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Call for Proposals

MIT-GSK Gertrude B. Elion Research Fellowship Program for Drug Discovery and Disease

Funding support for post-doctoral research

Introduction

Massachusetts Institute of Technology and GlaxoSmithKline are pleased to announce a new initiative to support research at MIT. The MIT-GSK Gertrude B. Elion Research Fellowship Program for Drug Discovery and Disease will fund up to three selected Fellows to conduct post-doctoral research at MIT, with a goal of promoting basic research while introducing scientists to key aspects of pharmaceutical research and development. The Fellowship Program honors Gertrude Belle Elion (1918-1999), an early leader in the field of chemotherapeutic agents. Elion worked at Burroughs Wellcome, which became GlaxoSmithKline in 2000, from 1944 until she retired in 1983 as Head of Experimental Chemistry. In 1988, Elion shared the Nobel Prize for Physiology or Medicine for “discoveries of important principles for drug treatment.”

About the Program

The Fellowship Program will fund research that has the potential to transform and modernize drug discovery. We encourage applications from basic or applied scientists and engineers interested in innovative technology and/or platforms that can enable transformative advances in drug discovery. Selected Postdoctoral Associates will receive funding for salary/benefits, lab supplies and indirect costs for two years, with extension possible upon mutual agreement. Associates will conduct their research in the laboratory of a Principal Investigator (PI) Mentor at MIT and will have a scientific Co-sponsor at GSK. We envision ongoing communication and exchange of information amongst the PI Mentor, Postdoctoral Associate and GSK Co-sponsor as a critical part of the program.

Application Process

PIs will submit preliminary applications describing the proposed research and Postdoctoral Associate. Information about Key Program Dates, Eligibility, Areas of Interest and Application Guidelines is provided below.



Key Program Dates

Applicants submit Phase 1 proposals. Confidential information will be protected by an existing Confidential Disclosure Agreement between MIT and GSK.	15 Sept 2017
GSK scientists and Program Joint Steering Committee complete review of Phase 1 proposals. Up to 6 Finalists selected for Phase 2 proposals.	31 Oct 2017
Finalists notified and Phase 2 proposals requested	10 Nov 2017
Finalists submit Phase 2 proposals	8 Jan 2018
GSK completes review of Phase 2 proposals from Finalists	12 Feb 2018
Program Joint Steering Committee selects Post-doctoral Associate Awards	28 Feb 2018
Post-doctoral Associate Awardees notified	12 Mar 2018
Public Announcement of Program Awards	Apr 2018

Eligibility

Principal Investigator qualifications

- MD, PhD or MD/PhD MIT faculty member with clear focus on technologies and platforms related to fundamentals of drug discovery currently running active, productive research programs at MIT
- Senior PIs should have an established track record of successfully mentoring post-doctoral fellows
- Junior PIs should have evidence of a promising research program

Post-doctoral Associate qualifications

- PhD, MD, or MD/PhD degree
- Record of accomplishment in scientific research
- Clear interest in translational science related to drug discovery and human disease
- Fewer than three years of post-doctoral experience
- Already in lab of PI Mentor or in process of joining PI Mentor's lab (must have or establish primary appointment at MIT)



Area of Interest: Drug Discovery Modernization

To maximize our ability to deliver medicines of value to patients, GSK plans to modernize key fundamentals of drug discovery. We envision a discovery platform that maximizes the ability to identify connections between human disease and molecular targets by using (1) patient data to elucidate disease pathways, (2) data collection techniques to address current scale limitations and (3) computational analysis to integrate information. By applying a parallel, design-driven approach to investigate disease indications, GSK envisions linking molecular targets with drug candidates at an unprecedented scale and pace. We believe the core areas described below will help us achieve our vision.

A. Computation, Modeling and Simulation

1. Physiologically Based Pharmacokinetic (PBPK)
2. Quantitative Systems Pharmacology (QSP) Modeling
3. Data Visualization and Interaction
4. Predictive Modeling
5. Computational Toxicology
6. Molecular Recognition
7. Automated New Chemical Entity (NCE) molecular design
8. Protein design

B. Enabling Platforms for Complex Cellular Engineering

1. Advanced Cellular Engineering
2. Biology Automation
3. Data Analytics Innovation: *In silico* models to design human, disease-relevant *in vitro* models

C. Minaturized and Continuous Biology & Chemistry in Discovery

1. Rapid chemical tool discovery platform, including chemistry approaches to avoid intrinsic tissue targeting
2. Experimental analysis and computational model to predict *ex vivo* human tissue viability and function
3. Closed-loop design-make-test
4. Delivery and Sampling Device
5. Platform for High Throughput Identification of On/Off Target Effects
6. Sensors and (Bio)sensors for Miniaturized Devices
7. Biopharm Molecular Discovery



Phase 1 Application Guidelines

By 11:59 pm Eastern Time on Friday, 15 September 2017, complete the application via Google forms at <http://bit.ly/mitgsk>. Please use the file name format of Last Name, First Initial.MIT-GSK Fellowship Program.pdf when attaching a **single file** to the Google form. The file should contain all of the information below.

1. Cover page

A. Principal Investigator Mentor

Full Name:

Title:

Department:

Telephone Number (office):

Email Address:

Core area of expertise:

B. Proposed Post-Doctoral Fellow

Full Name:

Current Affiliation:

Core area of expertise:

2: Cover letter

Letter from PI Mentor describing how the proposed project will address a drug discovery technology goal (one page maximum)

3: Description of Proposed Research Project (submitted by PI Mentor; one page maximum)

- Title of proposed research
- Abstract of proposed research
- Project Description

4: Curriculum Vitae for proposed Post-doctoral Associate



Phase 2 Application Guidelines for Finalists

1. **Research Proposal** (four pages maximum, excluding references; submitted by PI Mentor)
 - Executive Summary
 - Background
 - Research plan
 - References

2. **Budget**
 - Brief description of costs and rationale for purchases to support the proposed research. We anticipate costs of approximately \$100,000 – \$150,000 per Postdoctoral Fellow per year, which includes direct costs, indirect costs and salary/benefits.

Please contact mit-gsk@mit.edu with any questions, citing “MIT-GSK Gertrude B. Elion Research Fellowship Program” in the Subject line.