

# 4th Purdue Symposium on Psychological Sciences

*Using Basic Personality Research to Inform  
the Personality Disorders*

May 12-13, 2014



Welcome!

The Department of Psychological Sciences at Purdue University is pleased to host the fourth installment in its symposium series. This biennial event showcases current and emerging topics within the psychological sciences that form the basis for an edited volume following each symposium.

The **4th Purdue Symposium on Psychological Sciences** gathers leading thinkers in clinical and personality psychology to consider theoretical and empirical issues relevant to understanding the history, etiology, assessment, and developmental course of personality disorders. Each contributor highlights important theoretical and/or empirical findings.

This symposium arises out of an interest, spurred in part by the work leading up to DSM-5, in how personality disorders should be conceptualized. The goal for this gathering is to pull together a range of scholars focusing on different aspects of basic personality and personality psychopathology, in order to encourage collaboration and cross-disciplinary initiatives. The resulting work (to be published by Oxford University Press) will be the first edited volume to pull together so many experts across clinical and personality psychology whose research in the realm of personality and personality disorders. Speakers over the next two days will expound upon such topics as trait conceptualizations of personality disorders, assessment of personality pathology through the use of self-, informant, and behavioral methods, personality disorders across the lifespan, and biological underpinnings of personality pathology.

For our symposium, we have divided our coverage into four sections spread over our two-day symposium: (1) Introduction to Personality Disorders, (2) Assessment Methods and Issues, (3) Developmental Considerations, and (4) Biological Bases. Despite the imposed sections, we hope and expect there to be significant overlap in issues examined across sections. We are indebted to our “symposiasts” for their valuable time and input.

Sincerely,



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## 4<sup>th</sup> Purdue Symposium on Psychological Sciences

### *Using Basic Personality Research to Inform the Personality Disorders*

The symposium will be held in the East and West Faculty Lounges of the Purdue Memorial Union on the West Lafayette campus from May 12<sup>th</sup> through May 13<sup>th</sup>. The symposium will gather leading thinkers in personality and clinical psychology to consider how best to apply theoretical and empirical work from more basic personality science to understanding disordered personality. Each contributor will highlight theoretical and/or empirical findings.

Personality disorders are prevalent in both community and clinical settings and have important influences on a variety of life outcomes including relationships, occupational functioning, and mental and physical health. The assessment and diagnosis of personality disorders has received much recent attention due to the development of a new version of the *Diagnostic and Statistical Manual of Mental Disorders*, in which a series of changes to the assessment and diagnoses of personality disorders proposed by the Working Group on Personality Disorder were voted down by the broader DSM committee. There will undoubtedly be a revision to this proposal in coming years. Personality disorders also represent an area of research within clinical psychology that blends basic science on personality, neuroscience, and development with clinical concerns.

### **Monday May 12<sup>th</sup>:**

**8-8:30** Continental Breakfast (PMU – East Faculty Lounge)

**8:30-8:45** Introduction and Logistics

### Topics:

#### *Introduction to Personality Disorders*

**8:45-9:30 Historical Overview of Personality Disorders:** Thomas Widiger (T. Marshall Hahn Professor of Psychology at University of Kentucky; Co-Editor of *Annual Review of Clinical Psychology*, Associate Editor at *Journal of Abnormal Psychology* and *Journal of Personality Disorders*)

**9:30-10:15 Current State of the Research:** Carl Lejuez (Professor at University of Maryland; Founder and Editor at *Personality Disorders: Theory, Research, and Treatment*)

**10:15-10:30** Coffee break

**10:30-11:15 Personality Disorders as Collections of Traits:** Joshua Miller (Professor at University of Georgia; Associate Editor at *Journal of Personality*)

**11:15-11:30 General Discussion**

**11:30-1:00:** Lunch

*Assessment Methods and Issues*

**1:00-1:45 Real World Assessment (EMA and EAR):** Will Fleeson (Ollen R. Nalley Professor of Psychology at Wake Forest University; Associate Editor at *Journal of Personality and Social Psychology*)

**1:45-2:30 Self-other Asymmetries in Personality:** Simine Vazire (Associate Professor and Rosenzweig Chair in Personality Science at Washington University in St. Louis; Associate Editor at *Journal of Research in Personality*, *Frontiers in Personality Science and Individual Differences*, and *Social Psychological and Personality Science*)

**2:30-2:45** Coffee Break

**2:45-3:30 Interpersonal Aspects of Personality:** Christopher Hopwood (Assistant Professor at Michigan State University; Associate Editor at *Journal of Personality Disorders and Assessment*)

**3:30-4:15 Extremity vs. Dysfunction in the Assessment of Personality Disorder:** Lee Anna Clark (William J. and Dorothy K. O'Neill Professor of Psychology at University of Notre Dame; Member of Work Group on Personality and Personality Disorders for DSM-5).

**4:15 General Discussion**

**Tuesday May 13<sup>th</sup>:**

**8-8:30:** Continental Breakfast (East Faculty Lounge)

**8:30-8:45:** Introductions and Logistics

*Development*

**8:45-9:30 Personality Across the Life Course:** Brent Roberts (Professor at University of Illinois)

**9:30-10:15 Early Personality Development:** Jennifer Tackett (Associate Professor at University of Houston; Associate Editor at *Assessment*, *Journal of Personality Disorders*, *Journal of Psychopathology and Behavioral Assessment*, and *Journal of Research in Personality*)

**10:15 -10:30** Coffee Break

**10:30-11:15am Personality Disorders in Later Life:** Thomas Oltmanns (Edgar James Swift Professor at Washington University in St. Louis; Editor at *Oxford Research Reviews*)

**11:30-1:00:** Lunch (East Faculty Lounge)

***Biology***

**1:00-1:45 Genetics of Personality:** Jaime Derringer (Assistant Professor at University of Illinois)

**1:45-2:30 Personality in Non-human animals:** John Capitanio (Professor at University of California - Davis)

**2:30-2:45** Coffee Break

**2:45-3:30 Hormonal and Neurogenetic Bases:** Turhan Canli (Associate Professor at SUNY-Stony Brook; Associate Editor at *Social Neuroscience*)

**3:30-4pm: Wrapup and closing by Don/Susan/Doug**

## **Historical Overview of Personality Disorders: Thomas Widiger**

Bio: Thomas A. Widiger, Ph.D. is the T. Marshall Hahn Professor of Psychology at the University of Kentucky. He received his Ph.D. in clinical psychology from Miami University (Ohio) in 1981 and completed his internship at Cornell University Medical College (Westchester). He has published extensively in the area of the diagnosis, classification, and assessment of personality disorders. He currently serves as Co-Editor of *Annual Review of Clinical Psychology*, and Associate Editor for *Journal of Abnormal Psychology* and *Journal of Personality Disorders*. He is the 2013 recipient of the Joseph Zubin Award by the Society for Research in Psychopathology and the 2010 recipient of the Distinguished Scientist Award by the Society for a Science of Clinical Psychology.

Abstract: The purpose of my presentation is to provide an historical overview of the personality disorders. My presentation traces the history of the American Psychiatric Association's classification of personality disorders from DSM-I through the current DSM-5. Attention is paid in particular to points of controversy, beginning with DSM-III and ending with the lack of success for any of the proposals for DSM-5.

## **Current State of the Research on Personality Disorders: Carl Lejuez**

Bio: Dr. Lejuez received his graduate training at West Virginia University and completed a Clinical Internship at the Brown University Clinical Psychology Training Consortium. He is currently a Professor and the Director of Clinical Training in the Clinical Psychology Program at the University of Maryland and the Founding Editor of *Personality Disorders: Theory, Research, and Treatment* published by the American Psychological Association (APA). His research is translational in nature applying laboratory methods to develop novel assessment and treatment strategies spanning the clinical domains of addictions, personality pathology, and mood disorders, and he is most interested in the common processes across these conditions.

Abstract: Drawing from trends in personality disorders (PD) research across the broader psychological literature and with data taken from submissions to the *Journal Personality Disorders: Theory, Research, and Treatment*, I will outline one perspective on the current status of the PD field. More general issues will include the fallout from DSM-5 and the use of dimensional versus categorical approaches in PD research. More specific issues will include areas of oversaturation in borderline PD research, the relative utility of and attention to fringe PDs, current contribution of process variables (e.g., impulsivity, emotion regulation) in laboratory and treatment research, the dearth of literature on antisocial PD compared to psychopathy, and diversity (and in some cases lack of diversity) in samples used as a function of PD type. Following from this review of current status, I will lead a discussion on where the field may be (and possibly should not be) headed.

## **Personality Disorders as Collections of Traits: Joshua D. Miller**

Bio: Josh Miller is a Professor of Psychology at the University of Georgia where he conducts research on personality disorders with a specific focus on narcissism and psychopathy. Dr. Miller has published over 130 peer-reviewed manuscripts and book chapters. He is currently an Associate Editor of the *Journal of Personality* and is on the editorial board of several journals including *Journal of Abnormal Psychology*, *Journal of Personality Disorders*, and *Personality Disorders: Theory, Research, and Treatment*.

Abstract: A substantial literature exists documenting the ability of general and pathological personality trait models to aid in the conceptualization, assessment, and diagnosis of personality disorders (PDs). In this talk, I review the literature on the utility of the five-factor model of personality (FFM) in relation to PDs, including an overview of ways to describe FFM-PD relations including academician and clinician ratings, as well as meta-analytic reviews. These disparate methods yield similar profiles suggesting good consensus as to which traits characterize various PDs. Next, I review alternative methods for using trait to assess PDs, including both prototype matching and additive count approaches, and discuss the convergent and criterion validity of these approaches. Subsequently, data are reviewed that indicate that trait approaches can help explain important PD-related findings including comorbidity, sex differences, and differences among assessments of the same construct, as well as demonstrate significant clinical utility. These same issues are then discussed with reference to the new pathological FFM found in the DSM-5. The evidence to date indicates that the general and pathological FFM are related in expected ways and that the DSM-5 FFM will largely replicate the findings reported initially for the general trait approach. I close with a discussion of why the field would benefit from a more objective and integrated review of the literatures on these trait approaches to PDs.

## **Using Basic Personality Models to Inform the Personality Disorders: William Fleeson**

Bio: In his efforts to understand the whole person, William Fleeson has received diverse training in personality, social, cognitive, and lifespan developmental psychology. He received his B.A. in philosophy from the University of Wisconsin, his Ph.D. in psychology from the University of Michigan, and postdoctoral training at the Max Planck Institute for Human Development in Berlin. He is now a Professor in the Department of Psychology at Wake Forest University, where he has been on the faculty since 1996. His research interests include the nature of personality, consistency, self-regulation, adult development, psychological well-being, borderline personality disorder, and moral character, among other topics. He has published in multiple journals, has served as associate editor for the *Journal of Personality and Social Psychology* and the *Journal of Research in Personality*, served as President of the Association for Research in Personality, and has worked on three major grants on personality, borderline personality disorder, and character. His work on distributions of behavior and their implications for the nature of personality won the Society of Personality and Social Psychology's Theoretical Innovation Prize.

Abstract: We propose that basic personality research can inform the personality disorders by providing models of personality functioning. In particular, we propose Whole Trait Theory as a model of basic personality functioning that can illuminate the functioning of borderline personality disorder. The translation of Whole Trait Theory results in the Core Contingency Model of BPD. This model suggests taking the occurrence of a symptom as a meaningful event and as a window into the etiology and processes underlying the disorder, rather than as a mere expression of the disorder or as a mere epiphenomenon. We present evidence in support of this model, including evidence about the intraindividual variability in symptoms, continuity and discontinuity of symptom experience across the spectrum, dynamic proximal etiologies underlying BPD, and P-technique factor analyses. In turn, this evidence reveals new information about the dynamic etiology of BPD.

**Self-other Asymmetries in Personality:** Simine Vazire, Erika N. Carlson, and Thomas F. Oltmanns

Bio: Simine Vazire is associate professor of psychology and Saul and Louise Rosenzweig Chair in Personality Science at Washington University in St. Louis. She is the director of the Personality and Self-Knowledge laboratory. Her research is funded by the National Science Foundation. She is an associate editor at *Journal of Personality and Social Psychology: PPID*, *Social Psychological and Personality Science*, *Journal of Research in Personality*, and *Frontiers in Personality and Social Psychology*.

Abstract: In this talk, I will review the evidence regarding the accuracy of self- and other-perceptions of personality traits. The Self-Other Knowledge Asymmetry (SOKA; Vazire, 2010) model proposes that self- and other-perceptions of personality diverge, and that each is more accurate for some types of traits. Building on previous work on self-other agreement and accuracy, our research examines the moderators of self- and other-accuracy, specifically, trait observability and evaluativeness. We also examine the extent to which people are aware of the differences between how they see themselves and how others see them ('meta-insight'). We examine these phenomena for normal personality traits, including the big five and subclinical narcissism. Results suggest that for observable and evaluative traits (e.g., those associated with externalizing disorders), reports from close others may provide important insight that is not captured by self-reports. Implications for the measurement of personality disorders, and the role of insight in personality disorders, are discussed.

**Interpersonal Aspects of Personality:** Christopher Hopwood

Bio: Christopher J. Hopwood, PhD is licensed psychologist in Michigan and an assistant professor of clinical psychology at Michigan State University. He is an associate editor of the *Journal of Personality Disorders and Assessment* and President-elect of the Society for Interpersonal Theory and Research. His research focuses on personality assessment and interpersonal processes; his clinical and supervisory work focuses on therapeutic assessment and interpersonal psychotherapy for individuals with personality pathology.

Abstract: Personality and psychopathology research has been historically characterized by a tension between varying perspectives the tend to emphasize, but often fail to integrate, structure, function, and dynamics (Funder, 1991). Significant progress has been made in each of these emphases to the point that integrating them has the potential to significantly impact the translation of basic personality science to clinical practice (e.g., Fleeson, 2012). Interpersonal theory is well-positioned to contribute to this integration because it has historically focused on all three of these emphases (Wiggins, 1996): it provides a coherent theory about the function of personality (Sullivan, 1953), a specific, evidence-based set of predictions about interpersonal dynamics (e.g., Sadler et al., 2009), and an extensively validated multimethod measurement system for assessing structural feature of personality as they manifest over time and across different levels of analysis (Pincus et al., 2014). In this talk the interpersonal situation will be described as an organizing construct that is informed equally by structural, functional, and dynamic considerations and has important implications for integrating different trajectories in personality science towards the translation to practice.

**Trait Extremity and Dysfunction in the Assessment of Personality Disorder:** Lee Anna Clark

Bio: Lee Anna Clark is the University of Notre Dame William J. and Dorothy K. O'Neill Professor of Psychology and Co-Director of the Center for Advanced Measurement of Personality and Psychopathology. She earned her doctorate in clinical psychology from the University of Minnesota and moved to the University of Notre Dame in 2010 after 17 years at the University of Iowa. Her research focus is on the assessment of personality disorder, for which she developed the Schedule for Nonadaptive and Adaptive Personality (SNAP) to assess personality traits across the normal-abnormal spectrum. She was a member of the *DSM-5* Personality and Personality Disorders Work Group, and also served on a number of cross-cutting study and advisory groups for *DSM-5*. Her current research focus is funded by a 5-year NIMH grant to develop a comprehensive assessment system for personality disorder diagnosis including both personality traits and functioning.

Abstract: The *DSM-5*, Section III alternative model conceptualizes personality disorder (PD) in terms of a combination of self-and-interpersonal (i.e., personality) dysfunction and extreme/ pathological traits. On a large ( $N = 299$ ) mixed sample of outpatients ( $n = 135$ ) and community adults screened in for high risk for personality disorder ( $n = 164$ ), we collected (1) self- and interview-based ratings of extreme traits (Personality Inventory for *DSM-5* and the *DSM-5* Clinician Rating Form, respectively); (2) self-and interview-based assessments of personality dysfunction (multiple self-report measures of personality functioning and the *DSM-5* Level of Personality Functioning Scale, respectively), (3) interview-based ratings of *DSM-5*, Section II personality disorder categories using the Structured Interview for *DSM* Personality, and (4) multiple self-report measures of psychosocial functioning (e.g., WHO Disability Assessment Schedule-II, Social Functioning Questionnaire). This presentation provides evidence from hierarchical regression analyses that personality dysfunction and extreme traits substantially predict both dimensional measures of *DSM-5*, Section II personality disorder categories and psychosocial functioning, and jointly they predict these construct significantly better than either personality dysfunction or extreme traits alone.

## **Personality across the Life Course: Brent Roberts**

Bio: Brent W. Roberts is a Professor of Psychology in the Department of Psychology at the University of Illinois, in the Social-Personality-Organizational Division. Dr. Roberts received his Ph.D. from Berkeley in 1994 in Personality Psychology. He received the J. S. Tanaka Dissertation Award for methodological and substantive contributions to the field of personality psychology in 1995. He also was awarded the Diener Mid-Career award in Personality Psychology from the Foundation for Personality and Social Psychology, The Theodore Millon Mid-Career award in Personality Psychology from the American Psychological Foundation, and was appointed as a Richard and Margaret Romano Professorial Scholar at the University of Illinois from 2008-2011. He recently received the 2012 Henry Murray Award from the Society for Personality and the American Psychological Association

Abstract: I will consider the evidence for and against the principles of personality trait development originally proposed in Roberts et al. (2008) and how they are relevant to clinical issues. The seven principles are: The cumulative continuity principle, maturity principle, plasticity principle, role continuity principle, identity development principle, social investment principle, and corresponsive principle. These principles provided testable hypotheses about the patterns of continuity and change in personality traits across the life course as well as the putative causes of personality trait development. I will also highlight findings that concretely link therapeutic and clinical syndromes to personality trait development.

## **Personality in Childhood and Adolescence: Jennifer Tackett**

Bio: Jennifer L. Tackett, Ph.D., is Associate Professor of Psychology at the University of Houston. Dr. Tackett received her Ph.D. from the University of Minnesota with concentration in clinical psychology and supporting areas in statistics, personality, and behavior genetics. She is associate editor at *Assessment*, *Journal of Personality*, *Journal of Personality Disorders*, *Journal of Psychopathology and Behavioral Assessment*, and *Journal of Research in Personality*, and on the editorial boards of several more. Her research focuses on adaptive and maladaptive personality development and disinhibitory psychopathology in childhood and adolescence.

Abstract: This presentation focuses on the nature and assessment of personality in childhood and adolescence. Specifically, I will address issues including the content and structure of childhood personality traits, highlighting the ways in which they differ from adult personality. I will discuss current issues in measurement and assessment of youth personality, including the usefulness of thin slice assessment and informant discrepancies. Thin slice assessment of child personality is: 1) easy and efficient to implement in both research and clinical settings, 2) relevant for both normal-range and pathological personality traits, 3) helpful in reconciling multi-method and multi-informant discrepancies, and 4) useful in contextualizing person  $\times$  situation fit and variability. The relevance of youth personality for understanding the development of

personality pathology will also be emphasized, such as the benefit of focusing on critical developmental periods for personality disorder development and the explanatory power offered by personality pathology traits well before adulthood. Time permitting, an example will be offered regarding the extent to which youth personality pathology elucidates associations between hormones and externalizing behaviors.

**Personality Disorders in Later Life:** Thomas Oltmanns

Bio: Tom Oltmanns is the Edgar James Swift Professor of Psychology, Professor of Psychiatry, and Director of Clinical Training in Psychology at Washington University in St. Louis. He was previously professor of psychology at the University of Virginia (1986-2003) and at Indiana University (1976-1985). He earned his undergraduate degree in psychology at the University of Wisconsin and his Ph.D. in clinical psychology from Stony Brook University. He has served as a member of the Board of Directors of the Association for Psychological Science (2006-2010) and was elected president of the Society for Research in Psychopathology (2009) and the Society for a Science of Clinical Psychology (1993). He is currently president of the Academy of Psychological Clinical Science.

Abstract: Lifespan perspectives have played a crucial role in shaping our understanding of many forms of psychopathology. Unfortunately, little attention has been given to personality disorders in middle adulthood and later life. We know very little about the trajectory and impact of personality pathology in older adults. Several issues are responsible for this deficiency, including difficulty applying the diagnostic criteria for personality disorders to older people and challenges in identifying appropriate samples of older participants. The goal of this presentation is to explore the benefits of considering older adults in the study of personality disorders. Later life offers a unique opportunity for investigators to consider links between personality pathology and consequential outcomes in people's lives. For example, older adults are entering a period in their lives when the frequency of transitions and health problems will increase. Many domains are relevant in considering links between personality pathology and life outcomes, including health, longevity, social adjustment, marital relationships, and the experience of major life events. I will review each domain and consider ways in which the study of middle-aged and older adults challenges investigators to evaluate what we know about personality disorders, including the ways in which they are defined and measured.

**Genetics of Personality:** Jaime Derringer

Bio: Jaime Derringer is an Assistant Professor of Psychology at the University of Illinois Urbana-Champaign. She completed her Ph.D. in Psychology at the University of Minnesota in 2011 and was a post-doctoral fellow at the University of Colorado Boulder's Institute for Behavioral Genetics. Her personality research spans a range of methodological approaches to human behavior genetics, including twin studies and molecular genetics.

Abstract: Behavior geneticists have long known that individual differences in both normal range and pathological personality are partly heritable. However, much of the effort to identify specific genes that cause personality has been largely fruitless. Recent years have seen an explosion of studies using the meta-analytic genome-wide association method, a shotgun approach that simultaneously tests millions of genetic variants for correlation with individual differences, often with total sample sizes numbering in the tens of thousands. These large-scale studies are shedding new light on why it has been so difficult to identify specific genetic variants that predict personality. The apparent heritability of personality likely arises from many (thousands of) genetic variants, each with incredibly small individual effect sizes. However, these large-scale studies often sacrifice construct specificity for measurement harmonization across dozens of pre-existing samples. Nonetheless, results from these broadly-defined studies reveal potential genetic mechanisms for heritable differences in personality. These findings represent a valuable resource for researchers interested in characterizing in detail the complex relationship between genes and personality.

### **Personality in Non-human animals: John Capitanio**

Bio: John Capitanio, Ph.D. is a Research Psychologist in the Department of Psychology at the University of California, Davis, and a Core Scientist at the California National Primate Research Center. He received his Ph.D. in Comparative Psychology from the University of California at Davis in 1982, and was a postdoctoral researcher in Developmental Psychobiology in the Dept. of Psychiatry at the University of Colorado Health Sciences Center. He is the former Associate Director for Research at the Primate Center, a Past-President of the American Society of Primatologists, a recipient of the Patricia R. Barchas Award in Sociophysiology from the American Psychosomatic Society, a Fellow of several professional societies (including APA, APS, and AAAS), and in 2012, he received the Distinguished Primatologist Award from the American Society of Primatologists. Dr. Capitanio's research interests are focused on the causes and consequences of individual differences in primate bibehavioral organization, particularly with respect to health-related outcomes.

Abstract: John P. Capitanio, Dept. of Psychology and California National Primate Research Center, University of California, Davis. Psychology has a long tradition of personality research in nonhuman primates – it simply wasn't labeled as such for many decades. While there has been a general focus on how experience (principally postnatal) contributes to personality, research on species differences also suggests genetic factors play a role. The existence of discrete personality factors in nonhumans has led recently to theorizing about the evolutionary advantage of having somewhat predictable patterns of response to the world, and the trade-offs that are an inevitable consequence of that predictability. Some of those tradeoffs are believed to be associated with health outcomes. I will review briefly some historical, comparative, and ecological perspectives on animal personality, and discuss in more detail how variation in a fundamental personality characteristic, Sociability, found in all nonhuman primate species so far, is associated with behavioral, neuroimmune, and health outcomes. The study of animal personality in general, and nonhuman primate personality in particular, is thriving, and I

will conclude with a brief description of a unique resource at the California National Primate Research Center that may be helpful in understanding personality disorders in humans.

### **Gene Discovery in Traits - An Integrative Approach: Turhan Canli**

Bio: Dr. Canli's primary research interests cover the fields of psychology, neuroscience, and molecular biology. Current work in Dr. Canli's laboratory focuses on gene-environment interactions, specifically the molecular genetic and epigenetic mechanisms that regulate gene expression across the human genome. Research in Dr. Canli's laboratory covers all levels of analysis: self-report, behavioral, neural, and cellular/molecular. Dr. Canli received a Ph.D. in psychobiology (Yale University '93), with postdoctoral training in behavioral, cognitive and affective neuroscience (Yale University '93-'95; Stanford University '95-2001), and later sabbatical training in molecular biology.

Abstract: Prior studies of gene-trait associations have either focused on candidate gene polymorphisms or on genome-wide association studies of SNPs. Yet, functional variation imparted by genes can be expressed at levels other than DNA, such as the level of the transcriptome (mRNA) or at the level of proteomics. For studies of behavioral traits, these gene-expression-dependent levels of analysis are difficult to study, because they require access to brain tissue. In this talk, I will present ongoing studies in my laboratory that begin with genome-wide analysis of gene expression in postmortem human brain tissue from donors with known behavioral phenotypes. These results are then replicated, built upon, and expanded using a variety of different techniques and datasets. This integrative approach combines methods of gene discovery with validation efforts that intend to capture the biological function of these newly discovered genes.