

# Michelle Oraa Ali

## Curriculum Vitae

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Massachusetts Institute of Technology  
Brain and Cognitive Sciences

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- Education**    **Mount Holyoke College**, South Hadley, MA, USA  
Bachelor of Arts, 2017. *Magna Cum Laude* with High Honors; *Phi Beta Kappa*.  
Major: Neuroscience and Behavior. Minor: Graphic Narrative and 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**.  
• Investigating 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    • Assisting visiting researcher, **Paula Rubio-Fernandez**, in investigating referential communication, Theory of Mind and lexical pragmatics.  
• Collecting data via Amazon Mechanical Turk, event related potential (ERP) and functional magnetic resonance imaging (fMRI).  
• Collecting and analyzing 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**
- Feb 2015-  
Present    **Neuroscience and Behavior, Mount Holyoke College**  
Senior Thesis Research Assistant. P.I. **Mara Breen**.  
• Employing ERP and eye-tracking techniques to investigate the role of rhythm in implicit prosody during silent reading of limericks.
- Oct 2016-  
Present    **Neuroscience and Behavior and Biological Sciences, Mount Holyoke College**  
Independent Research. P.I. **Renae Brodie**.  
• Behavioural ecology research on the effect of unmanned aerial vehicles (drones) on urban avian populations.
- Jan 2016-  
Present    **Independent Research – MuSyC: Music, Synaesthesia, Color**  
• Using electrical engineering, signal processing, fabrication, data visualization and design to create a device which simulates chromesthetic synaesthesia.  
• Technical demonstrations at MIT Media Lab, Universität Wien & Mount Holyoke College.
- Summer  
2016        **Janelia Research Campus, Howard Hughes Medical Institute.**  
Undergraduate Research Scholar. P.I. **Stephen Huston**.  
• Studied sensorimotor integration and context dependent behavior in *Drosophila melanogaster* using optogenetics, immunohistochemistry and confocal microscopy.

Jan 2015- Dec 2016	<p><b>Biological Sciences, Mount Holyoke College</b> Research Assistant. P.I. <b>Craig Woodard</b>.</p> <ul style="list-style-type: none"> <li>• Investigated role of orphan nuclear receptor, <math>\beta</math>FTZ-F1, and neuropeptide secretion of steroid hormone, 20-hydroxyecdysone in development during the metamorphosis of <i>Drosophila melanogaster</i>.</li> <li>• Utilized genetic engineering and molecular biology techniques in conjunction with light and fluorescence microscopy.</li> </ul>
Summer 2015	<p><b>Center for Cognitive Neuroscience, University of Pennsylvania.</b> Undergraduate Research Fellow. P.I. <b>Dr Anjan Chatterjee</b>.</p> <ul style="list-style-type: none"> <li>• In collaboration with <b>Children's Hospital of Pennsylvania</b> and <b>Center for Human Appearance</b>, conducted an independent research project on the social responses to facial appearance, specifically focusing on disfigurement.</li> <li>• Conducted corpus construction, experimental design, data collection and visualization.</li> </ul>
March 2014- May 2015	<p><b>Neuroscience and Behavior, Mount Holyoke College</b> Research Assistant. P.I. <b>Jared Schwartzer</b>.</p> <ul style="list-style-type: none"> <li>• Investigated mice models of autism spectrum disorder with neuroimmunological and behavioral neuroscience techniques with special focus on maternal immune asthma and social approach and memory tasks in BTBR and C57 mice.</li> </ul>
<b>Papers</b>	<p>Jamrozik, A.; <b>Oraa Ali, M.</b>; Sarwer, D. &amp; Chatterjee, A. (2017). More than skin deep: Judgments of individuals with facial disfigurement. <i>Journal of Psychology of Aesthetics, Creativity and the Arts</i>.</p> <p><b>Oraa Ali, M.</b>; Fitzroy, A.B. &amp; Breen, M. (2018) Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. <i>Manuscript in preparation</i>.</p> <p>Rubio-Fernández, P.; Mollica, F.; <b>Oraa Ali, M.</b> &amp; Gibson, E.A. (2018) How do you know that? Automatic belief inferences in passing conversation. <i>Manuscript in preparation</i>.</p>
<b>Talks</b>	<p><b>Oraa Ali, M.</b>, Fitzroy, A.B., &amp; Breen, M. Prosody, Poetry and Processing: ERP Evidence for Hierarchical Metrical Structure in Silent Reading. <i>15<sup>th</sup> International Conference on Music Perception and Cognition and 10<sup>th</sup> triennial conference of the European Society for the Cognitive Sciences of Music</i>. Montreal, Canada.</p>
July 2018	<p><b>Oraa Ali, M.</b>, Fitzroy, A.B., &amp; Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. <i>31<sup>st</sup> Annual CUNY Conference on Human Sentence Processing</i>, University of California, Davis, CA.</p>
March 2018	<p><b>Oraa Ali, M.</b>, Fitzroy, A.B., &amp; Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. <i>31<sup>st</sup> Annual CUNY Conference on Human Sentence Processing</i>, University of California, Davis, CA.</p>
May 2017	<p><b>Oraa Ali, M.</b> MuSyC: Music, Synaesthesia and Art. <i>Digital Humanities Fellows Showcase, Five College Digital Humanities</i>, Amherst, MA, USA.</p>

- April 2017 **Oraa Ali, M.**, Fitzroy, A.B., & Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. *Senior Symposium*, Mount Holyoke College, South Hadley, MA, USA.
- April 2017 **Oraa Ali, M.** & Brodie, R. Drone Incoming! Avian Species-Specific Alarm Responses to Unmanned Aerial Vehicles. *Senior Symposium*, Mount Holyoke College, USA.
- Aug 2016 **Oraa Ali, M.**; McCune, C.; Sano, K. MuSyC: Music, Synaesthesia, Colour. *Art and Science symposium at the 24<sup>th</sup> Conference of the International Association of Empirical Aesthetics*. Universität Wien, Vienna, Austria.
- April 2016 **Oraa Ali, M.** MuSyC: Transcending Art, Neuroscience and Digital Technology, *Microgrant Recipient Showcase, Five College Digital Humanities*, Amherst, MA, USA.
- Oct 2015 **Oraa Ali, M.**, Jamrozik, A., Chatterjee, A. Behavioral Responses to Facial Appearance, *Learning from Application Symposium*, South Hadley, MA, USA.
- 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. March 2018.
- April 2017 **Oraa Ali, M.**; Fitzroy, A.B. & Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. *11th Annual Cornell Undergraduate Linguistics Colloquium*. Cornell University, Ithaca, NY, USA. [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, USA.
- 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, USA.  
• 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, North Haven, CT.

April 2016	<b>Oraa Ali, M.;</b> Van Andel, E.; Bhushan, P. The effects of cytochalasin D on length of actin filaments. <i>Cell Biology Student Research Showcase</i> , Mount Holyoke College, USA.
Feb 2015	Nanda, P.; Emerson, F.; Schwartz, A.; <b>Oraa Ali, M.;</b> Steffens, E. & Schwartz J. J. Maternal Immune Activation and Social Cognition: A model for environment effects on the development of social behavioral deficits in autism spectrum disorders. <i>Northeast Undergraduate Research on Neuroscience (NEURON)</i> . Quinnipiac University, CT.
<b>Demos</b> Nov 2016	<b>Oraa Ali, M.</b> MuSyC: Music, Synaesthesia, Color. <i>Remixing Senses, Tech Expo, Hacking Arts Conference</i> , Massachusetts Institute of Technology, Cambridge, USA.
<b>Awards</b> 2017	<b>Sue Barry Award</b> , Mount Holyoke College, MA, USA <ul style="list-style-type: none"> <li>• Awarded to one graduating senior every year for demonstrating "vision, joy and curiosity" in the pursuit of research in science.</li> </ul>
2017	<b>Phi Beta Kappa</b> , Mount Holyoke College, MA, USA
2017	<b>Mary Lyon Scholar</b> , Mount Holyoke College, MA, USA
2016, 2017	<b>Award of Academic Excellence: Neuroscience and Behaviour</b> , Mount Holyoke College, MA, USA
Nov 2016	<b>Finalist, Hacking Arts Hackathon</b> , MIT Media Lab, Cambridge, USA
Aug 2016	<b>Robert Frances Award for Outstanding Student Research Contribution</b> International Association of Empirical Aesthetics, Vienna, Austria
May 2016	<b>NIDCR Building Bridges Travel Award</b> , National Institute of Health, USA
May 2016	<b>Margaret Chambers Gould Award</b> , Biological Sciences, Mount Holyoke College, USA <ul style="list-style-type: none"> <li>• Awarded to one senior every year for outstanding pursuit of independent research in biological sciences.</li> </ul>
May 2016	<b>Student Caucus Travel Award</b> , Association of Psychological Science, USA
Feb 2016	<b>Most Interdisciplinary Project: MuSyC</b> , across themes of Brain & Development, Artificial Intelligence, Life Hacks and Environment, Hampshire Hackathon, USA
Aug 2012	<b>C.C. Scholarship for Excellence in Biology</b> , Sardar Patel Vidyalaya, India
<b>Grants &amp; Fellowships</b>	<b>Harap Fund Grant for Independent Research</b> , Mount Holyoke College, USA <ul style="list-style-type: none"> <li>• Four time recipient (May 2018, Feb 2018, Jan 2017, May 2016) for pursuit of thesis research and travel.</li> </ul>
2013 - 2017	<b>21<sup>st</sup> Century Scholarship for Academic Excellence</b> , Mount Holyoke College, USA

2013 - 2017	<b>Mary Lyon Grant for Leadership and Achievement</b> , Mount Holyoke College, USA
2016-2017	<b>Five College Digital Humanities Student Fellowship</b> , The Andrew W. Mellon Foundation, Pioneer Valley, USA
Oct 2016, Jan 2016	<b>MakerSpace Grant</b> , Mount Holyoke College, USA <ul style="list-style-type: none"> <li>• Two time recipient for development of MuSyC prototype.</li> </ul>
Summer 2015	<b>Five College Digital Humanities Microgrant</b> , Five College Consortium, MA, USA
Summer 2015	<b>LYNK-UAF Grant for Pursuit of Scientific Research</b> , Mount Holyoke College, USA
<b>Teaching</b> Spring 2017	<b>English, Africana Studies and Critical Social Thought</b> , Mount Holyoke College Teaching Assistant, <b>Visual Culture of Protest</b> . <ul style="list-style-type: none"> <li>• Provided technical, design and research support for the course.</li> </ul>
Spring 2016	<b>Biological Sciences</b> , Mount Holyoke College Teaching Assistant, <b>Cell Biology</b> . <ul style="list-style-type: none"> <li>• Taught scientific techniques such as epifluorescence microscopy and polymer chain reaction to group of 50 students.</li> </ul>
Fall 2014- Spring 2015	<b>Neuroscience and Behavior</b> , Mount Holyoke College Tutor, Introduction to Neuroscience and Behavior, 2014-2015. <ul style="list-style-type: none"> <li>• Mentored an introductory class of 27 students and offered one on one tutoring sessions.</li> </ul>
Fall 2014, Spring 2015	<b>Psychology and Education</b> , Mount Holyoke College Teaching Assistant, Statistics for Psychology, 2014. <ul style="list-style-type: none"> <li>• Taught fundamental statistical concepts and provided academic support to a class of 72 students.</li> </ul>
<b>Service &amp; Outreach</b> 2016-2017	<b>Student Liaison, Neuroscience and Behavior</b> , Mount Holyoke College <ul style="list-style-type: none"> <li>• Providing mentorship and guidance to peers and younger students about pursuing research in neuroscience, course catalogues and academic strategies.</li> </ul>
2014-2017	<b>Student Resource, AccessAbility Services</b> , Mount Holyoke College <b>in Organic Chemistry, Research Methods in Psychology, Cognitive Psychology, Evolution and Neurobiology</b> . <ul style="list-style-type: none"> <li>• Provided peer academic support to students with AccessAbility needs.</li> </ul>
2015-2016	<b>Co-President, Neuroscience Student Forum</b> , Mount Holyoke College <ul style="list-style-type: none"> <li>• Helped organize regular meetings to discuss topics and themes in neuroscience.</li> <li>• Curated a collaborative neuroscience related art exhibition for Brain Awareness week, entitled: "<i>Synapse: Bridging the Gap Between Art and Science</i>".</li> </ul>

Aug 2015	Hafri, A., McQuire M., <b>Oraa Ali, M.</b> Using eye tracker technology to understand the perception of visual art. Interactive presentation and demonstration at <i>ART+SCIENCE: Science After Hours</i> , The Franklin Institute, Philadelphia, PA, USA.
<b>Professional Experience</b> 2015-2017	<b>Student Archivist, Archives and Special Collections, Mount Holyoke College</b> <ul style="list-style-type: none"> <li>• Curated an exhibition for the 40th anniversary of LGBTQ+ college organizations.</li> <li>• Catalogued the feminist zine collection followed by digital data visualization.</li> </ul>
Summer 2016	<b>Summer Student Fellow</b> , Five College Digital Humanities <ul style="list-style-type: none"> <li>• Independently created and curated a digital archive and directory of courses related to digital humanities in the Five College network.</li> </ul>
2012-2013	Journalist and Writer, Science and Technology, Deccan Chronicle, India <ul style="list-style-type: none"> <li>• Wrote articles for science communication and outreach, as well as gaming and digital culture for a national newspaper.</li> </ul>
<b>Languages</b>	English (native), Hindi (native), Urdu(fluent), Sanskrit(reading), French(reading) Spanish(basic), German(basic)
<b>Technical Skills</b>	<b>Programming:</b> R, Python, EPrime, JavaScript, $\text{\LaTeX}$ , HTML + CSS, Arduino, MATLAB <b>Software:</b> Amazon Mechanical Turk, Photoshop, SPSS, ImageJ <sup>++</sup> FIJI, Excel, StoryMapJS <b>Cognitive Neuroscience:</b> Event-related potential(ERP), electroencephalography(EEG) corpus construction, eye-tracking (TOBI), functional magnetic resonance imaging(fMRI). <b>Molecular Neuroscience:</b> Optogenetics, Immunohistochemistry, stereotaxic surgery for neurotoxin lesioning, quantitative polymerase chain reaction (qPCR).