BOSTON UNIVERSITY

KILACHAND DOCTORAL AND POSTDOCTORAL FELLOWS – CALL FOR APPLICATIONS

We are working to build an interactive and collaborative environment across disciplines in the newly funded **Multicellular Design Program** (MDP; see https://sites.bu.edu/mdp/). The mission of the MDP, which is funded through the Rajen Kilachand Fund, is to understand the underlying design, assembly, and control principles governing multicellular systems, and to take advantage of these principles for the development of new technologies and therapies.

As part of this effort, we are looking to recruit **Kilachand Fellows**: Ph.D. students and postdoctoral fellows within the BU community who are co-mentored by at least one MDP faculty member (see the list of participating faculty below) and one BU faculty member (who does not need to be a current MDP faculty member) and who will help form the foundation of our community and catalyze new directions in our science. The Kilachand Fellows will play a key role in integrating strengths of BU in new ways, combining theory, data sciences, synthetic biology, microbiology, immunology, tissue engineering, and regenerative medicine, amongst others. These fellows are expected to be active participants in future Multicellular Design Program seminars and workshops, and they will have the opportunity to help shape this emerging field and its foundations here at Boston University.

To apply for a fellow position, interested Ph.D. students and postdoctoral fellows should submit the following documents to https://sites.bu.edu/mdp/apply/ by **March 26, 2021**:

1. Curriculum vitae
2. A short (under 500 word) statement authored by the trainee about their project that includes a clear description of the work and how it synergizes with the research themes of the MDP.
3. A single letter of support from their mentor and co-mentor, describing the collaborative nature of the work and how co-mentorship is structured on the project.

Funding can be requested for full salary for fellows, but applications for partial support (for example, if the candidate has another source of support) will also be considered. Appointment will be for one year, with option for competitive renewal.

MORE ABOUT THE MULTICELLULAR DESIGN PROGRAM: DESIGNING MULTICELLULAR SYSTEMS, FUNCTIONS, AND THERAPEUTICS

As a research community, we have developed a deep understanding of cells, their inner workings, and how they function as individuals; however, in nature, many cells function as part of complex, multicellular systems. Cells in our own tissue and organ systems, the bacteria that live in our gut or cause infections, and even cancers operate in coordinated communities with emergent properties that are not present in isolated cells. Exploiting its unique combination of strengths in Synthetic Biology, Microbial Engineering, Tissue Engineering, Data Science, and Biophysics, Boston University is uniquely poised to address this major gap by establishing a new Multicellular Design Program. The Multicellular Design Program will establish a physical and organizational infrastructure that stewards a self-sustaining, vibrant community of Boston University scientists to pioneer this critical new field. Specifically, the MDP will provide:

1) a platform for scientists across Boston University to bring to bear their expertises from computing, physics, mathematics, engineering, biology, and medicine into a major integrated effort to understand the design principles of multicellular systems,
2) a new training ground for students and fellows at these interfaces, and
3) a new science that researchers across the globe can participate in.

This program will shepherd in a new era in engineering biology with major societal impacts and demonstrate these impacts through creating synthetic multicellular communities for the rational design of smart medical therapies.

MDP Faculty:

Azer Bestavros, Ph.D., Department of Computer Science
Cynthia Bradham, Ph.D., Department of Biology
Christopher Chen, M.D., Ph.D., Department of Biomedical Engineering
Douglas Densmore, Ph.D., Department of Electrical and Computer Engineering
Mary Dunlop, Ph.D., Department of Biomedical Engineering
Andrew Emili, Ph.D., Department of Biology/Biochemistry
Laertis Ikonomou, Ph.D., Department of Medicine
Thomas Kepler, Ph.D., Department of Microbiology
Ahmad Khalil, Ph.D., Department of Biomedical Engineering
Mark Kon, Ph.D., Department of Mathematics and Statistics
Kirill Korolev, Ph.D., Department of Physics
Darrell Kotton, M.D., Department of Medicine
Joseph Larkin, Ph.D., Department of Biology/Physics
Pankaj Mehta, Ph.D., Department of Physics
Gustavo Mostoslavsky, M.D., Ph.D., Department of. Medicine/Microbiology
John Ngo, Ph.D., Department of Biomedical Engineering
Allyson Sgro, Ph.D., Department of Biomedical Engineering
Daniel Segrè, Ph.D., Department of Biology/Bioinformatics Program
Trevor Siggers, Ph.D., Department of Biology
Alice White, Ph.D., Department of Mechanical Engineering
Wilson Wong, Ph.D., Department of Biomedical Engineering