

# CURRICULUM VITAE

**Shara D. Stough**

Augustana College

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## EDUCATION

- 2003-2010 Ph.D. Biological Sciences, **University of California, Irvine**, Irvine, CA (Dr. Thomas Carew)  
1998-2002 B.A. Psychology and Philosophy (Honors), **Coe College**, Cedar Rapids, IA (Dr. Wendy Dunn)

## TEACHING

- 2011-present **Assistant Professor – Augustana College; Rock Island, IL**
- PSYC 100 Introduction to Psychology (2011-present)
  - PSYC 246 Research Methods (2016-present)
  - PSYC 318 Drugs and Behavior (2012-present)
  - PSYC 347 Learning + Lab (2011-present)
  - PSYC 349 Physiological Psychology (2011-present)
  - PSYC 382 Supervised Research (2011-present)
  - PSYC 400 Independent Study (Spring 14-15) - Cognition & Learning co-taught with Dr. Daniel Corts
  - PSYC 452-3 Seminar Research: Senior Inquiry I & II (Winter/ Spring 13-14 and 16-17)
  - PSYC 471 Special Topics: Addiction (Spring 15-16 and Fall 17-18)
  - PSYC 481 Research Practicum (Fall 14-15; advisory committee Winter 15-16)
  - LSC 350 Integrative Learning Portfolio (Fall/Winter/Spring 15-16)
  - The Amazing Brain; Augustana Summer Academy (Summer 2012, 2014, 2016, 2018)
- 2010 **Adjunct Lab Instructor – Chapman University; Orange, CA**
- Cellular and Molecular Biology Lab; lab instructor (Fall 2010)
- 2003-2010 **Graduate Student Instructor – University of California, Irvine; Irvine, CA**
- Brains in Action; co-instructor w/ Dr. Thomas Carew (Spring 2009, Spring 2010)
  - Brain and Behavior; instructor (Summer 2009)
  - Neurobiology Lab, COSMOS Program Neuroscience Cluster; lab instructor (Summer 2007, Summer 2008)
  - Neurobiology Lab; lab instructor (Fall 2003 – Spring 2007)
- 1998-2002 **Coe College; Cedar Rapids, IA**
- Writing Center Consultant (Fall 1998 - Spring 2002)
  - Statistical Methods in the Behavioral Sciences; teaching assistant (Fall 2000 – Spring 2002)
  - Introductory Psychology; undergraduate tutor (Fall 2001)

## RESEARCH

- 2011-present **Primary Investigator**, Department of Psychology, Augustana College, *Associative Fear Memory in Young Domestic Fowl*
- 2010-2011 **Postdoctoral Scholar**, Department of Neurobiology and Behavior, Center for the Neurobiology of Learning and Memory, University of California, Irvine (Dr. Thomas Carew), *Spatiotemporal Analysis of the Molecular Mechanisms of Memory*
- 2003-2010 **Graduate Student Researcher**, Department of Neurobiology and Behavior, Center for the Neurobiology of Learning and Memory, University of California, Irvine (Dr. Thomas Carew), *Tyrosine Kinase and Mitogen-Activated Protein Kinase Signaling in the Induction of Lasting Plasticity in Aplysia*
- 2002-2003 **Research Assistant I**, Department of Psychology, Behavioral and Cognitive Neuroscience Training Program, University of Iowa (Dr. Mark Blumberg), *Neurobiology of Sleep and Thermoregulation*
- 2001-2002 **Honors Thesis**, Department of Psychology, Coe College (Dr. Wendy Dunn), *Effects of Attractiveness and Extraversion on Hiring Decisions.*
- 2000-2001 **Undergraduate Research**, Department of Psychology, Coe College (Dr. Wendy Dunn), *An Investigation of Relationships: The Big Five Personality Dimensions, Attractiveness, General Mental Ability, and Hireability*
- 1999-2000 **Undergraduate Research**, Department of Psychology, Coe College (Dr. Michael Baker), *Testosterone Place Conditioning in Young Domestic Fowl*

## STUDENT MENTORSHIP

**Mentor** to undergraduate researchers at Augustana College (Rock Island, IL)

2017-2018 Mentored 12 students

Projects:

- *Investigating the effect of familiar and novel scents on the expression of fear in young male chicks*
  - ✓ Team of 6 students
  - ✓ Poster presentation at MidBrains Midwest Neuroscience Conference; University of St. Thomas; St. Paul, MN, Fall 2017
- *Exploration of whether chicks mirror fear levels in a video v. live companion*
  - ✓ Successfully applied for Student-Faculty Academic Partnership grant to support one student (Danielle Hurmis)

2016-2017 Mentored 21 students

Projects:

- *Tracking changes in fear expression across multiple training sessions in young male chicks*
  - ✓ Team of 7 students
  - ✓ Poster presentation at MidBrains Midwest Neuroscience Conference; University of St. Thomas; St. Paul, MN, Fall 2017
  - ✓ *Testing red v. green color preference (pilot experiment)*
- *Soundproofing pilot experiment*
  - ✓ Team of 6 students
- *Investigating the effectiveness of video predator stimuli to induce fear in young chicks*
  - ✓ Team of 7 students

- *Impact of social contact on predator-induced fear responses in young male chicks*
  - ✓ Two teams of 8 students total
  - ✓ Poster presentation at Faculty for Undergraduate Neuroscience special session of Society for Neuroscience conference; San Diego, CA, Fall 2016
  - ✓ Poster presentation at Celebration of Learning; Augustana College; Rock Island, IL, Spring 2017

2015-2016 Mentored 16 students

Projects:

- *Predator video sound volume pilot*
  - ✓ Team of 5 students
- *Exposure-type social buffering of predator-induced fear behavior in young domestic chicks*
  - ✓ Team of 6 students
  - ✓ Poster presentation at Faculty for Undergraduate Neuroscience special session of Society for Neuroscience conference; Chicago, IL, Fall 2015
  - ✓ Poster presentation at Celebration of Learning; Augustana College; Rock Island, IL, Spring 2016
  - ✓ Continuation of Student-Faculty Academic Partnership grant to support one student (Sarah English)
- *Development of training apparatus and stimuli to prepare for summer research aimed at further investigating possible social facilitation of fear*
  - ✓ Team of 5 students
- *Effects of different auditory stimuli (distress peeps and colony sounds) on fear behavior in young chicks*
  - ✓ Team of 5 students
  - ✓ Students supported by Dr. Larry Jones Fellowship in the Natural Sciences

2014-2015 Mentored 20 undergraduate research students

Projects:

- *Developmental analysis of fear conditioning in chickens at PHD 10 and 17 AND Use of multiple distinct predator cues to prevent habituation to the US*
  - ✓ Team of 7 students
  - ✓ Successfully applied for Student-Faculty Academic Partnership grant to support one student (Sarah English)
  - ✓ Two students were supported by Augie Choice (Caleb Arnold-Ivey and Haley West)
  - ✓ *Exploration of the impact of habituation and associated positive and negative stimuli on innate color preference (pilot experiment)*
  - ✓ *Exploration of the presence of conspecifics on fear expression in young chicks (pilot experiment)*
- *Analysis of fear expression and associative memory formation in young chickens using Contextual Fear Conditioning and Conditioned Place Aversion*
  - ✓ Team of 6 students and team of 5 students
  - ✓ Poster Presentation at Celebration of Learning; Augustana College; Rock Island, IL, Spring 2015
- *Investigation of the relationship between anxiety and social behavior in chicks*
  - ✓ Team of 7 students

- ✓ Poster Presentation at Celebration of Learning; Augustana College; Rock Island, IL, Spring 2015
- ✓ *Exploration of tonic immobility as a measure of fear (pilot experiment)*

2013-2014 Mentored 10 undergraduate research students

Projects:

- *Analysis of contextual fear conditioning in young domestic chicks using activity as a measure of fear AND Role of predator eyes in fear response in young chickens*
  - ✓ Team of 6 students
  - ✓ Poster Presentation at MidBrains Undergraduate Neuroscience Conference; Bethel University; St. Paul, MN; Fall 2014
  - ✓ Poster Presentation at Celebration of Learning; Augustana College; Rock Island, IL, Spring 2015
  - ✓ Successfully applied for Student-Faculty Academic Partnership grant to support two students (Brooke Heibel and Rodrigo Raya)
- *Effect of combined visual and auditory stimuli on conditioned place aversion*
  - ✓ Team of 4 students

2012-2013 Mentored 4 undergraduate research students

Projects:

- *Using natural predator sounds as an aversive stimulus in conditioned place aversion in young chicks*
  - ✓ Team of 4 students
  - ✓ Poster Presentation at Celebration of Learning; Augustana College; Rock Island, IL, Spring 2013

2011-2012 Mentored 5 undergraduate research students

Projects:

- *Investigating the hole-in-the-wall test as an assay of fear in young chicks*
  - ✓ 1 student
  - ✓ Supervised student application for Summer Student Research Fellowship (Hannah Osborn, not funded)
- *Using conditioned place preference to investigate rewarding stimuli (food and social contact) in young chickens*
  - ✓ Team of 4 students
  - ✓ Poster Presentation at Celebration of Learning; Augustana College; Rock Island, IL, Spring 2012

**Mentor** to undergraduate researchers in the lab of Dr. Thomas Carew at the University of California, Irvine (Irvine, CA)

2006-2011 – Mentored 6 undergraduate research students

- Undergraduates were co-authors on Society for Neuroscience abstract; Fall 2009, 2010, 2012
- Undergraduate student gave oral presentation at Minority Science Programs Undergraduate Symposium; UCI, Fall 2008

- Undergraduate student presented poster at Sigma Xi Annual Meeting & Student Research Conference; Washington, D.C., Fall 2008

## PUBLICATIONS

Harrington, I.A., Grisham, W., Brasier, D.J., Gallagher, S.P., Gizerian, S.S., Gordon, R.G., Hagenauer, M.H., Linden, M.L., Lom, B., Olivo, R., Sandstrom, N.J., **Stough, S.**, Vilinsky, I., & Wiest, M.C. (2015). An instructor's guide to (some of) the most amazing papers in neuroscience. *The Journal of Undergraduate Neuroscience Education (JUNE)*, 14(1), R3-R14.

**Stough, S.**, Kopec, A. M., & Carew, T. J. (2015). Synaptic generation of an intracellular retrograde signal requires activation of the tyrosine kinase and mitogen-activated protein kinase signaling cascades in *Aplysia*. *Neurobiology of Learning and Memory*, 125, 47-54.

**Stough, S.** (2010). *Tyrosine Kinase and Mitogen-Activated Protein Kinase Signaling in the Induction of Lasting Plasticity in Aplysia*. Ph.D. Dissertation. University of California, Irvine, 2010. Dissertations and Theses @ University of California, Proquest. (Publication No. AAT 3404762)

Shobe, J. L., Zhao, Y., **Stough, S.**, Ye, X., Hsuan, V., Martin, K. C., & Carew, T. J. (2009). Temporal phases of activity-dependent plasticity and memory are mediated by compartmentalized routing of MAPK signaling in *Aplysia* sensory neurons. *Neuron*, 61(1), 113-125.

**Stough, S.**, Shobe, J. L, & Carew, T. J. (2006). Intermediate-term processes in memory formation. *Current Opinion in Neurobiology*, 16(6), 672-678.

Sharma, S. K., Sherff, C. M., **Stough, S.**, Hsuan, V., & Carew, T. J. (2006). A tropomyosin-related kinase B ligand is required for ERK activation, long-term synaptic facilitation, and long-term memory in *Aplysia*. *PNAS*, 103(38), 14206-14210.

## POSTER PRESENTATIONS

*\*Italics represent undergraduate collaborators*

**Stough, S.**, *Nguyen, L., Strell, P., and Todorov, S.* Augustana College 'NeurdFest': A neuroscience outreach event that impacts both elementary school-age attendees and undergraduate volunteers. Program No. 26.09SU. *2016 Neuroscience Meeting Planner*. San Diego, CA: Society for Neuroscience, 2016. Online.

**Stough, S.**, Kopec, A., and Carew, T. Synaptic generation of a retrograde intracellular signal requires tyrosine kinase and mitogen-activated protein kinase activity in *Aplysia*. Program No. 629.12. *2015 Neuroscience Meeting Planner*. Chicago, IL: Society for Neuroscience, 2015. Online.

**Stough, S.**, *Zarider, N.*, and Carew, T. J. Synaptic tyrosine kinase contributes to the generation of a MAPK-dependent retrograde signal following an analog of activity-dependent sensitization training in *Aplysia*. Program No. 294.01. *2012 Neuroscience Meeting Planner*. New Orleans, LA: Society for Neuroscience, 2012. Online.

**Stough, S., Zomorodi, A., Carew, T. J.** Tyrosine kinase activity is required during activity-dependent analogue training for the persistent trans-compartmental activation of MAPK activation in *Aplysia*. Program No. 409.9. *2010 Neuroscience Meeting Planner*. San Diego, CA: Society for Neuroscience, 2010. Online.

**Stough, S., Renteria, R., and Carew, T. J.** Compartmental analysis of TK-MAPK signaling in response to activity-dependent analogue training in *Aplysia*. Program No. 888.12. *2009 Neuroscience Meeting Planner*. Chicago, IL: Society for Neuroscience, 2009. Online.

**Stough, S., Shobe, J. S., and Carew, T. J.** Differential involvement of tyrosine kinase in two distinct forms of intermediate-term facilitation in *Aplysia*. Program No. 880.15. *2008 Neuroscience Meeting Planner*. Washington, DC: Society for Neuroscience, 2008. Online.

Shobe, J. L., Ye, X., **Stough, S.**, Zhao, Y., Martin, K. C., and Carew, T. J. Molecular and cellular mechanisms of activity dependent intermediate-term memory in *Aplysia* I: Upstream activation of MAPK. Program No. 208.13. *2007 Neuroscience Meeting Planner*. San Diego, CA: Society for Neuroscience, 2007. Online.

Zhao, Y., Shobe, J. L., Ye, X., **Stough, S.**, Carew, T. J., and Martin, K. C. Molecular and cellular mechanisms of activity dependent intermediate-term memory in *Aplysia* II: MAPK regulation of PKC. Program No. 208.4. *2007 Neuroscience Meeting Planner*. San Diego, CA: Society for Neuroscience, 2007. Online.

**Stough, S., Shobe, J. L., and Carew, T. J.** Differential involvement of tyrosine kinase in two distinct forms of intermediate-term facilitation in *Aplysia*. San Diego, CA: Molecular and Cellular Cognition Society Meeting, 2007. Online.

**Stough, S., Shobe, J. L., and Carew, T. J.** Tyrosine kinase is required for activity-dependent plasticity at *Aplysia* sensory-motor synapses. Program No. 669.12. *2006 Neuroscience Meeting Planner*. Atlanta, GA: Society for Neuroscience, 2006. Online.

Sharma, S. K., Sherff, C. M., **Stough, S.**, and Carew, T. J. Brain-derived neurotrophic factor signaling is critical for long-term memory, long-term synaptic facilitation, and ERK activation in *Aplysia*. Program No. 504.18. *2005 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, 2005. Online.

## PRESENTATIONS

- 2017 Augustana Winter Symposium Day: Trying to the Right Thing with the Wrong Brain: Evolutionary Legacies in the 21<sup>st</sup> Century
- 2016 Augustana Winter Symposium Day: Say What?!: Exploring Polarizing Social Media Comments
- 2015 Augustana GIFT session: Course Projects and Signature Work
- 2015 Augustana Psychology Club: Sea slugs, Memory, and Publishing your Research
- 2015 Augustana Celebration of Learning: Developing an Animal Model of PTSD: Engaging Students in Scientific Inquiry
- 2015 Augie NAMI: Post-traumatic Stress Disorder
- 2014 Augustana Fall Symposium Day: Transgender Persons: The Challenge of Identity
- 2014 Augustana Winter Symposium Day: Out-group Prejudice and the Brain
- 2014 Augustana GIFT session: Teaching Students to Critically Evaluate Evidence
- 2014 New Directions in Information Fluency Conference: A Developmental Approach to Teaching Scientific Inquiry in Psychology
- 2013 Augustana Fall Symposium Day: The Brain and Relationships

- 2013 Coe College Research Symposium Series: Investigating Fear Memories in Young Chickens: Neural Mechanisms and Clinical Implications
- 2012 Guest Lecture in PSYC 421 Abnormal Psychology: Neurobiology of Schizophrenia
- 2011 Augustana Psychology Club: Emotion, Memory & the Brain: Implications for Therapy
- 2010 UCI Dissertation Defense: Tyrosine Kinase and Mitogen-activated Protein Kinase Signaling in the Induction of Lasting Plasticity in *Aplysia*
- 2008 UCI Advancement Talk: What are the Mechanisms that Underlie the Formation of Memory that can be Maintained over Time?
- 2008 UCI Neuroblitz: Differential Involvement of Tyrosine Kinase in Two Distinct Forms of Synaptic Facilitation in *Aplysia*

### PROFESSIONAL DEVELOPMENT

- 2017 Faculty for Undergraduate Neuroscience Education Workshop: Activities, Laboratories, and Best Practices for Developing, Assessing, and Sustaining Inclusive Curricula; Dominican University; River Forest, IL
- 2017 Sustained Dialogue Moderator Training; Augustana College; Rock Island, IL
- 2016 Society for Neuroscience Workshop – “Creating, Sustaining, and Enhancing Undergraduate Neuroscience Programs”
- 2015 Augustana College Advising Mini-retreat – Vocational Exploration
- 2015 QCPDN Workshop – “Dealing with Challenging Situations in the Classroom”
- 2015 Peak Performing Professor Workshop; Augustana College; Rock Island, IL
- 2014 Augustana College Advising Academy
- 2014 Illinois Academic Advising Association Conference; Southern Illinois University; Carbondale, IL
- 2014 QCPDN Workshop – “Student Assessment”
- 2014 QCPDN Workshop – “Active and Collaborative Teaching Strategies”
- 2013 QCPDN Workshop – “Designing Courses for the 21<sup>st</sup> Century Learner”
- 2013 Promoting Undergraduate Research at Liberal Arts Colleges Conference; Augustana College, Rock Island, IL
- 2012 ACI New Faculty Institute; George Williams College, WI
- 2011 Faculty for Undergraduate Neuroscience Education Workshop: Resourcing the Curriculum, Improving Pedagogy and Programs, and Expanding our Disciplinary Horizons; Pomona College; Pomona, CA
- 2011 Augustana College Teaching Observation Group
- 2009 Individual Teaching Consultation on Videotaped Class Session; UCI Teaching, Learning and Technology Center; Chris O’Neal, Associate Director
- 2009 Graduate of Course Design Certificate Program; Teaching, Learning and Technology Center; University of California, Irvine; Irvine, CA

### COMMITTEES AND PROFESSIONAL SERVICE

- 2017 **Co-Organizer** – Augustana-St. Ambrose Summer Research Event
- 2017 **Poster Judge** – Society for Neuroscience Chicago Chapter Annual Meeting
- 2017 **Co-Moderator** – Sustained Dialogue at Augustana College
- 2017 **Ad-hoc Reviewer** – Journal for Undergraduate Neuroscience Education
- 2016 **Transition Coordinator Search Committee** – Augustana College
- 2016-present **Secretary / Treasurer** – John Deere Chapter of Sigma Xi Scientific Research Society

2016 **Panelist** – “Senior Inquiry at Augustana”, Panel for Alumni, Homecoming 2016, Augustana College

2016 **Panelist** – “Making the Most of Your Summer”, New Faculty Mentoring Circle, Augustana College

2016 **Poster Judge** – Society for Neuroscience Chicago Chapter Annual Meeting

2015 **Panelist** – “Seeking Research Funding”, Research Forum, Augustana College

2015-2017 **Student Policies Committee** – Augustana College

2015-present **Student Research Committee** – Augustana College

2015-present **Psychology Department Assessment Coordinator** – Augustana College

2015-present **Reading Writing Center Advisory Group** – Augustana College

2015 **Poster Judge** – Society for Neuroscience Chicago Chapter Annual Meeting

2014 **Poster Judge** – Society for Neuroscience Chicago Chapter Annual Meeting

2014-2017 **Symposium Committee** – Augustana College

2013-present **Educational Policies Committee** – Augustana College (drafted syllabus policy and finals week policy)

2013-present **Institutional Animal Care and Use Committee** – Augustana College

2013 **Session Moderator** – Celebration of Learning, Augustana College

2013 **Session Moderator** – Promoting Undergraduate Research at Liberal Arts Colleges: A One-Day Conference for Faculty and Administrators to Share Best Practices, Augustana College

2012 **Student Policies Committee** (temporary substitute, Fall) – Augustana College

2011 **Panelist** – “How to get a job at a Primarily Undergraduate Institution”, Graduate Resource Center, University of California, Irvine

2008-2010 **Member** – N113L Working Group, student/faculty committee to provide input on redesign of neurobiology lab, University of California, Irvine

2005-2010 **Lab Manual Editor** – Bio Sci N113L, University of California, Irvine

2009 **Conference Note Taker** – Neuroscience Research in Education Summit, Society for Neuroscience, Irvine, CA

2008 **Reviewer** – Graduate Women in Science Fellowship applications

2007 **Graduate Student Representative** – Center for the Neurobiology of Learning and Memory Executive Committee, University of California, Irvine

2005-2007 **Lab Leader** – Bio Sci N113L, train/supervise lab instructors for undergraduate neurobiology lab, University of California, Irvine

#### **FELLOWSHIPS AND AWARDS**

2017 **Student-Faculty Academic Partnership grant** (winter)

2015-2016 **Larry P. Jones Endowed Fellowship in the Natural Sciences**

2015 **Student-Faculty Academic Partnership grant** (summer & fall)

2014-2015 **New Faculty Research Award**

2014 **Student-Faculty Academic Partnership grant** (summer)

2007-2009 **NRSA Individual Predoctoral Training Grant**, Multilevel Analysis of Activity-Dependent Plasticity, 1-F31-MH079660-01A1

2007 **UCI Graduate Student Travel Fellowship**

2004-2005 **NRSA Institutional Training Grant**, Training Program in Neural Plasticity, 5-T32-MH014599

2003-2006 **McElroy Fellowship**

2002 **Richard H. Bahwell Prize in Psychology**

2002 **Frederick B. Eutsler Prize in Philosophy**

1998-2002 **Coe College Science Scholarship**

1998-2002 **Coe College Writing Center Scholarship**  
1998-2002 **Coe College Trustee Scholarship**  
1998 **Shoemaker-Strickler Memorial Scholarship** for study in Chemistry at University of Iowa  
(declined)

#### **SCIENTIFIC MEMBERSHIPS**

2011-present Faculty for Undergraduate Neuroscience  
2011-present Sigma Xi – John Deere Chapter (*secretary-treasurer: 2016-present*)  
2006-present Molecular and Cellular Cognition Society  
2003-present Society for Neuroscience

#### **OUTREACH**

2017 Co-organized the 3<sup>rd</sup> annual Longfellow NeurdFest  
2016 Co-organized the 2<sup>nd</sup> annual Longfellow NeurdFest (presented poster with 3 student co-authors at the 2016 Society for Neuroscience conference)  
2015 Co-organized the Longfellow NeurdFest, a neuroscience fair for 40 2<sup>nd</sup> grade students, Augustana College  
2011 Brain Awareness Week volunteer; Fountain Valley Elementary School  
2004-2011 Lab tours/presentations to elementary, high school, and undergraduate students, University of California, Irvine

Updated November 2017