IES POST-DOCTORAL TRAINING GRANT

MATHEMATICAL THINKING, LEARNING, AND INSTRUCTION

WISCONSIN CENTER FOR EDUCATIONAL RESEARCH • UNIVERSITY OF WISCONSIN-MADISON

Dear Colleague: We are pleased to announce a new postdoctoral training grant in mathematics education.

OUR VISION

There is a clear and recognized need for well-trained mathematics education researchers who are able to conduct scientifically based qualitative and quantitative research that addresses immediate and long-term questions about the efficacy of educational programs and policies, and who can provide an empirical basis for future designs of curricula, assessments, instruction, and learning environments. With funding from the US Department of Education's Institute for Educational Sciences, we now offer a two-year interdisciplinary, postdoctoral training program, situated at the University of Wisconsin–Madison, which aims to increase postdoctoral capacity to conduct rigorous research in the topic area of mathematics education. The program provides recent graduates opportunities to experience a range of methods, including those from curriculum & instruction seeking to learn quantitative methods that support causal inference, as well as psychologists and other social scientists seeking to conduct studies in natural settings and collect, analyze, and interpret process-level data. The training program emphasizes the interdisciplinary nature of the mathematics education research opportunities at the University of Wisconsin–Madison. It addresses broad research interests, including: Exploratory research, basic processes in learning and instruction, development and innovation, efficacy and replication, and measurement.

PROGRAM DETAILS

We frame the postdoctoral experience in terms of project-based learning by anchoring the training in ongoing, funded research on mathematics education. The program also offers our postdoctoral fellows individualized experiences created in collaboration with a mentoring committee including: research methods courses, campus colloquia, and independent research and supervised grant writing projects designed to match the needs of individual participants. The training grant Mentoring Team includes:

- **Mitchell J. Nathan**, director of the training program, professor of Educational Psychology, uses mixed methods approaches to study thinking, learning, professional development and teaching in mathematics and engineering classrooms from cognitive, social and embodied perspectives.
- **Eric Knuth,** professor of Mathematics Education, focuses on the meaningful engagement of students in mathematical practices such as justification and proof in algebra and geometry, and the design of curriculum and instruction that fosters increasingly sophisticated forms of engagement in such practices.
- **Amy Ellis**, assistant professor of Mathematics Education, studies students' reasoning, particularly as it relates to mathematical generalization, justification, and proof; the development of algebraic thinking; and the ways in which quantitative reasoning supports students' mathematical understanding.
- **David Kaplan**, professor of Educational Psychology, focuses on quantitative methods such as Bayesian latent variable models and the problem of causal inference in non-experimental settings. He serves on the Questionnaire Expert Group for OECD/PISA.
- **Martha W. Alibali**, professor of Psychology, studies mechanisms of knowledge change in the development of children's mathematical reasoning, and the role of visual scaffolding (including gestures, diagrams, and other inscriptions) in instructional communication.
- **Charles Kalish**, professor of Educational Psychology, studies inductive inference and categorization, focusing on intuitive statistical reasoning in adults and children; learning from examples in mathematics and non-mathematics domains; and the pragmatics of teaching and learning.

Further details are available at our website, http://iesPostDoc.wceruw.org.

HOW TO APPLY

We seek highly qualified applicants who have earned a doctorate degree in mathematics education, psychology, learning sciences, or related areas. The positions carry a stipend of $50,000 per year plus health insurance coverage and support for professional travel. Review of applications will begin on March 15, 2010 and will continue until the positions are filled. The starting date is negotiable. Applicants should be US citizens or permanent residents. Please send (a) a letter that summarizes your research experiences, areas of interest and identifies a primary and secondary mentor from among the program team; (b) curriculum vitae; and (c) two publications or manuscripts to IESPostDoc@wcer.wisc.edu. Also arrange for three letters of reference to be sent directly to the same email address with the applicant's name in the subject line. If you require further information, please do not hesitate to contact the director and PI, Mitchell Nathan, mnathan@wisc.edu, 608-263-0563.