

# BYU Psychology

## Faculty Research Interests



Scott Baldwin

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Research Interests:

I'm primarily interested in data analysis and statistical issues in clinical psychology and the behavioral sciences. My data analysis interests are diverse. My research has focused on the analysis of clustered data, psychometrics, longitudinal data analysis, and meta-analysis. Recently, I have focused on using Bayesian methods to better understand clinical data and improve inferences. Indeed, the majority of my analyses now use Bayesian methods, conducted using Stan. I am also interested in evaluating psychotherapy and understanding how and why psychotherapy works.

Wendy Birmingham

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Research Interests:

My program of research is guided by previous research indicating that the quality and quantity of one's social relationships are linked to lower morbidity and mortality and protect against the adverse effect of stress. My research focuses on two pathways linking relationship quality and quantity to health pathways, I am interested in how marital relationship quality and family processes can impact blood pressure, a predictor of cardiovascular disease risk. In terms of examining behavioral pathways, I am interested in how relationship processes such as relationship quality, familial support and influence, spousal support and influence, and patient-provider influence can impact behaviors such as cancer screening adherence (e.g., HPV vaccination adherence, colorectal cancer screening adherence, mammography adherence), and diet and lifestyle choices, specifically in individuals who are at increased risk for cancer due to a family history.





## Scott Braithwaite

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Research Interests:

My primary research interests center on preventing marital distress and divorce as well as enhancing marital health. Much of my work focuses on novel methods of delivering premarital interventions so they can be disseminated broadly, especially to those who have historically been less likely to receive them. I also study basic processes that help us understand why some marriages thrive while others fail; for example, I am interested in partner selection and how the processes related to it influences marital health and stability. Finally, I'm interested in the association between close relationships and physical or mental health.

## Bruce Brown

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Office: 1098 KMBL

Research Interests:

My primary current research focus is the development of methods for neuropsychological measurement. In particular, our research team has been investigating the extraction of cognitive components from event-related potentials (EEG waves) as biomarkers for neuropsychiatric illnesses. I also work with students and faculty on the application of quantitative methods to organizational psychology problems, such as sexual harassment in the workplace, and I occasionally co-author papers on the statistical properties of name corpora.



## Gary Burlingame

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Research Interests:

I've been interested in small group treatments for over 30 years. For instance, for the past several decades my students and I have been testing which group treatment protocols produce the best outcomes with different patient populations, and which member characteristics predict greater improvement while in group. We've also developed international collaborations devoted to identifying common mechanisms of change and leader interventions that are linked to more successful groups. This research has led to the development of a selection (GRQ; Group Readiness Questionnaire), leader intervention (GPIRS; Group Psychotherapy Intervention Rating Scale), and group mechanism of change (GQ; Group Questionnaire) measures, which have been linked to process, outcome, and member attrition in studies from three countries and several clinical populations. We just finished a three-site, randomized clinical trial to test the effect of providing leaders with feedback on the GQ and OQ. As a codeveloper of the OQ and YOQ, my lab also has a small number of studies that focus on outcome with particular emphasis in the severely mentally ill and children or youth. We typically cooperate with the Utah State Hospital and Professor Jared Warren's lab to support these studies.





## Derin Cobia

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### Research Interests:

Dr. Cobia's laboratory is focused on the implementation of computational anatomy tools to study neuropsychiatric diseases, particularly schizophrenia. His interests are in the clinical and biological heterogeneity that exists in schizophrenia by taking a cognitive neuroscience perspective. His work has involved linking cognitive and neurobiological characteristics to important clinical dimensions (e.g., negative symptoms) of the illness. Dr. Cobia also conducts research in a rare language-based dementia known as Primary Progressive Aphasia.

## Shawn Gale

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### Research Interests:

My research interests are largely centered in the field of neuropsychology, which is the study of brain-behavior relationships. I utilize clinical and research techniques, including neurocognitive assessment and neuroimaging through our new MRI Research Facility here on campus, and neuroepidemiological techniques, to investigate neurocognitive outcomes in various neurologic disorders including traumatic brain injury, epilepsy, and dementia. More recently, I have become increasingly interested in the potential negative effects of (latent) infectious disease on neurocognitive functions and psychiatric illness.



## Ed Gantt

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### Research Interests:

I am currently interested in critically analyzing naturalistic accounts of human action in contemporary psychology. Thus, I am interested in (1) identifying the (often) hidden philosophical assumptions of materialism, determinism, reductionism, and egoism in mainstream psychological theories; (2) examining the implications of those assumptions for psychological theory and practice; and (3) articulating viable, alternative approaches to accounting for human action that preserve moral agency and meaning. More specifically, my recent work looks to (1) evaluate evolutionary psychological accounts of religion and religious phenomena; (2) explore the nature of the interface between religion and science; and (3) articulate possible avenues for re conceptualizing psychological science, human action (generally), and religious experience (specifically)—for example, reconceptualizing via the ethical phenomenology of Emmanuel Levinas and other phenomenological philosophers and psychologists.





## Sam Hardy

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Office: 1040 KMBL

Research Interests:

I am currently focusing on religious and spiritual development in adolescence and young adulthood.

## Dawson Hedges

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Office: 1082 KMBL

Research Interests:

My research investigates neuropsychiatric epidemiology. In particular, I investigate the influence of genetic and environmental variables on cognitive outcome and aging. In addition, I study how previous infection may affect cognition and risk for neuropsychiatric outcomes.



## Dee Higley

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Research Interests:

Professor Higley is recognized as an international expert in serotonin-mediated temperament and personality, and developmental psychopathology. His research uses rhesus macaques to model features of human alcohol abuse and alcoholism and their related behaviors and biochemistry. The studies have focused on the development of neurobiological mechanisms, as mediated by early experience and genetic influences. The importance of mothers in development is primary to his research focus. Secondary measures such as temperament, and other behavioral measures are used as early life predictors of alcohol abuse, violence, and anxiety. Included in this program is the use of a large database of various behavior, rearing, genetic and neurochemical measures

that are to assess the behavioral outcomes and early predictors of alcohol intake and violent behavior. Ongoing research performed at the University of California National Primate Center allows students to act as summer interns collecting data from the monkeys. Neuroimaging and other traditional approaches are used to study the brain of the monkeys prone to excessive alcohol intake.



## Julianne Holt-Lunstad

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### Research Interests:

There is now robust evidence of the protective effects of social relationships both on morbidity and on mortality, with a magnitude of effect comparable with many well-established risk factors such as smoking cessation and obesity. My program of research examines the influence of both the quantity and the quality of social relationships on long-term health and on risk for mortality, and the biological pathways (e.g., cardiovascular, neuroendocrine, genetic) by which such associations may occur. I also consider the potentially detrimental influence of negativity in close relationships (e.g., ambivalence, marital distress). My studies have examined social relationships at a network level, among married couples, in mother-and-infant relationships, and within friendships. My work is interdisciplinary and

takes a multimethod approach including experimental, naturalistic, meta-analytic, and intervention studies.

## Mona Hopkins

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### Research Interests:

My research focuses on brain-behavior relationships. One area of research examines the effect of critical illness on cognitive and psychological function (i.e., anxiety, depression, and posttraumatic stress disorder) and the relationship between cognitive function and brain imaging. Another area of research assesses whether interventions such as physical or cognitive rehabilitation can improve cognitive function following critical illness.



## Chad Jensen

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### Research Interests:

My program of research addresses prevention of and intervention for childhood and adolescent obesity and related disorders. I have primarily focused my research efforts on (a) developing and evaluating behavioral weight control programs for children and adolescents, (b) investigating the psychological and social experiences of overweight and obese youth (e.g., peer victimization; quality of life), (c) assessing the utility of innovative technologies in pediatric obesity prevention and intervention, and (d) examining neural processes relevant to weight-related pediatric behavior.



## Blake Jones

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### Research Interests:

My research program addresses the influence of daily routines and behaviors on health and well-being. Specifically, I am interested in how daily routines such as family mealtimes, bedtime routines, media use, and parental work schedules are associated with obesity, sleep problems, and hypertension in children and adolescents. I am also interested in identifying how physiological stress, psychological stress, and hormones influence the relationship between routines and health outcomes.

## Daniel Kay

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### Research Interests:

Sleep, Insomnia, Cognition, Memory, Mood Disorders, Cognitive Aging.



## Brock Kirwan

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### Research Interests:

I study the brain mechanisms that allow people to form and retain memories of events. This includes big events, like your wedding or your sixth birthday, as well as more mundane information, like where you parked your car or what the word "doughnut" means. One question that occupies much of my time is this: What information will we forget, and why? To address this and other questions, my students and I use a number of methods, including neuropsychological studies with memory-impaired patients, behavioral studies with healthy adults, and functional neuroimaging (fMRI) experiments. Our fMRI experiments are conducted at the new MRI Research Facility on BYU campus.





## Michael Larson

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### Research Interests:

The aims of my Clinical Cognitive Neuroscience and Neuropsychology (CCNN) lab and research program center on these cognitive control functions and are four-fold. First, we (myself, students, and collaborators) test hypotheses about behavioral (e.g., response times, error rates) and neural (primarily event-related potential [ERP] and functional magnetic resonance imaging [fMRI]) reflections of cognitive control to determine how the brain exerts control of behavior, adjusts in the presence of conflict and errors, and under what conditions cognitive control is enhanced or compromised. Second, we aim to understand the lifespan developmental course and subsequent deterioration of cognitive control component processes associated with neurologic insult or psychopathology, such as traumatic brain injury (TBI), autism, depression, or anxiety. Understanding these neural processes can assist our understanding of cognitive rehabilitation, psychotherapy, or pharmacological treatment. Third, we aim to identify the role of cognitive control component processes in exercise and food-related behaviors, including food-related response inhibition and the role of cognitive control in food intake, exercise, and obesity. Fourth, we aim to determine the psychometric properties of biological measures, such as ERPs, to both improve current research and allow for future clinical application. Attention to psychometrics demonstrates our lab's dedication to rigorous research and strong methodology.

## Steven Luke

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### Research Interests:

I use eye-tracking and other methods (MRI, EEG) to investigate: (1) The interaction of visual and linguistic processing, especially as it relates to reading. (2) The cortical networks underlying vision, attention, language, reading, and the interaction of these processes. (3) The influence of context and task on reading, visual word recognition, and other visual processing. (4) Individual differences in and the development of language processing and eye movement control. (5) Using eye movements in cognitive assessment and the diagnosis of clinical and neurological disorders.





## Rebecca Lundwall

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### Research Interests:

As a developmentalist in the Psychology Department and an affiliate of the Neuroscience Center, I conduct studies with infants, children, and adults. I have interest in typically developing and atypical populations, such as those with an attentional or cognitive deficits (including those with autism, traumatic brain injury, or attention deficit disorder). The goal of my research is to clarify influences on cognitive development from infancy to adulthood. To reach my goals, I use psychometric, neuroimaging, genetic, self-report, and interview methodology. For example, my psychometric approaches use reaction time and accuracy to visually presented stimuli such as geometric shapes. My neuroimaging studies use function magnetic resonance imaging to explore association with behavior in those with traumatic brain injury or autism. I collect saliva samples to examine individual differences in neurotransmitter production. I gather information from participants on their nutrition, academic functioning, peer-relationships, and socio-economic experiences to look for associations with brain-related outcomes. Some of my studies involve collecting longitudinal information to answer particularly intriguing questions about the trajectories of development that cannot be satisfactorily answered in other ways.

## Hal Miller

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### Research Interests:

I am interested in behavioral optimality and, specifically, in the asymmetry of gains and losses. I use concurrent-choice procedures with humans and nonhumans (pigeons and rats) to measure the motivational effects of gains (reinforcers) and losses (punishers). This behavioral-economic research is related to self-control and addiction.



## Jared Nielsen

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### Research Interests:

In the Nielsen Brain and Behavior Lab, we are interested in answering questions about the organization of the brain and how neurological and psychiatric illnesses disrupt its organization. To answer these questions, we use a variety of analytical techniques to extract quantitative information from MRI scans.



## Bob Ridge

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Office: 1034 KMBL

Research Interests:

My students and I study the effects of violent media on people's thoughts, feelings, and behavior. We are currently investigating how depictions of violent scenarios that end in reconciliation between the parties compare with depictions that result in violent retaliation. We are also conducting research investigating public perception of violent media as a risk factor for aggression. In a somewhat related vein, we study a particular type of aggression (sexual harassment) in opposite- and same-sex interactions. Much of our work focuses on adults, but we are expanding our research to study younger people.

## Mikle South

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Research Interests:

My lab conducts research on emotion regulation and decision making, especially in autism spectrum disorders (ASD). We study the shared brain mechanisms that underlie associated anxiety and autism symptoms. We use behavioral, psychophysiological (e.g., skin conductance, cardiac impedance), electroencephalography (EEG), and functional magnetic resonance imaging (fMRI) methods to measure response to various kinds of stress. I have active collaborations both on campus and internationally.



## Patrick Steffen

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Office: 287 TLRB

Research Interests:

Stress and health; stress reduction and biofeedback; the effects of culture and spirituality on health.



## Scott Steffensen

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Research Interests:

My research focuses on the neurobiology of addiction. I utilize electrophysiological, neurochemical, and behavioral approaches to study neuroadaptations in brain substrates during alcohol and nicotine dependence and codependence. My research has been funded by grants from the National Institutes of Health (NIH) for the past thirty years. My lab is currently staffed by a postdoctoral fellow, three graduate students, and thirty-five undergraduate students. I am grateful for internal support from BYU as well as the amazing students under my purview.

## Dianne Tice

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Research Interests:

Social Psychology: Self; Social rejection; Self-control; Procrastination.



## Jared Warren

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Research Interests:

Child and adolescent mental health services research; Patient-focused mental health outcome research; Clinical applications of positive psychology; mindfulness-based interventions.



## Niwako Yamawaki

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### Research Interests:

My research interests are often focused on examining the effects of sexism, stereotypes, and gender-role traditionality on individuals' attitudes toward violence against women. Another area of my research is to investigate the cultural factors, such as stigma, discrimination, collectivism, and so forth that may influence one's attitudes toward mental health services. I conduct these studies in cross-cultural settings.