitals, mental health centers, and private practices. They may bill third-parties for payment. Individuals with this degree have good success rising to administrative positions in various organizations.

**Job Prospects**
The job market for clinical social workers remains excellent. Because of the breadth of their training, social workers are in high demand, especially in rural and other under populated areas where specialized clinical professionals are in low supply.

**Master of Professional Counseling**
Many states have developed licensure afforded to individuals properly educated and trained to diagnose and treat people with mental illnesses. As such, degrees that qualify students for this type of licensure and/or certification have become popular. Students can become licensed in professional counseling with a Master’s Degree, a specialist degree (Ed.S.), or with a doctorate degree. Professional counselors are trained to work with all population groups, including children, adolescents, and adults. They work with individuals, couples, groups, and families. In contrast to the MSW programs where students are trained in social policy and social justice in addition to clinical issues and challenges, graduate programs in professional counseling focus their efforts on clinical training. Their coursework and applied practicum experiences are almost universally geared toward work with therapy clients.

**Training Model**
According to the American Counseling Association (ACA) ([http://www.counseling.org/aca-community/learn-about-counseling/what-is-counseling/overview](http://www.counseling.org/aca-community/learn-about-counseling/what-is-counseling/overview)) Professional Counselors are often trained to take a developmental perspective when examining clients’ issues and problems. Rather than focusing on pathology, professional counselors often view problems as part of the process of living. Helping clients adjust to their current phase in life can set the stage for more optimal function in future stages.

**Time to Completion**
Most professional counselor training programs require two years (48 semester credits) of coursework. Often the training course culminates in a one-semester practicum and then a one-year supervised clinical internship.

**Availability of Licensure**
All U.S. States recognize and license professional counselors. Accreditation through the Council on the Accreditation of Counseling and Related Educational Programs (CACREP) is often required. However, individual states have their own educational and experiential requirements ([http://www.nbcc.org/directory](http://www.nbcc.org/directory)). Successfully fulfilling the education requirements and passing a national examination conducted by the National Board for Certified Counselors (NBCC) is often mandated. Professional counselors are licensed as professional counselors (LPC’s) although in some states there are other designations (e.g., Licensed Mental Health Counselor)

**Job Prospects**
Professional counselors are in high demand. Their focused training and extensive counseling experience make them very marketable, especially when competing with other professionals with less direct clinical experience. Once licensed, LPC’s often work in mental health agencies, counseling centers, community agencies, or in private practices. They are able to bill third-parties for mental health services.

**Master of Marriage and Family Therapy**
A Master of Marriage and Family Therapy (MFT) degree is a more specialized training program that prepares students to work with people who have mental health issues. The MFT focuses on interventions that impact relationships between two or more individuals. According to the American Association for Marriage and Family [Therapy](http://www.aamft.org/iMIS15/AAMFT/About/About_AAMFT/Content/About_AAMFT/About_AAMFT.aspx?)}
MFT’s are trained to diagnose and treat a wide range of serious clinical problems, including: depression, anxiety, individual issues, and child-parent problems. Educational requirements include a master’s or doctoral degree in Marriage and Family Therapy.

**Training Model**

While MFT’s are qualified to work with individuals, their training model takes a systems-based approach. The training philosophy of many MFT programs is based on family systems theories and/or social-constructionist theories that consider human behavior and experience within a broad and complex system of interrelated elements and influences. MFT’s tend to adopt a brief solution-focused approach to problems that includes careful study of the context within which behavior occurs. Social systems extend beyond families. Thus, community and cultural systems are viewed as important parts of the equation as well.

**Time to Completion**

MFT programs typically require two years of graduate training with a one-year internship at the conclusion.

**Availability of Licensure**

Marriage and Family Therapists can be licensed in every US State ([http://www.aamft.org/iMIS15/AAMFT/Directories/MFT_Licensing_Boards/Content/Directories/MFT_Licensing_Boards.aspx](http://www.aamft.org/iMIS15/AAMFT/Directories/MFT_Licensing_Boards/Content/Directories/MFT_Licensing_Boards.aspx)). Requirements vary from state to state, but typically the process includes graduating from an accredited graduate program (Master’s or Doctorate level), two years of supervised clinical experience, and successful completion of a comprehensive examination in Marriage and Family Therapy (e.g. the American Association of Marriage and Family Therapy Regulatory Board exam).

**Job Prospects**

Projections for MFT employment suggest professional positions increasing by 14% between 2008 and 2014. While the MFT is a relatively new field, the focus on family systems theory, and emphasis on interventions within the family context is likely to help it gain traction. MFT’s are employed in mental health agencies, family services, health care settings, and in employee assistance programs. A high proportion of licensed MFT’s are of retirement age within the next 5 to 10 years. One concern for potential MFT students is a potential paucity of qualified placement sites. In many states, students who wish to license must be supervised by a qualified Licensed MFT within a specific type of setting. Since the number of MFT program graduates is on the rise, so is the demand for post-degree internships.

**Doctoral Training Programs**

Students interested in doctoral training may be surprised at the number of options available to them. There are various types of Philosophy Doctorate (Ph.D.) degrees (Clinical, Counseling, and School Psychology), an Education Doctorate (Ed.D.) degree, and a Doctorate in Psychology (Psy. D.) degree than can lead to practice as a psychologist. In general, doctoral programs are designed around a 4-year curriculum, and also require an additional year of supervised full-time internship experience. More extensive instruction on theory and in research methods/statistics is common in doctoral programs. While doctoral-prepared professionals are trained and qualified to carry out individual, couples, group, and family therapy, their scope of practice often extends to other types of activities: program evaluation, psychological testing and assessment, etc. Doctoral programs are generally more competitive for admittance. According to the American Psychological Association ([http://www.apa.org/workforce/publications/11-grad-study/applications.aspx](http://www.apa.org/workforce/publications/11-grad-study/applications.aspx)) between 5% to 10% of applicants to doctoral programs are accepted.

Students in doctoral programs are required to complete a 2000 hours pre-doctoral internship. Presently, there is a paucity of pre-doctoral internship positions available. For example, in 2012 approximately 1/3 of students seeking internship positions were not “matched.” In other words, they were not placed in a suitable internship. Graduates from 2013 will be competing for the limited number of available spots along with those who did not match from 2012. The APA requires programs to publish these data in the materials they supply.
to future applicants. Interested students should check the internship match percentage of programs before they apply.

The Doctorate of Philosophy (Ph.D.) Degree

Training Model

Most doctoral programs in applied (Clinical or Counseling) psychology ascribe to the Scientist-Practitioner training model, also known as the “Boulder Model” (Mellott, 2007). Established in 1949 at the Boulder Conference on Education in Clinical Psychology, this approach to clinical training emphasized adherence to the scientific method, procedures, and research in the day to day practice of psychologists. As a result, students in Ph.D. programs focus on research methods and design, statistical operations, and critical thinking in addition to learning about psychopathology, various forms of psychotherapy, theoretical decision making, professional ethics, and clinical judgment.

Doctoral students interested in working with clients in human service or health care settings will need to decide between a clinical psychology, counseling psychology, or school psychology degree program. While there are some distinct differences between clinical and counseling, there are far more similarities (Norcross, 2000). The day to day practices of clinical vs. counseling psychologists are quite similar. Those from clinical programs may have more training and experience with people who have more chronic and pervasive mental illnesses, while those from counseling programs may more typically deal with clients who have phase of life issues and who are seeking career counseling or advice. Furthermore, psychologists with clinical training may receive more training and experience with personality, cognitive, and neuropsychological testing and assessment while those from counseling programs are better versed at academic achievement and career advising testing. Additional information about the differences and similarities between these clinical and counseling psychology is available at the American Counseling Association [http://www.div17.org/about/what-is-counseling-psychology/counseling-vs-clinical/] and in other venues like the American Psychological Association [http://www.apa.org/gradpsych/2009/03/similarities.aspx], and the About Education website: [http://psychology.about.com/od/psychologycareerprofiles/p/counseling-psychology.htm].

Employment opportunities for the two are similar. Either can qualify for psychologist licensure, and have full authority under the psychology scope of practice. However, most trained in counseling psychology find work in university counseling centers and other human service agencies while those who are clinically trained more often work in hospitals or public mental health facilities. Once licensed, psychologists from clinical or counseling programs are free to practice privately as well.

Entrance into both the clinical and counseling doctorate programs is extremely competitive. Students should have a high GPA along with excellent GRE or MAT scores. Both clinical and counseling programs accept between 6 to 8 percent of applicants. The clinical programs generally receive more applications, making the probability of being accepted to counseling programs slightly higher.

Research interest is one area where distinct differences seem to emerge between the two. Those from clinical programs tend to delve into research areas that deal with psychopathology, treatment strategies, outcome measures, etc. Students in counseling programs are more likely to do research in human diversity, vocational and career options, and professional issues (i.e. ethics) (Norcross, 2000).

School psychologists are highly trained professionals who specialize in helping youth succeed academically, socially, behaviorally, and emotionally within the school setting. A relatively young profession, school psychology was formally recognized as a specialty area by the American Psychological Association in 1968. School psychologists are licensed by their state licensing boards and/or certified by the National Association of School Psychologists [http://www.nasponline.org/about_sp/spsych.aspx].
**Time to Completion**
The time to completion for a Ph.D. in clinical, counseling, or school psychology ranges between 5 and 10 years. In addition to coursework, a master’s thesis and/or a doctoral dissertation project is often required. To satisfy accreditation standards, students complete a 2,000 hour (one year of full-time work) pre-doctoral internship at a designated internship site.

**Funding Options**
Since both the clinical and counseling Ph.D. programs are research intensive, programs often have research or teaching assistant funding available. While not guaranteed, these positions often provide tuition waiver and a stipend for doing research, teaching courses, working in a university counseling center, or other jobs that support the role and mission of the department, school, or university.

**Availability of Licensure**
The Association of State and Provincial Psychology Boards (ASPPB) publishes a handbook with licensing requirements from each state ([http://www.asppb.org/HandbookPublic/before.aspx](http://www.asppb.org/HandbookPublic/before.aspx)). States usually dictate the graduate curriculum, the minimum number of supervised predoctoral internship hours, at least 4,000 hours of supervised practice, and minimum score on a licensing exam (e.g., the Examination for Professional Practice of Psychology [EPPP]). Some states have reciprocity agreements with other states, while others do not.

To practice as a School Psychologist, there are two levels of preparation; a Specialist Credential which requires at least three years of graduate training, and a Doctoral Credential in School Psychology which requires at least four years of graduate training. Both levels of training require a minimum of 1500 hours of supervised practice before credentials can be given. To become credentialed, school psychologists must also pass a comprehensive examination, for example, the Educational Testing Service’s (ETS) School Psychology Examination. While clinical and counseling psychologists who are licensed are qualified to practice privately and bill third parties for payment, the scope of practice for School Psychologists is limited to the school setting. In other words, they are not able to work outside the educational realm and are not generally permitted to provide psychological services to clients.

**Accreditation**
All doctoral programs in psychology are accredited by the American Psychological Association. For licensure, many states require that applicants graduate from an APA Accredited program.

**The Doctorate of Psychology (Psy. D.) Degree**

**Training Model**
The Doctorate of Psychology (PSY D) degree emphasizes becoming practicing psychologists rather than scientists and researchers (Peterson, 1997). Since the initial pilot programs were introduced in the late 1960’s, the number of programs and student enrollment has grown substantially. According to the American Psychological Association website ([http://www.apa.org/ed/accreditation/programs/clinical.aspx](http://www.apa.org/ed/accreditation/programs/clinical.aspx), accessed March 4, 2013), there are 59 accredited PSY D programs in the United States of America.

**Time to Completion**
Generally, the time requirement is similar for the Psy. D. and Ph.D. (usually between 5 to 10 years). Students in Psy. D. programs may have an option to do a dissertation, or complete a comprehensive professional project that applies more directly to the practice of psychology. Psy. D. programs also require a 2000 hour pre-doctoral internship.

**Funding Options**
Another difference between the Psy. D. and Ph.D. is the availability of funding for students. In Psy. D. programs, since there is less focus on research, fewer grant dollars filter through faculty down to students in
the form of assistantships. While there may be some Psy. D. programs where funding sources are available, they seem to be the exception rather than the rule.

**Availability of Licensure**
Licensure for students who earn a Psy. D. is generally the same as for students from a Ph.D. program.

**Education Doctorate (Ed.D.)**
The Education Doctorate in psychology was first offered at Harvard University in 1920. The need arose for a practitioner/educator oriented degree in psychology and educational practices. The Ed.D. can be offered in counseling, developmental psychology, and in educational psychology. Ed. D. programs require a culminating dissertation project, but most are practical/applied using survey-based information and may not entail conducting basic-research. While some have derided the Ed.D. as inferior to the Ph.D. in scope, quality, and rigor, the National Science Foundation has recognized the Ed.D. as equal to the Ph.D. in terms of importance and contributions to the field of psychology.

**Training Model**
Most Ed. D. programs are housed within colleges or schools of education. Training also follows the Boulder Model, but may be more of a Practitioner-Scientist approach rather than Scientist-Practitioner where the focus on rigorous scientific research is secondary to clinical training and practical application.

**Time to Completion**
The Ed.D. requires the same amount of time as a Ph.D. or Psy. D. Students should plan on between 5 to 7 years to complete the educational portion of the degree, with an additional two years of supervised experience for licensure.

**Funding Options**
Similar to students in Ph.D. programs, funding for students in Ed.D. programs may be available through graduate and research assistantships.

**Availability of Licensure**
Most states accept the Ed.D. as equivalent to the Ph.D. or Psy.D.as long as the program curriculum meets state requirements.

**Conclusion**
We hope this brief chapter has provided some food for thought. Again, deciding on a graduate program that best suits a student’s needs and individual expectations is one of the most important decisions that can be made. Such decisions deserve careful research and informed processes. We encourage students to consult with academic advisors, program faculty, and professionals in the field early in their academic careers. Ask questions, glean opinions, do some research, find an academic training path that fits your professional and personal needs. We also recommend students seek out opportunities for internships and/or practicum experiences to help further explore the benefits and drawbacks of different professions. The sooner one develops an educational plan based on long-range occupational goals, the better that plan can serve as a guide and roadmap for success.

**References**


### Appendix: State Licensing Web Sites

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3. Preparing for Graduate School in Psychology: It’s Never Too Early to Get Started!

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It’s never too early to start thinking about preparations for admission into a graduate program, since there are activities and tasks that students can engage in throughout their college years that will make their application more competitive. Graduate school admissions committee members have the task of looking through hundreds of applications to choose the best students for their program. Thus, it is important for students to do the types of things that will set their application apart from the rest and increase their chances of obtaining admission. This chapter provides a brief guide to help advisors and students understand what admissions committees are looking for and to provide advice on how to best prepare for graduate school in psychology.

Get to Know Professors

It is important for students to get to know their professors early in their college careers. In addition to being able to answer questions about class material, professors can provide invaluable advice and help navigate the graduate school application process. Professors are likely to be able to help narrow down which subfield of psychology best matches students’ interests, suggest classes to take, inform students about research/clinical opportunities, help students pinpoint the schools to which they are applying, and provide letters of recommendation. Letters of recommendation often carry great weight in the application process and should come from faculty members who know the student well and are able to discuss their aptitude for graduate work. Because reference letter writers are often asked to comment on skills and qualities such as academic ability, analytical ability, oral expression, written expression, interpersonal skills, dependability, emotional maturity, and self-motivation, it is essential that students build rapport with their professors throughout their college years.

Create Career Goals

When it comes time to apply for graduate school, students will want to find graduate programs that fit their interests, skills, and career goals. Therefore, it is important that students explore their career goals and become familiar with the steps needed to meet these goals. It may be helpful for students to talk to a psychology advisor or faculty member about their interests so they can help students pinpoint the types of programs that match their interests. Students should also network and talk to people who have the career that they are interested in pursuing to determine how their career goals can best be reached (e.g., the type of degree needed, types of programs to apply to, faculty that they would recommend working with, schools that they would recommend; see other chapters in this e-book for additional information about different sub-fields in psychology and types of degrees offered). It may also be beneficial for students to explore the APA’s Graduate Study in Psychology to get a better idea of the requirements [e.g., grade point average (GPA), Graduate Record Examination (GRE) scores, and coursework] required to earn a degree in a particular field. Knowing what type of program(s) they are interested in will enable students to gain a better idea of what activities (e.g., research experience, clinical experience, and coursework) will best prepare them for graduate work in that area. This knowledge will also help students develop goals and create a plan to reach those goals.

Coursework

While it is important to maintain a competitive grade point average (GPA) and complete the courses necessary for the major, taking specific classes and electives may help prepare students for graduate study.
Lawson, Reisinger, and Jordan-Fleming (2012) examined undergraduate course preferences listed on U.S. psychology graduate program websites. They found that courses emphasizing statistics and research methods were listed as the most often preferred classes across the different sub-disciplines of psychology. However, they also found that there were differences in course preferences based on the program (e.g., clinical/counseling, educational/school, industrial/organizational, and experimental). For example, taking a class in abnormal psychology is important for students interested in clinical/counseling psychology but not as important for students interested in experimental psychology. It may be helpful for students to read Lawson et al.’s article to see which classes may be important to enroll in.

In addition to enrolling in psychology classes that are relevant to a student’s field of interest, taking additional courses outside of the psychology major may help bolster a student’s application. In graduate school, students will need to be able to conduct research, analyze results, and write research papers. Therefore, taking additional classes in advanced statistics, writing, research design, and computer programming may substantially strengthen their application (Bukist & Burke, 2007). Bukist and Burke (2007) recommend that students consider completing a minor that complements their career interests. Students may also consider taking a variety of classes that are related to their field of interest. For example, if students are interested in a graduate program in cognitive neuroscience, they may want to enroll in cognitive psychology, biology, and computer science classes. If students are interested in clinical/counseling psychology, they may consider taking psychopharmacology/pharmacology, biology, and cultural diversity classes. Another option is to enroll in or audit a graduate level class in their field of interest. In summary, if possible, elective courses and/or a minor should complement a student’s area of interest in order to provide a foundation for graduate work.

**Research Experience**

Research experience is important for anyone interested in graduate school, including individuals applying to clinical/counseling programs. Landrum (2002) and Silvia, Delaney, and Marcovitch (2009) point out that research experience enables students to learn more about psychology and how it works, and it strengthens professional skills such as collaborating with others, ethics training, public speaking, and scientific writing [see Landrum (2002) and Silvia et al. (2009) for information on how to get involved in research]. Because graduate school in psychology relies on the ability to understand and conduct research studies, gaining research experience as an undergraduate may help students decide whether graduate school in psychology is right for them. There are several ways in which students can gain research experience, such as serving as a research assistant in a professor’s laboratory (preferably for more than one semester in order to gain in-depth experience), asking if they can develop their own research project under a professor’s guidance (independent study), or by completing an honor’s thesis. In each of these cases, students may be asked to do one or more of the following: collect data, enter data, attend lab meetings, attend or present at a conference, and write part of a manuscript that may be submitted for publication. If students conduct their own research projects, they may want to take the initiative and discuss the possibility of presenting their findings at a conference and/or submitting a manuscript to an undergraduate or professional journal.

In addition to gaining research experience during the school year, several prestigious undergraduate research programs are offered during the summer (e.g., National Science Foundation Research Experiences for Undergraduates Program, APA Science Directorate Summer Science Fellowship, Boston University’s Summer Undergraduate Research Fellowship Program; additional research opportunities can be found on the APA website: [http://www.apa.org/education/undergrad/research-opps.aspx](http://www.apa.org/education/undergrad/research-opps.aspx)). While these programs are highly competitive and require advanced planning, as each has their own specific requirements (e.g., summer of junior or senior year, letters of recommendation), they are also highly rewarding.

**Clinical Experience**

Clinical experience, in the form of an internship or volunteer work, is important for students interested in obtaining a clinical, counseling, or related degree. Clinical experience illustrates that students are familiar
with some of the professional activities performed by clinicians. Those who are interested in clinical/counseling psychology can gain clinical experience by volunteering or interning at rehabilitation centers, nursing homes, mental health centers, shelters, crisis hotlines, prisons, psychiatric centers, schools, and after-school programs.

**Extra-Curricular Leadership and Community Experiences**

Extra-curricular activities such as becoming a teaching assistant or volunteering in the community may also enable students to strengthen their interpersonal skills. Attending conferences, joining regional or national organizations (e.g., APA, APS, EPA, MPA, RMPA, SEPA, SWPA, WPA), and being initiated into Psi Chi (the International Honor Society in Psychology) are excellent ways to learn more about psychology and to network. Holding leadership positions in organizations can also help strengthen leadership abilities and communication and interpersonal skills.

**Additional Preparation Considerations**

In addition to the above suggestions, there are a few more activities that students should be sure to engage in to prepare for the application process. These include studying for and taking the GRE, creating a **curriculum vitae** (CV; an academic résumé that details education, research experience, clinical experience, and the like), and writing a personal statement. The GRE is an exam that is typically required of students applying to doctoral programs and, in some cases, to master’s degree programs. The main portions of this exam are focused on mathematical abilities, reading comprehension and vocabulary knowledge, and writing abilities. Some schools require students to take the GRE Psychology Test that is offered three times a year. Because GRE scores play an important role in gaining admission, it is imperative that students study for the GRE and schedule the exam early enough so that they have the opportunity to retake it should their scores not meet the minimum admissions criteria for the schools to which they are applying. There are various preparation guides that can be obtained in a local bookstore or over the Internet to prepare for this examination. It is also a good idea for students to start working on their CV early and updating it as they gain additional experiences. The CV that students submit with their application should be presented in an easy-to-read fashion that enables admission committee members to quickly get an overall impression of the student’s accomplishments. Writing the CV may also aid students in thinking about what they have learned through their coursework and experiences. This information will be helpful when it comes time to write the personal statement. The personal statement allows students to showcase their experiences, distinguish themselves from other candidates, and explain why they are a good fit for a particular program. It often takes students longer than they think to write their personal statement, so it is a good idea for students to start early and to make sure that their personal statement is tailored to each program to which they are applying. If students have built rapport with a professor, they may want to ask the professor to provide feedback on their CV and personal statement. Students may also want to talk to their mentor(s) about possible backup plans in case they do not get accepted into graduate school the first time they apply.

**Overall Assessment of your Application by Graduate Programs**

Graduate school programs will often ask students to submit their academic transcript(s), GRE scores, letters of recommendation, CV, and personal statement. While every program is different and may evaluate admissions requirements differently, many admissions committees set their initial focus on objective measures such as GPA and GRE scores. However, other factors may also be considered, such as the personal statement, letters of recommendation, research experience, clinical/fieldwork experience, work experience, volunteer experiences, major GPA, GPA for the past 2 years, honors, awards, leadership activities, coursework, and goodness of fit (with the program or a specific faculty member). While GPA and GRE scores are often the first factors that are taken into account, letters of recommendation, research experience, personal statements, writing skills, and goodness of fit are important secondary selection criteria (e.g., Bukist & Burke, 2007; Keith-Spiegel, Tabachnick, & Spiegel, 1994; Keith-Spiegel & Wiederman, 2000; Landrum, Jeglum, & Cahnin, 1994; Stoup & Benjamin, 1982). In fact, strong research skills (and letters of recommendation from research mentors) can in some instances help compensate for low GPA or low GRE
scores. Students or their letter writers might also want to be upfront about low scores and discuss how those scores are perhaps not the best representation of the student’s motivation, skills, and dedication to the chosen career path.

Conclusions
It is never too early for students to start thinking about and preparing for graduate school. Of utmost importance is building rapport with multiple professors, creating career goals, choosing classes wisely, gaining research and/or clinical experience, becoming involved in extra-curricular activities, and being aware of how graduate applications will be assessed. All of these activities can give students a competitive edge in the application process by increasing their knowledge and strengthening their skills. Overall, admissions committee members are looking for individuals who have strong records of academic merit, achievement, and professional promise, and who can bring an exceptional set of experiences, skills, and perspectives to their program. Taking the steps outlined here and preparing well ahead of time to produce the strongest application possible allows students to create an impressive set of credentials and distinguish themselves among the sea of other applicants.

References

Additional Resources: Books and Journal Articles


**Additional Resources: Websites**

American Psychological Association (www.apa.org)
Applying to grad school (http://www.apa.org/education/grad/applying.aspx)
Careers in psychology (http://www.apa.org/careers/resources/guides/careers.aspx)
Graduate admission essay do and don’ts (Kuther, T.) (http://gradschool.about.com/od/essaywriting/a/DosandDonts.htm)
Graduate school and careers in psychology (Rider University) (http://users.rider.edu/~suler/gradschl.html#get%20in)
How to get in: Your guide to applying to graduate programs in psychology (Columbia University) (http://www.columbia.edu/cu/psychology/dept/resources/getin3.html)
Psychology graduate school FAQs (About.com) (http://psychology.about.com/od/education/a/psychology-graduate-school-faq.htm)
So, you want to go to grad school in psychology (https://uwaterloo.ca/psychology/future-graduate-students/applying/so-you-want-go-grad-school-psychology)
The pursuing psychology graduate school information page (Walsh, L.) (http://www.uni.edu/walsh/linda2.html)
What is Biopsychology?
Biopsychology, also known as biological psychology, physiological psychology, or behavioral neuroscience, is the study of biological influences on behavior, with particular attention to the roles of genetics, evolution, and the nervous system (Kalat, 2013). It should be distinguished from neuroscience, which emphasizes cellular and molecular functions of the nervous system (Kandel, 1982), and from neuropsychology, which also studies brain-behavior relationships, but focuses on the clinical assessments of brain function in individuals with brain disorders (Craig, 2007). Topics commonly covered in biopsychology textbooks include function of neurons, sleep, movement, brain development, language, consciousness, sexual behavior, hunger/thirst, temperature regulation, learning and memory, emotion, sensation, and psychological disorders.

Although the topics covered in biopsychology may be of interest to many students, relatively few of them choose it as a field of study. In 2009-2010, neuroscience/biological psychology (combined in the APA report) made up only 1.3% of all master’s degrees in psychology and 3.6% of all doctoral degrees (APA, 2012). However, those of us in the field will tell you biopsychology is the most interesting topic in the world!

How do students choose a graduate program in biopsychology?
Graduate programs in biopsychology are generally very competitive. In 2009-2010, graduate programs in neuroscience/biological psychology accepted only 20% of applicants (APA, 2012). If students doubt their chances of being accepted into a Ph.D. program, they may want to complete a master’s degree first, which can enhance the likelihood of being accepted into a doctoral program later. If students complete master’s degrees in the same specialty, some of their coursework may transfer and reduce their course load as doctoral students.

There are a limited number of schools that offer a graduate program in biopsychology. The APA book *Graduate Study in Psychology* (2012) lists 33 biological psychology and 15 physiological psychology graduate programs in the US and Canada, although there are other related programs such as behavioral neuroscience that may be included under different labels (e.g., behavioral psychology, experimental psychology). Other schools that offer related degrees may be found at: http://www.gradschools.com/search-programs/biopsychology.

The identification of a potential graduate advisor is an important factor in the choice of graduate programs to which students apply. Ideally, students will have specific research interests that align with the research interests of faculty members who may serve as their graduate advisors for an extended period of time (5-7 years). Having common research interests can improve students’ chances of being accepted and make it more likely that they will complete the program. For additional recommendations regarding the selection of an advisor, see Dermer (1993).

Many programs offer assistantships and/or tuition waivers that can help pay for education, along with a small monthly stipend, so students should keep a broad perspective on where they would like to go to school (out of state!). Over two-thirds of psychology graduate programs offer some form of financial assistance to first-year students (APA, 2012).

What kinds of jobs can one seek as a biological psychologist?
The three main career tracks for a biological psychologist are academic, private industry, and government. In academic settings (i.e., college or university), biological psychologists would likely teach courses in their specialty field and be expected to obtain grant funds to sponsor their research and to publish research findings in scholarly journals. In private industry, biological psychologists may work for medical or
pharmaceutical companies conducting research. For example, some biological psychologists work at medical schools where they primarily do research in collaboration with researchers in related fields (Grigorenko, 2007). Finally, in a government position such as at the National Institutes of Health, biological psychologists would likely conduct research on health-related topics, but the funding would come from congress-appropriated research dollars.

**What can a biological psychologist do with different degrees in this field?**

With a master’s degree in biological psychology, individuals can work in jobs that are similar to those obtained by individuals with a Ph.D., but they will likely work under the supervision of someone who has a doctorate. If students are interested in teaching at the college level, they could be hired by a two-year college with a master’s degree, but a university or four-year college would likely require a Ph.D. To be competitive for jobs at a large research university, students should seek additional postdoctoral training after earning their doctorate.

There are no additional licenses or accreditation beyond regular coursework and research training. However, it is recommended that students join national organizations that sponsor annual conferences where they can network with other individuals and stay current with the research in their fields. Such organizations include the Society for Neuroscience ([http://www.sfn.org](http://www.sfn.org)), the Society for Physiological Research ([http://www.sprweb.org/](http://www.sprweb.org/)), and the Association for Psychological Science ([http://psychologicalscience.org](http://psychologicalscience.org)).

**What are the most helpful courses to take as an undergraduate, and why?**

Most undergraduate programs offer a course in biological/physiological psychology, psychobiology, or behavioral neuroscience as the introductory-level course for the field. Related courses are especially helpful including those offered in biology and chemistry departments such as genetics, neurobiology, organic chemistry, anatomy/physiology, and other courses that include a laboratory component. Graduate students in biological psychology will likely be doing bench work in a laboratory, which may include brain tissue slicing, cell staining, chemical analyses, animal surgeries, and computer programming.

**What experiences would be the most helpful for undergraduates interested in this field?**

Because the majority of research in biopsychology is conducted with animals, undergraduates should take courses or volunteer to assist faculty with research using animals, especially mice, rats, cats, dogs, or primates. If given the opportunity to do so, undergraduates should conduct their own research projects under the supervision of a faculty member. Doing so will improve students’ likelihood of acceptance into graduate programs and will help students become familiar with research techniques and statistical analyses.

**What is it like as a biopsychology graduate student?**

In addition to coursework demands, graduate students will spend time in the research lab where they will be trained by senior graduate students, postdoctoral fellows, or faculty members. Duties as a graduate student may include regular monitoring of the wellbeing of animals, writing animal research protocols for approval by an animal ethics committee, and training other students on laboratory procedures. The coursework will be challenging, as will the research demands. In some programs, Ph.D. students complete comprehensive oral and written exams, usually during the second year of the program. These exams may take 2-3 days to complete, which can be very stressful. Upon completion of the doctoral degree, the dissertation defense is an opportunity to demonstrate how much (or little) students have learned. It is expected that a dissertation will be a significant contribution to the field and that the findings will eventually be published as part of a student’s growing list of publications.

Unlike some other graduate and professional programs, the timeline for completing a Ph.D. is dependent upon individual progress and success in mastering research skills. Graduate advisors will help determine when students are likely to be prepared for the next phase of their careers, but keep in mind that training a graduate student is a large investment in time and energy on the part of advisors so he or she may not be too
anxious for a student to leave the program. However, establishing a good relationship with one’s graduate advisor can bring continued opportunities for collaborative research in the future.

Pursuing a postdoctoral fellowship will result in acquisition of additional research skills in a laboratory different from the one in which students studied in graduate training. During a postdoctoral fellowship, trainees will start earning a relatively meager salary, although postdoctoral fellowships are often funded by grants obtained by advisors and/or students, so there can be a lot of pressure to submit grants for funding of the lab and for a postdoctoral student’s own salary!

**Summary and Final Thoughts**

Graduate study in biopsychology is challenging, but fascinating. Those who pursue this course of study will always have something to be excited about as researchers continue to uncover the intricate workings of the brain and its role in human behavior.

**References**

APA. (2012). *Graduate study in psychology*. Washington, DC: APA.


**Books with Topics Related to Biopsychology**


5. On the Origin of an Evolutionary Psychologist

Barry X. Kuhle
University of Scranton

Evolutionary psychology is the scientific study of human nature dedicated to discovering and understanding the psychological adaptations that evolved to solve ancestral survival and reproductive problems. Evolutionary psychology is not a specific topic of psychological study. Rather, it is a meta-theoretical perspective with which to view all psychological domains. Evolutionary psychologists focus on many and varied phenomena through an evolutionary lens, including the adaptive problems and evolved solutions associated with surviving, long-term mating, short-term mating, parenting, kinship, cooperation, aggression, warfare, and conflict between the sexes (Buss, 2012).

What Credentials Do Students Need to Pursue Evolutionary Psychology?
A doctoral degree in psychology (or a related discipline such as evolutionary biology or biological anthropology) is usually necessary to pursue a career as an evolutionary psychologist. For those unable to gain entry into a doctoral program, acquiring a master’s degree in evolutionary psychology may be a good stepping-stone toward access to a Ph.D. program.

What Kinds of Jobs Can Students Acquire as an Evolutionary Psychologist?
Most evolutionary psychologists are employed in academia as researchers and instructors. A small but growing number of applied evolutionary psychologists are finding employment in marketing, business, law, and psychotherapy. For more information on applied evolutionary psychology see www.aepsociety.org.

How Do Students Choose Graduate Programs in Evolutionary Psychology?
Evolutionary psychology is a relatively small field, but the number of places to pursue graduate study in the field grows every year. A great place to start searching for a program is to consult the list of universities found here: http://www.hbes.com/resources/places_to_study.php. Questions to help narrow the list to 5-10 suitable programs to apply to include:

- What topic(s) does the student want to explore?
- In what universities are professors who have conducted similar explorations located?
- How do the student’s credentials (e.g., GPA, GRE scores, letters of reference, research experience) compare to a graduate program’s expectations for incoming students? (Information on the median GRE scores and GPAs of admitted students for many schools can be found in the APA’s Graduate Study in Psychology 2013 guide.)

What are the Most Helpful Courses to Take to Prepare for Graduate Study in Evolutionary Psychology?
As evolutionary psychology is an interdisciplinary approach to understanding human nature, a range of courses grounded in evolution would be useful, especially those in genetics, animal behavior, evolutionary biology, biological anthropology, and of course evolutionary psychology.

What Seminal Books Should Students Read?
Evolutionary psychology is fortunate to claim many scientists heralded for their clear thinking and writing. Two notable examples are Harvard cognitive psychologist Steven Pinker and Oxford evolutionary biologist Richard Dawkins, both of whom are award winning authors who recently topped Prospect magazine’s list of world thinkers (World Thinkers 2013, 2013). Of their myriad contributions, Dawkins’ The Selfish Gene (1976) and The Extended Phenotype (1982) and Pinker’s How the Mind Works (1997) and The Blank Slate: The Modern Denial of Human Nature (2002) are “must reads” for aspiring evolutionary psychologists. Close reading of the field’s first textbook (Evolutionary Psychology: The New Science of the Mind) and handbook
(The Handbook of Evolutionary Psychology) are also encouraged (Buss, 2005, 2012). A slightly dated but superb list of articles, chapters, and books to read to learn more about evolutionary psychology and the issues that surround it can be found here: www.ceps.ucsb.edu/reading.html. Three peer-reviewed journals to read include Evolution and Human Behavior, Human Nature, and Evolutionary Psychology. The latter is an online journal that is free to access at www.epjournal.net. Becoming a student member of the Human Behavior and Evolution Society (www.hbes.com) is recommended because, for only $33 a year, members receive a free subscription to Evolution and Human Behavior and reduced rates for Human Nature and for the society’s annual conference (discussed below).

What Experiences would be Helpful for Undergraduates Interested in Evolutionary Psychology?
Attending an annual meeting of evolutionary psychologists and related scientists is a great way to learn about the field, contribute to it, and meet like-minded others. Conferences to consider attending include annual meetings of the:

- Human Behavior and Evolution Society (HBES: www.hbes.com/conference/)
- European Human Behavior and Evolution Association (EHBEA: www.ehbea.com)
- International Society for Human Ethology (ISHE: www.ishe.org/)
- NorthEastern Evolutionary Psychology Society (NEEPS: neepsociety.com)
- Evolutionary Psychology Preconference associated with the Society for the Study of Personality and Social Psychology (SPSP: www.spsp.org)

How is Evolutionary Psychology Distinct From Related Sub-fields?
There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved. (Darwin, 1859, p. 459)

Evolutionary psychology explicitly embraces the grandeur that is viewing life through an evolutionary lens. Unlike most sub-disciplines of psychology, evolutionary psychology stands out for its perspective, breadth, and interdisciplinary nature. Evolutionary psychologists study a broad array of topics and use the methods and findings from many disciplines to illuminate human nature. The diverse nature of evolutionary psychology is reflected in the variety of scientists who attend its conferences and publish in its journals, including research psychologists, clinical psychologists, psychiatrists, neuroscientists, biological anthropologists, behavior geneticists, biologists, economists, political scientists, lawyers, historians, and literary scholars.

Summary
Although Darwin (1871) first explored human nature from an evolutionary perspective in the 1870s, it wasn’t until the mid-1980s that evolutionary psychology as a formal discipline dedicated to the study of human nature was born. Although early psychologists like William James (1890) saw the importance of understanding evolution to understand the human mind, most 20th century psychologists paid evolution little mind. Thankfully, the dark days of exploring the human mind in ignorance of the process that designed it are over. The study of life was long ago catalyzed by recognizing that “nothing in biology makes sense except in the light of evolution” (Dobzhansky, 1973, p. 125). The study of human life—our thoughts, feelings, behaviors, and products—is now being explored with the explicit recognition that evolution did not stop at the neck, that natural selection’s fingerprints are on our bodies and brains. The evolution revolution in psychology has led the nascent field of evolutionary psychology to grow increasingly prominent over the past quarter-century (Cornwell, Palmer, Guinther, & Davis, 2005; Silverman & Fisher, 2001; Webster, 2007a; Webster, 2007b), due in large part to the empirical harvest that Darwin’s seminal theories have germinated (Buss, 1995, 2012).
Final Thoughts
Darwin long ago opined that, “In the distant future I see open fields for far more important researches. Psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation [natural selection]” (Darwin, 1859, p. 449). If you share Darwin’s belief that psychology should be grounded in the meta-theory of evolution by natural selection (Buss, 1995) and feel that you can contribute to an understanding of human nature through the empirical study of our mind in the light of evolution, then please do apply! Applicants who evidence the abilities to adapt to, survive, and thrive in the graduate school environment will, naturally, be selected to become the next generation of evolutionary psychologists.

References and Suggested Readings
Preparing for Careers in Physiological Psychology

Physiological psychology focuses on brain-behavior relationships, with a particular emphasis on animal models of memory, emotion, perception, and motivation. Physiological psychologists explain behavior in terms of physiological mechanisms; they use experimental approaches to manipulate the brains of non-human animals in controlled experiments. Such experiments permit these psychologists to develop theories and models that describe and explain brain-behavior relationships. Much of the research uses animal models to reveal the molecular, cellular, physiological, and endocrine processes that contribute to behavior. Unlike other areas of neuroscience (e.g., biopsychology), physiological psychology focuses primarily on fundamental processes with little clinical application.

What Does a Physiological Psychologist Typically Do?

Most physiological psychologists work in academic settings such as four-year colleges or universities. In these positions, physiological psychologists conduct research and write scholarly articles, teach courses related to their expertise, and serve the college or their profession. The range of work environments and balance of responsibilities vary some across different types of colleges. By pursuing a career at a small liberal arts college, a physiological psychologist will have a heavier teaching responsibility but will still be expected to develop a research program, and most often a program that can involve undergraduates. Physiological psychologists who work in larger comprehensive or research universities often have greater expectations for research and securing external funding to support their research. For this particular subfield, and for some specific areas of study (e.g., recording activity from single nerve cells), significant financial support is needed to even establish and maintain a laboratory. So a student interested in becoming a physiological psychologist, and intending to work at a smaller college with limited resources, needs to remain cognizant that their ability to pursue certain research may be limited. Physiological psychologists also work in private research firms, pharmaceutical companies, or in government positions.

What Credentials do Students Need to Become a Physiological Psychologist?

Working as a physiological psychologist requires a doctoral degree (Ph.D.) in physiological psychology or a related field (e.g., neuroscience, neurobiology). Physiological psychologists are trained in traditional experimental psychology, giving them not only a broad knowledge of brain-behavior relationships, but also a firm grounding in experimental design and statistical analyses. Graduate work at the master’s level is possible; several well-regarded M.A. programs in experimental psychology have physiological psychologists on their faculty who supervise students in their laboratories. Having only a master’s degree limits students’ employment opportunities, although students may find rewarding work in various settings that allow them to put their research and laboratory skills to use.

How Do Students Choose a Graduate Program in Physiological Psychology?

Physiological psychology is a diverse field with highly specialized areas of research. Finding a program that aligns with their interests is a critical first-step for students, which not only improves the chances of admission, but it improves the chances that students are satisfied once admitted and that they will successfully finish the program. Programs should be selected based on the research interests of the faculty and students should locate faculty whose research interests dovetail with their own. Looking for programs based solely on location or perceived prestige is not recommended.
**What Are the Most Helpful Courses (in Preparation for Physiological Psychology) to Take as an Undergraduate and Why?**

Faculty who work in physiological psychology graduate programs look for potential students whose interests not only match their own but who possess the skills that enable the student to easily transition and begin making meaningful contributions to the faculty’s research. The exact sequence of courses that would best prepare a student for these programs depends on the area one is interested in pursuing. In psychology, students should take courses in traditional experimental psychology like cognition, learning, physiological psychology, etc. If courses in neurobiology or neuroscience are offered through the biology department, taking such courses would be good preparation.

A good rule-of-thumb is to take laboratory-based courses such as organic chemistry, biochemistry, microbiology, or anatomy/physiology as these will help build basic laboratory skills, which is perceived as an added bonus to an applicant’s resume. Courses in calculus and physics are a plus as well; much of physiological psychology relies on computational modeling, so having a mathematical background could benefit students. A more important set of courses would be in computer programming. Experiments in physiological psychology often rely upon using computer programs to automate experiments. Though a lot of software currently is commercially available for running and automating experiments, these are expensive. And while most are menu-driven, an assumption is made that the user has some programming knowledge. For an already strong student with solid grades and research experience, having some skills in programming (e.g., MATLAB) will make that student even more competitive for admission to a graduate program.

**What Experiences Would be Most Helpful or Essential for Undergraduates Interested in This Field?**

Undoubtedly having research experience not only improves students’ chances of getting admitted but also gives them the skills needed for early success in graduate school. It matters less as to the nature of the research experience; it is more important for students to have experiences in designing experiments, executing the projects, collecting and analyzing data, and preparing posters/presentations for regional or national conferences. Finding research opportunities in other disciplines such as biology or chemistry is particularly helpful, as a lot of research areas in physiological psychology primarily use research tools that may be more commonly used in those areas (e.g., molecular techniques, assays, etc). Unfortunately labs in the natural sciences also tend to have large numbers of students working on specific parts of a larger project; students might get good experiences with a particular research technique but they are not responsible for all aspects of the study.

An opportunity sometimes overlooked by students is summer Research Experiences for Undergraduates (REU’s). Select institutions offer these programs for an 8-10 week period over the summer. Students apply and choose a faculty member whose research interests match their own. These are very competitive and admitted students spend the summer working under the mentorship of one the program’s faculty. All in all, these are wonderful opportunities for students considering doctoral programs. They really do provide valuable skills not to mention an edge in the admission process.

**What GPA and GRE Scores Should Undergraduates Have to Pursue This Field at the Masters and Doctoral Levels?**

The required GPA and GRE scores for admission to master’s or doctoral programs is likely similar to other areas of psychology. It may be more instructive to determine the specific ranges of GPA and GRE scores for the programs to which you are applying. The APA publishes a book titled *Graduate Study in Psychology*. This is an extremely useful resource. For a variety of programs, it provides GPA and GRE scores for recent cohorts. For students with lower GPA’s or GRE scores, it is extremely important to promote their readiness for graduate work through their letter of intent in which they can highlight their research experience, relevant fieldwork and/or internships, and other experiences.
Having a GPA below 3.0 is detrimental to students who want to apply to doctoral programs, although they may be competitive for master’s programs. Students should highlight their psychology GPA, and particularly their GPA during the last two-years of college. Students’ GPA may also be lower because they took courses in the life and physical sciences in which students tend to earn lower grades. However unsettling it may be for students to earn low marks in these courses, having taken them probably is viewed more positively to a graduate program than the grade earned.

**Are There Any Seminal Books That Students Should Read Related to Physiological Psychology?**

A great way to become familiar with the area is to peruse classic physiological psychology textbooks. A seminal book by Neil Carlson (1980) titled *Physiology of Behavior* is an essential read for any student interested in the field. It is a little overwhelming due to the amount of detail provided. Though often used as an advanced undergraduate text, it probably is more typical of a graduate-level text. Nevertheless it remains an authoritative text, despite its age. A recent edition is available but it would also be interesting for a student to read the first edition.

**How is This Subfield Distinct From Other Related Subfields?**

Physiological psychology shares a lot in common with other areas in psychology and related fields. Terms such as behavioral neuroscience, neuropsychology, biopsychology, and cognitive neuroscience are often incorrectly used interchangeably. Biopsychology and behavioral neuroscience are synonymous terms; behavioral neuroscience seems to be a more recent usage. The major distinguishing factor between physiological psychology and biopsychology is that the latter generally includes topics that reflect uniquely human processes and applications (language, clinical applications, etc). *Behavioral* neuroscience can also be distinguished from *molecular* neuroscience, though the major differences relate to the level of analysis and topics emphasized. Behavioral neuroscientists study such topics as sleep, emotion and motivation, sensory processes, motor systems, and memory. Molecular neuroscientists primarily study such topics as the properties of membrane potentials and action potentials, ion channels, synaptic signaling, neurotransmitter function, and the regulation of neuronal gene expression and protein synthesis.

Another common misconception is that students often use the term ‘neuropsychologist’ when describing a physiological psychologist, which is incorrect. Neuropsychologists are clinical psychologists who specialize in testing and assessment of brain damaged patients. Students earning doctoral degrees in clinical psychology may pursue post-doctoral study in neuropsychology in order to become trained in neuropsychological testing and assessment.

**Summary**

Preparing for a career in physiological psychology parallels the steps needed to pursue many other areas in psychological science: a strong academic record, competitive GRE scores, research experience, marketable skills, and strong letters of support. Deciding to pursue graduate study in physiological psychology requires a careful assessment of one’s readiness and temperament for doctoral study. Taking lab-based courses and finding research opportunities enables the student to better prepare for doctoral study. These types of experiences also help strengthen students’ self-awareness for their readiness and preparedness for entering a graduate program in physiological psychology.

**Final Thoughts**

Maybe one feature of physiological psychology that distinguishes it from graduate study in areas like social or developmental is that physiological psychology programs are highly interdisciplinary. Students may take courses offered through various departments in a school of medicine or engineering; and their major advisors may hold dual-appointments in psychology and an allied field (e.g., neurobiology, Ophthalmology, Computer Science, etc.). The interdisciplinary nature of these programs provide students with rich experiences and
permit them to interact with students studying other areas of brain science from different scholarly perspectives. Because program faculty may hold dual-appointments, their students may participate in weekly seminars where graduate students, post-doctoral fellows, and faculty give research presentations.

References and Suggested Readings
A truly extensive field, neuroscience is inherently interdisciplinary and described concisely as the study of the nervous system. Neuroscience connects with and draws from fields such as biology, chemistry, computer science, engineering, mathematics, medicine, philosophy, physics, and psychology in the study of how the nervous system works, with specific scientific approaches ranging from cellular and molecular neuroscience (i.e., studying neurons, receptors, ion channels, etc.) to behavioral and cognitive neuroscience (i.e., studying relationships between behavior or cognition and brain function). A slight rephrasing of the theme areas of the Society for Neuroscience annual meeting (http://www.sfn.org/Annual-Meeting/Neuroscience-2013/Abstracts-and-Sessions/Call-for-Abstracts-ISM/Themes-and-Topics) provides another way to think about the breadth, interdisciplinary nature, and disciplinary connections of, as well as opportunities for training in, neuroscience: brain development, cellular mechanisms of neurons and glia, nervous system disorders and treatment, sensory and motor systems function, integrative and related areas like neuroendocrinology and neuroimmunology, how the brain regulates and responds to cognition and behavior, new technologies and methods for all areas of neuroscience, and the history and teaching of neuroscience. For the psychology undergraduate interested in developing a background in neuroscience there is both opportunity and need to look beyond the psychology curriculum for training opportunities. Also, it is important for the student to be able to distinguish neuroscience from some closely related sub-fields in psychology.

How is neuroscience distinct from related sub-fields in psychology?
Neuroscience relates to biological or physiological psychology, neuropsychology, and cognitive psychology but has more breadth with sub-fields of neuroscience relating more closely to these sub-fields of psychology. Biological or physiological psychology relate closely to behavioral neuroscience with these areas drawing explicit connections between biology and behavior. While biological and physiological psychology consider various systems of living organisms in relation to behavior, study in behavioral neuroscience would always include the brain and/or nervous system in relation to behavior. From the neuroscience perspective, psychopharmacology or behavioral neuroendocrinology are sub-fields of behavioral neuroscience, which is a sub-field of neuroscience. As a basic or clinical science, neuropsychology generally involves study of relationships between behavior and/or cognition and brain function in humans or the assessment and treatment of brain-injured people (American Psychological Association, 2012), and behavioral or cognitive neuroscience would not necessarily only include human subjects either implicitly or explicitly. Finally, study and research in cognitive psychology or science does not necessarily explore brain function when addressing cognitive processes. As a sub-field of neuroscience, cognitive neuroscience explicitly includes brain function and its relation to cognition.

As a psychology major, what courses should I take for training in neuroscience?
Training in neuroscience for undergraduates isn’t new, and this training has been and is available most often through neuroscience, biology, and psychology degree programs (Kerchner, Hardwick, & Thornton, 1998; Ramirez, Aanonsen, Dunbar, Hill, Paul, Smith, et al., 1998; Wieterlak & Ramirez, 2008). If undergraduate education in neuroscience is to lead to work or further training, then psychology majors seeking a good background find themselves in ‘competition’ with students in other disciplines doing the same thing but from different orientations. The typical psychology curriculum usually includes a group of courses essential for building a background in neuroscience. Psychology courses often mentioned in discussions of undergraduate neuroscience education include general or introductory psychology, statistics and research methods, principles of learning and behavior, cognitive psychology, and, of course, biological psychology (e.g., Ramirez et al., 1998; Wieterlak & Ramirez, 2008). The latter course, biological psychology (also physiological psychology, behavioral neuroscience), should address neuroscience topics as broadly as
possible and be taken as early as possible during the undergraduate years and with a laboratory component when possible. Certainly, any other courses found in psychology departments relating brain and behavior provide excellent opportunity for training; for example, courses like abnormal, hormones and behavior (behavioral endocrinology), drugs and behavior (a solid introduction to psychopharmacology), sensation and perception, or seminars in specific neuroscience-related topics. Ideal capstone experiences from the psychology curriculum might include an undergraduate independent research project and/or a behavioral, cognitive, or social neuroscience seminar with opportunity to read, analyze, write about, and discuss primary literature.

Because neuroscience is a quickly evolving field, courses outside the psychology curriculum are also essential in providing adequate and competitive training in neuroscience. Probably the singularly important experience, if available, is a course in neuroscience (Wieterlak & Ramirez, 2008). Courses in biology and chemistry are also essential. In biology, the introductory sequence with laboratory and additional courses (at least some with laboratory work) that provide training in cellular and molecular biology as well as genetics, immunology, or animal behavior are important. The introductory chemistry sequence with laboratory experience is close to essential, and organic chemistry with laboratory is highly recommended (Wieterlak & Ramirez, 2008). Of course, biochemistry, introductory physics, precalculus (at least) or calculus (ideally), and philosophy of mind or science would contribute to the undergraduate experience for any neuroscience-interested psychology major. Finally, any coursework that enhances a student’s critical thinking, quantitative, and analytic skills, or experiences that prepare a student to think independently, be self-motivated learners, and communicate well are beneficial (e.g., Kerchner et al., 2012).

Other than course work, what experiences in neuroscience would be helpful for me?
As for the sub-fields of psychology, a singularly important experience for any undergraduate interested in neuroscience is doing research. It is likely that some of the best learning a student does will happen outside the classroom or structured laboratory course when she or he can work with a faculty mentor and/or peers doing research. Each semester, a student might consider doing neuroscience research. It really is never too early to begin engaging in research experiences. In fact, outcome reports of surveys of graduate programs in neuroscience point toward the importance of undergraduate research, over and above taking specific courses, for success in graduate school (Kerchner et al., 2012). A second important experience would be an internship that would allow specific work within and broad reflection about neuroscience (Wieterlak & Ramirez, 2008). For example, a psychology major might work with brain-injured individuals, read and discuss literature specific to cases, and then reflect on the relation of the specific experience within the disciplines of neuroscience and psychology. Similarly, summer opportunities to engage in neuroscience research at another institution in either the United States or abroad or post-baccalaureate research experiences can be exceptionally valuable. For example, the National Institutes of Health has a web page outlining many training opportunities (https://www.training.nih.gov/programs), some of which are for undergraduates or recent graduates.

Can I work in neuroscience with only an undergraduate degree?
It would be difficult to find work as a ‘neuroscientist’ with only an undergraduate degree in psychology and training in neuroscience. It might be possible to find work as a research assistant or laboratory technician at a university or corporation; however, the likelihood of success will depend on specific undergraduate experiences and skills (see 2. and 3. above). A psychology major with a good background in biology and chemistry as well as a good set of technical skills might be more competitive as a research assistant than another major by virtue of her or his experience with learning and behavior. Most psychology majors have good critical thinking, analytic, and general research skills and are competitive for various jobs that might be tangentially related to neuroscience; for example, working in a rehabilitation facility for brain-injured people. An interesting way to explore the work one can do with various degrees in a discipline is to use Google and read the resulting information with care.
How do I choose a graduate program in neuroscience?

There are a couple of things to consider when choosing a graduate program in neuroscience. First, what level of graduate training is of interest? At the master’s degree level, it is likely that degree programs will be in psychology or biology rather than neuroscience. Many neuroscience programs are interdisciplinary within and across colleges and housed in medical schools as often as in colleges of arts and sciences. The Society for Neuroscience offers information on careers and training at [http://www.sfn.org/careers-and-training/higher-education-and-training](http://www.sfn.org/careers-and-training/higher-education-and-training) with a specific list of ‘student resources’ and a list of graduate programs. Neuroscience programs, or those with specific tracks in neuroscience, typically admit students with the expectation that the goal is a doctoral degree. An initial step in finding a program is to identify a large group of programs with faculty conducting research in areas that are of interest to the future applicant. The next step might be for the applicant to assess his or her strengths and credentials (GPA, GRE scores, experiences) and rule out schools that are not a match. Next, it would be good to examine the program at each potential school and identify those with acceptable curricula and training strategies (e.g., rotating through research labs versus moving directly into a lab). Finally, it is always good to correspond with programs of interest and with potential mentors. If this is done electronically, then any email should be well written and thoughtful. The bottom-line is to apply to training programs that are appropriate academically, interesting to the applicant, and places where she or he could envision spending five or six years doing research.

What kind of jobs can I seek as a neuroscientist?

Neuroscientists with master’s degrees can work as research assistants or technicians for universities, pharmaceutical or biotechnical companies, research institutes, or for the government. Positions may be long term or short term depending on the nature of the specific program and might be permanent, or temporary grant funded positions. Individuals with doctoral degrees can work in the same settings as those persons with master’s degrees but with increased levels of responsibility. For example, a master’s level researcher might be responsible for a set of studies for a biotech company while the doctoral level neuroscientist is likely to oversee a research program for that company. It is important to remember that before a Ph.D. level neuroscientist finds a permanent position with a university, institute, company, or government agency, she or he will likely work as a postdoctoral fellow conducting research under the supervision of some other scientist who is principal investigator for a research project. During postdoctoral training, a person works as a neuroscientist but also may learn a new research area and/or new technical skills. Of course, an ultimate goal for many neuroscientists is a position as a faculty member. Neuroscientists with a doctoral degree hold faculty positions at colleges and universities and in various departments (e.g., psychology, biology, physiology, anatomy, neuroscience, etc.) within colleges of arts and sciences and medical schools. Finally, a number of neuroscientists work at many of the National Institutes of Health.

Summary and Final Thoughts

Most psychology curricula provide an excellent opportunity for training in neuroscience, and psychology majors who are thoughtful about courses taken outside the major are competitive for further training opportunities in neuroscience. A hard-working psychology undergraduate has experiences that foster integrated learning and gaining desirable competencies such as independent and critical thinking, self-motivated learning, and skills with scientific inquiry and research. These attributes coupled with a careful selection of courses outside the major designed to develop basic knowledge in biology, chemistry, and neuroscience as well as psychology can prepare a student for further training (cf. Kerchner et al., 2012), or possibly work, in neuroscience.

References


**Other Sources of Information**

1. The Society for Neuroscience web site (http://www.sfn.org) contains a large array of information about neuroscience for a variety of audiences. Of particular interest for those reading this chapter might be the directories of neuroscience training programs (i.e., doctoral programs) on this page http://www.sfn.org/careers-and-training/higher-education-and-training. Specifically for faculty, the information on this page http://www.sfn.org/about/volunteer-leadership/committees/committee-on-neuroscience-departments-and-programs?pagename=committee_CNDP may provide helpful information about neuroscience departments and programs and how the Society provides support.

2. The Faculty for Undergraduate Neuroscience is an organization focused specifically on education and research in neuroscience at the undergraduate level. The organization maintains a website (http://www.funfaculty.org) with valuable information for faculty and students. Of particular interest might be the list of internship opportunities at http://www.funfaculty.org/drupal/undergrad_internships_neuroscience.
8. Quantitative Psychology

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We suspect that undergraduate psychology majors (UPMs) would say they know less about quantitative psychology (QP) than other sub-fields within the discipline. If UPMs are unaware of QP, it actually would be quite ironic since most are required to complete QP coursework. In their review of 374 UPM programs, Stoloff et al. (2010) reported that 98% require completion of a research methods or statistics course. Thus, most UPMs have been exposed to QP, but may not have made the connection between these courses and the field.

The American Psychological Association (APA) describes QP as “the study of methods and techniques for the measurement of human attributes, the statistical and mathematical modeling of psychological processes, the design of research studies and the analysis of psychological data” (APA Task Force for Increasing the Number of Quantitative Psychologists, 2009, p. 9). That is, QPs focus on methodological, measurement, and quantitative issues that arise in both applied and basic psychological research. To further clarify, consider the following research questions that QPs might be called upon to answer:

1. How should data be collected to examine the effectiveness of a program created to reduce test anxiety in college students? Should test anxiety be measured not only for program participants, but also for students who do not participate in the program? How often should data be collected and from how many students?

2. How should test anxiety be measured? Should self-report items be utilized? If so, what should be their content and response scale for the items? How many items are necessary? Would biological measures of test anxiety (e.g., galvanic skin response) be more accurate? Does one method of measuring test anxiety result in more precise and/or meaningful values than another?

3. What statistical analyses are needed to describe the results of the study and to make conclusions about program effectiveness not only for this sample, but for the larger population of college students from which the sample was obtained? What are the assumptions of these inferential statistical methods? If evidence suggests that assumptions have been violated, how are conclusions impacted and what alternative analyses might be used?

These questions were intentionally arranged into three sets corresponding to different areas of training within QP: research methods, measurement, and statistics, respectively. Although a QP may specialize in one of the three areas, QPs receive training in all three.

How is QP distinct from other sub-fields?

Because every psychologist consumes or produces research, they must have facility with quantitative methods. The necessity of quantitative skills is why UPMs and psychology graduate students are required to complete quantitative coursework (Aiken, West, & Millsap, 2008). Given all psychologists are expected to have quantitative proficiency, a relevant question is what makes QPs distinct? The answer pertains to the depth and breadth of the coursework, research, and practice that QPs devote to these topics. Whereas a developmental psychologist might learn about quantitative methods to answer research questions within their domain, it is the quantitative methods in and of themselves that are of interest to QPs. For instance, QPs might develop new techniques in research methods, measurement and statistics, or may evaluate the performance of existing techniques under commonly occurring conditions (e.g., small sample sizes, non-normal data; APA Task Force, 2009).

Because QPs develop and evaluate the quantitative methodology used to answer substantive research questions in all areas of psychology, becoming a QP does not mean a person has to “give up” their interest in

2 QP will be used as an acronym for Quantitative Psychology and Quantitative Psychologist.
other domains. In fact, having expertise in quantitative methods allows QPs to be involved in a wide variety of research in the social sciences.

**What kinds of jobs do QPs have?**

QPs enjoy a wide variety of careers, including those in academia, research/testing organizations, and governmental agencies. Examples of job titles include professor, research scientist, psychometrician, data analyst, and evaluation specialist. We find it helpful to distinguish between what might be called “technical” and “applied” positions. QPs in more technical positions may spend the majority of their time examining the behavior of measurement or statistical models under various conditions or developing new models. Many faculty positions in QP graduate programs at research-intensive universities would be considered technical. There are also technical careers in educational testing or research organizations where a large proportion of time might be devoted to evaluating various models, writing code, executing analyses, and writing reports.

Careers suitable for more applied QPs include positions at research and testing organizations where a great deal of time is spent explaining quantitative techniques and results to non-quantitatively oriented audiences (e.g., policy makers, teachers, and clients). Applied positions typically require strong interpersonal and time management skills because responsibilities include managing projects as well as people.

Although we have made a distinction between technical and applied positions, most positions have both technical and applied components. The most successful QPs have technical expertise as well as excellent communication and “soft” skills (e.g., time management skills, interpersonal skills). Although one can become a QP with subpar skills in some areas, the number and nature of the jobs available are more limited.

**Are QPs in demand and what is their typical salary range?**

The demand for QPs has been high for some time and there is no reason to expect it will decrease. There is a particularly great need for educational measurement specialists, often called psychometricians, who assist in the creation and evaluation of educational tests and scales (Brennan & Plake, 1991; Herszenhorn, 2006; Patelis, Kolen, & Parshall, 1997). Because there are more jobs than QPs to fill them, APA convened the “Task Force for Increasing the Number of Quantitative Psychologists” in 2006. Not surprisingly, this task force and others have called for heightened recruitment efforts of undergraduates into QP (APA Task Force, 2009; Finney & Pastor, 2012; Sireci, 2000; Sireci & Khaliq, 2002).

It would not be unusual for a new Ph.D. to obtain starting salaries between $50,000 and $120,000, although the particular amount will depend on the employer, location, position, and applicant. More information can be found in Camara (2007) and Packman, Camara, and Huff (2010).

**What kind of training is needed to become a QP?**

A master’s or doctoral degree is needed to become a QP, with more job opportunities and higher pay typically available to those with a doctorate. QP graduate programs are housed in departments of psychology and educational psychology, with programs in the two departments overlapping in the quantitative training provided, but differing in the applied context (APA Task Force, 2009). UPMs interested in quantitative methods to address questions in psychological research and practice should consider programs in psychology departments, whereas those interested in educational research and practice should consider programs in educational psychology departments. A listing of programs can be found in the APA Task Force report (2009) and those specific to educational measurement can be found in Kolen and Tong (2012).

**What kind of undergraduate courses or experiences would be most helpful in applying to QP graduate programs?**

Applicants to QP graduate programs typically have an undergraduate degree in the social sciences or education with coursework in statistics, mathematics, or computer programming. Students with degrees in statistics, mathematics, or computer programming with coursework in the social sciences or education are also well suited. In preparation for graduate work, UPMs should complete as many courses as possible in
measurement, statistics, and research design and also seek opportunities to assist faculty with research. These experiences will help students answer the question, “Is a career in QP right for me?” If the answer is yes, these experiences will strengthen the student’s application. If the answer is no, these experiences are still beneficial as they likely strengthen the student’s application for employment or graduate study in another domain.

Coursework in mathematics (e.g., calculus, matrix algebra) is required by some QP graduate programs. Other QP programs put less emphasis on the number and type of mathematics courses completed and more emphasis on QP coursework (e.g., psychological statistics, research methods) and experiences (e.g., research with faculty). There is no doubt that mathematical training facilitates deep understanding of QP concepts, but QP graduate programs and careers vary in the extent to which mathematical skills are required and utilized.

Summary
The expertise of QPs in research methods, measurement, and statistics allows them to enjoy a wide variety of careers. QPs are in high demand and are usually paid generous salaries. A graduate degree is typically needed and more opportunities are available for those with doctorates. Completing quantitative coursework and engaging in research with faculty will not only help UPMs decide if QP is right for them, but will strengthen their resume regardless of what career they decide to pursue.

Final Thoughts
Even though quantitative psychology is one of the Charter Divisions of APA (i.e., Division 5), less than <1% of APA members identify their major field as QP (or a related field; APA, 2012) and of that small percentage, many “stumbled onto the field by chance” (APA Task Force, 2009, p. 20). Because the field is not well known, UPMs may encounter professors, even of quantitative courses, who know little about the field. For this reason, UPMs interested in learning more should consult the resources in the reference list and connect with faculty and graduate students in QP programs. UPMs should also visit the websites of QP programs and relevant professional organizations (APA-Division 5, American Educational Research Association – Division D, National Council of Measurement in Education).

We hope that we have given UPMs reason to adhere to this wise piece of advice from Novotney (2008): “Next time you’re considering skipping stats class, think again.”

References
References marked with an asterisk should be consulted to learn more about Quantitative Psychology and related topics. These references may or may not have been referenced in the chapter.


9. Preparing for a Career in Psychological Clinical Science

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Clinical science, as discussed here, refers to a career path involving the science-centered application of clinical psychology services. We discuss careers in clinical science primarily as those in clinical psychology with an emphasis on clinical psychology research. What follows is a list of critical questions to which students will need answers if pursuing a clinical science career.

What do clinical science-focused psychologists do?
A doctor of philosophy (Ph.D.) in clinical psychology allows for a great variety of career paths. Clinical science-focused psychologists necessarily must earn a doctoral degree to enter this career. Careers in clinical science can range from traditional academic positions within departments of psychology to grant-supported positions in hospitals or departments of medicine. Clinical scientists may also choose to provide clinical services (e.g., therapy, supervision) within a hospital setting, group practice, or as an individual with a full or part-time practice. Some of these careers provide a great amount of security and stability (e.g., academic), while others are subject to the volatility of the grant funding climate, such as changes in the amount of money appropriated by congress for government funded research. It also is worth noting that these are common career trajectories in clinical science, but they are not the only career paths available. For example, a career in clinical science may also include starting a private business related to clinical science or consulting with private businesses about psychological assessment and treatment.

What experiences should students have before applying to graduate programs?
Many things can be done, while an undergraduate, to be well positioned to pursue a career in clinical science. Perhaps the most critical is to obtain research experience. It is never too early to seek out clinical research experience. Generally, the initial step in this process is to seek out a faculty member who shares similar research interests as your own. If you are unsure of which research topics you are interested in, it may be beneficial to obtain experiences in 2-3 research laboratories that seem interesting. It is often the case that faculty are looking for undergraduates to serve as research assistants, helping with the conduct of studies that are led either by the faculty member or other senior trainees in her/his laboratory (e.g., graduate students, postdoctoral fellows). It is important to be proactive in identifying this type of experience.

Once you have secured a role in a laboratory (e.g., research assistant, database manager), it is important to integrate into the laboratory and make yourself an invaluable resource. There are many rich opportunities that may present themselves while working in a laboratory, including activities that will help with clinical skill development, hands-on experience working with data, and opportunities to contribute to research posters, publications, and grants, or even direct a research project (e.g., an honors thesis). Graduate programs weigh these experiences heavily in their admission processes, and they will significantly advance your understanding of a topic area of interest.

At many universities, students have the option to complete honors theses and independent projects. The thesis or independent project may be especially important for students attending small liberal arts schools where research may be supported or conducted differently than at larger institutions. The honors thesis (or independent project) allows for the (1) development of a research question, (2) designing a related study, (3) succinct expression of your research plan in the context of a research proposal, (4) conduct of your research, (5) analysis of collected data, and (6) presentation and dissemination of study findings. Completing an
independent research project is one of the most challenging experiences during an undergraduate career, but it is the most likely to provide you with the skills necessary to successfully transition into a graduate career in clinical science.

In addition to research experiences, getting to know faculty members, including networking (e.g., attending lab functions and departmental colloquia) and getting involved in psychology-related organizations (such as psychology clubs and Psi Chi), is another important step in preparing for graduate training in clinical science. Graduate programs typically require three letters of recommendation. Individuals who know the applicant well enough to speak to characteristics beyond class performance ideally write letters. For example, a letter writer that can speak to one’s ability to manage stressful situations or work well with peers can make a more compelling case for the potential of an applicant than someone who can only speak to grades and class participation. Letters are strongest when written by people with careers in clinical science, as these letters can be viewed as written by people who understand what it takes to become a clinical scientist.

How do students select graduate programs?

There are many resources available that can assist in the evaluation of graduate programs in clinical psychology. We recommend the American Psychological Association’s (APA’s) website for a helpful overview of considerations and resources (http://www.apa.org/education/grad/applying.aspx). One particularly helpful resource is the APA’s Graduate Study in Psychology. This reference book allows for quick identification of many important program details, such as number of faculty members, theoretical orientation, emphasis on science relative to practice, and number of applications received and individuals accepted in each program, each year.

A particularly helpful piece of information to consider is the training model adopted by a program. Models you may encounter include the Boulder Model, the Vail Model, the Scientist-Practitioner model, the Scholar-Practitioner model, and the Practitioner-Scientist model, among others; Dr. Mitch Prinstein’s discussion of some of these models, as well as additional helpful information can be found at: http://www.unc.edu/~mjp1970/Mitch%27s%20Grad%20School%20Advice.pdf. Knowing the training model helps direct students in terms of how a program balances science and practice in its training. Although a thorough review of these different models is beyond the scope of this chapter, we suggest considering scientist-practitioner programs. While there is variability within scientist-practitioner programs, they tend to integrate training in the science of psychology to a greater degree than some of the other training models.

The Academy of Psychological Clinical Science (APCS) via the Psychological Clinical Science Accreditation System (PCSAS; http://acadpsychclinicalscience.org/) has recently formalized a newer “Clinical Scientist” model. In addition to the importance of choosing a program that is accredited by the APA, doctoral programs in clinical psychology that publicly endorse science-centered clinical training can be accredited by PCSAS. These programs also should be seriously considered when selecting a program for training in clinical science as they have a documented focus on training in the science of clinical psychology.

Another important consideration for many people is the degree to which graduate programs fund students. Tuition, fees, and living expenses can accumulate over five or six years of graduate school and the degree to which graduate programs offset these costs varies. Many doctoral programs in clinical science can offer tuition waivers and stipends for four years or more, which significantly offsets these expenses and may reduce the need for student loans. Indeed, a recent study documented that 77.4% of incoming students to an APA-accredited clinical Ph.D. program received full financial assistance (tuition waiver and stipend), with 98.7% of those in a program accredited by APCS receiving a similar level of assistance (Sayette, Norcross, & Dumoff, 2011). Resources such as the Insiders Guide to Graduate Programs in Clinical and Counseling Psychology can be useful for determining the types of financial assistance available. A wealth of information can be gleaned from most departmental web pages as well.

Publishing research papers in scholarly journals can be important for attaining certain careers in clinical science. Therefore, it is important to consider whether publishing opportunities are available to graduate
students in a doctoral program. The best way to gauge this is to look up what graduate students are publishing, if anything. Graduate student names can often be found on department web pages and a simple PsycNet or PubMed search can be very informative when attempting to predict what opportunities may be available during doctoral training. Keep in mind, however, that publishing as a graduate student is a major accomplishment and fairly unlikely to occur early in training. Therefore, trying to gauge graduate student productivity is best done by looking at the records of students in their 3rd, 4th, or 5th years of training.

How do students select graduate advisors with whom they may like to work?
Though the above-mentioned factors may be useful in determining overall departmental fit, choosing a mentor is arguably the most important aspect of deciding upon a graduate program in clinical science. Many training programs primarily rely on individual faculty members to choose students that they believe would be a good fit within their laboratories. As such, choosing a potential mentor that is a good match with one’s interests is paramount. Examining a potential mentor’s (departmental) webpage and published scholarly work can be invaluable in determining if s/he may be a good match.

What should students consider to determine if graduate school in clinical science is right for them, and if so, which one?
Additional factors to consider when choosing a graduate program include (1) average time to graduation, (2) recent alumni of programs, (3) APA-accredited internship placement rate/programs, and (4) graduate student grant records and opportunities. These four factors should be weighed at the department level as well as the mentor level, as there is considerable variability within many departments. Determining how long students typically take to complete a program, and if the jobs secured by recent alumni are consistent with your interests and goals, can help identify optimal programs. Additionally, as clinical science programs require a year of internship, it is important to consider internship placement rates and the quality of internships that alumni attend. Finally, those interested in pursuing a clinical research-centered career should also note whether the department or university offers funding for graduate research as well as whether students have applied and/or successfully obtained funding during their graduate careers to support masters theses or doctoral dissertation projects (e.g., National Research Service Award [NRSA; F31], dissertation award).

Do I have to take the GREs (Graduate Record Exams), including the psychology subtest? If so, what kind of scores do I need to be competitive?
Yes, GRE scores are needed to apply to most doctoral programs relevant to a career in clinical science. Some, but not all, of these programs also require the psychology subtest. Doctoral programs optimal for pursuing a career in clinical science are very competitive. Therefore, weaknesses in an application to such programs can prevent getting an interview. Accordingly, begin to prepare for the GREs as early as possible and try to allow for the opportunity to take them a second time in case the initial scores need to be improved. Resources such as department webpages can be helpful in estimating the scores needed (including grade point average) to make one’s application competitive. It also is important to take advantage of the plethora of books and websites that have been designed to aid in preparing for the GRE.

Should I take a year off before applying to grad school?
Though one might perceive taking a year or two off between undergraduate and graduate school as less than ideal, it is actually common among students entering the field of clinical science. Students often spend a year or two working in a clinical research laboratory, academic medical center, Veterans Affairs (VA) hospital, or institutions like the National Institutes of Health (NIH), after completing their undergraduate degree. This allows one to obtain the skills and record necessary for successful application to graduate school while demonstrating consistent dedication to obtaining a career in clinical science. Post-baccalaureate experiences are sometimes paid, though often unpaid, and allow for full immersion into clinical research. They therefore provide rich opportunities for developing clinical and research skills, as well as for participating in research
poster presentations, publications, and grants that will improve the likelihood of successful placement in a clinical science program.

**Summary**
Careers in clinical science can be highly rewarding. They offer the opportunity to practice and advance the services offered by clinical psychologists. A Ph.D. in this area opens doors to a wide variety of careers, but obtaining one is challenging. Begin preparing as early as possible and work as closely as possible with someone who has successfully developed such a career; this sort of personal guidance is invaluable.

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**Suggested Reading**
10. Scholarship of Teaching and Learning

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Scholarship of Teaching and Learning
The scholarship of teaching and learning (SOTL) is a growing sub-discipline of higher education involving the systematic exploration of teaching and learning processes, program evaluation and assessment, and the development of modern teaching methodologies (Hutchins, Huber, & Ciccone, 2011), such as the incorporation of technological advancements. Importantly, teaching and learning scholarship also encompasses a critical public component (Boyer, 1990; Hutchins et al., 2011). Scholars engaging in teaching and learning research seek to develop professionally by sharing pedagogical ideas with, and learning from, colleagues and disseminating their evidence-based practices through publicly available outlets (Boyer, 1990; Hutchins et al., 2011). Indeed, since the scholarship of teaching—a term which later evolved to include the scholarship of teaching and learning—was initially recognized as a critical area of scholarly inquiry by Ernest Boyer (1990), numerous institutions of higher education have created active centers for teaching and learning devoted to developing and sharing empirically-driven pedagogical techniques. Several prominent societies or foundations, such as the Carnegie Foundation for the Advancement of Teaching, the International Society for the Scholarship of Teaching and Learning, and the Society for the Teaching of Psychology (to name a few) have been developed to advance Boyer’s (1990) scholastic mission. Various peer-reviewed academic journals, including the Journal of the Scholarship of Teaching and Learning, the International Journal for the Scholarship of Teaching and Learning, and specific to psychology, Teaching of Psychology, have been created to enhance the public dissemination of teaching and learning scholarship.

Though interdisciplinary in scope, the scholarship of teaching and learning is fundamentally psychological in nature. Enhancing one’s understanding of teaching and learning outcomes inherently relies on the exploration of cognitive, learning, and memory processes. As such, the scholarly investigation of teaching and learning processes is an area of particular appeal to academic psychologists.

What does a psychologist specializing in the Scholarship of Teaching and Learning typically do?
Individuals specializing in SOTL engage in scholarly inquiry aimed at illuminating pedagogical techniques that maximize teaching effectiveness as well as identifying factors that promote and enhance student-learning outcomes. Teaching and learning scholars employ myriad research methodologies including case studies, observational designs, survey techniques, program evaluation, experiments and quasi-experiments, and longitudinal analyses, among others. Specific to psychology, those specializing in teaching and learning scholarship advance understanding of the field by promoting excellence in classroom pedagogy for, and learning of, the various subareas of psychology as a discipline. Findings from such scholarly inquiry are disseminated through various outlets, including in-house dissemination among academic departments, colleges, or universities, as well as public dissemination via teaching and learning centers (often associated with universities), workshops, conferences, or peer-reviewed academic journals.

What type of educational preparation do I need to specialize in the Scholarship of Teaching and Learning?
SOTL researchers come from various backgrounds. Some receive specialized graduate training or certification in the scholarship of teaching and learning, whereas others are professionals who specialize in such scholarship as a means of enhancing teaching and learning within their particular disciplines. For those seeking specialized training in the scholarship of teaching and learning, the following avenues are perhaps the most relevant for graduate education:
• **Educational Psychology:** Educational psychologists’ work is “concerned with theory, methodology and applications to a broad spectrum of teaching, training, and learning issues” (Educational Psychology, 2013). More specifically, educational psychology research focuses on issues related to cognition, student outcomes, individual differences in learning, educational assessment, instructional design, and classroom management, among other topics. Educational psychology programs are typically housed in departments of education, rather than departments of psychology.

• **Cognitive Psychology:** Cognitive psychology entails the “study of higher mental processes such as attention, language use, memory, perception, problem solving, and thinking” (Glossary of Psychological Terms, 2013). As such, many cognitive psychologists’ research focuses on mechanisms that can inform best teaching practices and maximize learning outcomes. Consequently, fundamental principles of cognitive psychology are often major components of educational theory.

• **Science of Teaching and Learning:** Though marketed under varying names and labels (i.e., depending on the institution one can receive a doctorate in *Cognitive Science of Teaching and Learning* (University of Illinois, Urbana-Champaign), *Learning, Teaching, and Diversity* (Vanderbilt University), or simply *Teaching and Learning* (Ohio State University, New York University), for example), graduate programs focusing on SOTL train students to systematically explore the processes by which individuals acquire knowledge and aim to enhance students’ pedagogical expertise. Potential areas of specialization include learning and cognition, technology and learning, pedagogical development and implementation, curriculum design, environmental design and learning outcomes, program evaluation, and sociocultural perspectives on education, among others. Teaching and learning programs are typically housed in departments of education.

• **School Psychology:** A more clinically-oriented application of teaching and learning scholarship is offered through school psychology, a sub-discipline which is “composed of scientific-practitioner psychologists whose major professional interests lie with children, families and the schooling process” (School Psychology, 2013). Although many school psychologists work in applied settings as counselor-practitioners (and thus do not directly engage in SOTL), others develop active programs of scholarly research at academic institutions that focus on creating effective, research-based educational practices. More specifically, such scholars investigate and design educational interventions aimed at enhancing the learning outcomes of children suffering from learning disabilities, academic difficulties, or emotional-behavioral challenges. Additionally, some school psychologists also develop academic programming for students characterized as gifted and talented. School psychology programs are typically housed in departments of education.

Depending on the specific program and institution, students may pursue a master of arts (M.A.), master of science (M.S.), master of education (M.Ed.), doctor of philosophy (Ph.D.), or doctor of education (Ed.D.) degree in the aforementioned areas. However, individuals aspiring to establish active research careers in the field of teaching and learning typically obtain a doctorate in their specific discipline. For additional information about program and degree availability by state and institution, please see the American Psychological Association (APA) publication, *Graduate Study in Psychology* (2014).

In addition to formal graduate training in the aforementioned areas of specialization, many researchers specializing in SOTL receive their education in other sub-disciplines and then simply focus some of their scholarly efforts on exploring ways by which teaching and learning outcomes can be enhanced within their specific field. For example, *Teaching of Psychology*, the official journal of the Society for the Teaching of Psychology, receives original research article submissions from scholars in all areas of psychology that focus on diverse aspects of teaching, learning, assessment and evaluation, and curriculum design as they relate to the teaching of psychology. Thus, these scholars simply develop two areas of research expertise—one in their primary discipline of study (e.g., cognitive, personality, developmental, social psychology, etc.), and the other in SOTL.
What classes would be most helpful or essential for undergraduates interested in this field?

In preparing for graduate training or a career in SOTL, completing courses in cognitive psychology, learning theories, research methods and statistics, personality psychology, educational psychology (if available) and school psychology (if available) may be beneficial. Each of these courses will afford the student a unique perspective on research and issues relevant to learning and educational processes. Furthermore, ample involvement in collaborative research with an undergraduate faculty mentor will also strengthen the student’s prospects of being admitted to competitive graduate programs, particularly for those interested in pursuing doctoral study in their area of interest.

What G.P.A. and GRE scores should undergraduates obtain to pursue this field at the master’s and doctoral levels?

G.P.A. and GRE (verbal + quantitative) score requirements for graduate programs specializing in teaching and learning scholarship vary substantially by institution and degree type. For example, some master’s programs do not indicate a minimum G.P.A. and do not require the GRE for admission, whereas others may require a 3.0 cumulative G.P.A. and some specified GRE minimum. Admission requirements for doctoral programs are similarly variable. Minimum G.P.A.’s may range from 3.00 to 3.5 cumulative, while GRE (General Test) minimums may range from no minimum requirement to as high as 1200 (old test)/300 (new test), verbal + quantitative combined (note: as of August 1, 2011, the GRE General Test transitioned to a new scoring system, with possible scores ranging from 130-170 on each of the verbal and quantitative sections. Scores on the old system could range from 200-800 on each section, respectively). Importantly, average G.P.A. and GRE scores among accepted applicants typically exceed these minimums. According to the 2014 edition of the APA’s Graduate Study in Psychology, median scores for applicants accepted into doctoral degree programs in psychology (collapsing across area of study) are 577 (old)/158 (new) for the GRE verbal section, and 668 (old)/154 (new) for the GRE quantitative section. For more information on admission criteria, see specific program websites or the APA’s Graduate Study in Psychology (2014).

What kinds of jobs can I seek as a psychologist specializing in the Scholarship of Teaching and Learning?

Individuals specializing in SOTL often seek employment as faculty at 2- or 4-year academic colleges or universities. Particularly at 4-year institutions, such positions afford the scholar the resources necessary to mutually apply their relevant knowledge as teacher-educators, and, to continue their scholarly exploration of teaching and learning processes as research faculty. Although you may qualify for some faculty positions with only a master’s degree, in most cases holding a Ph.D. or Ed.D. is preferred or required. Relatedly, scholars (especially those holding a doctorate) may also seek employment at research centers devoted exclusively to the scholarship of teaching and learning, many of which are university-affiliated. These centers focus on researching, developing, and offering valuable resources to teacher-scholars that will enhance their pedagogical and student-learning success. To learn more about the aim and scope of such research centers, see below for a sampling of extant centers around the U.S.:

- Carnegie Foundation for the Advancement of Teaching
- University of Michigan Center for Research on Learning and Teaching
- Carnegie Mellon Elberly Center for Teaching Excellence and Educational Innovation
- Harvard University Derek Bok Center for Teaching and Learning
- University of California, Berkley Center for Teaching and Learning
- Cornell University Center for Teaching Excellence

Other career prospects for specialists in SOTL include administrative positions in public school systems, employment with government agencies or corporations, or professional positions with public or private research organizations.
How is this sub-field distinct from other related sub-fields?
The SOTL is distinct from other sub-fields in psychology in that its foundation is inherently and uniquely interdisciplinary in nature. As an area of research, contributing scholars boast a range of academic expertise not only within the field of psychology, but within academia and higher education more generally. This diversity presents the unique opportunity for scholars in the area to contribute to, and benefit from a literature rife with variability in educational perspective and experience.

Summary and Final Thoughts
Scholars of teaching and learning seek to enhance student outcomes by systematically examining all aspects of pedagogical practice with the aim of improving courses, academic programs, and facilitating progress toward educational objectives (Hutchins et al., 2011). Specific to psychology, teaching and learning scholars advance understanding of the field by taking an evidence-based approach to improving those educational techniques that afford students the finest opportunity to learn the various sub-fields of psychology. There are several educational tracts that a person may pursue if they aspire to specialize in teaching and learning scholarship. Some involve graduate preparation in areas that specifically focus on matters related to SOTL, whereas others involve receiving training in a more general academic area and subsequently tailoring one’s scholarly pursuits toward SOTL. Career prospects include faculty or research positions at 2- or 4-year academic institutions, administrative positions in public school systems, employment with government agencies or corporations, and research positions with public or private organizations, among others. These opportunities will continue advancing the growth of the SOTL community both within the psychological discipline as well as within academia more generally.

References and Suggested Readings


Organizations Devoted to Scholarship of Teaching and Learning
- Carnegie Academy for the Scholarship of Teaching and Learning (CASTL)
- Society for the Teaching of Psychology
- International Society for the Scholarship of Teaching and Learning (ISSOTL)

Scholarly Journals Devoted to the Scholarship of Teaching and Learning
- Teaching of Psychology
- The Journal of the Scholarship of Teaching and Learning
- International Journal for the Scholarship of Teaching and Learning
11. Comparative Psychology

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Comparative psychology is a multidisciplinary approach to the study of cognition and behavior that attempts to integrate the evolutionary focus of biology and the individual-behavior focus of psychology (Daniel & Papini, 2008). Although they may specialize in a variety of different areas (e.g., experimental analysis of behavior, cognitive psychology, neuroscience, etc.) comparative psychologists consider the evolutionary history and adaptive function of the cognitive processes and behaviors under study.

Although similar in many respects to the fields of animal learning, behavioral ecology, and ethology, comparative psychology has emerged as an integrative approach (or perspective) to the study of non-human animals (Kamil, 1988). Specifically, comparative psychology draws theoretical and methodological inspiration from the aforementioned fields to investigate mechanisms by which non-human animals learn, store, remember, and respond to information from the environment (Shettleworth, 2010).

A guiding principle of the comparative approach is to focus on similarities and differences in psychological processes across species in an effort to illuminate general and specialized mechanisms (Bitterman, 1960, 1965, 1970). Such an approach is often accomplished through experimental research in the field or laboratory on topics including, but not limited to, attention, communication, foraging, mating, memory, perception, predator-prey interaction, and tool use (for reviews see Papini, 2002; Shettleworth, 2010; Wasserman & Zentall, 2006).

What does a comparative psychologist usually do?

Broadly speaking, comparative psychologists are often found in university settings engaged in formal and programmatic research (either in the field, the laboratory, or both) to answer fundamental questions regarding non-human animal behavior and cognition. As a result, comparative psychologists are often faculty members in psychology departments, and they spend the bulk of their time teaching, researching, and writing.

What credentials do I need to be a Comparative Psychologist?

Although there is no set path to becoming a comparative psychologist, the conventional route involves attending graduate school to obtain the necessary content knowledge and research skills to begin an individual line of research. As a result, most comparative psychologists obtain a Ph.D. with a specialization in a content area (e.g., learning, memory, cognition, neuroscience, etc.).

How do I choose a graduate program in Comparative Psychology?

Selecting a graduate program that specializes in comparative psychology can be a tricky endeavor because “comparative psychology” rarely appears as an official program name. As a general rule, students should seek out specific faculty members around the globe who conduct research in a content area of interest to them. This may be most easily accomplished by seeking peer-reviewed articles on topics of interest and subsequently searching for the corresponding author’s name to identify his/her affiliated university and graduate program.
Which courses should I take if I have an interest in Comparative Psychology?

Technically, the word “animal” refers to both humans and non-humans, but a course with the word “animal” in the title is likely to focus more on issues prevalent in comparative psychology. As such, a general strategy may be to seek courses with “animal” in the title; however, given the breadth of comparative psychology, one should seek courses that comprise the diversity that is the comparative approach. In general, courses in biology, evolution, ethology, animal learning and behavior, animal cognition, statistics, research design, and biological bases of behavior will serve as a solid foundation for graduate study, but a more targeted approach would be to read course descriptions from your course catalog and identify courses similar to the following:

**Introduction to Psychology.** Required by most Psychology departments for majors.

**General Biology.** Because psychology involves the study of living organisms, a basic understanding of biology is essential to students interested in Comparative Psychology.

**Genetics.** Depending on the specific course, genetics may investigate changes from the molecular level to the level of the species. Evolutionary theory provides a driving rationale for comparisons among species, making the study of genetics valuable for the study of Comparative Psychology.

**Animal Behavior (may be called Comparative Behavior, Comparative Psychology).** This course examines animals, primarily in their natural habitats, to allow comparisons among species regarding innate behaviors. A sampling of topics includes mating, maternal (and if applicable, paternal) behavior, infant/parent bonding, critical or sensitive windows for development, aggression, nest building, communication within species, resource competition, feeding.

**Ethology (or Animal Behavior or similar titles in a Biology Department).** Similar in content to Animal Behavior offered in a Psychology Department, Ethology (often offered in a Biology Department) will also include an investigation of hormonal influences as well as more emphasis on the ecological niche of the species under investigation.

**Animal Learning (Principles of Learning, Comparative Learning, Conditioning and Learning, Animal Learning and Cognition, Animal Learning and Memory).** This course examines changes in behavior due to experience (rather than to maturation, development, etc.). Topics will include basic processes of habituation, reinforcement and punishment, schedules of reinforcement, classical conditioning, stimulus control, and more complex areas of learning (e.g., cognition, memory).

**Physiological Psychology (Psychobiology, Biopsychology).** This course examines the interaction between behavior and the physical body (e.g., neurons, nervous systems, hormones, etc.).

**Brain/Behavior.** Usually an advanced course, this course examines the interaction between the brain and behavior. This course should cover structures and functions of the brain in greater depth than a basic Physiological Psychology course.

**Evolutionary Psychology.** This course examines a field that was previously known as Sociobiology, and may still be referred to as such. This area examines the biological bases of social behavior as well as the roles of natural and sexual selection in the evolution of psychological traits and abilities.

**Behavioral Ecology.** This area covers a full range of living organisms, including single cell organisms, plants, animals, etc. The interaction of species, behavior and environment form the base for this area of study.

**History of Psychology (History and Systems of Psychology).** This course focuses on the progression of Psychology as a science beginning with its origins in Philosophy, Physics, and Anatomy/Physiology. The coverage of the emergence of the various areas of Psychology as well as major theoretical and empirical developments will provide students with critical information regarding our discipline’s historical roots and maturation.
**Psychological Research Method/Statistics.** These courses are crucial for students intending to attend graduate school. In these courses, the basic techniques of conducting research and evaluating the results of research will be covered. If advanced versions of these courses are available, we strongly encourage students to also take these courses. These courses will help build the analytic and quantitative skills required to succeed in graduate programs.

**What experiences should I seek if I have an interest in Comparative Psychology?**
One of the most important experiences a student can have involves engagement in research under the supervision of a faculty member. These experiences are valuable whether a student intends to continue his or her studies or would like to seek immediate employment because the skills gained in this process are often transferable to other areas. If a faculty member is not conducting research in the student’s area of interest, the student may wish to seek out a faculty member in a different area related to the student’s interests. Although in some settings such experience is voluntary, in other settings course credit may be earned. In either case, a student should familiarize himself/herself with the areas of interest of the faculty and explore this opportunity with faculty members who share similar interests. Other experiences can include involvement (via volunteer work or internships) with zoos, veterinary hospitals and clinics, animal shelters, and pharmaceutical research (either corporate or medical).

**What kinds of employment can I seek as a Comparative Psychologist?**
The most common career for a comparative psychologist is to teach and conduct research in a college or university. Depending on one’s area of expertise, there may also be opportunities to work for pharmaceutical companies (e.g., laboratory researcher), federal governmental agencies (e.g., center for disease control, environmental protection agency, national science foundation), or animal care facilities (e.g., zoo, aquarium).

**Summary**
Drawing from various sub-fields of biology and psychology, comparative psychology is an integrative approach to the study of non-human animal learning, memory, and cognition with an emphasis on similarities and differences in underlying psychological mechanisms across species. Areas of study include (but are not limited to) attention, communication, foraging, mating, memory, perception, predator-prey interaction, and tool use. Comparative psychologists are often faculty members with a Ph.D. and spend the bulk of their time teaching, researching, and writing in an effort to discover and disseminate fundamental information regarding non-human animal behavior and cognition.

**Suggested Readings**
The following books cover a variety of topics and have been published (and republished) across the years. Any (or all) of them will add to an understanding of the comparative psychological approach.


**References**
Cognitive psychology is essentially the study of the mind. It is a sub-field of psychology that focuses on how we acquire, process, and manipulate information. Cognitive psychologists do this by studying mental processes such as perception, attention, memory, language, learning, problem-solving, and reasoning (American Psychological Association, 2013). Even a simple question, ‘What is your major?’ and answer, ‘Psychology’, involves complex mental processes working together, such as perceiving and attending to the question, language comprehension and articulation in forming a response, memory activation relating to the knowledge of one’s major, and decision-making in deciding if and how to answer the question.

As these mental processes are fundamental to everything we do, cognitive psychologists make an important contribution to the field of psychology. Even so, cognitive psychology is a relatively new sub-field of psychology. Although mental processes were being examined by early psychologists such as Donders (1868) and Ebbinghaus (1885), and written about by James in his *Principles of Psychology* (1890), it was not until the mid-1960s that the term *cognitive psychology* began to be used. Neisser (1967) is credited with coining the term and defining cognitive psychology as the study of “all processes by which the sensory input is transformed, reduced, elaborated, stored, recovered, and used. [Cognition] is concerned with these processes even when they operate in the absence of relevant stimulation, as in images and hallucinations... Given such a sweeping definition, it is apparent that cognition is involved in everything a human being might possibly do; that every psychological phenomenon is a cognitive phenomenon” (p. 4). Prominent cognitive psychologists and examples of their areas of research include Neisser (1978, memory), Broadbent (1958, attention), Loftus (2003, false memory), Chomsky (1972, language), and Miller (1956, information processing), just to name a few.

Cognitive psychology differs from other sub-fields, such as neuroscience, neuropsychology, behaviorism, and cognitive science in that it is often less applied, and more often focuses on basic research. It differs from neuroscience in that it concerns the *mind*, rather than the *brain*, and therefore, is more concerned with understanding mental processes and what affects them, rather than where in the brain they are occurring. That said, neuroscience and cognitive psychology complement each other and cognitive psychologists employ physiological methods to study mental processes and some specialize in neurological methods, such as fMRI or ERP.

**What is a cognitive psychologist?**

A cognitive psychologist uses the scientific method to empirically study mental processes using behavioral methods (e.g., reaction times, memory recall) and/or physiological methods (e.g., eye tracking, heart rate). Information gained from using either of these methods is then used to make inferences about the underlying mental processes involved in the observable response. There is a wide range of mental processes or topics within cognitive psychology on which cognitive psychologists may focus. For example, some may specialize in sensation and perception, or on factors that affect attention, while others may focus on memory or language. Even within these topics, cognitive psychologists will often focus on particular aspects of a mental process (e.g., false memory, selective attention, statistical learning theories, sleep consolidation). Cognitive psychologists may also specialize in cognitive aspects of other areas of psychology, such as social cognition or cognitive development.

**What kinds of jobs can I seek as a cognitive psychologist?**

Many cognitive psychologists work in academia, either teaching or doing both teaching and research at
colleges and universities. Some cognitive psychologists work within applied areas. For instance, in human factors psychology, psychologists focus on how cognitive information is understood and used by humans to improve the design of computer and work systems. These psychologists may redesign airplane cockpits to improve the flow of information, or examine the flow of information through a workplace, to see if changes to the workflow might improve efficiency.

**What does a cognitive psychologist typically do?**

Within an academic setting, cognitive psychologists typically teach courses within their areas of expertise, such as Sensation and Perception, Cognitive Psychology, and seminars on Reading and Language, Memory, or Social Cognition. Most faculty members also conduct research projects with students and colleagues, and publish their studies in journals and present at conferences. As part of their research, cognitive psychologists may also pursue funding from granting agencies. Within an applied setting, cognitive psychologists often work on research teams where they investigate cognitive issues related to a field such as perception, decision-making, or aviation.

Most graduate programs in cognitive psychology will specialize in a small number of cognitive domains. For instance, a program might specialize in memory, with an emphasis on false memories, or on decision making, with an emphasis on behavioral outcomes and utilizing neuroscientific measures such as fMRI. Thus, it is important to have narrowed down one's interest areas before considering graduate programs.

Once a student knows he or she is interested in an area, such as visual perception, the best way to find programs is to talk about it with a cognitive psychologist! Most professors and advisors have a large network of colleagues around the country and can advise on programs that might be a good fit for the student’s interests. Another suggestion is to read recently published articles focusing on the area. These will give a sense of researchers and programs to consider. Once programs are identified, students can explore the program’s website for more information about faculty members, curricula, and application information. Another excellent resource for finding graduate programs is the current edition of the American Psychological Association’s *Graduate Study in Psychology* (APA, 2014). This comprehensive resource lists programs geographically and by area of study, and includes information from previous years’ applicants and accepted students, such as mean GRE scores and GPAs, number of applications, financial aid information, and other important information that will help inform the graduate program decision.

Note that success in graduate programs is largely dependent on the fit between the student, his or her mentor, and the program, so be careful, thoughtful, and honest about your strengths and weaknesses when engaging in this process.

**What GPA and GRE scores should undergraduates have to pursue this field at the masters and doctoral levels?**

Typically, undergraduates pursuing a graduate degree in cognitive psychology should have a GPA of at least 3.5. Most graduate programs look for GRE scores (both verbal and quantitative) of 160 or above; most programs will prefer higher quantitative scores than verbal scores. Most programs look for a writing score in the 4.5-6 range. Some programs also require the Psychology GRE. The psychology GRE score requirements vary by program. Generally, any GRE scores below the 50th percentile will be unlikely to be considered for admission.

**What are the most helpful courses to take as an undergraduate and why?**

A cognitive psychology course is important, as it will introduce students to the field and its various topics. Taking other cognitive-related courses will also broaden one’s knowledge of cognitive psychology and particular topics that one may want to further pursue in graduate school. For example, taking courses that focus solely on sensation and perception, or on memory and learning, will make a more competitive applicant for graduate school and will help students identify what programs and types of research are most attractive. Courses in neuroscience and neuropsychology, as well as biological psychology, are also important
for a cognitive psychologist since the line between the mind and the brain and body is more figurative than absolute.

Research is an essential aspect of cognitive psychology, as it is the means by which we infer what is going on in the mind, which cannot be directly observed. Therefore, statistics, data analysis, experimental design, and research methodology courses are essential for a career in cognitive psychology.

**What experiences would be most helpful or essential for undergraduates interested in this field?**

Experience as a research assistant in a cognitive psychology lab is important for students who intend to pursue a graduate degree by demonstrating knowledge of the scientific method, as well as critical thinking and analytical skills. Research experience will also help to narrow down which aspect of cognition is of most interest, thereby helping students identify graduate schools, programs, and possible faculty members with similar research interests. Experience as a course assistant, if available, will help prepare students for working as a Teaching Assistant in graduate school, and will help to inform students regarding whether a career in academia is of interest.

**What can a cognitive psychologist do with a Masters degree in this field?**

Most students that enter graduate school within cognitive psychology will pursue a doctorate. However, there are opportunities available for students that want to pursue a master’s degree instead. Individuals with a master’s degree would likely work in a more applied area of cognitive research and development. For instance, individuals with master’s degrees might work within a government, advertising, or corporate setting. Working as a member of a research team within one of these settings, individuals would help to develop new products or systems that maximize human information processing. There are no professional licenses or additional credentials necessary for a career in this field at this level.

**What can a cognitive psychologist do with a doctoral degree in this field?**

Students that pursue a doctorate in cognitive psychology may also pursue employment within an academic setting. These faculty members will teach, research cognitive phenomena, and advise undergraduate or graduate students. Those who do not pursue a career in academia might work within a government, advertising, or corporate setting. Working as members of a research team, or a team leader within one of these settings, individuals would design and help to develop new products or systems that maximize human information processing. There are no professional licenses or additional credentials necessary for a career in this field at this level.

**Summary**

Since the cognitive revolution in the 1960s and 70s, cognitive psychology has been a major area of concentration within the field of psychology. The field is special in that it informs all other areas within psychology, including neuroscience, mental health, and behavioral decision-making. Cognitive psychologists are helping individuals understand the exciting question of how the mind works.

**References and Suggested Readings**


Social psychology is the study of individuals in a social context. In other words, social psychologists study how people think, feel, and act depending on the social situation. Social psychology is a popular area of study because of its broad applicability to daily life. Further, social psychology is known for powerful, memorable, and provocative studies such as Milgram’s (1963) obedience research, the Stanford Prison Experiment (Haney, Banks, and Zimbardo, 1972); Darley and Latané’s (1968) bystander intervention studies, Bargh, Chen, and Burrows’ (1996) priming studies, and Correll, Park, Judd, and Wittenbrink’s (2002) “shoot/don’t shoot” simulations. Social psychology also relates well to other fields of research, as demonstrated by the following journal titles: *Journal of Personality and Social Psychology*, *Journal of Social and Clinical Psychology*, *Social Psychology of Education*, *Social Cognitive Affective Neuroscience*, and *Journal of Applied Social Psychology*. For more information on the field of social psychology, explore the Social Psychology Network: www.socialpsychology.org, and read this chapter to answer key questions for those interested in the field.

What Undergraduate Classes would be Most Helpful?
Undergraduate students interested in social psychology should take statistics and research methodology courses in addition to a course in social psychology. When possible, methods and statistics courses should be taken early in the undergraduate career because they facilitate deeper understanding of upper-level courses. Additional courses can be based on the student’s interests. For example, students interested in social cognition would benefit from a cognitive psychology course. Some programs may offer additional courses in social psychology beyond the introductory course. For example, at Ohio State undergraduate students can enroll in courses on Attitude Structure and Function, the Self, Stereotyping and Prejudice, Attitudes and Persuasion, Interpersonal Relations, the Psychology of Emotions, and The Psychology of Personal Security.

Other subfields of psychology that often overlap with social psychology are judgment and decision making and industrial/organizational psychology. Students interested in social psychology might pursue additional coursework in these areas. Graduate training in a growing number of social psychology programs now also incorporates neuroscience (Dovidio, Pearson, & Orr, 2008), so an undergraduate course in behavioral neuroscience is recommended. Students interested in applying social psychology to business might also consider taking undergraduate courses in marketing, consumer behavior, public relations, or communications as well as business statistics courses.

What Experiences Would be Most Helpful?
Students interested in social psychology should seek out academic research experiences as soon as possible in their undergraduate careers. This advice is not unique to students interested in social psychology; research experience may be the single most important factor in applying to graduate school in any area of psychology. We argue that students do not need to have research experience in social psychology specifically; having meaningful research experience in any area of psychology is what really matters. Students should expect to begin their research experience in an “entry-level” role (e.g., collecting data, coding responses), but by performing these tasks well and demonstrating interest in taking on higher-order tasks, serious students can “work their way up” into more central roles in a lab. Students who have only participated in research by running participants through protocols will be less competitive candidates for graduate school compared with students who have written IRB (Institutional Review Board) protocols, created stimulus materials, programmed research software, analyzed data, written up results, and given research presentations. One way to get this high level of research experience is by completing a Senior
Thesis or Honors Thesis, an ideal way to prepare for the kind of work required of graduate students in social psychology. If research experiences are limited at a particular institution, students may apply for summer research institutes (see http://www.apa.org/education/undergrad/research-opps.aspx). It is critical for students to demonstrate experience and skills in research when applying to graduate programs.

Regardless of whether students are considering graduate school, research experience is still valuable to develop skills for the workplace. Having first-hand experience in any or all aspects of the scientific method—reviewing literature, formulating a testable hypothesis, creating stimulus materials, collecting data, analyzing results, writing up a report, and presenting the findings—all develop skills that will be invaluable in the workplace. Research experience demonstrates to prospective employers a student’s ability to work well with others, complete work independently, and be professional. Employers often seek out undergraduate psychology majors specifically because of this skill set (Hayes, 1996; Landrum & Harrold, 2003).

What Kind of Jobs Can I Seek as a Social Psychologist?

Social psychology uniquely equips both undergraduate and graduate students with skills that are valuable and marketable in a variety of contexts. Depending on their interests, undergraduate students interested in social psychology can seek employment from research firms, consulting companies, not-for-profit organizations, or government agencies as a research assistant, evaluator, or data analyst. With a bachelor’s degree in psychology and foundational coursework in social psychology, students can seek employment in a wide range of fields including advertising, human resources, market research, public relations, public health, data analysis, management consulting, corrections/rehabilitation, program evaluation, or sales.

The most in-depth training in social psychology is obtained at the graduate level. Individuals who have earned doctorate degrees in Social Psychology are most likely to seek employment at colleges and universities doing a combination of teaching classes, conducting research, and participating in professional service. Rigorous graduate training in social psychology has historically been oriented toward preparing graduates for a career in academia as a professor. However, a growing number of social psychologists are seeking employment outside academia, and there have never been more opportunities to apply social psychology to other professions.

A degree in social psychology uniquely equips students for any job that is concerned with people’s opinions, attitudes, and motivations. Social psychologists may work in public health or medicine by helping to develop and evaluate programs or to influence health-related behaviors such as increasing exercise, improving diet, or decreasing smoking. Social psychologists are increasingly found in the domains of marketing, public relations, and advertising because they understand social behavior and how to conduct, interpret, and apply research. Similarly, social psychologists can be found in public affairs, government, not-for-profit community organizations, and even computer science for these same reasons. For example, the U.S. Army Research Institute for the Social and Behavioral Sciences is one of many military research organizations that hire social psychologists to explore issues related to teamwork, morale, and organizational behavior. Many not-for-profit organizations operate at the local, state, and federal level and apply social psychological research to social problems. Social psychologists can assist not-for-profit organizations that focus on health behaviors, sustainability and the environment, education, poverty, immigration, and issues of race, ethnicity, and gender—and in any of these contexts familiarity with research on attitudes, persuasion, social cognition, social influence, and group processes (along with methodological and data analytic tools) are valuable assets. Many research companies such as Neilson, Gallup, the Pew Research Center, Zogby, and the National Opinion Research Center employ social psychologists, and in fact many large manufacturers often have a marketing research or product development division where social psychological knowledge and skills would be valuable. Any field that involves understanding and predicting social behavior has opportunities for individuals with a degree in social psychology.
What are the Qualifications for Graduate School?

Various graduate programs will use information about the students’ grade point average (GPA) and Graduate Record Exam (GRE) scores differently. High scores are necessary to be competitive for graduate school admission. According to the Social Psychology Network (http://www.socialpsychology.org/facq.htm), graduate program requirements vary, but most programs look for high GPAs, strong GRE scores, three positive letters of recommendation written by undergraduate teachers, advisors, or research supervisors, experience doing research, and a personal statement or essay describing one’s research interests. Specific criteria for admission can be found by visiting a program’s website. Often schools post the average GPA and GRE scores for admitted students. The more competitive the program, the higher the requirements are likely to be. Students interested in a particular program or line of research can reach out to faculty members directly to learn more about their labs, whether they are accepting new students, and the specific requirements for their graduate program.

We recommend that students consult program websites as well as the reference Graduate Study in Psychology, published by the American Psychological Association, for information about GPA and GRE scores for specific schools. Each year, this book lists the minimum and median GPA and GRE scores for the entering class. The book also includes the number of students who applied/were accepted. For example, according to the 2014 edition of this yearly volume, Ohio State’s social psychology PhD program had 117 applicants in the 2012-2013 academic year; of those, 8 were accepted. Because social psychology Ph.D. programs are competitive, it is not unusual to have high rejection rates. Master’s programs likely have lower expectations for admissions, although terminal Master’s programs in social psychology are rare; typically the Master’s degree is awarded as part of the Doctoral program of study. Students can elect to earn a Master’s degree from a general psychology/psychological science graduate program to enhance their research experience. With additional research experience, Master’s students may be more competitive in gaining admission to a doctoral program in social psychology.

Final Thoughts

Students interested in pursuing a degree in social psychology, whether a bachelor’s degree or a more advanced degree, should begin with a strong foundation in methods, statistical analysis, and research in social psychology. Rigorous training prepares students well for any number of possible career paths both in and outside of academia–and the possibilities continue to grow. In the not-so-distant past, social psychologists were found almost exclusively in higher education and many still are, but there have never been more opportunities to apply the skills and knowledge gained by earning a degree in psychology with a concentration in social psychology. Be aware that the stereotype of a “psychologist” still most prevalent today is of a clinical practitioner. Some employers may not yet be familiar with social psychology as a discipline or they may have a very limited understanding of psychology as a field. Thus, students should be aware while seeking jobs in applied fields that the potential employers may not fully appreciate the value social psychologists bring to their organization, and students may need to help potential employers understand and appreciate the value of a background in social psychology.

References


**Suggested Readings about Social Psychology**


14. What to Know about Ethnic Minority Psychology

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Many of our students realize there are tremendous opportunities to have careers and lives that involve interacting with people of various cultural and ethnic backgrounds. Ethnic and racial minority students and those interested in studying their psychological experiences can contribute to the field of psychology to promote cultural awareness and competence in academic, business, and clinical/counseling contexts. There is a huge need in the field for people who represent and can understand different minority populations. Thus, students seeking more knowledge in this area can potentially become new practitioners, teachers, and leaders to help expand our ability to improve access, diagnosis, treatment, and intergroup relations.

Textbooks posit knowledge about “culture” in different ways. Some focus broadly on cross-cultural psychology, which may require interest in research and sampling people and phenomena from different cultures. Some examine indigenous psychology, which can be useful for understanding culture-bound syndromes, and the cumulative and interactive effects of colonial history and genocide. Content overlaps greatly in these fields and in the purview of ethnic minority psychology or the psychology of ethnic diversity. Ethnic psychology is defined as understanding phenomena about groups of “varying national origins, living within a multicultural society” (Segall, Lonner, & Berry, 1998, p. 1105); thus ethnic minority psychology focuses on minority ethnic populations in a multicultural nation such as the US, South Africa, Brazil, Germany, or Malaysia. For example, those who study ethnic minority populations in the US may examine Black/African-American, Hispanic/Latino, Asian/Pacific Islander, Native American, Arab American, and biracial/multiracial people living in the US. Moreover, many who focus on ethnic minority psychology understand that because the field is relatively new in comparison to some of the longer-standing traditions in psychology, the field relies on multidisciplinary partnerships. Scholars and practitioners may find that their work intersects with ethnic studies, sociology, women’s studies, student affairs issues, and more.

As you begin to advise students who are interested in ethnic minority psychology you will want to consider asking your students the following questions. Answers to these questions will better prepare you to meet your students’ individual needs.

**What kind of career are you seeking?**

You might start by asking your students what they hope to do with their interests in ethnic minority psychology. Will they be helping others, providing direct services, or performing research on specific populations? Many specialists in ethnic minority psychology seek to provide therapeutic services to indigenous and ethnic minority individuals and families. Clinical psychologists help to develop and test empirically supported treatments for ethnic minority clients, and create culturally relevant instruments to assess and diagnose symptomology. Some specialists perform research on innovative empirically supported treatments, and investigate the cultural competence of service providers working with diverse clientele. Often this kind of work requires some level of language competency and awareness of cultural idioms. Industrial/organizational or workplace psychologists can provide consultations and assessments to businesses, governments, and health care agencies to understand and improve workplace diversity and collaborative outcomes. School psychologists and counselors may help to foster inclusiveness by promoting higher education and scholarships to minority students interested in psychology and its subfields.

For students interested in a career in which they would like to conduct research, issues such as immigration, racism and ethnocentrism, colonization, colorism, linguicism, religion, gender and sexuality, poverty, ableism, acculturation, and intergenerational conflict are all hot topics in ethnic minority psychology. A review of journals and publications related to the field will help students identify areas of research. Of particular interest is Cultural Diversity and Ethnic Minority Psychology, the flagship publication of the American Psychological Association’s (APA) Division 45 – the Society for the Psychological Study of Ethnic Minority
Issues (http://division45.org/). The Journal of Black Psychology, the Journal of Latina/o Psychology, the Asian American Journal of Psychology, and related journals in rural/community psychology and international psychology may be of interest to your students. Related fields in psychology may be a good option for conducting research. For example, social psychologists seek to uncover the roots of social cognitive processes that impact ethnic minority individuals, including prejudice, stereotyping, intergroup relations, attraction, and conformity. Developmental psychologists may seek to understand attachment, emotional expression, and parenting styles in ethnic minority populations. School psychologists and educational psychologists may be interested in developing classroom interventions to reduce bullying, examine rates of inequity in academic achievement and school punishments, or create school-wide policies on inclusive curricula. And these aren’t the only careers that involve research – complementary disciplines such as cognitive psychology, neuroscience, and forensic psychology also contribute to the field’s knowledge about ethnic minority psychology.

What kind of training program would best suit your professional goals?

For students seeking a career in clinical or counseling practice, many Psy.D., master’s level programs, social work degrees, and Ph.D. degrees will prepare students to provide services to minority populations. Clinical programs tend to emphasize research more than counseling programs, but both clinical and counseling programs provide training in assessment and diagnosis, treatment and prevention, and theoretical approaches to client symptomology. All graduate programs will expect qualified applicants to demonstrate some balance of challenging coursework, real-world practice, employment or volunteerism, and other scholarly achievements. Performing well on a graduate program entrance exam (e.g., the GRE, MCAT, LSAT) will help an applicant's chances of acceptance. The APA Graduate Study in Psychology book, which is updated annually, contains useful information about program areas, acceptance rates, and graduate employment statistics. Obviously, matching an interest area (e.g., clinical psychology, I/O psychology, social psychology) to a university and its resources will make the most sense in your student’s search for an acceptable graduate program.

No matter what type of program your student is looking for, good advisors should seek to understand the backgrounds of their students when recommending programs that might pose a particular economic or social strain on the student. Many ethnic minority students might be first-generation college students, or may be expected to help out with their family even while in graduate school. Moreover, being an ethnic minority student at a predominantly White institution (PWI) can also be quite stressful! Helping your advisees select a program whose geographic and demographic context will be supportive is quite relevant. Imagine advising an African American student who wants to earn a degree in counseling psychology and conduct research on African American youth, however, her top two choices are at PWIs with less than 4% Black population. Will she be prepared to enter such an environment? If not, she might consider programs located at or near a historically Black college or university (HBCU), a more cosmopolitan/metro campus, or one that has excellent staff and resources to support their ethnic minority students. Your students can easily find online listings of HBCUs, Hispanic serving institutions (HSIs), and Asian American and Native American/Pacific Islander serving institutions.

What kinds of classes should you take as an undergraduate?

Hopefully your undergraduate program will have at least a handful of courses that focus primarily on ethnic diversity and psychology; even broad-based cross-cultural psychology classes may be appropriate. Courses in ethnic studies, ethnic minority literature, cultural anthropology, linguistics, language, and critical pedagogy/empowerment can also be of value, particularly if specific interests are underrepresented within the psychology curriculum. Moreover, because the field is often multidisciplinary, relevant theory and authors from non-psychology disciplines may influence what your students decide to do with their psychology degree. Studying abroad can also provide valuable experiences to help students learn the origins of some of the cultural phenomena that exist as “minority” experiences in other cultures. Virtually any advanced degree program will also look favorably upon advanced methods and statistics courses, and
capstone or upper-level topics devoted to your students’ subfields of interest. Note that for pre-med students, medical school programs and the new MCAT are increasing their emphasis in scholarly areas related to oppression, discrimination, social systems, and social justice; commensurate coursework on these topics clearly overlap with ethnic minority psychology interests.

What else can you do now to help prepare you for a career that involves ethnic minority psychology?

Many campuses at PWIs have campus-affiliated ethnic and racial advocacy groups, culture houses, or fraternities and sororities designed to advocate and support ethnic minority students and promote cultural awareness and dialogue. Such organizations provide psychological and social support for students who may find it difficult to find peers, role models, and culturally relevant information that complement their own psychological experiences. Moreover, leadership positions within such organizations are beneficial for a future career in which a person may be expected to speak on behalf of particular topics in ethnic minority psychology. Finally, these campus organizations are usually open to students of all backgrounds, so members of a specific ethnic or racial group, or friends and allies dedicated to the same social issues can participate and learn about ethnic minority psychology.

Students can get a head start in engagement at the local or national level, even as undergraduates. Many national and international associations contribute to the field by focusing on a single ethnic minority population, such as Apse – the Association of Black Psychologists, AAPA – the Asian American Psychological Association, NLPA – the National Latino/a Psychological Association, and the Society of Indian Psychologists. Such organizations promote advocacy of ethnic minority issues with invitations to present research and network at national conferences to develop leadership skills; some offer a student division, listserv, or even grant funding to support research, service, or travel. All of these organizations have a web presence via their own website or Facebook. These organizations provide critical opportunities for networking, collaboration, mentorship, and social support. In addition, a number of APA Divisions feature interest groups on ethnic minority issues. For example, Division 17 (Counseling Psychology) has a special task group on mentoring ethnic minority individuals, and seeks to promote cultural competence in all its student members. Students who see themselves as future instructors might want to get involved at some point with Division 2’s (Teaching of Psychology) Diversity Committee, which focuses on curriculum development, teaching/pedagogy, and hiring and retaining a diverse professoriate.

What are some good books to read about ethnic minority psychology?

For students just starting to think about ethnic minority psychology, a broad resource such as the *Handbook of Racial & Ethnic Minority Psychology* (Bernal, Trimble, Burled, & Leong, 2003) or the *Encyclopedia of Multicultural Psychology* (Jackson, 2006) provides a good foundation. Both texts provide overviews of relevant themes in ethnic minority psychology (e.g., acculturation, racism, ethnic identity), and concepts for specific ethnic groups (e.g., filial piety in Asian Americans, *familismo* in Hispanic families). You could suggest an up-to-date textbook such as *The Psychology of Ethnic Groups in the United States* (Balls Organista, Marín, & Chun, 2010) that devotes chapters to specific ethnic and racial groups. More advanced students with a specific ethnic group in mind could find more in-depth texts quite useful, such as *Asian American Psychology: Current Perspectives* (Tewari & Alvarez, 2009), *The Psychology of Blacks* (Parham, 2010), or the *Handbook of U.S. Latino Psychology* (2009). Moreover, textbooks are not the only way to inspire creative interest in ethnic minority psychology – psychology journal articles, fiction, nonfiction ethnic studies resources, film, and other media can also spur a deeper understanding of the field.

Who are the big names in the field?

Any basic introductory psychology class is likely to cover some major names relevant in ethnic minority psychology, and many of the most prominent scholars will overlap greatly in their areas of research.
For Black and African American psychology, one might first look to Kenneth and Mamie Clark, who published the famous doll study in which it was found that African American schoolchildren had more negative associations toward a black doll than a white doll, concluding that such attributions contributed to self-esteem and academic achievement. In fact, Kenneth Clark was the first Black president of the American Psychological Association. The widely renowned Claude Steele studies the concept of stereotype threat, the idea that under conditions in which a person is primed to think about a salient negative stereotype for their group, the extra cognitive load and stress that accompanies the stereotype can actually cause people to perform worse on high-stakes tests. Thomas Parham continues to publish and speak widely on topics such as African American youth, resilience, ethnic/racial identity, and cultural competence.

For Hispanic/Latino US psychology, Amado Padilla studies educational outcomes in Hispanic youth, culturally-minded psychological assessment, and acculturative stress in Hispanic-descent clients. Steven Lopez has a long history of studying mental illness in Hispanic American populations, cultural sensitivity, and proper diagnostic assessment of Hispanic clients. Adriana Umaña-Taylor studies ethnic identity development, cultural transmission of values in Hispanic families, and well-being.

Stanley Sue’s pioneering work in Asian American mental health, ethnic match in clinical relationships, and development of culturally sensitive clinical practices has contributed greatly to the field of ethnic minority psychology. Derald Wing Sue, Stanley’s older brother, is also very well known in the field of Asian American psychology, publishing on topics such as racial microaggressions, coping with racism, and cultural competence in counseling settings. Frederick Leong is a recognized editor and researcher well known for his work on Asian American populations, with interest areas including vocational choice, psychosocial stressors, and culturally sound measurement of symptoms.

For Native American/indigenous US psychology, Joseph P. Gone and Justin (“Doug”) McDonald are fine resources, with published work on indigenous mental health, trauma and healing in Native populations, and the impact of history and reservation status on psychological functioning. Mona Amer is probably the most prominent expert in Arab American psychology, publishing on issues such as stigma of mental health, acculturation of Arab Americans, and post-9/11 psychiatric symptoms in Arab-descent clients. Finally, Maria P.P. Root has published many articles on biracial/multiracial psychology, interracial marriage, and Filipino American psychology. Remember, ethnic minority psychology is still relatively new, and many other scholars have emerged in recent years, all with specific areas of expertise and interest. A thorough search on a university library portal will help to turn up even newer names of active scholars in the field.

Final Thoughts
Congratulations on having students who are interested in ethnic minority psychology! For a field that is still relatively new, these students need your support. Be especially mindful of some of the institutional barriers that may create difficulties for entering this field (e.g., funding, lack of demographic diversity or resources). It is important for advisors and advisees to have dedicated conversations about the range of possibilities for integrating ethnic minority psychology into one’s career.

References

15. Developmental Psychology: An Academic Journey of Life and Discovery

_Sara Villanueva_
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From the moment of conception, human beings begin a long journey of continual change. We begin as a single-celled organism and proceed through life becoming more complex and more nuanced through this process of development. Developmental Psychology is the field of study that examines and assesses the process of change and stability from conception through death (Berk, 2010; Papalia, Olds, Feldman, 2011). Traditionally known as “child development” or “child psychology”, the field of Developmental Psychology reflects a greater emphasis on the process whereby organisms change as they proceed through the lifespan (Achenbach, 1978). It also reflects a wider scope of interest to include the study of developmental processes that go beyond just the period of childhood, but include adults and nonhuman organisms paying particular attention to how specific characteristics fit into the typical or normative developmental sequence.

The purpose of this chapter is to address some fundamental questions for students considering this popular field of study. It is, in essence, a way by which prospective Developmentalists can gain more insight and make more informed decisions regarding their future.

**What are the basic concepts studied in the field of Developmental Psychology?**

The processes of change and stability that developmental scientists and theorists study focus around three general areas:

- **Developmental scientists study two kinds of change: quantitative and qualitative.** *Quantitative change* in amount or number such as changes in height, weight, or size of vocabulary. *Qualitative change* is a change in kind, structure, or organization that is marked by the emergence of new phenomena that could not necessarily have been anticipated by earlier functioning, such as the change from being a nonverbal child to one who understands words and sentences and can communicate verbally.

- **Change and stability occur in various domains or dimensions of development.** Developmental scientists focus on change and stability in three separate domains: *Physical development* (muscle growth, motor skills, pubertal process), *Cognitive development* (thought processes, memory, language), and *Psychosocial development* (peer interactions, self and identity, relationships with family). Although they are considered separately, these domains of development are very much interrelated.

- **Although specific Periods of Development are socially constructed and seemingly arbitrary, Developmental scientists examine the lifespan by dividing it into distinct periods:** *Prenatal Period* (conception to birth), *Infancy and Toddlerhood* (birth to age 3), *Early Childhood* (3 to 6 years), *Middle Childhood* (6 to 11 years), *Adolescence* (~11 to ~20 years), *Adulthood*, and *End of Life*. It is interesting to note that shifts in these divisions and age criteria vary across time historically and across cultures around the globe.

**What are some current assumptions made in this field?**

As the study of development has matured over the years, a broad consensus has emerged on several basic points:

- **All domains of development are interrelated.** Although developmental scientists often consider the domains of development as separate, the reality is that each domain can affect the others. For example, a child gaining the dexterity and motor functioning to learn to walk, also learns about different perceptions of the world around her, and gets socially reinforced when her mother praises her for doing a ‘good job.’

- **Normal development includes a wide variety of individual differences.** One child may be outgoing, another may be shy. Each person is unique. One can have a very different context or set of circumstances...
influencing his development from another. Genetic characteristics, family dynamics, gender, social class, ethnicity, and personality are only some of the factors that can differentially impact development in individuals. Examples may include the age at which an adolescent begins the pubertal process; or the likelihood that an older person will begin to lose memory.

- **People help shape their own development and influence others’ responses to them.** Because no one exists or behaves in a vacuum, infants from the beginning evoke responses from others based on their behaviors and basically begin to mold their environment. The influence is then bidirectional and is seen as a very interactive and reciprocal dynamic. For example, when babies babble and coo (very early language development), adults respond positively by smiling and talking to them, when in turn causes the baby to “talk” more. Similarly, if an adolescent responds to her mother’s request to clean her room by being defiant and moody, the resulting interaction may not be so positive.

- **Historical and cultural contexts strongly influence development.** Each person develops in the larger historical and environmental context. A child growing up in the United States today is likely to have very different experiences than one growing up in Colonial times. Similarly, the experiences of a teen attending school or socializing with other teens in Afghanistan or in a tribal community in Ethiopia would likely be very different than those had by adolescents in the U.S.

(*Much of this information referenced the Papalia et.al., 2011 text and Crain, 2005)

**What can students do with a degree in Developmental Psychology and what does it take?**

The choices are truly endless. What career a recent Developmental Psych graduate ends up with is really a personal choice. Here are some options and examples:

- **Graduate school: Clinical.** If students want to become therapists focusing on children, adolescents, families, or parenting, they will need at minimum a Masters Level degree with the necessary state licensure to begin seeing clients. Some students elect to obtain either a Ph.D. (research focus) or a Psy.D. (applied), but to be a practitioner seeing clients in a therapeutic setting, the minimum is a Masters degree with a state license to practice. It should be noted that although both Masters and Doctoral level clinicians can be practitioners and see clients, those at the Ph.D. level are somewhat more professionally ‘marketable’ in that they can also conduct research and teach at a university, given their extensive experience in the scientific method. It should also be noted that if you want to work with children with disordered or non-normative behavioral issues, AND you want to be able to prescribe medications, you would have to pursue the field of Psychiatry, which would require medical school training.

- **Graduate school: Academics.** If students plan to go into an academic setting—being a University professor or researcher—they should elect to complete a Ph.D. program. There are many outstanding doctoral programs in the U.S. Two things to consider in selecting programs: willingness to relocate and type of research (what topics) interests. It is highly recommended that once students establish what area of study they want to pursue (e.g., infant memory, pubertal development in adolescence, geriatric wellness, etc.) they should next identify with whom (specific professor at a specific institution) they may want to work. At that time, one would begin communicating, networking, and systematically approaching the application process. By taking the time and making the effort to research both the program and the individual faculty member, you will ensure a good fit in terms of the location and institution, but potentially end up with a mentor whose line of research really meets your research interests.

- **Non-Profit Orgs.** Many Developmental Psychology graduates go on to work at non-profit organizations working with children, adolescents, families, or the elderly population. Depending on the specific position, students may only need Bachelor’s degrees. Additionally, some recent graduates take on internships (some paid, some not) at these types of organizations that can turn into long-term career paths. Despite the fact that there is typically not a lot of wealth to be made by working in the non-profit arena, people who choose this path often report significant intrinsic value and high job satisfaction.
• **Applied Positions.** Individuals who complete doctoral studies in Developmental Psychology may also acquire jobs at places like PBS, The Sesame Street Corporation, Nickelodeon (or other developmental/learning programs), or companies like Tyco, Hasbro, Fisher-Price, LeapFrog Enterprises, and others where the focus is to develop toys, activities, or other learning tools for children and adolescents. Because the target audience of these types of organizations are children and teens at varying levels, there is a great need for Developmental scientists whose expertise can inform their products. Similarly, Developmentalists have obtained positions conducting market research or focus groups with adolescents, who happen to be one of the most powerful consumer groups in the world; as well as with companies that focus on memory deficits and other cognitive or physical declines experienced in some elderly populations.

**What can undergraduate students do to determine if Developmental Psychology is right for them?**

• Take as many psychology courses as possible. Courses specific to Developmental Psychology: Child Development, Adolescent Psychology, Theories of Development, Developmental Psychopathology, Lifespan Development, Death and Dying – all to see what piques interest.

• Complete at least one internship, to determine whether a particular population is one with whom you want to work. I’ve had many students, for example, who were absolutely convinced that they wanted to work with children, only to say after an internship that they now realize they’d rather work with older populations. Of course, the opposite may be true for others. An internship allows students to go out into the field and gain experiences to see how it all operates and whether it is really a good fit. There are internship opportunities in various settings with people from all developmental periods. So, whether it is working with adolescents at a juvenile detention center, or helping elderly people with inclusive art therapy, being involved in internships is not only beneficial for students professionally, but it can also be helpful to others, and maybe even fun.

• Conduct online research and become informed of the various events and latest news within the field. It is important to stay up to date on the developmental trends, and perhaps identify either a specific type of accomplishment, job, or even person after whom you would like to base your future plans.

**How is this sub-field distinct from other related sub-fields?**

There are many common interests that all psychologists have when studying human behavior. What makes Developmental Psychologists unique is that they seek to understand how people come to perceive, understand, and behave on the world around them, and how this entire process changes over time. Why are people the way they are, and how did they get there? Developmental psychologists are interested in the process of change and how going through his process, we develop into the people that we have become. Developmental psychology is a fascinating field, with many unexplored areas just waiting to be discovered. The possibilities are plentiful, so I encourage you to begin your explorations now and see how they develop!

**References**


The experimental analysis of behavior (EAB) is the basic science branch of behavior analysis, which approaches the science of behavior “as a subject matter in its own right apart from internal explanations, mental or physiological” (Skinner, 1989, p. 122 as cited in Moore, 2011). Philosophically, behavior analysis makes its home within the school of radical behaviorism, which seeks to identify and describe both public and private events in terms of their interactions with the environment in which they occur and the consequences that follow them, a triad which has come to be known as the “three-term contingency” (see Moore, 2001 and 2011 for a discussion on the philosophical foundations of radical behaviorism). The primary goal of EAB is to identify and describe the underlying principles of behavior through rigorous investigation and description of these relationships.

What does an experimental behavior analyst typically do (describe the range of possibilities)?
Experimental behavior analysts apply the scientific method to the study of behavior in order to empirically extend our understanding of how behavior is shaped by the environment. Some conduct research using animal models (usually rats or pigeons, but other species are studied as well), while others study human behavior. The latter case is often referred to as “human operant” research. While much of this research occurs in laboratory settings, it can also occur in more naturalistic settings (e.g., in schools or places of work).

One defining characteristic of EAB is the emphasis placed on studying behavior at the level of the individual. While group designs are used when needed, EAB places a premium on single-subject research designs in order to demonstrate functional relations between individual behavior and environmental contingencies.

Experimental behavior analysts study many aspects of behavior, but some of the more common topics include timing, stimulus equivalence, choice, behavioral economics (e.g., delay discounting, demand analysis), and stimulus control. In addition, many researchers apply EAB to the study of phenomena in other fields such as behavioral pharmacology/toxicology, behavioral neuroscience, and behavioral health.

What credentials do I need to become an experimental behavior analyst?
The type of credentials required depends largely on the type of career you would like to pursue, but generally speaking, those with a Ph.D. have the greatest number of opportunities. Doctoral degrees are required for anyone wishing to pursue a career as a tenure-track faculty member or as a research scientist in an academic setting. If you would like to direct laboratory research in government or private companies, you are also likely to need a doctoral degree.

Individuals obtaining a terminal master’s degree in EAB are qualified to serve as adjunct instructors in academic settings, and can also work as research assistants or laboratory managers in academic or non-academic settings.

How do I choose a graduate program in the experimental analysis of behavior?
The most common strategy for selecting a graduate program within EAB involves (a) determining the type of research you are interested in pursuing, (b) identifying which scientists within the field are conducting that research, and (c) contacting these individuals to determine whether they are accepting graduate students. Some suggestions for determining your interests are as follows:

Read. A lot. Textbooks (for example, Catania, 2012; Chance, 2013; Mazur, 2013) are a good starting point to help identify your general interests. An examination of the primary literature will provide more details regarding the specific type of work being done within these areas. While the flagship journal for EAB is *The Journal of the Experimental Analysis of Behavior*, many behavior analysts publish in other outlets. A quick
search using *PsychInfo* and/or PubMed will put you in contact with topics of interest. Once you have determined which papers describe research you are most interested in, contact the authors to see if they are taking graduate students. Before doing so, peruse the department website to learn as much about their program as possible (e.g., do they have a graduate program? If so, do they offer masters and/or doctoral degrees?).

**Advisors.** Talk to your undergraduate research advisor or someone in the department with a background in behavior analysis (e.g., a Psychology of Learning professor). If no one in your department has a background in behavior analysis, your academic advisor may be able to provide some guidance.

**ABAI website.** Keep in mind that only ABAI accredited programs are listed here; there are many non-accredited programs that provide excellent training in EAB, so do not limit yourself to those with accreditation. Also, be aware that training opportunities occur in many forms. In some cases, entire departments are dedicated to EAB. In other cases, a subset of faculty forms an EAB “core.” In yet other cases, a single faculty member may represent EAB. Your choice will be determined by your goals.

**Attend conferences.** Conferences are excellent venues for hearing talks and attending poster presentations describing ongoing research on many topics, and more importantly, they provide an opportunity to meet and talk to the people conducting that research. Meeting faculty members and students in person allows them to put a face to your name when your application comes across their desks; this is particularly beneficial if you establish good rapport with them during conference sessions. Personal interactions also give you the opportunity to gain insight into whether you think you would enjoy working with these individuals on a personal level.

Once you have identified programs you are interested in, contact affiliated individuals to ask more detailed questions about graduate training and personal experiences. Specifically, ask about requirements for course work, research, thesis/dissertation completion, and the expected timetable for graduation. Speak with faculty members about what they expect from their graduate students, but also remember to ask about what they can offer you (interviews are a two-way street). It is particularly important to speak with current and former students to get their perspectives on both the program as a whole and on working with the faculty member(s) you are specifically interested in.

**What are the most helpful courses (in preparation to become an experimental behavior analyst) to take as an undergraduate and why?**

**Statistics and research methods.** These courses are often required for undergraduate psychology majors, but undergraduates rarely recognize their importance while taking them. That said, these are very important classes for anyone wishing to pursue a career in EAB. Paying attention now and making an effort to learn, retain, and apply the material will not only make you a stronger graduate candidate (e.g., through higher grades, improved interviews), it will give you a considerable advantage in graduate-level courses should you be accepted into a graduate program.

**Psychology of learning.** This course covers the foundations of both classical and operant conditioning, which form the cornerstone of both experimental and applied behavior analysis, and will a) help you decide if this is the right field for you and b) prepare you for graduate study.

**Biological psychology.** At any moment in time, behavior is a function of both environmental contingencies and physiological processes. Courses in the psychology of learning are designed to cover the former; the latter are the purview of biological psychology. Such classes focus specifically on the role of the nervous system in learning and behavior, and are beneficial for at least two reasons. First, they are likely to give you a competitive edge in applying to graduate school, especially if you are interested in sub-fields such as behavioral pharmacology/ toxicity, behavioral neuroscience, or those fields specializing in neurological disorders (e.g., schizophrenia, Alzheimer’s disease). Second, many (if not most) graduate programs require a
graduate course in biopsychology – having at least an introductory level course prior to this is likely to improve your performance at the graduate level.

**Additional courses.** If you are interested in a hybrid field that combines EAB with other academic areas, you should consider taking one or more courses that provide background in these areas. For example, if you would like to study behavioral pharmacology and/or toxicology, consider courses in biology, chemistry, or developmental psychology (and of course, behavioral pharmacology/toxicology if it is offered).

**What experiences would be most helpful or essential for undergraduates interested in the experimental analysis of behavior?**
The most valuable experience for any undergraduate thinking of applying for graduate school in EAB is as a laboratory research assistant. Ideally, you should look for opportunities in labs conducting research in EAB, but if that is not an option, labs conducting good, experimental research in other areas will suffice (consider looking outside the psychology department if necessary).

Undergraduate research experience is beneficial for at least three reasons. First, it will give you an idea of what graduate school in EAB will be like, which will help you determine whether it is a field you want to pursue at the master’s/doctoral level. Second, it provides an appreciation for and experience in the type of work you will be doing as a graduate student. Research is very different from traditional courses – even lab-based courses – and any experience you have at the undergraduate level will make the transition to graduate school easier. Finally, graduate admissions committees give a lot of weight to letters of recommendation. While some professors are willing to write letters for students they have had in class, the most effective letters will come from professors who have had a chance to work with you in a research setting. They will be able to more accurately speak to your capabilities in a research-oriented environment.

**What kinds of jobs can I seek as an experimental behavior analyst?**
Most doctoral-level behavior analysts find jobs teaching and/or conducting research in university settings. Others become research scientists in either the private (e.g., pharmaceutical companies, The Walt Disney Company) or public (e.g., the Environmental Protection Agency, National Institutes of Health, Army Research Institute) sector. Graduate training in EAB, however, will prepare you for many careers that require extensive analytic and writing skills.

**How is EAB distinct from other related sub-fields?**
The most closely related sub-field to EAB is applied behavior analysis (ABA). While EAB is dedicated to the discovery and elucidation of basic learning principles, ABA focuses on improving behavior that is socially significant through the use of interventions based on these principles, and further, to demonstrate that behavioral improvements are due to the intervention in question (Baer, Wolf, & Risley, 1968). Rather than forming a strict dichotomy, however, the distinction between EAB and ABA occurs along a continuum (for an in-depth discussion, see Baer, Wolf, & Risley).

**Summary & Final Thoughts**
To summarize, EAB is an empirically based field that seeks to identify and describe the basic principles underlying behavior. Individuals with advanced degrees in this area are qualified to work as research assistants, adjunct instructors, research scientists, or tenure-track professors depending on the type of degree completed. They study many behavioral phenomena, including (but not limited to) choice, stimulus control, and timing, and many work in hybrid fields such as behavioral pharmacology/toxicology, behavioral medicine, behavioral neuroscience, and behavioral economics. Further, individuals with degrees in EAB are also well poised to move into more applied areas following some additional training. Should you choose to pursue a career in EAB, preparation should include relevant coursework, working in a research laboratory, familiarizing yourself with current research and those conducting it through reading and conference attendance.
References and Suggested Readings

Other Resources – Websites
Association for Behavior Analysis International: [http://www.abainternational.org](http://www.abainternational.org)
Clinical psychology is the single most common field for students entering graduate study in psychology, accounting for about half of all doctoral degrees in psychology (Norcross, Kohout, & Wicherski, 2005). In contrast, the next highest subdiscipline of counseling psychology accounts for about 6%. Thus, many undergraduates who are considering graduate school are interested in clinical psychology. However, there are several issues pertinent to clinical psychology that differ from other areas of the discipline. The following chapter will attempt to outline several of the key questions students ask about clinical psychology and their answers.

Following are some of the most common questions students might ask about entering the field of clinical psychology. The list is not exhaustive by any means, and so I refer interested advisors and students to Norcross and Sayette’s (2012) book entitled the *Insider’s Guide to Graduate Programs in Clinical and Counseling Psychology*. The introductory chapters of the book provide additional information on each of the areas discussed below, as well as sound advice for every aspect of the application process. The book is updated every year to include the most relevant information possible for students.

**What can I do with a degree in clinical psychology?**

A degree in clinical psychology is incredibly flexible. The first area usually associated with clinical psychology is applied practice, including both intervention (e.g., psychotherapy) and assessment. Intervention refers to any practice designed to influence or improve a client’s condition, incorporating traditional one-on-one psychotherapy, group therapy, skills training, prevention, or even advocacy. On the other hand, assessment refers to procedures designed to clarify and understand the functioning and symptoms of the client. Many other disciplines (psychiatry, nursing, social work) are trained in intervention techniques for mental health, but relatively few beyond clinical psychology have much assessment training. Thus, the assessment skills of clinical psychologists tend to be a relative strength when working in applied settings with multidisciplinary teams.

When most students think of applied work, they are usually imagining private practice, where the clinical psychologist has opened an independent office. This mode of work is becoming less and less prevalent, for a variety of reasons including decreased cost feasibility, more stringent insurance reimbursement rules, and the development of other more efficient mechanisms for intervention (Comas-Díaz, 2006; Nordal, 2012). Other places one might find clinical psychologists doing applied work include hospitals or medical centers (especially inpatient psychiatric units), community mental health centers, specialty clinics (e.g., centers for the treatment of anxiety or sleep problems), or student counseling centers. A relatively new direction for clinical psychology is its integration into primary care, i.e., your general practitioner physician’s office. In that context, the physician can quickly and easily refer patients for psychological intervention (by literally walking down the hall) versus referring the person to a separate office, thereby increasing the chance of the person utilizing services.

Clinical psychologists work with all age ranges, starting at infancy and ending at death, although most professionals specialize in a particular age range (e.g., children versus adults). They work with all kinds of problems, ranging from everyday difficulties like a marriage dispute to severe disruptions in functioning like schizophrenia. Many sub-specialties exist within clinical psychology. For example, an area called behavioral medicine specializes in the psychological and behavioral factors that influence traditional medical conditions (e.g., diabetes management, cancer treatment). Neuropsychologists specialize in the identification and treatment of cognitive problems like dementia or brain damage. Forensic psychologists work within the criminal justice system, both in identifying potential criminals and rehabilitating adjudicated offenders.
Applied practice is not limited to intervention and assessment. Clinical psychologists are also involved in consultation, which is providing services indirectly through an institution or another provider. An example might be a clinical psychologist consulting with another mental health provider about the most appropriate diagnosis and treatment plan for an individual. Clinical psychologists also work in administration, overseeing mental health offices or coordinating community programs.

In addition to applied practice, clinical psychologists may be involved in teaching or research. They may teach at any level, ranging from high school to doctoral training. They may conduct research through a traditional academic appointment (i.e., a professorship), or through various research institutes like the National Institute of Mental Health (NIMH). Clinical psychologists might also work for a company in research and development, such as Pearson Assessments (publisher of psychological tests like the WAIS) or a drug company.

A degree in clinical psychology is incredibly flexible, in the sense that the person can find employment with any blending of the three general areas mentioned above (practice, teaching, research). A person may choose to spend 100% of her time in private practice. Another may work at a VA medical center, spending 25% of her time on research, 25% on administration, and the rest on direct service provision, while teaching a night course at the local community college. A third may work at a major university on a grant that blends research and clinical work by investigating a new form of psychotherapy. The person has considerable leeway in tailoring the blend of activities best matched to his or her professional goals.

Should I pursue a master’s or doctoral degree in clinical psychology?
The choice of pursuing a master’s or doctoral degree depends upon career aspirations and where you live. As will be described under Question 3, different states have different licensing options at the master’s level. Generally speaking, if you can do what you want to do (e.g., only do applied work in a consortium of other professionals) with a master’s degree, then just get a master’s. A doctoral degree provides a wider range of options, but also represents a significant investment of time, effort, and money. Most master’s degrees take approximately two years to complete, while the median time to completion for a doctoral degree in clinical psychology is 6.5 years (Burgess, Keeley, & Blashfield, 2008).

What does it take to obtain licensure as a clinical psychologist?
Licensure requirements vary state by state (see http://www.kspope.com/licensing/index.php#US for a directory of state licensing boards). Very few states provide licensure for master’s level clinical psychologists. In fact, the American Psychological Association has issued a policy advocating for only doctoral level individuals being licensable as “psychologists” (APA, 2009). That said, other licensing options, like a Licensed Professional Counselor (LPC), are often compatible with the training students would receive in a master’s program in clinical psychology. Some states have a license for a master’s level “psychometrist,” which is a testing or assessment specialist.

At the doctoral level, most often licensure requires the completion of a degree from an APA accredited program, the successful completion of an APA approved pre-doctoral internship, and a year of postdoctoral supervised experience. In addition to documenting those achievements, students must pass a test termed the Examination for Professional Practice in Psychology (EPPP), which is a multiple choice exam covering all areas of psychology. Many states also require an additional oral exam in front of the Board of Psychology.

What is an internship, and why is that important to consider now?
All doctoral degrees in clinical psychology (as well as school and counseling psychology) require a year long internship completed (usually) at the end of training. Getting an internship is not automatic—students must apply in a process very similar to applying to graduate school. The application process is governed by the Association of Psychology Postdoctoral and Internship Centers (APPIC; see www.appic.org for more information). The application process works through a centralized pool, whereby applicants are matched to centers in a computerized matching system. Students apply to a set of internship sites. If the sites find an application favorable, that applicant is invited to an interview. The applicant then rank orders his or her most
favored internship sites, and the sites rank order their most favored applicants. The computerized system then “matches” an optimal arrangement of applicants to centers. Matching to an internship is not guaranteed, and each year an increasing number of students do not match to an internship (APPIC, 2013). There are options for how to handle not matching, but for our purposes now, it is important to understand that some clinical psychology programs do better in the match process than others. Some are close to matching 100% of their students. Others are under 50% (Burgess et al., 2008; Norcross, Ellis, & Sayette, 2010). Equate that number to resting whether or not a student can complete his or her degree on a coin flip. When considering to which programs to apply, look for programs that have high internship match rates. These statistics should be posted on the program’s website; if they are not, it is not a good sign.

What is the difference between a Ph.D. and a Psy.D.?
There are two doctoral degrees in clinical psychology. The Ph.D. is the traditional academic degree. As such, one function of the degree is to generate new knowledge (i.e., research required in the form of a dissertation). The Psy.D. is a relatively new degree created as a professional degree (similar to an M.D. or Pharm.D.) that implements in professional practice the knowledge generated by others. As such, the focus is more on how to understand and implement research findings rather than doing the research directly. That said, some Ph.D. programs require relatively little research and focus much more on applied training, while some Psy.D. programs do require research. While the training is intended to equally prepare individuals for internship and licensure, there are a number of inequities between Ph.D. and Psy.D. programs. First, some Psy.D. schools accept much larger class sizes (upwards of 100 students every year) than Ph.D. programs (which average class sizes of about 10) (Norcross et al., 2010). As a result, chances of being accepted to one of those Psy.D. programs is much higher than for Ph.D. programs, and the admissions requirements (GRE scores and GPA) are much less stringent (Norcross et al., 2010). However, the amount of personal attention (including one-on-one supervision of applied practice) is drastically reduced. In addition, students in traditional Ph.D. programs are likely to receive some level of financial support, such as tuition remission, a paid assistantship, or both. Students in the large, professional school Psy.D. programs rarely receive any financial support, and tuition tends to be higher than for Ph.D. programs. Thus, individuals in Psy.D. programs report a median $100,000 in debt by the time they complete their degree, nearly twice as much as the $55,000 in Ph.D. programs (Wicherski et al., 2009). Finally, the internship match statistics of the large professional Psy.D. schools tend to be the worst of all programs (Burgess et al., 2008; Norcross et al., 2010). Taken together, a student should be cautious when applying to Psy.D. programs. Nonetheless, there are some smaller Psy.D. programs, usually attached to an academic department rather than a freestanding professional school, that are not subject to the above-mentioned problems. The lesson is not to steer away from Psy.D. degrees per se, but rather to avoid programs with high admission rates, low levels of funding, and poor internship match statistics.

What admissions criteria (GRE scores and GPA) are necessary to make it into a clinical psychology program?
The admission requirements for doctoral programs in clinical psychology are very stringent. Nationally, the average GPA for students admitted to a doctoral program in clinical psychology is 3.6, and the average GRE scores are 163 Quantitative and 159 Verbal (Norcross et al., 2010). While national data are not available for master’s clinical programs, the values tend to be more modest, with a 3.4 cumulative GPA and 150 GRE scores as typically acceptable numbers (Norcross et al., 2005).

What courses should I take as an undergraduate to prepare for clinical psychology?
A few graduate programs require certain classes for admittance, but these tend to be the same ones required for other subfields of psychology. Often, programs require at minimum a research methods course and a course in statistics. Usually, they also request courses like Psychology of Learning, Biological Psychology, Social Psychology, Cognitive Psychology, or other core areas of the discipline. Whether it is required or not,
students should endeavor to take courses in Abnormal Psychology and Clinical Psychology, if they are available. Other courses that would be helpful in preparing students include Behavior Modification, Personality, and Psychological Tests and Measures.

What other experiences should I obtain as an undergraduate to prepare for clinical psychology?

As with nearly every other area of psychology, research experience is the prime necessity for preparing for graduate school. However, that research need not be in a clinical area. If it is, that is good, but students just need experience doing research on any topic. If students have opportunities to conduct their own projects (i.e., an honors thesis or the equivalent), that would be ideal.

Gaining experience with clinical work, if possible, would also be very helpful. In many places, students cannot do direct clinical work as an undergraduate student. However, undergraduates can gain supervised experiences (such as shadowing a professional, volunteering at a hospital, or internships offered through the school). These sorts of experiences are particularly helpful to students to determine if they truly want to work in an applied field. While it might seem interesting on paper, the rigors and emotional turmoil of actual clinical work sometimes prove to be a mismatch for a student’s temperament or well-being.

How is this sub-field distinct from other sub-fields?

Perhaps the most common question students ask about clinical psychology is how it is different from other applied areas of psychology, especially counseling. The division of clinical versus counseling psychology is primarily historical rather than practical. At the doctoral level, a counseling psychologist can do any of the things a clinical psychologist can do (provided they have the required training experiences) and vice versa. However, clinical psychology programs typically developed in departments of psychology in the liberal arts and sciences whereas counseling programs were more likely in schools of education (Norcross & Sayette, 2012). Thus, they tended to have different emphases. For instance, because of their placement in traditional academic departments, clinical psychology programs tend to have a heavier research focus than counseling programs. Faculty in clinical programs are more likely to hold cognitive-behavioral theoretical orientations versus humanistic or cross-cultural perspectives in counseling, although all are well represented in both. Clinical psychology has tended to focus on more severe psychopathology whereas counseling has emphasized normal functioning or everyday problems.

Often, the more relevant distinction than clinical versus counseling for a student is the level of research focus versus application focus. Some programs (in both clinical and counseling) place a heavier emphasis on research training and expect more of the student’s time to be devoted to research. Other programs (again in both disciplines) focus more on applied practice and translating the research of others into informed interventions. Students should seek programs (in either clinical or counseling) that most closely match their career interests.

Summary and final thoughts

A career in clinical psychology can be a very rewarding and engaging vocation with a great deal of personal autonomy and flexibility. However, its popularity also makes it one of the hardest subdisciplines in psychology to enter due to the principles of supply and demand. The most important factor determining successful admittance to a graduate program in clinical psychology is a good match between student interests and talents and the program to which they apply. Included in that match is the relative degree of research versus practice focus students intend for their careers. That variable is the single most important delimiter between types of programs, and should heavily guide selection of possible schools. Hopefully the advice in this chapter and elsewhere will help lead to informed decisions about pursuing graduate study in clinical psychology.
References and Suggested Readings


School Psychology bridges the disciplines of psychology and education. School Psychology combines counseling, clinical, and educational psychology principles to address academic, social, behavioral and emotional needs of children in the classroom. Most school psychologists work as part of a team within a school or school system, which includes teachers, administrators, parents, and other professionals. Traditionally, one of the primary responsibilities of the school psychologist involves the assessment and diagnosis and the application of counseling and clinical psychology principles to create a safe, healthy and supportive learning environment. With the passage of Public Law 94-142 in 1975, school psychologists became mandated in school systems across the nation and the field has continued to grow since then. In recent years, the RtI (Response to Intervention) model has begun to expand the role of the school psychologist in many States. Students interested in pursuing a career in School Psychology will have critical questions that their advisors should be prepared to answer including the following:

What credentials do I need to become a School Psychologist?

In the United States, every State issues credentials (license and/or certificate) to regulate the practice of school psychology that is often part of the Department of Education. Typically a school psychologist has completed a graduate program in school psychology at either the specialist or doctoral level. At the specialist level, many States require that you obtain NCSP (National Certification in School Psychology) and/or graduate from a NASP (National Association of School Psychologists) approved program which entails at least 60 semester hours of graduate work, a 1,200 hour internship, and a passing score on the School Psychology Praxis II exam. Typically it takes three years to obtain a specialist degree in school psychology. Doctoral programs in school psychology have many of the same requirements as the specialist degree but also emphasize conducting research, as well as professional training in teaching the next generation of school psychologists. The doctoral degree in school psychology requires a dissertation and research is a major part of the training. Therefore, in addition to being a practitioner within a school system, a doctorate level school psychologist may work in a university setting or have a private practice. A doctorate in school psychology will typically take 5-7 years to complete.

How do I choose a graduate program in School Psychology?

When selecting a graduate program in school psychology it is important to closely consider your career goals. If your goal is to be a practitioner who works in the schools on a daily basis or if you aspire to ultimately go into school administration and policy development, then the specialist degree is sufficient to reach those goals. However, if your ultimate goal is to work within a university setting and train future school psychologists as well as research issues related to school psychology, then the doctoral program is the preferred approach. Both degrees embrace the scientist-practitioner model, the doctorate tends to add a third component, that of scholar. It is also very important that the program have either NASP and/or APA (American Psychological Association) accreditation. APA only accredits doctoral programs while NASP certifies both specialist and doctoral programs. Other questions about graduate programs you need to explore are the success of their students on the Praxis II test, their internship placements, and successful placement of their students in school psychology positions after graduation. More detailed information on selecting a graduate program and NASP certification can be found on their website, www.nasponline.org,(National Association of School Psychologists, 2005; 2007). Also, APA (American Psychological Association,
What are the most helpful courses to take as an undergraduate and why?
While a broad exposure to a number of psychology courses is important at the undergraduate level, there are some areas that a student could emphasize in preparing for a career in school psychology. A course in child development would be useful to help understand basic processes of developmental psychology. In addition, a course in test and measurement (psychological testing or psychometrics) is very useful since a practicing school psychologist administers a variety of tests and assessments. A course in clinical or counseling psychology would be very useful, especially one that emphasizes children (a course in child psychopathology would be very helpful). Outside of psychology, NASP recommends courses in the philosophy and theories of education, curriculum and instruction, as well as an introduction to special education. Different school psychology programs may have more specific course recommendations for undergraduate preparation so it would be wise to look at their programs closely before applying. There is a common misconception that school psychologists must be teachers or education majors. School psychologists actually have a variety of undergraduate majors with psychology and education being among the most frequent.

Where can I find published works within the field of School Psychology?
Like most subdisciplines in psychology, there are a number of specific journals that publish papers on research, theory, and practice in school psychology. APA publishes the School Psychology Quarterly that includes empirical studies and literature reviews on the psychology of education and services for children within the school setting. In addition, APA also publishes the Journal of Educational Psychology that encompasses the broad spectrum of issues in educational settings. NASP has two major journals: School Psychology Review (SPR) publishes scholarly information on research, training, and practice in school psychology while School Psychology Forum (SPF) is an electronic journal designed as an outlet for information on practice and professional issues in school psychology. SPF is an interactive journal with the goal of supporting school-based practitioners’ ability to improve outcomes for students, families and schools. Other major journals in school psychology include the Journal of School Psychology and Contemporary School Psychology both of which publish papers on theory, research, and practice issues.

What kinds of jobs can I seek as a School Psychologist?
Most school psychologists work within a school or closely related setting. These include public and private schools, school-based health and mental health centers, educational service units, community-based day-treatment or residential clinics and hospitals, and juvenile justice centers. Some school psychologists may establish a private practice or do private consulting and others, who have obtained their doctorate, may work in colleges or universities where they teach future school psychologists and do research.

What does a School Psychologist typically do?
The primary job of a school psychologist is to work with children and youth to help them succeed academically, socially, behaviorally, and emotionally. This involves the utilization of a number of skills and strategies to identify issues and find solutions. These may range from direct intervention with a child to facilitating changes within a classroom, school, or home environment. In addition to working with the student, the school psychologist often works with the parents and family of the child, teachers, school counselors, administrators, and other community providers such as social services and the juvenile justice system. School psychologists may also be involved in system level interventions. A school psychologist has extensive training in testing and assessment and thus often takes the lead in identifying and diagnosing problems and works with others to find and implement solutions for dealing with those problems.
What can a School psychologist do with a master’s degree in this field?
While there are some school psychologists that only have a master’s degree, for the most part, these individuals have been grandfathered into the profession. In order to practice, a person must have a specialist or doctoral degree.

What can a School psychologist do with a specialist degree in this field?
The specialist degree is viewed as the entry-level degree in school psychology. The degree allows you to work within the school district with children from birth to 21 years of age. One important role of the school psychologist is conducting psych educational assessments and working with the multidisciplinary team to refer a child for special education or other intervention services. The school psychologist also works with the school district to make data-driven decisions on changes at the individual, small group, and system levels. A school psychologist at the specialist level can provide counseling services for younger elementary school students.

What can a School psychologist do with a doctoral degree in this field?
An individual with a doctorate in school psychology can and does do everything the specialist degree person does and more. Most States limit the independent private practice of school psychology to professionals with doctorates. Full-time employment at a college or university typically requires a doctorate.

What experiences would be most helpful or essential for undergraduates interested in this field?
Some experience in working with children is essential since it is important that a school psychologist genuinely like children and like working with them. This experience could be gained through a job such as a para-educator, a day-care worker, a day-camp counselor or some other job that involves direct contact with children. Volunteer work with children through a local YMCA, park and recreation, or head start program would also provide the needed experience. Many schools may allow students to shadow a school psychologist which would allow students to see first-hand just what a school psychologist does on a day-to-day basis. Many undergraduate psychology programs have internships or practicum courses that can link you up with professionals in the community.

What GPA and GRE scores should an undergraduate have to pursue this field at the specialist and doctoral levels?
Admission requirements vary considerably. In general, a minimum undergraduate GPA of 3.0 is desired and GRE scores above the 50th percentile, but a high GPA can offset low GRE and vice versa. Doctoral programs tend to have higher requirements than the specialist degree programs. Both types of programs look closely at letters of recommendation and relevant work or volunteer experiences. Many programs also rely on personal interviews that are often conducted with the finalists.

School psychology can be a challenging and rewarding career for anyone who enjoys working with children. The school psychologist often collaborates with a team of professionals to try to provide the best opportunities for young minds. The field of school psychology continues to experience growth, the need is great, and employment opportunities are excellent. To further explore this field, you might want to look at vast resources available on both the NASP and APA websites. Some helpful websites include the NASP webpage; http://www.nasponline.org/students/degreefactsheet.pdf, APA Division 16 on School Psychology webpage; http://www.apadivisions.org/division-16/index.aspx, and About.com’s webpage; http://psychology.about.com/od/psychologycareerprofiles/p/schoopsych.htm.

References

What is health psychology?
Health psychology is an interdisciplinary subspecialty of psychology that focuses on the promotion and maintenance of health, in addition to the prevention and treatment of illness (Leventhal, Weinman, Leventhal, & Phillips, 2008; Michie, West, & Spring, 2013). However, in many ways health psychology is more than a subspecialty of psychology as it incorporates the theories and research from other areas of psychology. For example, health psychologists have built upon social and personality psychology's understanding of stress and coping. Health psychologists have also integrated the physiological underpinnings of health originally studied by biological psychologists. In addition, interventions employed by clinical health psychologists frequently incorporate principles of learning and cognition initially studied by behaviorists and cognitive psychologists. Clinical psychology has also influenced the development of the field by first exploring the possibility of a psychological basis to illness in the absence of physiological symptoms (Belar, McIntyre, & Matarazzo, 2013).

Health psychology differs from related fields, such as behavioral medicine, in that the field of health psychology, as defined by the American Psychological Association (APA), only includes psychologists. Behavioral medicine, on the other hand, includes other primary care providers in addition to psychologists. As such, behavioral medicine is not included as a division of the APA, but has its own governing body. Health Psychology, however, is a recognized division of the APA (Division 38) and lists some of its goals as 1) understand the etiology and promotion and maintenance of health in the prevention, diagnosis, treatment, and rehabilitation of physical and mental illness, 2) study psychological, social, emotional, and behavioral factors in physical and mental illness, 3) contribute to improving the health care system, and 4) formulate health policy (APA, 2013).

What kinds of jobs might a health psychologist obtain?
Typically, most health psychologists work in either a basic research or applied clinical setting. Those working in the former are typically experimental (i.e., research) health psychologists working at a university or other research facility (e.g., government agency, corporate business). Researchers aim to explore the biopsychosocial factors that influence the many areas of health psychology, including cardiovascular disease, stress, cancer, and HIV. Researchers must write proposals, supervise or work in a lab, recruit and collect data from participants, and analyze, write-up, and disseminate results. Their findings often affect public health policy, large- and small-scale illness treatment and prevention, and future research directions. In addition, experimental psychologists employed by a university often teach while simultaneously carrying out their research.

Clinicians, on the other hand, are more often affiliated with hospitals or specialty clinics (e.g., rehabilitation, pain). Clinical responsibilities include conducting psychological assessments (e.g., behavioral checklist, cognitive, personality, biofeedback), performing clinical interviews, collecting patient information, implementing psychological therapies, and writing case reports. In addition, clinical health psychologists also aim to change health behaviors, reduce stress, teach coping skills, and increase treatment adherence. While health psychologists may work independently, there is an increasing trend toward integrated primary care, in which psychologists work collaboratively alongside primary care providers to deliver patient care in either a hospital or private setting (Funderburk & Fielder, 2013). Clinical health psychologists may also find employment as practitioners in government agencies (e.g., the Veteran’s Administration) or as faculty teaching and/or researching at universities or medical schools.
What degree is necessary to become a health psychologist?
Before working as a health psychologist, most first obtain a master’s (M.S., M.A.) and/or doctoral (Ph.D., Psy.D.) degree. Whether a health psychologist is working as a researcher or clinician, a doctoral degree will afford them more professional flexibility than a master’s degree. For example, a master’s level health psychologist may work as a research assistant or practice with supervision, whereas a doctoral degree would enable that same person to run their own research lab or practice independently. Researchers seeking a doctoral degree may earn a Ph.D., whereas applied psychologists may choose between a Ph.D. and Psy.D. The main difference between the two applied degrees is the Ph.D.’s dual emphasis on research and practice versus the Psy.D.’s primary emphasis on practice.

Due to the relative infancy of the field, health psychologists will not necessarily earn their degree in Health Psychology (Clinical or Experimental), but will instead receive a degree in social, experimental, counseling or clinical psychology from a program that emphasizes health psychology in other ways (e.g., course work, faculty research interests, and practicum experiences). It is noteworthy, however, that there are a growing number of health psychology-specific programs. Predoctoral internships and postdoctoral fellowships are other avenues that offer specialized training in health psychology. Training programs vary widely so it is best to examine programs for their specific emphases and formats. Finally, clinicians, whether master’s or doctoral level, must become licensed upon graduation. Board certification is available in health psychology through the American Board of Professional Psychology. Doctoral level clinicians may practice in any state (requirements pending), but master’s level clinicians are limited in the states that recognize their degree. See the Association of State and Provincial Psychology Boards (ASPPB) Handbook of Licensing and Certification Requirements for state specific licensing requirements at http://www.asppb.org.

What classes help prepare for graduate school in health psychology?
Health psychology courses are available at many colleges and universities. This is a great start for students to see the breadth of the field. Many times students are surprised by the many connections between core content classes and health. Healthy psychology endorses a biopsychosocial definition of health therefore classes that provide a strong background in these areas will be advantageous to the graduate school candidate. Specifically courses in abnormal, social, learning, biopsychology, anatomy and physiology, psychopharmacology, community psychology, culture, and public health would be strongly encouraged.

What experiences outside the classroom would be beneficial?
Graduate programs are looking for research experience. Although it would be ideal to work in a lab where the topic of examination was related to health psychology, it is more important to have research experiences that provide the opportunity to “think and behave like a scientist” regardless of specific topic. Experiences that fully engage students in scientific exploration are likely to result in understanding that translates into the ability to describe and discuss research in writing as well as oral discussion (phone interview or on campus interview). Research experience needs to be more than a sentence in a personal statement or line on a resume. It is an experience that includes generating hypotheses, gaining familiarity with research literature, and understanding the limits of prior research. Most valuable would be long term research experiences that include working with an idea from the conceptual stage to the methodological stage to manuscript or presentation.

It is beneficial to have relevant life experiences broadly defined. Paid or volunteer work in a health related setting or applied psychology setting generally strengthens applications to graduate school. Completing a psychology internship in a medical hospital, psychiatric hospital, group home, program working with children, or research setting working with clinical patients provides evidence of experience working with people. Another option for students that are introduced to the topic of health psychology later in their undergraduate career are post-baccalaureate internships on a variety of health topics.
What are other related health fields?
Students that are interested in health psychology might benefit from exploring the related fields of social work and public health. Medical social workers assist patients and their families with health-related problems and concerns. They lead support groups, help patients find appropriate health care and other services, as well as support to patients. They may also help patients find legal resources and financial aid. Social work is a very versatile field and there are many applications related to health care. Social workers with an emphasis in health care can find employment in homes, community health centers, outpatient clinics, as well as hospitals. The National Association of Social Workers provides an excellent description of the field (see http://www.naswdc.org/students/default.asp).

The field of public health aims to improve the health of communities. Unlike the individual focus typical in psychology the target in public health is the general population. Public health areas include administration, epidemiology, environmental health and behavioral health. Public health professionals work in a wide variety of settings such as traditional health departments, managed care organizations, hospital, state and federal agencies, and consulting firms. There is a distinction between professional degrees and academic degrees in public health. The MPH, DrPH, and MHA are degrees that prepare for practice in public health settings. The MS, PhD, and ScD typically result in a career in academics or research. It is possible to find dual degree graduate programs that include a masters in public health and a masters in psychology. The Association of Schools of Public Health has a website that provides information valuable for students interested in this area. (see http://www.whatispublichealth.org/about.html).

Summary
The field of health psychology is very broad and students have many options for graduate study. Students need to examine specific programs directly for recommended GPA and GRE scores. It is important to find a program that matches your research and application interest. This field of graduate study is relatively new and there are many different types of models.

References
20. Applied Behavior Analysis: An Exciting Career for Psychology Students

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Applied Behavior Analysis is a science based on principles of operant and respondent conditioning that is “devoted to the understanding and improvement of human behavior” (Cooper, Heron, & Heward, 2007, p.3). Applied Behavior Analysis can be differentiated from other areas in psychology because it is focused on analyzing and modifying behaviors by manipulating environmental variables in the natural environment where behaviors occur (Murphy & Bailey, n.d.). This technology for behavior change has evolved out of decades of research. From Skinner’s investigations on basic behavioral processes in the 1930s (Skinner, 1938) to human applications that started in the 1950s (Ayllon & Michael, 1959), research in ABA has grown substantially over the years. Applied Behavior Analysis is now a “well-developed discipline among the helping professions, with a mature body of scientific knowledge, and established standards for evidence-based practice” (Behavior Analyst Certification Board, n.d.).

Successful applications of ABA can be found in a variety of areas, such as a) Organizational Behavior Management (improving employee performance in the workplace), b) Developmental Disabilities (providing clinical treatment to individuals with autism, intellectual disabilities, attention deficit disorder, Down Syndrome, etc.), c) Behavioral Safety (increasing safety in workplace and community), c) Traumatic Brain Injury (clinical treatment in rehabilitative environments), d) Gerontology (assisting with issues related to aging), and e) Education (consulting with schools or providing teacher training). While these examples demonstrate the breadth of ABA, applications continue to expand in other areas (e.g., drug addiction, sports, medication compliance), as ABA can be used for modifying any human behavior.

The field of ABA is perfect for students who are interested in human behavior and in making meaningful and lasting changes in other peoples’ lives. Despite its strong research background, ABA is still a relatively young field that is growing exponentially. For students interested in ABA, now is an exciting time to join this field. Employment rates are very high (despite a depressed economy), graduate programs are growing across the country (and world), and new research continues to produce innovative applications. More information about this rewarding field is discussed in greater detail below.

What is a behavior analyst and what do they do?
A behavior analyst is an individual who provides ABA-based services in a clinical setting, such as a hospital, clinic, business, classroom, client’s home, or any other setting where reducing problem behavior and/or improving human performance is important (Bailey, n.d.). Behavior analysts may provide one-on-one services (e.g., provide direct ABA), conduct training and supervision in a consulting fashion (e.g., train and supervise a behavior therapist who provides direct ABA), or work with a team of professionals (e.g., school psychologists, clinical psychologists, psychiatrists, teachers) to provide assistance to a client. While behavior analysts’ work can vary, they are required to practice only within their competence and professional training (Cooper et al., 2007). Thus, someone who has been trained to work with kids with behavior problems in schools may be employed by a school system to develop and implement behavior plans for children, and may not be competent for consulting with a nursing home. Furthermore, all board certified behavior analysts (BCBA’s) are required to follow ethical guidelines established by the Behavior Analyst Certification Board (BACB; www.bacb.com) when providing services.

What do ABA services entail?
While services can vary, most services fall under one of two categories (across client populations): reduction of problem behaviors or increasing desirable behaviors. Behavior analysts are typically trained in both of these areas (and called in to conduct one or both with a client), as well as data collection/analysis, staff
training, and treatment development/evaluation. Behavior analysts are unique because they provide specific expertise in the functional analysis of behavior problems (determining why problem behaviors occur or why appropriate behaviors are not occurring) so that effective, evidence-based treatments can be developed and implemented (Bailey, n.d.). After implementation of an intervention, behavior analysts continue to collect data to monitor progress and use data to make any additional treatment decisions.

**How do students become behavior analysts?**

Becoming a behavior analyst requires education, experience, and competency. People who wish to practice as behavior analysts become BCBA. The basic requirements to become a BCBA are a) obtain a Master’s degree that includes relevant ABA coursework, b) complete supervised clinical experiences (practica), and c) pass a certification exam. Students interested in becoming a behavior analyst should visit the BACB website (www.bacb.com), which provides a wealth of specific resources for becoming a BCBA. Additionally, some states may require a state license to practice as a BCBA. These regulations are relatively new for the field of ABA and are continually evolving. For up-to-date information with these changing developments, students can refer to the BACB website (listed above), which posts current information about licensure laws and other state regulations for practicing ABA.

**What are the options for graduate study of ABA?**

While ABA is a very specialized field, graduate programs are available across the country and worldwide. Specifically, students should look into programs that are BACB-approved, meaning they are approved to provide the graduate training and/or clinical experiences required for becoming a BCBA. In addition to BACB-approved graduate programs, the Association for Behavior Analysis International (ABAI) accredits graduate programs. For students interested in ABAI-accredited graduate programs, visit the ABAI website (www.abainternational.org).

Students can attend BACB-approved master’s level programs specializing in ABA. Students can pursue a doctorate degree specializing in ABA as well. The difference lies in career goals. In the field of ABA, master’s level practitioners (BCBAs) can have very successful careers; however, if a student is interested in being a professor, teaching graduate students, conducting research, or being an administrator or director of service delivery programs, a Ph.D. may be a great fit. While master’s degree programs are more widely available, specialized doctoral programs can be found in psychology departments, education departments, and departments of behavior analysis. Information about available master’s and doctoral programs is also available on the BACB website (www.bacb.com) and the ABAI website (www.abainternational.org).

**What are the options for students who are not ready for graduate school or do not plan to attend graduate school?**

Options are available to be a part of the ABA community with a bachelor’s degree. The BACB also provides certification for Board Certified Assistant Behavior Analysts (BCaBAs). Requirements for this certification include a bachelor’s degree that includes relevant ABA coursework, completion of supervised clinical experience, and passing a certification exam. Some universities offer a BACB-approved BCaBA course option (see www.bacb.com for a list of schools as well as BCaBA requirements). Additionally, many agencies employ behavior therapists at the bachelor’s degree level. The BACB website also includes a certificant registry where interested students can email BCBAs in their local communities to inquire about any potential job opportunities.

**What are helpful courses to take in preparation for becoming a behavior analyst?**

Whether pursuing graduate school or a BCaBA certification, there are several helpful undergraduate courses to prepare students. While many universities/colleges call similar courses different names, students should look into courses that cover topics related to these areas: research methods, applied behavior analysis, operant/respondent conditioning, autism, developmental disabilities, performance management, and
behavior modification. Students can also contact different ABA graduate programs of interest and inquire about any courses they require prior to enrollment.

**What is the job market like for behavior analysts?**

There is a strong demand for ABA professionals, making this a potentially lucrative career. As awareness of the utility of ABA across a variety of populations continues to rise, so will available positions for behavior analysts who can provide needed services. While most salaries for BCBAs are dependent upon location, responsibilities, years of experience, and other qualifications, a recent survey revealed that salaries for BCaBAs ranged from $20,000 to $60,000/year, and most salaries for BCBAs ranged from $40,000 to $80,000/year, with 25% of BCBAs reporting a salary greater than $80,000/year (Johnston, 2009). These data show that having a master’s degree and BCBA certification may produce about twice the salary than bachelor’s level employment, which is an important factor for students to consider when thinking about graduate school.

**Final thoughts**

In closing, ABA is an exciting field to consider. The benefits of being a behavior analyst go beyond salaries and employment opportunities. It is a job where professionals can see meaningful differences being made every day, and while the differences, at times, may be small, they can accumulate over time resulting in major changes – such as a child transitioning into a regular education classroom and no longer needing special education services… or a child saying “I love you” to his parents for the first time… or an employee who learns to love his job because his manager acknowledges and reinforces his hard work. This is an excellent field for students who want to make a difference and help others, which often is the reason for enrolling as a psychology major in the first place.

**References**


21. Advice for Pursuing Careers in I/O Psychology

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A Fortune 500 company wants to reexamine its promotion practices in order to select employees for leadership positions. An insurance company has instituted new claims procedures and needs to develop a training program for its employees. A university is interested in how best to support faculty morale. Solving each of these problems can involve a company using the expertise of an industrial/organizational (I/O) psychologist. I/O psychology is the application of psychological principles to the workplace. Psychology applied to work is a broad field, covering careers ranging from human resources selection specialist to independent consultant for entrepreneurs and executive coaches. The main goals of the field are to use what we know about the theories and science of psychology (a) to improve performance and efficiency of employees, (b) to encourage the fair treatment of employees, (c) to foster job satisfaction and fulfillment of employees, and (d) to help organizations positively influence society and the communities of which they are part (Lefkowitz, 2010).

What kinds of jobs do people with I/O degrees have?
I/O psychologists are involved in a number of activities and work contexts. I/O psychologists may work in private consulting firms, the government, non-profit companies, corporations, or in university settings. There are also many different areas of I/O psychology that individuals may pursue for their careers. These include foci related to employees (e.g., testing, selection, training), research areas (e.g., statistical modeling, data privacy, research design), organizational development (e.g., change management, job design, team building, diversity management), and human resources management (e.g., legal issues, compensation, performance evaluation design). As this list suggests, the topics that may be addressed under the label of I/O psychology are very broad. Students who are interested in pursuing careers in the field can focus on solving many different kinds of problems. To read profiles about different types of I/O psychologists, students can visit SIOP’s profile page “I/O Psychologists at Work” (http://www.siop.org/psychatwork.aspx).

What is the salary/job outlook for I/O psychologists?
In the United States (US), the median salary for I/O psychologists with a master’s degree in the field is approximately $70K, and over $100K for a PhD (although these are for careers that are in business, not typically those in academia). Salaries for the field are quite varied, ranging from $50K at the 10th percentile for I/O psychologists to $140K at the 90th percentile. Nonetheless, I/O psychology is the subfield of psychology with the highest salaries. These numbers are specific to those who have had training in I/O psychology, although some people do work in I/O related jobs without specific graduate training. There are good opportunities for jobs in human resources, sales, marketing, and training for those students with a bachelor’s degree. The employment trends for I/O psychology are in a positive direction, although there is considerable variation by state. The salary range that is common for I/O psychologists impresses most students; when advising students about careers in the field, I have found that students often are interested in pursuing the field because of what they have heard about the salary opportunities. However, students should be cautioned against using this as their primary criterion for pursuing a career.

Overall, O*NET designates I/O psychology as having a “bright outlook,” which is an occupation that is “expected to grow rapidly in the next several years, [or]...have large numbers of job openings” (http://www.onetonline.org/help/bright/19-3032.00). O*NET estimates that between the years of 2012 and 2022, there will be a 53% increase in the number of I/O-related jobs in the US. The job outlook for I/O psychologists is good; in fact, it is better than almost any other area of psychology (Attenweiler, 2009) and there is very low unemployment among I/O psychologists. However, students should be aware of the
competitive nature of getting into graduate school as well as of getting a job after completion of a master’s or doctoral degree. In Virginia, there is an estimated increase in the need for I/O psychologists, yet that is projected to yield only about 10 new jobs a year in the state. Considering only the two masters level I/O programs in the state, there are approximately 15-20 degrees conferred a year. Thus, even though the outlook for I/O psychologists is very good, there is still considerable competition for jobs after a competitive graduate admissions process. Furthermore, there has been an increase in the number of applicants for psychology programs in general and for I/O programs, specifically. We do know that there is a corresponding increase in the number of graduate degrees conferred; however, the pace does not match the pace of increase in applications to graduate programs (Landrum, 2005). Therefore, the competition for getting into graduate school is increasing.

What credentials and training are needed to be an I/O psychologist?
The credentials necessary to practice as an I/O psychologist depend on what you want to do in the field. Typically, people have a graduate degree in I/O psychology, either a masters or a PhD, in order to have positions in I/O psychology. Other professionals might work in similar fields or on tasks related to I/O psychology without graduate training. Unlike those in clinical psychology, professionals in the I/O field do not typically get licensed as a psychologist, and SIOP has not encouraged those in the field to do so, although there is wide-ranging debate within the organization related to licensure (Silzer, Erickson, & Cober, 2007; http://www.siop.org/tip/jan09/17silzer.aspx).

Therefore, when operating in jobs representative of I/O psychology, one would not market him/herself as a “psychologist”, as that is reserved for clinical practice and requires a professional to pass the licensure exam (Attenweiler, 2009). However, some professionals argue that those in the I/O field should pursue licensure in order to be seen as more credible and garner more legal protection (Thomas, 2010).

Graduate training is the primary way in which I/O psychologists enter the field and almost all people working in what would be called I/O psychology positions have some graduate training. Certainly, there are other jobs that do not require I/O graduate training specifically, or even graduate training in general, that are related to I/O psychology, such as human resources. The content and the focus of I/O graduate programs vary, but there are some common experiences that students can expect. Although graduate programs will vary by degree (Master’s vs PhD) and focus (Business vs. Psychology), there are common competencies that are primary across programs. First, I/O graduate training should ensure that students have an understanding of core concepts in psychology as a whole. Some students will meet these requirements in their undergraduate experience; however, SIOP recommends that I/O students have an understanding of the history and systems of psychology as well as knowledge of core psychological domains. Graduate I/O programs will also have an emphasis on research design and data analysis skills. The depth and breadth of this focus will vary considerably. However, data collection and analysis skills are a primary component of I/O training. The bulk of curricular work in I/O programs will focus on the core I/O domains, including but not limited to: ethical and legal issues; measurement of individual differences; criterion theory and development; employee selection, placement, and classification; performance appraisal; training; and organizational development. Many I/O programs will also have courses or experiences related to compensation, career development, human factors, and consumer behaviors, although these are not considered essential according to SIOP’s training guidelines. Typically, the competencies addressed in PhD programs tend to be more extensive, with more of an emphasis on the scientist-practitioner model. Many master’s programs are more practitioner-focused (see distinction between master’s and PhD programs below).

Do I want a master’s degree or a PhD?
When deciding whether to pursue a Master’s or Ph.D. in I/O, you should consider your career goals. Whereas in many other fields, such as clinical psychology, students must obtain a doctorate before they are able to seek out jobs (Murray, 2002), fewer I/O students go into doctoral programs for various reasons. These may include differences in career objectives and time commitments. Additionally, doctoral programs tend to be more competitive and accept fewer students (Murray, 2002).
The biggest difference between Master’s and Ph.D. programs is how you are trained (Landers, 2011). Master’s programs prepare you to enter the professional workforce as someone who is able to apply research and theory to organizations. Ph.D. programs prepare you to do this as well, but they also train you to conduct research to contribute to the field. This is not to say that those with a Master’s degree will never be working on research, but those with a Ph.D. will generally have the responsibility of developing and managing research projects.

The training in Master’s I/O programs tends to be broad, whereas training in a doctoral program is more focused and students delve into topics in more depth. Because of this, there can be quite a bit of variability among master’s programs and the areas of I/O psychology they focus on (Lowe, 1993). Master’s programs tend to provide students with basic competence in regard to major focus areas of psychology (SIOP, 1994). Master’s students are trained to be consumers of information in the field of I/O psychology, so they are trained to interpret and apply information to organizational settings (SIOP, 1994). There is often a lessened emphasis on research in Master’s programs, and more on practical experience. Master’s programs may be specifically focused on preparing students for pursuing doctoral level work in the field, preparing students to enter the field as a practitioner, or a combination of research and practitioner experiences. Programs that aim to provide training to students who intend to pursue doctoral level training place a greater emphasis on research. Emphasis on content in the area of I/O psychology should be greater for programs preparing students to enter the workforce upon completing their Master’s degree. Master’s level programs may or may not require a master’s thesis. Student’s interested in pursuing a doctoral program after completing their master’s should apply for programs that require or allow completion of a master’s thesis.

Doctoral programs train students to both produce innovative research and theory and provide services to organizational settings, consistent with the scientist-practitioner model. Doctoral programs aim to provide students with the capability to conduct common practices in I/O psychology, including job analysis, employee selection and placement, training program design, assessment centers, among others. Doctoral programs require the completion of a dissertation. Most doctoral programs will also require completion of a master’s thesis, thus most doctoral students will earn their MA or MS during the process of completing their Ph.D. program. In contrast to master’s programs, there is a much larger emphasis placed on research in Ph.D. programs. Students will be required to engage in research while completing their doctorate.

What is the difference between business I/O programs and programs in psychology departments?

Students are often interested in the differences between I/O programs housed in business vs. psychology departments and/or the differences between master’s degrees in I/O psychology in relation to MBA or human resources business degrees. Typically, the content of the different programs can be similar, the approach and focus is usually different. In particular, psychology programs train from the perspective of I/O psychology as an applied science. I/O psychology programs focus on teaching the science of psychology as well as how to use that science to solve applied organizational problems. Typically, business programs have less of an emphasis on the psychological theory and science behind the recommended practices. In addition, instead of relying on the research base, training in MBA or other business programs tends to focus on case study analyses. The focus on research design and data analysis ensures that those completing I/O psychology programs get an education more rooted in the scientific method.

How do I choose a graduate program in I/O psychology?

When deciding on graduate programs, collecting information from multiple sources is a good idea. The Society for Industrial and Organizational Psychology (SIOP; www.siop.org) is a great reference when starting your search for graduate schools. The first step is to get a sense of whether you want to pursue a master’s or PhD (see above). Students may decide that they ultimately would like to earn a PhD, but may need to apply to some master’s programs initially. The list of prospective programs that students generate should reflect this. The second step may be to eliminate programs based on minimum qualifications. If a student would not
be competitive based on their GPA or GRE scores, eliminating those programs from contention would be important. Next, eliminate any programs that you would not consider attending. Regularly, students apply to programs that they have no intention of attending. This is a waste of time and resources. Then, students should start a chart or table that has important characteristics of the programs that are still in contention. If a student is pursuing PhD programs, it is important to identify faculty members with whom s/he would be interested in working. All students should examine the foci of the faculty at the different programs to find those faculty and lines of research that are interesting to them. Students should determine the balance of research and practitioner experience they would like in a program and determine if a program has that balance. If a student is interested in eventually pursuing a PhD, then s/he should not apply to master’s programs that do not offer a thesis. If a student is only interested in being a practitioner, s/he should not apply to PhD programs.

**Are there particular courses/minors/majors that can help me prepare for graduate school?**

Many students who are interested in I/O psychology worry that they need a significant number of specific I/O psychology classes as an undergraduate. Although there are many undergraduate programs that offer I/O psychology for students, there are many programs in the US that do not have such classes. I/O psychology is a relatively small subfield of psychology and few I/O psychologists are employed to teach undergraduate courses. Students should not be concerned that they cannot pursue I/O psychology in graduate school just because they did not have many (or any) undergraduate courses in the field. A well-rounded psychology education is what graduate programs expect applicants to have. However, students should take an I/O course if they have the opportunity to do so. Often students think they want to pursue the field without really knowing what it entails. However, if there is not an opportunity to take an I/O course, students should be encouraged to pursue information on their own, by reviewing a textbook on the subject or pursuing an open-source course.

Statistics and data analysis courses are some of the most valuable classes that students who are interested in I/O psychology can take. In fact, all types of graduate programs place a premium on statistics experience (Purdy, Reinehr, & Swartz, 1989; Lawson, Reisinger, & Jordan-Fleming, 2012). I/O graduate programs will typically require a minimum of two statistics and/or design courses. Being able to show comfort with data analysis courses, the ability to learn new statistical methods, and an understanding of the importance of data analysis are important qualifications of prospective graduate students. As important is the fact that by taking additional statistics and data analysis courses as an undergraduate, students will reduce nervousness that is often associated with these types of courses well before being in a graduate class. Finally, it is important for students to see if they like statistics well enough to go to a graduate program in I/O psychology. It will be a foundation of what you do in graduate school and as a professional so it is important for students to determine if this is a deal-breaker for them before pursuing the field as a career.

Related to statistics and data analysis courses are experimental and research courses. Most undergraduate programs in psychology require a research methods course; performance in this course is important. Additional laboratory classes or experimental courses are also beneficial to students interested in I/O graduate programs. Students may have course work that includes a lab component, such as an experimental social psychology course where students conduct studies and collect their own data.

Other courses that are beneficial include broad-survey courses that provide a good foundation for the field of psychology, particularly social, cognitive, personality, and testing and measurement. Psychology is a “hub science” (Cacciopo, 2007) and as such, is a field that merges many other areas of study. Therefore, getting a solid background in psychology is most important for graduate study in the field. However, there are some other fields of study that may be helpful for those interested in I/O psychology. Coursework in math, especially statistics and calculus; business courses, such as human resources or management; and technical
writing would all provide good background for I/O graduate programs. Importantly, a business major or minor is not a requirement for obtaining an advanced degree in I/O psychology. What is helpful is an understanding of the basic language and the most current hot topics in business.

**What other experiences should I have before applying for graduate schools?**

Many of the recommendations for students applying to I/O programs are similar to advice given to students applying to any number of psychology graduate programs. In general, graduate programs place high importance on letters of recommendation, personal statements of goals and objectives, GPA, and the interview (Landrum, 2005). However, these criteria will be differentially important depending on the program to which students apply.

Getting to know faculty and getting faculty to know you is likely one of the most important and valuable things students can do to ensure success in applying for graduate school (and other aspects of success, as well). Two of the most important predictors of long-term well-being and workplace engagement are: (a) developing close relationships with faculty members who support your development as a student, and (b) investing in long-term projects that take place over the course of more than one semester (Gallup-Purdue Index, 2014). By getting to know faculty, you will have more one-on-one interactions to learn about psychology, be in the position to take advantage of research opportunities, and have professors who are able to write you strong letters of recommendation.

Gaining research and independent study experiences are important for preparing for graduate school in I/O psychology, and for graduate school in general. By working in research or lab groups, students can gain insights into I/O research topics, but more valuable are skills related to project and time management, working with teams, and becoming autonomous workers. Outside work experiences (regardless of area), volunteer work, or other leadership roles can all be helpful in developing the skills necessary for graduate work. Experiences that can develop one’s research, time management, managerial, and teamwork skills will be beneficial for students.

**What about grades and GRE scores? How high do they need to be?**

The importance of the GREs depends on the type of program to which you apply, but GREs are important in getting into graduate school for I/O psychology. There is a wide range of acceptable GRE scores across different programs, and typically higher scores are required for PhD programs than master’s programs. Students can use the graduate school search engine on the SIOP’s website to compare scores for different programs. For example, Radford University’s master’s program in I/O psychology lists scores of 154 (56th percentile) for quantitative reasoning and 150 (45th percentile) for verbal reasoning. However, George Mason University’s PhD program in I/O psychology gives scores of 156/162 (64th and 84th percentiles) for quantitative reasoning (minimum/average) and scores of 146/165 (30th and 95th percentiles) for verbal reasoning. The difference between the minimum and average is important for students to consider because although they may be qualified based on the minimum GRE, they may be reaching when they examine the average scores. A good rule of thumb might be for students to aim for scores above 150 if they are aiming for master’s programs (or around the 50th percentile) and above 160 (at least 60th percentile) for doctoral programs, with the understanding that there is still a great deal of variability among programs.

Students should plan on taking the GREs once, preparing extensively beforehand. Taking the test multiple times is costly and your scores could go down as well as up. Students should also be aware that they may need to take the psychology subject GRE test, although it is not required by all graduate programs. Students should take into account the average or required GREs for the programs to which they are applying.

**Do I have to go to graduate school to go into I/O psychology? What are some other fields that are related to I/O psychology?**

If you want to be an I/O psychologist, then some graduate training is necessary. However, if you are simply interested in going into business following your undergraduate degree in psychology, then graduate school is...
not necessary. There are myriad occupations that are in organizations and the business field that do not require specific graduate training. One common occupation that students pursue is human resources management.

Students who are interested in the topics of I/O psychology may be interested in other related fields. As mentioned above, human resources is a common career for students to pursue if they are interested in I/O. Other related programs include college student personnel administration (CSPA), quantitative psychology, human factors (often a sub-field of I/O psychology training), equality and diversity management, training and development, public relations, market research, advertising, consumer psychology, occupational health and wellness promotion (or public health management), mentoring and life-coaching, recruitment/headhunter, and information analyst.

References
In this concise chapter, we provide recommendations for advising undergraduate psychology students interested in careers in Legal Psychology and Forensic Psychology. We first address a central divide in the field between clinical and research careers. Advisees’ choices of career paths will drive subsequent advising talks. Second, we divide this chapter into two sections, one for advising future researchers and one for advising future clinicians. Third, we conclude with some general recommendations for students and advisors.

Our first recommendation must precede and clarify our later suggestions. We recommend that the first question advisors ask advisees is whether advisees seek professional clinical careers in the law or research careers in the law. Often, observers view research and professional fields separately, but in this subarea, both researchers and clinicians belong to the American Psychology-Law Society [APLS], both groups share conventions, and both research and professional ideas co-exist in many textbooks in the field (e.g., Costanzo & Krauss, 2010; Greene & Heilbrun, 2013; Roesch, Zapf, & Hart, 2010).

Less formally, we admit that our first conversation about writing this chapter was to express our amusement that many observers view both of us (Woody as a researcher in psychology and law and Coloroso as a clinical forensic practitioner) as members of the same field, despite our radically different educational backgrounds, licensing requirements, and daily working lives. As a clinical forensic professional, Coloroso studied clinical theories, relevant law, and psychological testing that is relevant to the courts, among many other professional topics; furthermore, some clinical forensic practitioners earn a Ph.D. and contribute to the scholarship in these areas, much as do scholars with doctorates in clinical psychology. Woody’s educational background included experimental design, multivariate statistics, and historical perspectives about psychological factors in the law. Additionally, as a professional who conducts assessments and provides therapy for people who have been convicted, Coloroso must meet extensive licensing requirements, but as a researcher who studies legal questions using methods from social and cognitive psychology, Woody does not face licensing requirements. Despite being viewed as participants in the same field, we have walked very different educational roads to get here, and our professional lives have little in common. Because separation of our career trajectories happened early in our educational careers, we recommend that students consider whether they have professional or research interests in psychology and law, and that advisors start with this overarching question before moving to advising.

**Research in Legal Psychology**

Researchers in legal psychology apply research methods from social, cognitive, development, or community psychology to research questions in the law. Ogloff and Finkelman (1999) defined this field as “the scientific study of the effect the law has on people and the effect people have on the law” (p. 3). These scholars study legal topics such as eyewitness testimony, jury decision-making, interrogation and confession, and other topics. These scholars conduct basic research (e.g., on human memory for faces under stressful conditions, e.g., Morgan, Southwick, Steffian, Hazlett, & Loftus, 2013) as well as applied research (e.g., to develop and evaluate police lineup techniques that are most diagnostic, i.e., the methods that lead to the highest ratio of correct identifications to incorrect identifications; e.g., Quinlivan et al., 2012).

Across subfields and research topics, researchers generally earn a Ph.D. in a psychology and law doctoral program or a broader doctoral program that includes legal research (e.g., a social psychology doctoral program with faculty who conduct research in legal psychology). We recommend that advisors prepare advisees for the competitive nature of the application process to Ph.D. programs as well as for the unique pressures of academic life. Although some researchers in psychology and law work for research institutes,
non-profit or other advocacy groups, or as trial consultants who assist one side in a legal case, many work in university settings with careers that incorporate teaching and service as well as scholarship. Scholars who conduct research in psychology and law may also work in the legal system as experts. They may educate attorneys or courts about issues related to eyewitness testimony, interrogation and confession, and other topics.

To prepare students for scholarly careers in psychology and law, we recommend that students seek related undergraduate research opportunities, if available. At institutions that do not have programmatic scholars or teachers in psychology and law, we recommend that advisors encourage students toward research experiences so that students can learn more about their own interests in conducting original scholarship.

Clinical Forensic Psychology

Forensic psychologists generally work within the legal system to answer specific questions about individual defendants (Nicholson, 1999). To clarify the researcher-practitioner split in this field, a legal psychological researcher may run a well-controlled experimental study of jurors’ decision making with juvenile defendants who are transferred to adult court (e.g., Ghetto & Redlich, 2001; Walker & Woody, 2011), but a clinical forensic psychologist would conduct an assessment of this particular juvenile defendant and draft a recommendation for the court to transfer this juvenile to adult court or to retain this child within the juvenile justice system.

In terms of numbers of practitioners, clinical forensic psychology is the larger of these parts of the field, it often looks fascinating in television dramas, and it attracts many students. This is a clinical field that involves assessment, diagnosis, and treatment in legal settings, such as jails, prisons, and halfway houses, but some practitioners also engage in these duties in private practice. Some aspects of these careers may be surprising to students, and we encourage advisors to address these issues explicitly.

A central area of challenge to some students relates to the populations within which clinical forensic psychologists work. Many students enter clinical forensic psychology as a mental health field that they love; Coloroso was therefore surprised when she encountered a forensic psychology professor who explicitly informed her and her peers that in order to be successful in the field they must “love” people who have committed serious crimes. Although the professor’s statement was surprising at the time, in retrospect, this professor was accurate; in order to perform effective clinical work, to meet the needs of clients, and to avoid burnout, clinical forensic psychologists must love people who have offended rather than just the mental health field. These are the experiential challenges that define the daily lives of many clinical forensic psychologists, and we recommend that students are aware of these challenges when entering these fields.

Some students may already know that they could or could not work in these populations, but some avenues exist for students to learn. We recommend that students consider internships in forensic psychology specifically or in psychology and the law in general. Although undergraduate students could only observe some of the activities of a practicing forensic psychologist, students can readily gain exposure to the law through internships or volunteer opportunities in public defenders’ or prosecutors’ offices, in legal investigations, or even in more criminal justice themed areas such as probation and parole. Although working with these populations can be difficult, it is truly an exciting and rewarding field.

An important choice for students in clinical areas is whether to seek an MA or a Ph.D. or a PsyD. Master’s level practitioners have limited options compared with doctoral-level practitioners, but master’s level psychologists engage in a wide range of activities, including mental health screening, referrals, and group and individual therapy (Zaitchik, Berman, Whitworth & Platania, 2007), often for issues related to trauma (with clients who may be both perpetrators and victims) and substance abuse, among others. Practitioners who pursue a doctoral degree may engage in psychological evaluation and testing as well as competency examinations for juveniles, people with cognitive disabilities, or defendants who raise questions related to
legal insanity. Additionally, doctoral-level practitioners may engage in clinical forensic research, supervision of master’s-level or other doctoral-level forensic therapists, and university-level teaching of forensic psychology. These individuals may also provide expert testimony in trials, largely because, as noted by Clements and Wakeman (2007), “either de facto or by statute, courts typically recognize the doctorate more readily” (p. 61). Beyond these considerations, some correctional settings require a doctoral degree (Clements & Wakeman, 2007).

Students who seek to become clinical forensic practitioners must complete an internship (including a 1-2 year internship at a forensic site for a doctoral degree) and meet state licensing requirements in the jurisdictions where they live. Additionally, doctoral-level clinical forensic practitioners may seek board certification from the American Board of Forensic Psychology, a subdivision of the American Board of Professional Psychology.

As an additional note about advising students, we should note the proliferation of criminal profilers in entertainment media; media portrayals often inspire students to emulate profilers. Advisors should prepare to inform students that few law enforcement agencies employ profilers, no graduate programs exist in profiling, and the available routes to these jobs are through careers in law enforcement rather than psychology. These may be challenging conversations for advisors and students.

**Additional Degree Options in Psychology and Law**

In addition to the relevant research or clinical psychology degree, some dual programs in psychology and law allow students to earn a concurrent J.D. or MLS (Master’s in Legal Studies). These options can enhance students’ knowledge of the law and improve their credibility with attorneys, judges, and courts. We recommend that advisors inform advisees of these options as well as the increased time and financial commitments that come with additional advanced degrees.

**General Conclusions and Resources for Advisors**

In general, we recommend that advisors start with our initial question and proceed from there. Several additional sources exist for advisors; for example, the APLS has strong student (http://www.apadivisions.org/division-41/education/students/index.aspx) and early career sections of their website (http://www.apadivisions.org/division-41/education/students/early-career.aspx), they have released a thorough careers and advising page for students and advisors (http://www.apadivisions.org/division-41/education/students/careers.aspx?item=1), and they maintain updated lists of graduate programs for clinical master’s, clinical doctorate, and non-clinical research graduate programs in psychology and law (http://www.apadivisions.org/division-41/education/programs/index.aspx; Ruchensky & Huss, 2014). Other resources exist, including resources for teachers of psychology and law (http://www.apadivisions.org/division-41/education/teaching/index.aspx; see also Greene & Drew, 2008) through APLS and other sources, including popular sources (e.g., Franklin, 2010).

Many students are interested in this growing area of psychology. We hope that these materials will help advisors guide advisees to areas in which advisees feel at home as researchers or practitioners in psychology and the law.

**References**


3 As an important note, legal insanity, which is often defined as the inability to know right from wrong, is distinct from psychological questions related to assessment of people with psychological disorders.
23. Teaching of Psychology

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Teaching of psychology, unlike other areas of psychology (for example, development, social, sensation and perception, health, and personality) is not a specific specialty within the discipline of psychology. Rather, teachers of psychology hail from every specialty area. Although not every psychologist will teach, there are many who do. In addition to teaching, many psychologists also work and/or conduct research in one or more specialty fields. Teachers of psychology may teach courses at all academic levels, ranging from the introductory psychology course to courses at the graduate level. For example, a social psychologist may teach courses in introductory psychology, psychological statistics, and social psychology. If her department has a graduate program, she may offer graduate courses in areas such as group behavior, interpersonal relations, or social cognition.

Apart from teaching, psychologists who are interested in the teaching of psychology sometimes work on projects to evaluate the educational impact of particular teaching strategies. Projects such as these may be done in both the laboratory and classroom settings. These projects can yield findings that inform teaching practice through the implementation of teaching strategies that are consistent with the way students learn academic material. One source for publication of this kind of research is the journal, Teaching of Psychology (ToP, http://teachpsych.org/top/index.php), the official journal for the Society for the Teaching of Psychology (Division 2, American Psychological Association). ToP offers teachers of psychology at all educational levels helpful articles on such topics as course design, class demonstrations, and instructional methods designed to produce positive learning outcomes.

**What are the most helpful courses undergraduates can take in preparation for teaching psychology, and why?**

The teaching of psychology is not an area of specialization in the discipline (like the others noted above). Generally, the best practice is for students to do well in a strong undergraduate curriculum in order to enable them to be competitive candidates for entry into any graduate program. In addition, undergraduates interested in teaching psychology may benefit from courses related to college teaching, science of learning, and/or the undergraduate teaching assistant experience (Hogan, Norcross, Cannon, & Karpiak, 2007).

**What GPA and GRE scores should undergraduates have to pursue this field at the Master’s and doctoral levels?**

The strength of the undergraduate’s overall academic record will be important in the competitiveness of being able to enter into a particular graduate program. Students should work to achieve the best academic record possible in order to forge a competitive advantage for entry into a desired graduate program.

**How do I choose a graduate program that specializes in the teaching of psychology?**

As students begin to search for an appropriate program, they will find that institutions offering graduate programs in psychology offer a range of specialty areas. Students should explore graduate schools for concentrations in specialty fields in which they have had some undergraduate preparation and/or special interest. In addition to specialty fields, some graduate programs also provide preparation and/or experience in the teaching of psychology. Interested students should follow the link to The STP Guide to Graduate Student Training in the Teaching of Psychology, 2nd ed. (Beers, Hill, & Thompson, 2012) (http://teachpsych.org/ebooks/gst2012/index.php) for a listing of many of the graduate schools that
incorporate the teaching of psychology in their graduate curriculum.

**What credentials do I need to become a teacher of psychology?**

Required credentials for teachers of psychology are dependent upon the setting in which the teaching takes place.

- **Secondary schools**: Credentials include those degree requirements of the school in which teaching takes place. Schools may require a master’s degree in psychology, but many teachers of psychology in secondary schools do not have a degree in psychology (http://www.apa.org/education/k12/teaching-guidelines.aspx).

- **Community colleges**: At most community colleges in the United States, the degree required for teaching is a master’s degree in psychology (or, sometimes, in a closely related field, such as counseling). Over 60% of the community colleges require a master’s degree for a teaching position. Approximately half of community college teachers have doctoral degrees (http://www.apa.org/monitor/mar02/community.aspx).

- **Four-year colleges and universities**: These types of institutions typically require the terminal degree in one’s specialty area as a requirement for employment (at least for full-time permanent faculty). For most academic disciplines, including psychology, the terminal degree is a doctorate.

**Are there any seminal books that I should read related to the teaching of psychology?**

A good place to start is with readings that are related to teaching in general and, in particular, readings related to the preparing of new teachers of psychology. With this in mind, the following four suggestions are a good place to begin:


- *Preparing the New Psychology Professoriate: Helping Graduate Students Become Competent Teachers* (Buskist, Beins, & Hevern, 2004) (http://teachpsych.org/ebooks/pnpp/index.php) is an informative collection of chapters, apprising readers of various aspects related to the transition of graduate teaching assistant (GTA) to faculty member. The book addresses various models of GTA preparation, institutional hiring practices, and experiences of newly hired junior faculty.

- *Effective college and university teaching: Strategies and tactics for the new professoriate* (Buskist & Benassi, 2012) presents readers with empirically driven principles of teaching and learning that can be used to inform teaching practice that is consistent with the way that people learn academic material.

**What kinds of jobs can I seek as a psychologist who is interested in the teaching of psychology?**

Teachers of psychology work in a variety of settings, including universities, 4-year colleges, community colleges, and secondary schools. They may work on a full-time or part-time basis. Although most teachers of psychology teach classroom-based courses, there has been a growing trend of courses being offered partially or exclusively online. With this shift, many teachers of psychology are hired by a college or university to teach one or more courses online on an ad hoc basis.
What does a psychologist who is interested in the teaching of psychology typically do?

Psychologists who are interested in the teaching of psychology typically teach psychology courses and may, depending on the type of institution at which they work, conduct research in their specialty field. Some teachers conduct and publish research directly related to teaching, learning, and/or the assessment of student learning (http://teachpsych.org/top/index.php). Depending on the eventual area of work, there will likely be some other duties required, such as research in the specialty field, and service, such as department and university committee work, student advising, and other responsibilities.

What experiences would be most helpful or essential for undergraduates interested in this field?

The primary experience occurs through exposure to teaching by virtue of being a student. Interested undergraduates should also observe and talk with teachers of psychology to learn what their work experiences and requirements are like (http://sites.allegheny.edu/psych/about-psych/careers-in-psychology/college-teaching/).

Summary

Teaching of psychology is not a content area of specialization in psychology; however, many who enter into the discipline will teach. Therefore, in addition to exploring graduate schools for concentrations in specialty areas in which students have had some undergraduate preparation and/or special interest, undergraduates who are interested in the teaching of psychology should consider graduate programs that provide formal instruction, supervision, and support in the teaching of psychology.

Graduates with the appropriate terminal degree teach psychology in a variety of settings from secondary schools to universities. Students should know that in addition to teaching, teachers might do additional kinds of work, either within or outside of the institution at which they teach.

References


Suggested Websites

Allegheny College: College Teaching: http://sites.allegheny.edu/psych/about-psych/careers-in-psychology/college-teaching/


Society for the Teaching of Psychology: http://teachpsych.org/
Teaching of Psychology (Official journal of the Society for the Teaching of Psychology):
http://teachpsych.org/top/index.php
What is Community Psychology?
Community Psychology examines how individuals interact with other individuals, social groups, societal institutions, the larger culture, and the environment. Community psychology emerged during the 1960s as a growing group of psychologists became dissatisfied with the ability of clinical psychology to address broader social issues and argued that psychology needed to focus more on community and social change in order to improve individual’s mental health and well-being (Dalton, Elias, & Wandersman, 2001). Community psychologists focus on how individuals and communities can work together to provide a healthy and sustainable environment. Community psychology is concerned with social institutions, social issues, and social problems. Community psychologists deal with a wide range of social problems such as poverty, homelessness, substance abuse, school failure, delinquency, empowerment, diversity, aggression and violence. Community psychologists differ from clinical psychologists in that community psychologists focus on prevention and promotion of behaviors that contribute to wellness rather than on interventions that address symptoms already present in the individual (Miller, 2008). Scientific inquiry in community psychology integrates research with action. It is directed towards the design and evaluation of ways to facilitate psychological competence and empowerment, prevent disorder, and promote social action and social change. Another way that community psychology is different is that it does not try to be value-free. Community psychologists are encouraged to reflect upon their personal values, to bring their values to the forefront of their work, and to acknowledge the effect their values have on what they do (Rappaport, 1977).

What are the Interests and Values of Community Psychologists?
Since community psychology is centered on action and solving problems, psychologists who enter this field share a number of values. According to Kelley (1971), students who pursue a career in community psychology should be prepared to become part of the communities that they are trying to change. Since community psychologists work with individuals from all walks of life, they must embrace diversity. Also, community psychologists should be prepared to face challenges that require them to effect change in a community armed with only limited resources. To do this, community psychologists need the interpersonal skills to be able to effect change and gain support from stakeholders. Often, the goal of the community psychologist is to empower (Rappaport, 1984) those individuals and communities that have been marginalized by society.

Helpful Courses to take as an Undergraduate Student
Some of the courses that an aspiring community psychologist could take are indicated below in bold along with what those courses will provide the student in the way of preparation for graduate study (see Levine, Perkins, & Perkins, 2005).

Like social psychology and sociology, community psychology also takes a holistic, systems-based approach to understanding human behavior and how people fit into society. Community psychology tends to focus on applying an understanding of human aggression, prejudice, helping behavior and many other topics covered in social psychology and sociology classes to taking immediate action in creating real-world solutions. Community psychology is related to public health in that both try to prevent problems before they start, rather than waiting for them to become serious and debilitating. Many of the issues addressed by community psychologists are related to public health concerns.

Research methods and statistics are valuable tools since community psychologists often put empirical findings to practical use through developing action-oriented community programs. In addition, community psychologists often find themselves using data driven information to convince allied community agencies to adopt specific programs and approaches. Community psychology borrows many techniques from industrial
and organizational psychology; particularly those techniques that can be applied to change management, community organizations, human service delivery systems, and support networks.

An understanding of developmental psychology can assist the community psychologists working with families at risk. Community psychologists often focus on enhancing the positive characteristics and coping abilities of those who are relatively powerless, including minorities, children, and the elderly, especially those who are poor (Hollingshead & Redlich, 1958).

Choosing a Graduate Program in Community Psychology

Most community psychologists hold at least a master's or doctorate degree in psychology. Graduate training in community psychology focuses on both research and application. Several universities in the United States and Canada offer graduate degrees, both masters and doctorates, in community psychology. Many community psychology programs are housed in psychology departments, while others are interdisciplinary, such as psychology & public policy or psychology & community health.

In addition to stand alone programs, universities may provide specific concentrations with their psychology graduate program that assist students in preparing to become a community psychologists. Some examples include public health, community action and advocacy, evaluation research and family life. Most doctoral programs run from four to six years to complete coursework, fieldwork and the dissertation, which includes the time it takes to earn the master’s degree. In addition, students may often enter a community psychology doctoral program having earned a Masters in a related field. In a community psychology program, students will study the relationships between individuals and institutions. They will develop the skills needed to identify problems and opportunities, carry out research and design solutions. Most students will choose a specialization within community psychology, for example delinquency, and customize their coursework, research, and service learning according to their concentration. Community psychology coursework will generally include the history of the field, human diversity, public health, research methods and statistics, organizational and community development, program evaluation, and grant writing. Since community psychologists tend to base their interventions on theory and research to promote social change, research is a key component of graduate training (Tolan, et al., 1990). In addition, service learning in the form of an internship or practicum is often included. For more information on graduate training in community psychology, go to the APA Division 27 website: "Educational Resources in Community Psychology (Teaching Resources and Lists of Graduate Programs) from SCRA – Division 27"

What Jobs are Available to Community Psychologists?

Community psychologists work in a wide variety of jobs, including community and non-profit organizations, colleges and universities, government and non-governmental agencies (such as city planning and health and community service agencies), consulting firms, health authorities, advocacy organizations, schools, research centers and medical centers.

Most undergraduate programs do not offer a degree in community psychology. However, students interested in working in the area with a BA/BS degree can prepare themselves for the job market by taking courses in social psychology, community development, health psychology, and research methods along with a service learning experience with a community agency. Some examples of jobs that are available with a bachelor’s degree are: Research Assistant, Health & Welfare Benefits Manager, Community Support Specialist, Grant Writer, Community Services Supervisor/Manager, Behavioral Management Specialist, Substance Abuse Counselor, Community Mental Health Assistant, Program Assistant at a Charitable Foundation, and more. To explore current open positions in community psychology, including those that only require a bachelor’s degree, go to [http://www.indeed.com/q-Clinical-Psychology-Community-Psychology-Counseling-Psychology-jobs.html](http://www.indeed.com/q-Clinical-Psychology-Community-Psychology-Counseling-Psychology-jobs.html).

With a Master’s degree, one can work as a Behavior Analyst, Research Associate, Director or Manager of a Community Services/Mental Health Agency, Crisis Evaluator, Community Program Evaluator, Rehabilitation Counselor, Public Policy Analyst, Mental Health Counselor, Hospital Program Manager and Public Health
Obtaining the doctoral degree allows the student to direct research, teach, analyze, consult and/or practice as a community psychologist. Community psychologists engage in a wide variety of tasks to include teaching and supervising undergraduate and/or graduate students, conducting “action oriented” research, developing and implementing programs to address the health and wellness of the community, such as an employment program for single mothers. Community psychologists also evaluate the effectiveness of community agencies and provide guidance on how to improve effectiveness, analyze and advance public policy, advocate for disempowered groups, determine the short and long term needs of a community or organization, and in general, collaborate with relevant stakeholders, from scientists, social workers, faculty members and hospital specialists to psychiatrists, statisticians, service agencies, legal professionals and members of the community to improve the health and well-being of members of a given community.

**Where to Learn More About Being a Community Psychologist**

For the student who wants a more in-depth look at what community psychology has to offer, I recommend visiting the SCRA website, browsing current issues of the journals listed below and leafing through some of the books listed in the section on “Additional Readings.” In addition, a somewhat dated article in *Eye on Psi Chi* provides useful information (Goldstein, 1998).

The Society for Community Research & Action (APA-Division 27) is the official organization of community psychology (website: Home – Society for Community Research and Action – SCRA or [http://www.scra27.org](http://www.scra27.org). Students can become members at a reduced cost. SCRA sponsors regional and national conferences on Community Research and Action where the student could interact with professionals in the field.


**Summary and Final Thoughts**

The field of community psychology is vast. It is interconnected with the social, political, and economic worlds. Community psychology is concerned with issues of health, culture, and the environment. Within the scope of community psychology, one can concentrate on issues related to crime, victimization, healthy living, obstacles to education, root causes of addiction, violence within the community, discrimination against minorities, issues surrounding unemployment and underemployment, human and civil rights, poverty, and community building. It is an area where one can seek social justice, work to reduce oppression, celebrate diversity, conduct research with real-world consequences, and assist in building healthy, sustainable communities.

**References**


Additional Readings
Environmental psychology is the study of psychological principles that explain how people interact with the natural and built environment. It includes both how the environment impacts people and how people impact the environment; many researchers would extend these impacts to nonhuman species. A closely related field is conservation psychology, which concentrates on how we can conserve natural resources using psychological principles. Yet another related specialty is population psychology, exploring how populations rise and fall in numbers (e.g., birth rates, death rates, short-term and long-term migration in and out of areas) and the consequences of such changes in numbers, including impact on the environment. Thus, the American Psychological Association unit that represents these fields (Division 34) is called the Society for Environmental, Population, and Conservation Psychology, or SECP. Yet another related specialty is ecopsychology, which concentrates on the therapeutic value of interacting with nature. Still another similar term sometimes encountered is ecological psychology, which studies the social consequences of living in or visiting specific settings.

What specifically do environmental psychologists study?
Topics and issues that environmental psychologists study include how we perceive and evaluate built and natural environments, how characteristics of built and natural environments influence us, noise, natural sounds, weather and climate influences (temperature, sunlight, altitude, wind, precipitation), disasters or disturbed environments (including human-caused and natural disasters), crowding, use of transportation alternatives (walking, biking, mass transit, personal automobile), and sustainability and conservation behavior. Environmental psychologists might study these topics in many types of settings, including a research laboratory. However, it is most common to use “real-world” (non-laboratory) settings such as in cities, in neighborhoods, inside a home or workplace, on a campus, in a national park or wilderness area, or in rural areas.

Examples of specific studies might include how the floor plan and views out a window influence recovery in a hospital or performance in a school, desirability of a home or exploration of a museum; how sounds increase or decrease enjoyment of a park or work setting; what motivates people to use alternative transportation or to conserve resources; or how families and communities cope with and recover from disasters.

An environmental psychologist would especially be interested in how an effect observed in one setting might or might not generalize to another setting. For example, what is the effect on social interaction and task performance if in a building you have one person per room, two people per room, or three or more people per room? Is the effect the same if the “room” is a children’s bedroom, a college residence hall room, an office in a business, a unit in a prison, a tent in a national park, or a tent in a disaster recovery area? As another example, we know that walking and biking are good for your health and they pollute the environment minimally compared to driving an automobile, but how do we encourage walking and biking? One way might be posting signs encouraging walking and biking, another might be providing designated paths for walking and biking, another might be discouraging driving by charging high parking fees, and another might be giving discounts at the lunch counter for those who walk or bike. An environmental psychologist would want to know how effective these different strategies are in encouraging the target behavior, and how they compare in terms of cost.

As another example, an environmental psychologist might consult with the staff at a national park. These parks in all parts of the world have two major mandates: (1) preserve the natural setting, and (2) provide for the enjoyment of the visitors. These two mandates inevitably create conflicts so that regulations and policies become necessary management tools, but competing interest groups will lobby for different regulations. The environmental psychologist might collect data through visitor surveys and observation of visitor behavior.
(e.g., how much time is spent in a particular activity such as observing the view at each overlook). One specific issue is tourist aircraft overflights (e.g., Mace et al., 2004). At Grand Canyon National Park and Hawaii Volcanoes National Park, the scenery is spectacular, but to many it is even more spectacular if seen from a helicopter or small plane, and there is a lucrative enterprise for the private operators of these tourist aircraft. For some visitors with disabilities, an aircraft might be the only practical way to see parts of the park. Yet for hikers and campers on the ground, the sound of the aircraft is annoying and not at all enjoyable. At Yellowstone National Park, the only access to many scenic areas in the winter is via snowmobile or snowcoach, yet the noise from these machines is very annoying to cross-country skiers. At campgrounds in most parks, the noise and laughter from a group at one campsite can be very disturbing to a quieter group at a nearby campsite. Thus, an environmental psychologist might study noise levels in any or all of these settings, survey visitors about their likes and dislikes, set up signs alerting visitors to the impact of noise, ask visitors how much more they would be willing to pay for a campsite that regulated noise levels, and write a report to the management staff about the impact, in addition to publishing the findings in a journal.

Investigators conduct research on these topics by collecting data through such means as internet surveys, direct observation, or use of archived data such as crime statistics or traffic counts or grades in a class. Thus, knowledge of the topics is very important, but skills in data collection and data analysis and writing reports are required.

**How do students find a graduate program in environmental psychology?**

Graduate programs specifically in any of the specializations described above are not common. Rather, faculty members specializing in one of these areas usually conduct environment-related research while being affiliated with a graduate program within a more common, broader specialization such as social psychology, clinical or counseling psychology, developmental psychology, cognitive psychology, experimental psychology, applied behavior analysis, or community psychology. In general, you have more employment options if your graduate training is in one of these broader specializations but your graduate research focuses on environmental topics within that specialization. There are faculty researchers training graduate students in environmental topics at universities all over the world. A really good way to find these potential faculty mentors is to check out the website of SEPCP or the listing of the editorial board for journals such as *Environment and Behavior* or *Journal of Environmental Psychology* or *Ecopsychology*, and also to look at several recent years’ worth of issues of these journals and see where the faculty authors of the articles are doing their graduate mentoring. For the authors who are not faculty members, you can see who their employers are and get a good idea of the kinds of non-academic jobs an environmental psychologist can obtain.

**What background credentials should students have to get into graduate study in environmental psychology or a similar field?**

See the admissions requirements for the specific graduate program. In general, knowledge of broad areas of psychology is beneficial, as are skills in data collection and analysis as well as writing and being part of a collaborating team of workers. Clinical experiences are helpful for those wanting to emphasize the related field of ecopsychology.

**What employment opportunities are there for environmental psychologists?**

Although many are faculty members, others are employed working for government agencies (parks and recreation, city planning department, natural resources management or transportation management), or for businesses such as architectural or interior design firms, or as sustainability coordinators for any of the above types of settings.

In sum, environmental psychologists study the interactions between people and the built and natural environments, including how the environment affects people and how people affect the environment.
Environmental psychology research tends to be very applied, studying interactions in real-world settings such as cities, neighborhoods, national and city parks, schools, and offices. Reports in environmental psychology journals cover a wide range of issues studied in these types of settings, with conservation behavior and sustainability being popular recent areas of study. Graduate training typically occurs in a more traditional specialization such as social psychology or counseling psychology, but with the research emphasis being on environmental topics such as how social behavior affects the environment or how a natural setting can improve emotional outlook. Training in a more traditional area broadens employment opportunities.

References and Suggested Readings


Websites
Society for Environmental, Population, and Conservation Psychology: [http://www.apa.org/about/division/div34.aspx](http://www.apa.org/about/division/div34.aspx)
Environment and Behavior: [http://eab.sagepub.com/](http://eab.sagepub.com/)
Ecopsychology: [http://www.liebertpub.com/overview/ecopsychology/300/](http://www.liebertpub.com/overview/ecopsychology/300/)
Among all age groups, those aged 65 years and older are the happiest people in America. Just four percent of older adults live in nursing homes. These are surprising facts to most people because negative stereotypes about aging abound and we are all susceptible to them. What else can be learned about this fascinating group of people? Every single day until the year 2029, 10,000 Americans will be turning 65. This phenomenal demographic “age wave,” driven by the baby boom generation (born between 1946 and 1964), is leading to a wide array of career choices in gerontology. By 2030, 72 million Americans will be age 65 or over, comprising almost 20% of our population. Those who pursue education in gerontology, the study of aging, have limitless opportunities to design and deliver new products, services, training, and education for these older adults. For example, it has been estimated that even now, we have only 10% of the psychologists we need to provide mental health care to this growing population.

**What do gerontologists/geropsychologists typically do?**

Gerontologists work to improve the quality of life of older adults. They plan, manage, administer, and evaluate programs; educate and train older adults, family members, and practitioners; conduct research; engage in policy development and advocacy; and provide direct services to older adults and their families.

**What kinds of jobs can a student seek as a gerontologist/ geropsychologist?**

With the burgeoning aging population, not only in the United States but also around the world, demand for professionals prepared to work with and for older people is rapidly increasing. Graduates can work in education; health, clinical, or social services; recreation or leisure services; advocacy or protective services; or administration and management. Some job titles are community educator, rehabilitation specialist, drug and alcohol counselor, recreation and wellness director, evaluation specialist, and non-profit administrator. Employers range from private industry and business, non-profit organizations, academic and educational institutions, to government agencies (local, state, and federal). Entrepreneurial students can start their own businesses to create and provide services and products that do not yet exist, or are in short supply. A few examples from graduates of the University of Nevada, Reno’s gerontology program are: Lend-A-Hand Senior Services, a home care agency; Awake and Aging 101, which offers classes, workshops, and coaching on conscious aging to the public; and icaresafely.com, an online training and certification program for personal care attendants.

One of the best resources for learning about jobs in aging is the latest edition of 101+ Careers in Gerontology (Grabinski, 2014), which presents a wealth of information for each featured career, including educational and experience requirements, needed skills, and salary ranges. Sponsored by the Association for Gerontology in Higher Education (AGHE) and the Gerontological Society of America (GSA), Careers in Aging Week offers programs on campuses throughout the country every April. GSA’s AgeWork.com posts job openings and lets job seekers post resumes and receive alerts on new job ads. And, Exploring Careers in Aging (businessandaging.blogs.com) provides a variety of material that students will find helpful.

**What credentials are needed to become a gerontologist/ geropsychologist?**

Academic programs in gerontology generally follow AGHE’s national standards and guidelines for developing their curricula. Currently, AGHE and GSA are leading an effort to create an accreditation process for gerontology degree and certificate programs. For those who complete a doctorate in geropsychology, the American Psychology Association (APA) has recognized clinical geropsychology as a proficiency in professional psychology.
What can a gerontologist/geropsychologist do with a master’s degree in this field?

A master’s degree in gerontology prepares students to work in applied areas within the public and private sectors, or to pursue a doctoral degree. Some programs have specialized tracks, for example, management of aging services, geriatric care management, and educational gerontology and life-long learning.

What can a gerontologist/geropsychologist do with a doctoral degree in this field?

More than 10 American universities offer a Ph.D. in gerontology. Doctoral graduates are prepared for academic and research careers, and for professional and leadership positions in private and public institutions and agencies that focus on the older population. Ph.D. programs may have tracks or emphases, for example, social gerontology, population health and epidemiology, or public policy. In addition, 17 American universities offer doctoral degrees in clinical or counseling psychology with a geropsychology specialization.

How does a student choose a graduate program in gerontology?

AGHE’s Directory of Education Programs in Gerontology and Geriatrics, now available online, contains information on undergraduate and graduate degree programs, certificates, and postdoctoral opportunities at almost 300 American universities and colleges. Each entry has details on specific areas of study, whether distance learning is an option, contact information, and more. APA’s Division 20, Adult Development and Aging maintains a Graduate Studies Directory online (see http://apadivisions.org/division-20/publications/graduate-studies/index.aspx). For each graduate program there is a list of courses; the number of faculty; availability of assistantships, practicum and internship placements; and contact information. In addition, the Society of Clinical Gerontology, APA’s Division 12-Section II, provides information on graduate programs and pre- and post-doctoral training sites in geropsychology (see http://www.geropsychology.org/).

What classes would be most helpful or essential for undergraduates interested in gerontology?

Core classes in gerontology include: Introduction to Aging, Psychology of Aging, Sociology of Aging, Biology of Aging or Health and Aging, and a field study or practicum experience. Examples of other classes are: Aging and Culture, Aging and Social Policy, Applied Gerontology, Creativity and Aging, Counseling Older Adults, Death and Dying, and Health Promotion and Older Adults. Psychology, Health Sciences, Human Development and Family Studies, and Sociology are some of the departments that may have a selection of courses with some or all of their content related to gerontology.

What experiences would be most helpful or essential for undergraduates interested in gerontology?

In addition to taking gerontology courses, undergraduates can also engage in other activities that would be helpful. GeroCentral (www.gerocentral.org/training-career) recommends volunteering in a place that serves older adults (community senior center, geriatric clinic, the gerontology program office of a college campus); participating in aging research (in gerontology, psychology, human development, or social work, for example); and exploring careers in aging. Attending gerontology conferences, and participating in the campus’ gerontology student club as well as professional organizations dedicated to gerontology (APA’s Division 20, GSA, the American Society on Aging), are also valuable experiences, and provide excellent networking opportunities.

Field experience or a practicum in an aging-related organization is especially helpful—in addition to gaining hands-on experience, it demonstrates a strong interest in the field, and, of course, field study supervisors are excellent sources for letters of reference for graduate applications. Possible settings for field experience are
community senior centers, state or local offices on aging, area agencies on aging, assisted living facilities, and nursing homes.

**What seminal books related to gerontology would be good to read?**

For a good overview of the field, students should read *Introduction to Aging: A Positive, Interdisciplinary Approach* (Sugar, Riekse, Holstege, & Faber, 2014), with chapters on health and wellness, mental abilities, living conditions, support systems, and public policy issues. For insight into hot topics, a good choice is *Aging: Concepts and Controversies* (Moody & Sasser, 2012). Encyclopedias and handbooks cover major topics and are written by leaders in the field. Examples are: the *Encyclopedia of Gerontology: Age, Aging, and the Aged* (Birren, 2007), the *Handbook of Aging and the Social Sciences* (Binstock & George, 2011), the *Handbook of Families and Aging* (Blieszner & Bedford, 2012), and, of particular relevance for psychology students, the *Handbook of the Psychology of Aging* (Schaie & Willis, 2011). Also of special interest to psychology students may be APA’s *Guidelines for Psychological Practice with Older Adults* (2013), available online at: [http://www.apa.org/practice/guidelines/older-adults.aspx](http://www.apa.org/practice/guidelines/older-adults.aspx)

**What GPA and GRE scores should undergraduates have to pursue this field at the masters and doctoral levels?**

Admission to most graduate schools in the United States requires a GPA of 3.0 or above (out of 4). Minimum scores on the GRE may also be required, including the advanced psychology test. Applicants should check specific admission requirements for the programs in which they are interested.

**How is this sub-field distinct from other related sub-fields?**

Gerontology is distinct from other fields because it focuses on a unique, and growing, group of adults in America and, indeed, throughout the world. That focus also means that there is maximum flexibility for study in any, and all, aspects of psychology. Opportunities for new discoveries are wide open because gerontology is a newer sub-field within psychology.

**Summary**

The best way for a student to find out if gerontology is of interest to them is to begin by volunteering in an organization or agency that focuses on older adults. Then, the student should investigate courses in gerontology and enroll in one of them. If they find themselves wanting to learn more, they should consult with an advisor for guidance on a course of study to complete an undergraduate program, or to prepare for a graduate program in gerontology.

**Final Thoughts**

There could not be a better time to be in the field of gerontology. For those wanting to make a difference in our society for the fastest growing segment of our population, adults aged 65 years and over, gerontology is the field for them!

**References and Suggested Readings**


The field of sport psychology is exciting, dynamic, and diverse. Sport psychology draws from disciplines such as kinesiology, psychology, counseling, and education and focuses on the study of the psychological processes associated with participation in sport and exercise (Finley, 2001; Weinberg & Gould, 2011). Sport psychologists seek to understand the emotional processes that apply to sport and exercise settings and help athletes use a variety of mental training techniques to “increase involvement, performance, and enjoyment in sport and exercise” settings (Association for Applied Sport Psychology, n.d.). There are two specific career tracks in sport psychology: clinical sport psychology and educational sport psychology (Weinberg & Gould, 2011). Clinical sport psychologists are trained in psychology and counseling and are licensed to work with athletes who experience clinical issues and emotional disorders. Educational sport psychologists are trained in kinesiology disciplines and focus on educating athletes about appropriate mental states for sport and exercise participation and performance. The focus of this chapter is on providing students with information to prepare for a career in educational sport psychology.

What credentials do I need to become a sport psychologist?
Additional education beyond an undergraduate degree is required to become an educational sport psychologist. In general, to coach at the collegiate level, a master’s degree is required and to teach at the college or university level a doctoral degree is required. For those wishing to enter the area of private consultation, one must either hold a masters or doctoral degree and it is preferred that one is a Certified Consultant of the Association for Applied Sport Psychology (CC-AASP). This certification can be done through the Association for Applied Sport Psychology (https://www.appliedsportpsych.org/about) and requires the successful completion of courses in disciplines such as psychology, counseling, and kinesiology and at least 400 hours of experience in sport and exercise consulting under the guidance of an approved mentor (Association for Applied Sport Psychology, n.d.).

How do I choose a graduate program in sport psychology?
There are many graduate programs at both the masters and doctoral levels in sport psychology. While all focus on teaching, research, and consulting, the three main areas of sport psychology as defined by Weinberg and Gould (2011), some may focus more specifically on one aspect over the other two. When choosing a graduate program, students must consider the correct program “fit” for their professional goals (Appleby et al., 2011, p. 26). An excellent resource for students who are interested in pursuing graduate study in sport psychology is the 10th edition of the Directory of Graduate Programs in Applied Sport Psychology (Sachs, Burke, & Schweighardt, 2011).

What are the most helpful courses to take as an undergraduate and why?
It is first important to consider an appropriate undergraduate degree that will align you with the requirements for graduate work in this field. While early research suggested that more than half of the undergraduate students who were pursuing a degree in sport psychology had completed a degree in a kinesiology-related undergraduate field (Teetor-Waite & Pettit, 1993), many undergraduate students also pursue degrees in psychology. Regardless of the curricular path chosen, it is crucial for students to choose elective courses wisely and with careful guidance from an advisor (Appleby, et al., 2011). If a student is a kinesiology major, elective courses within psychology such as Developmental Psychology, Social Psychology, Motivation, Cognition, and Learning Theory will provide a working knowledge of human behavior. If a student is a psychology major, kinesiology courses such as Movement Theory, Motor Development, Sport Psychology, and Sport Sociology will provide a general understanding of human movement and behavior in exercise settings. For a comprehensive list of possible undergraduate courses to take, see Finley (2003).
Are there any seminal books that I should read related to sport psychology?
There are two textbooks that have been available for many years that provide students with valuable information about the field of sport psychology. The first book is the 5th edition of *Foundations of Sport and Exercise Psychology* (Weinberg & Gould, 2011). This book provides an updated overview of the major concepts in sport psychology and the research that has been done in each of these areas. The second textbook is the 5th edition of *Sport Psychology: From Theory to Practice* (Anshel, 2011). This publication provides a similar overview on major areas in sport psychology but with a special emphasis on how these theories can be applied in practical settings. Textbooks are not the only resources that students interested in sport psychology should consult. The following are academic journals that issue recent, cutting-edge research in the field of sport psychology: (a) the *Journal of Applied Sport Psychology*, (b) *The Sport Psychologist*, (c) the *Journal of Sport and Exercise Psychology*, and (d) the *Journal of Sport Psychology in Action*.

What kinds of jobs can I seek as a sport psychologist?
There are several career opportunities for students who want to pursue a career in educational sport psychology such as coaching, teaching at the collegiate level, and providing private, performance enhancement consultation with athletes at all levels (Appleby, et al., 2011). Sport psychologists with doctoral level degrees may seek tenure-track faculty positions at institutions of higher education. These jobs require a balance of teaching, research, and service. Quite often, these faculty members also engage in sport psychology consulting for athletic teams at the institution. Sport psychologists in private practice often seek employment at either an existing organization that focuses on sport and exercise or may even create their own centers for performance enhancement that specialize in this type of consulting. Another popular career for sport psychologists is coaching at all levels of sport. Coaching at the collegiate level often requires a master’s degree while coaching at the youth or secondary education level may require a teaching certification.

What does a sport psychologist typically do?
Weinberg and Gould (2011) suggest that an educational sport psychologist can be thought of as a “mental coach” (p. 7). Specifically, sport psychologists work with athletes and exercisers to enhance mental skills for increased performance, to help individuals sustain consistent exercise regimes, and to enhance the enjoyment related to participation in sport and exercise settings (Association for Applied Sport Psychology, n.d.; Weinberg & Gould, 2011). Some of the most common mental skills that sport psychologists help athletes and exercisers with are imagery and visualization, goal setting, and stress management. Sport Psychologists also help athletes employ strategies to increase motivation and confidence and to appropriately maintain focus. Sport psychologists can also help athletes use mental skills to work through issues related to injury rehabilitation and to regain confidence to return to competitive levels of sport after injury (Association for Applied Sport Psychology, n.d.; Silvers & Appleby, 2013).

What can a sport psychologist with a master’s degree do?
A sport psychologist who holds a master’s degree can coach at the collegiate level, work in recreational settings with athletes, and also work in private practice with athletes. The standard of practice for these individuals is to secure a master’s level CC-AASP (for more specific information see Association for Applied Sport Psychology, n.d.)

What can a sport psychologist with a doctoral degree do in this field?
A sport psychologist with a doctoral degree is qualified to teach in a higher education setting as well as work in all of the other capacities in which a sport psychologist with a master’s degree can work. While holding a faculty position in sport psychology does not require a certification, again, the standard for practice for an individual who is a faculty member and who also provides sport psychology consulting is to secure a doctoral level CC-AASP (for more specific information see Association for Applied Sport Psychology, n.d.)
What experiences would be most helpful or essential for undergraduates interested in sport psychology?

Outside of undergraduate coursework, there are two other specific areas in which undergraduate students should consider if they are interested in pursuing their graduate degrees in sport psychology. First, engaging in sport specific internship experiences are vital for professional development (Appleby et al., 2011). Internships can be done in a variety of settings ranging from collegiate to recreational youth settings with athletes. It is important to remember that internships are most valuable when they are directly related to a student’s interest area in the field.

A second area of experience that undergraduate students should seek out is gaining research expertise. Almost all graduate programs will require a basic knowledge of and background in research. Therefore, students who are interested in pursuing graduate degrees in sport psychology should involve themselves in research activities as much as possible. While it may be difficult to do this as an undergraduate student due to a dearth of courses specifically related to obtaining research skills at the undergraduate level (Perlman & McCann, 2005), students can gain this critical experience by investigating the type of research the faculty at their institution conduct and ask if they can assist. Most faculty members are excited to mentor students through the research process.

What GPA and GRE scores should undergraduates have to pursue this field at the masters and doctoral levels?

GPA and GRE scores are program specific. Students who are interested in pursuing graduate work in sport psychology should consult each program in which they are interested and determine the specific GPA/GRE requirements for that school and program.

References

Sachs, M., Burke, K., & Schweighardt, S. (2011). Directory of graduate programs in applied sport psychology (10th ed.). Indianapolis, IN: Association for Applied Sport Psychology.

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Understanding, predicting, and shaping the behavior of others are the everyday responsibilities of a lawyer. Whether it is a judge, a jury, or the other party to a complex merger of two companies, lawyers must understand the needs and desires of their audience and develop strategies to obtain something from that audience, such as a favorable verdict or a lower sale price. Lawyers with backgrounds in psychology may better appreciate how the science of human behavior could be used to gain an advantage for their clients.

What do you need to become a lawyer?

To become a lawyer in the United States, you generally need a law degree (Juris Doctor) and a law license. Although many prospective lawyers major in business-related fields, no specific major is required for law school and it may benefit you to have a background different from other law students. Like many professions, lawyers are regulated by the states in which they practice, so you must obtain a law license in each state where you intend to work, usually by passing a bar exam in the places where you provide advice to clients. Once admitted to the bar, you are permitted to practice almost any type of law, although most lawyers become trained in one area of the law (such as criminal law or environmental law). Some lawyers practice in multiple areas, but the law is too broad and too complicated for a lawyer to competently handle every type of legal issue.

What kinds of jobs do lawyers do?

Forget anything you learned about lawyers from television dramas. Most lawyers do not spend significant amounts of time in a courtroom, and many never go to court at all. A lawyer’s job, at the most basic level, is to advise clients on what they can or cannot do and to help the client carry out those plans. That job requires many different tasks -- researching and interpreting what the law is, determining how to use the law to the client’s advantage, communicating to the client what is or is not permitted by the law, arguing or negotiating on behalf of the client, managing a client’s expectations about the outcome of a legal issue, preparing documents that carry out the client’s wishes, and, sometimes, appearing in court to convince a judge that the client’s position is the right one. Some lawyers do all of those things; others are responsible for one narrow portion. Strong advocacy, writing, and research skills are required for all lawyers. The clients a lawyer represents are diverse. Some lawyers work on behalf of the government, while others represent multinational corporations, small start-up businesses, a single mother fighting for custody of her daughter or a group of teachers who oppose school district layoffs. Despite the variety in what lawyers do, all lawyers are advocates for their clients and attempt to reach an outcome that is in the client’s best interest.

How is psychology different from law?

Psychology is a science, while the practice of law is a profession. Although the skills developed in the study of psychology may be immensely useful to a lawyer, the two fields have important differences. Psychologists use the scientific method to move closer to an understanding of what truly causes and influences behavior. Lawyers, unlike scientists, are often not concerned with how or why something happens. Instead, lawyers must creatively and passionately advocate for their client’s position, even if that position is wrong or contrary to what someone else wants. In the practice of law, things are less “black or white” than in science. For example, a law may clearly set the speed limit on a road at 35 miles per hour and direct that anyone going faster than 35 miles per hour receive a speeding ticket. What if a driver’s brakes fail and he cannot avoid traveling faster than 35 miles per hour? What if the driver is speeding because she is taking a seriously injured passenger to a hospital? The plain language of the law rarely answers those questions. Instead, a judge must listen to two lawyers, one advocating for the driver and one for the prosecution, and determine what result is most consistent with the purpose of the law. Unlike the objective measures used to judge the outcome of a scientist’s research, a lawyer’s performance is entirely subjective -- you may achieve all, some
or nothing of what your client wants depending on whether the judge or other decision-maker is willing to accept your argument. To understand your role as a lawyer, you need to train yourself to approach problem solving differently than a scientist would.

**How is psychology helpful to a lawyer and what psychology courses should I take?**

Despite the differences between what psychologists and lawyers do, a background in psychology can be very useful to a lawyer. Students have probably learned or will learn about the impact of memory and recall on witness testimony, but the relevance of psychology to law goes far beyond that. All lawyers should learn the principles of decision-making, judgment, communication, persuasion, and social psychology. For lawyers who specialize in family law, an understanding of human development, gender, emotion, and interpersonal relationships is important. Criminal defense lawyers should know how psychological disorders and mental health might play a role in their client’s crime. Business lawyers benefit from an understanding of industrial and organizational psychology. Every legal practice area is related to an aspect of human behavior.

**Other than being a lawyer, what careers involve both psychology and law?**

Students do not have to go to law school to find careers that combine psychology and law. Modern legal practice involves the efforts of various consultants, many of whom have backgrounds in psychology, who assist lawyers in preparing or presenting their arguments. For example, litigators often hire consultants to create presentations for a judge or jury during trial. The consultant uses psychological principles of perception, cognition, and memory to create a presentation that advocates for or against a position, often very subtly. Consultants also create mock juries so that litigators can practice their arguments on people who might be very similar to the jurors at the actual trial. The consultant interviews the mock jurors about their reactions to the argument, analyzes the data, and makes suggestions to the lawyer on how to refine the argument. Lawyers who specialize in trademark infringement hire consultants to design experiments testing whether average consumers can spot the differences between two similar products. An understanding of psychological testing, measurement, and statistics is important for these consultants. Other jobs, such as paralegals, victim advocates, and social workers also combine elements of psychology and law.

**How are law school courses different from psychology courses?**

Your grade in most law school courses is based only on a final exam. Law school exams do not have predetermined right or wrong answers, and do not ask students to regurgitate what the law says but rather how the law applies to a novel fact pattern. Critical thinking, analysis, and persuasive writing skills are emphasized more than rote recall, although you are expected to memorize fundamental concepts. A law professor is concerned with judging whether the student can use the facts and the law to advocate for a position, just as a lawyer does in real life. A typical law school exam requires a student to recall the facts and outcomes of significant cases learned in the course, and apply those cases to the exam’s fact pattern. What is tested is the student’s ability to use the law to make a credible argument -- it need not always be a winning argument so long as it is a well-reasoned interpretation of the facts and law.

**What courses outside of psychology should a prospective lawyer take?**

Psychology majors may benefit from taking courses outside the liberal arts in business, management, marketing, economics, finance or accounting. Those courses are particularly important for a business lawyer, who must understand the details of a client’s business before properly advising the client on significant transactions. However, lawyers in private practice, regardless of their specialty, are also business people. Lawyers must learn how to determine an appropriate fee structure for their clients, track time and expenses, manage paralegals and secretaries and market their services to potential clients. All of those tasks, which are significant in the life of a lawyer in private practice, are things not usually learned in psychology courses or in law school, so take advantage of the opportunity to learn those skills as an undergraduate business course. Writing and communication courses, especially those that emphasize creative and persuasive communication, will also benefit aspiring lawyers. If students have particular interest in becoming a patent
lawyer, they should review the requirements for being admitted to the patent bar, which requires certain science or math courses.

**Summary**
A good lawyer understands that their role is to manage and influence the behavior of others. Although the purposes and methods of lawyers and psychologists are quite different, a lawyer equipped with an understanding of the elements of human behavior might have an advantage over opposing counsel. If students are interested in pursuing a career in law, they should coordinate undergraduate experiences with psychology advisors and, if available, the pre-law advisor. A pre-law advisor may also be able to arrange for students to shadow a practicing lawyer, which is the best way to learn how undergraduate courses might provide a foundation for becoming a lawyer.

**References and Suggested Readings**
Many pre-medical students choose psychology as their major or minor field of study as they prepare for medical school. The Association of American Medical Colleges has recently begun placing increased emphasis on psychology and sociology in the pre-med curriculum. In fact, the Medical College Admissions Test (MCAT) will be adding a psychology section to the exam in 2015. Therefore, psychology majors and minors are likely to become more common among pre-med students moving forward. Working with pre-med students brings an entirely different set of issues to the advising table that go well beyond those of the typical psychology major. This chapter will address the key points psychology majors should consider to become competitive applicants for medical school.

**I am interested in pursuing a medical career. What are some of the initial resources I should consider?**

When students express an interest in pre-med, they should explore the field in depth. Students should begin by visiting with and shadowing physicians. The life of a physician is often glamorized in society and many students are unaware of the negative aspects of a career in medicine. Students should enter a pre-med program with a full understanding of the profession and all that it entails. Students should also do their homework in regards to the requirements for medical school and what it takes to be a competitive candidate. Students are often not aware of the rigors of the pre-med curriculum and the competitive nature of medical school admissions. The advisor can play a key role by providing students with information regarding the required courses for medical school, as well as the average GPAs and MCAT scores that are common among successful medical school applicants. The *Medical School Admission Requirements* (MSAR) is published annually by the Association of American Medical Colleges (AAMC) and provides the most accurate and up-to-date information. Advisors and applicants will find this book to be one of the valuable and comprehensive resources available for pre-med students. The AAMC also offers extensive resources for prospective pre-med students on their website. The road to becoming a physician is a long and grueling one. Students must make a realistic and informed decision when pursuing pre-med and they must be passionate about the field if they are to be successful.

**What are the additional academic requirements for pre-med psychology majors?**

Pre-med students may select any undergraduate major as long as they complete the pre-med curriculum and take the Medical College Admission Test (MCAT). Therefore, in addition to the requirements for the psychology major, students will need to complete the required pre-med science courses. Pre-med programs of study typically include general chemistry, organic chemistry, biochemistry, general biology, general physics, English composition, calculus and/or statistics and courses in the humanities. With the coming changes to the MCAT, psychology and sociology courses will also become part of most pre-med programs.

Students and advisors should develop a suitable academic program that encompasses the requirements for the psychology major, as well as the pre-med curriculum. It may be helpful to discuss with students which medical schools they plan to apply to and verify the requirements at each of those schools. When creating the academic plan, it is important to realize that the pre-medical requirements should be completed prior to the student taking the MCAT exam, which is most commonly taken in the summer before the student’s final year of his or her undergraduate program. If time allows, students may want to consider taking additional upper level courses in the sciences, psychology and sociology to further enhance their understanding of these disciplines and reinforce key concepts for the MCAT.
In addition to a solid academic record and MCAT scores, what other skills or experiences will make applicants more competitive?

Academic achievement and intellectual ability alone are not sufficient for acceptance into medical school. Most medical schools utilize a holistic admissions approach that examines not only academic ability, but also personal attributes, leadership abilities, commitment to the service of others and genuine interest in the field of medicine. Throughout the application process, medical schools assess these characteristics by examining student experiences, personal essays on the applications, and interviews.

Students’ experiences will play a key role in painting a picture of their interests, capabilities and knowledge. The most important attribute that medical schools will be looking for is commitment to the field of medicine. Students must spend time shadowing and gaining exposure to the medical profession, as well as demonstrating their desire to care for others. Admission committees will screen for other key attributes by examining students’ extracurricular activities, work experiences and life experiences. Examples of the types of attributes they are looking for include empathy, compassion, cultural competence, maturity, self-discipline, intellectual curiosity, motivation for medicine, professionalism, and many others. In order to demonstrate these qualities, students must take advantage of opportunities to become involved in community service and volunteer experiences. As students develop an approach to obtaining their academic experiences, they should keep in mind two things: 1) Gaining shadowing and medically-related experiences should be their first priority. 2) In terms of other extracurricular, volunteer, and community service experiences, depth is much more important than breadth. Several in-depth experiences from which the applicants may gain valuable insights are far more significant than laundry lists of short-term experiences. Students will have opportunities to write about their experiences on the application and it is important to have meaningful experiences to discuss. Therefore, students should approach these experiences as opportunities to grow as individuals and not just something to “check off” their lists.

What are the components of the medical school application process?

Applicants may begin submitting applications to medical schools during the summer prior to the final year of their undergraduate program. The application process to medical school is completed through an online centralized application processing service called the American Medical College Application Service (AMCAS). The application service allows students to apply to multiple medical schools through a single application. Students and advisors may go to www.aamc.org/amcas for a preview and to find links to the key steps, a timeline, FAQs, and a comprehensive instruction manual. The application is divided into sections including the following: identifying information, schools attended, biographic information, coursework, work/activities, letters of evaluation, medical school designations, the personal statement, and standardized test scores.

Students should spend time carefully selecting the medical schools to which they plan to apply. The Medical School Admission Requirements (MSAR) is an excellent resource for information about all the schools. It is published annually by the AAMC and is available on their website at https://www.aamc.org/students/applying/requirements/msar. Students should consider size, curriculum, location, number of applicants, the demographics of the students, and so forth. The shotgun approach of applying to dozens of medical schools is not particularly helpful. A well-chosen shorter list will be less expensive and give applicants their best chance at being accepted.

Once the application has been received and processed by AMCAS, it will be sent to the medical schools selected by the applicant. Medical schools review the applications and will send a secondary, or supplemental application to selected applicants inviting them to provide additional information. Once the application is complete, students will be invited to interview. The interview is an absolutely critical aspect to all medical school applications as it provides admission committees with the final piece of the holistic review of the applicant. Formats of medical school interviews vary greatly from school to school. Common formats include one-on-one interviews, interviews conducted by panels, group interviews, and multiple “mini” interviews. Students should research online the interview formats used at various medical schools or inquire...
directly through the Admissions Office of the school prior to the interview to prepare effectively. Mock interviews are also recommended to assist students in practicing interviewing skills.

What are the options available if an applicant is not accepted?

If a student is not accepted, the first step is to contact the medical schools to which they applied and inquire as to whether or not they will do an “exit interview.” An exit interview is a scheduled appointment or phone call with an admissions officer who reviews the student’s file and offers feedback regarding what improvements should be made before the applicant re-applies the following year. Once students have received this feedback, they should spend time assessing the recommendations and determining whether or not it is realistic to make the necessary changes. For example, it may be recommended that the student retake the MCAT, take more upper level science courses, or increase exposure to the medical field. It is critical that students follow the recommendations given by the medical schools. Therefore students must evaluate their own motivation and their passion for pursuing medical school to determine whether they want to and can meet those recommendations. If a student decides not to pursue medical school, there are a multitude of other healthcare careers for which the student may be a qualified applicant. Students and advisors should work together to consider these decisions.

Pre-medical students are often some of the best and brightest and are typically self-motivated and driven. However, many of these students may have unrealistic expectations regarding the preparation and application process for pursuing their goals. Therefore, it is important for both students and advisors to keep in mind that the role of the advisor in pre-med advising is to guide the students through the process with a student-centered approach in which the student takes ownership of his or her pre-med program, and ultimately, the outcome.

Suggested Readings

30. Advising for Students Interested in Health Science Careers

Peggy Abels
University of Nebraska at Kearney

As psychology majors search for career opportunities beyond their undergraduate experiences, it is common for them to explore the multitude of career options available in the health sciences. Healthcare careers provide excellent opportunities because they are in demand, stable, rewarding, and well-compensated professions that afford students the abilities to work in a variety of locations and settings. These career choices also allow psychology majors to utilize the knowledge and skills gained from their undergraduate major in meaningful ways. Advising students interested in health science careers requires additional knowledge on the part of the advisor, as these students will bring different questions and issues to the advising setting. The following chapter will answer some of the critical questions for which potential health science students will need to know answers.

I am interested in pursuing a career in healthcare. What are some of the initial resources I should consider?

There are dozens of career choices in health sciences requiring various skills and levels of education. Students should begin by looking for careers that match their personalities, attributes, strengths, academic abilities, and personal life goals. There are many resources available to aid in the process as students research their options. Online resources, such as http://explorehealthcareers.org/en/home, provide excellent information and allow investigation and comparison of many professions in one resource.

Once choices are narrowed to potential careers that are a good fit, shadowing healthcare professionals can help confirm the student’s plans. Shadowing provides the opportunity to see the career from the side of the professional and allows for discussion of both the positive and negative aspects of the career. Health science education is lengthy and expensive and the training can be very challenging. Thus, learning about the career options is critical to students making a mature and informed decision regarding their future.

Are there additional academic requirements for psychology majors pursuing healthcare careers?

For the majority of careers in the health sciences, completion of a pre-professional curriculum will be available as part of undergraduate programs. Pre-professional curricula are designed to prepare students for the rigors of professional schools and these courses are required for admission. The health sciences pre-professional curriculum typically includes basic science courses such as biology, chemistry, physics, and anatomy and physiology, as well as courses in other areas such as math, statistics, English composition, and psychology. These courses will need to be completed in addition to requirements for undergraduate psychology programs.

Students pursuing a health science career will need to investigate the course requirements for their field of interest. Advisors and students work together to create an academic plan that encompasses both the undergraduate degree requirements and the pre-professional curriculum in such a way that the courses can be completed in a timely manner.

In addition to course requirements, a number of health science fields require an entrance exam. For example, pre-optometry students must take the OAT and pre-pharmacy students must take the PCAT. Students and advisors should research whether or not such a test is required for programs in the chosen profession. If there is an entrance exam required, it is likely that the majority of the required coursework will need to be completed before taking the exam, which will impact students’ academic plans.
In addition to a solid academic record, what other skills or experiences help to make prospective healthcare professionals competitive for graduate programs?

Admission to almost every health science program requires high academic achievement and a demonstration of intellectual ability. However, admission committees will screen for other key attributes by examining medically-related experiences, extracurricular activities, work experiences and life experiences. Advisors should work with students to ensure that they are gaining valuable experiences that will help them become competitive applicants.

The most important attribute that medical schools will be looking for is the student’s commitment to the health science career to which they are applying. Therefore, students must spend time shadowing and gaining exposure to their health science profession of choice, as well as demonstrating the desire to care for others.

Admission committees will look for other qualities in applicants including empathy, compassion, cultural competence, maturity, self-discipline, professionalism, and many others. Students may demonstrate these characteristics by becoming involved in community service and volunteer opportunities. It is important for students to keep in mind that in terms of extracurricular, volunteer, and community service experiences, depth is much more important than breadth. Participating in a few in-depth experiences from which the applicant gained valuable insight is a far better strategy than simply accumulating a long list of short-term activities that did not have a meaningful impact on the student. Students should approach these experiences as opportunities to grow as individuals and not as something they “have” to do.

What does the application process consist of when applying to a health science program?

Most applications for health science programs are submitted in the summer prior to the student’s final year of their undergraduate program or during the fall semester of that year. For many professions, applications are submitted online directly to the school or program to which the applicant intends to apply. Other professions, such as physical therapy, pharmacy, dentistry, nursing, and physician assistant, utilize a centralized application service. The application service enables the applicant to fill out one online application through the service and have that application sent to a list of schools designated by the applicant. Once schools receive applications, they may request additional information from applicants through a secondary or supplemental application. In addition to the application itself, students will likely need to submit official transcripts, letters of recommendation, and a personal essay.

After an initial screening, the school or program will invite selected applicants for an interview. The interview is a critical aspect of the application process as it provides the selection committee with valuable information about applicants’ communication and people skills. The selection committee also uses the interview process to assess applicants’ motivation for pursuing the profession. Because it is such an important aspect, students should consider practicing their interview skills and articulating their strengths and weaknesses, as well as their career goals.

What are the options available if an applicant is not accepted?

Students who are not accepted should contact the schools or programs to which they applied and inquire as to whether or not the school will review their application and provide them with feedback regarding what improvements the applicant would need to make before they re-apply. Schools may, for example, tell a student that he or she needs to re-take a class, do more shadowing, practice their interview skills and so forth. Students will then need to assess those recommendations and evaluate whether or not the suggestions are realistic.

Students who decide that the improvements needed are not realistic or who decide that they simply are not passionate about that particular profession have many options. First of all, they could further their education in psychology. They may also want to consider pursuing a different health science field. The pre-health
science academic preparation for many health science careers is very similar and the student has likely already accumulated a significant amount of experience. This leaves the door open for the student to consider many other healthcare professions, some of which may have a less competitive application process. Students should work closely with advisors to make these determinations.

Health science career choices will likely remain popular among psychology majors into the foreseeable future. Pursuing these careers is considerably more complex than a typical psychology major, but it can be a very rewarding experience for both advisors and students. Navigating the waters of health science education presents decisions and challenges, but advisors have an opportunity to guide their students during this process and ultimately help shape their future.

Suggested Readings:


Our Contributors

PEGGY ABELS
UNIVERSITY OF NEBRASKA AT KEARNEY

Peggy Abels is the Director of Health Sciences at the University of Nebraska at Kearney. She received her B.S. in Biology and Chemistry Education in 1993 and her Master’s Degree in Biology Education in 1995, both from the University of Nebraska at Kearney. She taught high school science prior to becoming the Director of Health Sciences. In this position, Peggy serves as the academic advisor and program director for nineteen health professions and her program advises over 700 students per year. She is coordinator of the Kearney Health Opportunities Program scholarship and oversees student services for pre-health science students. Professionally, Peggy has served for six years on the Central Association of Advisors for the Health Professions Board of Directors and is currently serving for the National Association of Advisors for the Health Professions (NAAHP) as a liaison to the American Occupational Therapy Association. She has also served on the National Conference Planning Committee for NAAHP from 2009-2012. In addition to being active in the regional and national health advisor organizations, Peggy is also active locally in health care education. She is currently serving on the Board of Directors and the Education Outreach Committee for the Behavioral Health Education Center of Nebraska as well as serving on the Board of Directors for the Central Nebraska Area Health Education Center Board of Directors and the Mary Lanning Hospital School of Radiologic Technology Advisory Committee.

JEANNETTE ALTARRIBA
UNIVERSITY AT ALBANY, STATE UNIVERSITY OF NEW YORK

Jeanette Altarriba is Professor of Psychology and Vice Provost and Dean for Undergraduate Education at the University at Albany, State University of New York. She has taught Statistics for Psychology, Memory and Cognition, History of Psychology, and Survey of Cognitive Psychology. She received her M.A. and Ph.D. in Cognitive Psychology from Vanderbilt University and held the position of Postdoctoral Researcher at the University of Massachusetts, Amherst before joining the faculty at UAlbany. Dr. Altarriba joined the Department of Psychology at the University at Albany in 1992 as an Assistant Professor of Psychology. She was tenured in 1998 and promoted to the rank of Full Professor in 2004. Dr. Altarriba is also affiliated with the Department of Latin American, Caribbean, and U.S. Latino Studies, as well as with the Linguistics and Cognitive Science Programs. Dr. Altarriba is also the Director of the Cognition and Language Laboratory and works with undergraduate and graduate students on a wide array of research topics. Her research interests include psychology of language, psycholinguistics, second language acquisition, bilingualism, knowledge representation, eye movements and reading, concept and category formation, and cognition and emotion. She has published over 60 articles in scientific journals including Memory & Cognition, Visual Cognition, Behavior Research Methods, the Journal of Memory and Language, and Professional Psychology: Research and Practice. She has also co-edited five books in the areas of cognition and culture, bilingualism, bilingual memory, bilingual sentence processing, and the interaction between memory, language, and bilingualism. Dr. Altarriba has also distinguished herself in the realm of teaching and mentoring. She has received various awards for these endeavors, such as the Early Career Award for Teaching and Training from the American Psychological Association (APA), created to recognize her outstanding achievements, the Dalmas A. Taylor Distinguished Contributions Award for the Development of Ethnic Minority Psychologists through Teaching and Training, also from the APA, and Chancellor’s Awards from the SUNY-system for both Teaching and Service. Together with Dr. Azara Santiago-Rivera, she has worked on pioneering the field of bilingual therapy and use of language switching and language mixing within a therapeutic environment. Their work has been...
presented at many regional, national, and international venues, and Dr. Altarriba has been sought after for her presentations on this work. Recently, she was featured in the flagship publication of the American Psychological Association—Monitor on Psychology—for her work in the field of emotion, cognition, and mental health.

Kevin J. Apple
James Madison University

Kevin Apple is Interim Department Head for the Department of Psychology. Kevin received his Ph.D. in Experimental Psychology (Social) from Ohio University. He has worked at James Madison University for over 15 years. During this time, he has taught a wide variety of classes including psychological statistics, psychological research methods, social psychology, psychology of the Holocaust, and graduate social psychology. For 10 years he served as both the Assistant Department Head and the Assessment Coordinator. He has won various teaching and advising awards from James Madison. In 2009, he received a Certificate of Merit for Outstanding Faculty Advising from the National Academic Advising Association. He has published a variety of work on topics related to teaching pedagogy and social psychology. In 2013 he became the Interim Department Head for the Department of Psychology at James Madison University. In his role as Interim Department Head he strives to improve student advising.

Karen M. Appleby
Idaho State University

Karen M. Appleby, PhD received her BA from Hanover College in 1998 and her doctorate from the University of Tennessee, Knoxville in 2004. Currently, Dr. Appleby is a Full Professor in the Sport Science and Physical Education Department at Idaho State University where she teaches classes in sport psychology, research and writing, senior capstone, and marketing and management in sport. She has conducted research in the areas of mentoring in higher education, women’s experiences in sport and physical activity, and life quality issues in the master’s athlete population. She has published in journals such as Teaching of Psychology; Women in Sport and Physical Activity Journal; the Journal of Physical Education, Recreation, and Dance; and Athletic Insight: The Online Journal of Sport Psychology. Dr. Appleby was named the Outstanding Collegiate Educator by the Idaho Association for Health, Physical Education, Recreation, and Dance; was awarded the Idaho State University Distinguished Teacher Award; and is a three-time National Masters Cycling champion. In her spare time, she likes to cross country ski, race her road bike, and run with her husband and dogs in the Idaho mountains.

John T. Ault
Southern Utah University

John Ault, Professor of Psychology at Southern Utah University (SUU), practiced as a clinical psychologist in Massachusetts for 17 years prior to his faculty appointment at SUU. As Director of Clinical Services for 11 of those years, he trained many staff and interns, in addition to providing direct client services. As Director of Clinical Training for 26 years at SUU he created and taught the practicum and internship courses. He also provided clinical training to students in the context of the Introduction to Counseling and Psychotherapy, Group Therapy, and Abnormal Psychology courses. Dr. Ault earned his Ph.D. in Clinical Psychology from the University of Houston. He served his clinical internship at the Worcester Youth Guidance Center in Massachusetts. He has received many awards for both his clinical
and academic work, including Professor of the Year, Outstanding Educator, Distinguished Educator, Service
Learning Fellow Award, SUU President’s Award for Outstanding Service, Regional Community Partner Award,
and Outstanding Service Award from the Alliance for the Mentally Ill. He has also obtained $430,000 in
research and student-training grants.

Kelly Banna
Millersville University of Pennsylvania

Kelly Banna is an Assistant Professor at Millersville University of Pennsylvania. She earned a B.S. in Psychology from James Madison University in 1999, and her M.S. (2005) and PhD (2007) from Auburn University. She also completed undergraduate and graduate minors in statistics. Following graduate school, Dr. Banna worked as a postdoctoral scholar in the Neurosciences Department at the Medical University of South Carolina in Charleston studying animal models of substance abuse and relapse. Prior to joining Millersville University in 2013, Dr. Banna taught at a number of institutions, including Auburn University, the College of Charleston, and Wichita State University. She currently teaches General Psychology, Experimental Design and Statistics I & II, Learning and Motivation, and undergraduate-and graduate-level Physiological Psychology. Her research interests lie broadly in the field of behavioral economics.

Steve T. Barney
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Steve Barney is a Professor of Psychology at Southern Utah University. He is a practicing clinical psychologist and teaches Abnormal Psychology, Psychometrics, Clinical Neuropsychology, Group and Individual Counseling, and General Psychology. He received his Ph.D. from the University of Wyoming in Clinical Psychology and is licensed in the state of Utah. He served as chair of the Psychology Department at SUU and as the President of the Faculty Senate. He currently serves as the immediate Past President of the Rocky Mountain Psychological Association. He has been twice honored as a Southern Utah University Distinguished Faculty, and was named Professor of the Year in 2007. He was named an SUU Service-Learning Fellow in 2008, and received a Civically Engaged Scholar award from the Utah Campus Compact in 2010. Dr. Barney was granted the Rocky Mountain Psychological Association’s Outstanding Faculty Mentor Award in 2012. Dr. Barney’s pedagogical and research interests revolve around sport psychology training supervision, self-generated questions, service learning, and reduction of stigma towards people with mental illness.

Lisa M. Bauer
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Lisa M. Bauer received her Ph.D. in Cognitive Psychology from the University at Albany. She was an Assistant Professor at Utica College and an Associate Professor at Pepperdine University prior to her current teaching faculty position at the University of Missouri. Over the past 16 years, Dr. Bauer has enjoyed teaching a variety of classes including Cognitive Psychology; Death, Dying, and Bereavement; Human Cognition; Memory; Research Methods; and Statistics. She also loves mentoring and advising students. She has served as a faculty advisor for several student organizations in psychology (e.g., Psychology Club, Psi Chi) at Utica College, Pepperdine University, and the University of Missouri and regularly
holds workshops for undergraduates who are interested in obtaining a graduate degree. She hopes that her passion for teaching, mentoring, and advising inspires her students to discover their own passions and motivates them to follow their dreams.

Melissa Beers  
Ohio State University

Melissa Beers is Program Director for Introduction to Psychology and Course Coordinator for Introduction to Social Psychology at The Ohio State University. Melissa received her Ph.D. in Experimental Psychology (Social) from Ohio University then worked primarily in industry as a research specialist, data analyst, and statistical consultant for 15 years. In this role, she worked with many government agencies, not-for-profit organizations, educational institutions, and private businesses to inform customer and stakeholder research, program evaluation, and strategic planning. Concurrently with this applied work, she taught a variety of courses part-time at Ohio State, including Introduction to Psychology, Social Psychology, Data Analysis, and Research Methods. In 2006 she assumed the role of Program Director for Ohio State’s Introduction to Psychology course, and in this role currently trains and supervises approximately 30 graduate instructors each year and teaches a course on the Teaching of Psychology for new instructors. She oversees curriculum and assessment in the Introduction to Psychology course as well as in OSU’s Introduction to Social Psychology course.

Paul Bell  
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Paul Bell is Professor Emeritus in the Department of Psychology at Colorado State University. He received his B.A. in psychology and sociology from Southwestern University (Texas) in 1971, his M.A. in psychology from Trinity University (Texas) in 1972, and his Ph.D. in social psychology from Purdue University in 1975. At CSU he mentored 27 Ph.D. students in environmental and applied social psychology and also served as the University Mediation Officer for 13 years. He received over $4 million in research grants from the National Park Service, the U.S. Forest Service, the Environmental Protection Agency, the National Institute of Mental Health, and the Administration on Aging. He is a Fellow of the American Psychological Association and the Association for Psychological Science, and serves on the editorial boards of Environment & Behavior and Journal of Environmental Psychology. He is co-author on five editions of the textbook Environmental Psychology.

Victor A. Benassi  
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Victor Benassi earned a PhD in Psychology from the City University of New York, with a specialty in learning. He has been a professor, department chair, and academic administrator at the University of New Hampshire (UNH). He is Faculty Director of the Center for Excellence in Teaching and Learning. He is an APA fellow, and he served as APA’s 2013 Division 2 President (Society for the Teaching of Psychology, STP). He was principal investigator of a Davis Educational Foundation (DEF) grant—The Cognition Toolbox: Implementing Cognitive Principles and Assessing Student Learning in College Courses (2009-2012). He is currently principal investigator of a DEF grant: Teaching and Learning with Multimedia (2012-2015). With William Buskist, he co-editor of Effective College and University Teaching: Strategies and Tactics for the New Professoriate (2012, Sage Publications). With
Catherine Overson and Chris Hakala, he is co-editor of *Applying the Science of Learning in Education: Infusing Psychological Science into the Curriculum* (STP, 2014). In 2003, he received the American Psychological Foundation’s Charles L. Brewer Distinguished Teaching of Psychology award. His current research focuses on the application of science of learning principles to teaching and learning in college and university courses.

**Kent D. Bodily**  
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Kent Bodily is Associate Professor in the Psychology Department at Georgia Southern University. He teaches Introductory Psychology, Research Methods, Principles of Learning, Sensation and Perception, and History and Systems of Psychology. He received his B.S. in psychology from Utah State University and his M.S. and Ph.D. in Experimental Psychology from Auburn University. Dr. Bodily’s research interests include spatial learning and cognition, concept learning, and cross-species comparisons in learning and cognition. Dr. Bodily has published over 20 research articles, reviews and chapters, and enjoys mentoring graduate and undergraduate students as they pursue their research interests.

**Marcel O. Bonn-Miller**  
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Marcel O. Bonn-Miller is a Health Science Specialist at the Center of Excellence in Substance Abuse Treatment and Education at the VA Palo Alto Health Care System and Adjunct Assistant Professor at the University of Pennsylvania. Dr. Bonn-Miller received his Ph.D. in clinical psychology from the University of Vermont and completed his postdoctoral fellowship at VA Palo Alto and Stanford University. His research interests involve the identification of malleable risk factors to inform the development and refinement of interventions for individuals with substance use disorders and/or co-occurring posttraumatic stress disorder. Dr. Bonn-Miller serves on the editorial boards of *Addiction, Addictive Behaviors*, and *Psychology of Addictive Behaviors*. these findings into the development of novel prevention and treatment protocols.

**ERIN COLOROSO**  
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Erin M. Coloroso, MA earned her BA psychology at the University of Northern Colorado and her MA in clinical forensic psychology from the University of Denver. She has worked with juveniles and adults in clinical forensic settings that include an alternative halfway house and the Arapahoe County Department of Human Services. She currently teaches Forensic Psychology at the University of Northern Colorado.

**Dana Evans**  
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After graduating with honors in 2013 with a Bachelor’s of Science in Human Services/Psychology, Dana began work on her MS in Experimental Psychology at Emporia State University. As an undergraduate, Dana served as Chapter President of the Friends University Chapter of Psi Chi and the student worker for the Division of Social & Behavioral Sciences. At Friends, Dana was honored with the Sheldon Louthan Award, completed her psychology internship in both Intro to Psych and Research Methods; and presented her senior research project on the relationship between hyper-competitiveness and ethical behavior among working women at the Great Plains Students’ Psychology Convention, winning a first place award. Dana is currently the...
Psychology Club graduate president and a graduate student member of APA, APS, SWPA, and PERK. Currently, Dana is co-investigating the relationship with hyper-competitiveness and ethical work behavior among women in power positions with Dr. Donna Stuber at Friends University.

Matthew T. Feldner  
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Matthew T. Feldner, Ph.D., is an Associate Professor in the Department of Psychological Science at the University of Arkansas and Adjunct Associate Professor at the Laureate Institute for Brain Research. Dr. Feldner’s research aims to increase understanding of the development, prevention, and treatment of panic disorder, posttraumatic stress disorder, and the common overlap between drug use behavior and these conditions. He directs the Intervention Sciences Laboratory, which is a research and training laboratory focused on factors implicated in the development and/or maintenance of these conditions.

Sara J. Finney  
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Sara Finney received her B.A in Psychology from University of Wisconsin-Eau Claire and her M.A. and Ph.D. in Quantitative and Qualitative Methods from the University of Nebraska. Sara has a dual appointment at James Madison University as Professor in the Department of Graduate Psychology and as Assessment Specialist in the Center for Assessment & Research Studies. In addition to teaching multivariate statistics and structural equation modeling for the Assessment & Measurement Ph.D. program, Sara is the Coordinator of the Quantitative Psychology concentration with the Psychological Sciences M.A. program. Dr. Finney has published over 40 articles and chapters, with students co-authoring 70% of these publications. Much of her research involves the application of latent variable modeling techniques to better understand the measurement and nomological net of psychoeducational constructs. Her research has appeared in such journals as *Educational and Psychological Measurement, International Journal of Testing, Contemporary Educational Psychology*, and *Applied Measurement in Education*. Dr. Finney is the recipient of several awards for excellence in teaching, advising, and mentoring. These awards include the Outstanding Mentor Award from the Conference of Southern Graduate Schools, which is awarded to one faculty member from 163 universities across 15 states for outstanding success in mentoring graduate students. Moreover, Dr. Finney’s work evaluating the effectiveness of university educational programming has garnered four national awards from the American College Personnel Association (ACPA) and the Student Affairs Administrators in Higher Education Association (NASPA).
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Kethera Fogler received a B.A. and M.A. from the University of Colorado and a Ph.D. from Saint Louis University in Cognition and Neuroscience. She has taught at Saint Louis University and James Madison University, where she currently teaches Cognitive Psychology, General Psychology, Research Methods, and Statistics. Dr. Fogler runs a Memory and Cognition Lab, studying topics such as false memory, memory for proper names, language comprehension, cognitive aging, and sleep. Dr. Fogler has published over 20 articles, published abstracts, and chapters including publications in *Applied Cognitive Psychology; Aging, Neuropsychology, and Cognition; Cortex; Memory; Journal of Gerontology: Psychological Science; and Sleep.*

Corey L. Guenther  
Creighton University

Corey Guenther received his B.A. from the University of St. Thomas (MN) and his M.S. and Ph.D. in Social Psychology from Ohio University. He has been a faculty member in the Psychology Department at Creighton University since 2009. Dr. Guenther teaches courses in Introductory Psychology, Personality Psychology, Social Psychology, Motivation & Emotion, and Research Methods & Statistics. His research interests include processes underlying the formation and maintenance of self-identity, how naive theories about the social world impact judgments and performance in achievement domains, and the scholarship of teaching and learning. Dr. Guenther’s research has been published in the *Journal of Personality and Social Psychology,* the *Journal of Experimental Social Psychology,* *Personality and Social Psychology Bulletin,* and *Advances in Experimental Social Psychology,* among other outlets. He also serves on the Editorial Board for *Self and Identity.*

Alan Hughes  
Berry College

Alan Hughes is Professor of Psychology at Berry College in Rome, Georgia. He teaches Introduction to Psychology, Statistics and Research Methods I & II, Sensory and Perceptual Processes, Behavioral Neuroscience, and History and Systems. He received his B.A. degree in psychology from Berea College, his M.A. in Applied Experimental Psychology from Western Kentucky University, and his Ph.D. in Experimental Psychology (Major area: perception and neural science) from the University of Louisville. Before joining the faculty at Berry College, Dr. Hughes worked at Nazareth College in Rochester, NY. A physiological psychologist, his research interests include neural mechanisms of light adaptation, color vision, and neurovisual disorders.

Jessica G. Irons  
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Jessica Irons is currently an Associate Professor at James Madison University. She trained in both experimental psychology and teaching of psychology Auburn University. Jessica routinely engages in the scholarship of teaching and learning and has particular interest in the effects of mastery-based learning on related criterion-based tasks as well as the influence of different types of feedback on student performance. She also has strong interest in better understanding how best to teach and interpret validity in science. Jessica has been active in the Society for Teaching of Psychology for many years and she has chaired several task forces for the society and
serves as reviewer for ToP. Jessica primarily teaches research methods, introductory psychology, and laboratory experience courses. In 2007, she was awarded the Wilbert J. McKeachie Award for Excellence in Graduate Student Teaching by Division 2 of APA.

Jared W. Keeley  
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Jared Keeley is an Assistant Professor in the Psychology Department at Mississippi State University. He received his Ph.D. in clinical psychology from Auburn University in 2009. In addition to his clinical research interests in the classification of psychopathology, he has a longstanding interest in promoting the Scholarship of Teaching and Learning and improving teaching training for graduate students. He was awarded the Wilbert J. McKeachie Teaching Excellence Award for Graduate Students by the Society for the Teaching of Psychology (STP) in 2008. He has been involved with STP through their Graduate Student Teaching Association and their Early Career Psychologist Council. Currently, he is a consulting editor for *Teaching of Psychology*. He has edited three books on the teaching of psychology and published numerous articles and book chapters on a variety of teaching related topics, including work on an empirically derived teaching evaluation instrument—the Teacher Behavior Checklist. He teaches both graduate and undergraduate courses on Abnormal Psychology, Psychological Assessment, and Statistics.

Barry X. Kuhle  
University of Scranton  
Barry X. Kuhle received his B.A. in psychology from Binghamton University before heading west to earn his Ph.D. in evolutionary psychology and individual differences from the University of Texas at Austin. His research focuses on the evolved psychological mechanisms that underlie commitment and jealousy in romantic relationships. He is also interested in the evolution and development of both sexual fluidity and reproductive senescence in women. The interdisciplinary nature of his research is reflected in the diverse outlets with which he has published. In addition to psychology journals, his scholarship has appeared in journals dedicated to animal behavior, neuroscience, medicine, and menopause. He enjoys infusing popular culture into his teaching and research in the Department of Psychology at the University of Scranton. Outside the classroom, he takes pleasure in schooling his students and colleagues on the racquetball and basketball courts.

Mathew R. Lee  
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Matthew R. Lee earned a double-major in Psychology and English Literature at Rutgers University in New Jersey, and completed his Ph.D. in clinical/community psychology at University of Illinois at Urbana-Champaign, with concentration areas in culture and methodology. He co-chaired the national Asian American Psychological Association’s annual convention (2012, 2013), and serves as a reviewer for *Cultural Diversity and Ethnic Minority Psychology*, the leading Division 45 journal published by the APA. He currently teaches courses in cross-cultural psychology and lifespan development at James Madison University in Harrisonburg, VA. He teaches internationally at Romanian-American University in Bucharest, Romania, and via a study abroad course focusing on ethnic identity and conflict in Germany and Poland. He was recently profiled in *Diverse: Issues in*
Higher Education for his commitment to diversity in academia. In 2009, he won an APA Division 2 Society for the Teaching of Psychology Award for Infusing Diversity in Teaching.

Jeremy Lyne
Fuller Theological Seminary
Jeremy Lyne received his B.S. in Human Services/Psychology from Friends University where he graduated Cum Laude and received the Sheldon Louthan award for Outstanding Undergraduate in Human Services/Psychology. While earning his undergraduate degree, Jeremy won two first place awards for his presentations and regional conferences; he served as Chapter President of the Friends University Chapter Psi Chi; and as Chapter President, he established a mentoring program designed to connect senior psychology students with freshman and sophomore students interested in a psychology major. After graduation, he worked as a TA in Research Methods, and assisted students prepare for the Great Plains Students’ Psychology Convention. Jeremy also obtained a job as a data specialist with a local community agency funded by the Healthy Relationships Grant provided by the Office of Family Assistance. Currently, Jeremy is in a clinical psychology Ph.D. program at Fuller Theological Seminary. His research interests include marital conflict/satisfaction prediction utilizing affective neurobiological methods, and exploration of the development of the intersubjective self within relationships from an interpersonal neurobiological paradigm. He currently works as a TA for a doctoral-level course in Cognitive and Behavioral Therapy Intervention, as well as a MFT research methods class. He previously served on Fuller’s Psychology Graduate Union as an associate director for student life and currently serves as a member of a student leadership team for the San Gabriel Valley Psychology Association. He is an active member of the California Psychology Association for Graduate Students, the San Gabriel Valley Psychology Association, and the Global Association for Interpersonal Neurobiology Studies.

Richard L. Miller
Texas A&M University-Kingsville
Rick Miller received his B. S. from Weber State College and his M. A. and Ph. D. in social psychology from Northwestern University. He has taught at Georgetown University and the University of Cologne. He served as Director of the Community Learning Centre at the Colegio Internacional de Baleares in Spain, and for many years was the Director of applied behavioral science research projects for the Human Resources Research Organization (HumRRO) in Heidelberg, Germany. From 1990-2010, he served as chair of the Psychology Department at the University of Nebraska at Kearney. In the Fall of 2014, he became the chair of the Department of Psychology and Sociology at Texas A&M University-Kingsville. Dr. Miller is the special topics editor for the Journal of Psychological Inquiry and the editor-in-chief of the e-book series published by the Society for the Teaching of Psychology (STP). He also serves STP as Director of Departmental Consulting Services. He is a Fellow of the American Psychological Association (APA) and the Association for Psychological Science (APS). Currently, he serves as a regional coordinator for the society for STP (APA Division 2). He has been a member of the Rocky Mountain Psychological Association Executive Board since 1993, serving as archivist/historian. He was elected RMPA President in 2000, and received the RMPA Distinguished Service Award in 2003. Dr. Miller is the recipient of several awards for teaching excellence including the CASE US Professor of the Year Award in 2009, the Robert Daniel Award for Teaching Excellence from STP, and APA’s Charles Brewer Distinguished Teaching Award in 2012.
Catherine E. Overson  
University of New Hampshire

Catherine Overson earned her PhD in Psychology from the University of New Hampshire in Psychology, with a specialty in social psychology and science of learning. She is Project Director of the Center for Excellence in Teaching and Learning’s Teaching and Learning with Multimedia grant, funded by the Davis Educational Foundation (DEF) at the University of New Hampshire. Her research focuses on the application of science of learning principles to teaching and learning in college and university courses. She was previously a research associate on the Center’s Cognition Toolbox (also a DEF grant). She is a member of Division 2 of the Society for the Teaching of Psychology (American Psychological Association) and has presented her research on teaching and learning at annual APA and other national conventions. She has published in the same area (Overson & Goldstein), in Your vvGraduate Training in Psychology: Effective Strategies for Success, Sage Publications, 2011; Stiegler-Balfour & Overson, in Effective University and College Teaching, Sage Publications, 2012), and with Victor Benassi and Chris Hakala, she is co-editor of Applying the Science of Learning in Education: Infusing Psychological Science into the Curriculum (STP, 2014).

Dena A. Pastor  
James Madison University

Dena Pastor received her B.A in Psychology and her Ph.D. in Quantitative Methods from the University of Texas at Austin. Dr. Pastor has a dual appointment at James Madison University as Professor in the Department of Graduate Psychology and as Assessment Specialist in the Center for Assessment & Research Studies. Dr. Pastor teaches courses in hierarchical linear modeling, categorical data analysis, and data management and advises graduate students in the Assessment and Measurement Ph.D. program and the Quantitative Psychology concentration of the Psychological Sciences M.A. program. Dr. Pastor has received several awards at her university for her excellence in teaching, scholarship and graduate advising. Her research interests involve the application of latent variable models in the context of college student learning, development, and assessment. Her publications have appeared in Contemporary Educational Psychology, Applied Psychological Measurement, and Applied Measurement in Education. She serves on the editorial board for Educational and Psychological Measurement and the board of directors for the Northeastern Educational Research Association.

Jennifer L. Perry  
Baldwin Wallace University

Jennifer Perry earned a B.S. from the University of Massachusetts at Amherst and a M.S. and Ph.D. in Cognitive Psychology from the University of Oklahoma. She teaches courses in Cognitive Psychology, Applications of Psychology, History and Systems, and Research Methods at Baldwin University. Her many publications include topics such as memory in air traffic control, the effect of interruptions on task performance, and “future memory”, which includes prospective memory, prioritization of goals, multitasking, and strategizing.
Amy S. Polick  
Florida State University, Panama City  

Amy S. Polick is an Associate Teaching Professor in the Psychology Department at Florida State University Panama City (FSU PC). She received her Ph.D. in Experimental Psychology with a specialization in Behavior Analysis from Auburn University and is a doctoral-level Board Certified Behavior Analyst (BCBA-D). At FSU PC she teaches undergraduate courses in behavior analysis, learning, women’s studies, and research methods and also teaches graduate courses as faculty in the FSU Applied Behavior Analysis (ABA) Master’s Program. Additionally, Dr. Polick serves as the Director of the Florida State University Early Childhood Autism Program – a non-profit organization providing ABA services to families in the Panama City area. Dr. Polick’s research interests include early intervention strategies for children diagnosed with autism spectrum disorders, investigating claims and recommendations in behavioral treatment, behavior-analytic approaches to college teaching, and applications of ABA in the workplace. Dr. Polick has published research in the Journal of Applied Behavior Analysis, Behavior Analysis in Practice, and the Experimental Analysis of Human Behavior Bulletin. Dr. Polick has been serving on the executive board of the Florida Association for Behavior Analysis (FABA) since 2011 and was elected FABA President for 2014-2015. Additionally, she was recognized for teaching excellence at FSU by receiving the Undergraduate Teaching Award in 2012.

Bob Rycek  
University of Nebraska at Kearney  

Bob Rycek is a Professor of Psychology at the University of Nebraska at Kearney. He received his B.A. in Psychology from the University of Illinois, Chicago, an M.A. in Psychology from Northern Illinois University, and his Ph.D. in Developmental Psychology from Northern Illinois University. Dr. Rycek’s research interests focus on cognitive development particularly during the adolescent and emerging adulthood years although his research has cut across the entire life-span. His most recent work is exploring elderly adjustment to independent and assisted living facilities. He has published articles in Developmental Psychobiology, the Journal of General Psychology, Adolescence, Neurotoxicology and Teratology, among others; has published ancillary materials for a number of developmental textbooks and contributed to a previous Society for the Teaching of Psychology e-book. Dr. Rycek was the Founding President of the Nebraska Psychological Society and has been active in a number of professional organizations. He is currently serving as Secretary of the Rocky Mountain Psychological Association and is also the Psychology Division Chair for the Council on Undergraduate Research (CUR). Dr. Rycek has been an associate editor for the Journal of Psychological Inquiry and was co-editor of the STP e-book Developing, Promoting, & Sustaining the Undergraduate Research Experience in Psychology. Dr. Rycek has received several teaching, mentoring, and service awards including the University of Nebraska at Kearney Faculty Mentoring of Student Research Award in 1999, the University of Nebraska Outstanding Teaching and Instructional Creativity Award in 2001, the Pratt-Heins Faculty Award for Excellence in Service in 2004, and the Rocky Mountain Psychological Association Distinguished Service Award in 2014.
Jenne Rycek  
**Garden City Public Schools**  
Jenna Rycek is a School Psychologist in Garden City, Kansas. She received her B.S. in Psychology from the University of Nebraska at Kearney and is completing her Ed.S. in School Psychology at the University of Nebraska at Kearney. Currently completing her internship, she is directly responsible for over 600 children in the Garden City Public School System including an early childhood center, two grade schools, and a middle school.

Ryan P. Siney, Esquire  
**Tucker Arensberg, P.C.**  
Ryan is a business and intellectual property attorney focusing on trademarks, copyrights, software, digital media, commercial transactions and business litigation. Ryan is an Assistant Editor of the *Vindobona Journal of International Commercial Law and Arbitration*. He was appointed by the Court of Common Pleas of York County, Pennsylvania to a two year term (2011 - 2013) as an arbitrator, and regularly sits as an arbitrator for the Court of Common Pleas of Cumberland County, Pennsylvania. He is a member of the American Bar Association, Pennsylvania Bar Association, Maryland State Bar Association and Cumberland County Bar Association, and is licensed to practice law in Pennsylvania, Maryland and New Jersey. Ryan received a Juris Doctor from The Pennsylvania State University Dickinson School of Law. He holds a Master of Laws in international intellectual property law and a Postgraduate Diploma in commercial and corporate law from the University of London. Before practicing law, Ryan received a Master of Science from Auburn in experimental psychology and a BA in psychology from Miami University.

Janice N. Steirn  
**Georgia Southern University**  
Janice Steirn is an Associate Professor. She received her undergraduate degree in Psychology at West Virginia University, where she discovered the area of Animal Learning. Dr. Steirn pursued her graduate degrees at The University of Georgia, graduating in 1985. In graduate school she became interested in a subfield of Animal Learning and Cognition. For almost 30 years, her research focused on the study of problem solving, memory, and cognitive coding strategies in non-humans. Recently her research has shifted to the study of humans and cognitive processes as well as the involvement of classical conditioning on health-related behaviors. Dr. Steirn served as a faculty advisor to students at Georgia Southern University for 20 years.
Jeffrey Stowell
Eastern Illinois University

Jeffrey Stowell is Professor and Assistant Chair of the Psychology Department at Eastern Illinois University. He earned his B.S. and Master’s degrees from Brigham Young University and earned his PhD in Psychobiology from The Ohio State University, where he also did postdoctoral work with Janice Kiecolt-Glaser in psychoneuroimmunology. He teaches courses in Biological Psychology, Sensation & Perception, Learning, Controversial Topics, and Introductory psychology. His research interests are in the areas of test anxiety and teaching with technology. He currently serves as the internet editor for the Society for the Teaching of Psychology and has won a number of teaching awards.

Donna Struber
Friends University

Donna Stuber is a Professor of Psychology at Friends University in Wichita, KS. In addition to teaching, she has supervised the research of seniors preparing presentations or manuscripts since coming to Friends in 1996. She is the proud co-advisor of the Friends University Chapter of Psi Chi, which is the recipient of multiple regional and national honors including the 2008 Ruth Hubbard Cousins National Chapter Award. Dr. Stuber received her B.S. from Missouri Western State College, M.S. from Emporia State University, and Ph.D. from Kansas State University. Dr. Stuber’s research interests include academic dishonesty in the virtual classroom, student perceptions of the college experience, and university response to emotionally disturbed students. Recently she began co-researching hyper-competitiveness and supervisor worth ethics among women in power positions with her former student, Dana Evans. Since 1992, she has published over 20 articles and made over 20 presentations, many coauthored by undergraduates. Dr. Stuber’s memberships include Association for Psychological Science (APS), the Society for the Teaching of Psychology, Southwestern Psychological Association, and the Association for Psychological and Educational Research in Kansas (PERK). She is twice a Past-President of PERK, has twice served on the Board of Directors for the Great Plains Behavioral Research Association, and is a National Past President of Psi Beta. Once a presenter herself, she has served 3 times as convention coordinator for the Great Plains Students’ Psychology Convention and has had numerous students win first and second place awards. Dr. Stuber was included in Who’s Who Among America’s Teachers and in 1998 was presented the Outstanding Recent Graduate Award from the Teacher’s College at Emporia State University.

Bradley R. Sturz
Georgia Southern University

Bradley R. Sturz earned his B.A. (2002), M.S. (2004), and Ph.D. (2007) from Auburn University. After receiving his Ph.D. in Experimental Psychology, he completed a Post-Doctoral teaching/research position at Villanova University and then spent four years in a tenure-track position at Armstrong Atlantic State University in Savannah, Georgia. He accepted a tenure-track position at Georgia Southern University in 2011, and he was awarded tenure and promotion to Associate Professor in 2014. His teaching interests include Introduction to Psychology, Research Methods, Statistics, and Evolutionary Psychology. His research interests are broad within the realm of learning,
memory, and cognition, and his recent research focuses on spatial learning, memory, and cognition. Utilizing virtual-environment technology, he is interested in determining the basic mechanisms underlying orientation and navigation for the purposes of informing research and theory on how humans (and other mobile organisms) process, store, and utilize spatial information.

JUDITH SUGAR
UNIVERSITY OF NEVADA

Judith Sugar received her Ph.D. in Life-Span Development Psychology from York University in Toronto, and taught at Colorado State University before joining the faculty at the University of Nevada, Reno (UNR). In addition to her faculty appointments, she has served as Curriculum Coordinator for the Nevada Geriatric Education Center, and Associate Dean of UNR’s Graduate School. Dr. Sugar’s research interests are in gerontological education, retirement, and gender issues in aging. Dr. Sugar has published over 30 articles and book chapters, many of which focus on aging and enriching college students’ educational experiences. Her most recent work is a textbook for introductory classes in gerontology, *Introduction to Aging: A Positive, Interdisciplinary Approach*, published by Springer. Dr. Sugar has been active in service in professional organizations in psychology and gerontology throughout her academic career, including executive committee roles in APA’s Adult Development and Aging Division, the Association for Women in Psychology, and the Association for Gerontology in Higher Education. She was elected RMPA President in 2008, and received the RMPA Distinguished Service Award in 2010. She is a Fellow of the Association for Gerontology in Higher Education (AGHE).

Kristina Thielen
Halstead, KS Fire Department

Kristina Thielen earned her BS in Psychology at Friends University and a Master of Criminal Justice at Boston University. Kristina’s research interests includes subjects such as same sex marriage, stress responses in emergency responders, the effect of alcohol consumption on social capital, and the internet’s effect on human sexuality. Kristina has presented her research at five student conferences, winning four first place awards. Kristina served as the Psi Chi Vice and Historian for the Friends University Chapter of Psi Chi and wrote the winning essay at the time the chapter received the Ruth Hubbard Cousins National Chapter Award. During her master’s program at Boston University, Kristina was inducted into Alpha Phi Sigma, the criminal justice honor society. Currently Kristina is an EMS Volunteer with the Halstead, KS fire department.

Sara Villanueva
St. Edward’s University

Dr. Sara Villanueva is an Associate Professor of Psychology at St. Edward’s University in Austin, Texas. She attended the University of Texas at Austin where she attained a Bachelor of Arts degree with a major in psychology, and received her Masters of Science degree and her Ph.D. in Developmental psychology from the University of Florida. Her area of specialization is in the area of Adolescent development. She also conducts research on Parenting, Parent-Child Relationships, and Family dynamics. Dr. Villanueva has received recognition in her teaching, her service commitments, and her research. At present, she is in the process of publishing a book for a lay audience on parenting teenagers.
William Douglas Woody
University of Northern Colorado

William Douglas Woody, Ph.D. is Professor of Psychological Sciences at the University of Northern Colorado. He received his doctorate from Colorado State University in 1999, and he taught at the University of Wisconsin – Eau Claire before joining the faculty at the University of Northern Colorado in 2002. His research interests include the teaching of psychology, psychology and law, and the history of psychology. Dr. Woody serves as the Teaching Conference Coordinator for the Rocky Mountain Psychological Association, and he has also served the organization as President in 2012 and received both the RMPA Early Career Award and the RMPA Distinguished Service Award. Among other recognition, he has received the Early Career Award for Scholarship in the History of Psychology, and he has earned numerous college, university, and national teaching awards. He recently received the first university-wide Sears-Helgoth Distinguished Teaching Award from the University of Northern Colorado. Additionally, he has been named Best Professor by the students at two of the three universities at which he has taught.

TRACY ZINN
JAMES MADISON UNIVERSITY

Tracy Zinn is an Associate Professor of Psychology at James Madison University (JMU) in Harrisonburg, Virginia. She earned her BA in psychology from West Virginia University in 1997, and her Ph.D. in industrial/ organizational psychology with a minor in experimental psychology from Auburn University in 2002. After teaching in the Department of Psychology at Stephen F. Austin State University in Nacogdoches, Texas for two years, she accepted her current position at JMU. In 2007, she received the Early Career Award from the Society for the Teaching of Psychology (STP; Division 2 of the American Psychological Association) and the Junior Faculty Award for the College of Integrated Science and Technology at JMU. At JMU, Dr. Zinn teaches, among others, courses in statistics and research methods, performance management, and industrial/ organizational psychology. In addition, she conducts research on effective teaching practices and faculty and student perceptions of students as customers in higher education.

Mark C. Zrull
Appalachian State University

Mark C. Zrull is a professor in the Dept. of Psychology at Appalachian State University. He teaches courses in biological psychology, other areas of neuroscience, and a first year seminar about the brain as well as collaborating with undergraduate and graduate students in his behavioral neuroscience research lab. Dr. Zrull and his research team investigate the impact of environmental enrichment during adolescence on risk taking, preference and recognition behavior and neural activity in relevant brain structures of rats. Mark typically collaborates with a number of undergraduates researchers and advises these and other students who often continue their training in neuroscience and related disciplines. A number of his former students are now faculty, research scientists, or working in the health professions. Mark also works on projects that integrate aspects of undergraduates’ residence life and academic experiences such as Community of Science Interest (a Residential Learning Community, RLC), being a Residence Hall Faculty Fellow, and most recently taking a lead role in the Brain Matters RLC. Dr. Zrull received his B.S. from Georgia State University and took his Ph.D. training in General Experimental
Psychology at the University of South Carolina. He completed a postdoctoral fellowship at the University of Wisconsin in Madison before joining the Appalachian State faculty in 1992.