

Revitalizing a pharmacology department as a center of excellence for translational research

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Background and Significance

It is widely appreciated that major advances in patient care involve innovations across multiple disciplines, yet in practice it proven challenging for institutions to promote the type of interactions that are needed to integrate basic research with clinical practice. Leveraging my new position as Chair of the Department of Molecular Pharmacology and Therapeutics as well as my expertise in promoting cross-disciplinary interactions and pursuing translational research, my goal is to re-invigorate the Department to make it an exemplar for translational research.

Why Pharmacology? At most medical schools including my own, departments of pharmacology were originally created to teach the discipline of pharmacology to medical students; research within such departments was usually narrowly focused on areas such as ion channel function. However, as their original missions have changed over time, successful departments of pharmacology have evolved to encompass a wide range of research that bridges the gap between elucidating basic cellular mechanisms and understanding how such mechanisms can be targetable. Thus, departments of pharmacology are a natural hub to engage translational research across the medical school community.

Therefore, my broad goals are to rebuild our department towards a more modern concept of pharmacology and to serve as an exemplar for engaging basic research to ultimately influence clinical practice.

What is modern pharmacology?



Targets

Drug discovery
 Chemical biology
 Pharmacogenomics
 Metabolism
 Epigenomics

Disease models

Cancer
 Neurology
 Cardiovascular

Purpose and Objectives

Major objectives: Revitalize the department and bring it from near the bottom of pharmacology departments to within the top 10 within 8-10 years.

- Modernize the research program in the department
- Expand the research interests and expertise
- Recruit the top faculty at all levels
- Focus on increasing diversity of faculty
- Provide an effective administrative structure for the faculty to flourish
- Create an environment that is conducive to enhance translational research
- Engage faculty across disciplines in the medical school and University
- Create an environment that facilitates collaborative interactions
- Train junior colleagues across disciplines

Methods and Approach

To reflect the overhaul in the department, the name of the department will be changed to **“department of molecular pharmacology and therapeutics”**

- Name change was proposed and approved by the department members, Department Chairs, and Faculty Council
- Final approval from the board of trustees in March 2020

Recruit new faculty who are committed to pursuing outstanding engaging in translational research.

- Established a vision for the research focus faculty recruits
- Advertised for recruitment in major journals and by connecting with investigators across the country
- Reviewed applications for 200+ faculty
- 1st round interviews for 25 candidates
- 2nd round interviews for 8 candidates
- Because of COVID was only able to make offer to 1 faculty who accepted

Space renovations for the new faculty hires

- Dedicated space provided
- Designed new laboratory space for renovations
- Because of COVID renovations were delayed but are now back on track

Establish a new administrative team to support the faculty and the growth of the department

- Dedicated division administrator
- Dedicated financial manager
- Administrator and communications manager

Establish formal interactions with targeted departments that are key to the vision of re-building the department

- Decided to focus on the department of chemistry since it is most relevant to the vision of the new department
- Met individually with various members of the department of chemistry and chemical biology
- First joint symposium planned between the two campuses in the area of chemistry and pharmacology

Results: Recruitment of Nikhil Sharma, Ph.D.



Nikhil is currently a postdoctoral fellow at Harvard University. He has a long-standing interest in elucidating mechanisms of peripheral neuron development and function. His research has focused on using computational, genomic, and molecular genetic approaches to study the mechanisms underlying diversity of peripheral neurons. He generated a comprehensive mouse genetic toolkit to study unique peripheral neuron populations, which has revealed previously undescribed populations that detect distinct noxious stimuli. In his independent laboratory, he plans to study signaling pathways that allow peripheral neurons to react to distinct noxious stimuli and how these populations may be associated with common disease states such as inflammation or neuropathic pain.

Perspectives: Surviving and even thriving despite COVIC

As we all know, it has been a very tough year. Many unexpected events related to the COVID pandemic have challenged the success of our projects and indeed every aspect lives. Therefore, I think it is essential for us to assess our success not in terms of our initial expectations but rather with respect to how much we have achieve our goals despite insurmountable obstacles.

When viewed from this perspective, I think I have been highly successful in that I was able to recruit an outstanding faculty and have been able to secure key commitments and support from the University.

This year, we count our blessing as part of our success....