Post-doctoral Research Fellow with the Johns Hopkins Science of Learning Institute

The Science of Learning Institute and the Department of Cognitive Science at Johns Hopkins University is seeking a highly qualified post-doctoral research fellow to join an interdisciplinary research team to develop and evaluate a novel spatially-enhanced 3rd grade science curriculum and teacher supports. This project is a newly-funded 4-year collaborative partnership between cognitive scientists, developmental scientists, and educators to advance evidence-based STEM educational student and teacher practices through a new curriculum and professional development.

The fellow will work collaboratively with an interdisciplinary team of scientists and educators on the project, and will be involved in all aspects of the research, including (1) working with school district curriculum developers and leaders to develop the curriculum and teacher supports, (2) developing and piloting measures, (3) conducting focus groups and field-tests of the curriculum and teacher training, and (4) evaluating the effectiveness of the curriculum and teacher training compared to a control group.

There will be substantial opportunity for the fellow to broaden his/her translational science and evaluation skill set as well as to interact with the Science of Learning community at Johns Hopkins and the education community in Maryland.

Project Background and Aims:

The United States faces several key challenges regarding Science, Technology, Engineering, and Mathematics (STEM) education and training: we consistently score at or below average proficiency levels on math and science international assessments (OECD, 2012) and the demand for STEM jobs is outpacing the supply of well-trained workers (U.S. Congress Joint Economic Committee, 2012). These statistics have motivated new approaches to K-12 STEM education such as the Common Core State Standards for math and the Next Generation Science Standards (NGSS). Such efforts aim to facilitate students' knowledge and scientific problem solving relevant to STEM careers (National Governors Association Center for Best Practices, 2010; NGSS Lead States, 2013); however, students may lack a critical building block underlying success - spatial thinking. Decades of research show that spatial thinking skills are related to entrance into and achievement within STEM fields (Shea, Lubinski & Benbow, 2001; Wai, Lubinski & Benbow, 2009). Despite the apparent value of students "learning to think spatially," virtually no efforts have been made to *infuse* spatial research into science curricula. The goal of this partnership between Johns Hopkins University (JHU) and Prince George's County Public Schools (PGCPS) is to advance evidence-based STEM educational student and teacher practices through new curriculum and professional development. The project has three specific aims:

1. To develop an evidence-informed, spatially-enhanced science curriculum for 3rd grade students.
2. To develop spatial thinking teacher professional training modules to build spatial thinking knowledge and skills
3. To evaluate the impact of the spatially-enhanced curriculum and spatial thinking professional development modules on students' spatial skills, academic achievement, and interest in STEM.

Qualifications:

The ideal candidate will be passionate about the translation of research to practice and will have the following training and specialized knowledge and skills. Salary and benefits are competitive and commensurate with experience.

- Ph.D. in Cognitive Science, Psychology, Developmental Science, Education, or related field required.
- Knowledge of spatial thinking skills required. Knowledge should include a deep understanding of (1) how these skills develop in children and adults, (2) what tools/techniques facilitate their development, and (3) the connection between spatial thinking skill and achievement in Science, Technology, Engineering, and Mathematics.
- Knowledge of human learning and child development preferred.
- Knowledge of elementary science education preferred.
- Ability to work effectively with a wide variety of people across different environments, including senior leadership and staff across academic sectors and education.
- Ability to synthesize literature and write in a clear, concise manner for educational audiences.
- Demonstrate strong organization, problem-solving, and project management skills.
- Demonstrate excellent written and oral communication skills.
- Demonstrate a high degree of professionalism.
- Extensive, working knowledge of Microsoft Office Suite (Excel, PowerPoint, Word, Publisher, etc.), Adobe Acrobat Professional, and statistical software (e.g., SPSS) required. Knowledge of other presentation, word processing, publishing, data management, and website development software preferred.
- Experience with Adobe Creative Suite (Photoshop and Illustrator) or other graphic design software preferred.

Applications:

Applicants should submit the following information to Dr. Kristin Gagnier (kristin.gagnier@jhu.edu):

- Letter of interest, with a brief overview of the applicant's (a) expertise in spatial thinking, (b) knowledge of science education, human learning, and/or child development, (c) his/her qualifications for the position, (d) how the postdoctoral fellowship will build upon his or her current training, and (e) how the postdoctoral fellowship will facilitate his/her career goals.
- The names of three references who will be writing recommendation letters.
- CV
- 2 writing samples and 2 presentation samples, preferably for different target audiences (e.g., scientists, teachers)

Applications will be reviewed promptly. The position can start July 1 but will be open until the right candidate is identified.

For more information, interested applicants are encouraged to contact Dr. Kristin Gagnier (kristin.gagnier@jhu.edu).