Belinda Barbagallo Ph.D.

Associate Professor and Chairperson
Department of Biology and Biomedical Sciences
Salve Regina University
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Current Position

Associate Professor and Chairperson, Department of Biology and Biomedical Sciences, Salve Regina University — 2024-present

Primary teaching responsibilities include Cell Biology, Introduction to Neuroscience and electives within the biology major and neuroscience minor. Research: investigating barriers to nervous system development using the *C. elegans* and *Drosophila melanogaster* model systems.

Director, SEAS Scholars Program, Salve Regina University — 2024-present

Principal investigator for a six-year scholarship program funded by the National Science Foundation. The aim of this program is to increase the participation of students from low-income backgrounds in STEM education and training around the blue economy.

Education and Training

Assistant Professor	**Salve Regina University, Department of Biology and Biomedical Sciences** Primary teaching responsibilities include Cell Biology, Introduction to Neuroscience and electives within the biology major and neuroscience minor. Research: investigating barriers to nervous system development using the *C. elegans* and *Drosophila melanogaster* model systems.	2018-2024
Postdoctoral Fellow/ Lecturer	**Brandeis University, Department of Neuroscience** Research focused on identifying neural circuits underlying the physiological response to thermal stress using *Drosophila melanogaster* as a model system. Mentor: Paul Garrity Ph.D.	2014-2018
Ph.D.	**University of Massachusetts Medical School, Neuroscience** Thesis Title: Activity regulates neuronal connectivity and function in the *C. elegans* motor circuit. Mentor: Michael M. Francis Ph.D.	2008-2014
B.S.	**Worcester Polytechnic Institute, Biology and Biotechnology** Graduation with Honors Thesis Title: The hair follicle barrier to involvement by malignant melanoma. Mentor: Stephen Lyle, M.D. Ph.D.	2003-2007

Teaching

Courses Taught at Salve Regina

BIO-220: Cell Biology and Chemistry — Every Semester

Sophomore level core requirement for the B.S. and B.A. in Biology as well as the Minor in Neuroscience. This course provides a foundational knowledge of cell function and the impacts of chemistry on cellular processes.	F18-S23
BIO-220L: Cell Biology Lab This course accompanies BIO-220 and is designed to teach students critical laboratory skills required for success in upper-level courses and in their future careers. Skills include microscopy, DNA purification, electrophoresis, genetic analysis, and scientific writing.	S19, F19, S22
BIO-284: Hormones and Behavior Sophomore/Junior level course that fulfills elective requirements in the Biology Major, elective requirements in the Women and Gender Studies Minor and core requirements in the Neuroscience Minor. This course offers an introduction to behavioral endocrinology for students across several majors covering topics including: the biology of gender, parental behaviors, feeding behaviors and social interaction.	F22
BIO-425: Neuroscience Senior level molecular neuroscience course that fulfills elective requirements for Biology Majors and core requirements for Neuroscience Minors. This course covers the basics of neuronal function, neurotransmission and provides an overview of key concepts in modern neuroscience research with an emphasis on primary literature.	F18, S20, S21, S23
BIO-426: Experiments in Neuroscience Developed as course-based undergraduate research (CURE) lab where students carry out independent neuroscience research projects designed to mimic the first-year graduate experience. The course aims to develop skills in experimental design, data analysis, scientific writing, and scientific presentation.	S20, S2, S23
BIO-497/498: Independent Research Mentor independent research projects for Biology Majors in their sophomore, junior and senior years. Students are trained in experimental design, data analysis, scientific writing, and primary literature. Students in this course have contributed to peer-reviewed journal publications and conference presentations.	Every Semester F18-S23

BIO-497/498: Independent Research Projects

Spring 2023

Project: Chronic exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Ana Martinez, Haley Tallman, Matthew Morris

Project: Preconception exposure to PFOS alters nervous system structure and function.
Students: Tallya Maciel, Kheno Remitz, Owen Callahan

Project: Genetic underpinnings of Fanconi Anemia Neurological Syndrome.
Students: Meghan Holland, Zosia Kocab

Project: Women's Health Communication, Mercy Collaborative on Women and Gender.
Students: Ana Martinez, Haley Tallman

Spring 2023

Project: Chronic exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Ana Martinez, Haley Tallman

Project: Preconception exposure to PFOS alters nervous system structure and function.
Students: Tallya Maciel

Project: Genetic underpinnings of Fanconi Anemia Neurological Syndrome.
Students: Meghan Holland

Project: Women's Health Communication, Mercy Collaborative on Women and Gender.
Students: Courtney Collibee

Spring 2022
Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Ana Martinez, Haley Tallman

Project: Tachykinin and corazonin signaling contribute to acute cold stress response.
Students: Tallya Maciel

Project: Genetic underpinnings of Fanconi Anemia Neurological Syndrome
Students: Meghan Holland

Fall 2021
Maternity Leave

Spring 2021
Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Stephen Natola

Project: Tachykinin and corazonin signaling contribute to acute cold stress response.
Students: Tallya Maciel, Ana Martinez

Project: The mushroom body regulates physiological response to multiple stressors.
Students: Donatella Carazo, Aja Pragana

Fall 2020
Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Stephen Natola

Project: The mushroom body regulates physiological response to multiple stressors.
Students: Kiara Son-Has, Donatella Carazo, Aja Pragana

Project: Developmental PFOS exposure alters fertility and developmental timelines.
Students: Steven Devoe

Spring 2020
Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Megan Johnstone, Cailin McVey, Rachel Aresco, Stephen Natola

Project: The mushroom body regulates physiological response to multiple stressors.
Students: Zachary George, Owen Dormes, Aja Prajana, Paulina Clemente, Donatella Carazo

Project: PFOS exposure alters neuronal development in *C. elegans.*
Students: Emma Kiely

Fall 2019

Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Megan Johnstone, Cailin McVey, Rachel Aresco, Stephen Natola, Molly Black

Project: The mushroom body regulates physiological response to multiple stressors.
Students: Zachary George, Owen Doremus, Aja Pragana, Paulina Clemente, Donatella Carazo

Spring 2019
Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Megan Johnstone, Cailin McVey, Rachel Aresco, Cole Tindall, Neil Salley

Project: The mushroom body regulates physiological response to multiple stressors.
Students: Zachary George, Owen Doremus, Anna Wahl, Donatella Carazo

Fall 2018
Project: Neural circuits underlying acute cold tolerance in *Drosophila melanogaster.*
Students: Cailin McVey, Rachel Aresco, Donatella Carazo, Sophia Bruzik

Mentored SRyou Day Student Presentations

Tallya Maciel. Developmental perfluorooctanesulfonic acid (PFOS) induces damage to the nervous system in *C. elegans*. (talk)	2023
Haley Tallman. The role of alpha-lipoic acid in mitigating the development effects of perfluorooctanesulfonic acid in *Drosophila melanogaster*. (talk)	2023
Ana Martinez. Alpha-lipoic acid as a protective agent against PFOS-induced developmental defects in *Drosophila melanogaster*. (talk)	2023
Meghan Holland. Impacts of Fanconi Anemia gene mutations on nervous system development. (poster)	2023
Tallya Maciel. Corazonin and tachykinin as modulators of metabolic response to starvation in *Drosophila melanogaster*. (poster)	2022
Ana Martinez. Tachykinin increases acute cold temperature tolerance in *Drosophila melanogaster*. (poster)	2022
Aja Pragana. Investigating the role of peptadergic signaling in the environmental stress response of *Drosophila melanogaster*. (talk)	2021
Donatella Carazo. The mushroom body mediates metabolic stress in *Drosophila melanogaster*. (poster)	2021
Stephen Natola. The effects of preconception PFOS exposure in *Drosophila melanogaster*. (talk)	2021
Cailin McVey and Rachel Aresco. Neural circuit regulation of environmental stress. (poster)	2019

University Teaching Experience

Lecturer	**Brandeis University Neuroscience Department** Secured three years of funding from the National Science Foundation (NSF) to design and implement a **Project Lab in Neuroscience and Behavior** for undergraduate and master's students. In this course,	2017-2018

students carried out primary scientific research and learned the fundamentals of oral and written scientific communication.

Lecturer	**Brandeis University Quantitative Biology Program** Designed and implemented a new course titled **The Genetic Basis of Behavior** for non-biology graduate students across multiple STEM fields. The goal of the course was for students to learn to apply cutting edge genetic techniques to neurobiological problems.	2015
Lecturer	**UMASS Medical School** **Post-Baccalaureate Course in Biochemistry** Lectured in a team-taught **Biochemistry** Course specializing in ion channel function, active vs. passive transport, and clinical implications of ion channel dysfunction.	2013
T.A.	**UMASS Medical School Graduate Scientific Communication Course** Taught weekly workshops to 12 graduate students covering topics ranging from grant writing to figure design for scientific publication.	2012
T.A.	**UMASS Medical School Graduate Core Curriculum Course** Ran weekly mentoring sessions and study groups for first year graduate students in the Graduate School of Biomedical Sciences. Course topics covered included genetics, cell biology and molecular biology.	2009-2010

Community Teaching Experience

Facilitator	**Brandeis University and Waltham High School** Led group activities and participated in discussions about careers in STEM fields with a group of approximately 120 sophomores and juniors from underrepresented backgrounds.	2017
Mentor	**Brandeis University Research Experience for Undergraduates (REU) Program** Mentored summer students in research projects as part of a grant funded by the National Institutes of Health (NIH). The REU program aims to provide research experience to students from groups traditionally underrepresented in STEM fields.	2015-2018
Demonstration Developer	**Ecotarium Science + You** Designed and conducted monthly hands-on science programs for elementary and middle school students in a museum setting with the goal of teaching them how science impacts medicine.	2013-2015
Blogger	**Worcester Foundation for Biomedical Research- The Hudson-Hoagland Society** Researched and wrote blog posts on current scientific advances and my own research for distribution to members of the Hudson-Hoaglund Society. Blog is primarily written to introduce scientific concepts to adult non-scientists as part of fundraising efforts for UMass Medical School.	2012-2014
Invited Speaker	**Wachusett Regional High School Seminar Series** Seminar for high school honors students celebrating the 50th anniversary of the science program. Seminar focused on	2011

exploring the uses for *C. elegans* as a genetic model in biomedical research.

Teacher/ Mentor	**Wachusett Regional High School Science Project Room** Taught weekly workshop on experimental design and *Drosophila melanogaster* husbandry. Assisted students in the design and execution of their science fair projects, many of which went on to win prizes at the regional and state levels.	2008-2014

Scholarship

Fellowships and Grants

Pilot Project Grant Awarded 2024-2025
RI-INBRE, National Institutes of Health (NIH) National Institute of General Medical Sciences (NIGMS)
P20-GM103430
One-year, $50K grant submitted in collaboration with Dr. Niall Howlett at URI to fund research exploring neurological defects in Fanconi Anemia patients. This grant will fund PI and student summer salaries, and research supplies.

Scholarships in Science, Technology, Engineering, and Math Program. Awarded 2024-2030
National Science Foundation (NSF)
Six-year, $1M program grant to fund scholarships and programming for first-generation college students pursuing a STEM degree. This program will provide funding for a bridge program, faculty mentors, soft skills programming, and research support for 16 students across two cohorts. This program includes participation from multiple offices across campus and community partners across Rhode Islands.

McAuley Scholar: Collaborative on Women and Gender 2022-2024
Salve Regina University
Two-year, $3000 grant from Salve Regina University to fund a collaborative project with the aim to communicate my research in women's health to non-scientific audiences. Funds are used to pay student researchers to develop social media advocacy campaigns using scientific research on the impacts of environmental toxicants on childhood health outcomes. Five Salve Students funded.

SURF Summer Fellowship 2022-2024
RI-INBRE, National Institutes of Health (NIH) National Institute of General Medical Sciences (NIGMS)
P20-GM103430
Two-year, $50K research grant funded by the NIH to understand the impact of maternal PFOS load on nervous system development. This grant funded PI and Student summer salaries and research supplies. Six Salve Students funded.

Early Career Investigator 2019-2022
RI-INBRE National Institutes of Health (NIH) National Institute of General Medical Sciences (NIGMS)
P20-GM103430
Three-year, $300K research grant funded by the NIH to research neural circuit mechanisms underlying stress tolerance. This grant provided funding to support salaries for the PI and summer student researchers in addition to funds for research supplies and conference travel. Nine Salve Students funded.

RO1 Subcontract Award 2018-2024
NIH Health and University of Massachusetts Amherst
R01- ES028201
Co-PI on a research award aiming to quantify the effects of preconception and developmental PFOS exposure on the prevalence of type II diabetes and metabolic disease. This award provided $148K in funding for PI, Student, and Postdoctoral Fellow Salaries along with research supplies. Four Salve Students funded.

Interface Scholars Teaching Fellowship 2015
Howard Hughes Medical Institute, NIH, and Brandeis University
Teaching fellowship through the Brandeis University Quantitative Biology Program that funds a course taught to students across disciplines.
Course Title: The Genetic Basis of Behavior

T32- Institutional Training Grant
National Institutes of Health, National Institute of Neurological Disorders and Stroke (NINDS). 2014-2016
Institutional training grant through the Brandeis University Neurobiology Program.

F31- Ruth L. Krischstein National Research Service Award 2011-2014
National Institutes of Health, National Institute of Neurological Disorders and Stroke (NINDS).
Three-year training and research fellowship covering tuition, stipend, and travel funds. Research Project focused on elucidating mechanisms of excitotoxicity in motor neurons using the *C. elegans* model system.

Peer-Reviewed Publications

Articles in Preparation *** Indicates Salve Reginia Undergraduate Author**

Farias-Periera R, Martinez A*, Pragana A*, George Z*, Doremus O*, Daniels A, Garrity PA. and **Barbagallo B.** A mushroom body visceral control circuit drives acute thermotolerance in *Drosophila*. *Genes, Brains and Behavior.* (Current draft provided)

Published Articles

Barbagallo B, Kim J, Annuzito K, Farias-Periera R, Doherty J, Lee J, Zina J, Tindal C*, McVey C*, Aresco R*, Johnstone M*, Sant K, Timme-Largy A, Park Y, and Clark J. Maternal Preconception PFOS Exposure of *Drosophila melanogaster* Alters Reproductive Capacity, Development and Morphology*. Food Chemistry and Toxicology.* PMID: 33774094 2021

Flyer-Adams J, **Barbagallo B** and Griffith L. Flybuilder: a multimodal dry lab curriculum teaches Mendelian Genetics through the lens of *Drosophila* balancer chromosomes. Advances in Biological Laboratory Education. https://doi.org/10.37590/able.v41.art7 — 2019

Barbagallo B, Philbrook A, Touroutine D, Oliver D, Banerjee N, and Francis MM. Excitatory neurons sculpt GABAergic neuronal connectivity in the *C. elegans* motor circuit*. Development.* PMID: 28420711 — 2017

Barbagallo, B and Garrity PA Temperature sensation in *Drosophila*. (Invited Review) *Current Opinion in Neurobiology.* PMID: 25616212 — 2015

Bhattacharya R, Tourotine D, **Barbagallo B**, Climber, J, Lambert C, Clarke CM, Alkema MJ, and Francis MM. Peptide modulation of neuromuscular excitability shapes a food searching motor pattern in *C. elegans*. *PLoS Genetics. PMID: 25167143* — 2014

Philbrook A, **Barbagallo B**, and Michael MM. A tale of two receptors: dual roles for ionotropic acetylcholine receptors in regulating motor neuron excitation and inhibition. *Worm* (Invited Review). PMID: 24778941 — 2013

Prescott HA, Philbrook A, Haburcak M, **Barbagallo B**, and Francis MM. ACR-12 ionotropic acetylcholine receptor complexes regulate inhibitory motor neuron activity in Caenorhabditis elegans. *Journal of Neuroscience*. PMID: 23536067 — 2012

Barbagallo B, Boyle PR, Prescott HA, Climer J, Francis MM. A dominant mutation in a neuronal acetylcholine receptor leads to motor neuron degeneration in *C. elegans*. *Journal of Neuroscience*. PMID: 20962215 — 2010

Pozdnyakova O, Grossman J, **Barbagallo B**, Lyle S. The hair follicle barrier to involvement by malignant melanoma. *Cancer*. PMID: 19152437 — 2009

Invited Research Lectures

Invited Speaker — 2023
University of Rhode Island Interdisciplinary Neuroscience Program, Kingstown, RI.
Investigating barriers to neuronal development.

Invited Speaker — 2021
Rhode Island College Biology Department Seminar. Providence, RI.
A neural circuit regulating thermotolerance behavior in *Drosophila.*

Invited Speaker — 2019
UMass Amherst Toxicology. Amherst, MA.
Invited research lecture: The impact of preconception PFOS exposure on metabolic health in *Drosophila melanogaster.*

Invited Speaker — 2018
Brown University Biology Lecture Series. Providence, RI
A neural circuit regulating thermotolerance behavior in *Drosophila*.

Invited Speaker — 2012
Society for Neuroscience (SfN)- Annual Meeting. New Orleans LA
Barbagallo, B and Francis, MM.

International research conference presentation: Heterosynaptic regulation of inhibitory synapse development and postsynaptic structure by excitatory motor neurons.

Invited Speaker 2010
Genetics Society of America- *C. elegans* Neuroscience Meeting. University of Wisconsin, Madison. Madison, WI
Barbagallo B, Prescott HA, Boyle P, Climber J and Francis MM.
International research conference presentation: A dominant mutation in a neuronal acetylcholine receptor leads to motor neuron degeneration in *C. elegans*.

National Meeting Presentations

Annual Biomedical Research Conference for Minority Students (virtual). 2021
Anna Martinez*, Tallya Maciel* and **Belinda Barbagallo.** Tachykinin increases acute cold temperature tolerance in Drosophila melanogaster. **(Presentation Prize Winner)**

Annual Biomedical Research Conference for Minority Students (virtual). 2021
Tegan Tanner*, John Clark and **Belinda Barbagallo.** Developmental PFOS exposure induces metabolic dysfunction.

Annual Biomedical Research Conference for Minority Students (virtual). 2021
Tallya Maciel*, Anna Martinez* and **Belinda Barbagallo**. Tachykinin and corazonin as modulators of metabolic stress response in *Drosophila melanogaster.*

Society for Toxicology Annual Meeting. Anaheim, CA 2020
Rachel Aresco*, Cailin McVey*, Megan Johnstone*, Steven Symington, Alicia Timme-Laragy and **Belinda Barbagallo**. Preconception exposure to PFOS alters markers of metabolic disease in *Drosophila melanogaster*. International Research Meeting.

Society for Toxicology Annual Meeting. Anaheim, CA 2020
Megan Johnstone*, Cailin McVey*, Rachel Aresco*, Steven Symington, Alicia Timme-Laragy and **Belinda Barbagallo**. Male-specific upregulation of insulin-like peptides following preconception exposure to perfluorooctanesulfonic acid (PFOS) in *Drosophila melanogaster.* International Research Meeting.

Major Workshop Presenter 2019
Association for Biology Laboratory Educators Annual Meeting. University of Ottawa. Ottawa, ON
Johanna Flyer-Adams and **Belinda Barbagallo.**
International pedagogical conference presentation: Flybuilder: A multimodal dry-lab curriculum teaches Mendelian genetics through the lens of *Drosophila* balancer chromosomes.

Genetics Society of America- *C. elegans* International Meeting. UCLA, Los Angeles, CA 2013
Barbagallo, B and Francis, MM. Unraveling the mechanisms underlying the establishment of synaptic connectivity in a simple motor circuit.

Genetics Society of America- *C. elegans* International Meeting. UCLA. Los Angeles, CA 2011

Barbagallo, B and Francis, MM. Cholinergic motor neurons are required to instruct GABA preceptor clustering at the neuromuscular junction

Genetics Society of America- *C. elegans* Neuroscience Meeting. University of Wisconsin Madison. Madison, WI 2008
Barbagallo B and Francis, MM.
Unraveling roles for cholinergic signaling in the *C. elegans* nervous system.

Local and Regional Conference Presentations

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2023
Zosia Kocab, Kateri True, Tallya Maciel, and **Belinda Barbagallo.** A *C. elegans* model of Fanconi Anemia Neurological Syndrome (FANS).

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2023
Kateri True, Zosia Kocab, Tallya Maciel, and **Belinda Barbagallo.** Effects of maternal PFOS exposure of neuronal development and function.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2022
Sarah Minuit*, Katerina Bova*, and **Belinda Barbagallo.** Maternal exposure to PFOS alters structural development of the nervous system.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2022
Katerina Bova*, Sarah Minuit*, and **Belinda Barbagallo**. Maternal exposure to PFOS alters functional development of the nervous system.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2022
Ana Martinez*, Haley Tallman*, and **Belinda Barbagallo.**
Alpha lipoic acid as a protective agent against PFOS-induced developmental defects in *Drosophila melanogaster*.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2022
Alan Ardito, Jessica Leighton, Niall Howlett, and **Belinda Barbagallo.** Establishing a *C. elegans* model for Fanconi Anemia Neurological Syndrome.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2022
Haley Tallman*, Ana Martinez*, **and Belinda Barbagallo.** The role of alpha lipoic acid in mitigating the developmental effects of perfluorooctanesulfonic acid in *Drosophila melanogaster*.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2021
Tegan Tanner*, Renalison Ferias-Perira, and **Belinda Barbagallo.** Developmental perfluorooctanesulfonic acid (PFOS) exposure induces metabolic dysfunction in *Drosophila melanogaster*.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2021

Tallya Maciel*, Ana Martinez*, Renalison Ferias-Perira, and **Belinda Barbagallo.** Corazonin and Tachykinin as modulators of metabolic response to stress in *Drosophila melanogaster*.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2021
Ana Martinez*, Tallya Maciel*, Renalison Ferias-Perira, and **Belinda Barbagallo.** Tachykinin increases acute cold temperature tolerance in *Drosophila melanogaster.*

RI-INBRE Winter Research Retreat. University of Rhode Island. Kingstown, RI (virtual) 2021
Stephen Natola*, Renalison Ferias-Perira, Steven Devoe*, Cold Tindall*, Megan Johnstone*, and **Belinda Barbagallo**. Chronic developmental exposure to PFOS alters survival and markers of metabolic disease in *Drosophila melanogaster*.

RI-INBRE Winter Research Retreat. University of Rhode Island. Kingstown, RI (virtual) 2021
Kiara Son-Has*, Donatella Carazo*, Aja Pragana*, Renalison Ferias-Perira and **Belinda Barbagallo.** Neural circuits underlying the response to multiple environmental stressors in *Drosophila melanogaster*.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2019
Rachel Aresco*, Cailin McVey*, Megan Johnstone*, Cole Tindal*, and **Belinda Barbagallo.** The developmental effects of PFOS on metabolic maturation in *Drosophila melanogaster.*

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2019
Megan Johnstone*, Cole Tindal*, Rachel Aresco*, Cailin McVey*, and **Belinda Barbagallo.** Preconception exposure to PFOS alters insulin peptide expression profiles in *Drosophila melanogaster.*

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2019
Cailin McVey*, Rachel Aresco*, Megan Johnstone*, Cole Tindal*, and **Belinda Barbagallo.** Developmental effects of PFOS on the metabolic maturation of RNAi megalin knockdown in *Drosophila melanogaster.*

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2019
Cole Tindal*, Cailin McVey*, Rachel Aresco*, Megan Johnstone*, and **Belinda Barbagallo.** Preconception exposure to PFOS alters development and morphology in *Drosophila melanogaster.*

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2019
Owen Doremus*, Aja Pragana* and **Belinda Barbagallo.** Tracking neuropeptide release in the cold stress circuit of *Drosophila melanogaster.*

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2019

Zachary George* and **Belinda Barbagallo.** The mushroom body's role in metabolic stress.

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2019
Aja Pragana* and **Belinda Barbagallo.** The role of corazonin and tachykinin neuropeptides in the physiological response to cold stress *in Drosophila melanogaster.*

Rhode Island Undergraduate Summer Research Symposium. University of Rhode Island. Kingstown, RI 2019
Neil Salley*, Cole Tindal and **Belinda Barbagallo.** Effects of PFOS on neuronal development in *C. elegans.* RI-INBRE Summer Research Retreat.

Summer Research Mentoring

Summer 2023
Project: Preconception exposure to PFOS alters nervous system structure and function
Students: Kateri True, Zosia Kocab

Summer 2022
Project: Chronic exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Ana Martinez, Haley Tallman

Project: Preconception exposure to PFOS alters nervous system structure and function
Students: Katerina Bova, Sarah Minuit

Summer 2021
Project: Neuropeptide regulation of acute stress response.
Students: Ana Martinez, Tallya Maciel

Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Tegan Tanner

Summer 2020
Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Stephen Natola

Project: The mushroom body regulates physiological response to multiple stressors.
Students: Kiara Son-Has

Project: Developmental exposure alters fertility and developmental timelines.
Students: Steven Devoe

Summer 2019
Project: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.
Students: Megan Johnstone, Cailin McVey, Rachel Aresco, Cole Tindall, Neil Salley

Project: The mushroom body regulates physiological response to multiple stressors.
Students: Zachary George, Owen Doremus, Aja Pragana

Service

University Service

Faculty Executive Committee 2022-2025
Managed faculty dues and finances as treasurer.

Pell Honors Program Advisory Committee 2020-2023
Salve Regina University
This committee is charged with researching best practices and proposing changes to the current Pell Honors Program.

Presidential Commission on Diversity and Inclusion 2020-2022
Salve Regina University
This commission aims to advance Salve Regina's Mercy Mission by developing action steps towards improving university policy and practice surrounding issues of diversity and inclusion.

Diversity and Inclusion Ad Hoc Committee 2019-2021
Salve Regina University
Temporary committee with the charge of evaluating how the Salve Regina University curriculum addresses issues of race and inclusivity**.**

Distinguished Fellowships Committee 2019-2022
Salve Regina University
Three-year appointment with the aim of identifying promising students and mentoring them through the application process for various postgraduate fellowship programs. Campus advisory board for the Fulbright Student Program.

PhD Advisory Committee 2018-2021
Salve Regina University

Diversity and Inclusion Teaching Committee 2016-2018
Brandeis University
Committee aimed to develop a higher ed teaching program for Ph.D. students with a specific focus on teaching in a diverse classroom.

Scholarly Service

Abstract Evaluator, Annual Biomedical Research Conference for Minority Students 2021-present
Read and selected student abstracts for research talks and posters in the Neuroscience Division.

Presentation Judge, New England Regional INBRE Conference 2021
Attended and judged research presentations from Undergraduate, Graduate, and Medical Students. Wrote up evaluations for each presentation and provided feedback to student researchers.

Departmental Service

Search Committee: Assistant Professor, Genetics 2023

Search Committee: Lecturer, Anatomy and Physiology for Nursing 2022-2023

Biology Department Work Study Coordinator 2020-2021
Salve Regina University

Manage laboratory tasks and payroll information for departmental federal work study students. Hired grant-funded summer research students.

Biology Department First Year Advisor and Academic Advisor 2019-2021
Salve Regina University
Meet with first year students during orientation. Assist students in course selection and continue on as their advisor through their four years at Salve Regina. 24 total advisees.

Search Committee: Lecturer and Pre-health Advisor 2019

Senior Capstone Thesis Advising 2019-2023

2023
Tallya Maciel: Maternal perfluorooctanesulfonic acid (PFOS) exposure contributes to the rise in neurodevelopmental disorders by altering neuronal development and function.
Haley Tallman: The use of the dietary supplement alpha-lipoic acid (ALA) will mitigate the risk for developing metabolic syndrome through decreasing the developmental toxicity of chronic perfluorooctanesulfonic acid (PFOS) exposure in *Drosophila melanogaster*.
Ana Martinez: Nontoxic dietary supplementations of Alpha-lipoic acid (ALA) could normalize affected metabolic markers in *Drosophila melanogaster* and function as protective antioxidant agents against perfluorooctanesulfonic acid (PFOS) induced metabolic defects.

2022
Holden Ferrari: Concussion induced sleep apnea in both male and females in contact sports.
Grace Pelletier: Lgr1 expression in the hindgut of Drosophila melanogaster and their cold tolerance.
Catrina Piccirilli: Understanding the health of the retina in CTE mice may provide sufficient criteria for antemortem diagnosis of CTE in human TBI patients.

2021
Stephen Natola: Preconception PFOS exposure may predispose individuals to later-life metabolic syndrome.
Donatella Carazo: The mushroom body mediates metabolic stress in Drosophila melanogaster.
Aja Pragana: Investigating the role of peptadergic signaling in the environmental stress response of *Drosophila melanogaster.*

2020
Meghan Johnstone: Preconception exposure to PFOS alters insulin peptide expression profiles in *Drosophila melanogaster.*
Cailin McVey: Developmental and metabolic impact of PFOS exposure in *Drosophila melanogaster.*
Rachael Aresco: Preconception exposure to PFOS increases prevalence of type 2 diabetes and metabolic disorder.

2019
Lillie Haldeman: Aerobic exercise reduces risk for Parkinson's.
Michael Mello: Rapamycin prevents Alzheimer's and promotes longevity.
Sabrina Vieira: Quality of life in adults with Autism.

Awards and Honors

Be Inspiring Award 2023
Award for best student research mentor decided by the members of the Association of Student Researchers and presented at the Women in Research Gala.

Winner: NERIC Photo Contest 2021
National microscopy competition for researchers across NIH-IdEA states. The winning imaging was used for publicity materials for NIH programming.

Volen Retreat Poster Prize 2016
Awarded for best poster by a postdoctoral fellow at annual research retreat.

Prize Lecturer Brandeis Quantitative Biology 2015
Teaching Award for the course titled “The Genetic Basis of Behavior”

Featured Researcher, The Daily Voice 2011
Research was highlighted as part of a monthly update on local researchers with a special section about up-and-coming scientists.

Dan Mullen Award for Scientific Achievement 2010
Awarded by the University of Massachusetts in recognition of outstanding research and scientific presentation.

Dean’s Award for Community Service 2010
Awarded by the University of Massachusetts to honor work done with the Wachusett High School Project Room.

Professional Courses and Training

Intercultural Competence Development Program 2022-2023
Participated in the first cohort of the program. Attended workshops and completed assessments with the aim of improving intercultural competence in the classroom.

Leading with Mercy 2022-2023
Year-long training program with the goal of learning more about how the university works and how to contribute to the community and the Mercy Mission.

Developing and Teaching an Online Course 2020
Virtual course provided through Coursera by Salve Regina in response to COVID teaching models.

Mental Health First Aid 2019
Training sponsored by Salve Regina University. This training equipt faculty with the skills to recognize mental health crises in students and information on where to refer them for help.

Fostering Academic Success in STEM 2018
Conference hosted by the Center for Excellence and Innovation in Teaching and Learning at the University of New Hampshire.

Communicating Science, Alan Alda Center for Communicating Science 2017
Two-day course using improvisational acting to improve scientific communication.

Evidence-Based Undergraduate STEM Teaching 2014
Course designed to introduce effective STEM teaching strategies for postdocs planning academic careers. Certificate of Accomplishment.

Quantitative Fluorescence Microscopy (QFM), Mount Desert Island Biological Labs 2012
Intensive course focused on the theory, mechanics, and practical application of fluorescent microscopy.

Professional Experience

Consultant	**Talent Lab Consulting** Worked with small to medium biotechnology companies to identify and interview candidates for high level scientific positions. Provided scientific expertise to the recruitment process.	2016-2017
Research Technician	**University of Massachusetts Medical School** **Department of Neurobiology** Mentor: Michael M. Francis, Ph.D. Research focused on identifying Wnt signaling pathways responsible for synaptogenesis in *C. elegans*.	2007-2008
Intern	**University of Massachusetts Medical School** **Department of Cancer Biology** Mentor: Stephen Lyle, M.D Ph.D. Carried out an independent research project focusing on identifying stem cell populations in human sebaceous tumors and determining their role in cancer metastasis.	2006-2007
Intern	**Charles River Laboratories Drug Discovery Department** Mentor: Allysen Roskey Prepared reagent stocks, processed test samples, analyzed mass spectrometry data and compiled client reports.	2005-2007