

ALLYSON F. O'DONNELL, PH.D.

Department of Biological Sciences
University of Pittsburgh
A312 Langley Hall
4249 Fifth Avenue
Pittsburgh, Pennsylvania 15260
Phone: 650-521-1032 (cell)
email: allyod@pitt.edu
website: www.odonnelllab.com

Degrees & Academic Positions

Assistant Professor (August 2018 – current)

' α -Arrestin regulation of protein trafficking'
University of Pittsburgh, Department of Biological Sciences

Assistant Professor (January 2015 – July 2018)

' α -Arrestin regulation of protein trafficking'
Duquesne University, Department of Biological Sciences

Research Assistant Professor (April 2012 – Dec. 2014)

' α -Arrestin regulation of protein trafficking'
Lab affiliation - **Dr. Alexander Sorkin**
University of Pittsburgh, Department of Cell Biology

Postdoctoral Fellow (July 2010 – March 2012)

' α -Arrestin regulation of protein trafficking'
Supervisor - **Dr. Jeremy Thorner**
University of California at Berkeley, Department of Molecular & Cell Biology

Postdoctoral Fellow (Sept. 2004 - June 2010)

' α -Arrestin regulation of protein trafficking'
Supervisor - **Dr. Martha Cyert**
Stanford University, Department of Biology

PhD (Sept. 1998 - Aug. 2004)

'Mutational analysis of the yeast chromatin modulator complex FACT'
Supervisors - **Drs. Richard Singer and Gerald Johnston**
Dalhousie University, Biochemistry & Molecular Biology Department

MSc (May 1996 - Aug. 1998)

'Molecular and genetic characterization of AIR Carboxylase-SAICAR Synthetase in *Drosophila melanogaster*'
Supervisor - **Dr. Denise Clark**
University of New Brunswick, Biology Department

BSc (H) (Sept. 1992 - April 1996)

'Cloning of a *Drosophila* cDNA for SAICAR Synthetase and AIR Carboxylase by functional complementation with *E. coli* purine auxotrophs'
Supervisor - **Dr. Denise Clark**
University of New Brunswick, Biochemistry

Grants, Scholarships & Awards

2019-2024	National Institutes of Health DP2 (A. Carvunis, PI), From non-coding to coding: uncovering the hidden coding potential of non-coding sequences and their role in de novo gene evolution (\$150,000)
2018-2021	National Science Foundation Research Experiences for Undergraduates grant (S. Woodley, Co-PI), Interdisciplinary biological sciences research and community engaged learning experiences for undergraduates (\$318,862)
2017-2020	National Science Foundation Major Research Instrumentation grant (J. Pollock, PI), Acquisition of a Confocal Microscope for Research and Teaching (\$333,191)
2017-2018	Charles Henry Leach II Fund grant to support Women in Science at Duquesne University (\$9,000)
2017-2018	Pittsburgh Foundation grant for the CIRCLE program at Duquesne University (\$23,010)
2017	Mentor Award for Excellence in Advising Graduate Students, Dept. of Biological Sciences, Duquesne University
2017	American Society for Cell Biology COMPASS grant (\$700)
2016-2020	National Science Foundation CAREER grant , Regulation of cargo selection and ubiquitination by protein trafficking adaptors (\$1,016,453)
2016	Hunkele Dreaded Disease Grant (\$6,015)
2015	American Society for Cell Biology WICB travel grant (\$800)
2015-2019	National Institutes of Health R01 (J. Brodsky, PI), Endoplasmic reticulum associated degradation (ERAD) of membrane proteins in yeast (\$196,000)
2015	LI-COR Science Undergraduate Research Grant (\$18,400)
2014	Univ. of Pittsburgh, Competitive Medical Research Fund Grant (\$25,000)
2014-2016	O'Brien Kidney Foundation Pilot Grant (N. Clark, PI) (\$60,000)
2010	American Society for Cell Biology Postdoctoral Travel Award (\$300)
2006-2008	Agilent Technologies Foundation Grant (\$135,000)
2003-2004	N.S. Health Research Foundation Doctoral Award (\$20,030)
2002-2003	W. C. Sumner Fellowship (\$4,000)
2000-2003	Canadian Institutes for Health Research (CIHR) Doctoral Research Award (\$57,090)
1998-2002	Sir Izaak Walton Killam Memorial Scholarship (Honorarium)
1998-2000	Natural Sciences and Engineering Research Council (NSERC) Post-Graduate Scholarship (B) (\$31,200)
1996-1988	NSERC Post-Graduate Scholarship (A) (\$31,200)
1992-1996	Canada Scholarship (\$10,000)
1992-1996	Lord Beaverbrook Scholarship (\$20,000)
1995	NSERC Undergraduate Summer Research Award (\$3,600)
1994	NSERC Undergraduate Summer Research Award, Industrial (\$3,600)
1993-1994	Netherwood Foundation Scholarship (\$4,000)
1993	NSERC Undergraduate Summer Research Award, Industrial (\$3,600)
1992	Governor Generals Academic Medal

Publications**In preparation and submitted:**

Robinson, B., R.W. Bowman, P. Ziegler, S. Anaokar, A. Nikiforov, J. Patton-Vogt, and A.F. O'Donnell (2020) α -Arrestins Aly1 and Aly2 regulate trafficking of the glycerophosphoinositol transporter

Git1 and impact phospholipid homeostasis. *In preparation for submission to the Journal of Biological Chemistry in Spring 2020.*

Bowman, R.G and A.F. O'Donnell (2020) Arrestins on Parole: Dephosphorylation promotes α -arrestin-mediated trafficking. *Invited mini-review for Molecular and Cellular Biology, anticipated submission Spring 2020.*

Soncini, S.R., D.G. Chandrashekarappa, D.A. Augustine, K. Callahan, A.F. O'Donnell, and M.C. Schmidt. (2020) Spontaneous mutations that confer resistance to 2-deoxyglucose act through Hxk2 and Snf1 pathways to regulate endocytosis. *In Revision at PLoS Genetics.*

Published

Vakirlis, N., B. Hsu, O. Acar, N. Castilho Coelho, S.B. Van Oss, A. Wacholder, K. Medetgul-Ernar, J. Iannotta, R.W. Bowman, C.P. Hines, J. Iannotta, S.B. Parikh, A. McLysaght, C.J. Camacho, A.F. O'Donnell[‡], T. Ideker[‡], and A-R Carvunis[‡]. (2020) *De novo* emergence of adaptive membrane proteins from thymine-rich intergenic sequences. *Nature Communications*, 11(1):781. [‡]**Co-corresponding authors**

O'Donnell, A.F. and M.S. Schmidt (2019) Helping daughters succeed: asymmetric distribution of glucose transporter mRNA. *The EMBO Journal*, April 29:pii:e102063 Epub ahead of print.

O'Donnell, A.F.[‡] and M.S. Schmidt[‡] (2019) AMPK-mediated regulation of α -arrestins and protein trafficking. *International Journal of Molecular Sciences*, 20(3):pii:E515. [‡]**Co-corresponding authors**

Hager, N.A., C.J. Krasowski, T.D. Mackie, A.R. Kolb, P.G. Needham, A. Dempsey, C. Szent-Gyorgy, M.P. Bruchez, D.J. Bain, A.V. Kwiatkowski, A.F. O'Donnell[‡] and J.L. Brodsky[‡] (2018) Select α -arrestins control surface abundance of the mammalian Kir2.1 potassium channel in a yeast model. *Journal of Biological Chemistry*, 293(28):11006-11021. [‡]**Co-corresponding authors**

Mackie, T.D., B.Y. Kim, A.R. Subramanya, D.J. Bain, A.F. O'Donnell, P.A. Welling, and J.L. Brodsky. (2018) Endosomal trafficking factors CORVET and ESCRT negatively regulate plasma membrane residence of the renal outer medullary potassium channel (ROMK). *Journal of Biological Chemistry*, 293(9):3201-3217.

Chandrashekarappa, D.G., R. R. McCartney, A.F. O'Donnell, and M.C. Schmidt. (2016) The β subunits of yeast AMP-activated protein kinase direct substrate specificity in response to alkaline stress. *Cell Signaling*, **28**(12):1881-1893.

Prosser, D.C., K. Wrasman, T. K. Woodard, A. F. O'Donnell, and B. Wendland. (2016) Applications of pHluorin for quantitative, kinetic, and high-throughput analysis of endocytosis in budding yeast. *Journal of Visual Experimentation*, **116**:e54587, doi:10.379/54587.

Prosser, D.C., A.E. Pannunzio, J. Brodsky, J. Thorner, B. Wendland, and A.F. O'Donnell. (2015) Alpha-arrestins participate in cargo selection for both clathrin-independent and clathrin-mediated endocytosis. *Journal of Cell Science*, **128**(22):4220-34.

O'Donnell, A.F., R. R. McCartney, D. G. Chandrashekarappa, B. Zhang, J. Thorner, and M.C. Schmidt. (2015) 2-Deoxyglucose impairs yeast growth by stimulating Snf1-regulated and α -arrestin-mediated trafficking of hexose transporters 1 and 3 in *Saccharomyces cerevisiae*. *Molecular and Cellular Biology*, **35**(6):939-55.

C.G. Alvaro, A.F. O'Donnell^{*}, D.C. Prosser, A.A. Augustine, A. Goldman, J. Brodsky, M.S. Cyert, B. Wendland, and J. Thorner. (2014) Specific α -arrestins negatively regulate *Saccharomyces cerevisiae* pheromone response by down-modulating the G-protein coupled receptor Ste2. *Molecular and Cellular Biology* **34**(14):2660-81. ^{*}**Co-first author**

Hecht, K.A., A.F. O'Donnell, and J. Brodsky. (2014) The proteolytic landscape of the yeast vacuole. *Cellular Logistics* **4** (1): e28023.

- O'Donnell, A.F., L. Huang, J. Thorner, and M.S. Cyert. (2013) A calcineurin-dependent switch controls the trafficking function of α -arrestin Aly1/Art6. *The Journal of Biological Chemistry* **288** (33): 24063-24080
- O'Donnell, A.F. (2012) The running of the Buds: Control of permease trafficking by α -arrestins Bul1 and Bul2. *Molecular and Cellular Biology* **32** (22): 4506-09.
- Stevens, J.R., A.F. O'Donnell, T.E. Perry, J.R. Benjamin, C.A. Barnes, G.C. Johnston, and R.A. Singer. (2011) FACT, the Bur kinase pathway, and the histone co-repressor HirC have overlapping nucleosome-related roles in yeast transcription elongation. *PLoS One* **6** (10): e25644.
- Minear, S., A.F. O'Donnell*, G. Giaever, C. Nislow, T. Stearns, and M.S. Cyert. (2011) Curcumin inhibits growth of *Saccharomyces cerevisiae* through iron chelation. *Eukaryotic Cell* **10** (11): 1574-81. ***Co-first author**
- Piña, F.J., A.F. O'Donnell, S. Pagant, H.L. Piao, J.P. Miller, S. Fields, E.A. Miller, and M.S. Cyert. (2011) Hph1 and Hph2 are novel components of the Sec63/Sec62 posttranslational translocation complex that aid in vacuolar proton ATPase biogenesis. *Eukaryotic Cell* **10** (1): 63-71.
- O'Donnell, A.F., A. Apffel, R.G. Gardner, and M.S. Cyert. (2010) α -arrestins Aly1 and Aly2 regulate intracellular trafficking in response to nutrient signaling. *Molecular Biology of the Cell* **21** (20): 3552-3566. **(Highlighted publication in MBoC)**
- O'Donnell, A.F., J.R. Stevens, R. Kepkay, C.A. Barnes, G.C. Johnston, and R.A. Singer. (2009) New mutant versions of yeast FACT subunit Spt16 affect cell integrity. *Molecular Genetics and Genomics* **282** (5): 487-502.
- O'Donnell, A.F., N.K. Brewster, J. Kurniawan, L.V. Minard, G.C. Johnston, and R.A. Singer. (2004) Domain organization of the yeast histone chaperone FACT: the conserved N-terminal domain of FACT subunit Spt16 mediates recovery from replication stress. *Nucleic Acids Research* **32** (19): 5894-5906.
- O'Donnell, A.F., S. Tiong, D. Nash, and D.V. Clark (2000) The *Drosophila melanogaster ade5* gene encodes a bifunctional enzyme for two steps in the *de novo* purine synthesis pathway. *Genetics* **154** (3): 1239-1253.

Research Support

Ongoing Funding:

National Science Foundation

MCB 1553143/1902859

NSF CAREER

O'Donnell, A.F. (P.I)

01/01/2016-12/30/2020

\$1,016,453

Regulation of Cargo Selection and Ubiquitination by Protein Trafficking Adaptors

Cells must make correct 'decisions' to control protein activity, levels and localization to survive. For example, cell surface proteins such as nutrient transporters and hormone receptors—referred to hereafter as 'cargo'—are removed and destroyed when not needed. How is the decision made to relocalize these proteins? The α -arrestins, conserved from yeast to humans and related to the well-characterized and clinically important mammalian β -arrestins, are a recently described class of trafficking adaptor, that play a critical role in selective protein trafficking. While we have yet to appreciate the breadth of α -arrestin function, in yeast they interact with the Ub ligase Rsp5 to regulate the trafficking fate of cargo proteins. Here the PI proposes to: 1) Define how disruption of the α -arrestin-Rsp5 interface impairs the Ub ligase efficiency of Rsp5; 2) Determine how ubiquitination regulates α -arrestin-mediated trafficking and determine how Rsp5 activity is restricted to permit α -arrestin mono-ubiquitination; and 3) Comprehensively identify α -arrestin cargo proteins and define motifs that dictate α -arrestin-cargo interaction using a robust, new computational approach that employs evolutionary signatures to infer functional relationships.

**National Institutes of Health
DP2 GM137422**

**Carvunis, A-R. (P.I.); O'Donnell, A.F. (Collaborator)
09/30/2019-31/05/20204
Subcontract to O'Donnell \$150,174**

DP2: From non-coding to coding: Uncovering the hidden coding potential of non-coding sequences and its role in de novo gene evolution

How do new genes emerge in the genome and what features define them? We have shown that new genes--in the process of establishing themselves in the genome--often confer beneficial growth effects and have a high propensity to contain transmembrane spans. These newly emerging proteins localize to discreet membrane bound organelles. Our goals are to define their role in the cell and demonstrate how they are targeted to specific organelles. In many instances, these emergent genes encode for micropeptides, small proteins whose function has been largely understudied. Using *Saccharomyces cerevisiae* as a model system, we will comprehensively define the localization of these emerging proteins in yeast using a high-content imaging platform and define, for the first time, the breadth of localization and function associated with this understudied and exciting new element of the genome.

**National Science Foundation
MRI 1726368**

**Pollock, J (PI) and A.F. O'Donnell, W. Kim, R. Leak,
and J. Stolz (Co-PIs)
09/01/2017-08/31/2020
\$333,191**

MRI: Acquisition of a Confocal Microscope for Research and Teaching

This grant supports the acquisition of a new confocal microscope, which will have a significant impact on Duquesne research and teaching. Specific to my teaching and mentoring, I will host 3 workshops per year engaging high school students in microscopy techniques, all my graduate and undergraduate students will be trained on this system, and the microscope will be used in my section of the BIOL 371W: Superlab II course. This instrument is also essential to my research. The new total internal reflections fluorescence microscopy capabilities will allow my lab to map the spatial and temporal dynamics of α -arrestins at the cell surface. The enhanced sensitivity and speed of this system is essential for developing the Fluorescence-Activated Protein (FAP) imaging, which is one focus of the NIH collaborative grant with Dr. Jeff Brodsky (see below). This instrument has clear implications for the advancement of my research program.

Completed Funding:

**National Institutes of Health
GM075061**

**Brodsky, J. (PI) & O'Donnell, A.F. (collaborator)
08/01/2015-05/31/2019
\$196,000 to O'Donnell**

**National Science Foundation
*REU**

**O'Donnell, A.F. (PI) and S. Woodley (Co-PI)
08/2018-08/2021
\$318,862**

**Center for Community-Engaged Teaching
and Research, Duquesne Univ.**

**S. Woodley (PI) and A.F. O'Donnell (Co-PI)
10/2017-09/2019
\$20,000**

EQT Foundation Grant

**O'Donnell, A.F. (PI) and J. Janjick, R. Neilan-
Miller, R. Harbourne, L. Garand, F.
Benmokhtar, J. Aitken, M. Heo (Co-PIs)
1/2018-12/2018
\$25,000**

The Charles Henry Leach Fund II

**O'Donnell, A.F. (PI) and J. Janjick, R. Neilan-
Miller, R. Harbourne, L. Garand, F.
Benmokhtar, J. Aitken, M. Heo (Co-PIs)
08/15/2017-08/14/2019
\$9,000**

The Pittsburgh Foundation	O'Donnell, A.F. (PI) and Woodley, S. (Co-PI) 05/19/2017-05/18/2018 \$23,010
ASCB CIRCLE Program grant	O'Donnell, A.F. 05/07/2017-09/09/2017 \$500
Hunkele Dreaded Disease Grant	O'Donnell, A.F. 01/01/2016-12/30/2016 \$6,015
LI-COR Science Undergraduate Research Grant (SURG)	O'Donnell, A.F. 05/12/2015 \$18,400
Pittsburgh Center for Kidney Research O'Brien Kidney Research Center Pilot Grant	Clark, N. (PI) & O'Donnell, A.F. (collaborator) 08/01/2014-07/30/2016 \$60,000
Kaufman Foundation New Investigator Research Grant	Clark, N. (PI) & O'Donnell, A.F. (collaborator) 09/01/14-08/30/16
UPMC Competitive Medical Research Fund	O'Donnell, A.F. (PI) 07/01/2014-06/30/2015 \$25,000

Invited Seminars and Presentations

(N.B. – Since I started as an Assistant Professor in 2015, my students and I have presented over 90 posters in a variety of venues. For simplicity, these presentations are not listed and only invited seminars are shown.)

From here to there: The expanding roles of α -arrestins in selective protein trafficking. **The GRK and Arrestin Conferene: Key Modulation of GPCR Signal Transduction, FASEB Science Research Conference (2020)**, Lisbon, Portugal (*Invited and scheduled, however cancelled secondary to the COVID19 Pandemic*).

Ticket to Ride: α -Arrestin regulation of protein trafficking. **Cell and Developmental Biology Dept., University of Colorado (2020)**, Denver, Colorado (*Invited and scheduled, however cancelled secondary to the COVID19 Pandemic*).

Ticket to Ride: α -Arrestin regulation of protein trafficking. **Dept. of Biochemistry and Molecular Biology, Colorado State University (2020)**, Fort Collins, Colorado (*Invited and scheduled, however cancelled secondary to the COVID19 Pandemic*).

A KIR-iuous story using a FAP-ulous new imaging technology. **The Allied Genetics Conference (2020)**, Washington, DC (*venue changed to be online due to COVID19 Pandemic*).

Finding my way in academia by unraveling the α -arrestin protein trafficking jam. **Tri-Beta Annual Symposium Keynote Speaker (2020)**, Duquesne University, Pittsburgh, PA (*Invited and scheduled, however cancelled secondary to the COVID19 Pandemic*).

Ticket to Ride: α -Arrestin regulation of protein trafficking. **Dept. of Biology, Slippery Rock University (2019)**, Slippery Rock, Pennsylvania.

Ticket to Ride: α -Arrestin regulation of protein trafficking. **Donnelly Center, University of Toronto (2019)**, Toronto, Canada

From here to there: α -Arrestin regulation of protein trafficking. **Bridgeside Point Research Forum (2019), University of Pittsburgh**, Pittsburgh, Pennsylvania.

The heart of the matter: α -Arrestin regulation of the cardiac potassium channel Kir2.1 **Science! 2019 Research Symposium, University of Pittsburgh**, Pittsburgh, Pennsylvania.

A KIR-ious story using a FAP-ulous new imaging technology. **The 29th International Conference on Yeast (2019)**, Gothenburgh, Sweden.

Ticket to Ride: α -Arrestin regulation of protein trafficking. **ZMBH, Heidelberg University (2019)**, Heidelberg, Germany.

Using evolutionary rate covariation to unravel the α -arrestin trafficking jam. **Pittsburgh Local Traffic meeting (2019)**, Pittsburgh, Pennsylvania.

Virginia Commonwealth University, Dept. of Biochemistry and Molecular Biophysics (2019), Richmond, Virginia.

Ticket to Ride: α -Arrestin regulation of protein trafficking. **Kansas State University, Dept. of Biology (2019)**, Manhattan, Kansas.

Ticket to Ride: α -Arrestin regulation of protein trafficking. **SUNY Upstate Medical University, Dept. of Biochemistry and Molecular Biology (2018)**, Syracuse, New York.

Ticket to Ride: α -Arrestin regulation of protein trafficking. **University of California San Diego, Dept of Pharmacology (2018)**, San Diego, California.

Women and Minorities in STEM. **Panel Discussion with Institutional Research and academic Career Development Award (IRACDA) fellows from the Univ. of California San Diego (2018)**, San Diego, California.

Ticket to Ride: α -Arrestin regulation of protein trafficking. **Gettysburg College, Dept of Biology (2018)**, Gettysburg, Pennsylvania.

Evolutionary Rate Covariation as a predictive tool to identify α -arrestin-cargo pairs. **Yeast Genetics Meeting (2018)**, Stanford, California.

Ticket to Ride: α -Arrestin regulation of protein trafficking. **University of York, Dept. of Biological Sciences (2018)**, York, UK.

Evolutionary Rate Covariation as a predictive tool to identify α -arrestin-cargo pairs. **Lysosomes and Endocytosis Gordon Research Conference (2018)**, Andover, New Hampshire.

From here to there: α -Arrestin regulation of protein trafficking. **Duquesne University, Dept. of Biological Sciences (2018)**, Pittsburgh, Pennsylvania.

Ticket to Ride: α -Arrestin regulation of protein trafficking. **University of Pittsburgh, Dept. of Biological Sciences (2017)**, Pittsburgh, Pennsylvania.

Teacher Scholar Nexus: CTE Workshop Panel Speaker. **Duquesne University, Dept. of Biological Sciences (2017)**, Pittsburgh, Pennsylvania.

Identifying ion channel regulators through evolutionary signatures. **University of Pittsburgh, Renal Division (2015 and 2016)**, Pittsburgh, Pennsylvania.

Trafficking of the Kir2.1 potassium transporter is regulated by the ubiquitin ligase Rsp5 and a select subset of α -arrestins in yeast. **American Society for Cell Biology Annual Meeting (2014)**, Philadelphia, Pennsylvania.

Alpha-arrestin regulation of protein trafficking from yeast to humans. **University of Pittsburgh, Dept. of Pharmacology & Chemical Biology (2014)**, Pittsburgh, Pennsylvania.

Alpha-arrestin regulation of protein trafficking from yeast to humans. **University of Pittsburgh, Dept. of Microbiology & Molecular Genetics (2014)**, Pittsburgh, Pennsylvania.

Alpha-arrestin regulation of protein trafficking from yeast to humans. **Duquesne University (2014)**, Pittsburgh, Pennsylvania

Arrestin' Developments: New biological functions for the α -arrestin family of trafficking adaptors. **Carnegie Mellon University (2013)**, Pittsburgh, Pennsylvania.

Arrestin' Developments: New biological functions for the α -arrestin family of trafficking adaptors. **Johns Hopkins University (2012)**, Baltimore, Maryland.

Arrestin' Developments: New biological functions for the α -arrestin family of trafficking adaptors. **Duquesne University (2012)**, Pittsburgh, Pennsylvania.

Yeast α -arrestins Aly1 and Aly2 interact with clathrin and AP-1 to regulate protein trafficking in response to nutrient signaling. **Pittsburgh Local Trafficking Meeting (2012)**, Pittsburgh Pennsylvania.

Yeast α -arrestins Aly1 and Aly2 interact with clathrin and AP-1 to regulate protein trafficking in response to nutrient signaling. **Yeast Genetics and Molecular Biology Meeting (2010)**, Vancouver, British Columbia.

Regulation of intracellular trafficking and exocytosis by yeast α -arrestins. **Yeast Cell Biology Meeting (2009)**, Cold Spring Harbour, New York.

Function and regulation of yeast arrestins Aly1 and Aly2. **Yeast Genetics and Molecular Biology Meeting (2008)**, Toronto, Ontario.

Arrestin Developments in yeast: Function and regulation of yeast arrestins. **Yeast Cell Biology Meeting (2007)**, Cold Spring Harbour, New York.

Calcineurin and its substrate Hph1 regulate metal-ion homeostasis in *Saccharomyces cerevisiae*. **FASEB Trace Element Micronutrients: Integrating Basic and Applied Research (2006)**. Snowmass, Colorado.

Teaching Experience

(* denotes graduate level courses taught)

Spring 2020	Instructor, Univ. of Pittsburgh BIOSC 0352 Introduction to Molecular Genetics Laboratory
Spring 2019-20	Mentor, Univ. of Pittsburgh CS 1900 Computer Science Bioinformatics Capstone Project (3 students)
Spring 2019	Mentor, First Experiences in Research, Office of Undergraduate Research & Scholarship, Univ. of Pittsburgh (1 student)
Fall-Summer 2019	Mentor, Univ. of Pittsburgh BIOSC 1904 Undergraduate Research (2 students)
Spring 2013-18	Instructor, Duquesne University *Advanced Cell and Molecular Biology II
Spring 2017-18	Instructor, Duquesne University Cellular & Molecular Biology Laboratory
Fall 2015-17	Instructor, Duquesne University Advanced General Biology I
Fall 2016	Instructor, Duquesne University *Advanced Topics Graduate course
Spring 2016	Instructor and organizer, Duquesne University *Biology Seminar
Spring 2015	Instructor, Duquesne University Developmental Biology

Summer 2013	Roundtable moderator, University of Pittsburgh HHMI Undergraduate Research Program
Spring 2013	Lecturer and Participant *Cell Biology & Membrane Trafficking Journal club MSCBMP 2852
Fall 2007	Instructor, University of California at Santa Cruz Extensions Cellular Biology
Spring 2005	Lab Teaching Assistant, Stanford University Biology 55 Genes, Genomes and Proteins
Fall 2003	Teaching Assistant, Dalhousie University Biochemistry 5400 Gene Expression
Spring 2003	Teaching Assistant, Dalhousie University Microbiology 3033 Microbial Genetics
Fall 1998-02	Lab Teaching Assistant, Dalhousie University Biochemistry 3400 Nucleic Acids Biochem. & Molecular Biology
Spring 2001-02	Tutorial Leader, Dalhousie University Biochemistry 2200 Introductory Biochemistry
Spring 2000	Lab Teaching Assistant, Dalhousie University Biochemistry 1420 Introductory Biochemistry for Nursing Students
Spring 1999	Lab Teaching Assistant, Dalhousie University Biochemistry 2200 Introductory Lab
Fall 1997	Lab Teaching Assistant, University of New Brunswick Biology 3051 Eukaryotic Cell Biology and Molecular Genetics
Fall 1996	Lab Teaching Assistant, University of New Brunswick Biology 3061 Cell and Molecular Biology
Spring 1996	Lab Teaching Assistant, University of New Brunswick Biology 2482 Introductory Bacteriology

In addition to the above classroom and laboratory teaching experience, I have mentored 12 high school, 25 undergraduate and 6 graduate students on research projects at various stages in my scientific career.

Graduate Student Advising and Supervision

I am currently the PhD supervisor for Ray Bowman (4th year student), Natalie Hager (3rd year student) and co-advisor to Carly Houghton (2nd year student). I have served as an advisor for an additional 8 graduate students who rotated in my laboratory between years 2015-present. I also serve as a member of the PhD advisory committee for 14 students, including the following students at the Univ. of Pittsburgh:

Saurin Parikh (2020-present): Supervisor Dr. Anne Carvunis
 Jahree Sosa (2019-present): Supervisor Dr. Kirill Kisleyov
 Omer Acar (2019-present): Supervisor Dr. Anne Carvunis
 Matthew Blank (2019-present): Supervisor Dr. Jon Boyle
 Sara Tripplehorn (2019-present): Supervisors Drs. Karen Arndt and Sarah Hainer
 Morgan Webb (2019-present): Supervisor Dr. Jeff Brodsky
 Rachael Bainbridge (2018-present): Supervisor Dr. Anne Carlson
 Grant Daskivich (2018-present): Supervisor Dr. Jeff Brodsky
 Nga (Katie) Hong Nguyen (2018-present): Supervisor Dr. Jeff Brodsky

Committee contributions and community service

Science community

Co-organizer of Pittsburgh Area Yeast meeting 2019-present

This monthly meeting brings together scientist that use yeast as a model system from the local Pittsburgh research community. Started ~20 years ago by Drs. Jeff Brodsky and Karen Arndt, two research labs present their current findings in this forum each month and this meeting has 30-50

attendees. Together with my co-organizer, Dr. Joel McManus, we will begin organizing these meetings as of Fall 2019.

Member of the Center for Evolutionary Biology and Medicine (CEBaM) 2018-present

The mission of this center is to support cross-disciplinary research in evolutionary biology and medicine. This group is designed to foster collaborative ties between evolutionary and biomedical researchers. I am currently collaborating with Drs. Nathan Clark and Anne-Ruxandra Carvunis who are members of CeBAM and the Computational and Systems Biology Dept.

Member of the Center for Protein Conformational Diseases 2016- present

The research efforts of the members of the Center for Protein Conformational Diseases are aimed at understanding and treating diseases associated with protein misfolding. As a member of CPCD, I attend meetings to discuss science and consider funding opportunities with other member of this organization. I am actively engaged in an NIH funded collaboration with Dr. Jeff Brodsky, the director of CPCD, and have worked with Drs. Tom Kleyman, Alexander Sorkin, and Arohan Subramanya in the past. More information on the CPCD can be found at: www.proteindiseasecenter.pitt.edu/

National Science Foundation Grant Reviewer 2017-2019

I was a member of an NSF grant review panel in 2017, 2018 and 2019 and also served as an ad hoc reviewer for NSF in this timeframe.

Ambassador for the American Society for Cell Biology 2017-2018

I was invited to be an ambassador for ASCB and in this capacity, I help support and promote ASCB events and ensure my colleagues are aware of opportunities ASCB has to offer.

Adhoc reviewer for scientific journals 2013-present

I have reviewed 27 publications for an array of quality journals including Journal of Cell Biology, PLoS Genetics, Journal of Cell Science, Journal of Biological Chemistry, Molecular Biology of the Cell, Molecular and Cellular Biology, Traffic, Biochemistry Journal, Genetics, Scientific Reports, PLoS ONE and JoVE.

University of Pittsburgh

'Science Research' mentor 2013-present

Allderdice High School, Pittsburgh PA

I am a mentor in a science outreach program, initiated by Dr. Janet Waldeck at Allderdice High School, a large ethnically diverse, public school in Pittsburgh. The course, 'Science Research', developed by Dr. Waldeck gives high school students the opportunity to expand beyond the typical high school curriculum and gain cutting-edge research experience at laboratories in the Pittsburgh area. I am currently mentoring a high school student on research project in my lab, and had three high school students working in the lab over the past summer. I began volunteering in this program during my time as a Research Assistant Professor and I have expanded the program administration to ensure that high school students get experience working in other labs in the Pittsburgh research community as part of the CIRCLE program. I am currently mentoring two high school students from this program in my lab on research projects.

Graduate Funding and Fellowships Committee 2018-present

This committee meets to review and discuss graduate student grant applications and travel awards.

Duquesne University

Women in Science at Duquesne University founder 2016-2018

I initiated the formation of a new organization at Duquesne to support women in science. The Women in Science at Duquesne University (WIS@DU) forum is designed to promote and support women in basic and applied sciences, technology, engineering, and mathematics career paths at Duquesne University. The organization meets twice per semester to hold presentations and lead discussions on personal development, provide a networking opportunity for students and faculty, and to identify

positive strategies for women in STEM to navigate successful career paths. The group was recently appointed as a University level committee, reporting to the Provost and advocated successfully for paid family leave for graduate students. For more information please see the website:

www.duq.edu/wisdu

CIRCLE Program Director

2016-2018

Dr. Sarah Woodley and I founded the CIRCLE program whereby undergraduate students in Duquesne's Undergraduate Summer Research Program are involved in two forms of community-engaged learning. In the first, we use a 'push-out' model where students develop a lesson plan and science activities to share with middle-school aged children at a summer camp in an underserved, largely African American Pittsburgh neighborhood. In the second, we use a 'pull-in' model where high-school students are recruited to Duquesne from the local Pittsburgh Public Schools to participate with the undergraduate students in their research projects. This program was recently awarded an NSF REU grant to support undergraduate research and outreach activities.

Graduate Research Committee

2016-2018

Department of Biological Sciences

This committee evaluates the graduate student curriculum at Duquesne and selects graduate students for our program.

Undergraduate Research Committee

2013-2014

Department of Biological Sciences, Univ. of Pittsburgh

This committee evaluates undergraduate research fellowships and organizes undergraduate research opportunities and events. It is our mission to promote undergraduate research and ensure that undergraduates experience the excitement of scientific discovery

Intel International Science and Engineering Fair Judge

2012

University of California, Berkeley

Yeast Super Group

2010-2011

As organizer, I recruited speakers and arranged the schedule for monthly meetings of yeast researchers at UC Berkeley.

Yeast Super Share (YeSS!)

2010-2012

I designed and implemented a web-resource for the UC Berkeley yeast community to post equipment, strains, and protocols of mutual benefit.

Stanford University

Bay Area Yeast and other Fungi Symposium

2009

I organized a daylong conference at Stanford that brought yeast researchers from UC Berkeley, UC Santa Cruz, UC Davis, UC San Francisco and Stanford together to discuss research and foster collaborations. I also helped organize the 2011 meeting held at UCSF with members of Wallace Marshall's lab.

Association for Women in Science Mentor

2008-2010

This program promotes participation of women in STEM disciplines. I mentored female graduate students at Stanford University, meeting with them regularly to talk about their career goals and experiences.

References

Dr. Jeffrey Brodsky
(Collaborator)

University of Pittsburgh

(412) 624-4831
jbrodsky@pitt.edu

Dr. Martin Schmidt
(Collaborator)

University of Pittsburgh

(412) 648-9243
mcs2@pitt.edu

Dr. Nathan Clark

University of Pittsburgh

(412) 648-7785

Curriculum Vitae

Allyson F. O'Donnell

(Collaborator)

Dr. Jeremy Thorner University of California, Berkeley
(Postdoctoral Supervisor)

nclark@pitt.edu

(510) 642-255

jthorner@berkeley.edu

Dr. Beverly Wendland Johns Hopkins University
(Dean of Arts & Sciences and collaborator)

(410) 516-0460

bwendland@jhu.edu