Michelle Oraa Ali *Curriculum Vitae*

Massachusetts Institute of Technology
Brain and Cognitive Sciences

ali26m@mtholyoke.edu
Phone: +1 (413)437-3151

Education

Mount Holyoke College, South Hadley, MA, USA
Bachelor of Arts, 2017. *Magna Cum Laude* with High Honors; *Phi Beta Kappa*.
Major: Neuroscience & Behavior. Minor: Graphic Narrative & Visual Storytelling
Thesis: *Prosody, Poetry and Processing:an ERP Investigation of Auditory Imagery*

Research

Brain and Cognitive Sciences, Massachusetts Institute of Technology
Research Support Associate, LanguageLab. P.I. **Edward A Gibson**.
• Investigated prosody as a candidate for a cross-linguistic universal using PsiTurk, Hidden Markov Model Speech Recognition Toolkits for forced alignment, acoustic analyses via Praat and data analyses in R.

May 2017-Present
• Assisted visiting researcher, **Paula Rubio-Fernandez**, in investigating referential communication, Theory of Mind and lexical pragmatics.
• Collected data via Amazon Mechanical Turk and assisted in data collection via event related potential (ERP) and functional magnetic resonance imaging (fMRI).
• Collected and analyzed data for **Project Prakash**, in New Delhi, India - an initiative from the **Sinha Lab** for Vision Research, MIT
• Prepared stimuli for a referential communication task in collaboration with researchers at **University of Edinburgh**

Neuroscience and Behavior, Mount Holyoke College
Feb 2015-Present
Senior Thesis Research Assistant. P.I. **Mara Breen**.
• Employed ERP to investigate the role of rhythm in implicit prosody during silent reading of limericks.

Neuroscience & Behavior and Biological Sciences, Mount Holyoke College
Research Assistant. P.I. **Renae Brodie**.
Oct 2016-Oct 2017
• Behavioural ecology research on the effect of unmanned aerial vehicles (drones) on urban avian populations.

Independent Research – MuSyC: Music, Synaesthesia, Color
Jan 2016-Present
• Using electrical engineering, signal processing, fabrication, data visualization and design to create a device which simulates chromesthetic synaesthesia.

Janelia Research Campus, Howard Hughes Medical Institute.
Summer 2016
Undergraduate Research Scholar. P.I. **Stephen Huston**.
• Studied sensorimotor integration and context dependent behavior in *Drosophila melanogaster* using optogenetics, immunohistochemistry and confocal microscopy.

Biological Sciences, Mount Holyoke College
Research Assistant. P.I. **Craig Woodard**.

Jan 2015-Dec 2016
• Investigated role of orphan nuclear receptor, ßFTZ-F1, and neuropeptide secretion of steroid hormone, 20-hydroxyecdysone in development during the metamorphosis of *Drosophila melanogaster*.
• Utilized genetic engineering and molecular biology techniques in conjunction with light and fluorescence microscopy.

Summer 2015 **Center for Cognitive Neuroscience, University of Pennsylvania**
Undergraduate Research Fellow. P.I. **Dr Anjan Chatterjee**.
• In collaboration with **Children's Hospital of Pennsylvania** and **Center for Human Appearance**, conducted an independent research project on the social responses to facial appearance, specifically focusing on disfigurement.
• Constructed corpus of images of individuals with craniofacial surgeries, experimental design via Qualtrics, data collection via Amazon Mechanical Turk and data visualization.

March 2014-May 2015 **Neuroscience and Behavior, Mount Holyoke College**
Research Assistant. P.I. **Jared Schwartzer**.
• Investigated mice models of autism spectrum disorder with neuroimmunological and behavioral neuroscience techniques with a focus on maternal immune asthma using social approach tasks in BTBR and C57 mice.

Papers

Jamrozik, A.; **Oraa Ali, M.**; Sarwer, D. & Chatterjee, A.(2017). More than skin deep: Judgments of individuals with facial disfigurement. *Journal of Psychology of Aesthetics, Creativity and the Arts.*

Oraa Ali, M.; Fitzroy, A.B. & Breen, M.(2018) Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. *Manuscript in preparation.*

Rubio-Fernández, P.; Mollica, F.; **Oraa Ali, M.** & Gibson, E.A.(2018) How do you know that? Automatic belief inferences in passing conversation. *Manuscript in preparation.*

Talks

Oraa Ali, M., Fitzroy, A.B., & *Breen, M. Prosody, Poetry and Processing: ERP Evidence for Hierarchical Metrical Structure in Silent Reading. *15^{th} International Conference on Music Perception and Cognition and 10^{th} triennial conference of the European Society for the Cognitive Sciences of Music.* Montreal, Canada.
July 2018

Oraa Ali, M., Fitzroy, A.B., & *Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. *31^{st} Annual CUNY Conference on Human Sentence Processing*, University of California, Davis, CA.
March 2018

***Oraa Ali, M.** MuSyC: Music, Synaesthesia and Art. *Digital Humanities Fellows Showcase, Five College Digital Humanities*, Amherst, MA, USA.
May 2017

Aug 2016 ***Oraa Ali, M.**; McCune, C.; Sano, K. MuSyC: Music, Synaesthesia, Colour. *Art and Science symposium at the 24th Conference of the International Association of Empirical Aesthetics.* Universität Wien, Vienna, Austria.

Posters

March 2018 *Rubio-Fernández, P.; ***Oraa Ali, M.,** Gibson, E.A. Epistemic inferences in passing conversation: Pragmatics as a test of Theory of Mind accounts. *31st Annual CUNY Sentence Processing Conference.* University of California, Davis, USA.

April 2017 ***Oraa Ali, M.**; Fitzroy, A.B. & Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. *11th Cornell Undergraduate Linguistics Colloquium.* Cornell University, Ithaca, NY. [absent due to illness]

Aug 2016 ***Oraa Ali, M.**, Jamrozik, A., Sarwer, D. & Chatterjee, A. Interpersonal judgments of individuals with facial disfigurement before and after treatment. *24th Conference of the International Association of Empirical Aesthetics.* Universität Wien, Vienna, Austria.
• Recipient, **Third Best Poster prize**.

Aug 2016 ***Oraa Ali, M.** & Huston, S.J. Behavioral Effects of Single Visual Neuron Stimulation. *Undergraduate Scholar Research Symposium, Janelia Research Center,* Ashburn, VA.

May 2016 ***Oraa Ali, M.**, Jamrozik, A., Sarwer, D. & Chatterjee, A. Interpersonal judgments of individuals with facial disfigurement before and after treatment. *28th Annual Convention of the Association for Psychological Science.* Chicago, IL.
• Winner, **Building Bridges Poster Award**, National Institute of Dental & Craniofacial Research, National Institute of Health, USA.

Feb 2016 ***Oraa Ali, M.**; Jamrozik, A.; Sarwer, D. & Chatterjee, A. Interpersonal judgments of individuals with facial disfigurement before and after treatment. *Northeast Undergraduate Research on Neuroscience (NEURON).* Quinnipiac University, CT.

Feb 2015 *Nanda, P.; Emerson, F.; Schwartz, A.; **Oraa Ali, M.**; Steffens, E. & Schwartzer J. J. Maternal Immune Activation and Social Cognition: A model for environment effects on the development of social behavioral deficits in autism spectrum disorders. *Northeast Undergraduate Research on Neuroscience (NEURON).* Quinnipiac University, CT.

Demos

Nov 2016 **Oraa Ali, M.** MuSyC: Music, Synaesthesia, Color. *Remixing Senses, Tech Expo, Hacking Arts Conference,* Massachusetts Institute of Technology, Cambridge, USA.

Awards

2017 **Sue Barry Award,** Mount Holyoke College
• Awarded to one graduating senior every year for demonstrating *"vision, joy and curiousity"* in the pursuit of research in science.

2017 **Phi Beta Kappa,** Mount Holyoke College

2017 **Mary Lyon Scholar,** Mount Holyoke College

2016, 2017 **Award of Academic Excellence: Neuroscience & Behaviour**, Mount Holyoke College, MA, USA

Nov 2016 **Finalist, Hacking Arts Hackathon**, MIT Media Lab, Cambridge, USA

Aug 2016 **Robert Frances Award for Outstanding Student Research Contribution**
International Association of Empirical Aesthetics, Vienna, Austria

May 2016 **NIDCR Building Bridges Travel Award**, National Institute of Health, USA

May 2016 **Margaret Chambers Gould Award** Biological Sciences, Mount Holyoke College
• Awarded to one senior every year for outstanding pursuit of independent research in biological sciences.

May 2016 **Student Caucus Travel Award**, Association of Psychological Science, USA

Feb 2016 **Most Interdisciplinary Project: MuSyC**, across themes of Brain & Development, Artificial Intelligence, Life Hacks and Environment, Hampshire Hackathon, Hampshire College, USA

Grants & Fellowships

Harap Fund Grant for Independent Research, Mount Holyoke College
• Four time recipient (May 2018, Feb 2018, Jan 2017, May 2016) for pursuit of thesis research and travel.

2013 - 2017 **21st Century Scholarship for Academic Excellence,** Mount Holyoke College

2013 - 2017 **Mary Lyon Grant for Leadership and Achievement**, Mount Holyoke College

2016-2017 **Five College Digital Humanities Student Fellowship**, The Andrew W. Mellon Foundation, MA

Oct 2016, Jan 2016 **MakerSpace Grant**, Mount Holyoke College
• Two time recipient for development of MuSyC prototype.

Summer 2015 **Five College Digital Humanities Microgrant**, Five College Consortium, MA

Summer 2015 **LYNK-UAF Grant for Pursuit of Scientific Research**, Mount Holyoke College

Teaching

English, Africana Studies & Critical Social Thought, Mount Holyoke College
Teaching Assistant, **Visual Culture of Protest**.
Spring 2017 • Provided technical, design and research support for the course.

Fall 2014- Spring 2015 **Neuroscience and Behavior, Mount Holyoke College**
Tutor, **Introduction to Neuroscience and Behavior**.
• Mentored a class of 27 students and offered one on one tutoring sessions.

Biological Sciences, Mount Holyoke College
Teaching Assistant, **Cell Biology**.

Spring 2016
• Taught scientific techniques such as epifluorescence microscopy, protein purification and polymer chain reaction to group of 50 students.

Fall 2014, Spring 2015
Psychology and Education, Mount Holyoke College
Teaching Assistant, Statistics for Psychology
• Taught fundamental statistical concepts and provided academic support to a class of 72 students.

Service & Outreach

Student Liaison, Neuroscience and Behavior, Mount Holyoke College
2016-2017
• Provided mentorship to peers about pursuing research in neuroscience, course planning and academic strategies.

2014-2017
Student Resource, AccessAbility Services, Mount Holyoke College in Organic Chemistry, Research Methods in Psychology, Cognitive Psychology, Evolution and Neurobiology.
• Provided peer academic support to students with AccessAbility needs.

2015-2016
Co-President, Neuroscience Student Forum, Mount Holyoke College
• Helped organize regular meetings to discuss topics and themes in neuroscience.
• Curated a collaborative neuroscience related art exhibition for Brain Awareness week entitled:*"Synapse: Bridging the Gap Between Art and Science"*.

Aug 2015
Hafri, A., McQuire M., **Oraa Ali, M.** Using eye tracker technology to understand the perception of visual art. Interactive presentation and demonstration at *ART+SCIENCE: Science After Hours*, The Franklin Institute, Philadelphia, PA.

Professional Experience

Student Archivist, Archives & Special Collections, Mount Holyoke College
2015-2017
• Curated an exhibition for the 40^{th} anniversary of LGBTQ+ college organizations.
• Catalogued the feminist zine collection followed by digital data visualization.

Summer 2016
Summer Student Fellow, Five College Digital Humanities
• Created and curated a digital archive and directory of courses related to digital humanities in the Five College network.

2012-2013
Journalist and Writer, Science & Technology, Deccan Chronicle, India
• Wrote articles for science communication and outreach, as well as gaming and digital culture for a national newspaper.

Languages

English (native), Hindi (native), Urdu(fluent), Sanskrit(reading), French(reading) Spanish(basic), German(basic)

Technical Skills

Programming:
Most Experience with R, JavaScript, LaTeX, HTML
Some Experience with Python, Bash, EPrime, Arduino, MATLAB, CSS

Software: Amazon Mechanical Turk, Praat, Adobe Photoshop, SPSS, Excel, Adobe Illustrator, StoryMap JS, Qualtrics, Mesquite, ImageJ^{++}FIJI, Ethovision

Cognitive Neuroscience: Event-related potential(ERP), corpus construction. Basic experience with eye-tracking, functional magnetic resonance imaging (fMRI).

Molecular Neuroscience: Basic experience with optogenetics, stereotaxic surgery for neurotoxin lesioning, immunohistochemistry, quantitative polymerase chain reaction (qPCR).