

# Max L. Olender

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## EDUCATION

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### Massachusetts Institute of Technology, Cambridge, MA

Ph.D. Mechanical Engineering (*Candidate*) Oct 2020

Major Program: Biomechanical Engineering  
Minor Program: Numerical Methods & Analysis  
Kaufman Teaching Certificate  
Graduate Education in Medical Sciences Certificate

### University of Michigan, Ann Arbor, MI

M.S.E. Biomedical Engineering Apr 2016

Concentrations- Biomechanics & Biomaterials

B.S.E. Mechanical Engineering, *Summa Cum Laude* Apr 2015

Minor, Electrical Engineering

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## PROFESSIONAL EXPERIENCE

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**Harvard-MIT Biomedical Engineering Center, Edelman Lab**, Cambridge, MA Sep 2016 – Present

*Research Assistant & Lab Member, PhD Student*

- Build a computational platform to reconstruct, model, and characterize coronary arteries for biomechanical assessment
- Develop image analysis algorithms to autonomously identify and measure key physiological features
- Supervise, guide, and mentor master's students, defining research projects and overseeing thesis progress
- Disseminate research findings through publications, conference presentations, poster sessions, and patent applications

**Journal of Science Policy & Governance**, San Francisco, CA Jun 2020 – Present

*Associate Editor*

- Review submissions, provide feedback, and correspond with authors on behalf of open-access peer review publication
- Provide support to Editor-in-Chief and Journal leadership to further mission of international non-profit Journal

**Griff Technologies**, Milton, MA Jul 2018 – Present

*Mechanical Engineer*

- Create and revise CAD models to reflect changes to the design of various assembly parts and new components
- Generate drawings and files to prototype and manufacture new parts; assist with evaluation and troubleshooting

**Massachusetts Institute of Technology**, Cambridge, MA Jan – May 2019

*Teaching Assistant*

- Served as course assistant for “Cardiovascular Pathophysiology,” a joint Harvard-MIT clinical course
- Designed and organized instructional labs, assignments, and other learning experiences; provided feedback to students
- Interfaced with lecturers, students, and administrators to ensure smooth operations that enabled learning objectives

**University of Michigan Biomechanics Research Laboratory**, Ann Arbor, MI Sep 2015 – May 2016

*Lab Member, Master's Student*

- Created physical, interactive three-dimensional surgical planning and educational tool for the pelvic floor
- Built and 3D printed STL and CAD models of pelvic floor components using MR scan images and existing meshes

**GE Healthcare**, Laurel, MD May – Aug 2015

*Technical Intern, Maternal-Infant Care Team*

- Collected and analyzed data to characterize sensors and determine feasibility for use in future products
- Conducted exploratory and verification testing to identify potential software issues and ensure regulation compliance
- Participated in validation testing by neonatal intensive care unit nurses to ensure user requirements and needs were met
- Prepared production line and assembly instructions for initial process verification build of new product
- Provided logistical support during successful inspection by a government regulatory authority to determine compliance

**University of Michigan Neuromuscular Lab**, Ann Arbor, MI Sep 2013 – Apr 2015

*Lab Member, Undergraduate*

- Planned and set up experiments to investigate effects of neuromuscular stimuli in rats; tested and prepared equipment
- Composed sections of animal use protocol to allow review and secure approval of experimental procedure
- Prepared grant application to acquire funding for animal behavior experiment study expenses

**3M**, St. Paul, MN

May – Aug 2014

*R&D Intern, Stationery and Office Supplies Division*

- Analyzed trends in work spaces and emerging technology to conceptualize innovations for future “smart” office
- Designed, fabricated, and demonstrated functional prototypes of promising product concepts for further evaluation
- Composed analytical paper on physiological and psychological impacts of color and light to inform product development
- Led meetings and brainstorming session around future adaptive and intelligent office spaces for entire Division

**Los Alamos National Laboratory**, Los Alamos, NM

May – Aug 2013

*Intern, Space Instrumentation Realization Group*

- Constructed thermal models using CAD software to evaluate instrument designs and recommend modifications
- Planned and organized tests to determine component thermal properties to be used in refinement of thermal models
- Presented a report of results, observations, and recommendations to instrument design team and group management

**TRW Automotive**, Livonia, MI

May – Jun 2011

*Intern, Advanced Development & Friction Materials Engineering Group*

- Organized and conducted brake component tests to establish baseline properties and determine effects of stressors

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## AWARDS

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- **MathWorks Engineering Fellowship** (2020), **William Asbjornsen Albert Memorial Fellowship** (2019), **Whitaker Health Sciences Fund Fellowship** (2018), **Stryker Industry Scholarship** (2014), **BP Industry Scholarship** (2013), **Tau Beta Pi Scholarship** (2013), & **Lloyd H. Donnell Scholarship** (2013)
- **Blue Ribbon, Northwestern Michigan Fair** (2019)- Top award in the category of wood article, machine carved
- **Forbes Under 30 Scholar** (2016)- Selected among top students for Summit of young entrepreneurs & game-changers
- **Hugh Rumler Prize** (2015)- Presented to a senior on the basis of sincerity, integrity, and goodwill
- **Distinguished Leadership Award** (2015)- Conferred upon students to recognize outstanding leadership and service
- **Distinguished Achievement Undergraduate Award** (2015)- Presented to outstanding undergraduates; criteria include academic achievement, exemplary character, leadership in class and activities, and potential for future success
- **Eagle Scout** (2005)- 4 Gold Palms & Order of the Arrow Vigil Honor

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## TECHNICAL SKILLS

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**Programming & Machine Learning** - MATLAB, Python (NumPy, TensorFlow, PyTorch), Simulink, R, C++, Arduino

**Modeling, Simulation, & Analysis** - Abaqus, LabVIEW, COMSOL Multiphysics, Mathcad

**Image Processing, Visualization, & Measurement** - 3D Slicer, Mimics, MeVisLab, RadiAnt, MicroDicom

**Design (3D CAD)** - SolidWorks, PTC Creo, Rhinoceros

**Making, Prototyping, & Building** - Laser Cutter, 3D Printer, Benchtop Tools, Small & Hand Tools, Lathe, Mille, Waterjet, CNC Router, Precision Measurement Tools

**Language** – Spanish (basic proficiency)

**Medicine** - Wilderness First Aid (*certified*)

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## LEADERSHIP & SERVICE

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**MIT Science Policy Initiative**, *President, VP, & National Science Policy Group Liaison*

Sep 2016 – May 2020

- Planned and led visioning and team-building activities for executive board to develop cohesion toward common mission
- Supported fundraising activities—securing over \$30,000—to sustain extensive organization programming

**MIT MakerWorkshop**, *Emeritus Mentor; Laser Cutter Machine Master & Mentor*

Aug 2017 – Aug 2019

- Maintained laser cutters, ventilation system, and other machines through upkeep, repair, and cleaning activities
- Trained users on safe operation of laser cutter machines, and Team members in advanced topics (e.g. troubleshooting)

**MIT Graduate Student Leadership Institute**, *Fellow*

Sep 2018 – Sep 2019

- Engaged in peer-led collaboration across all MIT graduate schools to further develop leadership skills, experience, and network of outstanding MIT graduate students who have exhibited strong leadership capacity

**Engineering Student Government**, *President & Senator*

Mar 2014 – Apr 2016

- As President, led the student government of the University of Michigan College of Engineering by conducting meetings with administrators and student leaders, overseeing and enabling committees, and guiding direction of the organization
- Facilitated executive board and legislative body to empower student groups, organize events, and pursue initiatives

**MIT Outing Club**, *Hiking Leader, Winter School Leader, Desk Worker, Keyholder*

Sep 2016 – Present

- Lead hikes year-round for Club members, assist in facilitating gear rentals, and contribute to cabin facility upkeep