Ian G. Woods
Department of Biology • Ithaca College
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EDUCATION

• Stanford University School of Medicine (Palo Alto, CA) 2001-2006

Doctor of Philosophy, January 2006
Department of Developmental Biology
DISSERTATION: *Maps, myelin, and you: genetic analyses of vertebrate development*
ADVISOR: William S. Talbot, Ph.D.

• Stanford University (Palo Alto, CA) 1990-1995

Bachelor of Science, June 1995
Biological Sciences, with Honors and Distinction
THESIS: *Impacts of human land use on the endangered Myrtle's Silverspot Butterfly*
ADVISORS: Paul R. Ehrlich, Ph.D., and Carol L. Boggs, Ph.D.

Bachelor of Arts, June 1995
Music, with Honors and Distinction
THESIS: *The organ music of J.S. Bach*
ADVISORS: Kimberly Marshall, Ph.D., and Elizabeth Harrison, Ph.D.

PROFESSIONAL APPOINTMENTS

• **Associate Professor,** Ithaca College 2017-present
Assistant Professor, Ithaca College 2011-2017
Neuropeptide modulation of arousal behaviors, neuropeptide evolution, sensory system development, Videotracking quantification of animal movement, tardigrade diversity

• **Visiting Associate Professor,** Cornell University 2019-2022
Department of Computational Biology
Human Genetics and Migration

• **Postdoctoral Fellow,** Harvard University 2006-2011
Molecular Mechanisms of Nociception and Somatosensation
Department of Molecular and Cellular Biology, Laboratory of Alexander F. Schier, Ph.D.

• **Doctoral Student,** Stanford University School of Medicine 2001-2006
Molecular Genetics of Hedgehog Signaling and Myelin formation
Department of Developmental Biology, Laboratory of William S. Talbot, Ph.D.

• **Research Assistant**, Stanford University School of Medicine 1999-2000
Comparative Genomics and Karyotype Evolution
Department of Developmental Biology, Laboratory of William S. Talbot, Ph.D.

• **Research Assistant**, University of Nevada (Reno, NV) 1995, 1998
Population Biology of Montane Butterflies
Nevada Biodiversity Initiative, Supervisor: Erica Fleishman, Ph.D.

• **Research Assistant**, Stanford University (Palo Alto, CA) 1993-1995
Factors Contributing to the Decline of Myrtle's Silverspot, *Speyeria zerene*
Center for Conservation Biology, Lab of Paul Ehrlich, Ph.D.; Supervisor: Alan E. Launer, Ph.D

TEACHING

• **Associate/Assistant Professor**, Ithaca College Department of Biology, Ithaca, NY 2011-present
Developmental Biology and Lab (14 students)
Genomics, Bioinformatics, and Computational Biology (14 students)
The Biology of Music (30 students, non-majors)
The Biology of Aging (40 students, non-majors)
Tardigrade Tough: a Course-based Undergraduate Research Experience (15 students, majors)
Music, Math, and the Brain (20 students, Honors seminar)
Science Fact and Science Fiction (90 students, non-majors)
Principles of Biology: Evolution and Ecology (80 students, majors)
Topics in Biochemistry (14 students, majors)
Capstone in Biology (30 students, majors)
Human Genetics (80 students, non-majors)

Research Mentor for 51 undergraduate students, including eight winners of the Dana summer fellowship, three winners of a 'best presentation' award at the Whalen Symposium (Ithaca College), two winners of a 'best poster' award at the Whalen Symposium (Ithaca College), two winners of a 'best presentation' award at the Developmental Biology New York Conference, and one winner of a 'best poster' award at the Developmental Biology New York Conference.

• **Coordinator and faculty**, Developmental Biology Teaching Workshop 2017-2019
Darling Marine Center, University of Maine
Co-organized and led workshop for 8-10 faculty from throughout US, UK, Australia, and Brazil

• **Faculty**, Neural Development and Genetics of Zebrafish 2002-2015
Lecture and lab on bioinformatics and computer resources for zebrafish research
Conduct lab on genetic mapping and positional cloning of mutations
Summer Course, Marine Biological Laboratory, Woods Hole, MA

• **Teaching Assistant**, Advanced Graduate Genetics 2001
Wrote and graded problem sets and exams, conducted weekly
office hours, organized review sessions
Stanford University School of Medicine, Department of Genetics

• **Peace Corps Trainer**, Secondary Education Program 1998
Developed and implemented intensive training program for incoming teachers
Peace Corps, Solomon Islands

• **Math and Science Teacher,** Peace Corps 1995-1997
Developed curriculum and taught 3 sections of science and 2 sections of math
Vonunu Secondary School, Western Province, Solomon Islands

• **Course Section Coordinator**, Undergraduate Biology Lab 1995
Refined and extended laboratory protocols and instructional curriculum; trained undergraduate and graduate laboratory course assistants for the Developmental Biology and Ecology Sections of the Core Undergraduate Biology Lab Course, Biology 44x and 44y
Stanford University

• **Course Assistant**, Undergraduate Biology Lab 1993-1995
Conducted weekly laboratories, graded proposals and laboratory reports Developmental Biology and Ecology Sections of the Core Undergraduate Biology Lab Course
Biology 44x and 44y
Stanford University

INFORMAL TEACHING EXPERIENCES

• **Adult Choir Director**, First Presbyterian Church, Ithaca, NY 2013-2016
Led bi-weekly rehearsals and weekly performances during the church year

• **Undergraduate Thesis Advisor**, Harvard University 2006-2011
Mentor for two undergraduate honors students, both of whom won Hoopes Prizes for Outstanding Senior Thesis

• **Programming in Perl**, Schier lab, Harvard University 2009
Taught a two-month course in Perl and shell scripting for members of my lab, based on the Cold Spring Harbor 'Programming for Biology' course

• **Choir Director**, United Methodist Church, Lexington, MA 2009-2011
Led bi-weekly rehearsals and weekly performances during the church year

• **Mentor**, Graduate Rotation Projects 2006-2009
Supervised research of three graduate students doing rotation projects with the Schier Lab

• **Lecturer and lab instructor**, Stickleback Molecular Genetics 2003-2005
Gave introductory lectures and organized a fish injection and transgenesis lab for the summer Stickleback Course, Stanford University

• **Guest Lecturer**, Biology 209 2004-2005
Gave lectures on zebrafish molecular genetics for the course *The Human Genome and Disease: Evolution, Drift, and Populations*, Stanford University

• **Research Mentor**, Undergraduate Research in the Talbot Lab 2002-2005
Supervised research activities of four undergraduates and research technicians, including one honors student

• **Freshman Academic Advisor,** Stanford University 1999-2001
Met with 6-7 undergraduates quarterly to discuss course selection, available resources, and academic trajectory

• **Head Advising Associate,** Stanford University, Larkin House 1993-1994
Served as liaison between freshman and faculty advisors, and coordinated activities of ten other advising associates in an undergraduate residence hall

AWARDS AND FELLOWSHIPS

• **Dean's Level Merit, Ithaca College Humanities and Sciences** 2015

• **Departmental Level 2 Merit, Ithaca College Humanities and Sciences** 2013, '15, '17, '19, '23

• **American Cancer Society Postdoctoral Fellowship** 2007-2010

• **Departmental Nominee** 2005
Harold M. Weintraub National Graduate Student Award

• **Howard Hughes Medical Institute Predoctoral Fellowship** 2002-2005

• **Lauren G. Weinstein Award** 1995
Best undergraduate teaching assistant in Biology, Stanford

• **Robert H. Golden Medal,** Best performance in Music, Stanford 1995

• **Excellence in Teaching Award**, Biological Sciences, Stanford 1994

• **Phi Beta Kappa**, Stanford 1994

• **Humanities and Sciences Prize in Music**, Stanford 1994

• **Robert H. Golden Grant**, Undergraduate Research in Humanities, Stanford 1993

RESEARCH PUBLICATIONS (†Denotes Undergraduate Student co-Authors)

†Anderson, E.A., †Houck, S.G., †Conklin, C.L., †Tucci, K.L., †Rodas, J.D., †Mori, K.E., †Armstrong, L.J., †Illingworth, V.B., Lo, T-W., and **Woods, I.G.** (2024). Comparative analysis of tardigrade locomotion across life stage, species, and disulfiram treatment. PLOS One 19(9): e0310738. (https://doi.org/10.1371/journal.pone.0310738) Originally posted to bioRxiv 2024.05.24.595396. (https://doi.org/10.1101/2024.05.24.595396)

Rodriguez-Torres, C.S., Wicker, N.B., de Castro, V.P., Sefinko, M. Bennett, D. C., †Bernhardt, B., Montes de Oca, M.G., †Jallow, S. Flitcroft, K., Palalay, J-J.S., Payán Parra, O. A., Stern, Y.E., Koelle, M., Voisine, C., **Woods, I.G.,** Lo, T-W., Stern, M.J., de la Cova, C. C. (2024) The *Caenorhabditis elegans* protein SOC-3 permits an alternative mode of signal transduction by the EGL-15 FGF receptor. Developmental Biology 516: 183-195. (https://doi.org/10.1016/j.ydbio.2024.08.014**)**

Barlow IL, Mackay E, Wheater E, Goel A, Lim S, Zimmerman S, **Woods IG**, Prober DA, and Rihel JR (2023) The zebrafish mutant dreammist implicates sodium homeostasis in sleep regulation. eLife 12:RP87521. (https://doi.org/10.7554/eLife.87521) Originally posted to bioRxiv 2020.11.18.388736. (https://doi.org/10.1101/2020.11.18.388736)

Idris M, Gay CG, **Woods IG**, Sullivan M, Gaughan JB, and Phillips CJC (2023) Automated Quantification of the Behaviour of Beef Cattle Exposed to Heat Load Conditions. Animals 2023(13): 1125 (https://doi.org/10.3390/ani13061125)

Brunal AA, Clark KC, Ma M, **Woods IG**, Pan YA (2021) Effects of Constitutive and Acute Connexin 36 Deficiency on Brain-Wide Susceptibility to PTZ-Induced Neuronal Hyperactivity. Frontiers in Molecular Neuroscience 13. (https://doi.org/10.3389/fnmol.2020.587978)

Seidman DN, Shenoy SA, Kim M, **Woods IG**, Dyer TD, Lehman DM, Curran JE, Duggirala R, Blangero J, Williams AL (2020) Rapid, Phase-free Detection of Long Identity-by-Descent Segments Enables Effective Relationship Classification. American Journal of Human Genetics 106(4): 453-466. (https://doi.org/10.1016/j.ajhg.2020.02.012)

Woods IG, Imam FB (2015) Transcriptome analysis of severe hypoxic stress during development in zebrafish. Genomics Data 6: 83-88.

†Conklin EE, †Lee KL, †Schlabach SA, **Woods IG** (2015) VideoHacking: Automated tracking and quantification of locomotor behavior with open source software and off-the-shelf video equipment. Journal of Undergraduate Neuroscience Education 13(3): A120-125.

Liu J, Merkle FT, Gandhi AV, Gagnon JA, **Woods IG**, Chiu CN, Shimogori T, Schier AF Prober DA (2015) Evolutionarily Conserved Regulation of Hypocretin Neuron Specification by Lhx9. Development 142(6): 1113-1124.

Woods IG, Schoppik D, †Shi VJ, Zimmerman S, †Coleman HA, Greenwood J, Soucy ER, Schier AF. (2014) Neuropeptidergic signaling partitions arousal behaviors in zebrafish. Journal of Neuroscience 34(9): 3142-3160.

Varshney GK, Lu J, Gildea D, Huang H, Pei W, Yang Z, Huang SC, Schoenfeld DS, Pho N, Casero D, Hirase T, Mosbrook-Davis DM, Zhang S, Jao LE, Zhang B, **Woods IG**, Zimmerman S, Schier AF, Wolfsberg T, Pellegrini M, Burgess SM, and Lin S. (2013) A large-scale zebrafish gene knockout resource for the genome-wide study of gene function. Genome Research, 23(4): 727-735.

Low SE*, **Woods IG***, Lachance M, Ryan J, Schier AF, and Saint-Amant L. (2012) Touch responsiveness in zebrafish requires voltage-gated calcium channel 2.1b. Journal of Neurophysiology 108(1): 148-59. ***contributed equally**

Vastenhouw NL**,** Zhang Y, **Woods IG,** Imam F, Regev A, Lui XS, Rinn, J, and Schier AF. (2010) Chromatin signature of embryonic pluripotency is established during zygotic genome activation. Nature 464(7290): 922-926.

Woods IG, Lyons DA, Voas MG, Pogoda HM, and Talbot WS. (2006) *nsf* is required for organization of myelinated axons in zebrafish. Curr Biol. 16(7): 636-48.

Pogoda, H-M, Sternheim N, Lyons DA, Diamond B, Hawkins TA, **Woods IG** et al., (2006) A genetic screen identifies genes essential for development of myelinated axons in zebrafish. Dev Biol 298(1): 118-181.

Woods IG, Wilson C, Friedlander B, Chang P, Reyes D et al. (2005) The zebrafish gene map defines ancestral vertebrate chromosomes. Genome Research 15(9): 1307-1314.

Woods IG and Talbot WS. (2005) The *you* gene encodes an EGF-CUB protein essential for Hedgehog signaling in zebrafish. PLoS Biology 3(3): e66.

Lyons D, Pogoda HM, Voas M, **Woods IG**, Diamond B, Nix R, Arana N, Jacobs J, and Talbot WS. (2005) *erbb3* and *erbb2* are essential for Schwann cell migration and myelination in zebrafish. Curr Biol 15(6):513-24.

Stickney HL, Schmutz J, **Woods IG**, Holtzer CC, Dickson MC et al. (2002) Rapid mapping of zebrafish mutations with SNPs and oligonucleotide microarrays. Genome Research 12(12): 1929-1934.

Woods IG, Kelly PD, Chu F, Ngo-Hazelett P, Yan YL et al. (2000) A comparative map of the zebrafish genome. Genome Research 10(12): 1903-1914.

Postlethwait JH, **Woods IG**, Ngo-Hazelett P, Yan YL, Kelly PD et al. (2000) Zebrafish comparative genomics and the origins of vertebrate chromosomes. Genome Research 10(12): 1890-1902.

Kelly PD, Chu F, **Woods IG**, Ngo-Hazelett P, Cardozo T et al. (2000) Genetic linkage mapping of zebrafish genes and ESTs. Genome Research 10(4): 558-567.

REVIEWS and ESSAYS

Woods IG, Lo T. (2025) DBNY: Reimagining the Undergraduate Research Conference. CourseSource 12. https://doi.org/10.24918/cs.2025.4

Richter C, **Woods IG**, and Schier AF. (2014) Neuropeptidergic control of sleep and wakefulness. Annu Rev Neurosci 37: 503-531.

Woods IG and Schier AF. (2008) Targeted mutagenesis in zebrafish. Nature Biotechnology 26:650-651.

SELECTED CONFERENCE PRESENTATIONS

Woods IG, Booth JG, Williams AL. (2019) “SNP effect size estimates for behavioral phenotypes vary according to migration.” American Society for Human Genetics, Houston, TX.

Conklin E, Lee K, Rodenhouse A, Coleman H, Koulopoulos A, and **Woods IG**. (2016) “Comparative Analysis of Cart Peptide Expression and Function.” Allied Genetics Conference, Orlando, FL.

Woods IG. (2014) *Videohacking: quantification of animal locomotion on the cheap.* Faculty for Undergraduate Neuroscience Meeting, Ithaca NY.

Woods IG, Schoppik D, Shi VJ, Zimmerman S, Greenwood J, Soucy E, and Schier AF. (2013)

Neuropeptidergic signaling partitions arousal behaviors in larval zebrafish. Aquatic Animal Models for Human Disease, Milwaukee, WI.

Woods IG, Schoppik D, Shi VJ, Zimmerman S, Greenwood J, Soucy E, and Schier AF. (2012) *Neuropeptide modulation of arousal behaviors in larval zebrafish.* International Stress and Behavior Society, New Orleans, LA.

Woods IG and Schier AF. (2009) *Molecular mechanisms underlying somatosensory diversity in zebrafish*. American Cancer Society Postdoctoral Fellows Meeting, Stevenson, WA.

Woods IG, Wang PP, and Schier AF. (2007) *Molecular mechanisms of mechanosensory transduction in the zebrafish*. Gordon Research Conference on Mechanosensation, Biddeford, ME.

Woods IG and Talbot WS. (2004) you *encodes a novel secreted protein with a possible role in the Hedgehog signaling pathway*. 6th International Conference on Zebrafish Development and Genetics, Madison, WI.

Woods IG, Kelly PD, Chu F, Huang H, and Talbot WS. (2002) *A comparative map of the zebrafish genome*. 5th International Conference on Zebrafish Development and Genetics, Madison, WI.

Woods IG, Kelly PD, Chu F, and Talbot WS. (2000) *A genetic linkage map of the zebrafish genome*. 4th International Conference on Zebrafish Development and Genetics, Cold Spring Harbor, NY.

Woods IG, Kelly PD, Chu F, and Talbot WS. (2000) *A genetic linkage map of the zebrafish genome*. Northwest Developmental Biology Conference, Friday Harbor, WA.

INVITED SEMINARS, LECTURES, AND WORKSHOPS

"Technologies for Genetic Engineering." Medford LEAS, Medford NJ, August 14, 2020.

"Math, Music, and the Brain." Medford LEAS, Medford NJ, August 12, 2019.

"Obtaining a teaching position at PUI." Skirball Institute, New York University Medical Center, July 12, 2018.

"Molecular mechanisms of somatosensory neuron function and development." SUNY Geneseo, Department of Biology, March 31, 2017.

"Molecular mechanisms of somatosensory neuron function and development." Wells College, Department of Biology, March 3, 2017.

"Bach and the Brain." Baldwin Wallace University Bach Festival. April 17, 2015.

"Music, Math, and the Brain." First Presbyterian Church Adult Education. Ithaca, NY. July 2015.

"Peace Corps in Development." History 2791, International Humanitarianism, Cornell, April 2013, 2014.

"Neuropeptidergic modulation of arousal behaviors in larval zebrafish." Hamilton College, Department of Biology, September 9, 2013.

"Neuropeptidergic modulation of arousal behaviors in larval zebrafish." Colgate University, Department of Neurobiology and Behavior, February 26, 2013.

"Neuropeptidergic modulation of arousal behaviors in larval zebrafish." Syracuse University, Department of Neurobiology and Behavior, November 12, 2012.

"Neuropeptidergic modulation of arousal behaviors in larval zebrafish." Cornell University, Department of Neurobiology and Behavior, August 30, 2012.

"Peace Corps Volunteer Service." Ithaca College Department of Career Services. 2011, 2012, 2013.

STUDENT PRESENTATIONS

Bella Potakey and Ryan Martin. "GABA signaling is required for locomotion in Tardigrades," Whalen Symposium, Ithaca, NY, April 2025, Poster.
*** Finalist, Outstanding Student Research Presentation (Poster)**

Gili Butler-Furlong and Sierra Houck. "Tardigrades as a Model for Human Movement Disorders," Whalen Symposium, Ithaca, NY, April 2025, Poster.
*** Finalist, Outstanding Student Research Presentation (Poster)**

Woods Vargas and Emily Penny. "The Tardigrades of Ithaca College," Whalen Symposium, Ithaca, NY, April 2025, Poster.
*** Finalist, Outstanding Student Research Presentation (Poster)**

Emma Anderson "Tardigrades as a model of locomotion and movement disorders," Whalen Symposium, Ithaca, NY, April 2024, Talk.
*** Finalist, Outstanding Student Research Presentation (Talk)**

Emma Anderson "Tardigrade Locomotor Development," Whalen Symposium, Ithaca, NY, April 2023, Talk.
*** Finalist, Outstanding Student Research Presentation (Talk)**

Emma Anderson "Tardigrade Locomotor Development," Developmental Biology New York, Cornell University, Ithaca, NY, November 2023, Talk.
*** Winner, Outstanding Student Research Presentation (Talk)**

Emma Anderson "Tardigrades as a model for locomotion and movement disorders," Whalen Symposium, Ithaca, NY, April 2023, Poster.
*** Finalist, Outstanding Student Research Presentation (Poster)**

Sara Wright "Disruption of rest periods decreases *Daphnia* activity," Whalen Symposium, Ithaca, NY, April 2023, Poster.
*** Finalist, Outstanding Student Research Presentation (Poster)**

Joey Rodas "Dopamine modulates locomotion in tardigrades," Whalen Symposium, Ithaca, NY, April 2023, Poster.
*** Finalist, Outstanding Student Research Presentation (Talk)**

Joey Rodas "Dopamine modulates locomotion in tardigrades," Developmental Biology New York, Ithaca, NY, November 2022, Talk.
*** Winner, Outstanding Student Research Presentation (Talk)**

Katrina Tucci and Kristen Johnson "Modeling locomotor disorders in tardigrades," Developmental Biology New York, Ithaca, NY, November 2022, Poster.

Joey Rodas and Ranjini Iyengar "Dopamine modulates locomotion in tardigrades," TriBeta Regional Convention, Elmira, NY, April 2022, Poster.

Will Hugonnet and Phung Huynh "The role of *nav1a* and *nav1bi* in nervous system development in zebrafish." Central New York Zebrafish Meeting, Syracuse, NY, April 2022, Poster.

Joey Rodas and Ranjini Iyengar "Dopamine modulates locomotion in tardigrades," Central New York Zebrafish Meeting Zebrafish Meeting, Syracuse, NY, April 2022, Poster.

Claire Conklin “Modelling tardigrade locomotion for insight into neurological structure.” Whalen Symposium, Ithaca, NY, April 2021, Talk.

*** Winner, Outstanding Student Research Presentation (Talk)**

Leticia Guibinda and Khangelani Mhlanga “A tardigrade tough summer” Developmental Biology New York, Ithaca, NY, November 2020, Poster.

*** Winner, Outstanding Student Research Presentation (Poster)**

Claire Conklin “Modelling tardigrade locomotion for insight into neurological structure.” Developmental Biology New York, Ithaca, NY, November 2020, Poster.

Madison Chlebowski “The role of tppp2 in cytoskeletal regulation of somatosensory neurons in zebrafish” Central New York Zebrafish Meeting, Syracuse, NY, April 2019, Talk.

Madison Chlebowski “The role of tppp2 in cytoskeletal regulation of somatosensory neurons in zebrafish” Society for Developmental Biology, Northeast Meeting, Woods Hole, MA, April 2019, Poster.

Claire Conklin “Cell-Adhesion Proteins in Sensory Neuron Development of Zebrafish” Society for Developmental Biology, Northeast Meeting, Woods Hole, MA, April 2019, Poster.

Kate Mori “Nerve to Tissue Signaling Controlling Zebrafish Regeneration” Society for Developmental Biology, Northeast Meeting, Woods Hole, MA, April 2019, Poster.

Madison Chlebowski “The role of tppp2 in cytoskeletal regulation of somatosensory neurons in zebrafish” Whalen Symposium, Ithaca, NY, April 2019, Talk.

*** Winner, Outstanding Student Research Presentation (Talk)**

Claire Conklin “Cell-Adhesion Proteins in Sensory Neuron Development of Zebrafish” Whalen Symposium, Ithaca, NY, April 2019, Poster.

Kate Mori “Nerve to Tissue Signaling Controlling Zebrafish Regeneration” Whalen Symposium, Ithaca, NY, April 2018, Poster.

Madison Chlebowski “The role of tppp2 in cytoskeletal regulation of somatosensory neurons in zebrafish” Tri-beta Regional Convention, Hofstra University, March 2019, Talk.

Kevin Tran "Cart3 enhances regeneration rate in larval zebrafish fin folds" Society for Developmental Biology, Northeast Meeting, Woods Hole, MA, April 2018, Poster.

Taylor Yowan "Comparing rates of evolution in Arthropod DNA Damage Genes." Eastern Colleges Science Conference, Ithaca, NY, April 2018, Poster.

Elizabeth Freilich "Identifying downstream targets of Cart peptides in mediating regenerating zebrafish fin folds." Eastern Colleges Science Conference, Ithaca, NY, April 2018, Poster.

Madison Chlebowski "Molecular mechanisms of somatosensory neuron function and development in zebrafish." Eastern Colleges Science Conference, Ithaca, NY, April 2018, Poster.

Nishat Rahman "Function of Leptin in fin fold regeneration." Eastern Colleges Science Conference, Ithaca, NY, April 2018, Poster.

Elizabeth Freilich "The role of neuropeptide cart3 in zebrafish finfold regeneration." Central New York Zebrafish Meeting, Syracuse, NY, April 2018, Talk.

Taylor Yowan "Comparing rates of evolution in Arthropod DNA Damage Genes." Central New York Zebrafish Meeting, Syracuse, NY, April 2018, Poster.

Madison Chlebowski "Molecular mechanisms of somatosensory neuron function and development in zebrafish." Central New York Zebrafish Meeting, Syracuse, NY, April 2018, Poster.

Kevin Tran "Identifying downstream targets of Cart peptides in mediating regenerating zebrafish fin folds." Central New York Zebrafish Meeting, Syracuse, NY, April 2018, Poster.

Nishat Rahman "Function of Leptin in fin fold regeneration." Central New York Zebrafish Meeting, Syracuse, NY, April 2018, Poster.

Taylor Yowan "Comparing rates of evolution in Arthropod DNA Damage Genes." Whalen Symposium, Ithaca, NY, April 2018, Poster.

*Kevin Tran "Identifying downstream targets of Cart peptides in mediating regenerating zebrafish fin folds." Whalen Symposium, Ithaca, NY, April 2018, Poster.

*** Finalist, Outstanding Student Research Presentation (Poster)**

*Madison Chlebowski "Molecular mechanisms of somatosensory neuron function and development in zebrafish." Whalen Symposium, Ithaca, NY, April 2018, Poster.

*** Winner, Outstanding Student Research Presentation (Poster)**

Nishat Rahman "Function of Leptin in fin fold regeneration." Whalen Symposium, Ithaca, NY, April 2018, Poster.

*Elizabeth Freilich "The role of neuropeptide cart3 in zebrafish finfold regeneration." Whalen Symposium, Ithaca, NY, April 2018, Talk.

*** Winner, Outstanding Student Research Presentation (Talk)**

Elizabeth Freilich “Cart3 is sufficient for improved fin fold regeneration in zebrafish larvae.” Society for Neuroscience, Washington, DC, November 2017, Poster.

Madison Chlebowski “Molecular mechanisms of somatosensory development and function.” Society for Neuroscience, Washington, DC, November 2017, Poster.

Victoria Wright “Functional Genomics of Somatosensory Neuron Development, Morphogenesis, and Signaling.” Central New York Zebrafish Meetings, Syracuse, NY, April 2017, Talk.

Renee Felter-Rodriguez “Irf8 is not required for the development of social behaviors in larval zebrafish.” Central New York Zebrafish Meetings, Syracuse, NY, April 2017, Poster.

*Victoria Wright “Functional Genomics of Somatosensory Neuron Development, Morphogenesis, and Signaling.” Whalen Symposium, April 2017, Talk.

*** Finalist, Outstanding Student Research Presentation (Talk)**

Renee Felter-Rodriguez “Irf8 is not required for the development of social behaviors in larval zebrafish.” Whalen Symposium, April 2017, Poster.

Victoria Wright “Functional Genomics of Somatosensory Neuron Development, Morphogenesis, and Signaling.” NCUR, April 2017, Poster.

Victoria Wright “Functional Genomics of Somatosensory Neuron Development, Morphogenesis, and Signaling.” Allied Genetics Conference, July 2016, Orlando, FL, Poster.

*Emily Conklin “Evolution and Characterization of Vertebrate Neuropeptides.” Whalen Symposium, April 2016, Talk.

*** Winner, Outstanding Student Research Presentation (Talk)**

Andrew Rodenhouse “Defining regions of CART gene expression in the larval zebrafish brain via monoaminergic landmarks” Whalen Symposium, April 2016, Talk.

Emily Conklin “Evolution and Characterization of Vertebrate Neuropeptides.” NCUR, April 2016, Poster.

Andrew Rodenhouse “Defining regions of CART gene expression in the larval zebrafish brain via monoaminergic landmarks” NCUR. April 2016. Oral.

KathyAnn Lee "Comparative Analysis of Cart Peptide Expression and Function” Whalen Symposium, April 2015, Poster.

KathyAnn Lee "Comparative Analysis of Cart Peptide Expression and Function" NCUR. April 2015. Talk.

Haley Coleman "The role of CART in arousal behaviors of larval zebrafish" NCUR. April 2014. Talk.

Elitsa Stoyanova "*In vivo* tracking of CART neuropeptide dynamics in *Danio rerio"* Tri-Beta Regional Convention, Riverdale, NY, April 2014, Poster.

INTERNAL AND EXTERNAL FUNDED PROPOSALS

- Society for Developmental Biology Education Grant ($8000) 2023-2024
- Society for Developmental Biology Education Grant ($8000) 2018-2019
- Co-PI: R13 1R13HD103329-01 Developmental Biology Undergraduate Research Conference ($18,000) NIH 2019
- Tri-Beta Research Grant with student Elitsa Stoyanova ($750) 2018
- DANA summer internships ($30,000 total for undergraduate salary and supplies) 2012-2017
  Rachel Noyes (2012), Sadie Schlabach (2013), KathyAnn Lee (2014), Victoria Wright (2016) Madison Chlebowski (2017), Elizabeth Freilich (2017), Madison Colby (2019), Joey Rodas (2022)
- Center for Faculty Excellence Summer Research Grant ($11,000 total) 2022, 2017, 2013
- Improving Developmental Biology Lab Teaching ($1005) 2016
  Instructional Development Fund, Ithaca College
- FORD summer internships ($9,000 total for undergraduate salary and supplies) 2013-2015
  Emily Conklin (2015), Haley Coleman (2013)
- Educational Grants Initiative Awards ($1,720 total) 2012-2015
  Rachel Noyes (2012), Haley Coleman (2013), Katie Lee (2015)
- Ford Fund Research Awards ($5,000 total) 2011-2015
- Tri-Beta Research Grant with student Elitsa Stoyanova ($250) 2014
- Biology Department Endowed Funds Awards ($3,467) 2012-2015
- American Cancer Society Postdoctoral Fellowship 2007-2010
- Howard Hughes Medical Institute Predoctoral Fellowship 2002-2005

EXTERNAL PENDING AND UNFUNDED PROPOSALS

Co-PI: R13 2R13HD103329-04 Developmental Biology Undergraduate Research Conference ($18,000) NIH, **SCORED in 1st percentile, likely to be funded**
Co-PI: IUSE: EHR, Tardigrade Tough CURE, NSF. $169,556. (September 2020)
Co-PI: IOS Preliminary Proposal: Collaborative Research: RUI: Mechanisms of Dosage Compensation Evolution. (January 2017; invited for full submission)
PI: NSF IOS Preliminary Proposal RUI Collaborative Research: Cart Peptide Function in Regulating Behavior of Larval Zebrafish (January 2016)
HHMI Inclusive Excellence Science Education Initiative, Institutional Grant (up to $1 million) (October 2015, October 2017)
Beckman Scholars Program, Institutional Grant for Beckman Scholar and Mentor Research Program ($130,000), Arnold and Mabel Beckman Foundation (June 2015, June 2016, June 2017)
PI: NSF MRI: Acquisition of a Laser Scanning Confocal Microscope to Advance Research and Undergraduate Training at Ithaca College ($318,419, January 2015)

Co-PI: Research Corporation for Science Advancement, Preproposal for Cottrell Multi-investigator Award: Development of small molecule inhibitors for *Pseudomonas aeuroginosa* quorum sensing in a high-throughput zebrafish model of pathogenesis (October 2011, invited for full submission)

PROFESSIONAL SERVICE

• College-Wide (Ithaca College):

Health Professions Advisory Committee (Spring 2014 – present; **Chair** Fall 2016 – **present**)
Whalen Symposium Steering Committee (Fall 2023 – **present; Co-Chair** Fall 2024 – **present**)
Institutional Animal Care and Use Committee (IACUC, Fall 2011 – Fall 2018, Fall 2022 - **present**)
Institutional Animal Care and Use Committee (**Chair**, Fall 2022 – Spring 2023)
Faculty Associate, Outdoor Adventure Learning Community (Fall 2022 – Spring 2023)
Search Committee, Dean of the School of Music and Dance (2020, 2022)
Honors Steering Committee (Fall 2017 – Spring 2020)
Center for Faculty Excellence Summer Grant Reviewer (Spring 2016)
Whalen Symposium Abstract Reviewer (Spring 2016)
IC Peers Biology Representative (Jan 2013 – Spring 2013)
Presentation at Career Services re: Peace Corps (October 2011, October 2012, October 2013)
Committee to review new vendors for clicker technology (Spring 2012)
Volunteer / Tour Guide, Ithaca Today (2011 - 2024)

• Humanities and Sciences:

Summer Scholars Committee (Fall 2021 - **present**)
CP Snow Committee to bridge Humanities and Sciences (2015–2017; **Chair** 2016–2017; 2022–2024)
Faculty Search Committee, Psychology (2023; hire = Benjamin Zemel)
Faculty Search Committee, Anthropology (2017; hire = Thomas Garrison)
Educational Grants Initiative Committee (2013–2014)
Humanities and Sciences Honors Committee (2014–2015)
Humanities and Sciences Curriculum Committee (HSCC, 2012–2013)

• Department:

Personnel Committee (Fall 2022 – **present**)
Scholarship Committee (Fall 2019 – **present**)
Communication and Recruitment (Fall 2019 – **present**)
Extracurricular Activities (2020 – **present**)
Chair, Ecology & Evolution 1 year position (Fall 2023, hire = Cynthia Becker)
Chair, Animal Care Technician Search Committee (Fall 2023, hire = Bill Hamm)
Departmental Honors (2013 – 2023)
Diversity advocate, Faculty Search Committee, Ecology & Evolution (Fall 2019, hire = Elijah Carter)
Chair, Faculty Search Committee, Anatomy (Fall 2018; finalist declined offer)
Diversity Postdoctoral Fellow Search Committee (Spring 2016; hire = Nandadevi Cortes)
Budget Committee (Spring 2014 – Spring 2018)
Chair, Faculty Search Committee, Ecology (Fall 2014; hire = Brooks Miner)
Chair, Budget Committee (Fall 2013 – Spring 2015)
Assistant Chair, Biology Department (Fall 2013 – Spring 2014)
Scholarship Committee (Fall 2011 – Spring 2013)
Faculty Search Committee, Genetics (Fall 2012; hire = Te-Wen Lo)
Faculty Search Committee, Interim Genetics (Spring 2012; hire = Rebecca Brady)
DIIS Liaison (Fall 2011 – Spring 2019)
Admissions Outreach (Spring 2015)
Peer-to-Peer Coordinator (Fall 2012)
Honors Thesis Committees
2023: Pierce Pfaff, Sara Wright
2021: Claire Conklin
2020: Winona Platt
2019: Madison Chlebowski
2018: Elizabeth Freilich, Lauren Hodkinson
2017: Victoria Wright, Cynthia Uilbing
2016: Emily Conklin, Lauren Ryan, Jaime Lisack

2015: KathyAnn Lee, Holly Garbacz
2014: Haley Coleman, Robert Nichols, Alisha Minton, Josh Messinger
2013: Adam Longwich

• Community Outreach:

Adult education: Music, Math, and the Brain, Medford LEAS, Medford NJ (2019)
Contributor / reviewer: Molecular Biology of the Cell 6th edition, Alberts (2015)
Adult education: CRISPR, First Presbyterian Church (2017)
Adult education: Biology of Talent, Expertise and Creativity, First Presbyterian Church (2017)
Science workshops: Cayuga Heights Elementary School (2015-2018)
Adult education: Math, Music, and the Brain, First Presbyterian Church (2015)
Panelist, International Humanitarianism, Cornell University, John Weiss (2013-2014)