**SAVVAS J. CONSTANTINOU**

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Michigan State University, East Lansing, MI, 48824-1115   
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**Education:**

Ph.D. Student in Integrative Biology & Ecology, Evolutionary Biology, and Behavior, Michigan State University, East Lansing, MI (2015-Present)  
  
M.A. in Biomolecular Sciences (4.00GPA), Central Connecticut State University, New Britain, CT (2012-2014).   
***Master’s Thesis Research:*** Classical Conditioning in *Dugesia japonica*: Effects of Octopamine on Memory Formation and Retention.   
  
B.S. Biology & B.S. Neuroscience (3.83GPA), Trinity College, Hartford, CT (2008-2012).

**Employment:**

Research Technician, Dr. Terri A. Williams’ Laboratory, Biology Department at Trinity College, Hartford, CT (2013-2015).

Laboratory Technician/Teaching Assistant, Organic Chemistry at Trinity College, Hartford, CT (2011-2012).  
  
Research Technician, Dr. Robert B. Whitlatch’s Laboratory, Marine Sciences at University of Connecticut Avery Point, Groton, CT, 06340 (May 2010-Aug 2010).

Field Technician, Geoscience Technical Services under Dr. David O. Cook, Lyme, CT, 06371 (2005-2009).

**Awards:**  
Election and Confirmation to American Association for the Advancement of Science (October 2018)Election to Sigma Xi (November 2016).  
  
Award of Excellence for outstanding platform presentation in Organismal Biology at the 68th Annual Eastern Colleges Science Conference (April 2014).

Graduated *magna cum laude* (with great honor) in both undergraduate degrees (Spring 2012).

Election to Phi Beta Kappa (Spring 2012).

Election to Nu Rho Psi, The National Honor Society in Neuroscience (Spring 2011).

Undergraduate Faculty Honors (Fall 2009-Spring 2012).

**Grants and Fellowships:**

Ecology, Evolutionary Biology and Behavior (EEBB) Summer Fellowship, Michigan State University

($2,000; 2019)

Michigan State University College of Natural Science Dissertation Continuation Fellowship ($6000, 2019)

University Enrichment Fellowship, Michigan State University ($28,500; 2019-2020)

Ecology, Evolutionary Biology and Behavior (EEBB) Summer Fellowship, Michigan State University

($1,900; 2018)

Ecology, Evolutionary Biology and Behavior (EEBB) Summer Fellowship, Michigan State University

($1,900; 2017)

John R. Shaver, PhD. Graduate Student Fund in Zoology, Michigan State University ($1,150; 2017)

Academic Achievement Graduate Assistantship, Michigan State University ($20,000; 2016-2017)

Ecology, Evolutionary Biology, and Behavior (EEBB) Travel Grant, Michigan State University

($1,200; 2016)

BEACON travel fund, Michigan State University ($1,000; 2016)

Graduate School International Travel Grant, Michigan State University ($350; 2016)

Council of Graduate Students (COGS) travel fellowship, Michigan State University ($300; 2016)

Office of International Studies and Programs (ISP) travel grant, Michigan State University ($200; 2016)

Integrative Biology travel grant, Michigan State University ($200; 2016)

University Enrichment Fellowship, Michigan State University ($28,500; 2015-2016)

College of Natural Science “Early Start” Summer Fellowship ($6,000; 2015)

Awarded the Anthony and Helen Bichum Scholarship, Central Connecticut State University

($1,000; April 2013)  
  
**Peer-Reviewed Publications** (4 total):

**Constantinou, S. J.,** Nyugen, L., Kirschbaum, F., Salazar, V., Gallant, J. R. 2019. Silencing the Spark: CRISPR/Cas9 Genome Editing in Weakly Electric Fish. *J. Vis. Exp.* (152), e60253, doi: 10.3791/60253.

**Constantinou, S. J.,** Duan, N., Chipman, A. D., Nagy, L., Williams, T. A. Elongation during segmentation shows axial variability, low mitotic rates, and synchronized cell cycle domains in the crustacean, *Thamnocephalus platyurus*. bioRxiv 270728; doi: https://doi.org/10.1101/270728.   
*In review: Evolution & Development.*

Pitchers, W. R., **Constantinou, S. J.**, Losilla, M., and Gallant, J. 2016. Electric Fish Genomics: Progress, Prospects, and New Tools for Neuroethology. *Journal of Physiology- Paris* *110* (3B): 259-272. doi: 10.1016/j.jphysparis.2016.10.003

**Constantinou, S. J.,** Stangl, A. J., Pace, R., Nagy, L. and Williams, T. A. 2016. Wnt repertoire and developmental expression patterns in the crustacean *Thamnocephalus platyurus*. *Evolution & Development* *18*: 324-341.doi: 10.1111/ede.12204

Nakamoto, A., Hester, S. D., **Constantinou, S. J.**, Blaine, W. G., Tewksbury, A. B., Matei, M. T., Nagy, L. M., Williams, T. A. 2015. Changing cell behaviors during beetle embryogenesis correlates with slowing of segmentation. *Nature Communications 6*:6635doi: 10.1038/ncomms7635

**Presentations:**

**Poster Presentations:**

“Enabling Genotype-Phenotype Studies In Electric Fish”, **Constantinou, S. J.,** Luecke, D., Healey, H., Thompson, J., La Pontin, S., Markham, M. M., Warren, W., & Gallant, J. R.,1st Annual EDGE PI Meeting, National Science Foundation, Alexandria, VA (April 28-29, 2019).

“*scn4aa* is involved with amplitude of the electric organ discharge in a mormyrid weakly electric fish”, **Constantinou, S. J.,** & Gallant, J. R., 5th Annual Genetics Program Mini-Symposium: Impact and Applications of Genome Editing Technologies, Michigan State University, East Lansing, MI (May 10, 2017).

“s*cn4aa* drives EOD amplitude in mormyrid weakly electric fish”, **Constantinou, S. J.,** & Gallant, J. R., 1st Annual Ecology, Evolutionary Biology, and Behavior (EEBB) Research Symposium, Michigan State University, East Lansing, MI (May 1, 2017).

“Environmental variation influences aphid community structure over large spatial and temporal scales”, **Constantinou, S. J.,** Larson, C., Van Deynze, B., Zirbel, C., Osei-Bonsu, Lagos-Kutz, D., Voegtlin, D., Bahlai, C., 1st Annual Ecology, Evolutionary Biology, and Behavior (EEBB) Research Symposium, Michigan State University, East Lansing, MI (May 1, 2017).

**Oral Presentations:**

“Do it at ohm: Genetic engineering and gymnotiform electric fish”, MSU Vertebrate Genomics and Evolution Group journal club, Michigan State University, East Lansing, MI (December 17, 2019).

“Characterizing the *Brachyhypopomus gauderio* electric organ developmental transcriptome”, MSU “Fish Supergroup” journal club, Michigan State University, East Lansing, MI (December 11, 2018).

“Segmentation and Growth Zone Dynamics in a Branchiopod Arthropod”, Ecology Evolutionary Biology and Behavior Graduate Colloquium, Michigan State University, East Lansing, MI (November 1, 2017).  
  
“Evolution of the fish heart by sub/neofunctionalization of an *elastin* gene”, MSU “Fish Supergroup” journal club, Michigan State University, East Lansing, MI (March 14, 2017).

“Classical Conditioning in *Dugesia japonica*: Effects of Octopamine on Memory Formation and Retention”, 68th Annual Eastern Colleges Science Conference, Marist College, Poughkeepsie, NY (April 5, 2014).

“Planarian Classical Conditioning and Neurotransmitter Mediated Memory Formation”, Biology Senior Seminar Guest Speaker, Trinity College, Hartford, CT (Fall 2014).  
  
**“**How to Train Your Worm: Classical Conditioning in Planaria”, Biomolecular Sciences Departmental Research Forum, Central Connecticut State University, New Britain, CT (Fall 2013). **Research Experience:**

**2019-** **Present.** Michigan State University, East Lansing, MI. Determining the role of *scn4aa* in *Brachyhypopomus gauderio* electric organ function, and organismal behavior through CRISPR/Cas9 knockdowns.

**2018-Present.** Michigan State University, East Lansing, MI. Characterizing the gene regulatory networks of Gymnotiformes involved in electric organ function, regeneration and development.

**2017-Present.** Michigan State University, East Lansing, MI. Developing techniques in Gymnotiform electric fish, *Brachyhypopomus* gauderio: reliable breeding, *in vitro* fertilization & fry husbandry, CRISPR/Cas9 gene knock-outs.

**2016-2017**. Michigan State University, East Lansing, MI. Investigating the gene regulatory networks of mormyrids involved in larval and adult electric organ function and development.

**2015-2019**. Michigan State University, East Lansing, MI. Developing techniques in mormyrid electric fish, *Brienomyrus brachyistius*: reliable breeding & fry husbandry, morpholino gene knockdown and CRISPR gene knock-out & knock-in.  
  
**2013-2015.** Trinity College, Hartford, CT (with Dr. T. A. Williams). Comparative studies of arthropod segmentation and growth zone characteristics between an insect, *Tribolium castaneum*, and a branchiopod, *Thamnocephalus platyurus*.

**2012-2014.** Central Connecticut State University, New Britain, CT. Determining the role of octopamine in classical conditioning of a planarian flatworm, *Dugesia japonica*.  
  
**2010.** University of Connecticut Avery Point, Groton, CT (under Dr. R. B. Whitlatch). Investigating the impact of invasive species on the benthic community in Long Island Sound.

**2005-2009**. Geoscience Technical Services Inc., Lyme, CT (under Dr. D. O. Cook). Phase I and II soil & groundwater remediation.

**Society Memberships:**

American Association for the Advancement of ScienceSigma Xi  
International Society for Neuroethology

Nu Rho Psi  
Phi Beta Kappa

**Research Interests:**

Evolutionary Developmental Biology (Evo-Devo) Molecular Evolution  
Epigenetics Gene Regulatory Networks

**Service & Outreach:**

“The Shocking Truth of Electric Fish”, “Science Nights”, Whitehills School for K-6th grade students, East Lansing, MI (November, 2019).

“Parasitoid Wasps: The Ultimate Symbiont”, ‘Biology on Tap’ at The Loft, Lansing, MI (October, 2019).

“How to become a Biologist”, Advanced Placement Biology high school students, Williamston High School, Williamston, MI (May, 2019).

Graduate poster evaluator for Integrative & Organismal Biology at the 21th annual University Undergraduate Research and Arts Forum, East Lansing, Michigan State University (April 5, 2019).

“The Shocking Truth of Electric Fish”, “Science Nights”, Donley Elementary School, East Lansing, MI (February, 2019).

“The Shocking Truth of Electric Fish”, “Science Nights”, Pinecrest Elementary School, East Lansing, MI (November, 2018).

Graduate poster evaluator for Integrative & Organismal Biology at the 20th annual University Undergraduate Research and Arts Forum, East Lansing, Michigan State University (April 13, 2018).

Ecology, Evolutionary Biology, and Behavior (EEBB) 2018-2019 Seminar Speaker Decision Committee (April 10, 2018).  
  
“The Shocking Truth of Electric Fish”, “Science Nights”, Pinecrest Elementary School, East Lansing, MI (November, 2017).

“Feeling amped? Electric fish with spark your interest!“, “Night at the MSU Museum”, Michigan State University Science Festival for the general public, East Lansing, MI (April 22, 2017)  
  
“Building a Biological Battery: Electric Fish Know Watt to do!”, 2017 Spring K-12 Partnership Workshop, Kellogg Biological Station (KBS), Hickory Corners, MI (April 18, 2017).

“The Shocking Truth of Electric Fish”, “Science Nights”, Whitehills School for K-6th grade students, East Lansing, MI (November, 2016).

*“*Animal adaptations: what and why”, 3rd grade at Windemere Park Charter Academy, Lansing, MI (June, 2016).

**Teaching and Mentoring:**

**Teaching Assistant at Michigan State University:**

BS 161: Cells and Molecules- Graduate Teaching Assistant (Spring 2019)  
 BS 161: Cells and Molecules- Graduate Teaching Assistant (Spring 2018)

IBIO 320- Developmental Biology Laboratory Coordinator (Fall 2017)

**Mentoring Michigan State University undergraduate students:**

Allison Kwang; Characterizing *scn4aa* CRISPR/Cas9 mutant electric organ discharges and establishing function of larval EOD in *Brachyhypopomus gauderio*. (2019-present)  
  
Hope Healey; Developmental Atlas of *Brienomyrus brachyistius* and *Brachyhypopomus gauderio* (2017-2018)  
  
Nichole Robichaud; Morpholino knockdown of *scn4aa* in *Brienomyrus brachyistius* and effects on gene expression and electric organ discharge characteristics. (2016-2018)

**Teaching Assistant at Trinity College (Hartford, CT):**

Organic Chemistry I & II (2011-2012)  
Psychology 101 (Fall 2011)  
Animal Physiology (Fall 2011)

**Academic Mentors:**

Ph.D. Mentors (All appointed at Michigan State University):

Dr. Jason R. Gallant   
Other members of Ph.D. dissertation guidance committee:

Dr. Jenny Boughman   
Dr. Julia Ganz  
Dr. Weiming Li

Master’s Mentors (All appointed at Central Connecticut State University):  
Dr. Betsy Dobbs-McAuliffe  
Other Master’s Committee members:  
 Dr. James Mulrooney  
 Dr. Kathy Martin-Troy