

## Michael A. Emery

Interdisciplinary Program in Neuroscience  
 Texas A&M Institute for Neuroscience (TAMIN)  
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 OrchID: 0000-0002-8587-4115

### Education

- 2011–present      PhD in Neuroscience, Interdisciplinary Program in Neuroscience,  
 Texas A&M Institute for Neuroscience, Texas A&M University  
*Committee: Shoshana Eitan (advisor and chair), Paul  
 Wellman, Michelle Hook, C. Jane Welsh*
- 2006–2010      Bachelor of Arts in Psychology, minor in Chemistry, Southern Illinois  
 University Carbondale  
*Magna cum Laude*

### Teaching Experience

Guest Lecturer, PSYC 333—Biology of Psychological Disorders; Texas A&M University  
 Instructor of Record – Shoshana Eitan PhD. Fall 2016.

- Led journal-club-style presentation.

Guest Lecturer, PSYC 335H—Physiological Psychology, Honors; Texas A&M University  
 Instructor of Record – Shoshana Eitan PhD. Fall 2016.

- Created and presented guest lecture entitled, ‘The Long-term Consequences of Burn Injury’.

Guest Lecturer, PSYC 335—Physiological Psychology; Texas A&M University  
 Instructor of Record – Shoshana Eitan PhD. Spring 2016.

- Created and presented guest lecture on Neuroanatomy.

Teaching Assistant, PSYC 204—Experimental Psychology, Texas A&M University  
 Instructor of Record – Winfred Arthur, PhD. Spring 2015; Fall 2015; Spring 2016; Fall 2016;  
 Spring 2017.

- Led weekly 2-hour computer lab section.
- This course meets University Writing Intensive requirements.
- Administered and supervised PsychMate Experimental Psychology software modules.
- Instructed and supervised the writing of individual, APA-style scientific final papers based upon the data generated in the PsychMate experiments.

Guest Lecturer, PSYC 335H—Physiological Psychology, Honors; Texas A&M University  
Instructor of Record – Shoshana Eitan PhD. Fall 2014.

- Created and presented guest lecture on Neuroanatomy.

Grader, PSYC 107—Introduction to Psychology, Texas A&M University  
Instructor of Record – Rachel Smallman, PhD. Fall 2014.

- Graded written assignments and maintained electronic gradebook for 2 sections, total of 430 students.

Undergraduate Teaching Assistant, PSYC 102—Introduction to Psychology; Southern Illinois University Carbondale  
Meera Komarraju PhD, Supervisor. Fall 2010.

- Led weekly discussion group of 23 students, supervising discussions and activities related to that week's lecture material.
- Maintained gradebook, both electronic and hard copy.
- Administered tests.
- Graded critical response papers.
- Limited number of undergraduate seniors offered this honor every year.

## **Laboratory Experience**

Graduate Research Assistant. Shoshana Eitan, Principal Investigator.  
Behavioral and Cellular Neuroscience Program, Department of Psychology and Institute for Neuroscience, Texas A&M University, January 2012–Present.

- Administer and manage numerous research projects.
- Projects include various behavioral and molecular biology techniques to investigate the effects opioid use has upon the dopamine system in adolescents.
- Responsible for the supervision and training of undergraduate research assistants.
- Supervised an undergraduate Senior Thesis research project.

Laboratory Technician. Restorative Neuroscience Lab, Michael R. Hoane, Director.  
Brain and Cognitive Sciences Program, Department of Psychology and Center for Integrated Research in Cognitive and Neural Sciences, SIUC, December 2010–August 4, 2011.

- Ran independent research project culminating in a publication.
- Trained and supervised undergraduate research assistants and lab technicians.

Undergraduate Research Assistant. Restorative Neuroscience Lab, Michael R. Hoane, Director.  
Brain and Cognitive Sciences Program, Department of Psychology and Center for Integrated Research in Cognitive and Neural Sciences, SIUC, February 2010–December 2010.

- Assisted various projects.

Undergraduate Research Assistant. Paul Etcheverry, Primary Investigator.  
Social Psychology Program, Department of Psychology, SIUC, Fall 2007 and Summer 2008.

- Assisted data collection and running of participants.

## **Publications**

1. **Emery M.A.**, Bates, M.L.S., Wellman P.J., & Eitan S. (Submitted, estimated publication 2017). "Hydrocodone, but neither morphine nor oxycodone, is effective in suppressing burn-induced mechanical allodynia in the uninjured foot contralateral to the burn."
2. Eitan S., **Emery M.A.**, Bates, M.L.S., & Horrax, C.T. (Submitted, estimated publication 2016). "Opioid Addiction: Who Are Your Real Friends?" Review article.
3. **Emery M.A.**, Bates, M.L.S., Wellman P.J., & Eitan S. (Under review, estimated publication 2016). "Hydrocodone, but neither morphine nor oxycodone, is effective in suppressing the development of burn-induced hyperalgesia."
4. **Emery M.A.**, Bates, M.L.S., Wellman P.J., & Eitan S. (Accepted, estimated publication 2017). Burn-injury decreases the antinociceptive effects of opioids. *Behavioural Pharmacology*.
5. Bates, M.L.S., **Emery, M.A.**, Wellman, P.J., & Eitan S. (2016). Social environment alters opioid-induced hyperalgesia and antinociceptive tolerance in adolescent mice. *European Journal of Pain*, 20(6): 998-1009. DOI: 10.1002/ejp.825
6. **Emery M.A.**, Bates M.L.S., Wellman P.J., & Eitan S. (2016). Differential effects of oxycodone, hydrocodone, and morphine on activation levels of signaling molecules. *Pain Medicine*, 17(5): 908-914. DOI: 10.1111/pme.12918
7. **Emery M.A.**, Bates M.L.S., Wellman P.J., & Eitan S. (2015). Differential effects of oxycodone, hydrocodone, and morphine on the responses of D2/D3 dopamine receptors. *Behavioural Brain Research*. 284: 37-41. DOI: 10.1016/j.bbr.2015.01.023.
8. Bates, M.L.S., **Emery, M.A.**, Wellman, P.J., & Eitan, S. (2014). Social housing conditions influence morphine dependence and the extinction of morphine place preference in adolescent mice. *Drug and Alcohol Dependence* 142: 283-289. DOI: 10.1016/j.drugalcdep.2014.06.036.
9. Barwatt J.W., Hofford R.S., **Emery M.A.**, Bates M.L.S., Wellman P.J., & Eitan S. (2013). Differential effects of methadone and buprenorphine on the response of D2/D3 dopamine receptors in adolescent mice. *Drug and Alcohol Dependence* 132 (3): 420-426. DOI: 10.1016/j.drugalcdep.2013.07.016.

10. Vonder Haar C, **Emery M.A.**, & Hoane M.R. (2012). Chronic folic acid administration confers no treatment effects in either a high or low dose following unilateral controlled cortical impact injury in the rat. *Restorative Neurology and Neuroscience* 30(4): 291–302. DOI: 10.3233/RNN-2012-110196.
11. Petrofes Chapa R.D., **Emery M.A.**, Fawver J.N., & Murray I.V. (2012). Amyloids as Sensors and Protectors (ASAP) hypothesis. *Journal of Alzheimer's Disease* 29(3): 503–514. DOI: 10.3233/JAD-2012-112015.

## **Posters and Presentations**

### **Posters:**

\* Indicates presenting author.

1. Bates, M.L.S.\*, **Emery, M.A.**, Wellman, P.J., and Eitan S. (2016, December). *The influence of social housing conditions on morphine-induced gene expression*. Poster presented at the Annual TAMIN SfN Poster Session.
2. **Emery M.A.\***, Bates M.L.S., Christopher T. Horrax, Wellman P.J., and Eitan S. (2016, November). *Hydrocodone is More Effective Than Morphine or Oxycodone in Suppressing Burn-induced Hyperalgesia*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, San Diego, CA.
3. Christopher T. Horrax\*, **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2016, November). *Oxycodone, hydrocodone, and morphine differentially affect gene expression*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, San Diego, CA.
4. Bates, M.L.S.\*, **Emery, M.A.**, Wellman, P.J., and Eitan S. (2016, November). *The influence of social housing conditions on morphine-induced gene expression*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, San Diego, CA.
5. **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2016, April). *Differential locomotor responses to quinpirole following various opioids is driven by the mu receptor*. Poster presented at Texas A&M University TAMIN Spring Symposium 2016.
6. **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2016, March). *Differential locomotor responses to quinpirole following various opioids is driven by the mu receptor*. Poster presented at Texas A&M University Student Research Week 2016.
7. **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2015, October). *Differential locomotor responses to quinpirole following various opioids is driven by the mu receptor*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, Chicago, IL.

8. Bates, M.L.S.\*, **Emery, M.A.**, Wellman, P.J., and Eitan S. (2015, October). *Contribution of MRGPRB4-expressing sensory neurons to the socio-environmental effect on opioid dependence and reward in adolescent mice*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, Chicago, IL.
9. **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2015, March). *Differential effects of various opioids on the development of allodynia and abuse in the context of pain*. Poster presented at the Annual TAMIN Symposium.
10. Bates, M.L.S.\*, **Emery, M.A.**, Wellman, P.J., and Eitan S. (2015, March). *Social housing conditions influence the analgesic properties of opioid in adolescent mice*. Poster presented at the Annual TAMIN Symposium.
11. **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2015, March). *Differential effects of various opioids on the development of allodynia and abuse in the context of pain*. Poster presented at Texas A&M Student Research Week.
12. **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2014, October). *Differential effects of various opioids on the development of allodynia and abuse in the context of pain*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, Washington, DC.
13. Bates, M.L.S.\*, **Emery, M.A.**, Wellman, P.J., and Eitan S. (2014, October). *Social housing conditions influence the analgesic properties of opioid in adolescent mice*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, Washington, DC.
14. **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2014, April). *Differential effects of oxycodone, hydrocodone, and morphine on the response of D2/D3 dopamine receptors in adolescent mice*. Poster presented at the Annual TAMIN Symposium.
15. Bates, M.L.S.\*, Cole, S., Hofford, R.S., **Emery, M.A.**, Wellman, P.J., and Eitan S. (2014, January). *Social housing conditions influence extinction of morphine place preference in adolescent mice*. Poster presented at the Annual TAMIN SfN Poster Session.
16. **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2013, November). *Differential effects of oxycodone, hydrocodone, and morphine on the response of D2/D3 dopamine receptors in adolescent mice*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, San Diego, CA.
17. Bates, M.L.S.\*, Cole, S., Hofford, R.S., **Emery, M.A.**, Wellman, P.J., and Eitan S. (2013, November). *Social housing conditions influence extinction of morphine place preference in adolescent mice*. Poster presented at the Annual Meeting of the Society for Neuroscience (SfN), San Diego, CA.
18. Seloff K. E.\*, **Emery M. A.**, Bates M. L. S., & Eitan S. (2013, November). *Repeated morphine exposure decreases mGluR1 activity in the dorsal striatum of adolescent mice at 2, but not 4 or 24, hours following final administration of morphine*. Poster presented at the Annual Meeting of the Society for Neuroscience (SfN), San Diego, CA.

19. Barwatt J.W., Hofford R.S., **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2013, April). *Differential effects of methadone and buprenorphine on the response of D2/D3 dopamine receptors in adolescent mice*. Poster presented at the Annual TAMIN Symposium.
20. Hofford R. S., Cole S. L., Bates M. L. S.\*, **Emery M. A.**, Wellman P. J., & Eitan S. (2013, April). *The oxytocin and arginine vasopressin systems mediate the social effect on morphine conditioned place preference*. Poster presented at the Annual TAMIN Symposium.
21. Seloff K. E.\*, **Emery M. A.**, Bates M. L. S., & Eitan S. (2013, April). *Repeated morphine exposure decreases mGluR1 activity in the dorsal striatum of adolescent mice at 2, but not 4 or 24, hours following final administration of morphine*. Presented at the Annual TAMIN Symposium.
22. Barwatt J.W., Hofford R.S., **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2012, December). *Differential effects of methadone and buprenorphine on the response of D2/D3 dopamine receptors in adolescent mice*. Poster presented at the Annual TAMIN SfN Poster Session, December 6, 2012.
23. Hofford R. S., Cole S. L., Bates M. L. S.\*, **Emery M. A.**, Wellman P. J., & Eitan S. (2012, December). *The oxytocin and arginine vasopressin systems mediate the social effect on morphine conditioned place preference*. Poster presented at the Annual TAMIN SfN Poster Session, December 6, 2012.
24. Barwatt J.W.\*, Hofford R.S., **Emery M.A.\***, Bates M.L.S., Wellman P.J., and Eitan S. (2012, October). *Differential effects of methadone and buprenorphine on the response of D2/D3 dopamine receptors in adolescent mice*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, New Orleans, LA.
25. Hofford R. S., Cole S. L., Bates M. L. S.\*, **Emery M. A.**, Wellman P. J., & Eitan S. (2012, October). *The oxytocin and arginine vasopressin systems mediate the social effect on morphine conditioned place preference*. Poster presented at the Annual Society for Neuroscience (SfN) Conference, New Orleans, LA.
26. Vonder Haar C.\*, **Emery M.** & Hoane M.R. (2011, June). *Chronic folic acid administration does not improve recovery of function in either a low or high dose following unilateral controlled cortical impact*. Poster presented at the National Neurotrauma Symposium meeting in 2011, Ft. Lauderdale, FL.
27. **Emery M.A.\***, and Hoane M.R. (2011, April). *Folic Acid Treatment Does Not Result in Behavioral Sparing Following Unilateral Controlled Cortical Impact in The Rat*. Poster presented at the 2011 SIUC Undergraduate Research Forum, Carbondale, IL.

### **Presentations:**

*Research in the Eitan Laboratory. "TAMIN 101" Data blitz and lab orientation session, Texas A&M University, Fall 2016.*

*Differential Effects of Various Opioids on Behavior, Signaling, and Gene Expression.* TAMIN Seminar Series 'Grad Duo' Talk, Texas A&M University, Spring 2016 (March 10).

*Differential Effects of Different Opioids on the Locomotor Response of D2DR Receptors.* TAMIN Recruiting Weekend Data Blitz Session, Texas A&M University, Spring 2016 (February 12).

*Differential Effects of Different Opioids on the Locomotor Response of D2DR Receptors.* 'TAMIN 101' Data Blitz session, Texas A&M University, Fall 2015 (August 24).

*Opioid Pain Medication in Adolescents: Use and Abuse of Different Drugs Result in Differential Outcomes.* Behavioral and Cellular Neuroscience Program Brownbag talk, Texas A&M University Psychology Dept., Spring 2014 (April 28).

*Various Opioids Carry Differential Risks to the Adolescent Dopamine D2 Signaling Pathway.* Behavioral and Cellular Neuroscience Program Brownbag talk, Texas A&M University Psychology Dept., Fall 2012 (December 3).

## **Skills**

### *Computer Technology Research Tools*

- SPSS
- Microsoft Excel
- ImageTool (UTHSCSA)
- ImageJ (NIH)
- Adobe Photoshop
- SigmaPlot
- VersaMax & VersaMap

### *Laboratory Experience*

- Training and experience in hazardous materials handling
- Basic organic chemistry techniques
- Polymerase Chain Reaction (PCR), qRT-PCR
- SDS-PAGE and Western blot
- Immunoprecipitation
- FPLC
- Basic TIRF microscopy technique
- Laboratory fluids and chemical solutions preparation
- Histology: Tissue prep and gelatin slide mounting, Nissl staining, frozen tissue slicing on microtome, immunohistochemistry
- Care and handling of both rats and mice
- Small animal surgery, including:
  - Stereotaxic surgery, prep, and assistance in rats and mice
  - Craniotomies in rats
  - Injections (i.p. and s.c.) in both rats and mice, p.o. (gavage) in mice
  - Use of gas anesthesia in rats and mice, ketamine anesthesia in mice
  - Perfusion of rats, including brain, blood, and liver tissue harvesting
  - Tail vein blood draws in rats
  - Controlled Cortical Impact injury modeling in rats
- Behavioral testing, including:
  - Morris water maze
  - Locomotor placing task
  - Photobeam activity system

- Bilateral tactile adhesive removal task
- Rotarod Task
- Conditioned Place Preference
- Tail Withdrawal Assay
- Open Field Test
- Novelty-induced Hypophagia
- Sucrose Preference test

#### *Certifications and Training*

- Biosafety Level 1 training
- Texas A&M University Institutional Animal Care and Use Committee (IACUC) certifications, including:
  - Humane Care & Use of Laboratory Animals
  - Humane Care & Use of Laboratory Mice
  - Aseptic Surgery and Perioperative Care of Rodents
  - Anesthesia and Analgesia of Rodents
  - Occupational Health and Safety
- Texas A&M University Comparative Medicine Program (CMP) Basic Mouse Handling and Techniques training

## **Honors, Awards, & Memberships**

#### *Awards*

- Texas A&M Genomics Seed Grant: *Effects of various opioids and social environment on gene expression*. May 2014–August 2015. PI —Shoshana Eitan.
- Texas A&M University College of Liberal Arts Seed Grant: *Opioid Use in Pediatric Pain Management*. April 2013–March 2014. PI —Shoshana Eitan.
- Heep Fellowship in Neuroscience, Fall 2011–Spring 2014.
- August L. & Thelma Fowler Scholarship, May 2006.

#### *Honors*

- SIUC Dean's List, College of Liberal Arts and College of Science, 11 of 12 eligible semesters.
- SIUC Department of Psychology Top 5%, 8 courses over three years.
- SIUC Scholastic Honors, College of Science or College of Liberal Arts, Honors Day, 4 of 4 eligible years.
- Illinois State Scholar, 2006.

#### *Society Memberships*

- Sigma Xi, Texas A&M University Chapter, Associate Member, April 2016-present.
- Psi Chi, National Psychology Honor Society, November 2012–present.
- Society for Neuroscience Student Member, September 2012–present.
- Golden Key National Honor Society, November 2009–present.
- Sigma Alpha Lambda, National Leadership and Honors Organization, July 2007–present.
- Alpha Lambda Delta, National Honor Society for First Year College Students, April 2007–present.
- The National Honor Society, November 2005–May 2006.

## **Service**

Graduate Student Representative for TAMIN program, Graduate and Professional Student Council, 2015–16.

Judge for undergraduate oral presentations, Student Research Week 2015, Texas A&M University.

Judge for undergraduate poster presentations, Student Research Week 2015, Texas A&M University.

Historian, SANDI Neuroscience Student Organization, 2014–15.

Planning Committee, Texas A&M University & Health Science Center Faculty of Neuroscience Symposium 2015.

Planning Committee, Texas A&M University & Health Science Center Faculty of Neuroscience Symposium 2014.

Judge for graduate oral presentations, Student Research Week 2013, Texas A&M University.

Planning Committee, Texas A&M University & Health Science Center Faculty of Neuroscience Symposium 2013.

Judge for undergraduate oral presentations, Student Research Week 2012, Texas A&M University.

Planning Committee, Texas A&M University & Health Science Center Faculty of Neuroscience Symposium 2012.

## **Professional Development**

Attended College of Liberal Arts grant-writing seminar, August 25, 2016

Attended Departmental Teaching Assistant Training, Texas A&M University Dept. of Psychology, September/October 2014

Attended “Teaching Assistant Institute” by Texas A&M University Center for Teaching Excellence (CTE), August 2014

Attended graduate student workshop “Mentoring Undergraduates in Research.” September 14, 2012

Attended 4-day teaching workshop presented by Dr. Ludy Benjamin, May 14–17, 2012

## **References**

### *Academic*

Shoshana Eitan, Ph.D.

*Assistant Professor, Behavioral and Cellular Neuroscience and Institute for Neuroscience,  
Texas A&M University*

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Michael R. Hoane, Ph.D.

*Interim Department Chair and Professor, Brain and Cognitive Sciences, Psychology  
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