

Position Type: Postdoctoral Fellow

Start Date: 2023 (Negotiable, Winter, Spring, or Summer)

Faculty Advisor: Dr. William R. Holmes

Position Description:

The Holmes lab at Indiana University is looking for an enthusiastic and talented mathematician, physicist, engineer or quantitative scientist with experience with mathematical modelling, analysis, and simulation of biological systems. This fellow will work in a collaborative program of research studying the role and influence of the cytoskeleton in regulating insulin dynamics. The specific goals of this project are to 1) construct computational models of the cytoskeleton in insulin producing cells, 2) use modeling to understand how transport along that cytoskeleton influences the availability of insulin, and 3) understand how dysregulation of these cellular structures and processes influences stimulated insulin release (with applications to dysregulation in diabetes).

This project is a collaboration with the labs of Irina Kaverina (<https://lab.vanderbilt.edu/kaverina-lab/>) and Guoqiang Gu (<https://labnodes.vanderbilt.edu/community/profile/id/22>) in the Vanderbilt School of Medicine. This is an exciting multi-disciplinary project with opportunities to synergistically connect modeling directly with experiments to gain new mechanistic insights into how insulin release is regulated at the cell and tissue level. The fellow will be primarily supervised by Dr. Holmes but will interface directly with members of both labs as part of this program of research.

Qualifications:

Candidates should hold a Ph.D. in mathematics, physics, computer science, engineering, or a related discipline. The following skills are strongly desired.

REQUIRED

- 1) Strong computational skills (Matlab, Python, C, or similar).
- 2) Experience modeling and simulating biological systems.
- 3) Desire and ability to work in a collaborative, multi-disciplinary environment.

DESIRED

- 1) Experience constructing and simulating models of cellular processes.

Additional Information: This is a primarily research focused position, with one course teaching per year for professional development purposes. The appointment can start as early as January 2023. The appointment is for one-year. Renewal for a second year is contingent on availability of funds, satisfactory performance, acceptable progress in carrying out the assigned duties, and mutual agreement. Salary is commensurate with experience and determined by NIH postdoctoral salary scales.

To Apply: Applicants should submit the following materials using the online service provided by the AMS at <http://www.mathjobs.org>. If unable to do so, applicants may send application materials to the address below.

- AMS cover sheet
- curriculum vita
- research statement that clearly indicates the applicant's interest in this position
- cover letter

- brief statement on teaching
- brief statement on diversity
- 3 letters of reference, submitted either through mathjobs or emailed to Dr. Holmes

Note that teaching experience is not required for this position. This is a primarily research based position with one course teaching per year for the candidates professional development.

Applicants should then complete the posting at <http://indiana.peopleadmin.com/postings/14513> (no additional documents are required to be uploaded to this link). Applications should be received by December 19, 2022 to be considered, but the application will remain open until filled. If the applicant has questions or concerns regarding their application, please contact Clay Collier, (812) 855-2200, cldcolli@indiana.edu .

All qualified applicants are encouraged to apply, including women, African Americans, Hispanics and other minorities.

Candidates are encouraged to contact Dr. Holmes directly expressing interest while formal application materials are compiled. Review of applications will begin immediately and will continue until the position is filled. If you have any questions about this position or the application materials, please reach out to Dr. Holmes.

Department and University Environment: The Department maintains strong research groups in all of the principal fields of mathematics. Bloomington is located in the forested hills of southern Indiana and offers a rich variety of musical and cultural attractions. Indiana University is committed to building and supporting a diverse, inclusive, and equitable community of students and scholars. We encourage applications from candidates who will contribute to furthering these goals.

Indiana University is an equal employment and affirmative action employer and a provider of ADA services. All qualified applicants will receive consideration for employment based on individual qualifications. Indiana University prohibits discrimination based on age, ethnicity, color, race, religion, sex, sexual orientation, gender identity or expression, genetic information, marital status, national origin, disability status or protected veteran status.

Professor William Holmes
Department of Mathematics
Indiana University
831 East 3rd Street
Rawles Hall, Bloomington, IN 47405-7106 USA.
wrholmes@iu.edu