

# Nao J. Gamo

E-mail: nao.gamo@yale.edu  
Phone number: (617) 319-0394

## *Education*

**Massachusetts Institute of Technology** – Cambridge, MA

**Cumulative GPA: 4.7/5.0**

Bachelor of Science in Brain and Cognitive Sciences (2001 – 2005)

Bachelor of Science in Music (2001 – 2006)

**Yale University** – New Haven, CT

Ph.D. program in Interdepartmental Neuroscience Program (2006 – present)

Medical Research Scholar (2006 – present)

## **Relevant courses**

- Neurobiology (Yale)
- Principles of Neuroscience (Yale)
- Physiological Systems (Yale)
- Mentored Clinical Experience (Yale)
- Introduction to Psychology (MIT)
- Neuroscience & Behavior (MIT)
- Sensation & Perception (MIT)
- Neuroscience of Learning & Memory (MIT)
- Cognitive Neuroscience (MIT)
- Cognitive Processes (MIT)
- Neurology, Neuropsychology & Neurobiology of Aging (MIT)
- Neural Plasticity in Learning & Memory (MIT)
- Biochemistry and Pharmacology of Synaptic Transmission (MIT)
- Introduction to Linguistics (MIT)
- Music Perception & Cognition (Auditor, MIT)
- Brain Laboratory (MIT)
- Independent Research in Brain and Cognitive Sciences (BCS, MIT)
- Undergraduate Research in BCS (MIT)
- Organic Chemistry I (MIT)
- General Biochemistry (MIT)
- Introduction to Probability and Statistics (MIT)
- Introductory Biology (MIT)
- Principles of Chemical Science (MIT)
- Physics I&II (MIT)
- Calculus I&II (MIT)
- Differential Equations (MIT)
- Introduction to Analysis (MIT)
- Elements of Computer Science (Harvard)
- Japanese III (Harvard)

## *Theses*

### **Similar face inversion effect for own-race and other-race faces**

In collaboration with Dr. Galit Yovel of MIT, and Dr. Jia Liu and Xiaobai Li of University of Beijing

Advisors: Dr. Galit Yovel, Prof. Nancy Kanwisher

Kanwisher Laboratory, MIT

### **Effect of music and performance on psychological arousal**

Advisor: Prof. Peter Child

Senior Music Seminar research project, MIT

## *Research experience*

**Kanwisher Laboratory for High Level Vision, MIT**

**Undergraduate Research Opportunities Program (UROP) Researcher**

September 2005 – May 2006

- Designed behavioral experiments to address role of motivation in holistic processing of own and other-race faces
- Wrote paper for independent project, “Do we process other-race faces holistically?” to submit for publication

*June 2005 – August 2005 (Project Assistant through nextSource)*

- Designed behavioral experiments, ran human subjects and analyzed data to investigate holistic processing of own and other-race faces using whole-part paradigm
- Trained for safety and assisted in running fMRI scans
- Ran face and body perception experiments at Twins Days, a twins festival in Twinsburg, Ohio

*June 2003 – May 2005*

- Ran human subjects and analyzed data for various visual behavioral experiments, and trained new students in lab to run experiments
- Created face stimuli using Adobe Photoshop, FACES and Morph Man 2
- Designed behavioral experiment and wrote paper for independent project, “Holistic processing of own and other-race faces in Caucasian and Chinese subjects”
- Observed fMRI scans, analyzed fMRI data using SPM (Statistical Parametric Mapping), and reconstructed fMRI brain images using FreeSurfer

**Tonegawa Laboratory, Picower Center for Learning and Memory, MIT**

**UROP Researcher**

*September 2005 – May 2006*

- Investigated role of NMDA receptors in various amygdalar nuclei
- Performed stereotaxic injection of virus into rodent brain, rodent perfusion and brain collection, brain slice imaging, gel electrophoresis, plasmid construction, preparation of DNA samples for sequencing, and handling of cell cultures
- Taught stereotaxic, perfusion and brain slicing techniques to other members of laboratory

*June - August 2002*

- Performed established assays to investigate translocation of Arc gene to dendritic domains in mouse brain sections during formation of long-term memory
- Analyzed stained mouse brain sections using MATLAB
- Cared for mice to be used in experiments

**Fee Laboratory, MIT**

**Volunteer technician**

*May 2005 – July 2005*

- Documented breeding patterns and ages of zebra finches for experiments that investigated learning of bird song in male finches

**Moore Laboratory, MIT**

**UROP Researcher**

*September 2004 – May 2005*

- Constructed set-up for novel somatosensory experiment that investigated whether rats could sense sub-cochlear sound stimuli using vibration of whiskers
- Acclimated new rats to lab environment, and trained them to accept reward
- Designed and made jackets for rats to hold heart rate monitor on body

**Speech & Hearing Group, Research Laboratory for Electronics, MIT**

**Research Assistant**

*June 2004 – August 2004*

- Ran normal subjects and temporal lobectomy patients in music perception experiment, and analyzed data to compare perception of musical elements in normal controls and patients

**Music & Brain Science Institute, Massachusetts General Hospital  
Research Assistant**

*February 2004 – May 2004*

- Conducted literature searches and created professional profile for Dr. Mark Tramo to use in grant proposals

**Sinha Laboratory for Vision Research, MIT  
UROP Researcher**

*February 2003 – May 2003*

- Created face stimuli for experiment that investigated luminance differences contributing to attractiveness of faces
- Measured luminance structure of faces using MATLAB for systematic differences in luminance patterns between female and male faces
- Wrote summary of history of cosmetics

***Teaching experience***

**Mentor for Independent Activities Period Research Mentoring Program  
Kanwisher Laboratory, MIT**

*January 2004*

- Trained two freshmen to create face stimuli for behavioral experiments using Adobe Photoshop, and to run human subjects on experiments

**SAT Math teacher for *Let's Get Ready* (college preparatory program)**

*February 2002 – May 2002*

- Taught SAT Math section and gave advice for all aspects of college application to low-income high school students
- Ran math review sessions for students of all levels, and supervised practice SAT exams

**Teacher for Educational Studies Program *Splash* weekend, MIT  
“Make Yourself Smarter in 1 1/2 Hours”**

*Fall 2001, 2002*

- Gave lecture to high school students about theories of music's effect on spatiotemporal reasoning skills

***Awards and society memberships***

Medical Research Scholars Program, Yale, 2006 – 2007

National Science Foundation Graduate Research Fellowship, Honorable Mention, 2006

Walle JH Nauta Award for Outstanding Research in Brain and Cognitive Sciences, MIT, 2005

Paul E. Gray Award Fund for UROP research, MIT, 2002

Philip Loew Memorial Award for Creative Accomplishment in Music, MIT, 2004

Burchard Scholar for the School of Humanities, Arts and Social Sciences, MIT, 2004

MIT Cheerleading “Cutie” Award, 2002

Sigma Xi, Associate member of MIT chapter

Molecular and Cellular Cognition Society

New York Academy of Sciences

National Society of Collegiate Scholars

Kappa Alpha Theta fraternity, Zeta Mu chapter

### ***Poster sessions and competitions***

#### **Brain and Cognitive Sciences Society Poster Session Presenter, 2005**

“Holistic processing of own and other-race faces in Caucasian and Chinese subjects”  
Kanwisher Laboratory, MIT

#### **Brain and Cognitive Sciences Society Poster Session Presenter, 2004**

“Configuration and part processing of faces and objects”  
Kanwisher Laboratory, MIT

#### **MIT IDEAS Competition Participant, 2003**

“Conscious Alarm Clock”

#### **MIT IDEAS Competition Participant, 2002**

“Internet Tutorial for Patients With Neurological Conditions”

### ***Relevant skills***

#### **Laboratory**

- Behavioral testing of human subjects, behavioral data analysis using Excel
- Safety training and assistance in fMRI scans, cortical reconstruction of fMRI data using FreeSurfer, analysis of fMRI data using SPM
- Behavioral testing of rats, rodent care
- Stereotaxic virus injection into rodent brain, rodent perfusion and brain collection, brain slice imaging, cutting vibratome and cryostat brain sections, drug infusion into rodent brain, RNA in situ hybridization, gel electrophoresis, handling of cell cultures, virus construction

#### **Operating Systems**

- Mac OS 9 and X, Windows, Unix, Linux

#### **Software**

- MATLAB, Microsoft Office
- FreeSurfer (TkSurfer, TkMedit), SPM
- Morph Man 2, Adobe Photoshop, FACES

#### **Programming**

- Java, MATLAB

#### **Languages**

- Fluent in Japanese

### ***Leadership and other activities***

Treasurer, MIT BrainTrust, 2002-2003

Assistant Coordinator and Music Counselor, MIT Freshman Arts Program, 2002

Recruitment Counselor, MIT Panhellenic Recruitment, 2004

Class Representative, Kappa Alpha Theta Member Development Committee, 2002

Party Chair, Kappa Alpha Theta Recruitment, 2002, 2003

Competition Judge, TTT Mentoring Program Projects Day, 2002

Registration Worker, Tech Reunions, 2003, 2004

BCS Representative, MIT Campus Preview Weekend Academic Fair, 2003

MIT Concert Choir, 2002, 2004

MIT Cheerleading, 2002-2003

Various classes in music composition, history and musicology