Research Projects and Interests
Last Update 8/28/17

Jennifer Ablow (Clinical, Developmental, Infant-Parent Attachment, Maternal Brain, Influence of Familial Risk and Protective Factors to Development of Stress, Physiological, and Emotion Regulation)

Dr. Ablow's research interests are in the area of social development and developmental psychopathology, with an emphasis on understanding how psychobiological and family factors combine to influence individual adaptation. Specifically, her work focuses on understanding how the psychological and physiological properties of emotional arousal and styles of emotional regulation in one sub-system of the family shape similar processes in other familial sub-systems. From a developmental psychopathology and family research perspective, she has examined how emotional arousal and the regulation of arousal in the marital relationship can "spill-over" to and shape children's psychological and emotional development. An important aspect of this work has been the development of ways to assess how young children perceive and make sense of their family environment. More recently, her work incorporates biologically-based perspectives to further examine inter-personal emotional regulation and child development. In current research, she is exploring the relation between parental internal working models of attachment, physiological arousal, and behavioral sensitivity in response to infant emotional communication (e.g., attachment cues). For further information, please visit Dr. Ablow's website.


Nicholas B. Allen (Clinical, Adolescent Development and Mental Health, Mood Disorders, Sleep, Developmental Social and Affective Neuroscience, Family Processes, Digital Mental Health, Assessment and Intervention, Prevention Research)

Throughout the lifespan there are certain developmental transitions that appear to be particularly important for determining a person's mental health. The transition from childhood to adolescence is especially important, as many serious mental health problems, such as depression and substance abuse, emerge for the first time during or after this transition. In my research group, we use a developmental psychopathology approach to understand how children and adolescents are affected by the environments in which they grow up. We have especially focussed on how family interactions and other aspects of the child's environment that have been shown to increase risk for mental health problems (e.g., stress, abuse, socio-economic disadvantage) influence the child or adolescent's emotional functioning and the development of the biological systems that undergird these emotions. The aim of this work is to not only shed light on the underlying causes of mental health and ill-health during these stages of life, but also to inform developmentally targeted approaches to prevention and early intervention, including studies focusing on sleep, parenting, and teen sexual and romantic relationships as modifiable risk factors for poor mental health. Through the Center for Digital Mental Health our work also focuses on using mobile and wearable devices, and social media, to unobtrusively track and analyse behaviour in order to detect mental health needs and provide adaptive, personalized interventions exactly when users need them. For further information, please visit Dr. Allen's ADAPT Lab website or Center for Digital Mental Health website.

Dr. Allen will not be accepting new graduate students for Fall 2018.

Selected Books:

Selected Refereed Journal Articles:
Holly Arrow (Social/Personality, Small Group Dynamics, Psychology of War)

Dr. Arrow has two major research interests: the formation and development of small groups as complex dynamic systems and the psychology of war, in particular the evolution of social capacities that help men and women cope with the challenges to survival and reproductive success posed by war. For further information, please visit Dr. Arrow's website.

Dr. Arrow will not be accepting new graduate students for Fall 2018.

See also: https://scholar.google.com/citations?user=ksVPCBsAAAAJ&hl=en http://orcid.org/0000-0002-1086-6639 https://scholar.google.com/citations?user=ksVPCBsAAAAJ&hl=en


**Dare Baldwin (Developmental, Language Acquisition, Event Processing, Cognitive and Social-Cognitive Development)**

Dr. Baldwin's research concerns mechanisms that make possible the profound human capacity for learning. Much of her research focuses on infants and young children, given the phenomenal rate at which knowledge acquisition occurs so early in life. Dr. Baldwin's research clarifies that early-emerging social skill is foundational for children's powerful learning capacity, and she investigates learning mechanisms that in turn underlie the emergence of such early social skill. In a new line of research, Dr. Baldwin examines causes and consequences of malnutrition on infants' cognitive and socio-emotional development. For further information, please visit Dr. Baldwin's website.


**Elliot Berkman (Social-Personality, Social and Affective Neuroscience, Translational Neuroscience, Self-Regulation, Goals, Motivation)**

How do we pursue long-term goals? What are the cognitive and motivational processes that contribute to our success or failure, and how do those processes interact at the neural level? The central aim of the research in Dr. Berkman's Social and Affective Neuroscience Laboratory is to understand how knowledge from psychology and neuroscience can inform interventions to improve goal outcomes. To achieve this aim, his work combines the distinct strengths of several research methods including functional magnetic resonance imaging (fMRI), cross-sectional and longitudinal survey methods, and laboratory experiments. Examples of his research include fMRI studies of basic goal-relevant processes such as self-regulation and inhibitory control, experimental studies on how value and motivation relate to goal outcomes, and longitudinal studies on real-world goals such as smoking cessation and dieting. For further information, please visit Dr. Berkman's website.

Recent representative publications


Melynda Casement (Clinical Science, Developmental Psychopathology, Affective Processing, Sleep, Stress Neurobiology, Translational Neuroscience)

I am a clinical scientist who is interested in the neurocognitive mechanisms by which homeostatic stressors (e.g., stressful life events, insufficient sleep) contribute to depression and other forms of psychopathology. As a leading cause of disease burden, depression is particularly devastating and critical to understand. Over the last decade of research, I have studied affective processing biases as a key neurocognitive mechanism of depression. I am driven to understand how these affective biases develop and how they can be remediated.

My ongoing work tests a neurodevelopmental model in which stressful life events and insufficient sleep during adolescence increase risk for depression by disrupting neural reward processing. Stressful life events and insufficient sleep are both robust predictors of depression onset and both are linked to reward circuit disruption. Furthermore, adolescence is characterized by increases in stressful life events and habitual sleep deprivation. In combination, homeostatic stressors and stress-related reward circuit disruption may form a ‘perfect storm’ for depression during adolescence. These data also lead to the intriguing hypothesis that extending sleep duration in adolescents could buffer neural reward circuitry from the impact of stressors and thereby decrease risk for depressive symptoms.

Dr. Casement is accepting new graduate students for Fall 2018.

Selected Publications:

Robert Chavez (Social/Personality, Social Neuroscience, Self, Interpersonal Perception, Personality & Individual Differences, Multimodal Neuroimaging Methods)

Among the most defining characteristics of our species is our capacity for a rich sense of self and depth of our social cognition. How does the human brain build models of ourselves and other people, and how do we use this information to guide our behavior in the real world? My research aims to better understand the biological mechanisms and individual differences in these domains of psychology. Specifically, I am interested in the shared and dissociable psychological processes that underlie self-representation and interpersonal perception and their representation in the brain. Employing methods such as multimodal neuroimaging (e.g., fMRI and DTI) and machine learning, my work investigates how these processes are reflected in the structure and function of specific networks of the brain and how these they predict individual differences in each domain. As such, work in my lab broadly draws on theoretical and methodological approaches from personality and social psychology, cognitive neuroscience, evolutionary theory, and data science. Website: https://csnl.uoregon.edu/

Selected Publications:
**Paul Dassonville (Cognitive Neuroscience)**

Dr. Dassonville is interested in the brain's ability to form mental representations of the world using sensory cues. In particular, his research uses behavioral techniques and functional magnetic resonance imaging (fMRI) to examine the spatiotemporal patterns of neural activity that underlie perceptual awareness, while using various perceptual phenomena (e.g., visual masking, figure-ground segregation, binocular rivalry) to directly manipulate the contents of awareness. In addition, his laboratory examines the many possible frames of reference used by the brain to map the location of an object in three-dimensional space. By assessing the performance of human subjects responding to sensory stimuli presented under various conditions, these experiments provide insights into the sensorimotor processes that allow the eye or hand to be moved accurately to the location of an object.

Selected Publications (click [here](#) for a full listing).


I conceptualize human experience as a stream in time of words and co-occurring visual events. The goal of my research is to understand the structure of that stream, how statistical and temporal properties engage learning mechanisms and potentially tune the developing system. The conjecture is that structure in everyday activities - at multiple timescales, and changing over the course of development - drives change in the cognitive system. Current research in my lab focuses on three questions: (1) What are the basic properties of infants’ visual environments and do these properties change with age? (2) What are the distributional properties of instances with the same name in infants’ early experience? (3) How do the dynamics of play (words and objects clustered in time) matter for early learning? For further information, please visit Dr. Fausey's [website](#).

**Fausey, C.M., Jayaraman, S., & Smith, L.B. (in prep).** The changing rhythms of life: Activity cycles in the first two years of everyday experience.


Dr. Fisher is Philip H. Knight Chair and Professor of Psychology. His research focuses on developing and evaluating early childhood interventions in socially and economically marginalized communities, and on translating scientific knowledge regarding healthy development under conditions of adversity for use in social policy and programs. His lab is currently focusing primarily on studies involving FIND video coaching intervention that he developed with colleagues. Dr. Fisher is particularly interested in the effects of early stressful experiences on children’s neurobiological and psychological development, and in prevention and treatment programs for improving maltreated children’s functioning in areas such as attachment to caregivers, relationships with peers, and functioning in school. He is also interested in the brain’s plasticity in the context of therapeutic interventions. Dr. Fisher is the director of the UO Center for Translational Neuroscience (http://ctn.uoregon.edu). His laboratory, the Stress Neurobiology and Prevention (SNAP) lab (http://www.uoregon.edu/~snaplab/SNAP), includes graduate students, post-doctoral fellows, and other researchers with similar interests. Dr. Fisher also directs the Translational Science Initiative and is the Science Director for the National Forum on Early Childhood Policy and Programs, both based at Harvard University’s Center on the Developing Child. He is Co-Principal Investigator, with Patti Chamberlain, on the NIDA-funded Translational Drug Abuse Prevention (TDAP) Center, working to increase understanding of the effects of early adversity and risk in decision-making and behavior on policy and practice in child welfare systems. Dr. Fisher is the recipient of the 2012 Society for Prevention Research Translational Science Award. He obtained his Ph.D. from the University of Oregon in 1993.

Selected Publications (* Denotes graduate student/postdoc first-authored publications)


Jennifer J. Freyd (Clinical, Psychology of Trauma)

Dr. Freyd and her students investigate the causes and impact of interpersonal violence and institutional betrayal on mental and physical health, behavior, and society. Freyd’s research with adult and child participants investigates predictions made by betrayal trauma theory. Analysis of evolutionary pressures and developmental needs suggests that victims of abuse may remain completely or partially unaware of abuse and betrayal, not to reduce suffering, but rather to maintain an attachment with a person (or institution) vital to survival, development, and thriving. Highlighting social relations and trust as central to traumatic stress has challenged existing beliefs about the psychology of trauma and generates novel testable predictions. Current projects include studies of betrayal trauma as it relates to child abuse, domestic violence, campus sexual violence, minority discrimination, gender and sexual orientation, appraisals of traumatic events, disclosures of abuse, physical and mental health distress, and institutional betrayal.

Dr. Freyd will not be accepting new graduate students for Fall 2018.

Sample of Recent Publications (Full Set Here):


Gordon C. Nagayama Hall (Clinical)

Dr. Hall is interested in the sociocultural contexts of clinical science, health issues in immigrant populations, and Asian American psychology.

Dr. Hall will not be accepting new graduate students for Fall 2018.


Dr. Hodges will not be accepting new doctoral students for Fall 2018.

Selected Publications:

**Brice Kuhl (Cognitive Neuroscience, Memory, Cognitive Control, fMRI Methods)**

Dr. Kuhl is interested in how our perceptual experiences are transformed into memories and how we recreate and selectively recall these experiences. Research in Dr. Kuhl’s lab makes use of behavioral and neuroimaging methods (fMRI, EEG) with an emphasis on applying machine learning algorithms and multivariate pattern analyses in order to understand how memories are represented and transformed in distributed patterns of brain activity.

Some of the specific topics his lab addresses include: What are the cognitive and neural mechanisms that cause forgetting? How is competition between memories signaled and resolved in the brain during retrieval? How do we reduce interference between memories during encoding? Addressing these questions involves understanding the interactions and relative contributions of fronto-parietal cortex and medial temporal lobe structures.

Selected Publications:
Favila SE, Chanales AJH, & Kuhl BA (2016) Experience-dependent hippocampal pattern differentiation prevents interference during subsequent learning. *Nature Communications*. Doi:10.1038/ncomms11066

**Robert Mauro (Social/Personality)**

Dr. Mauro teaches and conducts research in applied decision-making and human emotion. Dr. Mauro's applied work is focused on topics in psychology and law and aviation. His psychology and law work includes studies of capital sentencing, the drug courier profile, and expert testimony. His work in aviation includes laboratory and field work on pilot decision-making, training, cockpit procedures, and automation. His work in human emotions includes studies of the cognitive models of emotion, opponent-process theory, and the relations between cognition and emotion. Dr. Mauro's research utilizes experimental, survey, and observational methods and psychological and physiological measures. For more information, visit Dr. Mauro's website.


**Ulrich Mayr (Cognitive Neuroscience)**

Dr. Mayr's primary research focus is on the relationship between memory, attention, and cognitive control, both from a general and a developmental/life-span perspective. His research methods include behavioral experiments, eye-tracking, and EEG or fMRI neuroimaging. As a secondary focus he also examines complex, social decision processes (e.g., whether or not to enter a competition or to give money to charity). For further information, please visit Dr. Mayr’s website.


**Jeffrey Measelle (Developmental, Developmental Stress Biology, Caregiving Support for Early Brain Development, Pediatric Global Health)**

My research seeks to identify early sources of psychopathology in childhood, in particular, family processes that adversely influence the development of very young children's psychobiology. A major focus of our work currently is parental sensitivity, which plays a critical role in shaping infants' earliest development – both prenatally and neonatally -- through processes of biological and behavioral synchrony. Along with colleagues at Friends without A Border, I am currently conducting health and well-being research in Laos and Cambodia. This new direction for our lab explores children's development around the world through both basic science and applied research activities in South East Asia. For further information, please visit Dr. Measelle's website.


**Pranjal Mehta (Social/Personality, Social Neuroscience, Status Hierarchies and Social Decision-Making)**

Dr. Mehta's primary area of research examines the psychological and biological processes that influence the development and maintenance of status hierarchies in social groups: who rises to positions of leadership and power within their group, and how? What are the psychological and biological mechanisms that explain status-seeking behaviors (e.g., aggression, social dominance, leadership behavior, competitive behavior)? How is status related to stress and overall health? A second related line of research explores how people make decisions in social interactions. Topics include the combined roles of status and fairness in decision-making, the effects of emotion and stress on negotiation and bargaining, and the mechanisms of risky decision-making. To examine these questions, Dr. Mehta's research integrates methods and approaches from the psychological sciences (behavioral observation in dyads and groups, self and peer reports of affect, cognition, and behavior) with neuroendocrinology methods (hormone measurement and administration). His research program combines well-controlled laboratory studies with naturalistic field studies to investigate how social and biological processes play out in the "real world". A core focus of Dr. Mehta's research is understanding how hormone systems interact with one another, with the social context, and with the brain to regulate status-seeking behaviors and social decision-making. For further information, please visit Dr. Mehta's [website](http://example.com).

**Dr. Mehta will not be accepting new graduate students for Fall 2018.**

Selected Publications:


Louis Moses (Developmental, Social Cognitive Development, Theory of Mind, Executive Functioning, Prospective Memory, Moral Reasoning, Autism, Quantitative Methods)

Dr. Moses studies children's developing appreciation of mental states like belief, desire, and intention. He is particularly interested in how advances in executive functioning (e.g., inhibitory control, working memory) affect the emergence and expression of early theories of mind. Much of his research is conducted with preschool children but he has also examined the early foundations of social cognition in infancy and the onset of constructivist theories of mind later in childhood. For further information, please visit Dr. Moses' website.

Dr. Moses will not be accepting new graduate students for Fall 2018.


Jennifer Pfeifer (Developmental, Adolescence, Developmental Social and Affective Neuroscience, Self, Social Cognition, and Emotion)

The transition from childhood through adolescence is characterized by changing brains and bodies, affect and motivation, peer relationships and conceptions of self – many strands which combine to shape behavior during this critical period. Dr. Pfeifer is interested in how affect, motivation, regulation, self-evaluation, and social perception interact across contexts, are instantiated at the neural level, as well as influence adolescent choices and well-being. She studies the development of these related phenomena at multiple levels, with the goal of enabling healthy transitions from childhood through adolescence and into adulthood. Her research is focused on i) building a foundational knowledge base about normative and atypical trajectories of functional brain development supporting these social, affective/motivational, and regulatory processes - in particular, integrating the contributions of social processes and social cognitive brain function to our neurobiological models of adolescent development; and ii) using fMRI as a tool to advance our understanding of neurobiological mechanisms that put some adolescents at risk for adverse outcomes, or serve as protective factors for others. She is also interested in how functional brain development is affected by various endogenous and exogenous factors such as pubertal development and early adversity. Her work has been funded by the National Institute on Drug Abuse, National Institute of Mental Health, National Institute of Child Health and Human Development, National Science Foundation, and the Oregon Medical Research Foundation. For further information, please visit Dr. Pfeifer's website.


Gerard Saucier (Social/Personality, Values, Cultural Psychology, Moral Psychology, Political Psychology)

Dr. Saucier leads a research group, often involved in international collaborations, that focuses on the following research questions:

- What is the most cross-culturally generalizable structure of personality attributes? What is the best (especially, the most valid) way to measure this structure? How do the dimensions in this structure relate to the mindset or affective-motivational ‘personality system’ of the individual, and to larger cultural systems? What are the sources of personality change (including sources related to beliefs and values)?

- Particularly in terms of most cross-culturally generalizability, how is structure for inter-individual variation in belief and value systems ordered and structured? What kinds of beliefs and values have the largest effects on patterns of behavior and emotion, and are the most integral components of culture and have the most important effects in the spheres of politics and religion? Which patterns of beliefs and values are associated with optimal human development, and which patterns encourage psychosocial dysfunction (e.g., alienation, corruption, militant extremism, genocide)?

The approach is “top-down” in the sense that we begin by defining the most important dimensions of dispositional variation and then seek to identify mechanisms that most importantly account for that variation. Dr. Saucier has been a leader in developing and refining dimensional models for personality (the Big Five, and upgrading from the Big Five to a more comprehensive Big Six model...
and a broader, more universal ‘Big Two’) and beliefs and values (e.g., dimensions of ‘isms’). Theoretically, our approach emphasizes the contribution of cultural dynamics to psychological tendencies.


For additional publications, see [http://www.uoregon.edu/~gsaucier/gsau3.htm](http://www.uoregon.edu/~gsaucier/gsau3.htm)

**Margaret E. Sereno (Cognitive Neuroscience)**

Dr. Sereno studies the representation of shape and space in the primate brain using experimental and computational approaches. Her recent work has focused on investigating the neural basis of 3D form perception using functional magnetic resonance imaging (fMRI) in humans and monkeys, the relationship between shape constancy and the artistic skill of drawing, spatial navigation and map use, and responses to nature’s patterns (fractals). Additional collaborative projects focus on the representation of space from eye-position modulated neural signals and the interaction between perception and language.


**Paul Slovic (Social/Personality, Judgment and Decision Making, Risk Perception, Affect and Information Processing, Genocide and Human Rights, Behavioral Economics)**

Dr. Slovic studies judgment and decision processes with an emphasis on decision making under conditions of risk. His work examines fundamental issues such as the influence of affect on judgments and decisions. He also studies the factors that underlie perceptions of risk and attempts to assess the importance of these perceptions for the management of risk in society. His most recent research examines psychological factors contributing to apathy toward genocide. He no longer does classroom teaching but does advise students in their research. For further information visit Dr. Slovic’s website: [www.decisionresearch.org](http://www.decisionresearch.org).

**Dr. Slovic will not be accepting new graduate students for Fall 2018 but is willing to serve as a member on advising committees.**


**Matt Smear (Systems Neuroscience)**

Dr. Smear studies the neural mechanisms of olfactory function in mice. Mice have an excellent sense of smell—much of their genome encodes odorant receptors (over 1000 genes), and a large portion of their brain processes olfactory information. These neural features support a rich repertoire of olfactory behaviors. The Smear lab interrogates olfactory function with a battery of psychophysical tests, while manipulating and recording neuronal activity with genetics, electrophysiology, and imaging. From these studies, the lab will pursue general principles of how neural circuits generate behavior.


**Sanjay Srivastava (Social/Personality, Emotion, Interpersonal Perception, Personality Development, Self, Social Media)**

How does someone’s personality affect their social environment? And how does the social environment affect personality? I study the dynamics of personality in social contexts from a variety of perspectives. In my lab we define “personality” broadly to include traits, identities, roles, emotions, and motivations. And we study personality in many social contexts, including among strangers, in couples, in small groups, and in online societies. We study what people do, how people perceive what people do, and how people perceive one another’s perceptions. We look at the dynamics of personality on time scales ranging from the first impressions people form in seconds to personality development that takes place over decades. And we use a variety of research methods to answer these questions, including laboratory experiments and observations, ecological assessments, longitudinal studies, surveys, and both laboratory-based and automated analyses of digital data, including “big data” methods for large-scale research in social media. For further information, please visit Dr. Srivastava’s website.


**Don Tucker (Clinical, Cognitive Neuroscience, EGI)**

Dr. Tucker is interested in how cognition is regulated by emotional arousal. His research uses methods of cognitive psychology to assess the influence of specific forms of emotional arousal, such as anxiety and depression. To assess the neural activity associated with emotional states and cognitive operations, this research includes computerized analysis of the electrical activity of the brain with dense array EEG measures, developed at Electrical Geodesics, Inc (EGI).

A particular interest now is mechanisms of the limbic system that seem to regulate learning and memory according to strategic motivational controls. For example, anxiety may engage the amygdala and ventral limbic networks that not only focus immediate attention, but facilitate continuing consolidation of threat-related information.
Another line of research examines the disruption of limbic control of cerebral excitability in epilepsy. The same limbic and thalamic mechanisms that regulate the excitability of the cerebral hemisphere in memory consolidation seem to become abnormal when a person develops a seizure disorder.

For more information, visit Dr. Tucker's websites: Brain Electrophysiological Lab and Electrical Geodesics, Inc.


**Nash Unsworth (Cognitive Neuroscience, Memory and Attention)**

Research in Dr. Unsworth's laboratory combines experimental and differential approaches to cognition in order to examine basic memory and attention processes and their role in higher-order cognition. Specifically, we are interested in individual differences in memory and attention capabilities and their relation to higher-order cognitive processes (such as intelligence and reasoning). Our current work explores two functional characteristics of working memory: the need to actively maintain information in the face of distraction and the need to retrieve information that could not be maintained. It is argued that both functions are needed in a host of cognitive activities, but to differing degrees based on task demands. Finally, work in the laboratory is aimed at better understanding search and retrieval dynamics in recall. For further information, please visit Dr. Unsworth's [website](https://www.unsworthlab.com).


**Mike Wehr (Systems Neuroscience)**

Dr. Wehr studies how local circuits in the cerebral cortex encode and transform sensory information. His laboratory uses mouse auditory cortex as a model system to investigate how cellular and network properties shape cortical responses to a continuous and temporally complex stream of sensory data. Research in his lab combines aspects of both cellular, systems, and theoretical neuroscience, by using the tools of molecular biology and cellular physiology to address systems-level questions. By using a variety of methods including optogenetics, in vivo whole-cell and single-unit electrophysiology, quantitative behavior, and imaging, the laboratory is trying to identify the cellular and synaptic mechanisms with which cortical circuits process auditory information, leading ultimately to our perceptual experiences of acoustic streams, such as music and speech.

To learn more about current research, and to download publications, please visit Dr. Wehr’s [website](#).

Selected recent publications:


**Maureen Zalewski Regnier (Clinical, Developmental Psychopathology, Parental Psychopathology, Maternal Borderline Personality Disorder, Dialectical Behavior Therapy, Emotion Regulation, HPA-axis)**

Dr. Zalewski is interested in risk factors that predict the development of emotion regulation in children. She examines the development of emotion regulation in children whose parents struggle with psychopathology. Specifically, she focuses on mothers with symptoms of borderline personality disorder, as many of these individuals struggle with emotion dysregulation and have childhood trauma histories. Dr. Zalewski’s lab uses multimethod assessment tools such as observational coding, physiological recording (HPA-axis and parasympathetic measures), and subjective self-report tools.

Furthermore, Dr. Zalewski is formally trained in Dialectical Behavior Therapy (DBT), an evidence-based approach to treating individuals with Borderline Personality Disorder (BPD) and other disorders involving high emotional dysregulation. Her lab is currently completing a 5-year clinical trial on DBT Skills for mothers of preschool aged children. She also supervises a DBT Skills practicum at the University of Oregon Psychology Training Clinic.

Selected publications (*denotes student)


Dasa Zeithamova Demircan (Cognitive Neuroscience, Memory)

Memory allows us to remember specific details from individual experiences that we encounter. It also allows us to derive new knowledge by combining information from many experiences and to generalize past experience to novel situations. My research focuses on how we use different memory systems to build complex knowledge representations, such as schemas, mental models or concepts, and how our ability to generalize interacts with our ability to retain specific details. My primary research tools include computer-based experiments, formal models of behavior, and advanced functional MRI methods. For further information, please visit Dr. Zeithamova Demircan’s website at http://cognem.uoregon.edu.

Selected publications:


Psychology Emeriti Faculty -- Emeriti faculty may not be available to supervise students.

Lewis R. Goldberg, Professor Emeritus (Personality)

Dr. Goldberg is actively involved in research on individual differences, including studies of personality structure, personality measurement and assessment, and the usefulness of assessment instruments for predicting such important human outcomes as physical and mental health. The objective of one of his research projects is to develop a scientifically compelling taxonomic structure for all of the personality-descriptive terms in the English language, with the goal of comparing such structures across diverse languages. In a related project, he has developed alternative measures of the constructs included in a variety of modern personality inventories. These measures are now available free-of-charge in the public domain in an internet-based collaboratory at http://ipip.ori.org. (No longer accepting students)


Barbara Gordon-Lickey, Professor Emeritus (Neuroscience)

Dr. Barbara Gordon-Lickey’s lab studies plasticity in the mammalian visual system; that is the ability of the visual system to change in response to change in the visual environment. For example, when one eye of an infant is deprived of visual experience (monocular deprivation) that eye becomes less effective in eliciting responses from neurons in the visual cortex. A similar
response does not occur in the adult. Our lab is studying the role of NMDA receptor in visual cortex plasticity. This receptor is made up of several protein subunits. By manipulating plasticity or subunit composition, we would like to find out which subunits are involved in plastic changes. We assess plasticity with pattern evoked potentials. We assess changes in subunit composition with in situ hybridization, immunohistochemistry, western blots and whole cell recording. (No longer accepting students)


**Marvin Gordon-Lickey, Professor Emeritus (Neuroscience)**

Barbara Gordon-Lickey and I are interested in developmental plasticity, critical periods, and the neural basis of learning. As a model system of cortical plasticity, we study the monocular deprivation effect, in which deprivation of vision in one eye during a critical period causes physiological, anatomical and behavioral adaptations to the unusual circumstance of seeing through one eye only. The monocular deprivation effect occurs in humans and all other mammals tested so far. In a recent study we used the technique of swept contrast visual evoked potentials to determine the critical period for the monocular deprivation effect in rats and mice. Surprisingly we found a prominent effect of monocular deprivation in adults as well as juveniles. The plasticity in the adult, however, is physiologically distinct from plasticity in the juvenile.

The use of mice for the study of plasticity is important because it allows comparison of behavioral, physiological and biochemical development within the same species using modern genomic techniques. For instance, we have asked whether the developmental time course of NMDA receptor proteins is linked to the onset and offset of the critical period in visual cortical neurons. We are now using transgenic mice to ask whether the transcription regulator CREB is important in determining the timing of the critical period in mice. These studies, and similar ones from many other laboratories, will eventually explain why humans and other animals lose their capacity for behavioral adaptation as they grow older. (No longer accepting students)


Pham, TA; Graham, SJ; Seigo, S; Barco, A; Kandel ER; Gordon, B; and Lickey, ME. (2004) A semi-persistent adult ocular dominance plasticity in visual cortex is stabilized by activated CREB. *Learning and Memory* 11: 738-747.

**Douglas Hintzman, Professor Emeritus (Cognitive)**

Dr. Hintzman’s research concerns the processes that underlie memory retrieval, the conscious experience of memory, and memory-based judgments. A particular focus is on the way in which processes of encoding, storage, and retrieval give rise to our experience of recurrence in time. (No longer accepting new students)


Ray Hyman, Professor Emeritus (Cognitive)

Dr. Hyman's current project deals with how well contemporary theories of cognitive science can help us understand how smart people can go wrong. For this purpose he has gathered a selection of detailed cases where eminent scholars have blundered badly. Each case has been selected to highlight a different cognitive mechanism that might have accounted for the blunder. Ideally, this project will showcase the power of cognitive science to provide possible explanations. For some cases, the project may point to limitations of current theories and point to ways in which cognitive science needs to be modified or expanded. He is currently working on a book that deals with this issue. (No longer accepting new students)


Carolin Keutzer, Associate Professor Emerita (Clinical)

Dr. Keutzer is concerned with the application and understanding of the humanistic-existential and transpersonal approaches in psychotherapy. Particular interests include the major determinants of perceptual discontinuity within the psychotherapeutic process. Current empirical research is looking at demographic differences in the precipitating events and presenting problems of counseling center clients. (No longer accepting new students)


Daniel Kimble, Professor Emeritus (Physiological, Neuroscience)

Dr. Kimble’s research concerns the behavioral effects of localized brain damage on various behaviors in the laboratory rat. In particular, he is interested in following the behavioral consequences following fimbria-fornix and hippocampal lesions in rats. He is also interested in the behavior of marsupials. Dr. Kimble is retired emeritus, no longer maintains laboratory space and cannot take on students.


Helen J. Neville, Professor Emerita (Cognitive Neuroscience)

For several years we have employed psychophysics, electrophysiological (ERP) and magnetic resonance imaging (MRI) techniques to study the development and plasticity of the human brain. We have studied deaf and blind individuals, people who learned their first or second spoken or signed language at different ages, and children of different ages and of different cognitive capabilities. Over the course of this research we have observed that different brain systems and related functions display markedly different degrees or 'profiles' of neuropsychologic. Some systems appear quite strongly determined and are not altered even when experience has been very different. Other systems are highly modifiable by experience and are dependent on experience but only during particular time periods ("sensitive periods"). There are several different sensitive periods, even within a domain of processing. A third 'plasticity profile' is demonstrated by those neural systems that remain capable of change by experience throughout life. We have also observed the two sides of plasticity in several domains of processing: i.e. systems that are most modifiable (i.e. display more neuropsychologic) display both more enhancements in the deaf and blind and greater vulnerability in those with or at risk for developmental disorders.

Guided by these findings, we are conducting a program of research on the effects of different types of training on brain development and cognition in typically developing children of different ages. In one series of studies we are targeting the most changeable and vulnerable systems in 3-5 year old preschoolers (at-risk for school failure for reasons of poverty) whom we study before and after 8 weeks during which the children receive attention training and their parents receive training in parenting skills.
once a week. Standardized measures of cognition and ERP measures of attention and language document large and significant effects of these different types of inputs on neurocognitive function. Genetic and Gene X Environment (training) interactions are also evident in these data. These studies will contribute to a basic understanding of the nature and mechanisms of human brain plasticity. In addition, they can contribute information of practical significance in the design and implementation of educational programs. For further information, please visit Dr. Neville’s [website](https://www.nvle.hui). (no longer accepting students).


**Richard Marrocco (Neuroscience, Cognitive)**

Dr. Marrocco is interested in the effects of naturalistic environments on sustained attention and cognitive function. He has one active funded project under way. For information about his previous work, please visit Dr. Marrocco’s [faculty website](https://www.faculty website) and see representative articles below. (No longer accepting new students)


**Michael Posner, Professor Emeritus (Cognitive, Neuroscience)**

Dr. Posner's current work deals with genetic and experiential factors in the development of brain networks underlying attention and self regulation. We are currently continuing a longitudinal study of the origins and development of attention networks. We are also studying means of modifying attention or attentional state. The research draws on fMRI, EEG and molecular genetic methods. The research is joint with M.K. Rothbart. (No longer accepting students)


Mary K. Rothbart, Professor Emeritus (Developmental)

Dr. Rothbart studies the development of individual differences in temperament using methods that range from questionnaire to laboratory observations. She has developed parent- and self-report questionnaires for assessing temperament in infancy, childhood, early adolescence, and adulthood. She has also developed standardized laboratory assessments of temperament, and she has done extensive laboratory work on the early development of the emotions, activity, and attention. Her research work on development of attentional systems is done in collaboration with Michael Posner. For more information, visit Dr. Rothbart’s website at http://www.uoregon.edu/~maryroth/. (No longer accepting students)


Myron Rothbart, Professor Emeritus (Social)

Dr. Rothbart continues to work on a issues related to social categorization, stereotyping, and intergroup relations, but is no longer actively conducting experiments in this area. He is completing projects involving already-collected data, and writing a book on categorization and prejudice. (No longer accepting students)


Marjorie Taylor, Professor Emeritus (Developmental, Development of Imagination and Creativity)

Dr. Taylor studies the development of imagination and creativity. She has investigated children's creation of imaginary companions and pretend identities during the preschool years and the role these fantasies play in children's emotional and cognitive development. Currently, she is investigating the development of anthropomorphism, how pretend play contributes to resilience and the relation between moral judgment and creativity. In addition, her work examines adult forms of fantasy behavior, such as the relationship between adult fiction writers and the characters they create for their novels. For further information, visit Dr. Taylor's website. (No longer accepting students)


Robert L. Weiss, Professor Emeritus (Clinical)

Dr. Weiss's clinical research focuses on assessment and intervention in intimate relationships, most notably dysfunctional marital relationships. Studies are concerned both with basic processes in marital relationships (e.g., behavior-cognition interface, insider-outsider perceptions of behavior, withdrawal, and attributional processes), treatment of distressed couples. Past research has produced assessment techniques now in wide use with couples, including behavioral observation coding systems. The latter serve as vehicles for answering questions about the nature of distressed and nondistressed interactions. For further information, visit Dr. Weiss’s website at http://www.uoregon.edu/~rlweiss/. (No longer accepting new students)


