John Kyle Cooper

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Objective

Striving to gain research experience in the field of auditory neuroscience and apply that knowledge to the engineering of hearing aids and cochlear implants in a medical industry setting.

Education

University of Rochester, Rochester, New York — August '19 -May '21
Masters of Science in Biomedical Engineering
Cumulative GPA: 3.878/4.000

Texas A&M University, College Station, Texas — May '19
Bachelor of Science in Biomedical Engineering, Minor in Electrical Engineering
Cumulative GPA: 3.428/4.000

Biomedical Engineering Fast-Track Program, Texas A&M University — Fall '18-Spring '19

Study Abroad: Germany Biosciences Program, Bonn, Germany — Spring '17
Greece Engineering Ethics, Thessaloniki, Greece — Winter '18

Teaching Experience

Teaching Assistant, **University of Rochester**, Rochester, New York — Spring '20
Course: Biomaterials

- Assisted students with learning the basic concepts of biomaterials by leading lab sessions, review sessions, and weekly office hours.
- Underwent weekly discussion with the teaching professor to improve the teaching methods and learning environment for the students.

Research Experience

Research Assistant, **University of Rochester,** Rochester, New York — August '19 -Present
PI: Dr. Ross Maddox

- Serve as a lab manager by recruiting and scheduling subjects for experiments, ordering lab supplies, and assisting with the experiments of other lab members.
- Conduct ∼65 EEG experiments for an NSF funded study aimed to investigate potential differences in processing syllabic stimuli in the auditory brainstem between musicians and non-musicians.

Undergraduate Research Scholars Program, Texas A&M University — August '18 -May '19

- Produced written undergraduate thesis on the application of multi-tonal complex stimuli with Optical Coherence Tomography imaging for vibrometric analyses of inner-ear structures.

Undergraduate Summer Research Grant, Texas A&M University — Summer '18

- Summer research opportunity under the guidance of a faculty mentor, a postdoctoral fellow, and advanced graduate students.

Research Assistant, **Texas A&M University**, College Station, Texas — August '16 –May '19
PI: Dr. Brian Applegate

- Conducted research focused on understanding cochlear pathophysiology and function using picometer sensitive, spatially resolved vibrometry in the ear.
- Coded an interactive view of 3-D cochlea scan using virtual reality equipment.
- Designed and built power supplies for an Optical Coherence Tomography imaging system.
- Implemented multi-tone calibration Python code into an inner-ear vibrometry analysis program and a laser diode into surgical ear endoscope.

Biomedical Engineering Capstone, Lynntech Inc. — Fall '18 -Spring '19

- Worked with a group of biomedical engineers on an orthotic rehabilitation device.
- Tasked with documentation, 3-D modeling, construction, and programming of the device.

Research Assistant, **Enmodes GmbH**, Aachen, Germany — January '17 -May '17

- Assisted in the R&D of the Ras-Q (world's first long-term respiratory system).
- Modeled a prototype for presentation to the company.

Technical Skills

- Python, PyTorch (machine learning), MATLAB, R, C, & LABVIEW programming languages
- 1 year of EEG experience (Brain Vision software)
- SolidWorks & Blender (3-D design software)
- VR Technology & Unreal Engine (virtual reality engine)
- 3D-Printing & Repetier Host Software (3-D printing applications)

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Presentations	**BMES Conference**, Atlanta, Georgia • Poster session presentation. *Calibration of Multi-Tonal Complex for Optical Coherence Tomography Imaging System.*	October 17-20, '18
	Undergraduate Research Scholars Symposium, Texas A&M University • Presented undergraduate thesis work completed through the Undergraduate Research Scholars Program.	February 27, '19
	SPIE Journal Club, Texas A&M University • Optical Engineering Manuscript Review with Dr. Alvin Yeh. • Presentations: *Scanning laser optical tomography for in toto imaging of the murine cochlea* by Nolte et al. (2017) & *Phototactic guidance of a tissue-engineered soft-robotic ray* by Park et al. (2016)	August, '17 –May, '19
	Air Force Workshop, Texas A&M University • The goal of this design experience was to provide input to Air Force Personnel to shape future research objectives.	June 27, '18
	Aggies Invent, Texas A&M University • Worked as an integral part of a team selected to compete in a 48-hour development project and shared a presentation of the prototype developed for the competition. • (Summer '18) Hearing aid technology: shifting the pitch of incoming speech to improve listener intelligibility. • (Fall '17) Orthpaedic rehabilitation device for bedridden patients.	Fall '17 & Summer '18
Other Conferences Attended	**CRASH/MASH Virtual Conference** • Joint conference focused on hearing research related to cochlear implants (CI) to bring together hearing and CI scientists to present CI-data, works in progress, or future directions.	October 16-17, '20
	Annual Neuroscience Symposium, Texas Brain & Spine Institute • Keynote lecture was given by Marc Diamond, M.D. (Director, Center for Alzheimer's and Neurodegenerative Diseases, UT Southwestern).	October 1, '18
	BMES Conference, Phoenix, Arizona • Served as volunteer for TAMU Social Event & participated in conference sessions.	October 11-14, '17
Mentorship/ Leadership	**Biomedical Engineering Society (BMES)** - Mentor • Serve as a mentor for undergraduates interested in both the pursuit of a degree in Biomedical Engineering and graduate school. Attended weekly meetings and listened to speakers from different companies share their cutting edge biomedical technology, such as representatives from *Stryker* and *Medtronic*.	August, '17 -Present
	Peer Mentor (Engineering Living and Learning Community) • Served as a resource to incoming freshmen engineers and plan activities for the Engineering Living and Learning Community to foster community for academics.	Fall '16
	Christian Engineer Leaders (CEL) - Committee Leader • Refined engineering and professional skills through leading fellow engineers. • Learned how to be faithful witnesses for Christ both in industry and in missions.	Fall '16
Professional Memberships	SPIE (the international society for optics and photonics) Biomedical Engineering Society (BMES) Christian Engineering Leaders (CEL)	
Honors	BME Graduate Student Teaching Assistant Award Honorable Mention	'20
	Undergraduate Research Scholar	'19
	Distinguished Student Award, College of Engineering, Texas A&M University	'17
	Phi Eta Sigma National Honor Society	'16 - Present
	National Society of Collegiate Scholars (NSCS)	'16 - Present
	High-School Valedictorian	'15
	Eagle Scout	'14