

# JASON PELLETTIERI, Ph.D.

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## EDUCATION

**Doctor of Philosophy**  
07/1998 - 08/2004

**Johns Hopkins University School of Medicine**, Baltimore, MD  
Biochemistry, Cellular, and Molecular Biology Program

**Bachelor of Arts**  
09/1990 - 05/1994

**Middlebury College**, Middlebury, VT  
Biology

## EXPERIENCE

**Professor**  
08/2010 - present

**Keene State College**, Keene, NH  
Department of Biology

08/2021 - present: Department Chair  
06/2020 - present: Full Professor  
08/2015 - 06/2020: Associate Professor  
08/2010 - 08/2015: Assistant Professor

**Adjunct Professor**  
08/2009 - 12/2009

**Westminster College**, Salt Lake City, UT  
Department of Biology

**Postdoctoral Fellow**  
10/2004 - 06/2010

**University of Utah School of Medicine**, Salt Lake City, UT  
Department of Neurobiology and Anatomy

*Mentor:* Alejandro Sánchez Alvarado, Ph.D.  
National Academy of Sciences

*Research focus:* Cell death in planarian regeneration

**Doctoral Student**  
06/1998 - 08/2004

**Johns Hopkins University School of Medicine**, Baltimore, MD  
Department of Molecular Biology and Genetics

*Mentor:* Geraldine Seydoux, Ph.D.  
National Academy of Sciences

*Dissertation:* *minibrain-kinase-2* and coordinate control of protein degradation at the egg-to-embryo transition in *Caenorhabditis elegans*

Recipient of 2004 Hans Joaquim Prochaska Research Award

**Laboratory Technician**  
01/1997 - 05/1998

**Johns Hopkins University School of Medicine**, Baltimore, MD  
Department of Pediatrics

**Laboratory Technician**  
06/1995 - 01/1997

**North American Vaccine, Inc.**, Beltsville, MD  
Department of Quality Control

## FELLOWSHIPS

**Research Associate**  
07/2008 - 06/2010

**Howard Hughes Medical Institute**  
Postdoctoral research in Sánchez Alvarado Lab

**Postdoctoral Fellow**  
07/2005 - 06/2008

**Jane Coffin Childs Memorial Fund for Medical Research**  
Postdoctoral research in Sánchez Alvarado Lab

## PUBLICATIONS

Woodcock, M. R., Powers, K., Snead, K., and Pellettieri, J. 2023. Flatworm transcriptomes reveal widespread parasitism by histophagous ciliates. *bioRxiv*. doi: 10.1101/2023.09.17.558123.

Pittendreigh, M., Powers, K., Vimal Cruz, M., and **Pellettieri, J.** 2023. Quantitative analysis of planarian pigmentation. *Methods in Molecular Biology*. 2680: 253-261.

Abel, C., Powers, K., Gurung, G., and **Pellettieri, J.** 2022. Defined diets for freshwater planarians. *Developmental Dynamics*. 251(2):390-402.

Kimball, C., Powers, K., Dustin, J., Poirier, V., and **Pellettieri, J.** 2020. The exon junction complex is required for stem and progenitor cell maintenance in planarians. *Developmental Biology*. 457(1):119-127

**Pellettieri, J.** 2019. Regenerative tissue remodeling in planarians – the mysteries of morphallaxis. *Seminars in Cell and Developmental Biology*. 87:13-21

Stubenhaus, B. and **Pellettieri, J.** 2018. Detection of apoptotic cells in planarians by whole-mount TUNEL. *Methods in Molecular Biology*. 1774: 435-444

He, X., Lindsay-Mosher, N., Li, Y., Molinaro, A., **Pellettieri, J.**, and Pearson, B. 2017. FOX and ETS family transcription factors regulate the pigment cell lineage in planarians. *Development*. 144(24): 4540-4551

Stubenhaus, B., Dustin, J., Neverett, E., Beaudry, M., Nadeau, L., Burk-McCoy, E., He, X., Pearson, B., and **Pellettieri, J.** 2016. Light-induced depigmentation in planarians models the pathophysiology of acute porphyrias. *eLife*. 5:e14175

Featured in *Science*, *Science Daily*, *Biomedical Picture of the Day*, *New Hampshire Public Radio*, *The Keene Sentinel*, *The Concord Monitor*, and *El Periódico* (Barcelona, Spain)

Bender, C., Fitzgerald, P., Tait, S., Llambi, F., McStay, G., Tupper, D., **Pellettieri, J.**, Sánchez Alvarado, A., Salvesen, G., and Green, D. 2012. Mitochondrial pathway of apoptosis is ancestral in metazoans. *P.N.A.S. USA*. 109(13): 4904-4909

**Pellettieri, J.**, Fitzgerald, P., Watanabe, S., Mancuso, J., Green, D., and Sánchez Alvarado, A. 2010. Cell death and tissue remodeling in planarian regeneration. *Developmental Biology*. 338(1): 76-85

Recommended in *Faculty Opinions*; over 300 citations

**Pellettieri, J.** and Sánchez Alvarado, A. 2007. Cell turnover and adult tissue homeostasis – from humans to planarians. *Annual Reviews in Genetics*. 41: 83-105

Stitzel, M., **Pellettieri, J.**, and Seydoux, G. 2006. The *C. elegans* DYRK kinase MBK-2 marks oocyte proteins for degradation in response to meiotic maturation. *Current Biology*. 16(1): 56-62

**Pellettieri, J.**, Reinke, V., Kim, S., and Seydoux, G. 2003. Coordinate activation of maternal protein degradation during the egg-to-embryo transition in *C. elegans*. *Developmental Cell*. 5(3): 451-462

**Pellettieri, J.** and Seydoux, G. 2002. Anterior-posterior polarity in *C. elegans* and *Drosophila* – PARallels and differences. *Science*. 298(5600): 1946-1950

Blaisdell, C., **Pellettieri, J.**, Loughlin, C., Chu, S., and Zeitlin, P. 1999. Keratinocyte growth factor stimulates CLC-2 expression in primary fetal rat distal lung epithelial cells. *American Journal of Respiratory Cell and Molecular Biology*. 20(4): 842-847

Undergraduate Author

**CURRENT RESEARCH FUNDING**

<b>NIH U24</b> 04/2022 - 04/2024	<b>UPLC analysis of porphyrin biochemistry in planarians</b> \$9,290 (100% direct costs)
<b>NIH R15/AREA</b> 09/2021 - 08/2024	<b>Metabolic control of porphyrin biosynthesis by mTOR signaling</b> \$412,148 (\$299,573 direct costs)

**PREVIOUS RESEARCH FUNDING**

<b>NIH NH-INBRE</b> 05/2018 - 01/2019	<b>Targeted incentive grant</b> \$15,000 (100% direct costs)
<b>NIH R15/AREA</b> 02/2018 - 01/2021	<b>Functional analysis of the NMD pathway in regeneration</b> \$416,179 (\$297,501 direct costs)
<b>NSF RUI</b> 08/2017 - 07/2021	<b>Functional analysis of the exon junction complex in planarians</b> \$474,387 (\$339,206 direct costs)
<b>NIH NH-INBRE</b> 08/2017 - 08/2019	<b>Salary support for research/teaching postdoctoral fellow</b> ~\$75,000 (100% direct costs)
<b>NIH NH-INBRE</b> 02/2016 - 08/2016	<b>Pilot screen for small molecule inhibitors of porphyrin biosynthesis</b> \$32,000 (100% direct costs)
<b>NIH R15/AREA</b> 09/2014 - 12/2016	<b>Analysis of phagocyte function in apoptotic cell excretion</b> \$306,802 (\$226,000 direct costs)
<b>NSF EAGER</b> 08/2014 - 07/2017	<b>Cell excretion, a novel mechanism of cell clearance</b> \$152,546 (\$116,175 direct costs)
<b>NIH NH-INBRE</b> 07/2013 - 12/2014	<b>Light-induced pigment cell apoptosis</b> \$120,192 (\$94,823 direct costs)
<b>NIH NH-INBRE</b> 10/2011 - 09/2012	<b>Molecular mechanisms of regenerative tissue remodeling</b> \$14,973 (100% direct costs)

**CLASSROOM TEACHING EXPERIENCE**

<b>Cell Biology</b> BIO-312	<b>Sophomore-level core course</b> Includes original research project in which students screen a small molecule library for compounds that impact planarian regeneration
<b>Biochemistry</b> BIO-375	<b>Upper-level elective (team-taught)</b> Includes original research project in which students investigate effects of dietary or environmental variables on porphyrin biosynthesis in planarians
<b>Developmental Biology</b> BIO-478	<b>Upper-level elective</b> Includes semester-long research project in which students use bioinformatics and molecular biology approaches to screen for novel regeneration genes (see Kimball et al., <i>Developmental Biology</i> , 2020)
<b>Senior Seminar</b> BIO-495	<b>Capstone course for biology majors</b> Focus on career planning, networking with recent departmental alumni, and a primary literature review in an area of each student's choosing
<b>Stem Cells and Regeneration</b> INBIO-301	<b>General education course designed for non-science majors</b> Focus on medical ethics and societal impacts of biomedical research; includes original student research projects on planarian regeneration (see Stubenhaus et al., <i>eLife</i> , 2016)

**SELECTED PRESENTATIONS**

- 2023 **University of Georgia**, Athens, GA: *Invited talk*
- 2023 **NIH NH-INBRE Meeting**, Bretton Woods, NH: *Invited talk*
- 2022 **NIH National IDeA Symposium of Biomedical Research Excellence**, Online: *Invited talk*
- 2022 **European Meeting on Planarian Biology**, Sant Feliu de Guixols, Spain: *Talk*
- 2022 **Mount Desert Island Biological Laboratory**, Bar Harbor, ME: *Invited talk*
- 2021 **SpiraliaBase**, Online: *Invited talk on using planarians in teaching and outreach*
- 2019 **Southern Maine Community College**, South Portland, ME: *Invited talk*
- 2019 **NIH Northeast Regional IDeA Conference**, Bretton Woods, NH: *Talk*
- 2019 **NIH NH-INBRE Meeting**, Bretton Woods, NH: *Invited talk*
- 2018 **International Symposium of Flatworm Biology**, Alghero, Italy: *Talk*
- 2018 **International Planarian Meeting**, Madison, WI: *Talk*
- 2016 **Harvard University Museum of Comparative Zoology**, Cambridge, MA: *Invited talk*
- 2016 **University of Vermont**, Burlington, VT: *Invited talk*
- 2016 **European Meeting on Planarian Biology**, Sant Feliu de Guixols, Spain: *Talk*
- 2016 **NIH NH-INBRE Meeting**, Bretton Woods, NH: *Led session on mentoring undergraduates*
- 2016 **University of Toronto**, Toronto, Canada: *Invited talk*
- 2016 **Gordon Research Conference, Chemistry & Biology of Tetrapyrroles**, Newport, RI: *Poster*
- 2016 **Wright State University**, Dayton, OH: *Invited talk*
- 2016 **UMass Medical School, Worcester Area Worm Meeting**, Worcester, MA: *Invited talk*
- 2016 **College of the Holy Cross**, Worcester, MA: *Invited talk*
- 2016 **MIT**, Cambridge, MA: *Invited talk on faculty careers at PUIs*
- 2015 **International Symposium of Flatworm Biology**, Oxford, United Kingdom: *Talk*
- 2015 **North American Planarian Meeting**, Chicago, IL: *Talk*
- 2014 **16<sup>th</sup> International Congress on Photobiology**, Córdoba, Argentina: *Talk*
- 2014 **Colby-Sawyer College**, New London, NH: *Invited talk*
- 2013 **North American Planarian Meeting**, Kansas City, MO: *Talk*
- 2013 **Plymouth State University**, Plymouth, NH: *Invited talk*
- 2011 **NIH NH-INBRE Meeting**, Whitefield, NH: *Invited talk on mentoring undergraduates*
- 2009 **Apoptosis and Cancer Meeting**, Hanover, NH: *Talk (rated scientific highlight)*
- 2008 **National Planarian Meeting**, Chicago, IL: *Talk and primary meeting organizer*
- 2007 **Cold Spring Harbor Laboratory Meeting on Cell Death**, Cold Spring Harbor, NY: *Talk*
- 2006 **Jane Coffin Childs Memorial Fund Symposium**, Lakeville, CT: *Poster*
- 2004 **Santa Cruz Conference on Developmental Biology**, Santa Cruz, CA: *Poster (best poster)*
- 2003 **International Worm Meeting**, Los Angeles, CA: *Talk*
- 2002 **American Society for Cell Biology Meeting**, San Francisco, CA: *Poster*
- 2002 **Santa Cruz Conference on Developmental Biology**, Santa Cruz, CA: *Poster*
- 2001 **International C. elegans Meeting**, Los Angeles, CA: *Talk*

## SELECTED MENTEE RESEARCH AWARDS

<b>Best Poster Award</b> 2022	<b>NIH NH-INBRE Meeting</b> <i>Spatiotemporal analysis of the stem cell response to injury in planarians</i> Emily Cornell du Houx, Ashley Seel, Shannon Berry, and Jason Pellettieri
<b>Best Poster Award</b> 2017	<b>Dartmouth College Big Data in the Life Sciences Symposium</b> <i>An animal model of acute porphyrias</i> Haley Zanga, Leanna Landfair, and Jason Pellettieri
<b>Best Poster Award</b> 2017	<b>NIH NH-INBRE Meeting</b> <i>Nonsense-mediated mRNA decay is required for planarian regeneration</i> Sarai Roby, Samantha Boulanger, and Jason Pellettieri
<b>Fellowship Award</b> 2016	<b>Keene State College Summer Undergraduate Research Fellowship</b> <i>Analysis of the exon junction complex in planarian stem cells</i> Simone McEwan and Jason Pellettieri
<b>Best Poster Award</b> 2013	<b>Dartmouth College Integrative Biology Symposium</b> <i>Light-induced depigmentation in <i>Schmidtea mediterranea</i></i> Brad Stubenhaus and Jason Pellettieri
<b>Fellowship Award</b> 2011	<b>Keene State College Summer Undergraduate Research Fellowship</b> <i>Genetic analysis of stem cell-mediated regeneration in planarians</i> Amber Poirier and Jason Pellettieri

## SELECTED LAB ALUMNI

<b>Ryan Woodcock, Ph.D.</b> Postdoc	<b>Trocaire College</b> , Buffalo, NY Assistant Professor of Biology
<b>Semon Randall</b> Class of 2021	<b>MCPHS</b> , Worcester, MA Pharm.D. Student
<b>Brian Stevens</b> Class of 2020	<b>Northwestern University</b> , Evanston, IL Ph.D. Student, Petersen Lab
<b>Allie Tolles</b> Class of 2019	<b>UMass Medical School</b> , Worcester, MA Research Technician, Lodato Lab
<b>Haley Zanga</b> Class of 2018	<b>Loyola University Chicago</b> , Chicago, IL Medical Student
<b>Casey Kimball</b> Class of 2017	<b>Intellia Therapeutics</b> , Cambridge, MA Production Lead, External Manufacturing
<b>Megan Beaudry, Ph.D.</b> Class of 2016	<b>University of Georgia College of Public Health</b> , Athens, GA Doctor of Philosophy, Environmental Health Science
<b>Maggie Kelly, D.V.M.</b> Class of 2015	<b>Purdue University College of Veterinary Medicine</b> , West Lafayette, IN Doctor of Veterinary Medicine
<b>Brad Stubenhaus, M.S.</b> Class of 2014	<b>Johns Hopkins University School of Medicine</b> , Baltimore, MD Master of Science, Molecular Biology
<b>Brett Murray, M.D.</b> Class of 2013	<b>Boston University</b> , Boston, MA Doctor of Medicine
<b>Sarah Anderson, Ph.D.</b> Class of 2013	<b>UMass Medical School</b> , Worcester, MA Doctor of Philosophy, Biomedical Sciences

## SCIENCE COMMUNICATION & OUTREACH

<b>Mentor</b> 2022 - present	<b>Classroom projects for New Hampshire middle and high schools</b> Provide planarians and technical support for middle and high school teachers developing hands-on activities for their science classes
<b>Instructor</b> 2021 - present	<b>Tech Camp, University of New Hampshire</b> Teach middle and high school students and teachers about stem cells and regeneration in annual two-week course funded by NIH SEPA grant
<b>Instructor</b> 2013 - present	<b>Science outreach project, Monadnock Regional High School</b> Lead annual research experience in which honors biology students explore the effects of environmental variables on planarian regeneration
<b>Instructor</b> 2022, 2024	<b>Short course in planarian regeneration, MDI Biological Laboratory</b> Teach core concepts in molecular biology to students from Southern Maine Community College with NIH Maine INBRE funding
<b>Writer</b> 2023	<a href="#">Addgene Blog</a> Guest blog post on course-based undergraduate research experiences
<b>Creator</b> 2017	<a href="#">Lab website</a> Overview of grant-funded research projects geared toward undergraduate students and members of the general public
<b>Creator</b> 2012 - 2015	<a href="#">Online Developmental Biology</a> Video lectures on selected topics in developmental biology

## SELECTED PROFESSIONAL SERVICE

<b>Principal Investigator</b> 2023 - present	<b>NIH NH-INBRE Research Support and Training Grant</b> Manage institutional award supporting Keene State College Faculty and students participating in biomedical research
<b>External Consultant</b> 2022 - present	<b>NIH Rhode Island INBRE</b> External mentoring consultant for NIH RI-INBRE-funded faculty
<b>Reviewer</b> 2012 - present	<b>Over 20 journals, including <i>Cell Reports</i>, <i>Development</i>, <i>Developmental Biology</i>, <i>eLife</i>, and <i>Stem Cell Reports</i></b> Ad hoc peer review of primary research articles
<b>Reviewer</b> 2012 - present	<b>National Science Foundation, Integrative Organismal Systems</b> Ad hoc peer review of grant applications
<b>Reviewer</b> 2020 - 2022	<b>NIH Rhode Island INBRE</b> Panel review of grant applications
<b>External Evaluator</b> 2016	<b>University of Toronto, Department of Molecular Genetics</b> Written review of Ph.D. thesis and oral examiner for thesis defense
<b>Reviewer</b> 2015	<b>National Science Foundation, Integrative Organismal Systems</b> Panel review of grant applications, Developmental Systems Cluster

**SELECTED INSTITUTIONAL SERVICE****Chair**

2021 - present

**Department of Biology**

Lead curriculum reform and assessment, faculty and staff searches, mentoring and evaluation of faculty and staff, course scheduling, and student advising; manage departmental budget and equipment

**Mentor**

2018 - present

**NIH NH-INBRE**

Provide institutional mentorship for faculty funded by NH-INBRE

**Faculty Coordinator**

2015 - 2017

**Center for Creative Inquiry**

Founding member of center providing internal funding and other support for undergraduate research, scholarship, and creative endeavors

**Member**

2014 - 2015

**Business Liaison Committee**

Helped to organize scholarship program sponsored by NH businesses and seminar series on careers in regional technology industries

**Member**

2012 - 2013

**Undergraduate Scholarly Activity Committee**

Recommended institutional measures for expanding faculty and student involvement in research, scholarship, and creative endeavors