

# Catrina McKenzie Hacker

## EDUCATION

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University of Pennsylvania, PhD in neuroscience **Present**  
University of Southern California, Neuroscience B.S. with honors, *Summa cum laude* **2019**  
Relevant Coursework  
Neuroscience: Intro to fMRI, Advanced Studies of the Nervous System  
Mathematics: Linear Algebra, Calculus I-III  
Biology/Chemistry: Molecular Biology, Organic Chemistry I/II, Biochemistry

## RESEARCH EXPERIENCE

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USC Image Understanding Lab, *Research Assistant* **2016 - 2019**  
Design, execute and analyze psychophysical studies investigating nature and limits of human face recognition to develop neurocomputational accounts of face processing.  
Bottjer Songbird Lab, *Research Assistant* **2018 - 2019**  
Assist in electrophysiological and optogenetic experiments in cortico-basal ganglia circuits of male zebra finches to explicate the neural circuitry involved in song learning and production.

## PUBLICATIONS

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**Hacker, C.M.** & Biederman, I. (2019). The invariance of recognition to the stretching of faces is not explained by familiarity or warping to an average face. *PsyArxiv*. doi: 10.31234/osf.io/e5hgx.  
**Hacker, C.M.**, Zhu, T., Nelken, M., Meschke, E.X. & Biederman, I. (2019). Why is it so difficult to recognize faces differing only moderately in orientation?. *PsyArxiv*. doi: 10.31234/osf.io/48k5q.  
**Hacker, C.M.**, Meschke, E.X. & Biederman, I. (2019). A Face in a (Temporal) Crowd. *Vision Research*, doi: 10.1016/j.visres.2018.02.007.  
Biederman, I., Shilowich, B.E., Herald, S.B., Margalit, E., Maarek, R., Meschke, E.X. & **Hacker, C.M.** (2018). The Cognitive Neuroscience of Person Identification. *Neuropsychologia*, 116, 205-214. doi: 10.1016/j.neuropsychologia.2018.01.036.

## POSTERS AND PRESENTATIONS

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**Hacker, C.M.** & Biederman, I. (2019). The capacity for face perception is independent of the capacity for face memory. Poster presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, Fl. May  
Biederman, I., Zhu, T., Nelken, M., Meschke, E.X. & **Hacker, C.M.** (2019). The cost of matching depth-rotated faces: A simple, additive function of image similarity. Poster presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, Fl. May.  
**Hacker, C.M.**, Meschke, E.X., Biederman, I. (2018). Recognition of Stretched Faces. Poster presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, Fl. May.

- Meschke, E.X., **Hacker, C.M.**, Biederman, I. (2018). How Many Faces Can We Recognize? Poster presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, Fl. May.
- Zhu, T., Nelken, M., **Hacker, C.M.**, Meschke, E.X., Biederman, I. (2018). Matching Depth-Rotated Faces at Varying Degrees of Physical Similarity. Poster presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, Fl. May.
- Meschke, E.X., **Hacker, C. M.**, Juarez, J.J., Maarek, R.S., & Biederman, I. (2017). Detecting Unspecified Familiar Faces. Poster presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, Fl. May.
- Biederman, I., Margalit, E., Maarek, R.S., Meschke, E.X., Shilowich, B.S., **Hacker, C. M.**, Juarez, J.J., Seamans, T. J., & Herald, S.B. (2017). What is the Nature of the Perceptual Deficit in Congenital Prosopagnosia? Poster presented at the Annual Meeting of the Vision Sciences Society, St. Petersburg Beach, Fl. May.

## HONORS AND AWARDS

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| USC Discovery Scholar, <i>Distinction recipient, Prize finalist</i>   | <b>2019</b>        |
| Graduation distinction awarded to students who excel in the classroom while demonstrating the ability to create exceptional new scholarship.                            |                    |
| USC Neuroscience Outstanding Student of the Year Award  | <b>2019</b>        |
| Award given to USC's best neuroscience student with senior standing.  |                    |
| Brian Phillip Rakusin Neuroscience Scholarship Award  | <b>2018</b>        |
| \$10,000 Scholarship awarded each year to the most outstanding sophomore or junior demonstrating exceptional achievements and aspirations in the field of Neuroscience. |                    |
| USC Provost's Undergraduate Research Fellowship, <i>Six-time Recipient</i>  | <b>2017 - 2019</b> |
| Fellowship awarded to select undergraduates demonstrating excellent academic standing and engaged in research, total value of \$7,000 over five semesters.              |                    |
| USC Dean's Scholar  | <b>2015 - 2019</b> |
| Quarter tuition scholarship to the University of Southern California  |                    |
| Dean's List, Dornsife College of Letters, Arts and Sciences, <i>Eight semesters</i>   | <b>2015 - 2019</b> |
| Phi Kappa Phi Academic Honor Society  | <b>2019</b>        |
| Phi Beta Kappa Academic Honor Society   | <b>2018</b>        |
| Nu Rho Psi National Honor Society in Neuroscience   | <b>2017</b>        |
| Alpha Lambda Delta Academic Honor Society   | <b>2016</b>        |

## SERVICE

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| InterAxon, <i>Vice President (2016-2017), President (2017-2018)</i>   | <b>2015 - 2019</b> |
| InterAxon is a student-run organization that visits local K-12 schools to teach lessons about neuroscience. I managed a team of nine executive board members to maintain daily operations and collaborated with faculty, advisors and student representatives as a member of the Neuroscience Executive Committee to enact changes within the neuroscience program. |                    |
| Community Health Connection, <i>VP of Outreach (2017-2018), President (2018-2019)</i>   | <b>2016 - 2019</b> |
| Supervised a team of eleven executive board members to plan, organize and execute two resource fairs a semester for approximately 1,000 total students and families in the local community.   |                    |

## SKILLS

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Programming Languages: Matlab, C++, Python

Experienced designing experiments, collecting and analyzing data using Matlab and Psych Toolbox

Proficient in experimental design, data collection and analysis in FEAT for fMRI experiments

Languages: French (advanced), Spanish (intermediate)