BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME	POSITION TITLE
Espy, Kimberly Andrews	Professor, Associate Vice Chancellor for Research, and Acting Dean of Graduate Studies
eRA COMMONS USER NAME kaespy	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Rice University (Houston, TX)	B.A.	1985	Psychology
University of Houston (Houston, TX)	M.A.	1988	Clinical Neuropsychology
University of Louisville School of Medicine (Louisville, KY)	Internship	1991 – 1992	Pediatric and Child Clinical Psychology
University of Houston (Houston, TX)	Ph.D.	1994	Clinical Neuropsychology
University of Arizona College of Medicine (Tucson, AZ)	Postdoctoral	1994 – 1996	Pediatric and Child Neuropsychology

A. Personal Statement

The goal of this application is to elucidate how early executive control measured in very young, at-risk preschoolers contributes to later functional outcome (academic and social). Specifically, the project will leverage methodological and statistical advances to shed light on developmental pathways toward childhood psychopathology and identify specific precursors to improve early identification and preventive interventions. The combination of my professional preparation and experience and my leadership capabilities uniquely positions me to lead this five-year initiative. A clinical neuroscientist by training, and currently a licensed psychologist, my research focuses on identifying the antecedents of learning, attention, and behavioral disorders in medically at-risk populations, including those born prematurely, those exposed to substances of abuse during pregnancy, and those exposed to neurotoxicants in their environment. For the past two decades, I have studied the normative development of emergent executive control skills in young children and infants, and its intersection with attention and emotion. In collaboration with colleagues at Georgia State University, the University of Aberdeen, and the University of Illinois at Chicago, my laboratory is pursuing the elucidation of the comparative parallels in executive control in young children and primates, and the relation of executive control to everyday behavior and to academic outcomes, such as mathematics (my work in this area currently is supported by several NIH institutes, including NIDA, NIMH, and NICHD). As a part of this work, I have led the development of many innovative cognitive neuroscience paradigms to investigate neuropsychological development, and its perturbations, in young children, infants, and neonates. In 2001, I received the Rita G. Rudel Award for Pediatric Neuropsychology and Developmental Cognitive Neuroscience. In 2005, I was honored with the Early Career Award from APA Division 40 (Clinical Neuropsychology), and I also was selected as a Fellow of that same division. I serve on the editorial board of *Developmental Neuropsychology* and *Assessment* and as an ad-hoc reviewer for many journals. During 2009, I completed my term chairing NIH's Child Psychopathology and Developmental Disabilities study section. Taken together, I am ideally suited to lead the proposed R01 project given my demonstrated record of research and professional success in areas directly related to our target population and important scientific question.

B. Positions and Honors

Positions and Employment

1994 – 1996 *Research Instructor.* Department of Pediatrics, University of Arizona College of Medicine (Tucson, AZ).

Project Director and Evaluator. Project CAMI, Department of Pediatrics, University of Arizona College of Medicine (Tucson, AZ).

1996 – 2002 *Assistant Professor.* Department of Family & Community Medicine, Southern Illinois University School of Medicine (Carbondale, IL).

2002 – 2005 *Associate Professor (with tenure)*. Department of Family & Community Medicine, Southern Illinois University School of Medicine (Carbondale, IL).

2005 *Professor.* Department of Family & Community Medicine, Southern Illinois University School of Medicine (Carbondale, IL). *[Cross-Appointment: Department of Psychology]*

2005 – Present *Professor.* Department of Psychology, University of Nebraska-Lincoln (Lincoln, NE).

Associate Vice Chancellor for Research. Office of Research and Economic Development, University of Nebraska-Lincoln (Lincoln, NE).

2010 – Present *Acting Dean of Graduate Studies.* Office of Graduate Studies, University of Nebraska-Lincoln (Lincoln, NE).

Other Experience and Professional Memberships

Licensed Clinical Psychologist: State of Illinois, #071-005297, Inactive, State of Arizona, Registrant #50330, National Register of Health Service Providers in Psychology

Advanced Statistical Workshops: *Hierarchical Linear Models* (1991); *Growth Curve Analysis: Introduction*, (1995); *Growth Curve Analysis in Neuropsychology* (1996); *New Methods for the Analysis of Change* (1998); *SAS Advanced Mixed Models* (1999). *Non-Linear Models: NLMIXED* (2000); Penn State Summer Institute on Longitudinal Methods, *Modeling with MPlus* (2001); *Longitudinal Modeling and Missing Data* (2002); *Applied Longitudinal Data Analysis (*2003)

Honors and Awards

- Visiting Lectureship, Department of Psychology, University of Aberdeen, Aberdeen, Scotland (2002)
- Blue Ribbon Award (best paper), American Psychological Association (APA), Division 40 (2002)
- Visiting Fellow, British Psychological Society (2004)
- Early Career Award, American Psychological Association (APA), Division 40 (2004)
- Fellow, American Psychological Association (APA), Division 40 (2005)

C. Selected Peer-reviewed Publications

Publications Most Relevant to the Current Application

Taylor, H.G., **Espy, K.A.**, & Anderson, P.J. (2009). Mathematics Deficiencies in Children with Very Low Birth Weight or Very Preterm Birth. *Developmental Disabilities Research Reviews*, 15, 52-59.

Wiebe, S.A., **Espy, K.A**., Stopp, C., Huggenvik, J., Gilbert, D., & Jameson, T. (2009). Genetics of self regulation across development: D2 dopamine receptor genotype and prenatal tobacco exposure. *Developmental Psychology*, 45, 31-44.

Espy, K.A., Fang, H., Charak, D., Minich, N. & Taylor, H.G. (2009). Growth mixture modeling of academic achievement in children of varying birth weight risk. *Neuropsychology*, 23, 460-474.

Wiebe, S.A., **Espy, K.A.,** & Charak, D. (2008). Using confirmatory factor analysis to understand executive control in preschool children: I. Latent structure. *Developmental Psychology*, 44, 575-587.

Chacko, A., Wakschlag, L., Hill, C., Danis, B., & **Espy, K.A.** (2009). Viewing preschool disruptive behavior disorders and ADHD through a developmental lens: What we know and what we need to know. *Child & Adolescent Psychiatric Clinics of North America*, 18, 627-644.

Additional Recent Publications of Importance to the Field (in chronological order)

Espy, K.A. & Bull, R.B. (2005). Inhibitory processes in young children and individual variation in short-term memory. *Developmental Neuropsychology, 28,* 669-688. *PMCID: PMC2682441*

Crawford, J.S., **Espy, K.A.**, Isquith, P.K. & Gioia, G.G. (2005). Assessment of Executive Functions in Preschool Aged Children. *Mental Retardation and Developmental Disability Research Reviews, 11,* 100-104.

Espy, K.A., Bull, R.B., Martin, J. & Stroup, W. (2006). Measuring the development of executive control with the Shape School. *Psychological Assessment, 18,* 373-381.

Espy, K.A., Senn, T.E., Charak, D., Tyler, J. & Wiebe, S. (2007). Perinatal pH and Neuropsychological Outcomes at age 3 years in children born preterm: An Exploratory Study. *Developmental Neuropsychology, 32,* 669-682.

Bull, R.B., **Espy, K.A.,** & Wiebe, S.W. (2008). Short-term memory, working memory and executive functioning in preschoolers: Longitudinal predictors of mathematical achievement. *Developmental Neuropsychology, 33,* 205-228. *PMCID: PMC2729141*

Nelson, M.M., & **Espy, K.A.** (2009). Low-level lead exposure and contingency-based responding in preschoolers: An exploratory study. *Developmental Neuropsychology*, 34, 494-506.

Fang, H., **Espy, K.A.,** Rizzo, M., Stopp, C., Wiebe, S., & Stroup, W. (2009). Using Integrated Approach to Identify Growth Patterns in Longitudinal Designs with Inflated Missing Data. *International Journal of Information Technology and Decision Making. 8,* 491-513.

Fang, H., Brooks, G. P., Rizzo, M. L., **Espy, K. A.**, & Barcikowski, R. S. *(*in press*)*. A Monte Carlo power analysis of traditional repeated measures and hierarchical multivariate linear models in longitudinal data analysis. *Journal of Modern Applied Statistical Methods*.

Fang, H., Brooks,G. P., Rizzo,M.L., **Espy, K.A.,** & Barcikowski, R.S. (2009). Power of models in longitudinal study: Findings from a full-crossed simulation design. *Journal of Experimental Education, 77,* 215-254*. PMCID: PMC2783599*

Kiselev, S., **Espy, K.A.,** Sheffield, T. (2009). Age-related differences in reaction time task performance in young children. *Journal of Experimental Child Psychology*, 102, 150-166. Epub 2008 Mar 24.

D. Research Support

Ongoing Research Support

2R01 MH065668, Espy (PI) 04/01/04 – 06/30/14
NIH/NIMH
Executive Function Development in Preschool Children
The goal of this project is to determine the longitudinal development of executive control in preschool children and how individual differences in executive skills relate to functional outcome.

DA 023653 Wakschlag and Espy (MPI) 04/01/09 – 12/31/13
NIH/NIDA
Prenatal Smoking and the Substrates of Disruptive Behavior in Early Life
The aim is to identify the clinical, neuropsychological, genetic, and parenting contributors to disruptive behaviors in exposed 5-year-olds.

0826828, Hibbing (PI) 01/01/09 – 12/31/12
NSF/BCS
Identifying the Biological Underpinnings of Political Temperament
This project is designed to understand the neurophysiological contribution to political attitudes, choices, and actions.
Role: Co-Principal Investigator

R01 HD050309, Taylor (PI) 09/01/06 – 06/30/11
NIH/NICHD
Early School Progress in <1000g Birthweight Children
The goal of this project is to understand the early school competencies in children born at extremely low birthweights.
Role: Co-Investigator

DA 024769, Wiebe (PI) 01/01/09 – 12/31/10
NIH/NIDA
Prenatal Tobacco Exposure, Self Regulation, and Externalizing Behaviors in Early Childhood
The goal is understand the mechanisms underlying the emergence of self-regulatory problems and externalizing behavior in 3-year-old children who were prenatally exposed to tobacco.

5P01 HD038051-05, Washburn (PI) 09/01/05 – 06/30/10
NIH/NICHD
The Emergence of Cognitive Control
The goal of this project that is one of 5 of a program project is to compare executive control in young children and primates.
Role: Co-Investigator/Consultant

Recently Completed Research Support

R01 DA014661, Espy (PI) 08/01/03 – 05/31/08
NIH/NIDA
Prenatal Tobacco Exposure: Perinatal and Genetic Risks
The aim of this project was to characterize the effects of prenatal tobacco exposure on early neurobehavior and temperament in fullterm and preterm infants and to determine whether risks vary according to genotype of dopamine receptor proteins.

R01 HD042729-01, Wade (PI) 07/01/02 – 06/30/07
NIH/NICHD
Child and Family Sequelae of Preschool Brain Injury
The aim of this project was to understand how family characteristics moderate outcome from brain injury in preschool children.
Role: Consultant