



University of
Pittsburgh

Department of Medicine
School of Medicine

Post-doctoral Training Program in

TRANSLATIONAL RESEARCH AND ENTREPRENEURSHIP IN PULMONARY VASCULAR BIOLOGY

Date: _____ Proposed starting date of fellowship: _____

Name: _____
(First) (Middle) (Last)

Date and place of birth: _____

Citizenship or green-card status: _____

Home address: _____

Phone: (____) ____ - ____

EDUCATION

College	Degree	Month / Day / Year
<i>Undergraduate</i>	_____	_____
<i>Graduate school</i>	_____	_____
<i>Medical school</i>	_____	_____
<i>Honors, special training, etc.:</i> _____		

Professional Positions	Institutions	Year
_____	_____	_____
_____	_____	_____
_____	_____	_____

Letters of Reference

Please list names and addresses of three (3) references. *Letters of recommendation should be e-mailed by the referee to Katie Nauman (naumanke@upmc.edu).*

- 1. _____
- 2. _____
- 3. _____

Additional Materials

In addition to this completed application form, please provide the following items as a single PDF:

- 1. Current curriculum vitae
- 2. Brief (1-2 page) statement of your plan of research and study, including:
 - a. a description of your primary area(s) of interest
 - b. the type of research you wish to carry out
 - c. the particular methods of approach in which you require additional training
 - d. mentor(s) with whom you would prefer to work
- 3. Copy of medical or graduate school transcript

Send the completed application form and additional materials to:

Katie Nauman
Academic Affairs Manager
Department of Medicine, Division of Cardiology
University of Pittsburgh
E1150 BST, 200 Lothrop Street
Pittsburgh, PA 15261
Phone: 412-624-7987
naumanke@upmc.edu



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The University of Pittsburgh School of Medicine supports a two- to three-year postdoctoral program titled "Training in Translational Research and Entrepreneurship in Pulmonary Vascular Biology," funded by the National Heart, Lung, and Blood Institute (NHLBI). The Program is intended for M.D. and Ph.D. fellows from fields of pulmonary and cardiovascular science. The Program features initial development of a 'translational research tool set,' individually-prescribed development plan, paired mentorship teams of basic and clinical researchers, emphasis on high impact publications, and preparation of a career development award (K-series or equivalent). Trainees may also participate in the Biomedical Entrepreneurship Track program, a collaborative effort between the Tepper School of Business at Carnegie Mellon University and the Institute for Clinical Research Education.

Translational Track:

A two-year intensive training fellowship with our translationally-oriented vascular biology mentors. The fellowship mentorship may include a basic-science-oriented mentor or a clinical-science-oriented mentor; trainees are highly encouraged to develop a mentorship team comprised of mentors across the translational spectrum, allowing for comprehensive training in basic science with the necessary application to the clinical and patient environment. Projects will require the learning of cutting-edge scientific methodologies (e.g., mass spectrometry, flow cytometry, molecular biology, etc.) applied to a clinical problem, leading to potentially novel therapeutic approaches or clinical studies in patients (e.g., development of human subjects protocols for specimen collection, pharmacological infusions, or development of patient cohorts or interventions). In addition to the two-year fellowship, an optional third year will be offered to allow for advanced career development.

'Translational Research Tool-Set': Immersion in an initial core competency training period in translational research including an intensive 2-week accelerated introduction to bench-to-bedside research and laboratory techniques at the University of Pittsburgh and an introduction to understanding and managing regulatory issues for human and animal research. Throughout the first six months, trainees will complete the 'Introduction to Translational Research' (CLRES 2140) course offered through the CTSI. A unique aspect of our translational training is the incorporation of full-time elective rotations at the FDA, intramural NIH Clinical Center Regulatory and Pharmacy Development Program, and Industry. This intensive exposure allows the trainee to develop the elemental tools for translational research: basic science methodology, clinical translational methodologies, and key regulatory tools.

Entrepreneurial Track:

Trainees interested in the entrepreneurial track may pursue the MBA/Biomedical Translational Research and Entrepreneurship program through Tepper Business School, contingent on acceptance into their MBA program. Students in this program will enroll in either the part-time or full-time MBA program and join the MBA/Biomedical Entrepreneurship track. All students will be immersed for a minimum of 15 months in a T1 translational research environment within laboratories at the University of Pittsburgh School of Medicine to acquire hands-on biomedical

experience in preparation for moving novel drugs, devices, or informatics solutions from the laboratory to clinical practice work. Students will be enrolled in the ICRE Entrepreneurial MBA Translational Research Training Program, acquiring knowledge in research techniques, literature review, drug and device commercialization processes, institutional regulatory bodies, clinical trials, and funding opportunities.

Core Competencies: Entrepreneurial trainees will undertake one-week rotations in a minimum of three of the entrepreneurial institutes and programs available within the UPitt system, including the Drug Discovery Institute, The Innovation Institute, UPMC Enterprises, the Institute for Entrepreneurial Excellence, and the Coulter Translational Research Partners II Program. Trainees will also be provided the opportunity to participate in our successful elective summer program (e.g., FDA Cardio-Renal Program and intramural NIH Clinical Center Regulatory and Pharmacy Development Program), as well as new hands-on entrepreneurship and commercialization training opportunities with the tPPG industry partners MAST Therapeutics and Complexa, Inc.

Research Project:

Each trainee will be expected to complete at least one major research project during the training program. Ideally, the project will provide the basis for subsequent NIH grant applications such as an F32 or K series career development award. Each Fellow is also expected to publish a minimum of 2-3 peer-reviewed papers (with at least one as first author) within the two-year training period.

Individualized Development Plan:

Trainees are likely to enter the Program with varying degrees of experience and sophistication in research methods, design, and statistics. Therefore, formal coursework will need to be individualized for each trainee. Examples of University of Pittsburgh courses most likely to be recommended for trainees are 1) CLRES 2010 Clinical Research Methods; 2) CLRES 2020 Biostatistics: Statistical Approaches in Clinical Research; 3) CLRES 2040 Measurement in Clinical Research; and 4) CLRES 2050 Ethics and Regulation of Clinical Research.

Typically, one or two of the courses per year will be required for each trainee based on individual needs.

Evaluation:

Each Fellow will present an oral progress report to the Training Committee annually, to facilitate evaluation of progress and focus in future direction. Written evaluations by trainees and mentors will be completed each year. More frequent informal education is recommended. For trainees interested in the entrepreneurial track, the University of Pittsburgh School of Medicine-Tepper Entrepreneurial MBA program has developed formalized evaluation documents for trainees, and the trainees' performance within this program will be evaluated based on a rubric that includes ethics and professional standards, oral and written communication, multidisciplinary team work, research expertise, scholarship, and entrepreneurial acumen.

Program Leadership:

Program Director: Mark Gladwin, MD

Program Co-Directors: Chris O'Donnell, PhD; Bruce Freeman, PhD; Solomon Ofori-Acquah, PhD

Training Faculty: Stephen Chan, Bill Chen, Partha Dutta, Bruce Freeman, Mark Gladwin, Thomas Gleason, Alison Morris, Anne Newman, Chris O'Donnell, Solomon Ofori-Acquah, Patrick Pagano, Frank Scurba, Iain Scott, Steven Shapiro, Sruti Shiva, Thomas Smithgall, Adam Straub, Prithu Sundd, Flordeliza Villanueva, Yadong Wang, Brian Zuckerbraun