Undergraduate Research Opportunities
2009-2010

PSYCHOLOGY

UNIVERSITY OF VIRGINIA
Research assistants (RAs) have the opportunity to work in a variety of psychology labs. As a RA, students learn important skills not easily taught in the classroom, such as learning how to: use technical equipment, interact with participants, code and analyze data, and design experiments. RAs are typically expected to work 10 hours per week. Doing a RAship is strongly recommended for students who are considering a Distinguished Majors Project. RAships are also valuable experiences for graduate school, medical school, law school, and other professional schools. In the research labs, faculty, post-docs, and graduate students are available to discuss graduate aspirations and to write letters of recommendations.

During the 2007-2008 academic year, 410 students registered for research, and 41 research papers or posters were presented at conferences or published with undergraduate students as authors or coauthors. For the academic year, 2008-2009, research opportunities for undergraduate students are available in 53 labs. Psychological research opportunities are available in the Psychology Department, the Curry School of Education, and the Medical School.

Procedure for Adding Research

1. Contact the lab where you would like to participate.
2. Add yourself to the permission list for PSYC 3590 under the section for the Professor's lab.
3. The lab contact person will send a list of approved students to the Ms. Sties, the Undergraduate Coordinator, who will invite you to add the lab. If you have any questions send email to psych-info@virginia.edu.
We are conducting several projects in the field of child clinical psychology involving treatments for youth with ADHD and their relationships with their peers. One project examines ways in which parents can help their children to make friends more easily, and tests a psychosocial clinical intervention that trains parents of children with ADHD in these skills. A second project tests the effectiveness of a new medication for adolescents with ADHD, and the effects of medication on their driving performance. Finally, a third project examines ways in which teacher practices contribute to the patterns of peer rejection and cliques in their classrooms, and what happens over the course of the school year to children with ADHD who are disliked.

RAs interview children and their families in laboratory or schools settings. Other RA positions involve coding videos and entering data of parent-child and peer interactions of children with ADHD, and of ADHD teenagers’ driving mishaps, which are taken from small video cameras mounted in their cars. RAs generally begin with videotape coding and data entry positions, and work their way up to the interview positions.

Web site: people.virginia.edu/~am4jd/

2007-2009 Undergraduate Presentations or Publications

Implicit Social Cognition Lab
Brian Nosek

We are examining how conscious or non-conscious aspects of people’s attitudes can influence judgments and behavior. Although attitudes include aspects that they can report, we are particularly interested in the influence of automatic, non-conscious attitudes, especially when they differ from the attitudes people can directly report.

RAs are involved in running experiments, entering and analyzing data, and helping create new studies. Other duties might include data entry, literature searches, article reviews, and study design. RAs also attend lab meetings with faculty and graduate students to gain research experience and expertise.

Contact: Kathleen Schmidt, kes7z@virginia.edu
Web site: www.briannosek.com/labgroup

2007-2009 Undergraduate Presentations or Publications

Social Psychology Lab
Timothy Wilson

Our lab invites motivated, sharp, and sociable undergraduates to help us prepare and run studies that explore people’s emotions and thoughts. We study people’s knowledge about their own feelings, behaviors, abilities and personalities. Our research focus is on emotional reaction to different events in life, and an individual's ability to predict his or her own reaction.

RAs are involved in all parts of the research process. Their main responsibility is to run social psychology studies, process and analyze the results, and see how the results fit social psychology theories. There are also lab meetings where research issues are discussed.
Child Language and Learning Lab
Vikram Jaswal

Our research focuses on how children (between 1 and 5 years of age) learn about the world, and how learning language changes how they think and reason about objects, events, and people.

RAs assist with everything from the design of the studies to the gathering of materials to the collection of data and data analysis. Because RAs interact with children and their parents, it is crucial that you enjoy being around young children. Students interested in cognitive development or cognitive science are encouraged to apply. A year-long commitment is required.

Contact: On leave 2009-2010
Web site: faculty.virginia.edu/childlearninglab

2007-2009 Undergraduate Presentations or Publications


Reasoning, Memory and Law Lab
Barbara Spellman

Our research investigates the decision-making process. Using computer games and legal paradigms, we explore how people make decisions when there is missing, faulty, or otherwise inadequate
information, as well as how decision-making is affected by whether
given information is deceptive, reliable, and redundant. We are
also exploring how effectively guided decision-making enhances or
diminishes the application of personal rights.

RA duties include gathering materials, running experiments,
entering and analyzing data, helping create new studies, and adapting
to and managing research issues as they emerge. RAs are expected
to attend weekly lab meetings and give a 20-30 minute presentation
at one of them.

Web site: people.virginia.edu/~ert8f/SpellmanLabHome.html

MEMORY PROCESSES LAB
Chad Dodson

Our research focuses on memory from both a cognitive and a
neurological perspective. We recently examined the causes of false
memories and the strategies for preventing them.

Applicants should have completed PSYC 1010 and at least one
2000-level PSYC class. We will give preference to students who
have also taken PSYC 3005, PSYC 3006 and PSYC 2150. Primary
RA responsibilities include: scheduling participants, leading partici-
pants through experiments, coding data, and doing administrative
tasks. Experience with Excel and SPSS is desirable, but not required.

Contact: Meg Scalia, mjscalio@virginia.edu

EARLY STEPS LAB
Melvin Wilson

The Early Steps Project is a longitudinal multisite (Oxford,
University of Oregon, University of Pittsburgh, and University of
Virginia) research study designed to provide intervention services for
children and their families. The goal of this project is to determine
the effectiveness of a family-centered intervention in reducing the early emergence of risk in young children for aggressive and with-
drawn behavior, academic readiness, and future substance abuse.

We are seeking some additional undergraduate students to work
with us during the fall semester. In order to apply, students must have
a cumulative GPA of 3.0 or better and be psych majors or intending
to be psych majors. Additionally, students must feel comfortable working with young children and open to working with a diverse population.

Early Steps RAs typically like field work the best. We are unique in that our field work is in people's homes. This is the most challenging RA work and gives the most significant experience to record for graduate school. We prefer students who are available 9am-2pm or 3-8pm at least two days out of the week.

RAs have the opportunity to work on a large-scale preventive intervention. RA's will work both in the community and at the University. RA duties include assisting in family assessment and therapy sessions, conducting neighborhood observations, childcare, videotaping, and data input.

Contact: Myles Glancy, mkg2c@virginia.edu

CULTURE AND WELL-BEING LAB
Shigehiro Oishi

We are conducting experiments on the following projects: 1) Misunderstanding and understanding in interpersonal perception; 2) Cultural differences in happiness; 3) Residential mobility and its relation to prosocial behavior and consumer behavior; and 4) Physiological measures of well-being.

RA responsibilities include preparing experimental materials, conducting experiments, entering data, coding, and data acquisition. Applicants must be responsible and motivated about doing psychological research.

Contact: Minkyung Koo, mk4rn@virginia.edu
Web site: people.virginia.edu/~so5x/index.htm

2007-2009 Undergraduate Presentations or Publications

**Emotion and Cognition Lab**

**Gerald Clore**

We are primarily interested in studying the effects of emotional experience on cognitive performance and behavior. Some of our research questions are: 1) Do emotions influence how we perceive our environment and ourselves? 2) Do emotions help us remember? 3) Do happy people think differently than sad people?

The small, cohesive atmosphere of our lab group provides opportunities for RAs to become intimately involved in all aspects of the research process. First-semester RAs are mainly responsible for scheduling participants, running experiments, and working with data. With increasing experience, lab members are encouraged to participate in the development of new research designs and the interpretation of results.

Contact: Jesse Pappas, pappas@virginia.edu

**Early Development Lab**

**Angeline Lillard**

We are actively researching 1) how different preschool environments (Montessori and conventional) impact children’s development, 2) how children know about pretending, and 3) how much exposure is required for children and adults to learn new words.

RAs help recruit participants, test children in the lab and at local Charlottesville schools, and help with coding and data entry. For the preschool study, students who are free at least 2 mornings per week, want to work 10 hours/week for the full academic year, and can drive to local schools to test children are welcome to apply. For studies of basic cognitive development, RAs help recruit participants, test children in the lab and at local Charlottesville schools, and help with coding and data entry. There is a weekly laboratory meeting for all
Psychology researchers. The Early Development Lab is located off grounds on Millmont St.

Contact: Prof. Lillard asl2h@virginia.edu for preschool study
Contact: Eric Smith, eds6r@virginia.edu
Web site: people.virginia.edu/~asl2h/EDL/EDLFrames.htm

**Community Psychology Lab**

Dickon Reppucci

We are partnered with the Charlottesville-Albemarle Commission on Children and Families (CCF) to provide students with an opportunity to participate in community-based research that has a direct effect on policy-making for local children and families.

RA duties include: working with CCF staff to compile and summarize information from the web, internal documents, and community partners; assisting with audits of existing practices such that we may better understand how to improve service provision locally; and participating in work groups aimed at understanding and addressing specific community problems. Car transportation is required as CCF is located at 1600 5th Street Extended. An interview, unofficial transcript and resume are required.

Contact: Prof. Porter, mporter@albemarle.org

**Psychometric Lab**

Karen Schmidt

Our research involves item response theory (IRT) measurement and focus on methodology to enhance construct validity and measuring individual differences. Current and ongoing projects include objective measurement of personality and individual experiences of pain, faking good detection in personality inventory responses, self-efficacy, reasoning and spatial visualization, AIDs knowledge, and international learning experiences in varying age groups.

RAs gain experience in all aspects of the research process, including learning sophisticated statistical and measurement procedures such as multiple regression, item response theory modeling, and structural equation modeling. RAs learn how to search and summarize research articles, create Web design of surveys, doing
Web-based data collection, conducting SPSS data analysis (including data coding, transformation, IRT analysis, and graphing), and creating reports and presentations. Reliable, independent, and creative assistance is strongly considered for co-authorship. Interested students should have completed PSYC 3005, and preferably PSYC 3006.

Contact: Prof. Schmidt, kschmidt@virginia.edu

2007–2009 Undergraduate Presentations or Publications


Psychology Department

the 2009 Association for Psychological Science Meeting, San Francisco, CA.

**Morality and Positive Psychology Lab**

**Jonathan Haidt**

We study morality and moral emotions, such as moral disgust, elevation, awe, gratitude, and admiration. We examine how these emotions develop, vary across cultures, and influence behaviors and interpersonal relationships. We also study the moral differences between liberals and conservatives, and how these differences lead to the big moral misunderstanding known as the culture war. Other projects include the benefits of positive emotions in relationships; the psychophysiology of moral emotions, and the creation of a library of positive emotion-inducing videos.

RA duties include running and testing studies, helping to compile and evaluate the video library, analyzing liberal and conservative texts, and helping to generate ideas for future studies of human morality.

Contact: Jesse Graham, jgraham@virginia.edu
Web site: faculty.virginia.edu/haidtlab

2007-2009 Undergraduate Presentations or Publications


**Sign Communication, Autism, and Psycholinguistics Lab**

**John Bonvillian**

Our laboratory group has developed a simplified system of manual signing for children and adults who are mute or who have severe speech difficulties. In another project, we are conducting preliminary analyses of various historical texts as part of a linguistic fingerprinting study.
We need assistance in teaching our simplified signs to low-functioning youngsters. Some knowledge of sign communication or experience working with exceptional children is helpful.

Contact: Prof. Bonvillian, jdb5b@virginia.edu

2007-2009 Undergraduate Presentations or Publications


**Police Interrogation Project**

Dickon Reppucci

The goal of the project is to assess both law enforcement officer and community member's perceptions of issues related to police interrogation of juveniles. This is a timely project that offers opportunities for hands-on learning about the intersection of field of law with both developmental and community psychology. RAs will be engaged in important aspects of the project, including data collection with community members. Access to a car is required because RAs will collect data in community setting.

Contact: Jessie Kostelnik, jao5j@virginia.edu

2007-2009 Undergraduate Presentations or Publications


**Anxiety, Cognition & Treatment Lab**

Bethany Teachman

Our lab studies cognitive processes that contribute to the development and maintenance of psychopathology, with a particular interest in anxiety disorders. We evaluate cognitive processing, including biases in attention, interpretation, and memory that cause harm in anxiety as well as other forms of mental illness. We are especially interested in automatic cognitive processing and in understanding how thoughts that occur outside of our control or awareness contribute to emotional dysregulation.

We are looking for RAs interested in working on studies of cognition and psychopathology. RAs help with recruiting and running subjects and attend weekly lab meetings to gain general experience with conducting research. There are also opportunities for advanced RAs to later develop their own projects.

Contact: Meghan Cody, mwc2d@virginia.edu

Web site: projectimplicit.net/nosek//bethany/research.html

**2007-2009 Undergraduate Presentations or Publications**


and strategic measures of body dysmorphic disorder. Poster presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, Philadelphia, PA.


**AUDITORY/MUSIC PERCEPTION LAB**

Michael Kubovy

We are interested in how the brain organizes visual and auditory information. Here are two examples. (1) How does the brain decide to see the picture as a woman's face or the shadow of a sax player?

(2) How does the brain decide whether to hear this:

\[\ldots\, \text{\includegraphics[width=0.5\textwidth]{face.png}}\ldots\]

as this:

\[\ldots\, \text{\includegraphics[width=0.5\textwidth]{sax.png}}\ldots\]

or this: 

\[\ldots\, \text{\includegraphics[width=0.5\textwidth]{shadow.png}}\ldots\]
RAs must be responsible and have organizational skills.

Contact: Minhong Yu, minhongyu@gmail.com, or Holly Earls, hej3f@virginia.edu
Web site: people.virginia.edu/~mk9y/home.html

**Child Study Center**

**Judy DeLoache**

We investigate the development of infants and young children. Most of our projects focus on early cognitive development and we are interested in how young children begin to master the many symbols that are important for thought and communication with others.

We are looking for independent, responsible, and caring individuals to be a part of our research team. RAs work closely with an individual graduate student and the lab coordinator. Their duties include, but are not limited to transcribing and coding data from taped experimental sessions, preparing stimuli, preparing materials for a participant, running participants, gathering literature for literature reviews, etc.

Contact: Kai Sherman, kv6e@virginia.edu

**Virginia Institute of Development in Adulthood**

**Joseph Allen**

The VIDA Project (formally the KLIFF Project) is a longitudinal study examining the influence of social relationships, autonomy, and attachment processes on psychosocial development. We are exploring how young adults develop and manage friendships with their peers, and how family relationships influence qualities of these peer relationships. Data is collected on several different areas of adolescence and young adulthood, such as the quality of family relationships, friendships and romantic relationships, peer pressure, school achievement, delinquency, and internalizing behaviors. We use a variety of measurement methods, including self-reports, semi-structured interviews, parent-reports, peer reports, and observations of family and peer interactions.
RA tasks include conducting interviews with participants, data entry and checking, transcribing, and other administrative tasks. We train RAs to use computer programs and the protocol for conducting interviews with participants. RAs who work on the project for multiple semesters have the opportunity to take on higher level responsibilities (such as coding data, scheduling participants, and writing a thesis) and may apply for paid positions.

Web site: www.teenresearch.org

2007-2009 Undergraduate Presentations or Publications


Perception Lab
Dennis Proffitt

Our research involves visual perception of spatial layout and the environment. What people consistently see is not what is really out there. When we are not outside, we use our room-size virtual reality system in many of these experiments. We investigate how the perception of space can be affected by the internal states of the body. We are interested in topics such as: 1) How effort/enegetics can affect how long distances appear and how steep hills look, 2) How social and emotional factors influence perception and cognition, 3) How we scale distances and sizes of objects to our body, and 4) What are the factors that influence and improve performance in spatial navigation? Another area of research involves functional brain imaging with cutting edge technologies: we’re helping to develop a new functional near-infrared device (similar to fMRI). We are using it as will allow people with complete paralysis to communicate with the outside world using only their thoughts.

We seek fun, motivated RAs to help with various research projects. RAs attend weekly lab meetings, do data entry and analysis, and run experiments that could require the operation of virtual reality equipment, projection screens, and devices that measure physiological potential. Experiments are performed in rooms within Gilmer Hall as well as in outdoor fields around grounds.

Contact: Elyssa Twedt, elt5z@virginia.edu
Web site: faculty.virginia.edu/perlab

2007-2009 Undergraduate Presentations or Publications

Language Processing Lab
Beverly Colwell Adams

We study spoken and written language processing through syntactic ambiguity. Our current research examines how syntactically and semantically ambiguous sentences are comprehended. American, Dutch, French, and Korean students hear computer-
generated speech in American English, Dutch, French, and Korean. We vary the amount of time between linguistic phrases of spoken language. The results will have important implications for instruction and bi-lingual communication. RA duties include 1) reading original research articles, 2) running the study/studies, 3) entering and analyzing data, 4) preparing experimental materials, as well as 5) preparing for conference presentations.

Contact: Prof. Adams, bca5y@virginia.edu

**Human Dynamics Lab**

**Steven Boker**

Our research explores how people coordinate their movements and facial expressions during conversation. RAs will be involved in all parts of the project including learning to use state of the art computer software that tracks the body movements and facial expressions. The fall semester will involve training in the laboratory methods and in running a teleconferencing experiment. We are looking for motivated students interested in the psychology of social interaction as well as the technical aspects of laboratory science in psychology. The project is in collaboration with researchers at Pittsburgh, Carnegie Mellon, and the University of East Anglia in the UK, so RAs will also have a chance to meet faculty and graduate students at other institutions. Priority will be given to students who can commit to at least two semesters.

Contact: Prof. Boker, boker@virginia.edu

**Behavioral Neuroscience Lab**

**Cedric Williams**

Our research is focused on identifying the mechanisms by which neuroendocrine hormones released during meaningful or emotionally arousing events influence the brain to encode memory for
these types of experiences more effectively. We use neurochemical and behavioral techniques to examine the functional relevance of the anatomical and chemical connections between various brain areas during the memory storage process. An understanding of how meaningful or arousing events influence neural activity in specific anatomical regions will provide a model of how the brain transforms representations of everyday experiences into permanent memories.

Contact: On leave 2009–2010

**Neural Development and Organization Lab**

Peter Brunjes

Our lab is involved in probing a number of issues surrounding the organization and development of sensory systems in the brain. Sensory systems are useful models for examining how the brain works: they often have clear cut circuitry, and it is relatively simple to manipulate the amount and type of information processed by the system. Our work centers around the olfactory system, which offers a number of unique features that make it an excellent model for studying the development and organization of the brain. Most of our recent work centers on studying the basic organizational features of the system, including understanding how odors are encoded in the olfactory cortex, and whether these representations change with olfactory experience.

When first joining the lab, RAs are usually responsible for participating in one aspect of an ongoing project as they are trained in various laboratory techniques. Once proficient, RAs often have the opportunity of developing more independent projects, many of which have become distinguished major projects.

Contact: Prof. Brunjes, brunjes@virginia.edu

**Visual Development and Plasticity Lab**

Alev Erisir

Postnatal development of the brain is characterized by a plastic stage during which abnormal sensory stimulation can lead to life-
long changes in the organization of visual cortex. Our lab aims to understand the biological mechanisms that enable this plasticity. What makes some young neurons lose their ability to respond to alterations in the sensory environment at the end of a critical period? What are the mechanisms by which the critical period of developmental plasticity is initiated, and terminated? Is there a change in the neurotransmitter receptor function in the visual cortex that can signal the onset or the offset of this period? Using anatomical techniques including immuno-electron microscopy, tract-tracing and confocal microscopy, we aim to reveal the changes that occur in visual system connectivity and glutamate receptor localization during and after the critical period of visual plasticity.

Upon joining the lab, RAs are assigned to an ongoing project. At the initial stages of the training, RAs learn tissue preparation techniques, light and electron microscope use and digital image analysis. Typically after several months of active contribution, RAs start formulating a project that they may use as their distinguished major thesis. Attending our regular lab meetings is also recommended. At least two semesters of commitment is required.

Contact: Prof. Erisir, erisir@virginia.edu

2007–2009 Undergraduate Presentations or Publications


**Personality and Genetics Lab**

**Eric Turkheimer**

Our research interests are divided into two main areas of study: behavioral genetics and personality assessment. From a behavioral genetics standpoint, we attempt to understand and predict adolescent externalizing behaviors such as risk-taking and substance abuse using genetically informed designs and sophisticated statistical models. Our interest in personality assessment is to explore new methods of personality disorder measurement and classification using both self- and peer-report.

RAs will have the opportunity to gain valuable research experience. Their integration into the lab consists of working alongside graduate students and faculty on ongoing projects as well as new research ideas that may develop. Typical RA duties include data entry and analysis, literature searches, and information gathering. While not mandatory, strong quantitative skills are recommended.

Contact: Derek Ford, dcford@virginia.edu

**Child Development in Contemporary Families**

**Charlotte Patterson**

Our research focuses on issues related to sexual orientation, human development, and family lives. What are the experiences of children and youth with lesbian and gay parents? How does sexual orientation influence family formation and family lives? How are the answers to these questions affected by the legal and public policy climates in which children, youth, and families live? These are some questions under study in our group.

Three different studies are underway now. In one of these, we are working with adoptive families and their young children; the parents may be lesbian, gay or heterosexual couples. We are studying modes of family functioning as well as the development and adjustment of children in these families. In another current study, we are
working with a large sample of English-speaking gay fathers from the United States and abroad. This research is intended to examine modes of family formation among gay men of different ages, experiences of fathering among gay men, and modes of family functioning among gay father families. A third study, just getting underway, is designed to explore the experiences of engaged couples as they move through the transition to marriage. We plan to study gay, lesbian, and heterosexual couples – in jurisdictions where all can legally marry --- before they marry, within a few months after their marriage, and a year after their marriage.

We welcome the involvement of motivated and responsible undergraduate students as part of our research team. Research assistants usually work closely with a graduate student, and their duties may include reading original research studies, preparing materials for new studies, transcribing and coding data, and assisting in data analysis. There are also opportunities for advanced RAs to develop their own projects.

Contact: Rachel Farr, farr@virginia.edu

2007-2009 Undergraduate Presentations or Publications

**Shared Understanding and Social Identity Lab**

Shigehiro Oishi

We are looking for motivated, interested, and enthusiastic RAs. Our research examines how interpersonal interactions and the beliefs we attribute to others, shape our beliefs, feelings and actions—particularly those beliefs relevant to stereotyping and prejudice.

RA responsibilities include conducting experiments, preparing and organizing research materials, recruiting participants, entering data, coding videotaped interaction and/or written materials, and participating in lab meetings.

Contact: Ashley McCormack, amm4ac@virginia.edu
**Early Childhood Lab**  
**Rachel Keen**

We are interested in the development of cognitive and motor skills in infants and children. For example, how do children’s problem solving skills change as their motor abilities improve? We use several different experimental methods (e.g., video recording, motion analysis, eye-tracking) to examine children’s behavior.

RAs are involved in every aspect of research, including data collections, data coding and analysis, subject recruitment and scheduling, and literature searches. RAs meet regularly with lab members. Note: RAs must commit to 2 semesters in the lab and must have taken or be currently enrolled in a course on child development.

Contact: Prof. Keen, rachelkeen@virginia.edu

**2007-2009 Undergraduate Presentations or Publications**


**Full Potential Initiative Lab**  
**Brian Nosek**

RA positions are available for a long-term study of the development and influence of unconscious math/science and gender attitudes and stereotypes. Below are some of the components of a RAship:

1. Interpersonal: interact via phone, email, instant messaging, etc. with participating teenagers and their parents.

2. Administrative: organize and maintain participant information in electronic and paper files; coordinate paper mailings and assembly of research materials.

3. Technical: assist with development of online experimental materials (e.g., find meaningful, but fun, scientific or mathematical exercises for teenage participants).

4. Creative: imagine online activities and promotions to contribute to a sense of excitement and enthusiasm about the project.
5. Educational: learn and educate others about effects of implicit social cognition in the academic domain.

You need not have strengths in all of these areas, but strong qualification and interest in at least one is important, as is willingness to be involved with all of them.

Web sites: projectimplicit.net/fpi or for online application, www.projectimplicit.net/iscl/fpi_ra_application.php

**Virginia Affective Neuroscience Laboratory**

**James Coan**

Our research focuses on the neural bases of emotional behavior, regulation, and experience, including a particular interest in the social regulation of neural processes underlying emotional responses. These interests integrate a variety of tools and methods, including observational behavior coding to electroencephalography (EEG) to functional magnetic resonance imaging (fMRI).

RAs are typically involved in a number of activities, including running experiments, entering and analyzing data, and completing literature searches. There tends to be an emphasis on learning about and utilizing psychophysiological methods.

Contact: Karen Hasselmo, keh7g@virginia.edu
Web site: www.affectiveneuroscience.org

**2007-2009 Undergraduate Presentations or Publications**


Cognitive Aging Lab
Timothy Salthouse

We study aging of cognitive functioning by administering a wide variety of tasks to participants ranging in age from 18-90+. The tasks assess different types of cognitive abilities, such as memory and spatial abilities. Among the questions that we are interested in are: 1) What are the proximal determinants of age-related effects on cognition? That is, are some aspects of cognitive functioning more fundamental than others with respect to age-related influences? 2) How are age-related influences on cognitive variables organized? 3) What factors moderate the effects of aging on cognitive functioning?

RAs are primarily responsible for administering tests to participants in the project, in addition to answering phone calls, scheduling appointments, scoring tests, and entering and checking data. Contact: On leave 2009-2010

Auditory Perception Lab
Ching-Ling Teng

Our lab is interested in how experiences, especially early period of postnatal experiences shape sensory processing, and how they, when changes are made, affect perception and behavior. We use multi-/single-unit electrode recording techniques to map auditory neurons responses in vivo. Combining with computational models and psychophysics, we ask questions about how these enriched/deprived experiences could functionally alter a subject’s perception and behavior.

A commitment of one year of RA experience is desired. The first semester will involve literature reviews, computer simulations, setting up experiments and administrative tasks. The second semester will involve data acquisition and analysis. Current projects will involve rearing rat pups in pure-tone environments and testing their tone hearing thresholds in adulthood. We currently use pre-pulse inhibition for acoustic startle as the animal behavior assay to examine changes in tone perception.
2007-2009 Undergraduate Presentations or Publications

Social Development Lab
Sara Rimm-Kaufman
Center for Advanced Study of Teaching & Learning
We are conducting a series of studies on elementary classroom environments and the extent to which they contribute to children's self-control, social skills, and achievement. For example, one large scale, experimental study involves 24 inner city schools. Specifically, we are examining the effectiveness of an intervention called the Responsive Classroom (RC) Approach. The RC Approach offers teachers a set of principles and practices to build their capacity to manage behavior and teach in the classroom. Do these practices really improve teachers ability to engage children in learning?

RAs observe and code videotapes of elementary school classrooms in order to better understand classroom social processes, especially during mathematics instruction. RAs have an opportunity to learn a lot about elementary school classrooms. In addition to observing classrooms, we need help with data entry, basic descriptive data analysis, and other miscellaneous tasks. RAs must be clear-thinking, responsible, reliable and detail-oriented. Further, we require at least a one year commitment to the lab.

Contact: Julia Thomas, jbt4u@virginia.edu

Child Observation Lab
Robert Pianta
Center for Advanced Study of Teaching & Learning
Our lab is mainly involved in the development of a new observation measure that assesses children's readiness as they enter elementary school. This tool is currently called the Classroom Assessment Scoring System--Child Version (CLASS-C) and is being used in
preschool classrooms across the country. We are currently collecting data in New York, Miami, Los Angeles and right here in Charlottesville. We are collecting observations, direct assessment, teacher reports and parent reports this fall.

RA duties would potentially include being trained on the measure, conducting observations in local preschools, data entry, data cleaning, video coding, managing research issues as they emerge, and successfully communicating with members of our team. RAs are expected to attend bi-monthly lab meetings.

Contact: Leslie Booren, booren@virginia.edu
Web site: www.virginia.edu/vprgs/CASTL/

Beliefs, Behavior & Belonging Lab
Marie Shoffner
Center for Advanced Study of Teaching & Learning

Our goal is to investigate student engagement, sense of belonging, and peer, teacher and parent supports. We are interested in how these factors relate to interests, goals and behaviors in Science, Technology, Engineering and Mathematics (STEM), especially in math and computing. We are now in the second wave of a longitudinal study, collecting data from 6th, 8th, and 10th-grade students, their parents and their math teachers. We are collecting both survey data and qualitative data (from focus groups and interviews).

We are looking for motivated, organized, responsible and reliable Research Assistants (RAs) with strong communication skills. While working on this project, RAs undertake multiple tasks: contacting local schools, organizing data collection materials, administering surveys, conducting focus groups and interviews, entering and coding data, following up with research participants, preparing (and possibly presenting) papers, and generating ideas for future studies. Applicants must feel comfortable working with children, adolescents, parents, and middle and high school teachers.

RAs work with graduate students and post-doctoral researchers. They also attend regular meetings where the research team discusses the topic, research design and implementation, and associated research tasks. Students who are involved in the lab more than one
semester have the chance to take on greater responsibility and can apply for paid summer positions. Priority will be given to students who can commit to at least two semesters. Unofficial transcripts, a resume and interview are required.

Contact: Christian Steinmetz, cls5p@virginia.edu
Web site: www.virginia.edu/vprgs/CASTL/
Register using Freeman as the instructor

**Young Women Leaders Program**

**Edith Lawrence and Nancy Deutsch**

**Department of Leadership, Foundations, and Policy**

Young Women Leaders Program (YWLP) is a psychoeducational mentoring program that empowers at-risk middle school girls to be leaders by combining the benefits of one-on-one mentoring with targeted group activities. YWLP is currently: 1) expanding our one-year mentoring program into a two-year, multifaceted girls development program and 2) investigating the processes that contribute to the program’s success in promoting healthy growth in girls. We have an ongoing mixed methods study of both the middle school girl participants and the college women mentors.

RA responsibilities include the following tasks: 1) Working with survey data from girls, parents, and college women (coding, entering, checking, running statistical analyses, and organizing project files), 2) Researching topics related to the project through literature reviews, 3) Attending weekly lab meetings, and 4) Helping team members prepare presentations and papers. Additional research hours may be available for assisting with quantitative or qualitative data collection, including surveys and observations of mentoring groups, and, beginning in summer 2009, coding observational data for development and validation of an observational measurement tool.

Contact: Anindita Das, anindita.das@ttu.edu
Register using Freeman as the instructor

**PeerTalk Lab**

**Tina Stanton-Chapman**

**Center for Advanced Study of Teaching & Learning**

Our project focuses on developing effective interventions for chil-
Children with language delays and problem behavior in Head Start settings. The interventions use storybooks and thematic toys to teach children the following skills: initiations, turn-taking, sharing, and obtaining a peer’s attention.

RA duties include transcribing intervention session tapes, scoring of standardized assessments, completing treatment fidelity checklists and social validation measures, and observational coding.

Contact: Kristen Jamison, kjamison@virginia.edu
Register using Freeman as the instructor

**Augmentative and Alternative Communication Lab**

**Filip Loncke**

**Communication Disorders Program**

We focus on processes that are involved when individuals communicate through non-standard modalities. We are running three major projects: 1) Learning through a communication device. This study, run simultaneously in Virginia, in France, and in Belgium, measures how a device with speech output influences learning of new words and phrases; 2) The development of communication boards as an assessment tool for individuals without functional speech. Through picture-and-word communication boards, basic skills such as picture preference, choice making, categorization, memory, combinatorial awareness, and literacy are measured. The boards have been field tested in five countries; 3) The study of Syntactic Ambiguity through computer-generated speech throughout languages (English, Dutch, French). This study looks at comprehension of ambiguous sentences in different languages.

Each of these studies attempts to increase our understanding in how individuals process information in non-standard form (i.e., everything but natural speech or writing). The data are important for people with severe communication limitations, but also for language education, and trans-cultural communication.

RA duties will include (1) running studies, (2) entering and analyzing data, (3) preparing experimental (and intervention) materials, as well as (4) preparing for conference presentations.
Contact: Prof. Loncke, filip.loncke@virginia.edu
Register using Freeman as the instructor

2007-2009 Undergraduate Presentations or Publications


Autism Studies Laboratory
Jane Hilton
Speech-Language-Hearing Center

Our current research interest is on the effectiveness of various popular intervention approaches for teaching young children with this diagnosis communication skills. We are examining specific communication skill sets to determine if a particular treatment approach facilitates these skills more than other approaches.

Additional ongoing research involves the use of gestures by young children. All typically developing children use gestures prior to using spoken words for communication. Gesture use in children diagnosed with an autism spectrum disorder has also been examined and found to differ from gestures used by typically developing children. Ongoing research is looking at early gesture use in young children with autism and determining if any changes are noted following intervention during a 6-week communication program. We are located in the Program of Communication Disorders at 2205 Fontaine Avenue.

Contact: Prof. Hilton, jch7b@virginia.edu or call at 924-4625.
Register using Freeman as the instructor
Center for Research on Early Childhood Education
Bridget Hamre
Center for Advanced Study of Teaching & Learning

Our primary research interests lie in integrating psychological and educational theory and methodology. In particular, we are interested in identifying classroom-level processes that facilitate children's academic, social, and emotional development. In addition, we are involved in several efforts to develop and evaluate school-based prevention and intervention programs aimed at improving the quality of interactions between teachers and students. In one study, funded by the Institute of Education Sciences, we are studying the effects on teachers' practices and child outcomes of two forms of professional development - a 14 week course, and a yearlong consultation. This study is being conducted with 350 early childhood teachers in nine sites across the country. We are seeking undergraduate or graduate students who are interested in being involved in a large educational research project. Primary responsibilities include coding videotapes of preschool classrooms, attending weekly meetings, and various other tasks associated with the project. Specific hours are flexible and opportunities for work over breaks and summer exist. Submit a resume if you are interested.

Contact: Tess Krovetz, tbk6d@virginia.edu.
Web site: www.ncrece.org
Register using Freeman as the instructor

MyTeachingPartner – Mathematics/Science
Mable Kinzie
Instructional Technology Program

MyTeachingPartner is implementing an innovative curriculum in Pre-Kindergarten Mathematics and Science for at-risk students. We are entering a pilot test year, and seek student collaborators to help assess the effects of the curriculum on children's learning.

RAs join our project team and gain valuable experience conducting observations in Pre-K classrooms, administering direct child assessments (including clinical interviews), and helping to prepare
research materials. Requirements: ability to work independently, strong communication and organizational skills. Personal transportation and morning schedules preferred.

Contact: Ashley Pinkham, amp6f@virginia.edu
Register using Freeman as the instructor

CONTINUUM OF POSITIVE BEHAVIOR SUPPORT
Martha Snell and Tina Stanton-Chapman
CENTER FOR ADVANCED STUDY OF TEACHING & LEARNING

The major goal of our project is to develop and test a comprehensive social competence intervention referred to as a Continuum of Positive Behavior Supports (CPBS) in Head Start (HS) classrooms. The project will develop: a) an implementation manual with step-by-step guidelines and fidelity of intervention checklists; b) a manual to guide inservice training and staff training materials (e.g., videotaped examples, role play activities, consultation guidelines); c) classroom materials (e.g., social skill lesson plans and toys); and d) reliable measures sensitive to intervention effects on staff and children which can be used in further research.

The CPBS includes two levels a) universal strategies used with all children in a classroom including class-wide positive behavior support (PBS) methods to teach social competence and prevent and respond to problem behavior and b) individualized interventions involving assessment-based individualized PBS plans implemented only with children who require more intensive methods to reduce problem behavior and build social skills.

RAs will be involved in data management activities for a survey and follow-up interviews with HS personnel. The survey and interviews are designed to identify attitudes, beliefs, current practices and challenges in regard to teaching social skills and discipline. Students will assist with survey data input and transcription and coding of interview tapes.

Contact: Prof. Voorhees, mmv5r@virginia.edu, or Sarah Hadden, dsh5gn@virginia.edu
Register using Freeman as the instructor
CHILD LANGUAGE DISORDERS LABORATORY
LaVae Hoffman
COMMUNICATION DISORDERS PROGRAM

Specific Language Impairment (SLI) is a communication disorder characterized by a failure to develop age appropriate language abilities despite normal hearing and vision, normal nonverbal intelligence, nurturing and interactive child care in a monolingual environment, normal gross neurological functioning and the absence of significant emotional or behavioral disturbance. Approximately 7% of school-age children meet the diagnostic criteria for SLI, and these children often struggle in school settings because of difficulty learning to read and establishing satisfactory peer relationships. The Child Language Disorder Lab is interested in the information processing abilities of school age children who have this difficulty, the efficacy of language interventions, and how we can improve their academic experiences to lead to greater success in their lives.

Current studies revolve around the assessment of narrative language abilities in children who have SLI, as well as typically developing children; exploratory analysis of clinical profiles of children who have good treatment outcomes following intensive language intervention; and analysis of parental engagement with school age children. RAs work closely with graduate students.

Students must be available at least 2 mornings or afternoons a week. A weekly laboratory meeting will be scheduled. We are located in the Program of Communication Disorders at 2205 Fontaine Avenue.

Contact: Prof. Hoffman, lmh3f@virginia.edu
Register using Freeman as the instructor

GESTURE STUDIES LABORATORY
Barbara Braddock
PROGRAM OF COMMUNICATION DISORDERS

Communication disorders are common disabilities following brain changes with disease or injury. Our research focuses on establishing efficacious treatment interventions for adults and children with neurogenic communication disorders. We are interested in

Curry School of Education
multi-modality interventions, or strategies that promote the use of gestural and visual modes of communication along with auditory and verbal modalities.

Current studies are planned in the area of home-based cognitive programming for adults with dementia; outcome language measurement in children with traumatic brain injury; and the gesture-speech link in adults with aphasia following cerebrovascular accident. Undergraduate RAs will work closely with graduate students in the Program of Communication Disorders. RAs must be available at least 2 mornings or afternoons a week, and have available transportation to complete home visits. A weekly laboratory meeting will be scheduled. We are located in the Program of Communication Disorders at 2205 Fontaine Avenue.

Contact: Prof. Braddock, bab9c@virginia.edu
Register using Freeman as the instructor

PILOT STUDY TO IMPROVE REGULATORY SKILLS
Claire Cameron Ponitz
CENTER FOR ADVANCED STUDY OF TEACHING & LEARNING

Teachers of preschoolers report that problems with classroom behavior can be a huge obstacle to children's success in the classroom. Skills like paying attention, mastering self-control, and learning to work independently are vital for doing well in school. The goal of the Pilot Study to Improve Regulatory Skills (PSIRS) project is to work in a collaborative team with teachers to design activities they can use to teach children these important “skills for success.”

RAs will work with the principal investigator, postdoctoral researcher Claire Ponitz, and a group of Head Start teachers to develop lesson plans to improve children's classroom behavior. Teachers will then implement the lesson plans, first leading a whole-group activity that children can reenact during center time. In addition to helping develop the lesson plans, research assistants will conduct behavioral assessments with preschoolers and observe children in the classroom. Morning schedules and personal transportation are preferred because the project will occur outside of Charlottesville. Gas mileage will be reimbursed. Conscientious, enthusiastic students inter-
ested in working with both teachers and young children are encouraged to apply.

Contact: Claire Ponitz, ccponitz@virginia.edu
Register using Freeman as the instructor

**Laboratory of Cognitive Neurodynamics**  
**William B. Levy**  
**Department of Neurological Surgery**

Our laboratory studies the biological bases of cognition and behavior using computational models. A large, and continuing project is to understand hippocampal function with simulations based on neurons and synapses. Another project seeks to understand the role of memory in PTSD and its symptoms, particularly hyper-reactivity and poor sleep. This work is building models of the brainstem systems controlling sleep and the peripheral stress reactions.

Reading courses are available for students who seek a strong background before entering the lab. Occasionally enough such work can culminate in a small review article which can be submitted for publication. Laboratory research consists of computer simulations and data analysis. Students who do exceptional research work during the year may qualify for a paid summer research position.

Contact: Prof. Levy, wbl@virginia.edu  
Register using Freeman as the instructor

**Center for Behavioral Medicine Research**  
**Daniel Cox**  
**Department of Psychiatric Medicine**

Our laboratory investigates how best to assess and quantify risky driving of all types, and the possibilities for improving driving performance through the development of both behavioral and medical interventions. Specifically, our current projects include: 1) How diabetic hypoglycemia impairs driving and whether Diabetes Driving Safety Training delivered over the internet can reduce hypoglycemia-related risk of driving mishaps; 2) Whether Virtual Reality Driving Simulation training can help rehabilitate individuals recovering from a traumatic brain injury; 3) How long-acting methylphenidate impacts on-road driving performance of young
adults with Attention Deficit/Hyperactivity Disorder (ADHD), as measured by in-car video monitoring; 4) Whether preparatory Virtual Reality Driving Simulation Training of novice drivers will improve on-road driver education efforts; 5) Whether normalizing sodium levels of senior citizens reduces intra-cranial pressures and thus improves cognitive-motor functioning and driving ability; 6) Whether High Engagement driving (driving that requires more driver attention as is the case with manual transmission) improves driving performance of individuals with attention difficulties. With funding from both NIH and DOD, we are developing a sophisticated motion-base, virtual reality driving simulator for testing, training and therapy- see photos.

RAs will be involved in data collection and coding, literature review, grant and manuscript preparation, research team meetings and future planning of grants and projects. For motivated students, opportunities for co-authorship of manuscripts and work on more independent research projects are afforded.

Contact: Lauren Barnett, lcb7s@hscmail.mcc.virginia.edu

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2007-2009 Undergraduate Presentations or Publications

Behavioral Medicine Center Type 1 Diabetes Lab

Linda Gonder-Frederick
Department of Psychiatric Medicine

We have opening for RAs with an interest in an interdisciplinary behavioral medicine. RAs work on a variety of NIH-funded, non-profit, and pharmaceutical projects related to behavior and diabetes management. We make an effort to ensure that RAs get solid training experience on the many aspects of research in behavioral medicine.

RAs are a valuable and integrated member of an interdisciplinary research team, composed of psychologists, psychology fellows, graduate students, endocrinology fellows, statisticians, biomathematicians, and endocrinologists. We offer training experience and an opportunity for students to gain perspective on interdisciplinary behavioral research in a hospital setting. We are interested in students willing to commit to a two-year position, working 20+ hours in the summer and at least 10 hours during the school year.

Contact: Prof. Gonder-Frederick, lag3g@virginia.edu
Register using Freeman as the instructor

2007-2009 Undergraduate Presentations or Publications


Integrative Medicine Projects

Justine Owens
Department of Medicine

Recent research projects are: 1) mindfulness-based stress reduction, 2) psychological factors in healthcare outcomes, 3) acupuncture treatment efficacy and mechanism of action, and 4) mapping and nurturing the path of wisdom in physicians and patients. This last project is a study of physicians who have made serious medical errors and chronic pain patients who have successfully managed chronic...
pain. The premise of this study is that physicians and patients who have successfully faced major life challenges are exemplars of finding wisdom out of adversity. All of our projects share a common interest in the measurement of stress and the development of life skills and treatments for successful stress management. We are working on a standardized medical evaluation of accumulated stress (allopathic load) using measures such as heart rate variability (HRV), EEG beta/theta ratio, cortisol, and immune function, toward the integration of alternative medical treatments into the conventional health care system.

RAs participate in projects at various stages from grant proposal, patient recruitment, data collection, literature review, data processing, manuscripts and presentations. RAs also help with a database and Web site for a new non-profit organization.

Contact: Prof. Owens, owens@virginia.edu
Register using Freeman as the instructor

**Family Violence Lab**

**Shelly Jackson**

**Dept. of Psychiatry and Neurobehavioral Sciences**

We are examining four types of abuse perpetrated against persons over the age of 59: financial exploitation, physical abuse, neglect, and a combination of abuses. Going through Virginia’s Department of Social Services, we interview adult protective services (APS) caseworkers and their elder clients (separately) about the abusive situation using the same semi-structured interview. Face-to-face interviews take between 2–3 hours. Our study seeks to 1) identify factors that contribute to or are associated with the abuse of the elderly; 2) identify what triggers and promotes the reporting of this abuse; 3) identify what facilitates and limits investigations of abuse; 4) compare the outcomes of the various forms of elder abuse; and 5) examine the differences in perceptions between caseworkers and elder clients.

We are looking for RAs to enter the data that is being collected. In addition to quantitative data, there is qualitative data, that is so interesting to read, such as narratives in the words of the elders regarding their abusive situation. There will be opportunities to accompany
me on these interviews (although not required). RAs may work up to 20 hours a week and the work schedule is flexible. RAs may be involved in this research for research credit or may be financially compensated up to $14/hr.

Contact: Prof. Jackson, slj4u@virginia.edu
Register using Freeman as the instructor

**Clinical Pharmacological Research Unit**

**Bankole Johnson**

**Dept. of Psychiatry and Neurobehavioral Sciences**

CPRU is committed to research using new investigational medications that may lead to new pharmacotherapeutics for the treatment of drug dependence. Currently we are conducting inpatient clinical trials of investigational medications that are examining the effects of the medications on drug-induced craving and neurocognitive functioning in both alcohol and cocaine dependent individuals.

RAs who join the CPRU research team will gain valuable clinical trials research experience. Typical RA responsibilities include but are not limited to: administration of outcome measures to study participants, data scoring, data entry, literature reviews, administrative duties (copying, study binder creation, answering telephone), take participants on walk/smoke breaks. In addition, RA’s will gain exposure to working with the Institutional Review Board by way of documentation review, protocol creation and maintenance, informed consent process, and protected health information regulations.

Good organizational skills, attention to detail, and interpersonal skills required, as well as computer experience (e.g., MS Office, Internet). Additionally, RAs must dress professionally.

Contact: Prof. Haughey, hmh8f@virginia.edu
Register using Freeman as the instructor

**Cognitive and Clinical Neuropsychology Lab**

**Scott Wylie**

**Department of Neurology**

We have openings for RAs with research interests in cognitive science, neuroscience, or psychological science. Our research focuses
on the measurement of executive cognitive processes, such as decision-making, reward based learning, and top-down control of action, in patients with neurodegenerative disease (e.g., Parkinson’s disease, Huntington’s disease, and Alzheimer’s disease).

RAs participate in administration of cognitive tasks to patients, data entry, lab meetings, journal club, and data analysis/discussion. We prefer students who are interested in at least a 1 year commitment. RAs should also be personable and comfortable in a patient setting.

Contact: Prof. Wylie, saw6n@virginia.edu
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2007-2009 Undergraduate Presentations or Publications


Behavioral Health and Technology Lab

Lee Ritterband

Dept. of Psychiatry and Neurobehavioral Sciences

The Behavioral Health and Technology Lab is focused on eHealth psychology research. We primarily work on the development and evaluation of behavioral treatments delivered via the Internet. Faculty in this lab are among the first researchers to test the feasibility and effectiveness of delivering Internet interventions, having
received many grants to create and test behavioral treatment programs delivered over the Web. In addition to Internet interventions, the Behavioral Health and Technology Lab utilizes numerous cutting-edge technologies to improve project design, implementation, data collection, and treatment delivery.

Ongoing projects include development and evaluation of: 1) an Internet intervention for pediatric encopresis, 2) an Internet intervention for insomnia (also being tested with a cancer patient population), 3) Internet-based applications for diabetes, 4) an Internet intervention for patients with spinal cord injury, and 5) an Internet intervention for infant sleep. In addition, researchers in this lab serve as co-investigators on colleagues’ grants to support the bridge between psychology/psychiatry and technology in the areas of hypoglycemia and driving, parent and child co-regulation of pediatric diabetes, bio-behavioral feedback and control of type 1 diabetes, and integration of motivational interviewing within Internet interventions.

RA responsibilities consist of data collection and coding, subject recruitment and follow-up, literature searches, manuscript preparation, and more. Typically, RAs are interested in psychology graduate or medical school, but some may simply want exposure to a clinical psychology laboratory. We prefer to hire a current 2nd year student, but will also consider 3rd year students. RAs typically work approximately 10 hours/week (potential more during the summer). Occasionally, there is funding for student positions. Email a brief letter of interest and include 1) your interest in this position, 2) your current year in school, 3) your major, 4) your cumulative GPA, 5) your work and research experience, and 6) the names of 2 references.

Contact: Anne McEwan, am7bd@virginia.edu
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Register using Freeman as the instructor
In addition to making us just feel tired and yucky, being sick also influences our moods and our ability to think clearly. This comes about because the immune system is able to signal and interact with brain regions that ultimately contribute to affective and cognitive functions, such as memory. But how, exactly, can the immune system signal the brain? Does aging influence the way the brain responds to sickness? Can anything be done about the fatigue, depression, and anxiety that can accompany chronic disease such as cancer, autoimmune disease (multiple sclerosis, rheumatoid arthritis) and heart disease?

The focus of the work in this lab is on understanding the neurological mechanisms that allow things like inflammation, infections, or chronic disease to influence our behavior. We combine anatomical techniques including functional neuroanatomy (using immunohistochemistry) immuno-electron microscopy, neuronal tract-tracing and confocal microscopy, with behavioral approaches to assess the kinds of ways that different immune challenges interact with the brain.

RAs joining the lab work initially on ongoing projects, which allow them to learn the various techniques we use and become familiar with the issues involved in the work we do. RAs are encouraged to get involved with many different aspects of lab. Attending our regular lab meetings is also recommended.

Contact: Prof. Goehler, goehler@virginia.edu
Register using Freeman as the instructor
**Addictions Lab**

Karen Ingersoll and Jennifer Hettema  
Dept. of Psychiatry and Neurobehavioral Sciences  

Our laboratory is located within the UVA Center for Addiction Research and Education, where we conduct clinical research designed to investigate treatments for substance related disorders. We currently have several research projects underway, including: 1) What treatments work best to increase medication compliance and decrease drug use among individuals who are HIV positive and use cocaine, 2) What treatments work best to decrease the risk of alcohol exposed pregnancies among women who drink and do not use proper contraception, 3) What in session therapist and client behaviors impact the outcome of addictions treatment, and 4) What are effective methods for encouraging doctors to talk with their patients about addictions issues. Many of our studies focus on a particular form of therapy called Motivational Interviewing.

We highly value undergraduate participation in research and work with our RAs to develop a tailored experience that is consistent with your interests and will help you to accomplish your long term goals. Available activities include conducting participant interviews, coding tapes of therapy sessions, entering and analyzing data, reviewing literature, and participating in research team learning opportunities. Opportunities to author or co-author manuscripts or posters and conduct independent research projects are available for motivated students.

*Contact: Prof. Hettema, jhettema@virginia.edu*

*Register using Freeman as the instructor*

**Behavioral Neuroendocrinology Lab**

Emilie Rissman

Our research foci revolve around one main topic in behavioral Neuroendocrinology. We use mice to study sexual differentiation of brain and behavior. We are interested in roles of specific steroid
receptors and genes on the sex chromosomes and how these generate sex differences in brain and behavior.

Males experience testosterone in late gestation and directly after birth whereas female ovaries are quiescent until puberty. Thus the model suggests, and decades of work support, the notion that the secretion of testosterone masculinizes the developing brain; in the absence of testosterone a feminine brain develops. We use knockout mice to assess the contributions of the genes for androgen receptor (AR), estrogen receptors (ERα, ERβ), and the enzyme that converts testosterone to estradiol (aromatase) to the development and expression of sex differences. We have made several important discoveries; one of these is that masculine sexual behavior does not require the action of ERα during development or in adults. A second discovery is that ERβ is involved in sexual differentiation of at least one behavior, lordosis, a female sexual behavior. Finally we have also identified a role for the AR in the expression of partner preferences and neural responses to odors from conspecifics. Our approach now is to focus on genes regulated by these steroid receptors during development.

In addition, to the classic model for sexual differentiation an alternative hypothesis is that genes on the sex chromosomes (X and Y) are involved in neural sexual differentiation. Using transgenic and sex chromosome aneuploid mice we have identified two sexually dimorphic behaviors, intruder directed aggression and pup retrieval that are influenced by genes on the sex chromosomes. We have also identified one neural sex difference, the vasopressin fibers in the lateral septum. In these cases individual with an XY sex chromosome complement are different than individuals with an XX karyotype. Now that we have identified these differences we are moving to identify the specific genes responsible.

Undergraduate assistants, depending on the project can expect to conduct behavioral observations, tissue preparation, learn western blotting to quantify protein levels, qRT PCR quantification of gene expression, and/or immunocytochemistry.

Register using Freeman as the instructor
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