

Michelle Oraa Ali

Curriculum vitae

CONTACT INFORMATION	Massachusetts Institute of Technology Brain and Cognitive Sciences Cambridge, MA, USA 02139	ali26m@mtholyoke.edu Phone: +1(413)437-3151 michelleoraaali.mit.edu
EDUCATION	<hr/> Brown University , Providence, RI Starting Fall 2019 Ph.D. in Cognitive, Linguistic and Psychological Sciences <ul style="list-style-type: none">Under supervision of Dr Roman Feiman Mount Holyoke College , South Hadley, MA 2013-17 <i>Bachelor of Arts</i> , Neuroscience and Behavior, Graphic Narrative and Visual Storytelling <ul style="list-style-type: none"><i>Magna cum Laude</i> with High Honors in Neuroscience; <i>Phi Beta Kappa</i>Thesis: <i>Prosody, Poetry and Processing:an ERP Investigation of Auditory Imagery</i>	
RESEARCH EXPERIENCE	<hr/> Massachusetts Institute of Technology <i>Research Affiliate, Brain and Cognitive Sciences</i> Feb 2019-Present <i>Research Support Associate, Brain and Cognitive Sciences</i> June 2017-Feb 2019 <ul style="list-style-type: none">Under supervision of Dr Edward GibsonInvestigated prosody as a candidate for a cross-linguistic universal in collaboration with Leon Bergen (UCSD).<ul style="list-style-type: none">Developing a pipeline for analyzing recordings for prosodic features by taking advantage of Hidden Markov model based forced aligners and optimizing ways to extract relevant acoustic features of spoken speech in Praat.Assisting visiting researcher, Paula Rubio-Fernandez (University of Oslo) in investigating referential communication, Theory of Mind and lexical pragmatics.<ul style="list-style-type: none">Examined automaticity of pragmatic inference with a false-belief task using a self-paced reading paradigm (through IbexFarms). [PsyArxiv - Preprint]With Project Prakash - Sinha Lab for Vision Research (MIT): Collected and analyzed eye-tracking and behavioral data to understand the development of cognitive abilities (functional visual acuity, language, Theory of Mind) in children (sighted, blind, and newly sighted) in New Delhi, India.With Julian Jara-Ettinger (Yale University), built a series of online reaction time experiments using JsPsych to explore efficiency in communication, looking at color and material adjectives.With Hannah Rohde & Maddie Long (University of Edinburgh), and Marta Bialecka-Pikul (Jagiellonian University): Prepared stimuli and processed auditory data for referential communication tasks.Assisted in data collection via event related potential (ERP) and functional magnetic resonance imaging (fMRI) for Ev Fedorenko (MIT, Harvard, MGH). Janelia Research Campus , Howard Hughes Medical Institute Summer 2016 <i>Undergraduate Research Scholar</i> <ul style="list-style-type: none">Under supervision of Dr Stephen HustonStudied sensorimotor integration and context dependent behavior in <i>Drosophila melanogaster</i> using optogenetics, immunohistochemistry and confocal microscopy. Mount Holyoke College , South Hadley, MA <ul style="list-style-type: none"><i>Lead Undergraduate Investigator, Neuroscience & Behavior</i> 2015-Present<ul style="list-style-type: none">Thesis Student, under supervision of Dr Mara BreenEmployed ERPs to investigate the role of rhythm and metrical structure in implicit prosody during silent reading of poetry.<ul style="list-style-type: none">Three-time recipient of Harap Fund Grant for Independent Research	

- *Research Assistant, Neuroscience & Behavior* 2016-Present
 - Under supervision of **Dr Renae Brodie**
 - Behavioural ecology research on the effect of unmanned aerial vehicles (drones) on urban avian populations.
- *Research Assistant, Biological Sciences* 2015-16
 - Under supervision of **Dr Craig Woodard**
 - Investigated role of orphan nuclear receptor, β FTZ-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.
- *Research Assistant, Neuroscience & Behavior* 2014-15
 - Under supervision of **Dr 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.

University of Pennsylvania, 2015-16
Undergraduate Research Fellow, Center for Cognitive Neuroscience

- Under supervision of **Dr Anjan Chatterjee** [[Publication Link](#)]
- 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 a corpus of images of patients who underwent reconstructive surgeries by scraping through craniofacial surgical archives
- Collected data via Qualtrics and Amazon Mechanical Turk and data analyses and visualization in R and SPSS.
 - Recipient of Harap Fund Grant for Independent Research

ACADEMIC AWARDS

- **Diversity Enhancement Award**, 43rd Boston University Conference on Language Development. 2018
- **Student Travel Award**, 31st CUNY Human Sentence Processing Conference 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.

	<ul style="list-style-type: none"> • 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	<p>Five College Digital Humanities, Five College Consortium & The Andrew W. Mellon Foundation</p> <ul style="list-style-type: none"> • Five College Digital Humanities Student Fellowship 2016-17 • Five College Digital Humanities Summer Student Fellowship 2016 • Five College Digital Humanities Microgrant 2016 <p>Mount Holyoke College</p> <ul style="list-style-type: none"> • Harap Fund Grant for Independent Research 2016, 2017, Feb & May 2018 <ul style="list-style-type: none"> • For pursuit of independent research and travel (<i>four time recipient</i>). • 21st Century Scholarship for Academic Excellence 2013-17 • MakerSpace Grant Feb 2016, Oct 2016 <ul style="list-style-type: none"> • For the development of MuSyC (<i>two time recipient</i>). • Laurel Fellowship 2015-16 <ul style="list-style-type: none"> • For pursuit of study in <i>Cognitive Neuroscience and Evolutionary Biopoetics</i> at the University of Maastricht, The Netherlands [<i>Declined due to pursuit of on-campus research opportunities</i>] • LYNK-UAF Grant - Pursuit of Scientific Research 2015 <ul style="list-style-type: none"> • For pursuit of independent research anywhere of one's choosing.
JOURNAL PUBLICATIONS	<p>Jamrozik, A.; Oraa Ali, M.; Sarwer, D. & Chatterjee, A.(2017). More than skin deep: Judgments of individuals with facial disfigurement. <i>Journal of Psychology of Aesthetics, Creativity and the Arts</i>. [Publication Link]</p> <p>Rubio-Fernandez, P.; Mollica, F.; Oraa Ali, M. & Gibson, E.A.(2018) How do you know that? Automatic belief inferences in passing conversation. <i>In review at Cognition</i>. [PsyArxiv - Preprint]</p>
PUBLICATIONS IN PREPARATION	<p>Oraa Ali, M.; Fitzroy, A.B. & Breen, M.(2018) Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. <i>Manuscript in preparation</i>.</p>
CONFERENCE TALKS	<p>Presenting Author Indicated with *</p> <p>[1] Oraa Ali, M., Fitzroy, A.B., & *Breen, M. Prosody, Poetry and Processing: ERP Evidence for Hierarchical Metrical Structure in Silent Reading. <i>15th International Conference on Music Perception and Cognition and 10th triennial conference of the European Society for the Cognitive Sciences of Music</i>. Montreal, Canada. 23-28 July 2018.</p> <p>[2] Oraa Ali, M., Fitzroy, A.B., & *Breen, M. Prosody, Poetry and Processing: ERP Evidence for Rhythmic Structure in Silent Reading. <i>31st CUNY Conference on Human Sentence Processing</i>, University of California, Davis, CA. 15-17 March 2018.</p> <p>[3] *Oraa Ali, M.. MuSyC: Music, Synaesthesia, Colour. <i>Art and Science symposium at the 24th Conference of the International Association of Empirical Aesthetics</i>. Universitat Wien, Vienna, Austria. 29 August - 1 September 2016.</p>

INVITED TALKS

- [4] ***Oraa Ali, M.**. Music, Synaesthesia and Art. *DayCon - Science in the News*. Harvard University, Cambridge, USA. 15 June 2019.

CONFERENCE
POSTERS

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- [5] Long, M.R.; Rohde, H.; **Oraa Ali, M.** & Rubio-Fernandez, P. The role of communicative strategies and cognitive control on referential efficiency across the adult lifespan. *8th biennial Experimental Pragmatics Conference*. University of Edinburgh, Edinburgh, UK. 19-21 June 2019.
- [6] Long, M.R.; Rohde, H.; **Oraa Ali, M.** & Rubio-Fernandez, P. Referential efficiency across adulthood: communicative strategies and cognitive control. *32nd CUNY Sentence Processing Conference*. University of Colorado, Boulder, USA. 29-31 March 2019.
- [7] Rubio-Fernandez, P.; ***Shukla, V.**; Ben Ami, S.; Ralekar, C.; Vaidya, A.; **Oraa Ali, M.** & Sinha, P. Perspective taking in newly-sighted children: Do they orient towards an interlocutor's face? *32nd CUNY Sentence Processing Conference*. University of Colorado, Boulder, USA. 29-31 March 2019.
- [8] ***Rubio-Fernandez, P.**; ***Oraa Ali, M.**, & Gibson, E.A. Epistemic inferences in passing conversation: Pragmatics as a test of Theory of Mind accounts. *31st CUNY Sentence Processing Conference*. University of California, Davis, USA. 15-17 March 2018.
- [9] ***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. 29-30 April 2017. [absent due to illness]
- [10] ***Oraa Ali, M.**; Jamrozik, A.; Sarwer, D. & Chatterjee, A. Interpersonal judgments of individuals with facial disfigurement before & after treatment. *24th 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**.
- [11] ***Oraa Ali, M.** & Huston, S.J. Behavioral Effects of Single Visual Neuron Stimulation. *Janelia Research Symposium, Janelia Research Center*, Ashburn, VA. 3 August 2016.
- [12] ***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. 26-29 May 2016.
– Winner, **Building Bridges Poster Award**, National Institute of Dental & Craniofacial Research, National Institute of Health, USA.
- [13] ***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. 28 February 2016.
- [14] ***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. 22 February 2015.
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REFEREED
WORKSHOP
POSTERS

- [15] Ben-Ami, S.; Davison, M.; **Oraa Ali, M.**; Gandhi, T.; Gilad-Gutnick, S.; Gupta, P.; Kumar, R.; Raja, S.; Ralekar, C.; Shukla, V.; Tiwari, K.; Rubio-Fernandez, P.; Sinha, P. From the Snellen chart to the Seguin Form Board Test: Looking for new measures of functional vision. *The Blind Brain Workshop on the Sensory Deprived Brain*. IMT School for Advanced Studies Lucca, Italy. 11-13 October 2018.

TECH DEMOS

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

TEACHING

Mount Holyoke College, South Hadley, MA

- **Teaching Assistant, Visual Culture of Protest** Spring 2017
English, Africana Studies and Critical Social Thought
 - 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 20th century.
 - Responsible for curating content for course related social media and outreach.
- **Laboratory Teaching Assistant, Cell Biology** Spring 2016
Biological Sciences
 - Taught scientific techniques such as epifluorescence microscopy, protein purification and polymer chain reaction to group of 50 students.
- **Teaching Assistant, Statistics for Psychology** 2014-15
Psychology & Education
 - Taught fundamental statistical concepts and SPSS, and provided academic support to a class of 72 students.
- **Tutor, Introduction to Neuroscience & Behavior** 2014-15
Neuroscience & Behavior
 - Provided one on one tutoring for students in introductory neuroscience course.
- **Student Resource, AccessAbility Services** 2014-17
 - Provided peer academic support for students in AccessAbility Services for several courses: **Research Methods in Psychology, Cognitive Psychology, Organic Chemistry, Evolution and Neurobiology**

SERVICE

- Judge, Massachusetts State Science & Engineering Fair, MIT** 2018
- Evaluated projects of high school students in the theme of Behavioral Science.
- Student Liaison, Neuroscience & Behavior, Mount Holyoke College** 2016-17
- Provided mentorship to peers about pursuing research in neuroscience, course planning and academic strategies.

	Volunteer, CUNY Conference for Human Sentence Processing, Cambridge, MA 2017
	Zine Coordinator, OUTreach, Mount Holyoke College 2015-16 <ul style="list-style-type: none"> • Curated the 3rd annual Gender & Sexuality Zine "<i>What is Pride?</i>" [PDF] • Facilitated panel about experiences of queer international students at the first Mount Holyoke Queer Alum conference. • Helped organize events about intersectional feminism, activism and intergroup solidarity and provide support for LGBT students on campus.
	Co-President, Neuroscience Student Forum, Mount Holyoke College 2015-16 <ul style="list-style-type: none"> • Helped student-led journal club to discuss different topics in neuroscience. • Curated a collaborative neuroscience related art exhibition for Brain Awareness week entitled: "<i>Synapse: Bridging the Gap Between Art and Science</i>".
	Student Volunteer, Association for Psychological Science, Chicago, IL 2016 Volunteer Presenter, The Franklin Institute, Philadelphia, PA 2015 <ul style="list-style-type: none"> • Showcased eye tracker technology in the perception of visual art at <i>Science After Hours</i> event in "ART + SCIENCE".
NON-ACADEMIC POSITIONS	<hr/> Archives & Special Collections, Mount Holyoke College, USA 2015-17 <i>Student Archivist</i> <ul style="list-style-type: none"> • Curated an exhibition for the 40th anniversary of LGBTQ college organizations and in honor of the "The Astronomer". • Catalogued the feminist zine collection followed by digital data visualization. Science & Technology, Deccan Chronicle, India 2011-13 <i>Journalist</i> <ul style="list-style-type: none"> • Wrote articles about the representation of women, LGBTQ and disabled individuals for a weekly segment for a national newspaper. Freelance Illustrator and Artist 2006-Present <ul style="list-style-type: none"> • Participated in 12 art exhibitions. Illustrated literary journals, designed covers for programs & magazines, created logos for organizations and fundraising events.
OTHER INDEPENDENT PROJECTS	<hr/> Radio DJ and Sound Engineer 2014-Present <ul style="list-style-type: none"> • <i>DJ and Engineer</i> for 4 seasons on WMBR 88.1 FM, MIT, Cambridge, MA <ul style="list-style-type: none"> - Show Name: Colourless Green Ideas Sleep Furiously • <i>DJ</i> for 7 seasons on WMHC 91.5 FM, Mount Holyoke College, South Hadley, MA <ul style="list-style-type: none"> - Show Names: Darling Mermaid Darlings, Swag Hags, The Cinnamon Nuns MuSyC: Music, Synaesthesia, Color 2016-Present <ul style="list-style-type: none"> • Used electrical engineering, signal processing, fabrication, data visualization, rapid prototyping & design to create a device which simulates chromesthetic synaesthesia. • Currently developing a real-time music visualizer for the WMBR (MIT Radio) website. [Link to Current Beta Web Version]
SKILLS	<hr/> Programming: <ul style="list-style-type: none"> • Most Experience with R, JavaScript, HTML/CSS, Python • Some Experience with UNIX, EPrime, Arduino, MATLAB, L^AT_EX Software and Platforms: <ul style="list-style-type: none"> • Amazon Mechanical Turk, PsiTurk, IbexFarm, Praat, GEPHI, SPSS, Adobe Photoshop and Illustrator, Qualtrics, Mesquite, ImageJ⁺⁺, Ethovision, AutoCAD Neuroscience: <ul style="list-style-type: none"> • 3 years of experience with Event-related potential(<i>ERP</i>) -BioSemi ActiView system

- Basic experience with *eye-tracking*, functional magnetic resonance imaging (*fMRI*), corpus construction, rodent behavioral testing, stereotaxic surgery, optogenetics.

Other:

- Proficient at illustration and graphic design (digital and traditional media)
- Experience with sound engineering and radio broadcast engineering
- Basic experience with fabrication (3D printing and laser cutting)
- Natural Languages: English, Hindi, Urdu, French, Sanskrit, German

ART SHOWS

Solo Shows

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

Selected 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, Northampton, MA, USA | 2016 |
| | - Title: " <i>Women Artists for Women Artists</i> ". | |
| [6] | Bienal Izmir, Izmir, Turkey | 2011 |
| | - Title: " <i>1.International Izmir Modern Arts</i> " | |
| [7] | Biennale Chianciano, Museo d'Arte, Chianciano Terme, Italy | 2009 |
| | - Title: " <i>International Exhibition of Contemporary Arts</i> " | |
| [8] | HelpAge India, The Oberoi, New Delhi, India | 2008 |
| | - Title: " <i>Art for Aged</i> " | |