

DR. JASON N. BRUCK, NATIONALITY: USA

PH.D., M.A. (HON), UNIVERSITY OF CHICAGO, B.SC (SUMMA CUM LAUDE), LONG ISLAND UNIVERSITY

CURRENT AFFILIATION: ASSISTANT PROFESSOR, DEPARTMENT OF BIOLOGY, STEPHEN F. AUSTIN STATE UNIVERSITY

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EDUCATION

Doctor of Philosophy; Department of Comparative Human Development: Behavioral Biology

Dissertation: New Perspectives on Dolphin Whistles: Evaluating Signal Context, Categorization and Memory.

University of Chicago, Chicago, IL, USA

Date of Graduation - June 2013

Master of Arts; Department of Comparative Human Development: Behavioral Biology

Thesis: Population Differences in Beacon Use of Juvenile Belding's Ground Squirrels.

University of Chicago, Chicago, IL, USA

Date of graduation - March 2007

Thesis Honors

GPA 3.9/4.0

Bachelor of Science; Interdisciplinary Psychology/Biology

Southampton College of Long Island University, Southampton, NY

Date of graduation - May 2002

Dean's List, 1998-2002; Faculty Honors, 1998-2002

GPA 4.0/4.0

EMPLOYMENT

2020-Present

Assistant Professor of Biology

Stephen F. Austin State University; Nacogdoches, TX

2017-2020

Teaching Assistant Professor of Integrative Biology

Oklahoma State University; Stillwater OK

2015-2017

Marie Curie Research Fellow

University of St. Andrews; St. Andrews, UK

2014-2015

Visiting Assistant Professor of Zoology

Oklahoma State University; Stillwater OK

2009-2014

Guest Teacher

Jefferson County Public Schools; Louisville KY

2002

Adjunct Instructor of Experimental Animal Learning

Southampton College; Southampton, NY

CURRENT GRANTS

2021-2022	Funding:	\$7,499 (Direct Costs)
	Agency:	Stephen F. Austin President's Innovation Fund
	Title:	DRONES – Drone Research and Outreach in the Natural and Environmental Sciences- President's Innovation Fund
	Role:	PI
2020-2021	Funding:	\$5,700 (Direct Costs)
	Agency:	Dolphin Quest
	Title:	Effects of Anthropogenic Noise on Bottlenose Dolphin Cognition
	Role:	PI
2020-2021	Funding:	\$5,100 (Direct costs)
	Agency:	Dolphin Quest
	Title:	A New Role for Hybrid Cetaceans in the Study of Comparative Cognition
2019-2020	Funding:	\$20,000 (Direct costs)
	Agency:	CH Woodrow Wilson
	Title:	Fellowship for Excellence in Teaching
	Role:	PI/Fellow
2019-2020	Funding:	\$1,600 (Direct Costs)
	Agency:	Dolphin Quest
	Title:	Visual Perception and the 'Blind Spot' of Bottlenose Dolphins
	Role:	PI
2019-2020	Funding:	\$9,000 (Direct costs)
	Agency:	Oklahoma State University Foundation President's Fellow Fund
	Title:	Digitization of the OSU Collection of Vertebrates for Use in Education, Outreach and Research
	Role:	Co-PI
2019-2021	Funding:	\$438,000
	Agency:	Oklahoma State University College of Arts and Sciences
		Renovation Grant
	Title:	Creation of a Marine Laboratory
	Role:	Co-PI

PENDING GRANTS

2021-2022	Funding:	\$34,861
	Agency:	Marine Mammal Commission
	Title:	Developing next generation UAVs for passive health assessments in small and large cetaceans
	Role:	Co-PI

PREVIOUS RESEARCH GRANTS

2015-2017	Funding:	\$214,000 (Total)
	Agency:	European Union: Horizon 2020 Marie Skłodowska-Curie Individual Fellowships
	Title:	Cetacean Use of Representational Acoustic Signals
	Role:	Fellow/Co-PI
2012-2013	Funding:	\$2,500 (Direct Costs)
	Agency:	University of Chicago: Gianinno Dissertation Year Fellowship
	Title:	Long-Term Social Recognition and Signal Meaning in Tursiops
	Role:	PI
2012-2013	Funding:	\$2,500 (Direct Costs)
	Agency:	University of Chicago: Ryerson Grant
	Title:	Long-Term Social Recognition and Signal Meaning in Tursiops
	Role:	PI
2009-2010	Funding:	\$2,000 (Direct Costs)
	Agency:	University of Chicago: Janco Research Travel Grant
	Title:	Long-Term Social Recognition and Signal Meaning in Tursiops
	Role:	PI
2008-2009	Funding:	\$3,000 (Direct Costs)
	Agency:	University of Chicago: Provost Summer Fellowship
	Title:	Long-Term Social Recognition and Signal Meaning in Tursiops
	Role:	PI
2008-2009	Funding:	\$8,000 (Direct Costs)
	Agency:	University of Chicago: Ryerson Grant
	Title:	Long-Term Social Recognition and Signal Meaning in Tursiops
	Role:	PI
2007-2008	Funding:	\$2,000 (Direct Costs)
	Agency:	University of Chicago: Hinds Fellowship
	Title:	Long-Term Social Recognition and Signal Meaning in Tursiops
	Role:	PI

PUBLICATIONS:

Peer-Reviewed Publications

- 2020 Jaakkola, K., BRUCK, JN; Connor, R.; Montgomery, S.; King, SL. (2020) Bias and Misrepresentation of Science Undermines Productive Discourse on Animal Welfare Policy: A Case Study. *Animals* 10(7):1118.
- 2020 BRUCK J.N. and Gunnars, T. Visual Perception. In: Vonk J., Shackelford T. (eds) *Encyclopedia of Animal Cognition and Behavior*. Springer, Cham.

- 2019 BRUCK, J.N. (2019) Long-term Memory. In: Vonk J., Shackelford T. (eds) *Encyclopedia of Animal Cognition and Behavior*. Springer, Cham.
- 2019 BRUCK J.N. and Stevens, P. (2019) Sensitization. In: Vonk J., Shackelford T. (eds) *Encyclopedia of Animal Cognition and Behavior*. Springer, Cham.
- 2019 BRUCK J.N. and Bruck, J. R. (2019) Day/Night Cycle. In: Vonk J., Shackelford T. (eds) *Encyclopedia of Animal Cognition and Behavior*. Springer, Cham.
- 2019 BRUCK J.N. (2019) Chemical Signals. In: Vonk J., Shackelford T. (eds) *Encyclopedia of Animal Cognition and Behavior*. Springer, Cham.
- 2018 BRUCK J.N. (2018) Dead Reckoning. In: Vonk J., Shackelford T. (eds) *Encyclopedia of Animal Cognition and Behavior*. Springer, Cham.
- 2017 BRUCK, J. N., Allen, N., Brass, K., Horn, B. & Campbell, P. (2017). Species Differences in Mouse (genus, *Mus*) Egocentric Navigation: The Effect of Burrowing Ecology on a Spatial-cognitive Trait. *Animal Behaviour*. 127, 67-73
- 2017 Stewart, J., Moore, M. E., Forshee, J. L., Boyles, K., Harmon, M. G., BRUCK, J. N. & French, D. P. (2017). 3D-printed fish models for testing guppy mate choice. *Tested Studies for Laboratory Teaching: Proceedings for the 39th Workshop/Conference of the Association for Biology Laboratory Education (ABLE), June 13-16, 2017*. McMahon, K. (ed.). USA: Association for Biology Laboratory Education, Vol. 38, 1-19
- 2015 Bruck, J.N. (2015). The Use of Acoustic Playbacks with Captive Cetaceans, *The Journal of Acoustical Society of America*, 137 (4), 2396 (conference publication)
- 2013 BRUCK, J. N. (2013). Decades Long Social Memory in Bottlenose Dolphins, *Proceedings of the Royal Society of London B*, 280 (1768)
- 2010 BRUCK, J. N. & Mateo, J. (2010). How Habitat Features Shape Ground Squirrel Navigation. *Journal of Comparative Psychology*. 124, 176-186

In Preparation

BRUCK, J.N. and Janik, V.M. Chemical social recognition and modality independent representations in bottlenose dolphins, to be submitted to *Nature*

BRUCK, J.N., Contextual Use and Categorization in Bottlenose Dolphin Non-Signature Whistles, to be submitted to *Animal Cognition*

BRUCK, J.N., Gaeta, R., Jacob, J., O'Brien, H. Cranial CT Scan of Juvenile Bottlenose Dolphin, to be submitted to *Scientific Data*

BRUCK, J.N., Hill, D.D. and Taft, B. Kin-recognition in bottlenose dolphins, to be submitted to *Proceedings of the Royal Society B*

BRUCK, J.N. and Gunnars, T. Field of Vision in Bottlenose Dolphins, to be submitted to *Marine Mammal Science*

Stevens, P.E., Hill, H. and BRUCK, J.N. Cetacean Acoustic Welfare in Wild and Zoological Settings: The Gaps and the Opportunities, Invited Manuscript to the journal *Animals*. Special Issue on animal welfare

BRUCK, J. N. and Pack, A. Understanding Across the Senses: Cross-modal Studies of Cognition in Cetaceans. Invited Manuscript to the journal *Animal Cognition*. Special Issue on Cetacean Cognition.

Gaeta, R., Jacob, J., and BRUCK, J.N. Particle Image Velocimetry of Bottlenose Dolphin Blowhole Excretion, to be submitted to *Fluid Dynamics*

BRUCK, J.N., Gaeta, R., and Jacob, J. Bottlenose Dolphin Perception of Silent Unmanned Aerial Systems, to be submitted to *Journal of the Acoustical Society of America*

Selected Web-based Publications

2020 BRUCK, JN. With the help of trained dolphins, our team of researchers is building a specialized drone to help us study dolphins in the wild. *The Conversation*
<https://theconversation.com/with-the-help-of-trained-dolphins-our-team-of-researchers-is-building-a-specialized-drone-to-help-us-study-dolphins-in-the-wild-137971>

2018 BRUCK, J.N. Grief In Animals: Does An Orca Have To Be A Human With Fins For Us To Care? <http://awesomeocean.com/top-stories/grief-animals-orca-human-fins-us-care/>

REFeree

European Commission Horizon Individual Fellowship 2020 and 2021 Grants, Bioacoustics, Animal Behavior and Cognition, Zoo Biology, Frontiers | Ecology and Evolution, PLOS ONE, Scientific Reports, Aquatic Mammals, Behavioral Ecology, University of Chicago Press and Nature.

RECENT PRESENTATIONS

2021 Integrating Zoos and Researchers: Making an Impact on Science and Guests. The European Association for Aquatic Mammals Conference. March 11th-13th. Virtual. (Talk)

2019 Two-Phase Computational Fluid Dynamics Simulations of Dolphin Blowhole Expulsion Jets. 72nd Annual Meeting of American Physical Society Division of Fluid Dynamics Conference; Seattle, Washington. (Talk)

- 2019 Quantitative Electrophysiology with Invertebrates: A Student-led, Goal-directed Lab to Drive Problem-solving and Simulate Authentic Research. National Association of Biology Teachers Conference; Chicago, IL. (Demonstration)
- 2019 Identification of Conspecifics using Chemosensory Signals in Bottlenose Dolphins. International Marine Animal Trainers' Association/Association of Zoological & Aquariums Conference; New Orleans, LA. (Poster- 1st Place).
- 2019 A Comparative Evolutionary Framework for Understanding Long-term Memory. FOSSIL (FlyOver State Scientists Integrating EvoLution) Conference; Stillwater OK. (Talk)
- 2019 Noise and Cognition: A Deeper Look into Anthropogenic Effects on Marine Mammals. FOSSIL (FlyOver State Scientists Integrating EvoLution) Conference; Stillwater OK. (Talk). P Stevens, M Tryzbiak, E West, and J Bruck.
- 2019 Noise and Cognition: A Deeper Look into Anthropogenic Effects on Marine Mammals. Conference on Comparative Cognition; Marathon, FL. (Poster). P Stevens, M Tryzbiak, E West, and J Bruck.
- 2018 Experimental Simulation of Dolphin Blow. Bulletin of the American Physical Society; Atlanta, GA. (Presentation). R Gaeta, J Bruck, and J Jacob.
- 2018 Research with dolphins under human care. Alliance of Marine Mammal Parks and Aquariums. Washington, DC. (Invited talk). J Bruck.
- 2017 Experimental Methods in Wild and Captive Marine Mammals. 22nd Biennial Conference on The Biology of Marine Mammals; Halifax Canada. (Workshop Facilitator)
- 2017 Chemical Social Recognition in Bottlenose Dolphins. 22nd Biennial Conference on The Biology of Marine Mammals; Halifax, Canada (Talk). J. Bruck
- 2016 Complex Signals in Bottlenose Dolphins. Workshop on Signal Complexity, University of Zürich; Zürich Switzerland (Invited talk). J. Bruck
- 2015 The Use of Acoustic Playbacks with Captive Cetaceans. 169th Meeting of the Acoustical Society of America; Pittsburgh PA (Invited talk). J. Bruck

MENTEES/ADVISEES

Current Graduate Students

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|--------------|--|---------------------------------------|
| 2021-Present | M.S. Advisor
Population Assessments of Resident Tursiops in Galveston Bay | S. Damiano, SFA State University |
| 2019-Present | Ph.D. Advisor
Anthropogenic noise and cognition in cetaceans | P. Stevens, Oklahoma State University |

2019-Present	Ph.D. Advisor Vocal learning in hybrid cetaceans	R. Hamrock, Oklahoma State University
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2018-Present	Member of Ph.D. Committee Development of biological instruction (genetics focus) at the university level	A. Leone, Oklahoma State University
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Past Graduate and Undergraduate Students

2018-2020	M.S. Advisor Visual perception in bottlenose dolphins. Graduated	T. Gunnars, Oklahoma State University
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2019-2020	Member of M.S. Committee Educational outcomes for students in rural communities. Graduated	J.C. Locke, Oklahoma State University
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2019-2020	Member of M.S. Committee Development of dolphin blowhole simulator. Graduated	C.J. Barton, Oklahoma State University
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2018-2019	Chair of Honors Committee Project related to Anthropogenic noise and attention in cetaceans. Graduated	P. Stevens, Oklahoma State University
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2018-2020	Undergraduate Research Advisor Anthropogenic noise and attention in cetaceans HHMI Life Science Freshman Research Scholar, Independent Study	M. Tryzbiak, Oklahoma State University
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2018-2020	Undergraduate Research Advisor Anthropogenic noise and attention in cetaceans HHMI Life Science Freshman Research Scholar, Independent Study	E.B. West, Oklahoma State University
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2018-2020	Undergraduate Research Advisor <i>Mus spicilegus</i> social tunnel building. HHMI Life Science Freshman Research Scholar, Independent Study	E. West, Oklahoma State University
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2018-2020	Undergraduate Research Advisor Dolphin non-signature whistles. HHMI Life Science Freshman Research Scholar, Independent Study	K. Davis, Oklahoma State University
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2018-2020	Undergraduate Research Advisor Dolphin non-signature whistles HHMI Life Science Freshman Research Scholar, Independent Study	L. Clark, Oklahoma State University
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2017-2019	Undergraduate Research Advisor Dolphin chemoreception, Independent Study	S. Sheppard, Oklahoma State University
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2017-2018	Undergraduate Research Advisor Project related to dolphin chemoreception, Independent Study.	S. Starr, Oklahoma State University
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- 2016-2017 Co-Supervised honours thesis. C. Raine, University of St Andrews
Categorising Non-Signature Whistles of Bottlenose Dolphins (*Tursiops truncatus*): The Rook and the Up-down
- 2015-2016 Supervised BS project M. Pearce, Oklahoma State University
All in the Family: Bottlenose Dolphin Kin Recognition Using Signature Whistles. HHMI Life Science Freshman Research Scholar, Independent Study
- 2015-2015 Supervised BS project N. Allen, Oklahoma State University
Eighteen Blind Mice: Species Level Differences in Path Integration Between *Mus spicilegus* and *Mus musculus*.
- 2015-2015 Supervised BS project. B. Horn, Oklahoma State University
Mechanisms of Kin Recognition in Cetaceans

RESEARCH APPOINTMENTS

2020-Present Assistant Professor

Stephen F. Austin State University Nacogdoches, TX

- Awarded \$7,499 President's Innovation Fund to develop biology drone curriculum.

2017-2020 Curatorial Associate/Acting Curator of The Collection of Vertebrates

Oklahoma State University Stillwater OK

- Co-awarded \$9,000 Tech Grant to develop scanning of collection materials.

2015-2017 Marie Curie Research Fellow

University of St. Andrews Scotland UK

- Supervised MSc Level students on independent projects.
- Obtained \$214,000 in EU funding.

2014-2015 Visiting Assistant Professor of Integrative Biology

Oklahoma State University Stillwater OK

- Published research with three undergraduates in the Journal *Animal Behaviour*.

2004-2014 Graduate Student and Research Fellow

Institute for Mind and Biology Chicago IL

University of Chicago

- Awarded \$27,000 in grants for Masters and Ph.D. research
- Published research that discovered the longest known non-human animal memory yet discovered in *Proceedings of the Royal Society of London B*.

2003-2004 Research Assistant

Institute for Mind and Biology Chicago IL

University of Chicago

- Developed independent research that was later published in the *Journal of Comparative Psychology*.

TEACHING APPOINTMENTS

2020-Present Assistant Professor

Stephen F. Austin State University Nacogdoches, TX

- Named 2021 Four-Year College & University Biology Teaching Award recipient for innovations in biology instruction.

2017-2020 Teaching Assistant Professor of Integrative Biology

Oklahoma State University Stillwater OK

- Nominated for Arts & Sciences Distinguished Teaching Award.
- Co-awarded \$438,000 infrastructure grant to build teaching marine research lab.
- Co-awarded \$5,000 instructional grant to teach Honors course on The Mind.
- Instructed over 300 upper-level undergraduate students in human physiology course.
- Implemented a new osmolarity lab focusing on real world applications in medicine related to traumatic brain injury and diabetes.
- Developed multiple new inquiry based labs for Invertebrate Zoology.
- Instructed 300 introductory biology students and had among the highest class average of the seven course sections with a 4.8 out of 5.0 teaching evaluation score from the students.

2015-2017 Guest Lecturer; School of Biology

University of St. Andrews St. Andrews, UK,

- Lectured on dolphin communication, cognition and social ecology for Animal Communication and Cognition course.
- Assessed and graded student writing and projects.
- Led and facilitated student discussion groups.
- Received University level training in British Undergraduate Degree Classification System through professional development courses.

2014-2015 Visiting Assistant Professor of Zoology

Oklahoma State University Stillwater OK

- Instructed over 70 upper-level undergraduate students in capstone evolution course focusing on genetic and epigenetic mechanisms of phenotypic variation.
- Cooperatively implemented new live animal labs in concert with intro biology course, organized field fish sample collection and supervised independent student research projects in fish biology, behavior, anatomy, ecology and physiology.
- Co-authored a workshop on a new fish sexual selection lab using 3D printed fish models at Association for Biology Laboratory Education Meeting 2016.
- Supervised and co-authored published manuscript with OSU faculty and two fourth-year undergraduate independent-study students on mice egocentric spatial navigation.
- Supervised undergraduate student on her first place project involving dolphin communication at Howard Hughes Medical Institute Freshman Scholar Research Competition.
- Developed ecology and environmental biology instruction for second and third year students
- Completed faculty development workshop on student writing and assessment.
- Participated in the development of university level writing assessment standards for Provost's Initiative on General Education.

COURSES TAUGHT

- Marine Biology (Lecture- 20 upper level undergrads)
- Mammalogy (Lecture and Lab- 40 upper level undergrads or grad students)
- Animal Physiology (Lecture and Lab- 40 upper level undergrads)
- Introductory Biology (Lecture/Lab – 100-120 Freshman students)
- Invertebrate Zoology (Lecture/Lab – 40 upper level undergraduate students)
- The Mind (Seminar – 20 Freshman Honors students)
- Mammalian Physiology (Lab – 25 upper level undergraduate students)
- Physiology (Lecture/lab – 300 undergraduate students)
- Cognition, Evolution, and Behavior (Graduate Seminar – 15 graduate students)
- Environmental Biology (Lecture – 40 undergraduate students)
- Evolution (Lecture – 150 undergraduate students)
- Biology of Fishes (Lecture/Lab – 20 upper level undergraduate students)
- Ecology (Lecture/lab – 150 undergraduate students)
- Experimental Animal Learning (Lecture/Lab – 20 students)
- Animal behavior TA (Lecture/Lab – 200 undergraduate students)
- The Mind TA (Seminar – 15 students)

SELECTED PROFESSIONAL SERVICE

2020-Present	Member, Department of Biology Institutional Animal Care and Use Committee, SFASU
2018-2020	Member, Integrative Biology Undergraduate Education Committee Oklahoma State University
2017-Present	Editorial Board Member Journal of Animal Behavior and Cognition
2016	Contract Research Staff Representative to Biology Faculty University of St. Andrews
2005	Point Person, Human Development Student Association University of Chicago

SELECTED OUTREACH-TALKS, LECTURES AND JUDGING

2017	Workshop Coordinator Conference on The Biology of Marine Mammals Halifax, Canada
2017	Science Discovery Day Demonstration University of St. Andrews, St. Andrews, U.K.
2016-2017	U.K. STEM Ambassador
2016	Youth Public Talk Canongate and Kingsbarn Primary schools, St. Andrews, U.K.

2015	Judge Oklahoma Louis Stamps Alliance for Minority Participation
2013	Guest Lecture Otterbein University; Westerville, OH
2013	Staff Lecture Brookfield Zoo, Brookfield, IL
2011	Staff Lecture Walt Disney World Animal Programs: Orlando, FL

PROFESSIONAL MEMBERSHIPS

Animal Behavior Society
Society for Marine Mammalogy
Psi Chi: National Honor Society
OCEAN: Oklahoma Center for Evolutionary Analysis
Association for Biology Laboratory Education (ABLE)
National Association for Biology Teachers (NABT)