

## **ABSTRACT: 2019 Faculty Launch Faculty Leadership Impact Project**

**Project Title:** Forging the Future of Drexel University's Marion Murray Spinal Cord Research Center

**Name and Institution:** Veronica Tom, Drexel University

**Collaborators and Mentors:** Itzhak Fischer

**Topic Category (choose 1):** Administration Clinical Education Faculty Development **Research**

**Background, Significance of project:** The Marion Murray Spinal Cord Research Center (MMSCRC) is recognized by Drexel University as a Research Center of Excellence. Faculty within the Center are from departments across the University. A key feature of the Center is the availability of shared facilities that make up "Cores": behavioral, surgery, electrophysiology, histology, and cell and molecular. Support for these Cores had depended upon a continuously-funded NIH Program Project grant (PPG), which expired in April, 2019. Faculty within the Center have leveraged the use of the facilities to obtain additional R01s that are not associated with the Program Project. In fact, as a direct result of use of these facilities, there are currently 10 active NIH R01s not associated with the Program Project grant, generating > \$1.2 million in indirect costs in FY18 alone. Thus, the Center is crucial to the research success that Drexel is currently experiencing that culminated in it being named as an R1 research institution. Because of changes in NIH policies, the Program Project grant cannot be renewed and it is unlikely that a Program Project based on spinal cord injury research will be awarded in the near future. As a result, there is a significant need to identify alternative sources of funding for the Cores. Additionally, with the current Director of the Center planning on stepping down soon, there is also a need to develop a new leadership structure. This is an opportune time to evaluate what our current and projected needs are.

**Purpose/Objectives:** The first, more immediate goal is to identify financial resources to continue the operation of the Center's Core facilities and maintain its research momentum. The second goal, which is more long-term, is to work with the Center's current faculty to identify priorities and needs, as well as new Center leadership. The overall objective is to keep the Center current, significant, and well-positioned to continue its long history of success.

**Methods/Approach/Evaluation strategy:** The method used include identification of institutional stakeholders and meeting with them to identify priorities and needs, as well as potential strategies to meet these priorities.

**Outcomes/Results:** A successful evolution of the MMSCRC will enable faculty to continue impactful, innovative basic research. It could also open up new lines of collaborative research with clinical departments.

**Discussion/Conclusion with Statement of Impact/Potential Impact:** The MMSCRC already has a strong reputation in the basic spinal cord injury research community. However, continuing

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upon our history of strong basic research with the implementation of some clinical research will enhance our visibility in the lay spinal cord injury community and further bolster our reputation. This could lead to additional grant funding as well as a pathway to fundraising.

# Forging the Future of Drexel University's Marion Murray Spinal Cord Research Center

Faculty Launch Fellow: Veronica J. Tom, Ph.D.

Department of Neurobiology and Anatomy

Mentored by: Itzhak Fischer, Ph.D., John Houle, Ph.D., Simon Giszter, Ph.D.

## Background and Significance

- More than 35 years ago, a group of faculty members at the Medical College of Pennsylvania (now the Drexel University College of Medicine) joined together to study ways of treating spinal cord injury (SCI). This group evolved into one of the premier Spinal Cord Injury (SCI) research centers in the world, with innovative and multidisciplinary programs for studying the pathophysiology of SCI and the development of therapeutic strategies to promote recovery of function. The Marion Murray Spinal Cord Research Center has been recognized by Drexel University as a Center of Excellence in Spinal Cord Research, one which has taken a leading role in the use of combination therapies to address multiple aspects of spinal cord injury in preclinical applications.
- Investigators in the Center apply recent advances in stem cell transplantation, physiology of locomotion, rehabilitation protocols and pharmacological interventions to open new avenues for more effective treatments. The Center has established some of the best core facilities for SCI research to support development of innovative techniques for animal surgery, cell and molecular biology, histology and imaging, with unique strengths in behavioral and physiological analysis of motor, sensory and autonomic function.
- The vision of the Center is to continue building a multidisciplinary program by including not only neuroscientists but also biomedical engineers for their insight into motor control, physical therapists for a rehabilitation perspective and a wide range of physicians to integrate clinical applications in critical disciplines such as urology (bladder function), radiology (MRI), neurology and psychiatry (outcome measures), orthopedics and neurosurgery (transplantation and clinical trials).
- Our mission is "to bridge the gap between the discovery phase and clinical application by developing and translating promising research strategies to treat patients whose function has been limited by spinal cord injury".

### Primary Faculty



Peter Baas	Marie-Pascale Cote
Megan Detloff	Kimberly Dougherty
Itzhak Fischer	Simon Giszter
Shaoping Hou	John Houle
Michael Lane	Ramesh Raghupathi
Ilya Rybak	Veronica Tom

## Goal

- A key feature of the Center is the availability of shared facilities that make up "Cores": behavioral, surgery, electrophysiology, histology, and cell and molecular. Support for these Cores had depended upon a continuously-funded NIH Program Project grant, which expired in April, 2019. Faculty within the Center have leveraged the use of the facilities to obtain additional R01s that are not associated with the Program Project. In fact, as a direct result of use of these facilities, there are currently 10 active NIH R01s not associated with the Program Project grant, generating > \$1.2 million in indirect costs in FY18 alone. Thus, the Center is crucial to the research success that Drexel is currently experiencing that culminated in it being named as an R1 research institution.
- Because of changes in NIH policies, the Program Project grant cannot be renewed and it is unlikely that a Program Project based on spinal cord injury research will be awarded in the near future. As a result, there is a significant need to identify alternative sources of funding for the Cores. Additionally, with the current Director of the Center planning on stepping down soon, there is also a need to develop a new leadership structure. This is an opportune time to evaluate what our current and projected needs are.

## Objectives

- Identify financial resources to continue the operation of the Center's Core facilities and maintain its research momentum
- Work with Center's current faculty to identify priorities and needs
- Identify new Center leadership
- Overall objective is to keep the Center current, significant, and well-positioned to continue its long history of success

## Methods and Approach

- Identification and meeting with institutional stakeholders
- Identification of priorities and needs, as well as potential strategies to meet these priorities.

## Outcomes

- A successful evolution of the Center will enable faculty to continue impactful, innovative basic research.
- It could also open up new lines of collaborative research with clinical departments.

## Challenges

- There are no available financial resources within DUCOM to help financially support the Center. Financial support is dependent upon departmental funds.

## Discussion and Impact

- The Center already has a strong reputation in the basic spinal cord injury research community. However, continuing upon our history of strong basic research with the implementation of some clinical research will enhance our visibility in the lay spinal cord injury community and further bolster our reputation. This could lead to additional grant funding as well as a pathway to fundraising.