

# Cairsty DePasquale

Associate Professor of Biology  
Division of Mathematics and Natural Sciences  
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## EDUCATION

- 2013 Ph.D., Wildlife and Fisheries Science, Center for Brain, Behavior, & Cognition, Pennsylvania State University, USA  
2008 Master of Research, Marine and Freshwater Ecology and Environmental Management, University of Glasgow, UK  
2007 B. Sc (Hons.) Ecological Science, University of Edinburgh, UK

## RESEARCH INTERESTS

- Behavioral Ecology
- Neuroscience
- Anatomy and Physiology
- Fish Biology
- Science Education
- Exercise physiology

## PROFESSIONAL EXPERIENCE

- 2022 Research Affiliate, University of Glasgow, Scotland  
2019-Present Associate Professor of Biology, Altoona College, Penn State University  
2013-2019 Assistant Professor of Biology, Altoona College, Penn State University  
2009-2013 Graduate Research Assistant, Dr. Victoria Braithwaite (Penn State University) and Dr. Lars Ebbesson (Bergen University)  
2009-2013 Graduate Teaching Assistant, Penn State University  
2011 Teaching Instructor, Penn State University  
2010 Visiting Research Assistant, University of Bergen, Norway  
2010 Visiting Research Assistant, Smithsonian Tropical Research Institute, Panama  
2008 Visiting Research Assistant, Bottlenose Dolphin Research Institute, Sardinia, Italy  
2007-2008 Graduate Research Assistant, Drs. Felicity Huntingford and Dominic McCafferty, University of Glasgow

## PUBLICATIONS

\* Published under candidate's maiden name

Undergraduate authors underlined

**DePasquale, C, N Kemerer, N White, M Yost, J Wolfkill, X Li.** 2021. The Influence of an Enriched Environment in Enhancing Recognition Memory in Zebrafish (*Danio rerio*). *Frontiers in Veterinary Science*, 8. DOI: <https://doi.org/10.3389/fvets.2021.749746>

**DePasquale, C, X Li, M Harold, S Mueller, S McLaren, C Mahan.** 2020. Selection for increased cranial capacity in small mammals during a century of urbanization. *Journal of Mammalogy*, 101(6): 1706-1710.

**DePasquale, C, J Sturgill, VA Braithwaite.** 2020. A Standardized Protocol for Preference Testing to Assess Fish Welfare. *JoVE*, Doi: 10.3791/60674.

**DePasquale, C, P Armstrong, X Li.** 2020. The influence of enrichment on spatial pattern separation in zebrafish (*Danio rerio*). *BIOS*, 9(1): 31-41.

**DePasquale, C, S Fettrow, J Sturgill, VA Braithwaite.** 2019. The impact of flow and physical enrichment on preferences in zebrafish. *Applied Animal Behaviour Science*, 215: 77-81.

**DePasquale, C, J Leri.** 2018. The influence of exercise on anxiety-like behavior in zebrafish (*Danio rerio*). *Behavioural Processes*, 157: 638-644.

Ahlbeck Bergendahl, I, S Miller, **C DePasquale, L Giralico, VA Braithwaite.** 2017. Becoming a better swimmer: structural complexity enhances agility in captive-reared fish. *Journal of Fish Biology*, 90 (3): 1112-1117.

**DePasquale, C, T Neuberger, A Hirrlinger, VA Braithwaite.** 2016. The influence of complex and threatening environments in early life on brain size and behaviour. *Proceedings of the Royal Society B*, 283 (1823): DOI: 10.1098/rspb.2015.2564.

**DePasquale, C, T Wagner, GA Archard, B Ferguson, VA Braithwaite.** 2014. Learning rate and temperament in a high predation risk environment. *Oecologia*, 176:661-667.

**Grassie\*, C, VA Braithwaite, J Nilsson, TO Nilsen, H-C Teien, SO Handeland, SO Stefansson, V Tronci, M Gorissen, G Flik, LOE Ebbesson.** 2013. Aluminum exposure impacts brain plasticity and behavior in Atlantic salmon (*Salmo salar*). *Journal of Experimental Biology*, 216: 3146-3155.

## FUNDING

- 2021 PI, "Differences in the distribution of the contrast agent, Phosphotungstic Acid (PTA), in the zebrafish (*Danio rerio*) during preparation of neural tissue for micro-CT," Penn State Commonwealth Campuses Research Collaboration Development Program Award, \$10,000.
- 2021 CO-PI, "Cranial capacity as indicator of human-driven selection on cognitive and behavioral flexibility in brown bears and gray wolves," Penn State Commonwealth Campuses Research Collaboration Development Program Award, \$10,000.
- 2020 PI, "Three-dimensional visualization of brain morphology in zebrafish, *Danio rerio*, using contrast enhanced X-ray micro-CT," Penn State Altoona Undergraduate Research Assistance Award, \$2,000 (two separate awards in the Spring and Summer sessions).

- 2019 PI, "Three-dimensional visualization of brain morphology in zebrafish, *Danio rerio*, using contrast enhanced X-ray micro-CT," Penn State Commonwealth Campuses Research Collaboration Development Program Award, \$10,000.
- 2019 PI, "Assessing the effects of exercise on spatial pattern separation in fish: An adaptation of the spontaneous location recognition task," Penn State Altoona Undergraduate Research Assistance Award, \$3,500 (three separate awards in the Summer, Fall and Spring sessions).
- 2019 PI, "Does personality type predict exercise behavior in zebrafish, *Danio rerio*, a common animal model of human disease," Penn State Erickson Discovery Grant, \$3,500 (awarded to undergraduate student).
- 2018 PI, "Understanding the cognitive benefits of exercise-induced neurogenesis using zebrafish (*Danio rerio*)," Penn State Center for the Study of Sports in Society Faculty Grant, \$5,000.
- 2018 PI, "The effects of moderate and intense exercise on pattern separation in zebrafish," Penn State Altoona Undergraduate Research Assistance Award, \$2,500 (four separate awards in the Spring and Summer sessions).
- 2017 PI, "The effects of exercise on pattern separation in zebrafish," Penn State Altoona Undergraduate Research Assistance Award, \$1,500 (one award for the Summer session).
- 2017 Co-PI, "Selection for increased cranial capacity in small mammals during a century of urbanization," Penn State Altoona Undergraduate Research Assistance Award, \$1,500 (two separate awards for the Spring and Fall sessions).
- 2016 PI, "The effects of physical activity on anxiety behavior and exploration in zebrafish," Penn State Altoona Undergraduate Research Assistance Award, \$500 (one award for the Fall session).
- 2016 PI, "Modifications to a swim tunnel for exercising groups of zebrafish," Penn State Altoona Undergraduate Research Assistance Award, \$1,500 (two separate awards for the Spring and Summer sessions).
- 2016 PI, "Forebrain cell proliferation of rainbow trout, *Oncorhynchus mykiss*, housed in plain or enriched conditions," Penn State Altoona Undergraduate Research Assistance Award, \$2,500 (three separate awards for the Spring, Summer and Fall sessions).
- 2016 PI, "Forebrain cell proliferation of rainbow trout, *Oncorhynchus mykiss*, housed in plain or enriched conditions," NASA's STEM Academic Research Training engaging Underrepresented Pennsylvanians (START-UP) Grant, \$6,000 (three separate awards).
- 2015 PI, "What do zebrafish want? Manipulation of the rearing environment to investigate housing preference in a common laboratory animal," Pennsylvania State University Research Collaboration Fellowship, Co-PI Dr. Victoria Braithwaite, \$10,000.
- 2015 PI, "Forebrain cell proliferation of rainbow trout, *Oncorhynchus mykiss*, housed in plain or enriched conditions," Penn State Altoona Division of Mathematics and Natural Sciences Summer Student Research Grant, \$1,500.
- 2015 Co-PI, "The effects of exercise on cortical volume in the eastern fence lizard (*Sceloporus undulatus*)," The Huck Institutes of the Life Sciences J. Lloyd Huck

- Bio-technology Mini Grant, PI Dr. Lara LaDage; Co-PI Dr. Thomas Neuberger, \$5,000.
- 2014/ PI, “Developing a learning test to measure spatial pattern separation in zebrafish  
2015 (*Danio rerio*),” Penn State Altoona Undergraduate Research Assistance Award, \$4,500 (four separate awards in the Spring, Summer and Fall sessions).
- 2014 PI, “Developing a ‘Build Our Kids’ Success’ (BOKS) program at Logan Elementary,” Penn State Altoona Community-Based Project Grant, \$2,430.
- 2014 PI, The Reebok Foundation, “Bring our Kids Success (BOKS) Activation Grant,” In partnership with Logan Elementary, \$1,000.
- 2014 PI, Penn State Altoona Undergraduate Research Assistance Award, “Spatial learning in exercise and non-exercise zebrafish (*Danio rerio*),” \$2000 (two separate awards in the Spring and Summer sessions).
- 2013 PI, Penn State Altoona Research Development Grant, “Selection for increased cranial capacity in small mammals during a century of urbanization,” \$4,938.86.
- 2012 Fisheries Society of the British Isles Small Research Grant, “The effects of environmental enrichment and repeated mild stress on brain plasticity and behaviour of zebrafish (*Danio rerio*)”, £5000
- 2011 College of Agriculture Competitive Grants Recipient, \$2000

## TEACHING

BIOL 110: Biology: Basic Concepts and Biodiversity (Laboratory)  
 BIOL 129: Mammalian Anatomy (Lecture and Laboratory)  
 BIOL 161: Anatomy and Physiology I (Lecture)  
 BIOL 162: Anatomy and Physiology I (Laboratory)  
 BIOL 164: Anatomy and Physiology II (Laboratory)  
 BIOL 421: Comparative Anatomy (Lecture and Laboratory)  
 BIOL 429: Animal Behavior

## AWARDS

- 2014 STAR faculty member, nominated by students of the Blue and White Chapter of the National Residence Hall Honorary, Penn State Altoona
- 2013 Paul Hand Award for Graduate Student Teaching, Penn State University
- 2013 Schreyer Institute for Teaching Excellence Graduate School Teaching Certificate, Penn State University
- 2010 Roger M. Latham Memorial Graduate Award, Penn State University

## PROFESSIONAL DEVELOPMENT

- 2021 International Workshop in Confocal Microscopy and Stereology, Neurorenew (virtual format)
- 2020 Web-based seminar – Flipping the classroom, Instructional Design, Penn State Altoona
- 2020 Web-based seminar – Kaltura: Video Quizzes, Instructional Design, Penn State Altoona
- 2020 Avizo/Amira Virtual Training Workshop, Thermo Fisher and Penn State University

- 2014 Summer Seminar in Proposal Writing, Office of Research and Sponsored Programs, Penn State Altoona
- 2012 Penn State Course in College Teaching, Penn State University
- 2010 Graduate Program in Neuroscience Interactive Study in Education, Penn State University

## POSTERS AND ORAL PRESENTATIONS

(All competitive submissions, except where noted)

- 2021 “Finding a connection between the brain and behavior: Contrast enhanced X-ray micro-CT as a tool for investigating neural plasticity in zebrafish (*Danio rerio*),” **DePasquale, C.** Presented at the 2021 Energy and Environmental Sustainability Webinar Series, Penn State Institutes of Energy and the Environment, Invited, September 2021 (virtual).
- 2021 “Behavior and Welfare in a Common Laboratory Animal, the Zebrafish (*Danio rerio*),” **DePasquale, C.** Presented at the 5th Annual Science of Enrichment Symposium, University of Michigan and Michigan Society for Medical Research, 500 in attendance, Invited, September 2021 (virtual).
- 2021 “Behavior and welfare in a common laboratory fish (*Danio rerio*),” **DePasquale, C.** Presented at the Zebrafish Husbandry Association Webinar Series, Zebrafish Husbandry Association, Invited, May 2021 (virtual).
- 2021 “Behavior and welfare in a common laboratory animal, the zebrafish (*Danio rerio*),” **DePasquale, C.** Presented at the Victoria Braithwaite Memorial Symposium. Invited, April, 2021 (virtual).
- 2020 “Selection for increased cranial capacity in small mammals during a century of urbanization,” **DePasquale, C, C Mahan.** Presented at the 56th Annual Conference of the Animal Behavior Society Conference, July 2020 (virtual).
- 2020 “Does personality type predict exercise behavior in zebrafish, *Danio rerio*, a common animal model of human disease,” Franklin, K, Z Jia, **C DePasquale.** Presented by Kristina Franklin at the Penn State University Undergraduate Fair, University Park PA, April 2020 (virtual).
- 2019 “Testing spontaneous location recognition (SLR) in zebrafish under different conditions of exercise,” Yost, M, **C DePasquale.** Presented by M Yost at the Penn State Altoona Undergraduate Expo, Penn State Altoona, Altoona PA, September 2019.
- 2019 “Does personality type predict exercise behavior in zebrafish, *Danio rerio*, a common animal model of human disease,” Franklin, K, Z Jia, **C DePasquale.** Presented by Kristina Franklin at the Penn State Altoona Undergraduate Expo, Penn State Altoona, Altoona PA, September 2019.
- 2019 “Assessing spatial pattern separation in fish: An adaptation of the spontaneous location recognition task,” Wolfkill, J, **C DePasquale.** Presented by J Wolfkill at the Penn State Altoona Undergraduate Research and Creative Activities Fair, Penn State Altoona, Altoona PA, April 2019.
- 2019 “Just Keep Swimming! What zebrafish can tell us about exercise-induced neurogenesis,” **DePasquale, C.** Presented at the Center for the Study of Sports in Society Seminar Series, Penn State University. Invited. March, 2019.

- 2019 “How to train your fish: ‘Just keep swimming, just keep swimming!’,” **DePasquale, C.** Presented at the Spotlight on Research and Teaching Series at Penn State Altoona. Invited. February, 2019.
- 2019 “Just Keep Swimming! What zebrafish can tell us about exercise-induced neurogenesis,” **DePasquale, C.** Presented at the Noll Physiological Research Seminar Series, Penn State University. Invited. February, 2019.
- 2018 “Selection for increased cranial capacity in small mammals during a century of urbanization,” Harold, M, X Li, C Mahan, **C DePasquale.** Presented by M Harold at the Penn State Altoona Undergraduate Research and Creative Activities Fair, Penn State Altoona, Altoona PA, April 2018.
- 2017 “Effects of exercise on anxiety behaviors in zebrafish,” Fochler, S, J Leri, **C DePasquale.** Presented by S Fochler at the Penn State Altoona Undergraduate Research and Creative Activities Fair, Penn State Altoona, Altoona PA, April 2017. (won 1<sup>st</sup> prize)
- 2016 “The influence of complex and threatening environments during development on brain and behavior,” **DePasquale, C,** VA Braithwaite. Presented at the 52nd Annual Conference of the Animal Behavior Society, University of Missouri, Columbia MO, July 2016.
- 2016 “Learning to swim: What interdisciplinary undergraduate research can teach us about exercise-induced neurogenesis in zebrafish,” **DePasquale, C.** Presented at The 12th International Congress for the Biology of Fish, Texas State University, San Marcos TX, June 2016.
- 2016 “Design and construction of a swim tunnel to understand the effects of physical activity on neural plasticity in zebrafish,” Palochko, V, **C DePasquale.** Presented by V Palochko at the Penn State Altoona Undergraduate Research and Creative Activities Fair, Penn State Altoona, Altoona PA, April 2016.
- 2014 “Learning to swim: What zebrafish can teach us about exercise-induced neurogenesis,” **DePasquale, C.** Presented at The Penn State Altoona Faculty Colloquium, Penn State Altoona, Invited.
- 2013 “The effects of environmental enrichment and daily chasing on the behavior of zebrafish (*Danio rerio*),” **Grassie\*, C,** A Hirrlinger, VA Braithwaite. Poster presented at the 50th Annual Conference of the Animal Behavior Society, University of Colorado, Boulder CO.
- 2013 “Using MRI to quantify brain development of a common neurobehavioral animal model, the zebrafish (*Danio rerio*), reared in different conditions,” Neuberger, T, **C Grassie\*,** VA Braithwaite. Presented by B Johnson. Digital poster presented at the 21st Annual Meeting of the International Society for Magnetic Resonance in Medicine, Salt Lake City UT.
- 2012 “Molecular and functional relationship between environmental allostatic loads and learning and memory in salmon,” Ebbesson LOE , TO Nilsen, **C Grassie\*,** M Gorissen, G Flik, SO Stefansson, SO Handeland, V Tronci, J Nilsson, VA Braithwaite. Presented by L Ebbesson. 7th International Symposium on Fish Endocrinology, Buenos Aires, Argentina.
- 2011 “The effects of environmental stress on the behavior of Atlantic salmon (*Salmo salar*),” **Grassie\*, C.** Presented at the Pennsylvania Chapter of the American Fisheries Society, Pennsylvania State University, Invited.

- 2010 “Quantifying the impact of environmental stress on learning and memory in Atlantic salmon (*Salmo salar*),” **Grassie\*, C**, VA Braithwaite, J Nilsson, LOE Ebbesson. Poster presented at The 9th International Congress for the Biology of Fish, Barcelona, Spain.

## SERVICE AND LEADERSHIP

- 2021 Chair, Penn State Altoona Biology Search Committee  
 2021 Chair, Penn State Altoona Biology Search Committee  
 2019 Discipline Representative, Life Sciences Promotion and Tenure Committee, Penn State Altoona  
 2016-Present Mentor, Penn State School of Forest Resources Alumni-Student Mentor Program  
 2016 Member, Penn State Altoona Biology Program Assessment Committee  
 2016 Member, Penn State Altoona Kinesiology Search Committee  
 2014-Present Advisor, Penn State Altoona Chapter of the National Biology Honors Society (Tri-Beta)  
 2014-Present Co-organizer, Penn State Altoona Biology Peer Tutoring Program  
 2013-Present Reviewed manuscripts for Oecologia. Behavioral Ecology, Ethology and Animals  
 2013 Judge, Undergraduate Poster Exhibition, Penn State University  
 2011 Presenter, “The Proposal Writing Process,” College of Agricultural Sciences 2011 Competitive Grants Workshop, Penn State University  
 2009-2011 Vice President, School of Forest Resources Graduate Student Organization, Penn State University  
 2010 Student activities subcommittee for the American Fisheries Society annual meeting, Pittsburgh, PA  
 2010 Graduate Mentor, Neuroscience Research Day, Hershey Medical School, Penn State University

## PUBLIC EDUCATION AND OUTREACH

- 2021 Presenter, “Behavior and Welfare in a common laboratory animal, the zebrafish (*Danio rerio*),” Zebrafish Husbandry Association monthly webinar  
 2014-2018 Co-organizer, Brain Awareness Week, Penn State Altoona and the community  
 2014-2016 Organizer, “Bring Our Kids Success (BOKS),” free before school physical activity program at Logan Elementary  
 2013 Presenter, “A fish-eye view of the brain,” Penn State Altoona Biology Club meeting  
 2013 Exhibitor, Animal Behavior Society 50<sup>th</sup> Annual Conference Outreach Fair, Boulder CO  
 2011, 2013 Exhibitor, Pennsylvania Forest Fest, University Park, PA  
 2010-2013 Participant, Magnetic Resonance Imaging (MRI) Research Group, Penn State University  
 2012 Educator, Miles Township Elementary School, Rebersburg, PA

2012	Educator, Fish Anatomy Demonstration, Radio Park Elementary School, State College, PA
2012	Exhibitor, Career Exploration Day, Park Forest Middle School, State College, PA
2009	Educator, Exploration Day, Penn State University
2008	Ranger, Mugdock Country Park, Scotland
2007-2008	Educator, National Trust for Scotland
2007	Research Assistant, The Alaska SeaLife Center, AK
2006	Volunteer, Global Volunteer Network, New Zealand
2004	Educator, Moray Firth Wildlife Centre, Spey Bay, Scotland

## UNDERGRADUATE STUDENTS MENTORED

Zhaohan Jia, Penn State University, B.S. 2021  
 Aaron Andrews, Penn State University, B.S. 2021  
 Kavya Jhaveri, Penn State University (transferred)  
 Kristina Franklin, Penn State University, B.S. 2020  
 Monica Yost, Penn State University (transferred)  
 Nathan White, Penn State University, B.S. 2020  
 Nicole Kemerer, Penn State University, B.S. 2020  
 Jordan Wolfkill, Penn State University, B.S. 2019  
 Zachary Hamor, Penn State University, B.S. 2019  
 Sydney Fochler, Penn State University, B.S. 2018  
 Mallory Harold, Penn State University, B.S. 2018  
 Timothy Barry, Penn State University, B.S. 2018  
 Sarah Farrell, Penn State University, B.S. 2018  
 Sean Fettrow, Penn State University, B.S. 2016  
 John Leri, Penn State University, B.S. 2016  
 Vada Palochko, Penn State University, B.S. 2016  
 Nathan Salamacha, Penn State University, B.S. 2016  
 Steven Douglass, Penn State University, B.S. 2015  
 Paul Armstrong, Penn State University, B.S. 2015  
 Amanda Colombo, Penn State University, B.S. 2014  
 Sarah Waksmonski, Penn State University, B.S. 2014

## MEDIA

2014 Interviewee, “Brain Awareness Week at Penn State Altoona”, CentralPA Live at WTAJ-TV.  
 2014 Interviewee, “Brain Awareness” *Ivy Leaf* magazine, Penn State Altoona Development and Alumni Relations  
 2014 Interviewee, Brain Awareness Week, *Altoona Mirror* newspaper  
 2014 Interviewee, “Campus Celebrates Brain Awareness Week,” *Ivy Link*, Penn State Altoona Development and Alumni Relations  
 2012 Interviewee, “On Centre: Penns Valley students assume scientist alter-egos to learn more about biology, physics, chemistry”, Centre Daily Times, PA

## PROFESSIONAL MEMBERSHIPS



Zebrafish Husbandry Association  
National Biology Honors Society, Tri-Beta  
Ecological Society of America  
Animal Behavior Society  
Fisheries Society of the British Isles