UNIVERSITY OF MIAMI
MILLER SCHOOL of MEDICINE

MSOM GRADUATE PROGRAMS

2023-2024

PhD Programs

Biochemistry & Molecular Biology
Executive PhD in Biochemistry
Cancer Biology
Cellular Physiology & Molecular Biophysics
Human Genetics & Genomics
Medical Scientist Training Program
Microbiology & Immunology
Molecular & Cellular Pharmacology
Molecular Cellular & Developmental Biology
Neuroscience
Programs in Biomedical Sciences
Physical Therapy – DPT/PhD

Undergraduate Program

Summer Undergraduate Research Fellowship

Masters Programs

Biochemistry & Molecular Biology
Biomedical Sciences
Clinical & Translational Investigation
Genomic Medicine
Medical Radiation Dosimetry
Skin Biology & Dermatological Science
Vision Science & Investigative Ophthalmology

Public Health Sciences Programs

Biostatistics – MS/PhD
Climate and Health – MS
Epidemiology – PhD
Master of Public Health – MPH
Prevention Science & Community Health – MS/PhD
Public Health – MS

MED.**MIAMI**.EDU/GRADUATE-STUDIES

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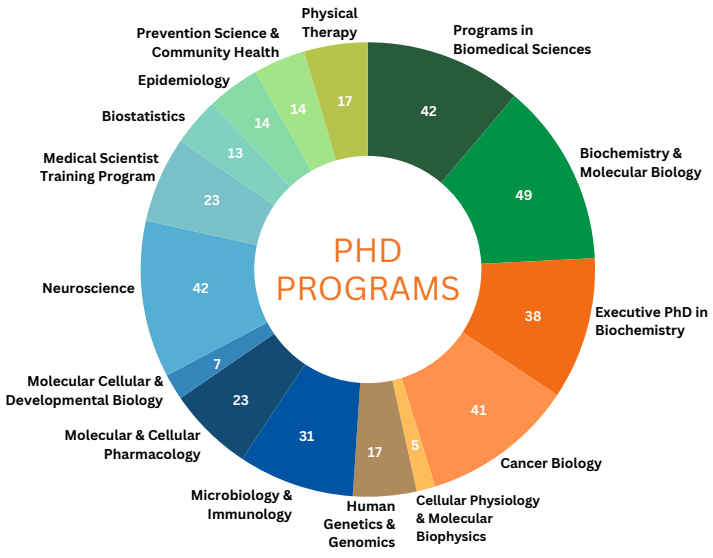
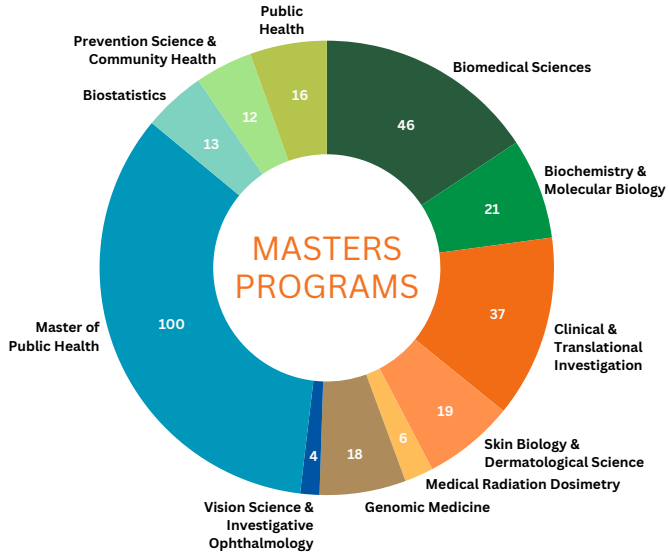
Designed by Camille Custodio

2023-2024 ENROLLMENT

844 TOTAL
376 PhD Students
192 MS Students
100 MPH Students
176 DPT Students





5 Year Growth

↑43% MS

↑21% PhD

185% **MS in Clinical & Translational Investigation**
13 → 37 students

171% **Executive PhD in Biochemistry & Molecular Biology**
14 → 38 students

89% **PhD in Human Genetics & Genomics**
9 → 17 students

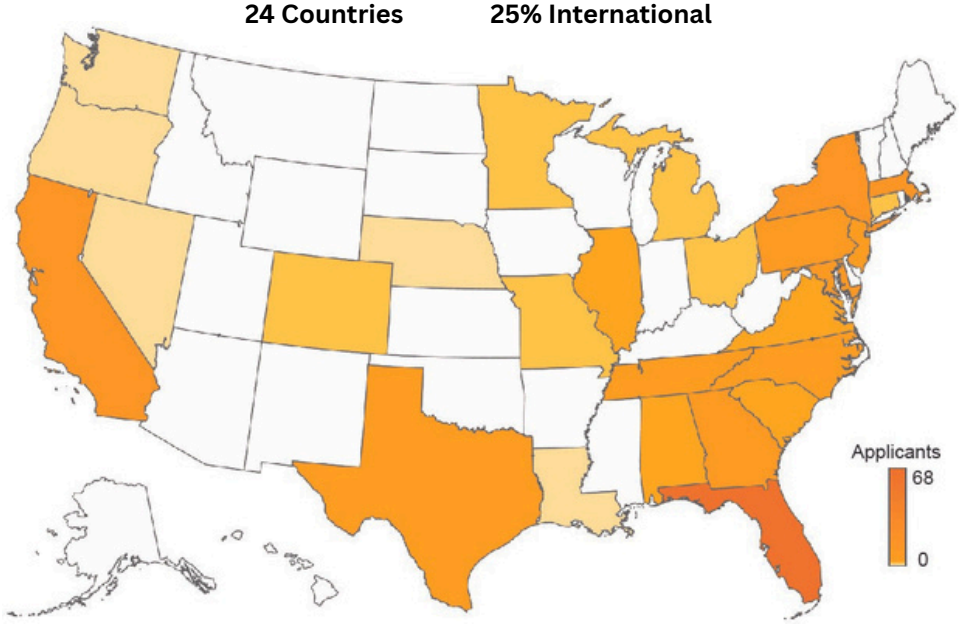
INCOMING PIBS CLASS 2024-2025

Programs in Biomedical Sciences (PiBS) will be welcoming **41 students**.

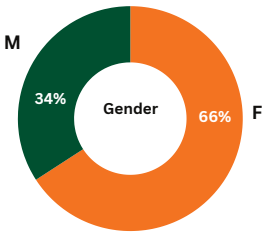
APPLICATION POOL: 241 APPLICANTS

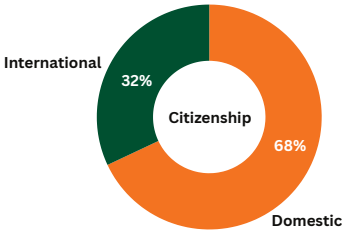
27 States + DC
24 Countries

75% Domestic
25% International



CLASS DEMOGRAPHICS





3.62
Average GPA

18 months
Average research experience

18%
Increase in class compared to last year

33%
Acceptance Rate

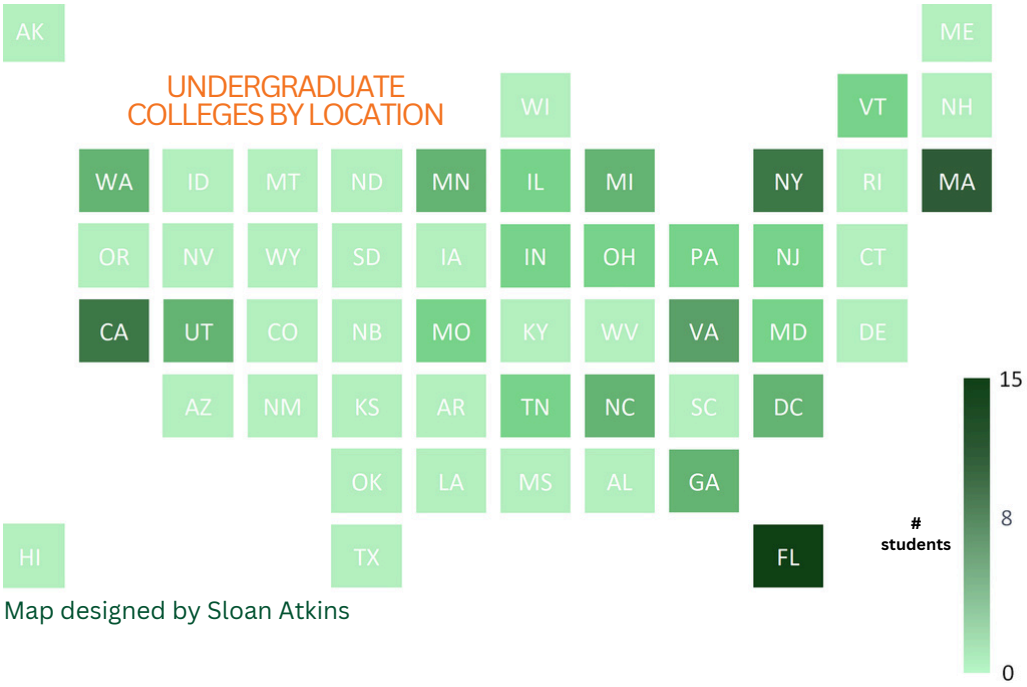
> "I am thrilled to have the opportunity to study at one of top universities in biomedical research- meeting with faculty members and current graduate students strengthened my desire to be a part of the UM scientific community."
>
> - David Suissa

> "It's clear that the U is a place where students are encouraged to explore their interests, challenge themselves, and grow both personally and professionally."
>
> - Maykeling Sarai Arauz Gutierrez

MEDICAL SCIENTIST TRAINING

MD/PHD DEMOGRAPHICS

- Female/Male Ratio: **48/52%**
- URM*: **29%**
- Total Diversity (Minority, Disadvantaged, Disabled): **40%**
- LGBTQ+: **8%**



Map designed by Sloan Atkins

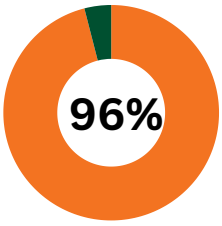
MD/PHD STUDENT OUTCOMES

- Average time to degree: **7.9 years**
- Attrition in last 10 years: **≤ 4 %**
- Average publications per graduate between 2014-2024: **8.7 total I 2.8 first author**
- Extramural fellowships: **61% of MSTP students**

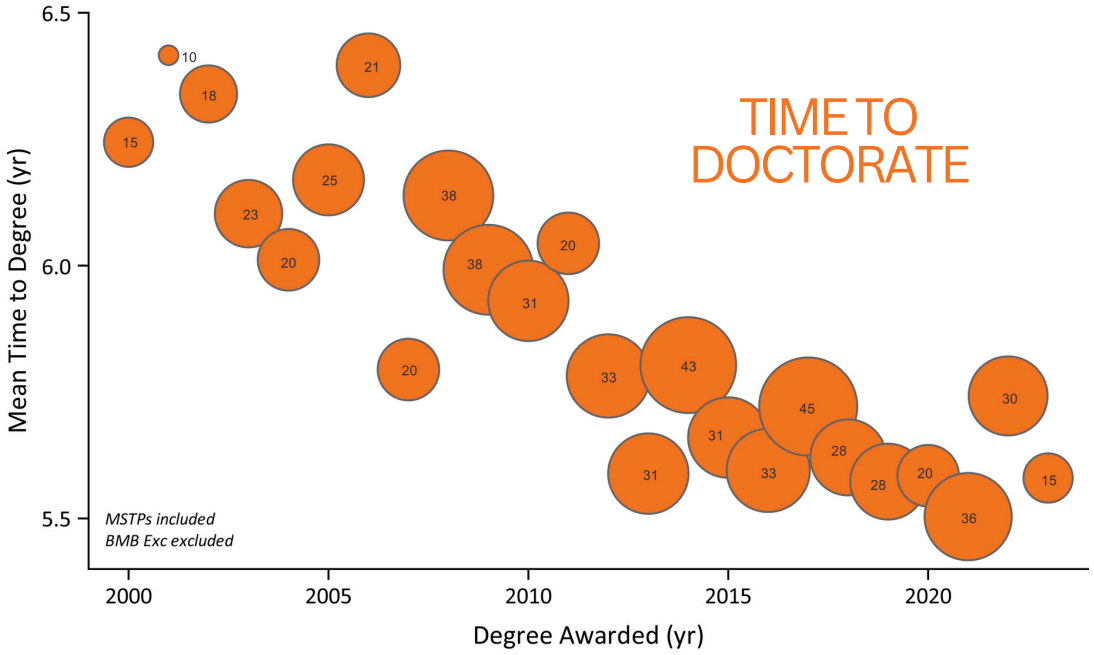
*URM - Underrepresented Minority in STEM

PHD OUTCOMES

Average time to degree:
5.57 years
2019-2024, (n=124)



Completion Rate
Admitted ≥2010, n=244



Christian McDonald

3 Minute Thesis 1st Place

Fifth Year - PhD Student in Microbiology & Immunology
Mentor: Dr. Noula Shembade & Dr. Enrique Mesri (Former Mentor)

Dissertation: How cancer virus Kaposi's Sarcoma Herpesvirus uses an eIF2-independent mechanism of translation initiation during viral replication and oncogenesis

Kaylie Cullison, Ph.D.

3 Minute Thesis People's Choice

Fourth year - MD/PhD Student in Biomedical Engineering
Mentor: Dr. Eric Mellon

Dissertation: The use of AI and machine learning of MRI images during glioblastoma treatment for prognosis

FELLOWSHIPS

$1.22M in Grant Funding by MSOM PhD Students

Mohammed Alnukhali (A Ahmad, *BMB*) – Saudi Cultural Ministry
Abdulraof Alqrache (M Rivas, *BMB*) – Saudi Cultural Ministry
Olivia Bosquet (S Daunert, *BMB*) – Maytag and McKnight
Conor Moran (A Barrientos, *BMB, MSTP*) – NIH
Michael Moraskie (S Daunert, *BMB*) – McKnight
Olivia Osborne (M Toborek, *BMB*) – NIH

Charles Alver (A Agarwal, *BME, MSTP*) – NIH
Kaylie Cullison (E Mellon, *BME, MSTP*) – NIH

Daniela Barbieri (M Figueroa, *CAB*) – Amer Soc Hematology
Caroline Coughlin (J Schatz, *CAB, MSTP*) – NIH
Olivia Skye Montoya (J Taylor, *CAB*) – NIH
Adnan Mookhtiar (S Nimer, *CAB*) – NIH
Michelle Zhang (D Pelaez, *CAB, MSTP*) – NIH
Nicolae Zubenco (V Sanghvi, *CAB*) – la Caixa Foundation

Sandra Garcia (W Hlaing, *EPI*) – McKnight
Karlon Johnson (W Hlaing & T Rundek, *EPI*) – PhRMA
Robert Mesa (Tali Elfassy, *EPI*) – AHA

Jamie Burgess (M Tomic-Canic, *MCP, MSTP*) – NIH

Farhan Qureshi (A Caicedo, *MDB, MSTP*) – NIH

Yaa Abu (S Roy, *MIC, MSTP*) – NIH
Acacia Crouch (T Malek, *MIC, MSTP*) – NIH
Chris Li (A Tomei, *MIC, MSTP*) – NIH
Christian McDonald (N Shembade, *MIC*) – McKnight

Danielle Antoine (S Roy, *NEU*) – NIH
Lauren Bystrom (L Tuesta, *NEU, MSTP*) – NIH
Julian Dallmeier (W Scott, *NEU*) – NIH
Jessica Dennison (C Wahlestedt, *NEU*) – NIH
Bianca Graziano (L Bianchi, *NEU*) – AHA
Elizabeth Jacobs (M Saporta, *NEU, MSTP*) – NIH
Markus Spurlock (V Shestopalov, *NEU*) – NIH

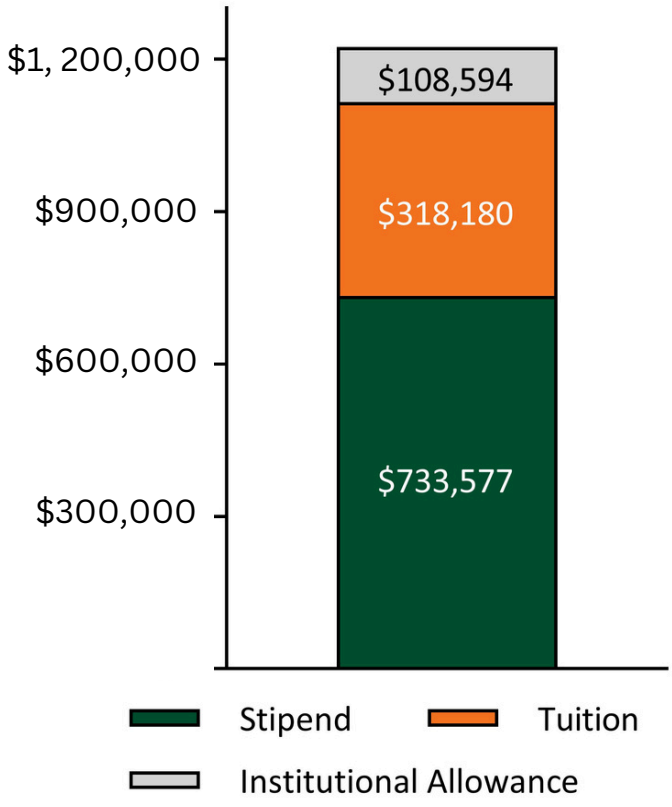
Iqra Shams (R Barro Soria, *PHS*) – US-Pakistan Knowledge Corridor

Leah Dodds (T Elfassy, *PREV, MSTP*) – NIH
Jahn Jaramillo (A Harkness, *PREV*) – NIH
Marina Plesons (A Harkness, *PREV, MSTP*) – Wolfson Foundation

74
Students Completed PIB 790 Grant Writing Basics Course

26
Grant Submissions

21
NIH Grants



PUBLICATIONS

Average number of publications per PhD graduate:
6.23

Average number of first author publications per PhD graduate:
1.93

PhD Program	5 year avg. of publications/PhD graduate (n)	5 year avg. of first author publications/PhD Graduate
Biochemistry & Molecular Biology	4.46 (13)	1.38
Biostatistics	5.06 (16)	1.00
Cancer Biology	4.92 (27)	1.30
Cellular Physiology & Molecular Biophysics	3.5 (6)	1.67
Epidemiology	6.50 (18)	2.00
Human Genetics & Genomics	9.38 (8)	2.62
Microbiology & Immunology	3.95 (19)	2.37
Molecular & Cellular Pharmacology	7.05 (20)	1.87
Molecular Cell & Developmental Biology	7.75 (8)	2.00
Neuroscience	5.85 (27)	2.00
Prevention Science & Community Health	11.06 (18)	4.38
All Programs	**6.23 (180)**	**1.93**

Student Publication Spotlight

Skye Montoya, Cancer Biology
Mentor: Justin Taylor
Science. 2024 Feb 2;383(6682):eadi5798

RESEARCH

RESEARCH ARTICLE SUMMARY

DRUG DEVELOPMENT

Kinase-impaired BTK mutations are susceptible to clinical-stage BTK and IKZF1/3 degrader NX-2127

Skye Montoya†, Jessie Bourcier†, Mark Noviski†, Hao Lu†, Meghan C. Thompson, Alexandra Chirino, Jacob Jahn, Anya K. Sondhi, Stefan Gajewski, Ying Siow (May) Tan, Stephanie Yung, Aleksandra Urban, Eric Wang, Cuijuan Han, Xiaoli Mi, Won Jun Kim, Quinlan Sievers, Paul Auger, Hugo Bousquet, Nivetha Brathaban, Brandon Bravo, Melissa Gessner, Cristiana Guiducci, James N. Iuliano, Tim Kane, Ratul Mukerji, Panga Jaipal Reddy, Janine Powers, Mateo Sanchez Garcia de los Rios, Jordan Ye, Carla Barrientos Risso, Daniel Tsai, Gabriel Pardo, Ryan Q. Notti, Alejandro Pardo, Maurizio Affer, Vindhya Nawaratne, Tulasigeri M. Totiger, Camila Pena-Velasquez, Joanna M. Rhodes, Andrew D. Zelenetz, Alvaro Alencar, Lindsey E. Roeker, Sanjoy Mehta, Ralph Garippa, Adam Linley, Rajesh Kumar Soni, Sigrid S. Skånland, Robert J. Brown, Anthony R. Mato, Gwenn M. Hansen*, Omar Abdel-Wahab*, Justin Taylor*

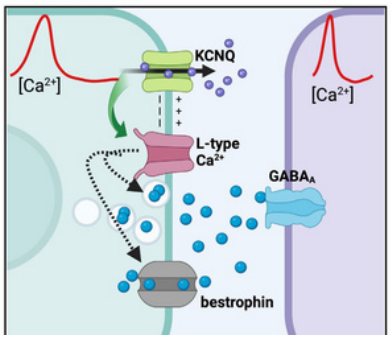
Bianca Graziano, Neuroscience
Mentor: Laura Bianchi
Neuron. 2024 Jun 5;112(11):1832

Neuron

Article

Glial KCNQ K^+ channels control neuronal output by regulating GABA release from glia in *C. elegans*

Graphical abstract



Authors
Bianca Graziano, Lei Wang, Olivia R. White, Daryn H. Kaplan, Jesus Fernandez-Abascal, Laura Bianchi

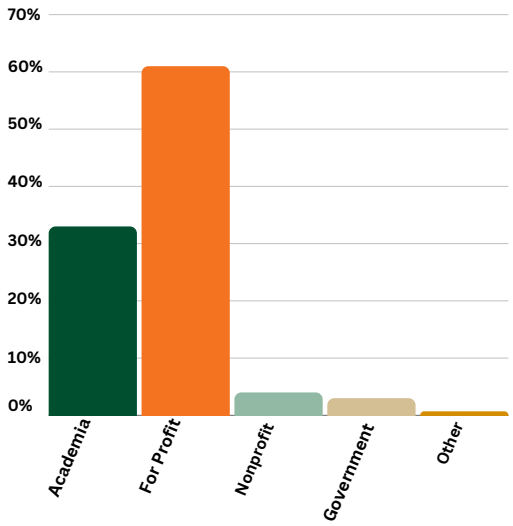
Correspondence
lbianchi@med.miami.edu

In brief
Graziano et al. report that in *C. elegans* KCNQ K^+ channels control the glial membrane potential, thereby regulating voltage-gated Ca^{2+} channels responsible for Ca^{2+} influx, which mediates GABA release from glia. Human KCNQ pathogenic mutations associated with epilepsy and autism spectrum disorder alter GABA release from glia.

CAREER OUTCOMES

Long-Term Placement for PhD Graduates

2015-2019 Graduates, n=149

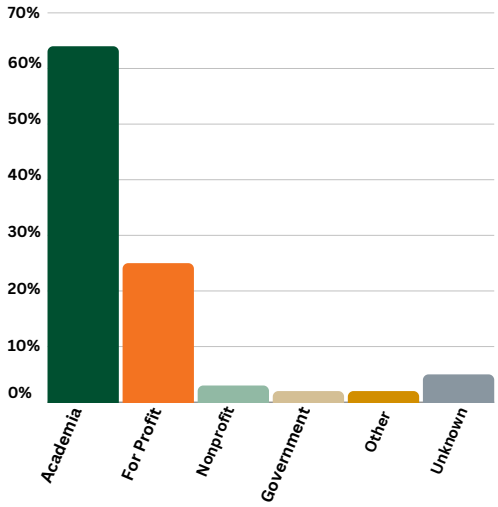


Alumni Spotlight: Hui Zhong, Ph.D. | Class of 2023
Postdoctoral Associate: Broad Institute of MIT and Harvard

Program: *Biochemistry & Molecular Biology*
Mentor: *Antonio Barrientos, Ph.D.*

Immediate Placement for PhD Graduates

2020-2024 Graduates, n=121



Alumni Spotlight: Samara Singh, Ph.D. | Class of 2024
Postdoctoral IRTA Fellow at the NEI/NIH

Program: *Cancer Biology*
Mentor: *Nipun Merchant, Ph.D.*

Exciting News!

We are now an implementation site for the Professional Development (pd | hub) Collections: Foundations of Career Exploration for Ph.D. Scientists.

Led by Dr. Ana Fiallos, Heather Rose, and Katelyn McGuigan to facilitate an evidence-based career exploration curriculum for Ph.D. students and postdoctoral fellows.

MEDICAL FACULTY ASSOCIATION AWARDEES

First-place: Skye Montoya
Mentor: Justin Taylor, M.D.
Program: Cancer Biology
Dissertation: Investigating resistance mechanisms to non-covalent Bruton's tyrosine kinase inhibitors and using degraders to overcome resistance for patients with B cell malignancies

Third-place: Oandy Naranjo
Mentor: Michal Toborek, M.D., Ph.D.
Program: Biochemistry & Molecular Biology
Dissertation: Blood-brain barrier pericytes as key latent HIV-1 reservoirs: a comprehensive transcriptional analysis

Second-place: Olivia Osborne
Mentor: Michal Toborek, M.D., Ph.D.
Program: Biochemistry & Molecular Biology
Dissertation: Ischemic stroke in cerebral amyloid angiopathy: microvascular injury and recovery

Fourth-place: Jiaqi Liu
Mentor: R. Grace Zhai, Ph.D.
Program: Molecular & Cellular Pharmacology
Dissertation: Compartment-specific NAD+ metabolism in glioma

ALUMNI HIGHLIGHTS

Dr. Jason Miska

Microbiology and Immunology

As an Assistant Professor at Northwestern, Dr. Jason Miska's research is at the nexus of immunology, metabolism, and glioblastoma. He received his Ph.D. in Microbiology and Immunology from the University of Miami under the guidance of Dr. Zhibin Chen, focusing on the role of CTLA-4 in autoimmunity, antitumor immunity, and its paradoxical role in inducing gastric tumorigenesis. To extend his knowledge of basic immunology and cancer biology into a more clinically focused environment, he completed his post-doctoral training in the laboratory of Maciej Lesniak, studying the role of immune suppression in glioblastoma. Dr. Miska's laboratory focus is on the role of the metabolic choices of immune cells within brain tumors. Specifically, his laboratory studies how tumor-infiltrating myeloid cells contribute to immune suppression, tumor growth, and therapy resistance.

Dr. Lu Han

Cellular Physiology & Molecular Biophysics

Dr. Lu Han is currently a Senior Data Scientist at Meta, specializing in optimizing recommendation systems for reels. She earned her Ph.D. in Cellular Physiology & Molecular Biophysics from the University of Miami under the mentorship of Dr. Laura Bianchi. Her work on discovering novel mechanosensory ion channels involved in touch in the Bianchi laboratory led to a first-author publication in the Journal of Neuroscience. After completing her Ph.D., she conducted research in diabetes and liver disease at Stanford University School of Medicine which resulted in six publications. Her commitment to data-driven decision-making was soon developed during her three years at San Jose State University, where she led advanced data analytics and reporting while facilitating informed decisions across departments. She then worked as a Data Scientist at Lyft, where she contributed to growth strategies within the Rider Growth Team transitioning her from academia to industry.