

**NIMH Training Grant:
Integrative Training in Early Childhood Mental Health Research
Description for Prospective Applicants
March 1, 2004**

An important national mandate is the promotion of mental health and the prevention of psychopathology before children enter school (National Research Council and Institute of Medicine [NRC & IOM], 2000; U.S. Public Health Service, 1999). Despite gains in the scientific support for such initiatives, we still lack (a) a sufficiently broad and complex store of developmental research that *translates* to the mental health needs of young children, their families, and the contexts in which they develop (Huffman et al., 2000; NAMHC, 2001), (b) a sufficiently high level of *collaborative* research across disciplines, sub disciplines, and between researchers and communities (Cicchetti & Dawson, 2002; Spoth & Redmond, 2002), and (c) adequate analysis of *developmentally-guided, empirically-supported* methods for evaluating and treating the diverse and complicated needs of young children, their families, and the contexts in which they are developing (NRC & IOM, 2000; Pettit & Dodge, 2003; Price & Ingram, 2001). There is an acute need for sophisticated, sensitive research on such topics to advance our ability to promote all youngsters' mental health and school readiness in order to prevent the problems that jeopardize their social and academic futures, and to help communities adopt and sustain effective interventions. The goal of this program is to provide training to pre- and post-doctoral individuals who will be able to conduct the research that advances the promotion of mental health and prevention of psychopathology in the first five years of life.

There are three qualities that the next generation of research must have to advance the commitment to early childhood mental health:

(1). Research must be grounded in developmental science, for both typical and atypical trajectories, emphasizing connections across domains of social, cognitive, linguistic, and familial development (Cicchetti & Dawson, 2002). Our training program builds upon recent advances in developmental science that have enormous implications for the identification of risk and the design of interventions by integrating neurocognitive-behavior relations (across domains of brain, perceptual, attentional, motor, executive, and language development in early childhood; Dionne et al., 2003; Nelson, et al., 2002) with developmental psychopathology (the study of the development of disordered behavior in the context of typical development; Rutter & Sroufe, 2000). The proposed training program aims to prepare new scientists *to study early childhood development from a neurocognitive-behavioral perspective across domains of functioning in order to understand the development of mentally healthy and disordered outcomes* (Cicchetti & Dawson, 2002; Fishbein, 2000).

(2). Studies of the pathways to mental health and psychopathology must take into account the fact that individual development emerges in multiple, embedded contexts (e.g., parent-child relationship, family system, economic and cultural priorities, changing societal trends and policies). Although an ecological approach has been advocated for years (e.g., Bronfenbrenner, 1986), it has not been easy to capture the full complexity of development in context. Levels of analysis must range from the moment-to-moment

interactions between child and caregiver, which coact with the developing brain, to the resources and constraints posed by community and culture. Development must take these various levels of analysis into account within studies (Cicchetti & Dawson, 2002). To understand change (ontogenetic or therapeutic) contextually requires the ability to draw from multiple disciplines, their constructs and methods (Huffman et al. 2000; NRC & IOM, 2000). Our training builds upon advances in knowledge that parenting, family systems, culture, and setting (community, classroom, neighborhood) influence developmental trajectories by providing trainees with the skills *to study families at risk through multidisciplinary collaborations that contextualize development*.

(3). Developmental science must be applied to assessment, intervention and prevention. Such applications must be empirically evaluated and effective treatments must be disseminated, in sustainable ways, to communities (Chorpita et al., 2002; Cicchetti & Hinshaw, 2002; Spoth et al., 2002). There is a critical need to understand the processes by which interventions are effective, with a particular emphasis on how interventions can work well for different children from different backgrounds (Kazdin, 2003). Our training program builds upon research advances in the development of empirically-supported interventions for children and families by integrating training in developmental science with intervention science. We propose to train researchers *to study the characteristics of children, families, communities, and intervention settings that are the mediators and moderators of intervention efficacy*.

Training Program Overview

The training program is co-administered by Pamela Cole (Child Study Center) and Mark Greenberg (Prevention Research Center). In the program, they are joined a number of outstanding faculty including Sandra Azar, Karen Bierman, Clancy Blair, Doug Coatsworth, Keith Crnic, Celene Domitrovich, Mark Feinberg, Scott Gest, Rick Gilmore, Keith Nelson, Rob Nix, Brian Rabian, Cindy Stifter, Doug Teti, and Hoben Thomas.

Trainees make a 2-year commitment to the program (with some flexibility for postdoctoral trainees based on their prior training). The first year emphasizes immersion in and development of integrative research questions; the second year focuses on the submission of actual grant proposals by trainees. The two-year program is purposefully designed with overlap between first year and second year trainees as a means of broadening their exposure and experience and providing first year trainees with exposure to second year trainees as they develop research proposals.

For graduate students, the fellowships are in the 3rd and 4th years, building upon basic skills and knowledge, and providing integrative research training as they approach their dissertations and post-graduate careers. The inclusion of postdoctoral trainees will enhance the training of the graduate students, further increase the collaborations across departments and disciplines, as well as provide excellent training for PhDs who are ready to launch their research careers.

The training program is organized around 3 research concentrations (neurocognitive-behavioral relations, intervention efficacy, and families-at-risk) and 3 training priorities (multidisciplinary approaches, sophisticated integration of basic and applied science, and integration of the public need with the scientific endeavor).

Research Training. Each predoctoral and postdoctoral trainee will work with two participating faculty, one of whom will be the Senior Preceptor. Of the two faculty

members, one will supervise trainee research in basic developmental science and one in applications of developmental science to developmental psychopathology or intervention science. The pair of studies must bridge two areas of concentration (see below). Research activity in both basic and applied projects is intended to provide experiences and skills that will seed the kind of depth, breadth, and integration of information that prepares trainees to conduct the much needed cross-disciplinary research. Trainees will be involved in all aspects of research, design, funding, data collection in laboratory and real-life settings (the two Centers have extensive observational research and field research capacity and support), data management, data analyses, program efficacy evaluation, presentation of research in scientific journals and professional meetings, and translation of science in community forums. Each trainee's research will be supervised by the two faculty research advisors; for predoctoral trainees, these advisors will serve on the student's doctoral committee (Penn State students requires at least 4 members).

Areas of concentration:

Neurocognitive-behavioral relations across-domains concentration. Faculty and research programs in this concentration can be organized around two strengths: (1) cross-domain studies of basic aspects of brain, motor, language, cognitive and socio-emotional development, and (2) translations of these aspects to the study of the development of psychopathology and of preventive interventions.

Families at risk concentration. The faculty and research programs in this concentration can be organized around three strengths: (1) demographic influences on family life, notably economic disadvantage, ethnic and geographic (rural/urban) diversity, (2) stresses and risk factors in parents (e.g., having a delayed child, being a parent with cognitive limitations), and (3) multi-level measurement and modeling, ranging from micro analytic coding of family interactions to geographical GIS mapping of neighborhood influences.

Intervention efficacy concentration. Faculty and research programs in this concentration can be organized around three main strengths: (1) design of theoretically based and developmentally informed interventions to promote social and emotional functioning and to prevent mental health problems in youth, (2) working with communities to select and implement empirically supported preventive interventions, and (3) evaluation of program effectiveness and the study of factors that contribute to more effective program outcomes.

Community Experience

Another major feature of the proposed program is training to work as a scientist with communities by (a) cultivating an appreciation of the questions that science must address in order to advance our ability to promote mental health and prevent disorder in early childhood, and (b) learning how developmentally-guided, empirically-supported interventions are implemented in diverse communities. The training is designed to produce researchers with an awareness of community needs that will stimulate new research, facilitate competent and sensitive interchange of knowledge with the community, and instantiate Penn State University's engaged partnership model.

Trainees also must take a program of courses that support the goal of having the breadth and background to conduct integrative research that addresses the public need in the area of mental health in very young children. These are accompanied by a weekly seminar in which trainees learn about the challenges and solutions to conducting integrative, collaborative, clinically relevant, interdisciplinary research, and receive training and support in preparing their own grants. All trainees produce a grant to be submitted during the second year of training.

Course Menu

<i>Course Title</i>	<i>Required (R)</i>	<i>Concentrations*</i>
Developmental Science		
PSY/HDFS Brain Development HDFS Poverty & Family Studies	Both R	NB FAR
PSY/HDFS Emotional Development PSY Cognitive Development PSY Social Development HDFS Family Studies Seminar	At least 2 R	NB NB NB, FAR FAR
Clinical & Prevention Science		
PSY Child Psychopathology	R	NB
HDFS Early Childhood Interventions PSY Child Clinical Interventions	At least 1 R	IE IE
HDFS Social Epidemiology HDFS Best Practices: School-Based HDFS Best Practices: Family-Based	At least 1 R	FAR/IE
Research Methods/Statistics		
PSY Clinical Research Design OR HDFS Program Evaluation PSY Multivariate ANOVA Tech PSY Multiple Regression Tech HDFS Data Analysis for Dev Res HDFS Multivariate Change Anal SOC Hierarchical Linear Regr	At least 1 R At least 3 R	IE IE

* Neurocognitive-Behavioral Relations (NB), Intervention Efficacy (IE), Families-at-Risk (FAR)

Trainees also participate in the Summer Institute, in which they observe a review panel review their own grants and receive expert consultation on their actual proposals. A trip to Washington to meet program officers is also provided.

We seek trainees with broad backgrounds and diverse experiences. For further information, please contact Pamela Cole at pmc5@psu.edu