

Program in Media Arts and Sciences

Graduate Program

A total of 183 students—95 master’s candidates and 88 doctoral candidates—were enrolled in the Program in Media Arts and Sciences (MAS) graduate program in AY2018. In addition to supervising MAS graduate students, MAS faculty and research staff collectively advised and supported more than 40 graduate students from other departments, including Biological Engineering, Physics, Electrical Engineering and Computer Science, Mechanical Engineering, and Civil and Environmental Engineering. Faculty also supervised students from the Harvard-MIT Division of Health Sciences and Technology; the Institute for Data, Systems, and Society; and Computation for Design and Optimization.

MAS offered 35 graduate courses during the 2017–2018 academic year. The MAS graduate student community included 67 women, 83 international students, and 17 students from underrepresented minority groups. During the year, 54 advanced degrees were awarded (39 master’s and 15 doctorates).

MAS received 1,255 master’s degree applications and offered admission to 59 students, a 4.7% admissions rate. Fifty-two students are expected to enroll (excluding two admitted students who have deferred for one year), an 88% yield.

Diversity and Community: Recruitment

MIT Summer Research Program

The MIT Summer Research Program (MSRP) brings undergraduate students from across the United States to conduct research at MIT for nine weeks over the summer. Interns learn about applying to and succeeding in graduate school. In summer 2017, the MIT Media Lab hosted four MSRP interns in four different research groups.

Virtual Visits

This past year, MAS launched a new, virtual recruitment series to reach prospective students who cannot travel to Cambridge to visit the Media Lab in person. These virtual visits were a huge success, allowing potential applicants to learn about MAS research and gain insight into the culture of the lab from current students. There were nine virtual visits presented by a combination of students, staff, and faculty.

Virtual visits included research talks from the Social Machines, Personal Robots, Mediated Matter, and Opera of the Future research groups. Two sessions were geared toward discussing the admissions process and student life in the MAS Program. Lastly, the newest MAS faculty member, Danielle Wood, hosted four visits during which she presented her research goals and group vision.

Students Offering Support Program

The Students Offering Support (SOS) Program is an important resource that pairs applicants with current students who provide feedback on either the applicant’s

statement of purpose or portfolio. Because the MAS research groups vary so much in the skills and experience they seek, this individualized attention goes a long way toward helping applicants understand how they should highlight their accomplishments in their applications. This year had the highest number of participants and graduate student volunteers since the program began. Fifty-seven applicants were matched with one of 39 volunteers across 18 research groups.

- 77% of SOS participants applied this cycle
- 7% of SOS participants were admitted, up from 6% in 2017

Open House Travel Grants

The MAS Open House allows prospective students to learn more about the lab, meet with faculty and graduate students, and determine if this is the best program for them. The cost of traveling to Cambridge can be a deterrent for individuals who live far away or do not have funds to travel here. Grants help alleviate the burden of these travel costs and therefore expand the program's reach and applicant pool.

- Twenty Open House travel grants were awarded in 2017
- Seventy percent of travel grant awardees applied this cycle
- Thirty-six percent of travel grant awardees who applied were admitted

Media Arts and Sciences Ambassadors

The MAS Ambassadors program aims to leverage current students' networks by sending them to their previous institutions or companies to speak about MAS. This program offers prospective students a more personal experience by meeting current students and hearing their insights firsthand. This year, Ambassadors visited the University of South Carolina, Cooper Union, the University of Texas at Austin, Georgia Institute of Technology, New York University, and Olin College.

Applicant and Enrollment Data

The program received 1,255 master's applications this admissions cycle.

Master's Applications by Gender

Year	Men	Women
2011	74%	26%
2012	72%	28%
2013	70%	30%
2014	69%	31%
2015	67%	33%
2016	65%	35%
2017	59%	41%
2018	56%	44%

Master's Applications by Race

Year	URM*	Non-URM*	International	Unknown
2011	6%	44%	46%	3%
2012	7%	45%	45%	2%
2013	6%	32%	58%	3%
2014	6%	35%	54%	5%
2015	6%	32%	57%	5%
2016	6%	28%	61%	5%
2017	8%	29%	58%	5%
2018	8%	28%	61%	3%

*Underrepresented minorities

Incoming Master's Cohort by Gender

Year	Men	Women
2011	67%	33%
2012	76%	24%
2013	76%	24%
2014	67%	33%
2015	66%	34%
2016	55%	45%
2017	60%	40%
2018	58%	42%

Note: Incoming master's cohort (does not include two deferrals who were admitted this cycle but will begin the program in fall 2019)

Incoming Master's Cohort by Race

Year	URM*	Non-URM*	International	Unknown
2011	3%	57%	37%	3%
2012	9%	33%	58%	
2013	2%	38%	48%	12%
2014		18%	71%	11%
2015	13%	32%	47%	9%
2016	16%	31%	49%	4%
2017	11%	34%	53%	2%
2018	13%	33%	48%	6%

Note: Incoming master's cohort (does not include two deferrals who were admitted this cycle but will begin the program in fall 2019)

Incoming PhD Cohort by Gender

Year	Men	Women
2011	67%	33%
2012	70%	30%
2013	70%	30%
2014	69%	31%
2015	92%	8%
2016	47%	53%
2017	56%	44%
2018	68%	32%

Incoming PhD Cohort by Race

Year	URM*	Non-URM	International	Unknown
2011	7%	47%	20%	27%
2012	6%	41%	41%	12%
2013	20%	50%	20%	10%
2014	6%	44%	50%	0%
2015	0%	50%	42%	8%
2016	0%	33%	47%	20%
2017	6%	38%	44%	12%
2018	23%	32%	45%	0%

*Underrepresented minorities

Diversity and Community: Retention and Climate

Women's Lunches

These monthly lunches continue to be a space for female graduate students and postdocs to connect and build community. Each session features a dynamic speaker who addresses some aspect of professional or personal development.

Diversity Committee

The Diversity Committee, comprising students, staff, and faculty, meets once a month to discuss recruitment and retention efforts to increase the racial, ethnic, and gender diversity of the MAS program. These meetings consist of brainstorming sessions, recruitment and admissions updates, and presentations by individuals working to improve diversity through programming at the lab and at the Institute as a whole. This year, the Diversity Committee:

- Learned about the MIT Graduate Student Council (GSC) diversity student liaisons
- Heard from MAS student Britney Johnson about the National Society of Black Engineers Conference
- Learned about the Media Lab's efforts do more climate and inclusion programming with staff
- Discussed the Title IX Bias Response report tool

The Diversity Committee announced the launch of all-gender bathrooms. MAS Diversity and Media Lab administration had been working with central MIT administration on this item for the past two years. Building-code restrictions played a significant role in the slow nature of the change. Last semester, the Commonwealth of Massachusetts gave MIT permission to launch a pilot for all-gender, multi-stall bathrooms at four different sites on campus. The Media Lab was the first campus location to open, with the E14 4th-floor bathrooms converted to all-gender in April 2018.

Random Acts of Kindness Week: March 5–9, 2018

As part of the MindHandHeart initiative, Random Acts of Kindness (RAK) Week took place across MIT. MAS Diversity again supplemented Institute-wide events with additional RAK Week activities. These included:

- Go the “Extra” Mile: On this day, Media Lab community members were encouraged to thank a friend, laboratory mate, or coworker who went the extra mile by giving them a pack of Extra gum, provided by MAS, with a thank-you note attached.
- Community Lunch: MAS hosted a lunch for all members of the Media Lab to take a break and come together over a meal.
- RAK Week Bingo: Everyone was invited to pick up a bingo card featuring random acts of kindness such as, “Ask someone how their day is going,” “Leave your office mate an encouraging note,” or “Compliment someone to their supervisor.” Once they reached five in a row, participants could turn in their bingo card at the MAS office for a prize.
- Ball Pit and Shout-outs: Shout outs were submitted in the weeks leading up to RAK Week to celebrate those who have made an impact. More than 220 messages were displayed in the third-floor atrium throughout the day.

Family Fun Day

On June 15, 2018, MAS Diversity hosted its first annual Family Fun Day. This half-day event was designed to bring the MAS community together with everyone’s non-Media Lab families to connect, let off some steam, and recharge. A bounce house and outdoor games encouraged attendees to get out of the building and enjoy the fresh air. Lunch on the sixth floor—followed by ice cream sundaes, face painting, a ball pit, and board games—brought everyone together for an afternoon of play.

Professional Development

A total of 108 one-on-one appointments with 54 students were conducted during AY2018. Appointments covered career planning, job-search strategies, document reviews, and industry-specific topics. They were offered in-person, over the phone, on Google Hangouts, and via Skype.

Professional Development Series

To further support students, MAS started a Professional Development Series that addressed a new career or professional development topic over lunch once a month. Topics for AY2018 included:

- “A Mindful Way to a Meaningful Career” with Jennifer Earls
- “Communicating Your Research” with Jorge Cham
- “Designing Your Life” with Sean Clarke, Jake Livengood, and Tianna Ransom
- “LinkedIn for Career Building, Networking and Job Search” with Sabrina Woods
- “Networking for People Who Hate the Idea of Networking” with Jen Dziura
- “Design Portfolio Workshop” with IDEO

Alumni Career Panels

There was one Alumni Career Panel in the fall and one in the spring. A total of six alumni—representing career paths in academia, industry, entrepreneurship, and independent consulting—returned to share their post-lab experiences and to offer advice to current students.

Undergraduate Engagement

The Undergraduate Research Opportunities Program (UROP) continued to represent the largest undergraduate presence in MAS and the Media Lab. More than 200 undergraduates from across the Institute participated in a wide variety of UROP research projects at the Media Lab, and many students pursued their undergraduate theses and advanced undergraduate projects under MAS faculty supervision. In addition, the MAS program offered five undergraduate subjects.

MAS also has an alternative first-year program. The students in the program participate in weekly Media Lab tutorial/laboratory sessions connected with two core first-year subjects, pursue Media Lab UROP programs, and take two MAS undergraduate subjects on design and research, one of which satisfies part of the undergraduate Communication Requirement, as well as the arts portion of the Humanities, Arts and Social Sciences (HASS) Distribution Requirement. For AY2018, there were 62 applicants to the program. Twenty-four students were selected—of whom 75% were women, 37.5% were underrepresented minorities, and 12.5% were international students.

Faculty and Staff

Appointments

Alumna Danielle Wood was appointed assistant professor of media arts and sciences in January 2018. Her degrees (all from MIT) are in aerospace engineering (SB '05), technology policy (SM' 08), aeronautics and astronautics (SM'08), and engineering systems (PhD '12). After graduating, she worked as a researcher at Johns Hopkins University on several space-related research projects, followed by a position as a space-systems engineer at the Aerospace Corporation.

Hugh Herr was promoted to professor. Professor Herr's Biomechatronics group creates next-generation prosthetic limbs.

Neri Oxman was promoted to associate professor with tenure. Professor Oxman's Mediated Matter group works at the intersection of computational design, digital fabrication, materials science, and synthetic biology.

Sampling of Honors and Awards

Fadel Adib's PhD thesis, "Wireless Systems that Extend Our Senses," won the George M. Sprowls Award for Best Doctoral Dissertation in Computer Science at MIT.

Ed Boyden was named the inaugural Y. Eva Tan Professor in Neurotechnology at the McGovern Institute for Brain Research. He was named to the 2017 class of fellows of the National Academy of Inventors and was also a recipient of the 2018 Canada Gairdner International Award. He was selected as a Howard Hughes Medical Institute Investigator.

Hugh Herr received the Mechanical Engineering Emerging Technology Award in Bioengineering for his work on developing advanced prosthetic limbs.

Neri Oxman was chosen as one of Cooper Hewitt's 2018 National Design Award winners (Interaction Design category).

The Association for Computing Machinery special interest group on Computer GRAPHics and Interactive Techniques (ACM SIGGRAPH) selected Ramesh Raskar to receive the 2017 Computer Graphics Achievement Award "in recognition of his pioneering contributions to the fields of computational photography and light transport, and for applying these technologies for social impact."

Mitch Resnick's book *Lifelong Kindergarten: Cultivating Creativity through Projects, Passion, Peers and Play* was selected for a 2018 PROSE Award in Education Practice.

The City Science group received the International Symposium for Wearable Computers 10-Year Impact Award at Ubicomp 2017 for a 2007 paper on real-time recognition of physical activities and their intensities using wireless accelerometers and a heart rate monitor. This is a "test of time" award for work that has had the greatest impact over the previous decade.

Graduate Student Awards and Recognition

"Promoting Relaxation Using Virtual Reality, Olfactory Interfaces, and Wearable EEG," by graduate students Judith Amores Fernandez, Nan Zhao, Robert Richer, Bjoern Eskofier, and Pattie Maes won the Best Student Paper award at the 2018 Institute of Electrical and Electronics Conference on Body Sensor Networks.

Judith Amores Fernandez was selected as an INK 2017 Fellow.

Guillermo Bernal was awarded Best Paper for System Design at the Pervasive Technologies Related to Assistive Environments (PETRA) 2017 Conference.

The Aspen Institute Communications and Society Program selected two members of the Civic Media group among its 2017 Guest Scholar recipients: Joy Buolamwini and J. Nathan Matias PhD '17.

“Small cities face greater impact from automation,” a paper by Morgan Frank, was the cover story of the February 2018 *Journal of the Royal Society Interface*.

Neil Gaikwad received a 2018 GSC Graduate Teaching Award.

Erhardt Graeff PhD '18, accepted a position as assistant professor of social and computer science at Olin College of Engineering.

Jen Groff was named one of the “Top 100 Influencers in EdTech” for 2017–2018 by *EdTech Digest*.

Fast Company's 2017 Innovation by Design Awards included: Xin Liu MS '17 and Yedan Qian (visiting student), Katia Vega (postdoctoral associate), Viirj Kan MS '17, Sang-won Leigh, and J. Nathan Matias PhD '17.

Moinina David Sengeh PhD '16 was appointed chief innovation officer for Sierra Leone.

Yi and the Thousand Moons, a short video game musical by David Su won a Best Style Award at the 2017 Bit Awards.

A team including Cameron Taylor and Rébecca Kleinberger won first place in the category of technical usability at MIT's Assistive Technologies Hackathon. Their project, CiPod, allows people wearing cochlear implants to use standard earbuds.

Udayan Umapathi MS '17 received the Golden Mouse Award at CHI 2018 for a video illustrating his Programmable Droplets project.

Tod Machover
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