

CURRICULUM VITAE

Robbert Creton, Ph.D.
 Department of Molecular Biology, Cell Biology and Biochemistry
 Brown University
 Box G-L127
 185 Meeting Street
 Providence, RI 02912

Phone: (401) 863-9646
 Email: Robbert_Creton@brown.edu

EDUCATION

University	Degree	Year	Field of study
Utrecht University, Netherlands *	B.S.	1990	Biology
Utrecht University, Netherlands	Ph.D.	1994	Developmental Biology

* Utrecht University ranks #2 in the Netherlands and #46 in the World (US News, Jan. 2025)

POSTGRADUATE TRAINING

1995 - 1999	Postdoctoral fellow The laboratory of Lionel F. Jaffe Marine Biological Laboratory Woods Hole, Massachusetts	Developmental Physiology
-------------	---	--------------------------

HONORS AND AWARDS

1993	Embryology course, Marine Biological Laboratory, Woods Hole, MA
1993	Spiegel fellow, Marine Biological Laboratory, Woods Hole, MA
1995	NATO fellow, Marine Biological Laboratory, Woods Hole, MA
2014	Master of Arts <i>ad eundem</i> degree, Brown University, Providence, RI
2014	Interviewed for 'The Cave Artists'. Lewis (2014). <i>Nature Medicine</i> 20, 228-230.
2015	Outreach activities highlighted in <i>The Herald News</i> , 9/28/2015
2018	Research Feature at https://researchfeatures.com/2018/01/31/

ACADEMIC APPOINTMENTS

1999 - 2002	Investigator Department of Obstetrics and Gynecology Women and Infants Hospital of Rhode Island
2002 - 2011	Assistant Professor of Medical Science (Research) Department of Molecular Biology, Cell Biology and Biochemistry Brown University
2011 - 2017	Associate Professor of Medical Science (Research) Department of Molecular Biology, Cell Biology and Biochemistry Brown University

2016 - 2017	Secondary appointment, Associate Professor (Research) Department of Pathology and Laboratory Medicine Brown University
2012 - 2020	Director, Molecular Pathology Core Brown University
2002 - present	Director, Leduc Bioimaging Facility Brown University
2017 - present	Professor of Medical Science (Research) Department of Molecular Biology, Cell Biology and Biochemistry Department of Pathology and Laboratory Medicine (secondary appointment) Brown University

OTHER APPOINTMENTS

2010 - present	Faculty member, Carney Institute for Brain Science
2014 - present	Faculty member, Center for Vision Research
2017 - present	Founding faculty member, Center for Alternatives to Animals in Testing
2023 - present	Faculty member, Center on the Biology of Aging

MEMBERSHIP IN SOCIETIES

2004 - present	Member of the Society for Developmental Biology
----------------	---

SERVICE TO THE UNIVERSITY

Director, Leduc Bioimaging Facility (2002 - present). The Leduc Bioimaging Facility, open to all investigators, provides equipment and training dedicated to high-resolution imaging in the life sciences. The facility has expanded from 3 imaging systems in 2002 to 12 imaging systems in 2024. The facility serves approximately 250 users and offers its services in Sidney Frank Hall (SFH), the BioMed Center (BMC), and the Laboratory for Molecular Medicine (LMM). The facility includes a Cryo transmission electron microscope, a scanning electron microscope, two fluorescence microscopes, two automated slide scanners, four confocal laser scanning microscopes, a spinning disk high-content screening system, and a multiphoton microscope.

Facility website:	https://biomedcorefacilities.brown.edu/bioimaging-facility
Facility personnel:	Geoffrey Williams (Manager, 2005 - present) Jacqueline Escolastico (Research Assistant, 2022 - present)

New microscopes and supportive equipment since 2002:

- 1) Zeiss Axiovert 200M light / fluorescence microscope (NIH COBRE supplement, 2003)
- 2) Leica TCS SP2 AOBS spectral confocal microscope (NIH NCRR, 2003 - 2015)
- 3) Zeiss Axiovert 200M light / fluorescence microscope for LMM (Brown University, 2004)
- 4) Zeiss Lumar fluorescence stereo microscope (Brown University, 2006)
- 5) Zeiss LSM510 Meta confocal microscope for SFH (Brown University, 2007 - 2017)
- 6) Zeiss LSM710 confocal microscope (NIH NCRR, 2009)
- 7) Olympus FV1000-MPE multiphoton microscope (BIBS / CRF infrastructure program, 2013)
- 8) Zeiss LSM800 confocal microscope (Brown University, 2015)
- 9) Olympus FV3000 confocal microscope with resonant scanner (Brown CRF program, 2017)
- 10) Thermo Apreo Scanning Electron Microscope for serial block-face imaging (NIH S10, 2017)

- 11) Nikon Ti2-E Fluorescence Microscope in LMM (Brown CRF program, 2018)
- 12) Zeiss LSM880 confocal microscope (Brown University, 2019)
- 13) Leica EM UC7 Ultramicrotome (Brown CRF program, 2019)
- 14) Olympus VS200 Slide Scanner (Brown CRF program 2020, installed in 2021)
- 15) Nikon Ti2-E Fluorescence Microscope in the BioMed Center (Brown startup, 2021)
- 16) Olympus / Evident VS200 Slide Scanner (Brown CRF program 2022, installed in 2023)
- 17) Thermo Tundra Cryo Transmission Electron Microscope (NIH S10 2023, installed in 2024)

Director, Molecular Pathology Core (2012 - 2020). The Molecular Pathology Core provides equipment, training and technical support for the evaluation of morphological changes in cells, tissues, and organs. The core was initially established to support research projects of Dr. Boekelheide and Dr. Kane in the Superfund Research Program at Brown University. In 2015, the core was formally approved as a University-wide Service Center. The core hired additional personnel, expanded its capabilities, and grew into a dynamic facility used by 45 laboratories in various departments, centers, and nearby hospitals (2020). The core is currently supported by David Silverberg (Research Assistant).

Facility Website: <https://biomedcorefacilities.brown.edu/molecular-pathology-core>

Operational support for the Opera Phenix (2017 - present). The Opera Phenix High-Content Screening System is a spinning disk confocal microscope designed for high-throughput 3D imaging in microplates. This imaging system is a key instrument in the Center for Alternatives to Animals in Testing (CAAT). The Leduc Bioimaging Facility provides operational support for the Opera Phenix, which is available to all investigators at Brown University and beyond.

Facility website: <https://caat.brown.edu/about-us/core-resources>

Facility Personnel: Samantha Madnick (2017 - 2023) & Jacqueline Escolastico (2023 - present)

University Committees

Confocal Evaluation Committee (2006)

Stereomicroscope Evaluation Committee (2006)

Advisory Committee for the Brain Science Program Optical Imaging Core (2006)

Small animal imaging task force (2007)

Confocal Evaluation Committee (2009)

Organizer of the first 'Zebrafish at Brown' meeting (2012)

Chair of multiphoton microscope steering committee (2012-2013)

Admissions committee MCB graduate program (2014)

User Group for the Leduc Bioimaging Facility (2008-present)

Chair of Search Committee for research assistant in the Molecular Pathology Core (2018)

UTRA Review Committee (2019)

Carney Institute Microscopy Working Group (2018-2020): this group successfully spearheaded the purchase of two new super-resolution microscopes: a Bruker Vutara 452 STORM microscope and a Nikon SoRa spinning disk confocal with STORM.

Chair of Search Committee for new manager in the Molecular Pathology Core (2019-2020)

Search Committee for a Director, Center to Advance Predictive Biology (2019-2020)

Floor Coordination Committee for managing Covid-related issues in research buildings (2020-2021)

Chair of Search Committee for a Research Assistant in the Leduc Bioimaging Facility (2021)

Advisory Committee for the Integrated Life Science Building (2023)

Chair of MCB Faculty Promotion Committee, Dr. Mamiko Yajima & Dr. Hongwei Yao (2023 - 2024)

Internal Advisory Board for the Proteomics Core (2023 - present)

CardioPulmonary Vascular Biology COBRE, Service Core Steering Committee (2023 - present)

Advisory board on NIH S10 grant for a Mass Spectrometer System (2024 - present).

SERVICE TO THE PROFESSION

Manuscript review

Behavioral Neuroscience (2014, 2017)
Behavioural Brain Research (2010, 2011, 2013-2016, 2018)
Biochimie (2011)
Chemosphere (2015)
Cold Spring Harbor Protocols (2011)
Developmental Biology (2005, 2012)
Developmental Dynamics (2008, 2009)
Development Growth and Differentiation (2009)
Developmental Psychobiology (2017)
Frontiers in Neuroscience (2023)
Genesis (2009)
Integrative Biology (2016)
International Journal of Developmental Biology (2006, 2010)
Journal of Neuroscience (2007)
Journal of Neuroscience Methods (2007)
Mechanisms of Development (2007)
Molecular Reproduction and Development (2008, 2009, 2014, 2016, 2017)
Pharmacology, Biochemistry and Behavior (2014, 2018, 2019, 2021)
Physiology & Behavior (2015, 2016)
PLOS One (2010, 2011, 2013)
Progress in Neuro-Psychopharmacology & Biological Psychiatry (2010)
Tissue Engineering (2008)
Zebrafish (2015, 2016, 2018)

Editorial services

1999 Guest editor, Microscopy Research and Technique

Grant review

2000 The National Science Foundation, Ad Hoc reviewer
2004 The National Science Foundation, Ad Hoc reviewer
2005 The National Science Foundation, Ad Hoc reviewer
2006 The National Science Foundation, Ad Hoc reviewer
2010 The National Science Foundation, Ad Hoc reviewer
2011 The National Science Foundation, Ad Hoc reviewer
2012 Graduate Women in Science, GWIS fellowships
2018 NIH ZMH1 ERB-C (C1) S Special Emphasis Panel / Scientific Review Group
2019 NIH Study Section (F03A: Neurodev. Synaptic Plasticity and Neurodegeneration)
2020 NIH Study Section (F03A: Neurodev. Synaptic Plasticity and Neurodegeneration)

NIH Webinar

2024 Webinar panelist, "Post-Award Requirements for an S10 Grant", September 2024

SERVICE TO THE COMMUNITY

The Leduc Bioimaging Facility is regularly visited by middle school and high school students. For many students, this is their first visit to a university and their first contact with scientific research. These visits were discontinued in 2020, due to Covid-19.

RESEARCH

Research in the Creton laboratory is focused on neurodevelopment, neurodegeneration, and behavior, using zebrafish as a model system. The studies aim to provide a better understanding of basic biological mechanisms and contribute to the prevention and treatment of various human disorders, including developmental brain disorders and Alzheimer's disease.

Laboratory personnel:

Sean Pelkowski (Research Assistant, 2010 - 2012)

Danielle Cliff / Bestoso (Research Assistant, 2012 - 2018)

Sara Tucker Edmister (Research Assistant, 2019 - 2021)

Thais Del Rosario Hernández (Research Assistant, 2021 - 2023, Senior RA, 2023 - present)

PUBLICATIONS

Peer-reviewed publications

- 1) Zivkovic D, **Creton R**, Zwaan G, de Bruijn WC and Dohmen R (1990). Polar localization of plasmamembrane $\text{Ca}^{2+}/\text{Mg}^{2+}$ ATPase correlates with the pattern of steady ionic currents in eggs of *Lymnaea stagnalis* and *Bithynia tentaculata* (Mollusca). Roux's Arch. Dev. Biol. 199: 134-145.
- 2) Zivkovic D, **Creton R** and Dohmen R (1991). Cell cycle related fluctuations in transcellular ionic currents and plasmamembrane $\text{Ca}^{2+}/\text{Mg}^{2+}$ ATPase activity during early cleavages of *Lymnaea stagnalis* embryos. Roux's Arch. Dev. Biol. 200: 120-131.
- 3) Zivkovic D, **Creton R**, Zwaan G and Dohmen R (1991). Localized activity of Ca^{2+} -stimulated ATPase and transcellular ionic currents during mesoderm induction in embryos of *Lymnaea stagnalis*. Roux's Arch. Dev. Biol. 200: 320-329.
- 4) **Creton R**, Zivkovic D, Speksnijder JE and Dohmen MR (1992). Manipulation of cytokinesis affects polar ionic current around the egg of *Lymnaea stagnalis*. Roux's Arch. Dev. Biol. 201: 346-353.
- 5) **Creton R**, Zivkovic D, Zwaan G, and Dohmen R (1993). Polar ionic currents around embryos of *Lymnaea stagnalis* during gastrulation and organogenesis. Int. J. Dev. Biol. 37: 425-431.
- 6) **Creton R**, Zwaan G and Dohmen R (1993). Specific developmental defects in molluscs after treatment with retinoic acid during gastrulation. Develop. Growth & Differ. 35: 357-364.
- 7) **Creton R**, Zwaan G and Dohmen R (1994). Retinoic acid modulates the pattern of cell division in embryos of *Lymnaea stagnalis* (Mollusca). Roux's Arch. Dev. Biol. 204: 70-74.
- 8) **Creton R**, Zwaan G and Dohmen R (1994). High pH prevents retinoic acid-induced teratogenesis. Int. J. Dev. Biol. 39: 409-414.
- 9) **Creton R** and Jaffe LF (1995). The role of calcium influx during the latent period in sea urchin fertilization. Dev. Growth & Diff. 37: 703-709.
- 10) Browne CL, **Creton R**, Karplus E, Mohler PJ, Palazzo RE and Miller AL (1996). Analysis of the calcium transient at NEB during the first cell cycle in dividing sea urchin eggs. Biol. Bull. 191: 5-16.

- 11) **Creton R**, Steele M and Jaffe LF (1997). Expression of apo-aequorin during embryonic development, how much is needed for calcium imaging? *Cell Calcium* 22, 439-446.
- 12) **Creton R**, Speksnijder JE and Jaffe LF (1998). Patterns of free calcium in the zebrafish embryo. *J. Cell Science* 111, 1613-1622.
- 13) Messerli MA, **Creton R**, Jaffe LF and Robinson KR (2000). Periodic increases in elongation rate precede increases in cytosolic Ca²⁺ during pollen tube growth. *Dev. Biol.* 222, 84-98.
- 14) **Creton R**, Kreiling JA, and Jaffe LF (2000). Presence and roles of calcium gradients along the dorsal-ventral axis in Drosophila embryos. *Dev Biol.* 217, 375-385.
- 15) **Creton R** (2004). The calcium pump of the endoplasmic reticulum plays a role in midline signaling during early zebrafish development. *Developmental Brain Research* 151, 33-41.
- 16) Wong JL, **Creton R**, and Wessel GM (2004). The oxidative burst at fertilization is dependent upon activation of the dual oxidase Udx1. *Dev. Cell* 7, 801-814.
- 17) Kreiling J.A., **Creton R**, Reinisch C. (2007). Early embryonic exposure to polychlorinated biphenyls disrupts heat-shock protein 70 cognate expression in zebrafish. *J Toxicol Environ Health A.* 70, 1005-1013.
- 18) Kreiling J.A., Prabhat, Williams G., **Creton R.** (2007). Analysis of Kupffer's vesicle in zebrafish embryos using a cave automated virtual environment. *Dev. Dyn.* 236, 1963-1969.
- 19) Kreiling J.A., Balantac Z.L, Crawford A., Ren Y., Toure J., Zchut S., Kochilas L., **Creton R.** (2008). Suppression of the endoplasmic reticulum calcium pump during zebrafish gastrulation affects left-right asymmetry of the heart and brain. *Mech Dev* 125, 396-410.
- 20) **Creton, R.** (2009). Automated analysis of behavior in zebrafish larvae. *Behav. Brain Res* 203, 127-136.
- 21) Colwill R.M., **Creton R.** (2011). Locomotor behaviors in zebrafish (*Danio rerio*) larvae. *Behav. Processes* 86, 222-229. PMID: PMC3063417.
- 22) Pelkowski S.D., Kapoor M., Richendrfel H.A., Wang X., Colwill R.M., **Creton R.** (2011). A novel high-throughput imaging system for automated analyses of avoidance behavior in zebrafish larvae. *Behav. Brain Res*, 223:135-44. PMID: PMC3111907
- 23) Richendrfel H., Pelkowski S.D., Colwill R.M., **Creton R** (2012). On the edge: pharmacological evidence for anxiety-related behavior in zebrafish larvae. *Behav. Brain Research* 228, 99 - 106. PMID: PMC3264763.
- 24) Richendrfel H., Pelkowski S.D., Colwill R.M., **Creton R** (2012). Developmental sub-chronic exposure to chlorpyrifos reduces anxiety-related behavior in zebrafish larvae. *Neurotoxicol. Teratol.* 34, 458-465. PMID: PMC3573706.
- 25) O'Neale A, Ellis J, **Creton R**, Colwill RM (2014). Single stimulus learning in zebrafish larvae. *Neurobiol Learn Mem.* 108:145-154. PMID: PMC3946257.
- 26) Clift, D., Richendrfel, H., Thorn, R.J., Colwill, R.M., and **Creton, R.** (2014). High-throughput analysis of behavior in zebrafish larvae: effects of feeding. *Zebrafish* 11, 455-461. PMID: PMC4172468.
- 27) Clift D.E., Thorn R.J., Passarelli E.A., Kapoor M., LoPiccolo M.K., Richendrfel H.A., Colwill R.M., **Creton R.** (2015). Effects of embryonic cyclosporine exposures on brain development and behavior. *Behavioural Brain Research* 282, 117-124. PMID: PMC4323675
- 28) Richendrfel H., **Creton R.** (2015). Chlorpyrifos and malathion have opposite effects on behaviors and brain size that are not correlated to changes in AChE activity. *Neurotoxicology* 49, 50-58. PMID: PMC4523399.
- 29) Lovato AK, **Creton R**, Colwill RM (2016). Effects of embryonic exposure to polychlorinated biphenyls (PCBs) on larval zebrafish behavior. *Neurotoxicol Teratol.* 53, 1-10. PMID: PMC4703504
- 30) Lin CL, Taggart AJ, Lim KH, Cygan KJ, Ferraris L, **Creton R**, Huang YT, Fairbrother WG (2016). RNA structure replaces the need for U2AF2 in splicing. *Genome Res.* 26, 12-23. PMID: PMC4691745
- 31) Gonzalez ST, Remick D, **Creton R**, Colwill RM (2016). Effects of embryonic exposure to polychlorinated biphenyls (PCBs) on anxiety-related behaviors in larval zebrafish. *NeuroToxicology* 53, 93-101. PMID: PMC4808333.

- 32) Mallick EM, Bergeron AC, Jones SK Jr, Newman ZR, Brothers KM, **Creton R**, Wheeler RT, Bennett RJ. (2016). Phenotypic Plasticity Regulates *Candida albicans* Interactions and Virulence in the Vertebrate Host. *Front Microbiol.* 7 (art. 780), 1-18. PMID: PMC4880793
- 33) Holloway MP, DeNardo BD, Phornphutkul C, Nguyen K, Davis C, Jackson C, Richendrfel H, **Creton R**, Altura RA (2016). An asymptomatic mutation complicating severe chemotherapy-induced peripheral neuropathy (CIPN): a case for personalised medicine and a zebrafish model of CIPN. *Nature Partner Journals (npj), Genomic Medicine* 1, 16016.
- 34) Thorn R.J., Clift D.E., Ojo O., Colwill R.M., **Creton R**. (2017). The loss and recovery of vertebrate vision examined in microplates. *PLoS One.* 12: e0183414. PMID: PMC5560659
- 35) Richendrfel H, **Creton R** (2018). Cluster analysis profiling of behaviors in zebrafish larvae treated with antidepressants and pesticides. *Neurotoxicology and Teratology* 69, 54-62. PMID: PMC5930167
- 36) Thorn RJ, Dombroski A, Eller K, Dominguez-Gonzalez TM, Clift DE, Baek P, Seto RJ, Kahn ES, Tucker SK, Colwill RM, Sello JK, **Creton R**. (2019). Analysis of vertebrate vision in a 384-well imaging system. *Scientific Reports* 9: 13989. PMID: PMC6764987.
- 37) Ranasinghe P, Thorn RJ, Seto R, **Creton R**, Bridges WC, Chapman SC, Lee CM (2020). Embryonic Exposure to 2,2',3,5',6-pentachlorobiphenyl (PCB-95) Causes Developmental Malformations in Zebrafish. *Environ Toxicol Chem.* 39(1): 162-170. PMID: 31499578
- 38) Ranasinghe P, Thorn RJ, **Creton R**, Lee CM (2021). Enantioselective Toxicity Effects of 2,2',3,5',6-Pentachloro Biphenyl (PCB-95) on Developing Brains in Zebrafish Larvae. *Bull Environ Contam Toxicol.* 2021 Aug;107(2):351-360. Epub 2021 Jul 6. PMID: 34230987.
- 39) Tucker Edmister S, Ibrahim R, Kakodkar R, Kreiling JA, **Creton R** (2022). A zebrafish model for calcineurin-dependent brain function. *Behav Brain Res.* 416: 113544. Epub Aug. 20, 2021. PMID: 34425181.
- 40) Tucker Edmister S, Del Rosario Hernández T, Ibrahim R, Brown CA, Gore SV, Kakodkar R, Kreiling JA, **Creton R** (2022). Novel use of FDA-approved drugs identified by cluster analysis of behavioral profiles. *Scientific Reports* 12(1): 6120. PMID: PMC9023506.
- 41) Tucker Edmister S, **Creton R**. (2022). Modulation of calcineurin signaling during development (2022). *Dev Neurobiol.* 82(6): 505-516. PMID: 35785416.
- 42) Gore SV, Kakodkar R, Del Rosario Hernández T, Edmister ST, **Creton R** (2023). Zebrafish Larvae Position Tracker (Z-LaP Tracker): a high-throughput deep-learning behavioral approach for the identification of calcineurin pathway-modulating drugs using zebrafish larvae. *Sci Rep.* 13 (1): 3174. PMID: 36823315; PMID: PMC9950053.
- 43) Del Rosario Hernández T, Joshi NR, Gore SV, Kreiling JA, **Creton R** (2023). An 8-cage imaging system for automated analyses of mouse behavior. *Sci Rep.* 13 (1): 8113. PMID: 37208415; PMID: PMC10199054.
- 44) Del Rosario Hernández T, Gore SV, Kreiling JA, **Creton R** (2024). Drug repurposing for neurodegenerative diseases using Zebrafish behavioral profiles. *Biomed Pharmacother.* 171: 116096. PMID: 38185043; PMID: PMC10922774.
- 45) Gore SV, Del Rosario Hernández T, **Creton R** (2024). Behavioral effects of visual stimuli in adult zebrafish using a novel eight-tank imaging system. *Front Behav Neurosci.* 18: 1320126. PMID: 38529416; PMID: PMC10962262.
- 46) Del Rosario Hernández T, Joshi NR, Gore SV, Kreiling JA, **Creton R** (2024). Combining supervised and unsupervised analyses to quantify behavioral phenotypes and validate therapeutic efficacy in a triple transgenic mouse model of Alzheimer's disease. *Biomed Pharmacother.* 181: 117718. PMID: 39637754.

Other peer-reviewed publications (reviews, editorials)

- 1) Jaffe LF and **Creton R** (1998). On the conservation of calcium wave speeds. *Cell Calcium*, 24, 1-8.
- 2) **Creton R**, Kreiling JA, and Jaffe LF. (1999). Calcium imaging with chemiluminescence. *Microsc. Res. Tech.*, 46, 390-397

- 3) **Creton R** and Jaffe L.F. (2001). Chemiluminescence microscopy as a tool in biomedical research. *BioTechniques* 31, 1098-1105.
- 4) Colwill R.M., **Creton R.** (2011). Imaging escape and avoidance behavior in zebrafish larvae. *Reviews in the Neurosciences* 22, 63-73. PMID: PMC3092434.
- 5) Richendrfer H.A., **Creton R.** (2013). Automated high-throughput behavioral analyses in zebrafish larvae. *JoVE* 77, e50622. PMID: PMC3731428.

Books and book chapters

- 1) **Creton R** (1994). Ionic currents in embryonic development. PhD Thesis, published by Uitgeverij WCC, Utrecht, The Netherlands, ISBN 90-7128239-2.
- 2) Colwill R.M., **Creton R.** (2010). Chapter 3. Automated imaging of avoidance behavior in larval zebrafish. *Humana Press / Springer Protocols: Zebrafish Neurobehavioral Protocols Series: Neuromethods*, Vol. 51, p. 35-48. 1st Edition. Kalueff, A.V.; Cachat, J.M. (Eds.). ISBN: 978-1-60761-952-9.
- 3) Colwill R.M., **Creton R.** (2012). Chapter 7. Automated imaging of visual recognition memory in larval zebrafish. *Humana Press / Springer Protocols: Zebrafish Neurobehavioral Protocols II*. Kalueff A.V. and Stewart A (Eds.).
- 4) Richendrfer H., **Creton R.**, Colwill R.M. (2014). Chapter 12. The embryonic zebrafish as a model system to study the effects of environmental toxicants on behavior. *Nova Science Publishers, Inc: Zebrafish, topics in reproduction, toxicology and development*. p. 245-264. Lessman, C.A., Carver, E.A. (Eds.). ISBN: 978-1-63117-558-9

Other non-peer reviewed publications

- 1) **Creton R.** (1999). Introduction to calcium identification. *Microsc. Res. Tech.* 46, 341. Introduction to special issue on 'Calcium Identification'.
- 2) **Creton R.**, Wessel G.M. (2011). The passing of a major wave: Lionel F. Jaffe (December 28, 1927 - April 27, 2011). *Mol Reprod Dev.* 78, Issue 6.

ABSTRACTS

- 1) Bretschneider F, **Creton R**, Dohmen MR, Heijmen PS, Versluis JP (1995). Offset currents in catfish electroreceptors measured with the vibrating probe. *Pfluegers Arch. Ges. Physiol.* 430 suppl, R160.
- 2) **Creton R**, Jaffe LF (1996). Aequorin and Ca²⁺ imaging. *International Symposium on Bioluminescence and Chemiluminescence*.
- 3) **Creton R**, Speksnijder JE, Jaffe LF (1998). Calcium patterns in the zebrafish embryo. *Zebrafish development and genetics meeting*, Cold Spring Harbor, NY.
- 4) Jaffe LF, Steele M, **Creton R** (1997). Elevation of calcium associated with Dpp (TGF- β) signaling in the *Drosophila* embryo. *Dev. Biol.* 186, p 274, A63.
- 5) **Creton R**, Speksnijder JE, Jaffe LF (1998). Calcium gradients in the developing brain of zebrafish embryos. *Zebrafish development and genetics meeting*, Cold Spring Harbor, NY.
- 6) **Creton R**, Speksnijder JE, Jaffe LF (1998). Patterns of free calcium in zebrafish embryos. *J. General Physiology* 112, p. 36.
- 7) **Creton R**, Jaffe LF (1998). Local calcium signaling in a large cell with multiple nuclei. *J. General Physiology* 112, p. 46.
- 8) Zchut S., **Creton R.**, Kochilas L. (2005). HDAC inhibition impairs cardiac development in the zebrafish embryo". *APS-SPR Annual Meeting*, Washington, DC, USA, May 14-17, 2005 (poster presentation).
- 9) Zchut S., **Creton R.**, Kochilas L. (2005). The role of HDAC3 in zebrafish cardiac development. *Meeting of the Society for Developmental Biology*, San Francisco, CA (poster presentation).

- 10) Zchut S., **Creton R.**, Kochilas L (2005). The role of HDAC3 in zebrafish cardiac development". Junior Investigator Award Lifespan Research Celebration.
- 11) Zchut S, **Creton R.**, Kochilas L (2006). Histone Deacetylase 3 (HDAC3) Is Essential For Embryonic Heart Development In Zebrafish. APS-SPR Annual Meeting, San Francisco, CA.
- 12) Kreiling J.A., Balantac Z.L, Toure J., Zchut S., Kochilas L., and **Creton R** (2006). Calcium manipulation in zebrafish embryos affects left-right asymmetry of the heart and brain. Northeast Regional Meeting of the Society for Developmental Biology.
- 13) Kreiling J., Balantac Z., Toure J., Zchut S., Kochilas L., **Creton R.** (2007). Calcium Manipulation in Zebrafish Embryos Affects Left-Right Asymmetry of the Heart and Brain. APS-SPR Annual Meeting, Toronto, Canada.
- 14) Kreiling J.A., Balantac Z.L., Crawford A., Toure J., Celik A., Kochilas L.K., **Creton R.** (2007). Inhibition of the endoplasmic reticulum calcium ATP-ase affects the early steps of left-right patterning in zebrafish embryos. American Heart Association, Orlando, Florida.
- 15) Williams G., Nathanson J., **Creton R.** (2008). The Leduc Bioimaging Facility. Rhode Island Research Alliance Symposium. Providence, Rhode Island.
- 16) **Creton R.** (2008). The Leduc Bioimaging Facility. Brown University Postdoc Orientation, Resource and Networking Event. Providence, Rhode Island.
- 17) Kreiling J., Colwill R.M., **Creton R.** (2009). Brain defects induced by modulators of calcium signaling. Society for Developmental Biology Northeast Regional Meeting, Woods Hole, Massachusetts.
- 18) Kreiling J., Colwill R.M., **Creton R.** (2009). Modulators of calcium signaling induce developmental brain defects and behavioral changes. 6th European Zebrafish Genetics and Development Meeting, Rome, Italy.
- 19) Colwill R.M., Kreiling J.A., **Creton R.** (2010). Activity in zebrafish (*Danio rerio*) larvae: developmental patterns and effects of PCBs. Eastern Psychological Association Meeting, New York City, NY
- 20) Colwill R.M., Kambe C.J., Kreiling J.A., **Creton R.** (2010). Social behavior in larval zebrafish (*Danio rerio*): an animal model of autism. Eastern Psychological Association Meeting, New York City, NY
- 21) Colwill R.M., Gishen K.E., Cole E.D., **Creton R.** (2010). The development of asymmetric behavior in zebrafish larvae. Society for Developmental Biology Northeast Regional Meeting, Woods Hole, Massachusetts.
- 22) Colwill R.M., Gishen K.E., Cole E.D., **Creton R.** (2010). Automated imaging of avoidance behavior in zebrafish larvae. 9th International Meeting on Zebrafish Development and Genetics, Madison, Wisconsin.
- 23) Pelkowski S.D., Richendrfer H.A., Kapoor M., Wang X., Colwill R.M., **Creton R.** (2011). A novel high-throughput imaging system for automated analyses of behavior in zebrafish larvae. Society for Developmental Biology Northeast Regional Meeting, Woods Hole, Massachusetts.
- 24) Richendrfer H.A., Pelkowski S.D., Kapoor M., Colwill R.M., **Creton R.** (2011). A novel high-throughput system for automated analyses of behavior in zebrafish larvae. New England Science Symposium, J.B. Martin Conference Center at Harvard Medical School, Boston, Massachusetts.
- 25) Lovato A.K., Pelkowski S., **Creton R.**, Colwill R.M. (2011). Embryonic exposure to environmentally relevant concentrations of polychlorinated biphenyls (PCBs) disrupts avoidance behavior in zebrafish larvae. Society for Neuroscience, Washington, DC.
- 26) Richendrfer H., Pelkowski S., Colwill R.M., **Creton R.** (2011). A novel high-throughput method to detect anxiety-related behaviors in zebrafish larvae. Society for Neuroscience, Washington, DC.
- 27) Richendrfer H., Pelkowski S., Colwill R.M., **Creton, R.** (2012). Chlorpyrifos and anxiety: What the zebrafish model can tell us about pesticide exposure during development. Society for Developmental Biology, Northeast Regional Meeting, Woods Hole, Massachusetts.

- 28) Pelkowski S.D., Richendrfer H.A., Kapoor M., Wang X., Colwill R.M., **Creton R.** (2012). Automated analyses of avoidance behavior in zebrafish larvae. International Meeting on Zebrafish Development and Genetics, Madison, Wisconsin.
- 29) Pelkowski S.D., Richendrfer H.A., Colwill R.M., **Creton R.** (2012). Automated analyses of behavior in zebrafish larvae. Measuring Behavior, Utrecht, Netherlands.
- 30) Richendrfer H. and **Creton R.** (2012). Chlorpyrifos during development reduces anxiety-related behavior in zebrafish larvae. Society of Toxicology, San Francisco, CA.
- 31) Richendrfer H., Pelkowski S., LoPiccolo M., Kapoor M., Colwill R.M., and **Creton R.** (2012). "Developmental toxicity in zebrafish larvae from pharmaceuticals that modulate calcium signaling pathways" Society for Neuroscience, New Orleans, LA
- 32) Richendrfer H, Pelkowski S, Kapoor M, LoPiccolo M, Colwill RM, **Creton R** (2013). Assessment of developmental toxicity by automated analyses of behavior in zebrafish larvae. 5th Strategic Conference of Zebrafish Investigators, Pacific Grove, CA, January 19-23rd.
- 33) Richendrfer H., and **Creton R.** (2013). Chlorpyrifos affects specific types of zebrafish larval behavior if administered during distinct developmental time periods. Society of Toxicology, San Antonio, TX.
- 34) Bestoso D., Regier E., Richendrfer H., **Creton R.** (2013). The behavior of 6 and 7-day-old zebrafish larvae is affected by feeding. Society for Developmental Biology, Northeast Regional Meeting, Woods Hole, Massachusetts.
- 35) Richendrfer H., Bestoso D, Regier E., **Creton R.** (2013). Zebrafish behavior is affected by modulation of embryonic calcium signaling pathways. Society for Developmental Biology, Northeast Regional Meeting, Woods Hole, Massachusetts.
- 36) Welch E.S., Gonzales S., Remick D., **Creton R.**, Colwill R.M. (2013). Embryonic exposure to environmentally relevant concentrations of polychlorinated biphenyls (PCBs) affects startle response in zebrafish larvae. Eastern Psychological Association, New York, New York.
- 37) Richendrfer H., **Creton R.** (2013). Several larval zebrafish behaviors are affected by the pesticide chlorpyrifos if it is administered during distinct developmental time periods. 8th European zebrafish meeting. Barcelona.
- 38) Holloway M.P., DeNardo B.D., Davis C.M., Hazin I., **Creton R.**, Altura R. (2013). Zebrafish model of chemotherapy induced neuropathy complicated by Charcot-Marie-Tooth. Zebrafish for Personalized / Precision Medicine Conference, Toronto.
- 39) Richendrfer H., **Creton R.** (2014). Zebrafish brain development is altered by early exposure to the organophosphate chlorpyrifos. Society of Toxicology, Phoenix, Arizona.
- 40) Clift D., Thorn R., Passarelli E., Kapoor M., LoPiccolo M.K., Richendrfer H., Colwill R.M., **Creton R.** (2015). Effects of embryonic cyclosporine exposures on brain development and behavior. Society for Developmental Biology, Northeast Regional Meeting, Woods Hole, Massachusetts.
- 41) Thorn R., Clift D., **Creton R.** (2015). The role of calcineurin in the developing brain. Society for Developmental Biology, Northeast Regional Meeting, Woods Hole, Massachusetts.
- 42) Clift D., Richendrfer H., Thorn R., Colwill R.M., **Creton R.** (2015). Improving high-throughput analysis of behavior in zebrafish larvae. Society for Developmental Biology, Northeast Regional Meeting, Woods Hole, Massachusetts.
- 43) Thorn R, Clift D, **Creton R** (2016). Differing roles for calcineurin regulatory subunits in zebrafish brain development. Society for Developmental Biology, Northeast Regional Meeting, Woods Hole, Massachusetts.
- 44) Clift D, Passarelli E, Richendrfer H, Thorn R, Colwill RM, **Creton R** (2016). Eye development and regeneration examined by automated analyses of behavior. Society for Developmental Biology, Northeast Regional Meeting, Woods Hole, Massachusetts.
- 45) Thorn R, Clift D, **Creton R** (2016). The regulatory subunits of calcineurin differentially direct zebrafish brain development. 12th International Conference on Zebrafish Development and Genetics, The Allied Genetics Conference (TAGC), Orlando, Florida.
- 46) Clift D., Thorn R, Passarelli E, Colwill RM, **Creton R** (2016). Photoreceptor development and regeneration examined by automated analyses of behavior. 12th International Conference on

Zebrafish Development and Genetics, The Allied Genetics Conference (TAGC), Orlando, Florida.

- 47) Madnick S, Huffman K, **Creton R**, Morgan J. (2018). The high-content screening system. University of Rhode Island, RI C-AIM symposium.
- 48) Dominguez T, Clift D, Thorn R, Dombroski A, Sello J, **Creton R** (2018). Imaging behavior of zebrafish larvae exposed to diazepam (Valium) using a 96-well plate assay. Undergraduate Research Symposium, Brown University, Providence, RI.
- 49) Dominguez T, Clift D, Thorn R, Dombroski A, Sello J, **Creton R** (2018). Imaging behavior of zebrafish larvae exposed to diazepam (Valium) using a 96-well plate assay. Leadership Alliance National Symposium (LANS), Hartford, Connecticut.
- 50) Dominguez T, Clift D, Thorn R, Dombroski A, Sello J, **Creton R** (2018). High-throughput analysis of zebrafish larval behavioral response to Valium. Annual Biomedical Research Conference for Minority Students, Indianapolis, Indiana.
- 51) Dombroski A, **Creton R**, Sello J (2019). Sedation and its Reversal by Novel Small Molecules. MPP T32 Graduate Program Retreat.
- 52) Tucker SK, Thorn RJ, Dombroski A, Eller K, Dominguez-Gonzalez TM, Clift DE, Baek P, Seto RJ, Kahn ES, Colwill RM, Sello JK, **Creton R**. (2019). Analysis of vertebrate vision in a 384-well imaging system. ZDM12, the 12th meeting of the Zebrafish Disease Models Society, Boston.
- 53) Gore S, Kakodkar R, Del Rosario Hernández T, Tucker Edmister S., Creton R (2022). High throughput automated behavioral analysis of novel calcineurin modulating compounds using zebrafish larvae. International Zebrafish Conference (IZFC), Montreal, Canada.
- 54) Gore SV, Del Rosario Hernandez T, Joshi NR, Kreiling JA, **Creton R** (2023). Drug discovery for Alzheimer's disease by automated analysis of zebrafish behavior. Zebrafish Neurobiology Meeting, Cold Spring Harbor, NY.
- 55) Del Rosario Hernández T, Gore SV, Kreiling JA, **Creton R** (2023). Investigating new therapeutic indications for FDA-approved compounds through the quantification of complex behaviors in zebrafish larvae. Zebrafish Neurobiology Meeting, Cold Spring Harbor, NY.
- 56) Gore SV, Kakodkar R, Del Rosario Hernández T, Tucker Edmister S, **Creton R** (2023). Z-Lap Tracker - A machine learning-based approach for behavioral characterization of zebrafish larvae in a high-throughput 384-wells setting. Zebrafish Neurobiology Meeting, Cold Spring Harbor, NY.

INVITED PRESENTATIONS

- 1) Creton R. (January 2006). Seminar series in Reproductive Biology, Kilguss Research Institute, Providence, RI.; 'A split mind and a change of heart, a story of embryonic midline signaling'.
- 2) Creton R. (October 2007). Cardiovascular Research Data Club, Laboratories for Molecular Medicine, Providence, RI.; 'Some hearts are all right'.
- 3) Creton R. (June 2007). Cardiovascular Research Center, Rhode Island Hospital; 'Microscopes, *in vivo* imaging, and early development of the heart'.
- 4) Creton R. (May 2008). Cardiovascular Research Center, Rhode Island Hospital; 'Introduction to basic methodologies in fluorescence microscopy'.
- 5) Creton R. (September 2009). 21st Annual MCB retreat, Haffenreffer, Bristol, RI; 'What's left and who's right?'.
- 6) Creton R. (October 2009). MCB Graduate Program, Faculty on Parade, Sidney Frank Hall, Providence, RI; 'Brain defects induced by modulators of calcium signaling'.
- 7) Creton R. (September 2010). Basic Methodology in Cardiovascular & Pulmonary Research, Coro West Center, Providence, RI; 'Fluorescence microscopy, image analysis, and asymmetry in the heart and brain'.
- 8) Creton R. (January 2013). Temple University, Department of Biology: "Effects of environmental factors on the developing brain".
- 9) Creton R. (October 2013). Basic Methodology in Cardiovascular & Pulmonary Research, Coro West Center, Providence, RI; 'Fluorescence microscopy'.

- 10) Creton R. (April 2014). Pathobiology Seminar Series, Brown University: "Effects of environmental factors on the developing brain".
- 11) Creton R. (October 2015). Superfund Research Program Retreat, Brown University: "Molecular Pathology Core".
- 12) Creton R. (November 2015). Mason Eye Institute, University of Missouri: "High-throughput analyses of visual defects".
- 13) Creton R. (January 2016). Biology Department, Central Michigan University: "Effects of environmental factors on brain development and behavior".
- 14) Creton R. (October 2017). BIBS Faculty Chalk Talk Series, Providence, RI: "Imaging systems for studying brain development and behavior".
- 15) Creton R. (October 2017). Superfund Research Program Retreat, Providence, RI: "Molecular Pathology Core".
- 16) Creton R. (November 2017). VA Medical Center, Providence, RI: "Imaging systems at Brown University".
- 17) Creton R. (January 2018). CVRC Seminar Series, Rhode Island Hospital, Providence, RI: "Frontiers in Medical Science Research: Imaging at Brown University".
- 18) Creton R. (January 2018). Rhode Island Consortium for Coastal Ecology Assessment, Innovation and Modeling (RI-C-AIM) meeting, University of Rhode Island, RI: "Opera Phenix high-content imaging system".
- 19) Creton R. (July 2018). Zebrafish Disease Models, ZDM11, Leiden, Netherlands: "The loss and recovery of vertebrate vision examined in microplates".
- 20) Creton R. (October 2018). University of Rhode Island Bay Campus, RI: "3D imaging of fluorescent samples with the Opera Phenix".
- 21) Creton R. (February 2019). Biology Chairs Meeting, Brown University: "The Leduc Bioimaging Facility".
- 22) Creton R. (October 2019). Cancer Biology Special Seminar, Brown University: "The Molecular Pathology Core and Leduc Bioimaging Facility".
- 23) Creton R. (June 2020). Leadership Alliance, Scientific Techniques and Concepts Workshop, Brown University: "Microscopy".
- 24) Creton R. (December 2022). Aging Center Brainstorming Breakfast Chalk talks, Brown University: "Calcineurin in Alzheimer's disease".
- 25) Creton R. (April 2023). Center for Alternatives to Animals in Testing, Foundation meeting, Brown University: "Alzheimer's models".
- 26) Creton R. (December 2023). Structural Biology Community Seminar Series, Brown University "Cryo-EM at Brown".
- 27) Creton R. (December 2024). Center for Alzheimer's Disease Research, Brown University: "Cyclosporine-type drugs as therapeutics for Alzheimer's disease".

GRANTS

Current grants (2024 calendar year)

1) NIH / NIGMS, R01 GM136906

Project period: 09/11/2020 - 06/30/2025

Project title: Emerging imaging technologies for automated analyses of calcineurin-dependent brain function

Role on project: Principal Investigator

Total award amount: \$ 1,273,000

2) Zimmerman Innovation Award in Brain Science

Project period: 04/01/2024 – 03/31/2025

Project title: Drug discovery for the prevention and treatment of Alzheimer's Disease

Role on project: Principal Investigator (MPI: Robbert Creton and Jill Kreiling)
Total award amount: \$100,000

3) NIH / Office of the Director, S10 OD032301

Project period: 06/01/2023 - 11/30/2024
Project title: Cryo-TEM for Biomedical Research
Role on project: Principal Investigator
Total award amount: \$ 1,390,836

4) NIH / NIGMS, S10 OD036295

Project period: 8/1/2024 - 5/31/25
Project title: Acquisition of a Mass Spectrometer System to Advance Proteomics Research in Rhode Island
Role on project: Advisory board (PI: Arthur Salomon)
Total award amount: \$1,214,295

5) Brown University Core Research Facility (CRF) Infrastructure Program

Project period: 07/01/23 - 06/30/24 (FY24)
Project title: Vitrobot 5 and Falcon C Detector for Cryo-TEM
Role on project: Principal Investigator
Total award amount: \$ 97,414 (Vitrobot) and \$ 200,000 (Falcon C Detector)

6) NIH / NIGMS, T32 GM136566

Project period: 07/01/2020 - 06/30/2025
Project title: Interdisciplinary and inclusive predoctoral training in molecular, cellular, and biochemical sciences
Role on project: Trainer (PIs: Mowry, Larschan, Johnson)
Total award amount: \$ 2 million

7) NIH / NIGMS, T32 AG041688

Project period: 05/01/2022 – 04/30/2027
Project title: Brown University Training Program in the Molecular Biology of Aging
Role on project: Trainer (PIs: Sedivy, Neretti, Tatar)
Total award amount: \$ 2 million

8) NIH / NIGMS, P30 GM149398

Project period: 06/01/2023 – 05/31/2028
Project title: CardioPulmonary Vascular Biology COBRE
Role on project: Service Core Steering Committee (PIs: Choudhary, Harrington)
Total award amount: \$ 4.5 million

9) Fulbright-Nehru Academic and Professional Excellence Fellowship

Project period: 8/15/2023 - 5/14/2024
Project title: Heparan sulfate proteoglycan modifications: role in the central nervous system related behavior of the developing and adult Danio rerio
Role on project: My laboratory hosted Dr. Mallika Chatterjee, a visiting professor from Amity University in India
Total award amount: \$ 32,700

Completed Grants

1) NIH / COBRE, P20 RR15578

Project period: 09/30/2000 - 08/31/2005

Project title: Center for Genetics and Genomics
Role on project: Director of Bioimaging Facility (PI: John Sedivy)
Total award amount: \$ 11 million

2) NIH / COBRE, P20 RR015578-03 S1

Project period: 09/01/2002 - 08/31/2005
Project title: Supplement to Brown University COBRE award
Role on project: Director of Bioimaging Facility (PI: John Sedivy)
Total award amount: \$ 496,937

3) NIH / NCRR, grant S10 RR017942

Project period: 05/01/2003 - 04/30/2004
Project title: Confocal Microscope
Role on project: Director of Bioimaging Facility (PI: Gary Wessel)
Total award amount: \$ 431,000

4) NIH / COBRE, P20 RR018728

Project period: 09/30/2003 - 06/30/2008
Project title: COBRE for Perinatal Biology
Role on project: Consultant for microscopy core (PI: Jim Padbury)
Total award amount: \$ 9 million

5) National Science Foundation, IOB-0421654

Project period: 08/01/2004 - 07/31/2007
Project title: Calcium signaling in the developing zebrafish brain
Role on project: Principal Investigator
Total award amount: \$ 344,239

6) The Rhode Island Foundation, grant 20050236

Project period: 01/25/2005 - 12/31/2005
Project title: The role of HDACs in zebrafish heart development
Role on project: Principal investigator
Total award amount: \$ 10,000

7) NIH / NICHD, R03 HD051895

Project period: 07/01/2006 – 06/30/2008
Project title: The role of HDAC3 in cardiac growth and development
Role on project: Collaborator (PI: Lazaros Kochilas)
Total award amount: \$ 150,000

8) NIH / NCRR, S10 RR023693

Project period: 4/1/2008 - 3/31/2009
Project title: Shared Zeiss Meta Confocal Microscope
Role on project: Director of Bioimaging Facility (PI: Elaine Bearer)
Total award amount: \$ 497,000

9) NIH / NIEHS, P42 ES013660

Project period: 04/01/2009 - 03/31/2014 (ext. 03/31/2015)
Project title: Superfund Research Program: "Reuse in RI: A State-based Approach to Complex Exposures", Molecular Pathology Core (Core D)
Role on project: Core Leader, 07/01/2012 - present (PI: Kim Boekelheide)
Total award amount: \$ 14 million

- 10) NIH / NIEHS, R03 ES017755
 - Project period: 08/01/2010 - 07/31/2012 (ext. 07/31/2014)
 - Project title: Zebrafish model of hyperactivity induced by embryonic PCB exposure
 - Role on project: Collaborator (PI: Ruth Colwill)
 - Total award amount: \$ 146,277

- 11) Brown Institute for Brain Science (BIBS) Core Facility Fund
 - Project period: 11/16/2012 - 11/15/2013
 - Project title: Multiphoton microscope for the Leduc Bioimaging Facility
 - Role on project: Principal Investigator
 - Total award amount: \$ 540,828

- 12) Brown University Core Infrastructure Award
 - Project period: 04/08/2014 - 03/31/2015
 - Project title: Computer, camera and software upgrades for the Bioimaging Facility
 - Role on project: Principal Investigator
 - Total award amount: \$ 38,165

- 13) NIH / NIEHS, F32 ES021342
 - Project period: 09/03/2012 - 08/31/2015
 - Project title: The effects of organophosphates on anxiety-related behavior and neurodevelopment
 - Role on project: Mentor (PI: Holly Richendrfer)
 - Total award amount: \$ 161,802

- 14) NIH / NICHD, R01 HD060647
 - Project period: 03/01/2010 - 01/31/2015 (ext. 01/31/2016)
 - Project title: Brain defects induced by embryonic exposure to modulators of calcium signaling
 - Role on project: Principal Investigator
 - Total award amount: \$ 1,263,230

- 15) NIH / Office of the Director, S10 OD023461
 - Project period: 04/15/2017 – 04/14/2018
 - Project title: SEM for serial block-face imaging
 - Role on project: Principal Investigator
 - Total amount: \$ 790,587

- 16) Brown University Core Research Facility (CRF) Infrastructure Program
 - Project period: 07/12/17 - 06/30/18 (FY18)
 - Project title: Confocal microscope
 - Role on project: Principal Investigator
 - Total award amount: \$ 140,000

- 17) Brown University Core Research Facility (CRF) Infrastructure Program
 - Project period: 07/01/18 - 06/30/19 (FY19)
 - Project title: Nikon Ti2-E Fluorescence Microscope for high-content imaging
 - Role on project: Principal Investigator
 - Total award amount: \$ 153,761

- 18) NIH / NIMH, R01 MH105442
 - Project period: 09/16/2014 - 05/31/2019

Project title: Mechanisms of circuit failure and treatments in patient-derived neurons in autism
Role on project: Key personnel / OSC (PI: Eric Morrow)
Total award amount: \$ 2,031,250

19) NIH / NIMH, R01 MH102418

Project period: 04/01/2015 - 02/28/2019
Project title: Autism-linked endosomal mechanisms in neuronal arborization and connectivity
Role on project: Key personnel / OSC (PI: Eric Morrow)
Total award amount: \$ 1,625,000

20) NIH / NIMH, R21 MH115392

Project period: 09/18/2017 - 08/31/2019
Project title: Convergent cellular mechanisms governed by UBE3A and NHEs in neurons
Role on project: Key personnel / OSC (PI: Eric Morrow)
Total award amount: \$ 487,500

21) NIH / NIEHS, P42 ES013660

Project period: 09/30/2015 - 03/31/2020
Project title: Superfund Research Program: "Toxicant Exposures in Rhode Island: Past, Present, and Future", Molecular Pathology Core.
Role on project: Core leader (PI: Robert Hurt)
Total award amount: \$ 11 million (\$604,849 for the Molecular Pathology Core)

22) NIH / NIGMS, T32 GM007601

Project period: 07/01/2015 - 06/30/2020
Project title: Training in molecular and cell biology and biochemistry
Role on project: Trainer (PI: Kimberly Mowry)
Total award amount: \$ 1,824,545

23) Brown University Core Research Facility (CRF) Infrastructure Program

Project period: 07/01/19 - 06/30/20 (FY20)
Project title: Leica EM UC7 Ultramicrotome
Role on project: Principal Investigator
Total award amount: \$ 53,206

24) NIH / NEI, R01 EY024562

Project period: 09/1/2015 - 08/31/2021 (no cost extension)
Project title: Automated analyses of behavior in response to visual stimuli
Role on project: Principal Investigator
Total award amount: \$ 1,377,294

25) Brown University Core Research Facility (CRF) Infrastructure Program

Project period: 07/01/20 - 06/30/21 (FY21)
Project title: Slide scanner
Role on project: Principal Investigator
Total award amount: \$ 150,000

26) NIH / NIEHS, T32 ES00727

Project period: 07/01/2017 - 06/30/2022
Project title: Training in environmental pathology

Role on project: Trainer (PI: Agnes Kane)
Total award amount: \$ 2,329,135

27) NSF, EPSCoR, OIA-1655221

Project period: 09/01/2017 - 08/31/2022
Project title: RII Track-1: Rhode Island Consortium for Coastal Ecology Assessment, Innovation, and Modeling (C-AIM)
Role on project: Director, Leduc Bioimaging Facility (PI: G. Bothun, co-PI: J. Morgan)
Total award amount: \$ 19 million

28) Brown University Core Research Facility (CRF) Infrastructure Program

Project period: 07/01/21 - 06/30/22 (FY22)
Project title: Computer and software upgrades
Role on project: Principal Investigator
Total award amount: \$ 45,000

29) NIH / NIGMS, R01 GM136906-03S1 (Supplement)

Project period: 07/01/2022 - 06/30/2023
Project title: Emerging imaging technologies for automated analyses of calcineurin-dependent brain function (NOT-AG-21-018, Alzheimer's supplement)
Role on project: Principal Investigator
Total award amount: \$ 295,075

30) Brown University Core Research Facility (CRF) Infrastructure Program

Project period: 07/01/22 - 06/30/23 (FY23)
Project title: Olympus / Evident VS200 Slide Scanner
Role on project: Principal Investigator
Total award amount: \$ 190,000

PATENT APPLICATIONS

- 2021 Brown University submitted a provisional patent application on the treatment of neurodegenerative disease using CsA-type compounds (63/193,935, inventor: Creton). The University hired a company, Wave Strategy, which mediates contacts with strategic partners, investors and industry experts to accelerate the introduction of CsA-type drugs to the market.
- 2022 Brown University submitted an international patent application on the treatment of neurodegenerative disease using CsA-type compounds (PCT/US22/31241, inventor: Creton).
- 2023 Brown University submitted a USA Utility patent application on the treatment of neurodegenerative disease using CsA-type compounds (18/562,032, inventor: Creton).

TEACHING

Undergraduate academic advising

2011-2013: Concentration advisor in Biology for Andrew Choi, Jeremy Korn, Julio Ma Shum, Lakir Patel, Michael Pico, Riyadh Seervai, Michael Sider.

2014-2016: Concentration advisor in Biology for Alana Bhatla, Emma Corcoran, Nancy Holt, Charlotte Kim, Stephanie Pitts, Graciela Rodriguez, Reid Secondo.

2019: Olivia Wilson (Neurobiology Sc.B.)

Advisor for undergraduate research

1) Jamal Toure	2005	BIOL1950/1960
2) Zaneta L. Balantac	2005-2007	BIOL1950/1960, NSF (summer research)
3) Andrew Crawford	2005-2007	BIOL1950/1960, UTRA (summer research)
4) Theresa McGowan	2006	Co-advisor on UTRA (summer research)
5) Daniel Cho	2006	NSF (summer research)
6) Lauren Hale	2006	NSF (summer research)
7) Alper Celik	2006-2007	NSF (summer research)
8) Christina Parodi	2007-2008	BIOL1950/1960, NSF (summer research)
9) Nicole Fuerst	2007-2008	BIOL1950/1960, NSF (summer research)
10) Xiaoxuan Chen (Abigail)	2008	UTRA (summer research)
11) Emily D. Cole	2009-2010	BIOL1950/1960, UTRA (summer research)
12) Kriya Gishen	2009-2010	BIOL1950/1960
13) Farrah Laliberte	2009	Wheaton volunteer (summer research)
14) Mrinal Kapoor	2010-2012	BIOL1950/1960, UTRA & NIH (summer research)
15) Benjamin Drapcho	2010	NIH (summer research)
16) Xingyue Wang (Star)	2010-2011	BIOL1950/1960
17) Michael Alim	2011	BIOL1950/1960
18) Mary Kate LoPiccolo	2011-2012	BIOL 1950/1960, UTRA (summer research)
19) Emily Regier	2012-2014	BIOL 1950/1960, UTRA & NIH (summer research)
20) Emily Passarelli	2014-2016	BIOL 1950/1960, UTRA (summer research)
21) Abhey Sur	2016-2017	BIOL 1950/1960, UTRA (summer research)
22) Daniella Barbosa	2017	Leadership Alliance (summer program)
23) Renee Seto	2017-2018	NIH (summer 2017), BIOL1950 (fall 2017), BIOL1960 (spring 2018), UTRA (summer 2018), NIH (fall 2018)
24) Tania Dominguez	2018	Leadership Alliance (summer program)
25) Kerry Eller	2018	NIH (summer research)
26) Peter Baek	2018-2019	BIOL1960 (spring 2018), BIOL1950 (fall 2018) BIOL1960 (spring 2019)
27) Elizabeth Kahn	2018-2020	Volunteer (fall 2018), BIOL1960 (spring 2019) NEUR1970 (fall 2019), NEUR1970 (spring 2020)
28) Bethany Arabic	2019	Leadership Alliance (summer program)
29) Jason Chang	2020	Volunteer (spring 2020)
30) Rahma Ibrahim	2019-2022	BIOL 1950 (fall 2019), BIOL 1960 (spring 2020) BIOL 1950 (fall 2020), BIOL 1960 (spring 2021) BIOL 1950 (fall 2021), BIOL 1960 (spring 2022)
31) Lily Zhou	2021-2023	Volunteer (fall 2021, spring 2022) BIOL 1950 (fall 2022), BIOL 1960 (spring 2023)
32) Peter Ajaya	2022	Summer BTR T35 program
33) Emilia Herdes	2022	Summer MIT (2022), BIOL 1950 (fall 2022)
34) Allison Lowe (Ali)	2022-2024	Volunteer (fall 2022), Summer project (2023) BIOL 1950 (fall 2023), BIOL 1960 (spring 2024)
35) Lawrence Heller (Larry)	2023-2024	Summer project 2023, NEUR 1970 (fall 2023, spring 2024, fall 2024)
36) Ziyuan Wang	2025	Volunteer (spring 2025)

Thesis advisor in the undergraduate honors program

1) Andrew Crawford	2007	Honors thesis
2) Zaneta Balantac	2007	Honors thesis
3) Christina Parodi	2008	Honors thesis
4) Emily D. Cole	2010	Honors thesis
5) Kriya Gishen	2010	Honors thesis
6) Xingyue Wang (Star)	2011	Honors thesis
7) Mrinal Kapoor	2012	Honors thesis
8) Emily Regier	2014	Honors thesis
9) Emily Passarelli	2016	Honors thesis
10) Peter Baek	2019	Honors thesis
11) Rahma Ibrahim	2022	Honors thesis
12) Allison Lowe (Ali)	2024	Honors thesis

Thesis committees, Master's programs

1) Daniel M. Zhu	Biomedical Engineering Master's Program (2023) Role: committee member (Thesis advisor: Jill Kreiling)
------------------	--

Thesis committees, PhD programs

1) Julian Wong	MCB graduate program, 2002-2005 Project: Molecular Mechanisms of the Block to Polyspermy Role: committee member (Thesis Advisor: Gary Wessel)
2) Samantha Jeschonek	MCB graduate program, 2011-2018 Project: Vg1 mRNA anchoring in Xenopus oocytes Role: committee chair (Thesis Advisor: Kimberly Mowry)
3) Tara Fresques	MCB graduate program, 2012-2017 Project: Germ line specification in the sea star Role: committee chair (Thesis advisor: Gary Wessel)
4) April Rodd	Pathobiology graduate program, 2013-2017 Project: development of mechanistic toxicity assays using brine shrimp Role: committee member (Thesis advisor: Agnes Kane)
5) Christy Rhine	MCB graduate program, 2016 - 2019 Project: The contribution of splicing defects in the etiology of Autism Spectrum Disorders Role: committee co-chair (Thesis advisor: William Fairbrother)
6) Xinru Wang	MCB graduate program, 2016 - 2019 Project: Cdk1 phosphorylates a LSPI site to recruit PP2A--B56 during (pro) metaphase to promote cell cycle progression Role: committee member (Thesis advisor: Rebecca Page)
7) Elizabeth Leary	Biomedical Engineering program, 2017 - 2018 Project: Imaging 3D spheroids Role: committee member (Thesis advisor: Jeffrey Morgan)
8) Lauren Olinski	MCB graduate program, 2017 - 2020

- Project: Mechanisms of opsin signaling in the skin
Role: committee member (Thesis advisor: Elena Oancea)
- 9) Amanda Dombroski MPP graduate program, 2017 - 2020
Project: Drug antidotes examined in zebrafish
Role: committee member (Thesis advisor: Jason Sello)
- 10) Jeremy Horrell MCB graduate program, 2017 - 2022
Project: Chromosomal architecture during aging
Role: committee member (Thesis advisor: Nicola Neretti)
- 11) Nathan Martin Pathobiology graduate program, 2018 - 2022
Project: The aryl hydrocarbon receptor in zebrafish brain development
Role: committee member (Thesis advisor: Jessica Plavicki)
- 12) Jenna Morris-Love Pathobiology graduate program, 2021 - 2022
Project: JC polyomavirus in the central nervous system
Role: committee member (Thesis advisor: Walter Atwood)
- 13) Layra Cintron-Rivera Pathobiology graduate program, 2019 - 2023
Project: Cardiovascular development in zebrafish
Role: committee member (Thesis advisor: Jessica Plavicki)
- 14) Kimberly Abt MCB graduate program, 2019 - 2024
Project: Role of Taf4b in oocyte development
Role: committee chair (Thesis advisor: Richard Freiman)
- 15) Angelica Tracey MCB graduate program, 2024 – present
Project: Lung development in Down syndrome
Role: committee member (Thesis advisor: Amanda Jamieson)

Advisor for graduate students in Masters programs

Jamal Toure	2006 - 2009:	Biomedical Engineering graduate program
Oladele Ojo	2016 - 2017:	Biomedical Engineering graduate program
Cameron Brown	2021 - 2022:	Pathobiology graduate program
Thais Del Rosario Hernandez	2024 - 2025:	Biotechnology graduate program

Advisor for graduate students in Ph.D. programs

Robert Thorn 2013 - 2018: Robert Thorn, a student in the MCB graduate program, joined the Creton laboratory in 2013 and received a PhD in 2018.

Advisor for postdoctoral fellows

Holly Richendrfer 2010 - 2016: Dr. Richendrfer worked in the Creton laboratory as a postdoctoral fellow and postdoctoral research associate.

Robert Thorn 2018: Dr. Thorn worked for half a year in the Creton laboratory after receiving his PhD.

Sayali Gore 2021 - present: Dr. Sayali Gore joined the Creton laboratory as a postdoctoral research associate. She was promoted to Senior Research Associate on 7/1/2024.

Other teaching or academic advising

2002 - present Instructor in microscopy and image analysis for a group of more than 250 facility users, including approximately 40 undergraduate students, 90 graduate students and 30 postdoctoral fellows.

2005 - present Trainer in the MCB graduate program.

2005 - present Trainer in the Biomedical Engineering graduate program.

2014 - present Trainer in the Pathobiology graduate program

2023 - present Trainer in the Molecular Biology of Aging (MBoA)

Courses at Brown University

Teaching Evaluations: 1=Excellent, 2=Very Good, 3=Good, 4=Fair, 5=Poor

- 2003 BIOL 2130** Techniques in Molecular and Cell Science
Role in course: Guest lecturer
- 2004 BIOL 2060** Ultrastructure / Bioimaging
Role in course: Course leader
Overall course rating: 1.63, Instructor's overall effectiveness rating: 1.25
- BIOL 2130** Techniques in Molecular and Cell Science
Role in course: Guest lecturer
- 2005 BIOL 1310** Analysis of development
Role in course: Lecture and Guest lab
- BIOL 1940** Selected Topics in Molecular Biophysics
Role in course: Guest lecturer
- BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
- BIOL 2010** Introduction to MCB Graduate Program Faculty Research
Role in course: Guest lecturer
- BIOL 2130** Techniques in Molecular and Cell Science
Role in course: Guest lecturer
- BIOL 2950/2960** Graduate Independent Research
Role in course: Advisor
- 2006 BIOL 1940** Selected Topics in Molecular Biophysics
Role in course: Guest lecturer
- BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
- BIOL 2060** Ultrastructure / Bioimaging
Role in course: Course leader
Overall course rating: 2.17, Instructor's overall effectiveness rating: 1.50
- BIOL 2130** Techniques in Molecular and Cell Science
Role in course: Guest lecturer
- BIOL 2950/2960** Graduate Independent Research
Role in course: Advisor
- 2007 BIOL 1050/2050** Biology of the eukaryotic cell
Role in course: Guest lecture
- BIOL 1310** Analysis of development

Role in course: Guest lecture and guest lab

BIOL 1940 Selected Topics in Molecular Biophysics

Role in course: Guest lecture

BIOL 1950/1960 Undergraduate Independent Study

Role in course: Advisor

BIOL 2030 Foundations for advanced studies in experimental biology

Role in course: Co-Instructor

Overall course rating: 1.29, Instructor's overall effectiveness rating: 2.17

BIOL 2060 Ultrastructure / Bioimaging

Role in course: Course leader

Overall course rating: 1.29, Instructor's overall effectiveness rating: 1.42

BIOL 2130 Techniques in Molecular and Cell Science

Role in course: Guest lecture

2008 BIOL 1310 Analysis of development

Role in course: Guest lecture and guest lab

BIOL 1940 / Ph 2620 Selected Topics in Molecular Biophysics

Role in course: Guest lecture

BIOL 1950/1960 Undergraduate Independent Study

Role in course: Advisor

BIOL 2130 Techniques in Molecular and Cell Science

Role in course: Guest lecture and facility demo

2009 BIOL 1310 Analysis of development

Role in course: Guest lecture and guest lab

BIOL 1950/1960 Undergraduate Independent Study

Role in course: Advisor

2010 BIOL 1310 Analysis of development

Role in course: Guest lecture and guest lab

BIOL 1950/1960 Undergraduate Independent Study

Role in course: Advisor

IMSD Biomed Initiative to Maximize Student Development

Role in course: Guest lecture and facility demo

BIOL 2060 Ultrastructure / Bioimaging

Role in course: Course leader (7 undergraduate and 3 graduate students)

Overall course rating: 1.67, Instructor's overall effectiveness rating: 1.56

BIOL 2130 Techniques in Molecular and Cell Science

Role in course: Guest lecture and facility demo

2011 CLPS 0100 Learning and conditioning

Role in course: Guest lecture (approximately 70 students, used iclickers)

BIOL 1310 Analysis of development

Role in course: Guest lecture and guest lab

BIOL 1950/1960 Undergraduate Independent Study

Role in course: Advisor

Summer Course Basic Methods in Pollen Research

Role in course: Guest lecture and microscope training

Summer Course Center for Biomedical Engineering, Cell Transplantation Design Team

Role in course: Guest lecture

BIOL 2130 Techniques in Molecular and Cell Science

Role in course: Guest lecture and facility demo

BIOL 2060 Ultrastructure / Bioimaging

Role in course: Course leader (1 undergraduate student, 6 graduate students, 1 research assistant).

Overall course rating: 1.56, Instructor's overall effectiveness rating: 1.44

- 2012 CLPS 0100** Learning and conditioning
Role in course: Guest lecture (44 students, used iclickers)
BIOL 1310/2310 Analysis of development
Role in course: Guest lecture and lab
BIOL 1950/1960 Undergraduate Independent Study
Role in course: Advisor
BIOL 2130 Techniques in Molecular and Cell Science
Role in course: Guest lecture and facility demo (8 students)
PHYS 2620 Selected Topics in Molecular Biophysics
Role in course: Guest lecture and facility demo (11 students)
- 2013 BIOL 1050/2050** Biology of the eukaryotic cell
Role in course: Guest lecture (~40 students)
BIOL 1310/2310 Analysis of development (spring and fall semester)
Role in course: Guest lectures and labs
BIOL 1950/1960 Undergraduate Independent Study
Role in course: Advisor
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
BIOL 2130 Techniques in Molecular and Cell Science
Role in course: Guest lecture and facility demo (10 students)
- 2014 BIOL 1310/2310** Analysis of development
Role in course: Guest lecture and lab
BIOL 1950/1960 Undergraduate Independent Study
Role in course: Advisor
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
Initiative to Maximize Student Development
IMSD module on: "Resources, Tools and Techniques in Biomedical Research".
Role in course: Module leader
- 2015 BIOL 1310/2310** Analysis of development
Role in course: Guest lecture and lab
BIOL 1950/1960 Undergraduate Independent Study
Role in course: Advisor
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
Responsible Conduct in Research (RCR) Section on Big Data.
Role in course: Guest lecture
Initiative to Maximize Student Development
IMSD module on: "Resources, Tools and Techniques in Biomedical Research".
Role in course: Module leader
- 2016 NEUR 1040** Introduction to Neurogenetics
Role in course: Guest lecture
BIOL 1310/2310 Analysis of development
Role in course: Guest lecture and lab
BIOL 1540/2540 Molecular Genetics

Role in course: Guest lecture

BIOL 1950/1960 Undergraduate Independent Study

Role in course: Advisor

BIOL 2060 Ultrastructure / Bioimaging

Role in course: Guest lecture

BIOL 2167 In vitro models of disease

Role in course: Guest lecture

Initiative to Maximize Student Development

IMSD module on: "Resources, Tools and Techniques in Biomedical Research".

Role in course: Module leader

- 2017** **BIOL 1310/2310** Analysis of development
Role in course: Guest lecture and lab
BIOL 1950/1960 Undergraduate Independent Study
Role in course: Advisor
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
- 2018** **BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
- 2019** **BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
NEUR 1970 Undergraduate Independent Study
Role in course: Advisor
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
- 2020** **BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
NEUR 1970 Undergraduate Independent Study
Role in course: Advisor
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
- 2021** **BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
BIOL 2980 Graduate Independent Study
Role in course: Advisor
BIOL 1050 / 2050, Eukaryotic Cell Biology
Role in course: Guest lecture on 'Optical methods'
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
- 2022** **BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
BIOL 2980 Graduate Independent Study
Role in course: Advisor
BIOL 1050 / 2050, Eukaryotic Cell Biology
Role in course: Guest lecture on 'Optical methods'
BIOL 2167 In vitro models of disease
Role in course: Guest lecture

- 2023** **BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
NEUR 1970 Undergraduate Independent Study
Role in course: Advisor
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
- 2024** **BIOL 1950/1960** Undergraduate Independent Study
Role in course: Advisor
NEUR 1970 Undergraduate Independent Study
Role in course: Advisor
BIOL 2167 In vitro models of disease
Role in course: Guest lecture
BIOL 1310 / 2310 Analysis of development
Role in course: Guest lecture