

BIOGRAPHICAL SKETCH

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NAME: Corbett, Blythe Anne

eRA COMMONS USER NAME (credential, e.g., agency login): BCORBETT

POSITION TITLE: Associate Professor of Psychiatry

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
California Lutheran University	B.S.	12/1993	Psychology
California School of Professional Psychology	M.A.	08/1995	Clinical Psychology
California School of Professional Psychology	Ph.D.	08/1999	Clinical Psychology
University of Minnesota	Internship	08/1999	Neuropsychology
University of Minnesota	Fellowship	08/2001	Neuropsychology

A. Personal Statement

My translational research program, the Social Emotional NeuroScience Endocrinology (SENSE) lab, aims to evaluate the social interaction and stress responsivity of children with autism spectrum disorder (ASD) by using several methods of analysis, including: sophisticated behavioral observational techniques, the assessment of biological markers of emotional arousal, such as cortisol, neuropsychological measures, and neuroimaging. The current research builds on my previous work exploring the behavioral, neuropsychological and biological profiles of children with ASD. I have established expertise in clinical psychology and neuroscience with an emphasis in the study of children and adolescents with ASD.

During my undergraduate education, I worked as a behavior specialist for children with autism and related neurodevelopmental disorders. During this time, I worked under the mentorship of leading behavioral scientists to develop my expertise in applied behavior analysis, peer and video modeling, and detailed observational coding which set the stage for the careful examination of social interaction and play. In graduate school and fellowship, I developed my expertise in pediatric neuropsychology. Subsequently, I expanded my research repertoire through training in biological and neuroimaging techniques, which was supported in part by a NIMH K08 award. In the past decade, I have served as Principal Investigator on several university-funded projects and a R01 project that synthesized my focus on the intersection between social engagement and arousal in autism. These pursuits have also informed the development of a novel peer-mediated, theatre-based intervention for children and youth with ASD, a NIMH R34 funded project.

My research has led to a proposed Neuroendocrine Spectrum Model, in which physiological arousal, cognition, and social interaction patterns intersect to inform different social stress profiles in ASD. In summary, I have an accomplished record in developing and producing innovative and high impact translational investigations in children with ASD.

Publications that are particularly relevant to current pursuits outlined in sections below:

- a) **Corbett**, B.A., Schupp, C., Simon, D., Ryan, N., Mendoza, S. (2010) Elevated cortisol during play is associated with age and social engagement in children with autism. *Molecular Autism*, 1:13, 1-12. PMID: PMC2955575
- b) **Corbett**, B.A., Swain, D.M., Newsom, C., Wang, L., Song, Y., & Edgerton, D. (2014). Biobehavioral Profiles of Arousal and Social Motivation in Autism Spectrum Disorders. *Journal of Child Psychology and Psychiatry*, 15(8):924-934. PMID: PMC4055549.

- c) **Corbett**, B.A., Newsom, C., Key, A.P., Qualls, L., & Edmiston, K. (2014). Examining the relationship between face processing and social interaction behavior in children with and without autism spectrum disorders. *Journal of Neurodevelopmental Disorders*, 6(1):35. PMID: PMC4150424
- d) Key, A., & **Corbett**, B. (2014). ERP responses to face repetition during passive viewing: A nonverbal measure of social motivation in children with autism and typical development. *Developmental Neuropsychology*, 39(6), 474-495. PMID: PMC4142544

B. Positions and Honors

Positions and Employment

1991-1993	Research Assistant, University of California (UCLA), Research Center, Camarillo, CA
1992-1993	Staff Research Associate I, UCLA Research Center, Camarillo, CA; Michael Green, Ph.D.
1993-1994	Behavior Management Consultant, Behavior Therapy & Counseling Clinic, Thousand Oaks, CA;
1994	Behavioral Consultant, Conejo Valley School District, Thousand Oaks, CA
1994-1996	Behavior Specialist, Cipani & Associates, Visalia, CA
1996-1998	Psychological Trainee, UCSF Valley Children's Hospital, Fresno, CA
1997-1998	Psychological Assistant, J. Stanley Bunce, Ph.D., ABPP, Madera, CA
1998-1999	Predoctoral Psychological Intern, APA Approved University of Minnesota Medical School
1999-2001	Postdoctoral Fellowship Neuropsychology, University of Minnesota Medical School
2000-2001	Coordinator, Autism Spectrum Disorders Program University of Minnesota, Minneapolis, MN
2001-2002	Psychological Associate, M.I.N.D. Institute, University of California, Davis, Sacramento, CA,
2001-2006	Assistant Clinical Professor, UC Davis Department of Psychiatry and the M.I.N.D. Institute
2006-2009	Assistant Professor, Clinical X, UC Davis Department of Psychiatry and the M.I.N.D. Institute
2009-2010	Associate Professor, Clinical X, UC Davis Department of Psychiatry and the M.I.N.D. Institute
2010-2013	Assistant Professor, Research Only Tenure Track, Vanderbilt University
2013-P	Associate Professor with Tenure, Vanderbilt University, Department of Psychiatry, Department of Psychology, Vanderbilt Kennedy Center, Nashville, TN

Other Experience and Professional Memberships

1993 - p	American Psychological Association (APA)
1997 - 2005	National Academy of Neuropsychology (NAN)
1999 - 2005	International Neuropsychology Society (INS)
2000 - 2002	Families for Effective Autism Treatment of Minnesota (FEAT-MN) Board Member
2003 - p	Society for Neuroscience (SFN)
2005 - p	Cognitive Neuroscience Society
2005 - p	International Society for Autism Research (INSAR)
2009 - p	Establishment of SENSE Theatre nonprofit 501(c)(3)

Honors

1992	Creative Options Award
1992	Paul L. Baumgartner Memorial Scholarship
1993	Soroptomist International Reentry Scholarship
1993	Leo J. Baranski Scholarship - Highest Honor Psychology Major
1993	CLU Women's League Scholarship 1993
1996	Director's Award for Outstanding Neuropsychology Doctoral Candidate
1996	CSPP Neuropsychology Research Award
1996	Central Valley Research Symposium Doctoral Student Award
1997	CSPP Neuropsychology Research Award
2004	Japanese American Frontiers of Science Young Investigator (National Academy of Sciences)
2005	NIH Loan Repayment Program (LRP) Award
2007	American Society for Clinical Investigations (ASCI) Travel Award
2010	California Inclusion Award

C. Contributions to Science

1. Examination of the diurnal regulation and stress responsivity in children with autism spectrum disorders.

The cornerstone of my research explores the rhythmicity and responsivity of the stress hormone cortisol and the associations with factors, such as novelty, age, and sensory functioning that can affect it. Cortisol has a normal circadian rhythm with a peak in the morning to include the cortisol awakening response (CAR) and decline throughout the day with the lowest level in the evening. Across multiple studies, I have shown that children with ASD evidence significant variability in the day-to-day regulation of cortisol. Another consistent finding from this body of work has been the demonstration of elevated evening values, which have been associated with changes and cumulative stress throughout the day. This research has demonstrated that the general circadian cycle is intact including the presence and magnitude of the CAR. As one of the pioneers in this area of research, I contributed a review of cortisol studies in ASD conducted over the past 40 years.

- a. **Corbett, B.A.**, Mendoza, S., Wegelin, J.A., Carmean, V., Levine, S. (2008). Variable cortisol circadian rhythms in children with autism and anticipatory stress. *Journal of Psychiatry and Neuroscience*, 33(3) 227-234. PMID: PMC2441887
- b. **Corbett, B.A.**, Schupp, C.W., Levine, S., Mendoza, S. (2009). Comparing cortisol, stress and sensory sensitivity in children with autism. *Autism Research*, 2, 39-49. PMID: PMC2698454
- c. **Corbett, B.A.**, & Schupp, C.W. (2014). A Comprehensive Investigation of the Cortisol Awakening Response (CAR) in Children with Autism. *Hormones and Behavior*. 65(4):345-50. PMID: PMC4004674.
- d. Taylor, J.L., & **Corbett, B.A.** (2014). A Review of Rhythm and Responsiveness of Cortisol in Individuals with Autism Spectrum Disorders. *Psychoneuroendocrinology*, 49, 207-228. PMID PMC4165710.

2. Study of social behavior and stress responsivity in children with autism spectrum disorder and typical development using lab-based and more natural ecologically valid paradigms.

It is well established that social factors can facilitate or exacerbate stress through activation of the limbic hypothalamic pituitary adrenal (LHPA) axis. Thus, a central focus in my work has been on examining social stress in children and adolescents with ASD. In the process we have demonstrated that the context in which the social situation occurs is vital in determining stress response in ASD. Using a standardized lab-based protocol known to reliably activate the LHPA axis, this research showed that in contrast to children with TD, children with ASD did not find social evaluative threat to be stressful. However, using our ecologically valid peer interaction paradigm in which children play in a natural context, we have shown that many children with ASD show significant stress during benign social interactions with peers.

- a) Lanni, K., Schupp, C., Simon, D., & **Corbett, B.** (2012). Verbal ability, social stress, and anxiety in children with Autistic disorder. *Autism: International Journal of Research and Practice*, 16(2):123-38. PMID: PMC3586791.
- b) **Corbett, B.A.**, Schupp, C.W., & Lanni, K. (2012). Comparing biobehavioral profiles across two social stress paradigms in children with and without Autism Spectrum Disorders, *Molecular Autism*, 3:13. PMID: PMC3533919.
- c) Schupp, C.W., Simon, D. & **Corbett, B.A.** (2013). Cortisol responsivity differences in children with autism spectrum disorders during free and cooperative play. *Journal of Autism and Developmental Disorders*, 43(10) 2405-2417. PMID: PMC3885342.
- d) Simon, D., & **Corbett, B.A.** (2013). Examining associations between anxiety and cortisol in high functioning male children with autism. *Journal of Neurodevelopmental Disorders*, 11;5(1):32. PMID: PMC3827503.

3. Development of novel peer-mediated paradigms and treatments for children with ASD.

Since my earliest studies, I have incorporated typically developing peers in my research not only as subjects, but as research confederates and trained interventionists through peer-mediated approaches. In my early work with video modeling, I have shown that the inclusion of peers as models in the intervention facilitated the acquisition of vital language and social skills. Moreover, many of the peers that I trained and worked with in these studies have been youth actors thereby serving as "expert models" of social communication and flexible thinking. My most notable contribution has been the development of SENSE Theatre, a peer-mediated, theatre-based program, which has contributed to significant immediate and generalized gains in social cognition, social interaction and reciprocal communication as well as stress reduction in children with ASD.

- a) **Corbett, B.A.**, Abdullah, M. (2005). Video modeling: Why does it work with autism? *The Journal of Early and Intensive Behavioral Intervention*, 2 (1), 2-8.

- b) **Corbett, B.A.**, Gunther, J., Comins, D., Price, J., Ryan, N., Simon, D., Schupp, C.W., Rios, T. (2011). Theatre as therapy for children with autism. *Journal of Autism and Developmental Disorders*, 41(4), 505-511. PMID: PMC3055998.
- c) **Corbett, B.A.**, Swain, D.M., Coke, C., Simon, D.M., Newsom, C., Houchins-Juarez, N., Jenson, A., Wang, L., and Song, Y. (2014). Published online October 22. Improvement in Social Deficits in Autism Spectrum Disorders Using a Theatre-based, Peer-mediated Intervention. *Autism Research*,7(1):4-16. PMID: PMC3943749.
- d) **Corbett, B.A.**, Qualls, L., Valencia, B., Fecteau, S., & Swain, D.M. (2014). Peer mediated theatrical engagement for improving reciprocal social interaction in autism spectrum disorder. *Frontiers in Pediatrics, section Child and Neurodevelopmental Psychiatry*, 2, 110. PMID: PMC4193263.

4. Application of neuroimaging to elucidate cognition and play in neurodevelopmental disorders.

In an effort to better understand cognitive processes and how they relate to symptom profile in neurodevelopmental disorders, I have utilized neuroimaging methods (fMRI and ERP) in children with ASD, ADHD and Tourette syndrome. I have been especially interested in face processing and have shown that many children with ASD are able to accurately identify facial emotions; however, they have significant deficits in memory for faces. My research has also highlighted that despite comparable behavioral performance to typically developing groups, children with ASD often fail to differentiate between social (novel and familiar faces) and nonsocial (houses or computers) stimuli as demonstrated by atypical neural responses.

- a) *Baym, C.L., ***Corbett**, B.A., Wright, S.B., Bunge, S.A. (2008). Neural correlates of tic severity and cognitive control in children with Tourette syndrome: An fMRI study. *Brain*, 131(1), 165-179. *Shared 1st authorship.
- b) **Corbett, B. A.**, Carmean, V., Ravizza, S., Wendelken, C., Henry, M., Carter, C., Rivera, S. (2009). A functional and structural study of emotion and face processing in children with autism. *Psychiatry Research: Neuroimaging*, 173,196-205. PMID: PMC2748131.
- c) Mazaheri, A., Coffey-Corina, S., Mangun, G.R., Bekker, E.M., and **Corbett**, B.A., (2010). Functional disconnection of frontal cortex and visual cortex in attention deficit hyperactivity disorder. *Biological Psychiatry*, 67(7) 617-23.
- d) Edmiston, K., Merkle, K., **Corbett**, B.A. (2015). Neural and Cortisol Responses during Play with Human and Computer Partners in Children with Autism. *Social Cognitive and Affective Neuroscience*, 1-10. PMID in progress.

Complete List of Published Work in MyBibliography:

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/43398673/?sort=date&direction=ascending>

Scientific Metrics (on May 8, 2015)

- Google Scholar Profile: <http://scholar.google.com/citations?user=4OhnLOIAAAAJ&hl=en> H-index: 25 I-10 Index: 29 Total Citations: 2,219
- Research Gate Profile: http://www.researchgate.net/profile/Blythe_Corbett Cumulative Journal Impact Factor: 190.68; RG Score: 34.86 (>92.5% percentile)

D. Research Support

Ongoing Research Support

1R01 MH085717-01A2 Corbett (PI) 09/01/2010-03/31/2015 (no-cost extension)
NIH/NIMH

Psychobiological Investigation of the Socioemotional Functioning in Autism

Principal Investigator: Blythe A. Corbett, Ph.D.

The primary aim of the proposed interrelated studies is to evaluate biobehavioral profiles of socioemotional functioning in children with autism utilizing several methods of analysis.

1R34 MH097793 Corbett (PI) 07/1/13 – 4/30/2016

Role: Principal Investigator

NIH/NIMH

Amount: \$701,999

Title: Peers, play and performance to improve social interaction in autism

The primary aim of this randomized wait-list study is to evaluate the impact on social functioning and stress responsivity in children with ASD following a theatre-based, peer-mediated intervention.

R324A110266 Bess (PI)
IES

07/01/2011 – 06/30/2015

Title: Fatigue and Listening Effort in School-Age Children with Hearing Loss.

The goal of this project is to examine whether school-age children with hearing loss expend greater listening effort and subsequently experience more fatigue than children with no hearing loss and to assess the impact of hearing-related fatigue on skills essential for learning in school.

Role: Co-Investigator

Completed Research Support

Hobbs Discovery Grant Corbett (PI)

10/1/12 – 9/30/2013

Role: Principal Investigator

Vanderbilt Kennedy Center

Title: Treatment effects on Face Processing

The primary aim of the study is to evaluate the treatment effect of the SENSE Theatre intervention on face identification and memory using neuropsychological and neurophysiological measures.

Completed Research Support:

1 K08 MH072958-01 Corbett (PI)

05/10/05-04/30/10

NIH/NIMH

The role of the amygdala in autism

The goal of this series of studies is to evaluate the role of the amygdala in children with high-functioning autism via structural and functional MRI.

Role: PI

Debber Family Foundation Corbett (PI)

2003-2006

A comparison study of the neuropsychological functioning and development of children with ADHD and autism spectrum disorders

The goal of this study was to compare and contrast the attention, memory, executive functioning and emotion processing of children with ADHD and autism spectrum disorders.

Role: PI

UC Davis M.I.N.D. Institute Corbett (PI)

2003-2006

Pilot Research Award

Video modeling for the perception of emotion

The goal of this study was to use video modeling to improve the perception of basic emotions in children with autism.

Role: PI

Children's Miracle Network Corbett (PI)

06/1/06- 12/1/2008

Behavioral, Neurological and Endocrine Responses to Stress in Children with Autism

UC Davis Children's Hospital.

This grant supported ongoing studies investigating biological, behavioral and neuropsychological response to ecologically valid peer interaction paradigms in children with autism.

Role: PI

Merck Bunge (PI)

06/1/05-05/31/09

John Merck Scholars Program in Biology of Developmental Disabilities

Neural Underpinnings of Deficient Cognitive Control in Developmental Disorders Affecting Frontostriatal Circuitry

This grant supported research on cognitive control in children with Tourette's Syndrome, with or without comorbid Obsessive-Compulsive Disorder.

Role: Co-investigator