

Shannon Proksch

Assistant Professor of Psychology – Cognitive Neuroscience
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EDUCATION

PhD Cognitive and Information Sciences University of California, Merced Advisor: Prof. Ramesh Balasubramaniam	2022
MSc, Mind, Language and Embodied Cognition with Distinction The University of Edinburgh	2017
BA, Music, minors Philosophy & Psychology Summa Cum Laude, Honors Program Graduate with Thesis Defense Texas A&M University – Corpus Christi	2015
Certificate, Teaching English to Speakers of Other Languages Texas A&M University – Corpus Christi	2015
Seven-week French Language Immersion Program Middlebury College, Vermont	2013

ADDITIONAL TRAINING

Institute for Evidence-Based Teaching Practices Center for Engaged Teaching & Learning, UC Merced, California	2021
Neuromatch Academy Computational Neuroscience Summer School	2020
American Psychological Association Advanced Training Institute: Nonlinear Methods for Psychological Science, University of Cincinnati, Ohio	2019
Spring School Language and Music in Cognition: Integrated Approaches to Cognitive Systems, Universität zu Köln, Cologne, Germany	2019
Linear Models and Mixed Models with R, University of Edinburgh (Instructor: Bodo Winter)	2017

AWARDS & SCHOLARSHIPS

Cognitive & Information Sciences Graduate Student Spotlight Award for outstanding contributions to scholarship and service, <i>UC Merced</i>	Fall 2021
NSF Research Traineeship (NRT) Fellowship- Intelligent Adaptive Systems <i>UC Merced</i>	Fall 2021-Summer 2022
NSF Research Traineeship (NRT) Fellowship- Intelligent Adaptive Systems <i>UC Merced</i>	Fall 2019-Summer 2020
NRT Interdisciplinary Computational Graduate Education Program <i>UC Merced</i>	Spring 2019
Travel grant from the American Psychological Association for the Advanced Training Institute: Non-Linear Methods for Psychological Science	Summer 2019
Graduate Dean's Recruitment Fellowship <i>UC Merced</i>	Fall 2018-Summer 2019
Highly Commended Dissertation Prize <i>University of Edinburgh</i>	October 2017

PUBLICATIONS & IN PRESS

Proksch, S., Reeves, M., Spivey, M., Balasubramaniam, R. (*in press*) Measuring acoustic social worlds: reflections on a study of multiagent human interaction. In S. Besser, F. Lysen, N. Geode (Eds.) *Worlding the Brain*, forthcoming with Brill in 2022.

Novelli, N., **Proksch, S.,** (2022) Am I (deep) blue? Music-making AI and emotional awareness. *Frontiers in Neurorobotics*. doi: 10.3389/fnbot.2022.897110

Pabst, A., **Proksch, S.,** Médé, B., Comstock, D., Ross, J. M., & Balasubramaniam, R. (2022). A systematic review of the efficacy of intermittent theta burst stimulation (iTBS) on cognitive enhancement. *Neuroscience and Biobehavioral Reviews*. Preprint doi: 10.31234/osf.io/me6n4
Publication doi: 10.1016/j.neubiorev.2022.104587

Proksch, S., Reeves, M., Balasubramaniam, R., & Spivey, M. (2022). Coordination Dynamics of Multi-Agent Human Interaction in a Musical Ensemble. *Scientific Reports*. 12, 421.
Preprint doi: 10.31234/osf.io/nz4g2
Publication doi: 10.1038/s41598-021-04463-6

Moser, C., Ackerman, J., Dayer, A., **Proksch, S.,** Smaldino, P.E. (2021) Why don't cockatoos have war songs? [commentary on Mehr et al. and Savage et al.] *Behavioral and Brain Sciences*. Preprint doi: 10.31234/osf.io/j3nd6
Publication doi: 10.1017/S0140525X20001223

Holbrook, C., Iacoboni, M., Gordon, C., **Proksch, S.,** Makhfi, H., & Balasubramaniam, R. (2021). Posterior Medial Frontal Cortex Regulates Sympathy: A TMS Study. *Social Neuroscience*.
Preprint doi: 10.31234/osf.io/hduac
Publication doi: 10.1080/17470919.2021.1980097

Pouw, W., **Proksch, S.,** Drijvers, L., Gamba, M., Holler, J., Kello, C., Schaefer, R., Wiggins, G. (2021). Multilevel interactions in multimodal communications. *Philosophical Transactions of the Royal Society B: Biological Sciences*. Preprint doi: 10.31219/osf.io/psmhn
Publication doi: 10.1098/rstb.2020.0334

Proksch, S. Comstock, D. C., Médé, B., Pabst, A., Balasubramaniam, R. (2020). Motor and predictive processes in auditory beat and rhythm perception. *Frontiers in Human Neuroscience, Cognitive Neuroscience*. 14:578546. doi: 10.3389/fnhum.2020.578546

Holbrook, C., Iacoboni, M., Gordon, C., **Proksch, S.,** Balasubramaniam, R. (2020). Posterior medial frontal cortex mediates threat-enhanced religious belief: A replication an extension study. *Social Cognitive and Affective Neuroscience*, nsaa153. doi: 10.1093/scan/nsaa153

Proksch, S. (2017). Interoceptive inference and emotion in music: Integrating the neurofunctional 'Quartet Theory of Emotion' with predictive processing in music-related emotional experience. *Journal of Cognition and Neuroethics*, 5(1): 101-125.

Proksch, S. (2017). *Integrating the neurofunctional 'Quartet Theory of Emotion' with predictive processing in music-related emotional experience*. (Unpublished master's dissertation). The University of Edinburgh, Edinburgh, Scotland.

Proksch, S. (2015). *Music and language: Evolutionary and cognitive perspectives*. (Unpublished BA Honors Thesis). Texas A&M University-Corpus Christi, Corpus Christi, Texas.

Proksch, S. (2014). *Music and language in the mind: Intention, structure, and perception*. (Unpublished BA Thesis). Texas A&M University-Corpus Christi, Corpus Christi, Texas.

PREPRINTS & SUBMISSIONS

Ross, J. M. *, **Proksch, S.***, Iversen, J., Balasubramaniam, R. (*submitted*). Contributions of left and right parietal cortex for musical beat perception: replication and extension. **These authors contributed equally*

Rahimpour, A., Lanka, P., Pollonini, L., **Proksch, S.**, Balasubramaniam, R., Bortfeld, H. (*submitted*). Multiple levels of contextual influence on action-based timing behavior and cortical activation.

Kaur, J., **Proksch, S.**, Balasubramaniam, R. The effect of forcefield detuning on bimanual coordination. (*submitted*).

Proksch, S., Reeves, M., Gee, K., Transtrum, M., Kello, C., Balasubramaniam, R. (*submitted*). Recurrence Quantification Analysis of crowd sound dynamics at a collegiate basketball game.

CONFERENCE PRESENTATIONS

Proksch, S., Ross, J. M., Comstock, D. C., Backer, K. C., Iversen, J. R., Balasubramaniam, R. (August 2022). Motor contributions to rhythm perception: a TMS-EEG Study. Talk presented at *Society for Music Perception and Cognition*. Portland, Oregon, USA.

Kaur, J., **Proksch, S.**, Balasubramaniam, R. (July 2022). The effect of detuning on interlimb coordination. Poster presented at *Neural Control of Movement*. Dublin, Ireland.

Proksch, S., (October 2021). Acoustic social worlds: from Markov blankets to interpersonal synergies. Talk presented at *Cognitio 2021: Active inference and collective intelligence*. Montréal, Canada.

Proksch, S., Reeves, M., Spivey, M., Balasubramaniam, R. (August 2021). Coordination dynamics of multi-agent human interaction–recurrence quantification analysis of a musical performance. Poster presented at the *16th International Conference on Music Perception and Cognition and 11th triennial conference of the European Society for the Cognitive Sciences of Music*. Sheffield, United Kingdom.

Proksch, S., (November 2019). Synchrony and the Markov Blankets of Multi-Agent Human Interaction. Talk presented at the *Timescales of Life and Mind: Interdisciplinary Conference on Timescales as a Methodological Approach to Predictive Processing and the Free Energy Principle*, Edinburgh, Scotland.

Ross, J. M., **Proksch, S.**, Iversen, J.R., Balasubramaniam, R. (August 2019). Down-regulation of left posterior parietal cortex impairs musical phase shift detection in subjects with good perceptual acuity for phase timing. Poster presented at the *Biennial Meeting of the Society for Music Perception and Cognition*. New York City, USA.

Ross, J. M., **Proksch, S.**, Iversen, J.R., Balasubramaniam, R. (July 2019). Down-regulation of left posterior parietal cortex impairs musical phase shift detection in subjects with good perceptual acuity for phase timing. Poster presented at *Synchrony and Rhythmic Interaction: From Neurons to Ecology Lorentz Workshop*, Leiden, Netherlands.

Proksch, S., Booth, L., Dayer, A., Reeves, M., Spivey, M. (June 2019). Online and In Sync? Bodily synchrony & interpersonal closeness in audiovisual communication. Poster presented at the *American Psychological Association Advanced Training Institute on Nonlinear Methods for Psychological Science*, Cincinnati, Ohio.

- Ross, J. M., **Proksch, S.**, Iversen, J.R., Balasubramaniam, R. (March 2019). Hemispheric differences in parietal contributions to auditory beat perception. Poster presented at *Cognitive Neuroscience Society 2019 Annual Meeting*, San Francisco, California.
- Proksch, S.**, Ross, J. M., Balasubramaniam, R. (February 2019). Hemispheric differences in parietal contributions to auditory beat perception. Poster presented at *Spring School 2019 Language and Music in Cognition: Integrated Approaches to Cognitive Systems*, Cologne, Germany.
- Proksch, S.** (November 2017). Interoceptive inference and emotion in music: Integrating the neurofunctional ‘Quartet Theory of Emotion’ with predictive processing in music-related emotional experience. Poster presented at *Expecting Ourselves: Prediction, Action, and the Embodied Mind*, Edinburgh, United Kingdom, November 2017.
- Proksch, S.** (November 2017). Grounding musical entrainment and social cohesion in sensorimotor contingencies. Talk presented at the *Worlding the Brain Conference*, Amsterdam, Netherlands.
- Proksch, S.** (August 2017). Interoceptive inference and emotion in music: Integrating the neurofunctional ‘Quartet Theory of Emotion’ with predictive processing in music-related emotional experience. Talk presented at the *Mind and Brain Annual Conference*, Flint, MI.
- Novelli, N. & **Proksch, S.** (April 2017). The limitations of music making machines. Talk presented at the *6th Dubrovnik Conference on the Philosophy of Art*, Dubrovnik, Croatia.

OTHER PRESENTATIONS

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| Frontiers of Science Institute – University of Northern Colorado | June 2021 |
| Presented my research to high school students interested in pursuing STEM research in higher education; Discussed transitioning from an arts and humanities background into STEM-oriented fields | |
| Topic: Music, Movement, and the Brain | |
| Research Seminar in Systematic Musicology – Universität Graz | June 2021 |
| Topic: Coordination dynamics of multi-agent interaction within a musical ensemble | |
| Achievement Rewards for College Scientists Foundation | March 2021 |
| Presented to the ARCS Northern California Chapter | |
| Topic: Overview of my music/brain work, & graduate student life at UC Merced | |
| Guest Lecturer – University of North Carolina, Charlotte | January 2021 |
| Presented to undergraduate music students of the UNC-Charlotte Wind Bands | |
| Lecture Topic: Neuroscience, Music, & Emotion | |
| Workshop Leader – Professional Development Event | October 2020 |
| Led an interactive workshop for the Cognitive & Information Sciences Graduate Student Group | |
| Workshop Topic: Giving Effective Presentations at Online Conferences | |
| Guest Lecturer – COGS 001, Intro to Cognitive Science | July 2020 |
| Lecture Topic: Neuroscience and Music | |
| RadioBio GradStory | March 2020 |
| Interviewed by RadioBio, a graduate student run podcast, during UC Merced’s Research Week | |
| Interview topic: Rhythms in Brains and Interacting People. | |

- Cognitive Science Student Association Symposium** December 2019
 Outreach event sharing graduate student cognitive science research with undergraduate students
 Talk title: On Music & Artificial Intelligence: The limitations of music-making machines
- Edinburgh Music Psychology Research Reading Group** Spring 2017
 Organized and led discussion for three reading group sessions on:
 Introduction to music and predictive processing
 Emotion in music and predictive processing
 Rhythm in music and predictive processing

TEACHING EXPERIENCE

- Assistant Professor, Psychology – Augustana University** Fall 2022 – present
 PSYC 215 – General Psychology (2022 -)
 PSYC 240 – Cognitive Psychology (2022 -)
 PSYC 260 – Behavioral Neuroscience (2023 -)
 PSYC 271 – Research Methods (2023 -)
- Instructor, Frontiers of Science Institute – Univ. of Northern Colorado** June 2022
 Introduction to Neuroscience
- Instructor of Record – University of California, Merced** Summer 2021
 PHIL/COGS 110 – Philosophy of Cognitive Science
- Teaching Assistant – University of California, Merced** 2020—2021
 PHIL/COGS 110 – Philosophy of Cognitive Science (Spring 2021)
 COGS 140 – Perception and Action (Fall 2020)
- English Second Language Instructor** Nov 2016—May 2018
 E-Joy English Online Language School, Beijing, China
- Elementary Music and English Second Language Instructor** Feb 2016—June 2016
 Ameri-Can International Academy,
 CIBT Education Group, Weifang, China
- Grader/Supplemental Instructor- Honors Elementary Formal Logic** Spring 2015
 Texas A&M University- Corpus Christi
- Reader/Grader- Music Appreciation** Fall 2014
 Texas A&M University- Corpus Christi
- Counselor/Music Theory Instructor- Islander Band Camp** 2013—2015 (summers)
 Texas A&M University- Corpus Christi

PROFESSIONAL SERVICE

- Ad Hoc Reviewer** 2019 – Present
 Journals: *Cognition*, *Philosophical Transactions of the Royal Society B*,
Music and Science, *Journal of Motor Behavior*, *Frontiers in Human Neuroscience*
- Search Committee Member** Fall 2023
 Augustana University, Department of Psychology
- Cognitive & Information Sciences Graduate Group Administrative Fellowship** Summer 2021
 Updated and clarified policies and procedures on the CIS webpage, created FAQ and detailed guides for CIS graduate program milestones

Graduate Students Rights & Responsibilities Review Committee Graduate Student Association, University of California, Merced	Spring 2021
Professional Development Officer Cognitive and Information Sciences Graduate Student Group University of California, Merced	Fall 2019—Spring 2021
Co-founder Cognitive & Information Sciences Graduate Student Group University of California, Merced	Fall 2019
Delegate, Cognitive & Information Sciences Graduate Student Association, University of California, Merced	Fall 2019—Spring 2020
Co-organizer of Cognitive Science for the Common Good Event Theme: Improving Workplace Climate & Gender Equity in Academia Cognitive & Information Sciences, University of California, Merced	October 2019

SUPERVISING AND MENTORING EXPERIENCE

Mentor, Undergraduate Research Assistants Guided six RAs on projects as members of the “Motion Capture Crew” & “EEG Crew” within the Sensorimotor Neuroscience Lab, UC Merced	Fall 2019—Spring 2022
Mentor, Women in Science and Technology WSTEM University of California, Merced	Fall 2019—Spring 2020

WORKSHOP & EVENT ORGANIZATION

Professional Development Event Series (Organizer) Industry(+) Job Market Panels (2) Academic Job Market Panel Giving Effective Presentations at Online Conferences (presenter) Time Management Workshop (2) Open Sciences & the Practicalities of Pre-registration Graduate Student Experience & Navigating Support Structures Grant Writing Workshop	Fall 2019—Spring 2021
Cognitive Science for the Common Good (Co-organizer) Event Theme: Improving Workplace Climate & Gender Equity in Academia	October 2019
Cognitive & Information Sciences Brownbag (Co-host) Co-host of the CIS Graduate Student Speaker Series Organized an Industry Jobs Panel w/ CIS Alumni Organized an Academic Jobs Panel w/ Early Career CIS Professors	Spring 2019
Interactive Alexander Technique Workshop Organized a workshop enhancing awareness of the body in performance practice to prevent repetitive stress and posture related injuries and promote relaxed performance. <i>Guest speaker: Dr Teresa Ford, American Society for the Alexander Technique</i>	March 2015
Interactive Dalcroze Eurhythmics Workshop Organized a workshop reinforcing rhythm, structure, and musical expression in the body through movement. <i>Guest speaker Dr David Frego, University of Texas at San Antonio</i>	February 2014
Province Days: Three Day Educational Symposium Co-organized musical performances, workshops on embodied musicianship and body awareness in musical performance, and presentations on arts	February 2014

management, arts communication, and financial management for performing artists. *Attended by South Texas Members of the Sigma Alpha Iota Music Fraternity and students from Texas A&M University-Corpus Christi, Del Mar College, Texas A&M University-Kingsville, and University of Texas-San Antonio*

SKILLS

Transcranial Magnetic Stimulation, EEG
Motion Capture (Vicon 3D MoCap system & integrated AMTI force plates; OpenPose 2D real-time multi-person keypoint detection)
R, Python, MATLAB

LANGUAGES

English (native)
French (speak, read, & write with proficiency)

ORGANIZATIONS

Society of Music Perception and Cognition
American Psychological Association
Cognitive Neuroscience Society

INSTRUMENTS

Primary: Oboe/English Horn
Secondary: Saxophone/Clarinet/Flute