

# GRACE AHN

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## EDUCATION

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**MASSACHUSETTS INSTITUTE OF TECHNOLOGY** Cambridge, MA  
*School of Engineering & Sloan School of Management* 2021 - Present

M.S., Engineering and Management, June 2023  
• Fellow, System Design and Management Program

**OLIN COLLEGE OF ENGINEERING** Needham, MA  
B.S., Mechanical Engineering, May 2016 2012 - 2016

## EXPERIENCE

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**MASSACHUSETTS INSTITUTE OF TECHNOLOGY** Cambridge, MA  
*Teacher's Assistant* Fall 2022 - Present

- Assisting 100+ graduate students in MIT's System Design and Management Core classes over two terms in System Architecture, Systems Engineering and Project Management modules. Awarded full tuition funding.
- Served class of 18 graduate students in Multi-Stakeholder Negotiation with Technical Experts.

**EMULATE INC** Boston, MA  
A biotechnology startup that creates advanced Organ-Chip in-vitro models and instrumentation. 2016 – 2021

### ***Engineer 3 (Research and Development Technical Lead)***

Served as technical point for two multimillion-dollar NCATS/CASIS grants in organ-chips-in-space\* microgravity research using Emulate's Organ-Chip platform. Completed missions include SpaceX CRS-16 in December 2018, SpaceX CRS-17 in May 2019, and SpaceX CRS-20 in March 2020.

### *Technical Management*

- Developed microfluidics hardware and programmed experiment software to autonomously run bioengineering experiments for launch, travel, and station on the International Space Station.
- Patented technique in biological sampling, media recirculation and pumping, [USPTO: 17/036652](https://patents.google.com/patent/USPTO:17/036652).
- Led monthly Engineering Verification Tests in a BL2+ lab verifying nominal flow and pressure, experiment programming, sensing suite validation and bioengineering sterility.

### *Product Management*

- Coordinated cross-functional team of 8 biologists and engineers allocated across two NIH grants.
- Collaborated with external groups in aerospace and manufacturing to develop payload features and debug hardware and software issues.
- Developed and managed aggressive development and verification schedule from concept to rocket launch for 3 launches for 2 Organ-Chip grants over 4 years.
- Reported monthly experiment updates and data findings to NIH-NCATS and CASIS grant executives.

***Engineer 1*** 2016 - 2017

- Design and delivered a fraction collector to enable higher resolution biological sampling in lab experiments including mechanical, electronics and programming.

**WALT DISNEY IMAGINEERING** Glendale, CA  
***Ride Mechanical Engineering Intern*** Summer 2015

- Responsible for mock ride test for upcoming Disney Tokyo E-Ticket attraction.
- Modeled and simulated ride vehicle motion on ride tracks followed by prototype construction to analyze guest experience using on-board sensing suite.
- Coordinated with Creative and Ride department directors to meet design and technical specifications.

**BARRETT TECHNOLOGY** Boston, MA  
***Mechanical Engineering Intern*** Summer 2014

- Designed hand webbing to safely ensure patient's grip onto the Barrett's rehabilitation robot while in motion.
- Explored material and design improvements for the BarrettHand to have an IP44 rating.

**OLIN COLLEGE OF ENGINEERING** Needham, MA  
***Soft Robotics Research*** 2012 - 2016

- Built a 3-finger soft hand\* using two durometer rubbers and two cast jobs with 3D printed molds powered by single motor under-actuation transmission. Won class competition picking up diverse set of objects in mass and shape.
- Olin Intelligent Vehicle Lab - Created soft actuators to propel underwater bio-mimetic robots.

### *Design Research*

- Designed and fabricated universal prosthetic socket\* for a man born with one arm over a semester long project. Presented at the Open Hardware Summit in Philadelphia, PA as the only undergraduate students.

- Conducted open-ended discovery research with recreational boxers over a semester long capstone project in user-oriented design.

#### **ADDITIONAL INFORMATION**

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- Skills: CAD (12 years) · Prototyping Tools (10 years) · Microfluidics (4 years) · Python (3 years) · Embedded Systems (4 years)
- \*Project Links: [Organ-Chips in Space](#) | [Soft Robotic Hand](#) | [Universal Prosthetic Socket](#)
- Interests: Avid surfer, Climber, and Volunteer at the Salvation Army and Health Story Collaborative