

# Michelle Oraa Ali

## Curriculum vitae

CONTACT INFORMATION	Massachusetts Institute of Technology Brain and Cognitive Sciences Cambridge, MA, USA 02136 ali26m@mt holyoke.edu Phone: +1(413)437-3151 michelleoraaali.mit.edu
EDUCATION	<b>Mount Holyoke College</b> , South Hadley, MA 2013-17 Bachelor of Arts, Neuroscience and Behavior, Graphic Narrative and Visual Storytelling <ul style="list-style-type: none"> <li>• <i>Phi Beta Kappa</i>; <i>Magna cum Laude</i> with High Honors in Neuroscience &amp; Behavior</li> <li>• Thesis: <i>Prosody, Poetry and Processing:an ERP Investigation of Auditory Imagery</i></li> </ul>
RESEARCH EXPERIENCE	<b>Massachusetts Institute of Technology</b> 2017-Present <i>Research Support Associate, Brain and Cognitive Sciences</i> <ul style="list-style-type: none"> <li>• Under supervision of <b>Dr Edward Gibson</b></li> <li>• Investigated prosody as a candidate for a cross-linguistic universal in collaboration with <b>Leon Bergen</b> (UCSD).</li> <li>• Assisted in data collection via event related potential (ERP) and functional magnetic resonance imaging (fMRI) for <b>Ev Fedorenko</b> (MIT, Harvard, MGH).</li> <li>• Assisted visiting researcher, <b>Paula Rubio-Fernandez</b> (University of Oslo) in investigating referential communication, Theory of Mind &amp; lexical pragmatics.</li> <li>• Collected and analyzed data for <b>Project Prakash</b>, in New Delhi, India - an initiative from the <b>Sinha Lab</b> for Vision Research (MIT).</li> <li>• Prepared stimuli and processed data for a referential communication task in collaboration with <b>Hannah Rohde &amp; Maddie Long</b> (University of Edinburgh), <b>Marta Bialecka-Pikul</b> (Jagiellonian University) and <b>Julian Jara-Ettinger</b>(Yale University).</li> </ul> <b>Janelia Research Campus</b> , Howard Hughes Medical Institute Summer 2016 <i>Undergraduate Research Scholar</i> <ul style="list-style-type: none"> <li>• Under supervision of <b>Dr Stephen Huston</b></li> <li>• Studied sensorimotor integration and context dependent behavior in <i>Drosophila melanogaster</i> using optogenetics, immunohistochemistry and confocal microscopy.</li> </ul> <b>Mount Holyoke College</b> , South Hadley, MA <ul style="list-style-type: none"> <li>• <i>Lead Student Investigator, Neuroscience &amp; Behavior</i> 2015-Present             <ul style="list-style-type: none"> <li>• Under supervision of <b>Dr Mara Breen</b></li> <li>• Employed ERP to investigate the role of rhythm and metrical structure in implicit prosody during silent reading of poetry.                 <ul style="list-style-type: none"> <li>– Three-time recipient of Harap Fund Grant for Independent Research</li> </ul> </li> </ul> </li> <li>• <i>Research Assistant, Neuroscience &amp; Behavior</i> 2016-Present             <ul style="list-style-type: none"> <li>• Under supervision of <b>Dr Renae Brodie</b></li> <li>• Behavioural ecology research on the effect of unmanned aerial vehicles (drones) on urban avian populations.</li> </ul> </li> <li>• <i>Research Assistant, Biological Sciences</i> 2015-16             <ul style="list-style-type: none"> <li>• Under supervision of <b>Dr Craig Woodard</b></li> <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> </li> </ul>

- *Research Assistant, Neuroscience & Behavior* 2014-15
  - Under supervision of **Dr Jared Schwartz**
  - 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.

**University of Pennsylvania,** Summer 2015  
*Undergraduate Research Fellow,* Center for Cognitive Neuroscience

- Under supervision of **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 craniofacial disfigurement.
- Constructed corpus of images of patients who underwent reconstructive surgeries, experimental design via Qualtrics, data collection via Amazon Mechanical Turk and data visualization
  - Recipient of Harap Fund Grant for Independent Research

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JOURNAL PUBLICATIONS 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*.

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

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

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CONFERENCE TALKS Presenting Author Indicated with \*

[1] **Oraa Ali, M.**, Fitzroy, A.B., & \*Breen, M. Prosody, Poetry and Processing: ERP Evidence for Hierarchical Metrical Structure in Silent Reading. *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*. Montreal, Canada. 23-28 July 2018.

[2] **Oraa Ali, M.**, Fitzroy, A.B., & \*Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. *31<sup>st</sup> CUNY Conference on Human Sentence Processing*, University of California, Davis, CA. 15-17 March 2018.

[3] \***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*. Universitat Wien, Vienna, Austria. 29 August - 1 September 2016.

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CONFERENCE POSTERS [4] \*Rubio-Fernandez, P.; \***Oraa Ali, M.**, & Gibson, E.A. Epistemic inferences in passing conversation: Pragmatics as a test of Theory of Mind accounts. *31<sup>st</sup> CUNY Sentence Processing Conference*. University of California, Davis, USA. 15-17 March 2018.

[5] \***Oraa Ali, M.**; Fitzroy, A.B. & Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. *11<sup>th</sup> Cornell Undergraduate Linguistics Colloquium*. Cornell University, Ithaca, NY. 29-30 April 2017. [*absent due to illness*]

- [6] \***Oraa Ali, M.**;Jamrozik, A.;Sarwer, D. & Chatterjee, A. Interpersonal judgments of individuals with facial disfigurement before & after treatment. *24<sup>th</sup> Conference of the International Association of Empirical Aesthetics*. Universitat Wien, Austria. 29 August - 1 September 2016.  
– Recipient, **Robert Frances Award** and **Third Best Poster prize**.
- [7] \***Oraa Ali, M.** & Huston, S.J. Behavioral Effects of Single Visual Neuron Stimulation. *Janelia Research Symposium, Janelia Research Center*, Ashburn, VA. 3 August 2016.
- [8] \***Oraa Ali, M.**; Jamrozik, A.; Sarwer, D. & Chatterjee, A. Interpersonal judgments of individuals with facial disfigurement before and after treatment. *28<sup>th</sup> Annual Convention of the Association for Psychological Science*. Chicago, IL. 26-29 May 2016.  
– Winner, **Building Bridges Poster Award**, National Institute of Dental & Craniofacial Research, National Institute of Health, USA.
- [9] \***Oraa Ali, M.**; Jamrozik, A.; Sarwer, D. & Chatterjee, A. Interpersonal judgments of individuals with facial disfigurement before and after treatment. *North-east Undergraduate Research on Neuroscience (NEURON)*. Quinnipiac University, CT, UAA. 28 February 2016.
- [10] \*Nanda, P.;Emerson, F.;Schwartz, A.;**Oraa Ali, M.**; Steffens, E. & Schwartz J.J. Maternal Immune Activation & 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, USA. 22 February 2015.

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#### DEMOS

- [11] \***Oraa Ali, M.** MuSyC: Music, Synaesthesia and Art. *4<sup>th</sup> Digital Humanities Symposium and Fellows Showcase*, Five College Digital Humanities, Amherst College, MA, USA. 6 May 2017.
- [12] \***Oraa Ali, M.** MuSyC: Music, Synaesthesia, Color. *Remixing Senses, Tech Expo, Hacking Arts Conference*, MIT Media Lab, Cambridge, MA, USA. 19 November 2016.
- [13] \***Oraa Ali, M.** MuSyC: Integrating Art and Science. *3<sup>rd</sup> Digital Humanities Symposium and Fellows Showcase*, Five College Digital Humanities, Amherst College, MA, USA. 30 April 2017.

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#### AWARDS

- **Diversity Enhancement Award**, 43rd Boston University Conference on Language Development. 2018
- **Student Travel Award**, 31st CUNY Sentence Processing 2018
- **Finalist, Hacking Arts Hackathon**, MIT Media Lab 2016
- **Robert Frances Award (Outstanding Student Research Contribution)** 2016 International Association of Empirical Aesthetics, Vienna, Austria
- **NIDCR Building Bridges Travel Award**, National Institute of Health 2016
- **Student Caucus Travel Award**, Association of Psychological Science 2016

- **Most Interdisciplinary Project: MuSyC**, Hampshire Hackathon 2016
  - Across themes of Brain & Development, Artificial Intelligence, Life Hacks and Environment.

**Mount Holyoke College, South Hadley, MA:**

- **Sue Barry Award** 2017
  - Awarded to one graduating senior every year for demonstrating "*vision, joy and curiosity*" in the pursuit of research in science.
- **Phi Beta Kappa** 2017
- **Mary Lyon Scholar** 2017
- **Academic Excellence Award**, Neuroscience & Behavior 2017, 2016
- **President and Dean of College Fund** 2016

**GRANTS AND FELLOWSHIPS**

**Five College Digital Humanities**, Five College Consortium & The Andrew W. Mellon Foundation

- **Five College Digital Humanities Student Fellowship** 2016-17
- **Five College Digital Humanities Summer Student Fellowship** 2016
- **Five College Digital Humanities Microgrant** 2016

**Mount Holyoke College**

- **Harap Fund Grant for Independent Research** 2016, 2017, (2018 x 2)
  - For pursuit of independent research and travel (*four time recipient*).
- **21<sup>st</sup> Century Scholarship for Academic Excellence** 2013-17
- **MakerSpace Grant** 2016 x 2
  - For the development of MuSyC (*two time recipient*).
- **Laurel Fellowship** 2015-16
  - For pursuit of study in *Cognitive Neuroscience and Evolutionary Biopoetics* at the **University of Maastricht, The Netherlands** [*Declined due to pursuit of on-campus research opportunities*]
- **LYNK-UAF Grant - Pursuit of Scientific Research** 2015
  - For pursuit of independent research anywhere of one's choosing.

**TEACHING**

**Mount Holyoke College, South Hadley, MA**

- **Teaching Assistant, Visual Culture of Protest English, Africana Studies and Critical Social Thought** Spring 2017
  - Provided technical and research support for advanced seminar of 27 students.
  - Facilitated discussion about visual archives of protest and revolution from second half of the 20<sup>th</sup> century.
  - Responsible for curating content for course related social media and outreach.
- **Laboratory Teaching Assistant, Cell Biology Biological Sciences** Spring 2016
  - Taught scientific techniques such as epifluorescence microscopy, protein purification and polymer chain reaction to group of 50 students.
- **Teaching Assistant, Statistics for Psychology Psychology & Education** 2014-15
  - Taught fundamental statistical concepts and SPSS, and provided academic support to a class of 72 students.

	<ul style="list-style-type: none"> <li>• <b>Tutor, Introduction to Neuroscience &amp; Behavior</b> 2014-15  <b>Neuroscience &amp; Behavior</b> <ul style="list-style-type: none"> <li>• Provided one on one tutoring for students in introductory neuroscience course.</li> </ul> </li> </ul>
SERVICE	<hr/> <p><b>Judge, Massachusetts State Science &amp; Engineering Fair, MIT</b> 2018</p> <ul style="list-style-type: none"> <li>• Evaluated projects of high school students in the theme of Behavioral Science.</li> </ul> <p><b>Student Liaison, Neuroscience &amp; Behavior, Mount Holyoke College</b> 2016-17</p> <ul style="list-style-type: none"> <li>• Provided mentorship to peers about pursuing research in neuroscience, course planning and academic strategies.</li> </ul> <p><b>Volunteer, CUNY Conference for Human Sentence Processing, Cambridge, MA</b> 2017</p> <p><b>Student Resource, AccessAbility Services, Mount Holyoke College</b> 2014-17</p> <ul style="list-style-type: none"> <li>• Provided peer academic support for students in AccessAbility Services for several courses: <b>Organic Chemistry, Research Methods in Psychology, Cognitive Psychology, Evolution and Neurobiology.</b></li> </ul> <p><b>Zine Coordinator, OUTreach, Mount Holyoke College</b> 2015-16</p> <ul style="list-style-type: none"> <li>• Curated the 3<sup>rd</sup> annual Gender &amp; Sexuality Zine "<i>What is Pride?</i>" <a href="#">[PDF]</a></li> <li>• Facilitated panel about experiences of queer international students at the first Mount Holyoke Queer Alum conference.</li> <li>• Helped organize events about intersectional feminism, activism and intergroup solidarity and provide support for LGBT students on campus.</li> </ul> <p><b>Co-President, Neuroscience Student Forum, Mount Holyoke College</b> 2015-16</p> <ul style="list-style-type: none"> <li>• Helped student-led journal club to discuss different topics 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> <p><b>Student Volunteer, Association for Psychological Science, Chicago, IL</b> 2016</p> <p><b>Volunteer Presenter, The Franklin Institute, Philadelphia, PA</b> 2015</p> <ul style="list-style-type: none"> <li>• Showcased eye tracker technology in the perception of visual art at <i>Science After Hours</i> event in "ART + SCIENCE".</li> </ul>
NON-ACADEMIC POSITIONS	<hr/> <p><b>Archives &amp; Special Collections, Mount Holyoke College, USA</b> 2015-17</p> <p><i>Student Archivist</i></p> <ul style="list-style-type: none"> <li>• Curated an exhibition for the 40<sup>th</sup> anniversary of LGBTQ college organizations and in honor of the "The Astronomer".</li> <li>• Catalogued the feminist zine collection followed by digital data visualization.</li> </ul> <p><b>Science &amp; Technology, Deccan Chronicle, India</b> 2011-13</p> <p><i>Journalist</i></p> <ul style="list-style-type: none"> <li>• Wrote articles about the representation of women, LGBTQ and disabled individuals for a weekly segment for a national newspaper.</li> </ul> <p><b>Freelance Illustrator</b> 2006-Present</p> <ul style="list-style-type: none"> <li>• Illustrated literary journals, designed covers for programs &amp; magazines, created logos for organizations and fundraising events.</li> </ul>
OTHER INDEPENDENT PROJECTS	<hr/> <p><b>Radio DJ and Sound Engineer</b> 2014-Present</p> <ul style="list-style-type: none"> <li>• <i>DJ and Engineer</i> for <b>4 seasons</b> on WMBR 88.1 FM, Massachusetts Institute of Technology, Cambridge, MA <ul style="list-style-type: none"> <li>- Show Name: Colourless Green Ideas Sleep Furiously</li> </ul> </li> <li>• <i>DJ</i> for <b>7 seasons</b> on WMHC 91.5 FM, Mount Holyoke College, South Hadley, MA <ul style="list-style-type: none"> <li>- Show Names: Darling Mermaid Darlings, Swag Hags, The Cinnamon Nuns</li> </ul> </li> </ul> <p><b>MuSyC: Music, Synaesthesia, Color</b> 2016-Present</p> <ul style="list-style-type: none"> <li>• Used electrical engineering, signal processing, fabrication, data visualization, rapid prototyping and design to create a device which simulates chromesthetic synaesthesia.</li> </ul>

- Currently developing a real-time music visualizer for the WMBR (MIT Radio) website. [\[Link to Current Beta version\]](#)

## SKILLS

### Programming:

- Most Experience with **R**, **JavaScript**, **HTML**, **CSS**
- Basic Experience with **Python**, **UNIX**, **EPrime**, **Arduino**, **MATLAB**, **L<sup>A</sup>T<sub>E</sub>X**

### Software and Platforms:

- **Amazon Mechanical Turk**, **PsiTurk**, IbexFarms, GEPHI, **Praat**, SPSS, Adobe Photoshop and Illustrator, StoryMap<sup>JS</sup>, Qualtrics, Mesquite, ImageJ<sup>++</sup>, FIJI, Ethovision, AutoCAD

### Neuroscience:

- 3 years of experience with Event-related potential(*ERP*) -BioSemi ActiView system
- Basic experience with *eye-tracking*, functional magnetic resonance imaging (*fMRI*) corpus construction, rodent behavioral testing and stereotaxic surgery, optogenetics.

### Other:

- Proficient at Drone piloting, surveillance
- Proficient at illustration and graphic design (digital and traditional media)
- Basic experience with sound engineering and radio broadcast engineering
- Basic experience with fabrication (3D printing and laser cutting)

## ART SHOWS

### Solo Shows

- |  |      |
|--|------|
| [1] Experimental Art Gallery, India Habitat Centre, New Delhi, India   | 2016 |
| - Title: " <i>Curiouser &amp; Curiouser: An Experimental Exhibition about Paintbrushes &amp; Petridishes</i> " |      |
| [2] Blanchard Student Art Gallery, South Hadley, MA, USA   | 2016 |
| - Title: " <i>Curiouser &amp; Curiouser: Integrating Art and Science</i> "                                     |      |
| [3] Convention Centre, India Habitat Centre, New Delhi, India  | 2007 |
| - Title: " <i>More Than Meets The Eye</i> "  |      |

### Group Shows

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|---|------|
| [4] Blanchard Student Art Gallery, South Hadley, MA, USA                        | 2016 |
| - Title: " <i>Synapse: Bridging the Gap Between Art and Science</i> "           |      |
| [5] Olympia Art Collective, South Hadley, MA, USA                               | 2016 |
| - Title: " <i>Olympia: Last Event</i> ".  |      |
| [6] Olympia Art Collective, Northampton, MA, USA                                | 2016 |
| - Title: " <i>Women Artists for Women Artists</i> ".                            |      |
| [7] Olympia Art Collective, Mount Holyoke, South Hadley, MA, USA                | 2016 |
| - Title: " <i>Presenting Olympia</i> ". Mount Holyoke Art Studio, South Hadley. |      |
| [8] KRITI + Alliance Francaise de Delhi, New Delhi, India                       | 2011 |
| - Title: " <i>EcoFestival, Exhibition by Professional Artists</i> ".            |      |
| [9] Bienal Izmir, Izmir, Turkey   | 2011 |
| - Title: " <i>1.International Izmir Modern Arts</i> "                           |      |
| [10] Biennale Chianciano, Museo d'Arte, Chianciano Terme, Italy                 | 2009 |
| - Title: " <i>International Exhibition of Contemporary Arts</i> "               |      |
| [11] HelpAge India, The Oberoi, New Delhi, India                                | 2008 |
| - Title: " <i>Art for Aged</i> "  |      |