

*Curriculum Vitae*

**Jessie C. Tanner**

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**EDUCATION**

- 2018-present **NSF Postdoctoral Research Fellow in Biology**, Advised by Dr. Leigh W. Simmons, Centre for Evolutionary Biology, University of Western Australia, Crawley, WA, Australia  
Project title: “Evolution of the Mammalian Baculum”
- 2012-2018 **Ph.D. Ecology, Evolution, and Behavior**, University of Minnesota  
Co-advisers: Dr. Mark Bee and Dr. Marlene Zuk  
Dissertation Title: “Sexual Selection Constrained: The Expression of Mating Preferences in Acoustically Communicating Animals”
- 2007-2012 **B.S. Zoology and Biomedical Sciences, Magna cum laude**, University of Oklahoma  
Thesis title: “Precopulatory Interactions in a *Hyalella* Amphipod”
- 2007-2012 **B.A. French, Magna cum laude**, University of Oklahoma  
Thesis title: « *Observation et allégorisation: le comportement des animaux et des images de renouvellement dans les bestiaires médiévaux* » (“Observation and Allegory: Animal Behavior and Images of Renewal in the Medieval Bestiaries”)
- 2009-2010 Academic year abroad studying Linguistics, French History and Literature, Université Michel-de-Montaigne, Bordeaux, France

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

Society for the Study of Evolution, International Society for Behavioral Ecology, Animal Behavior Society, Australasian Evolution Society, Orthopterists’ Society, American Society of Ichthyologists and Herpetologists

**GRANTS AND FELLOWSHIPS**

Amounts in US dollars

**External Awards**

- 2018-present NSF Postdoctoral Research Fellowship in Biology (\$207,000)
- 2013-2018 NSF Graduate Research Fellowship (\$132,000)
- 2013-2018 Ford Foundation Pre-Doctoral Fellowship (\$66,000)
- 2018 Animal Behavior Society Travel Grant (\$500)
- 2017 NSF Doctoral Dissertation Improvement Grant – IOS (\$17,222)
- 2016 Theodore J. Cohn Research Grant – Orthopterists’ Society (\$1,492)
- 2016 Animal Behavior Society Student Research Grant (\$2,500)
- 2013 Helen T. and Frederick M. Gaige Award – American Society of Ichthyologists and Herpetologists (\$500)

2013 Research Grant – Minnesota Herpetological Society (\$997)

#### University of Minnesota

2017 Joyce Davenport Fellowship in Natural History – Bell Museum (\$2,500)  
2016 Dayton Family Fellowship in Natural History – Bell Museum (\$1,343)  
2016 UMN Graduate School Thesis Research Travel Grant (\$2,500)  
2014 Travel Grant – Minnesota Graduate and Professional Student Association (\$200)  
2014 Travel Grant – University of Minnesota Council of Graduate Students (\$800)

#### PUBLICATIONS

##### Manuscripts Currently in Progress

1. **Tanner, JC** and MA Bee. *In review*. Inconsistent sexual signaling degrades optimal mating decisions in animals. *Science Advances*.
2. **Tanner, JC**, ER Johnson, and M Zuk. *In preparation*. Female field crickets do not adjust preferences for male signals based on signal quality experienced during development.
3. **Tanner, JC** and MA Bee. *In preparation*. Female preferences for pulse rate are constrained by chorus noise, but not within-individual variation in signal production, in Cope's gray treefrog (*Hyla chrysoscelis*).

##### Peer-Reviewed Journal Articles

1. **Tanner, JC**, J Justison, and MA Bee. *In press*. SynSing: a graphical user interface for design of synthetic animal signals in MATLAB. *Bioacoustics*.
2. **Tanner, JC**, E Swanger, and M Zuk. 2019. Sexual signal loss in field crickets maintained despite strong sexual selection favoring singing males. *Evolution* 73(7): 1482-1489.
3. **Tanner, JC** and MA Bee. 2019. Within-individual variation in sexual displays: signal or noise? *Behavioral Ecology* 30(1): 80-91.
4. **Tanner, JC**, LM Garbe, and M Zuk. 2019. When virginity matters: age and mating status affect measures of female responsiveness in crickets. *Animal Behaviour* 147: 83-90.
5. Ditmer, MA, LK Werden, **JC Tanner**, JB Vincent, PA Iazzo, TG Laske, and DL Garshelis. 2019. Bears habituate to the repeated exposure of a novel stimulus, unmanned aerial vehicles. *Conservation Physiology* 7(1): coy067.
6. **Tanner, JC**, JL Ward, RG Shaw, and MA Bee. 2017. Multivariate phenotypic selection on a sexual signal. *Evolution* 71(7): 1742-1754.
7. Zuk, M, **JC Tanner**, E Schmidtman, MA Bee, and S Balenger. 2017. Calls of recently introduced coquí frogs do not interfere with cricket phonotaxis in Hawaii. *Journal of Insect*

*Behavior* 30(1): 60-69.

8. Ward, JL, EK Love, AT Baugh, NM Gordon, **JC Tanner**, and MA Bee. 2015. Progesterone and prostaglandin F2 $\alpha$  induce species-typical female preferences for male sexual displays in Cope's gray treefrog (*Hyla chrysoscelis*). *Physiology & Behavior* 152(2015): 280-287.
9. Werden, LK, JB Vincent, **JC Tanner**, and MA Ditmer. 2015. Not quite free yet: clarifying UAV regulatory progress for ecologists. *Frontiers in Ecology and Evolution* 13(10): 534-535.
10. Ditmer, MA, JB Vincent, LK Werden, **JC Tanner**, TG Laske, PA Iazzo, DL Garshellis, and JR Fieberg. 2015. Bears show a physiological but limited behavioral response to unmanned aerial vehicles. *Current Biology* 25: 1-6.
11. Makowicz, AM, **JC Tanner**, E Dumas, and I Schlupp. 2015. Pre-existing biases for swords in mollies (*Poecilia*). *Behavioral Ecology* 27(1): 175-184. doi:10.1093/beheco/arv130

### Book Chapters

1. Olzer, RM, R Ehrlich, JL Heinen-Kay, **JC Tanner**, and M Zuk. 2018. Insect Reproductive Behavior. In *Insect Behavior: from mechanisms to ecological and evolutionary consequences*. Alex Córdoba-Aguilar, Daniel González-Tokman, and Isaac González-Santoyo, eds. Oxford: Oxford University Press.

### Published Abstracts

1. **JC Tanner** and MA Bee. 2018. Within-individual variation in signal production limits female choice in noisy treefrog choruses. *The Journal of the Acoustical Society of America* 143(3): 1899.
2. **JC Tanner** and MA Bee. 2017. Sources of noise-induced communication errors in *Hyla chrysoscelis*, Cope's gray treefrog. *Integrative and Comparative Biology* 57: E426

### Published Code

1. SynSing, a MATLAB-based graphical user interface for generation of acoustic stimuli in studies of bioacoustics: <https://github.com/jessiectanner/SynSing/releases>

### PRESENTATIONS

#### Invited Seminars

1. **Tanner, JC**, ER Johnson, and M Zuk. Does plasticity in the expression of mating preferences facilitate the rapid loss of a sexual signal? Centre for Evolutionary Biology Seminar, University of Western Australia, Perth. October 24, 2018.
2. **Tanner, JC**. Sexual Selection Constrained: within-individual variation and behavioral plasticity affect female preference expression in treefrogs and field crickets. University of Wisconsin, Milwaukee, EEB Journal Club. February 9, 2018.

3. **Tanner, JC.** Measuring multivariate selection on animal signals. Hamline University Mathematics Seminar, Saint Paul, MN. November 7, 2017.
4. **Tanner, JC** and MA Bee. The expression of female preferences in natural signaling contexts. International Bioacoustics Congress, Haridwar, India. October 4, 2017. Invited talk in symposium: “Acoustic Communication, Reproductive Systems, and Sexual Selection.”
5. **Tanner, JC.** Sexual Selection Constrained. University of Nebraska Ecology, Evolution, and Behavior Seminar, Lincoln, NE. September 15, 2017.

#### **Contributed Talks at Professional Meetings**

1. **Tanner, JC,** ER Johnson, and M Zuk. Does plasticity in the expression of mating preferences facilitate the rapid loss of a sexual signal? International Society for Behavioral Ecology. Minneapolis, MN. August 12, 2018.
2. **Tanner, JC** and MA Bee. Within-individual variation in sexual displays limits female choice in noisy treefrog choruses. Animal Behavior Society, Milwaukee, WI. August 5, 2018.
3. **Tanner, JC** and MA Bee. Within-individual variation in signal production limits female choice in noisy treefrog choruses. Acoustical Society of America, Minneapolis, MN. May 10, 2018.
4. **Tanner, JC** and MA Bee. Sources of noise-induced error in animal communication. 4<sup>th</sup> International Symposium on Acoustic Communication in Animals. Omaha, NE. July 20, 2017.
5. **Tanner, JC** and MA Bee. Sources of noise-induced error in animal communication. Society for Integrative and Comparative Biology, New Orleans, LA. January 7, 2017.
6. **Tanner, JC** and MA Bee. Sources of noise-induced error in *Hyla chrysoscelis*, Cope’s gray treefrog. Animal Behavior Society, Columbia, MO. August 3, 2016.
7. **Tanner, JC** and MA Bee. Multivariate phenotypic selection on a sexual signal. Society for the Study of Evolution, Austin, TX. June 19, 2016.
8. **Tanner, JC,** JL Ward, and MA Bee. Multivariate selection on the advertisement call of the gray treefrog, *Hyla chrysoscelis*. American Society of Ichthyologists and Herpetologists, Reno, NV. July 17, 2015.

#### **Contributed Posters at Professional Meetings**

1. **Tanner, JC** and LW Simmons. The evolution of genital morphology: baculum shape diversification in muroid rodents. Australasian Evolution Society, Sydney, NSW. Planned November 2019.
2. **Tanner, JC,** JL Ward, and MA Bee. Measuring non-linear selection on the advertisement call of the gray treefrog, *Hyla chrysoscelis*. Animal Behavior Society, Princeton, NJ. August 13, 2014.

3. **Tanner JC**, JL Ward, and MA Bee. Multivariate selection on the advertisement call of a North American treefrog. *International Society for Behavioral Ecology*, New York, NY. August 2, 2014.

## TEACHING AND ADVISING

### Laboratory Instructor Positions

- 2019 ANIM 3365: Behavioural Ecology Tutorial, School of Biological Sciences, University of Western Australia, Crawley, WA, Australia
- Fall 2017 EEB 3411: Animal Behavior, College of Biological Sciences, University of Minnesota Twin Cities, Saint Paul, MN
- 2015-2016 BIOL 1003: Evolution and Biology of Sex, College of Biological Sciences, University of Minnesota Twin Cities, Minneapolis, MN
- Fall 2012 BIOL 2002: Foundations of Biology, College of Biological Sciences, University of Minnesota Twin Cities, Saint Paul, MN

### Guest Lectures

- U of Minnesota EEB 3411: Animal Behavior, Professor Mark Bee, November 15, 2017  
Saint Catherine University: Animal Behavior, Professor Susan Balenger, April 5, 2016  
U of Minnesota EEB 3412W: Animal Behavior, Professor Emilie Snell-Rood, April 15, 2015  
U of Minnesota EEB 3412W: Animal Behavior, Professor Mark Bee, November 17, 2014

### Pedagogical Training

- Fall 2015 GRAD 8101: Teaching in Higher Education (University of Minnesota)  
Fall 2007 AVIA 4113: Certified Flight Instructor Seminar (University of Oklahoma)

### Honors and Master's Thesis Mentees

\*Denotes master's student

- 2019 Hwei Ling Chan\* (UWA), thesis title: "Do male crickets adjust the quality of their ejaculates in response to sperm competition risk by alternating their macronutrient intake?" (co-supervisor, with Leigh W. Simmons)
- 2016-2017 Sachin Rao, thesis title: "Evaluating the Effects of Multiple Types of Noise on Error Rates in Female *Hyla chrysoscelis*"  
Laura Garbe, thesis title: "Mating Experience and Female Choice in Pacific Field Crickets"
- 2015-2016 Matthew LaPrade, thesis title: "Noise Induces Errors in Communication"
- 2013-2014 Margaret Tierney, thesis title: "Multivariate Selection Analysis of Female Choice in Cope's Gray Treefrog (*Hyla chrysoscelis*)"

### Directed Research and Undergraduate Research Opportunities Program Mentees

- 2016-2018 Joshua Justison, project title: “SynSing: A Graphical User Interface for Design of Synthetic Animal Signals in MATLAB”
- 2016-2018 Emily Johnson, project title: “Does song quality during development influence adult mating preferences in *Teleogryllus oceanicus*?”
- 2016 Alec Scollard, thesis title: “Effects of Ambient and Signaler Noise on Call and Pulse Rate Discrimination Errors in *Hyla chrysoscelis*”
- 2014-2015 Kelia Axler, project title “Quantifying Variation in Advertisement Signals in the spring peeper (*Pseudacris crucifer*)”
- 2013-2017 Recruited, trained, and supervised 73 undergraduates from UMN and other institutions who worked as field and research assistants on various studies of acoustic communication in treefrogs. Each student committed to working between 12 and 40 hours per week for 6 weeks on all aspects of the project, including conducting experiments, curating data, and collecting and caring for animals. I mentored some of these students for multiple treefrog seasons.
- 2013-2014 Undergraduate Research Opportunities Program Mentor: Margaret Tierney

## PROFESSIONAL SERVICE

### ***Ad hoc* Reviewer**

*American Naturalist, Animal Behaviour, Behavioral Ecology and Sociobiology, Evolution, Bioacoustics, Biological Journal of the Linnean Society, Journal of Herpetology*

### **Committee Service**

- 2014-2018 UMN EEB Ethics and Aesthetics Committee – Collaboratively organized 4-6 seminars or workshops per year on the responsible conduct of research, with a focus on issues of equity, diversity, and inclusion in academic research and graduate education
- 2015 UMN Undergraduate Research Opportunity Program Proposal Review Panel
- 2013-2014 UMN Behavior Group Coordinator  
President, EEB Graduate Students

### **Public Outreach and Engagement**

- June 2019 Published SynSing, free open-source MATLAB code for generating synthetic signals for use in studies of acoustic communication
- April 2018 Judge: Minnesota State Science & Engineering Fair
- Feb. 2017 Elementary school outreach, Southside Family School (Minneapolis) 1st graders: Amphibian Communication and Life Cycle
- Feb. 2016 STEM Fair Mentor: one-on-one science fair mentorship (design, data collection, analysis, and presentation) over three weeks, with five 4<sup>th</sup> and 5<sup>th</sup> grade students at Chelsea Heights Elementary School (Saint Paul)
- Aug. 2014 Animal Behavior Society Outreach Fair Presentations – “Rapid Evolution and Sexual Signaling in Crickets” and “The Ear of the Beholder: Hearing in Non-Human Animals”
- Feb. 2014 Anoka-Hennepin County STEM Fair Judge

- Aug. 2013 Animal Behavior Society Outreach Fair Presentation: “The Ear of the Beholder: Hearing in Non-Human Animals”
- Spring 2013 Teaching SMART Volunteer and Session Leader: Pratt Community School 5<sup>th</sup> graders – Animal Communication and Treefrogs in Minnesota
- April 2013 "Save the Frogs Day" presentation at Woodlyn Heights Healthcare Center, Inver Grove Heights, MN – Conserving Amphibians and Minnesota Wetlands
- Jan. 2013 Anoka-Hennepin County (MN) STEM Fair Judge
- 2008-2012 Members’ Nights at the Sam Noble Oklahoma Museum of Natural History – Discussed museum collections and answered visitor questions with the Herpetology and Recent Invertebrates departments.
- Aug. 2009 Intro to STEM Scavenger Hunt and Picnic – As President of AΣK - Women in Technical Studies chapter at OU, led collaborative effort to introduce 30 underprivileged girls aged 7-11 from Boys and Girls Clubs of Oklahoma County to STEM fields and women in STEM role models during the AΣK national convention.

#### **AVIATION TEACHING AND CERTIFICATION**

- 2008-2009 **Flight Instructor,**  
Riverside Flight Center, Tulsa, OK.  
Taught procedures and maneuvers pertinent to the private and commercial pilot licenses and instrument ratings in classrooms, airplanes, and simulators.
- 2008 Certified Flight Instructor – Airplane, Single-Engine Land (ASEL)  
Certified Flight Instructor Instrument Rating  
Advanced Ground Instructor  
Instrument Ground Instructor
- 2007 Commercial Pilot with Instrument Rating (ASEL)