

ANDREW N. SIVAPRAKASAM

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[GitHub](#) | [Twitter](#)

EDUCATION

Indiana University School of Medicine

MD/PhD Candidate

Medical Scientist Training Program (MSTP)

August 2018-Present

Indianapolis, IN

Purdue University

PhD Student, Biomedical Engineering

Medical Scientist Training Program (MSTP)

April 2020-Present

West Lafayette, IN

University of Pittsburgh

B.S.E. in Bioengineering

Minors: Computer Science, Chemistry

Magna Cum Laude

August 2013-April 2018

Pittsburgh, PA

EXPERIENCE

Auditory Neurophysiology and Modeling & SNAP Laboratories

PhD Student— Advisors: Drs. Mike Heinz & Hari Bharadwaj

May 2019 - Present

West Lafayette, IN

- Applying various signal processing and data analysis techniques to investigate normal hearing and hearing disorders using translational and basic science approaches. Currently interested in developing non-invasive assays to isolate the effects of different hearing pathologies, namely Cochlear Synaptopathy (CS).

Brainstem Neurophysiology Laboratory

Rotation Student — Advisor: Dr. Mark Sayles

July 2018 - August 2018

West Lafayette, IN

- Observed methods used to record single-unit auditory nerve spikes at the Purdue Dept. of Speech, Language, & Hearing Sciences.

Human Engineering Research Laboratories (HERL)

Research Associate — Advisor: Dr. Alicia Koontz

January 2016 - April 2018

Pittsburgh, PA

- Assisted with study design, data analysis, and programming related to investigating wheelchair propulsion kinetics and kinematics using the Computer-Assisted Rehabilitation Environment (CAREN). Led SBIR Phase I development and testing of the *AgileLife Patient Transfer System*.

Orthopaedic Biodynamics Laboratory

Research Assistant — Advisor: Dr. Scott Tashman

May 2014 - December 2015

Pittsburgh, PA

- Studied knee joint biomechanics and cartilage morphology after ACL reconstruction using Dynamic Stereo X-ray, MRI, and CT image analysis techniques

PUBLICATIONS

A. Sivaprakasam, H. Wang, R. Cooper, and A. Koontz, “Innovation in Transfer Assist Technologies for Persons with Severe Disabilities and Their Caregivers,” *IEEE Potentials*, vol. 36, no. 1, pp. 34-41

SELECTED CONFERENCE PAPERS AND ABSTRACTS

Research Focus

A. Sivaprakasam, H. Bharadwaj, M. Heinz, “The Role of Envelope and Temporal Fine Structure in Auditory Neural Coding of Timbre in Normal and Impaired Hearing,” to be presented at Neuroscience 2021, Chicago, IL, 2021.

A. Sivaprakasam, S. Bass, D. Kamaraj, and A. Koontz, “Investigating Wheelchair Seating Parameters and Their Effect on Ramp Propulsion,” presented at the Biomedical Engineering Society 2017 Annual Meeting, Phoenix, AZ, 2017.

A. Sivaprakasam, R. Cooper, and A. Koontz, “Evaluation of the AgileLife Patient Transfer and Movement System,” presented at the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) 2017, New Orleans, LA, 2017.

A. Sivaprakasam, J. Irrgang, F. Fu, and S. Tashman, “Contralateral Limb Differences in Knee Kinetics After Anterior Cruciate Ligament Reconstruction,” presented at the Biomedical Engineering Society 2015 Annual Meeting, Tampa, FL, 2015. (Platform)

E. Thorhauer, K. Sass, **A. Sivaprakasam**, J. Irrgang, F. Fu, and S. Tashman, “Alterations in In Vivo Knee Cartilage Contact After Anterior Cruciate Ligament Reconstruction and Correlations to Clinical Outcomes,” presented at the Orthopaedic Research Society 2015 Annual Meeting, Las Vegas, NV, 2015.

E. Thorhauer, K. Sass, **A. Sivaprakasam**, J. Irrgang, F. Fu, and S. Tashman, “Changes in Tibiofemoral Gait Kinematics Are Associated with Regional Cartilage Morphological Changes,” presented at the Orthopaedic Research Society 2015 Annual Meeting, Las Vegas, NV, 2015.

R. OHara-Plotnik, E. Thorhauer, **A. Sivaprakasam**, J. Irrgang, F. Fu, and S. Tashman, “Gait Is a Poor Task Choice for Identifying Kinematic Deficits After ACL Reconstruction ” presented at the Orthopaedic Research Society 2015 Annual Meeting, Las Vegas, NV, 2015.

Education and Innovation

Z. Guckien, A. Woloshuk, N. Patel, **A. Sivaprakasam**, A. Warrick, L. Garcia, “Advancing Innovation in Medicine: Expanding the Physician’s Toolbox” presented (virtually) at IUSM Education Day 2021. *Awarded Outstanding Abstract for Poster Presentation*

A. Woloshuk, **A. Sivaprakasam**, N. Patel, A. Warrick, A. Witten, L. Brennan, Z. Guckien, N. Diggins, L. Garcia, L. Wang, J. Acchiardo, J. Merrell, “A Prototype ECG for Neonatal Resuscitation,” presented (virtually) at the IUSM Student Research Symposium 2020: <https://youtu.be/thIokzKTy0E>

INVITED TALKS & WORKSHOPS

Put the PRO in Programming. **A. Sivaprakasam**, N. Patel, A. Petrucciani. Student-led Workshop. IU Medical Scientist Training Program Retreat 2021. July 10th, 2021

GRANTS & FELLOWSHIPS

Purdue University

- Interdisciplinary Training in Auditory Neuroscience (1T32DC016853) Fellowship (2020-2022)

Indiana University

- Haselby Family Scholarship Recipient (2018-2020)

University of Pittsburgh

- Nominated (BioE Dept.) for the 2018 George Washington Prize
- Swanson School of Engineering Summer Research Internship 2017

- Swanson School of Engineering Summer Research Internship 2015

AWARDS & ACHIEVEMENTS

Academic

- Finalist for University of Pittsburgh *Co-op Student of the Year*

Other

- 1st place in age category, 2014 Charleston Distance Run 15 Miler
- 10th place or under in age category in 2013, 2014, 2015, and 2016 Pittsburgh 10 Mile races
- Raised \$1200 for Children's Hospital of Pittsburgh, ran Pittsburgh Marathon 2016

TEACHING EXPERIENCE

University of Pittsburgh

- Teaching Assistant, HRS 2774 — Rehabilitation Biomechanics (Fall 2016)
- Teaching Assistant, BIOENG 1310 — Bioinstrumentation (Spring 2016 & 2017)

EXTRACURRICULAR INVOLVEMENT

Advancing Innovation in Medicine (AIM)

Spring 2019-Present

Co-Founder

Indianapolis, IN

- Student Interest Group (SIG) created with the purpose of educating medical students on the medical design process/prototyping
- Taught basic programming and CAD concepts using student-led design project

Auditory Neuroscience Association at Purdue (ANAP)

Summer 2020-Present

President (2021-2022) | Vice President (2020-2021)

West Lafayette, IN

- Group focused on peer discussion, networking, and mentoring for Purdue undergraduates, graduates, and post-doctoral trainees interested in auditory neuroscience
- Organized monthly talks, discussions, and social events

IUSM Combined Degree Student Council (CDSC)

Fall 2019-Present

Class Representative

Indianapolis, IN

- Convey class concerns and feedback to administration and assist with organizing annual MSTP retreat

IUSM Symphony Orchestra

Fall 2019-Present

Violinist

Indianapolis, IN

- Perform approximately twice per semester
- Continuing 15 consecutive years as an orchestral musician
- Currently on pause due to COVID restrictions

MENTORING EXPERIENCE

Fernando Aguilera de Alba, *Behavioral Comparison of Comodulation Masking Release (CMR) Between Chinchillas and Humans*. Summer 2020 (Co-Mentored)

LICENSURE & CERTIFICATION

USMLE Step 1 — Pass, June 2020

TECHNICAL STRENGTHS

Programming Literacy

Matlab, Java, HTML, Python, Android App Development

Adobe Creative Cloud

Lightroom, Illustrator, Photoshop

Motion Capture & Imaging Tools

Visual3D, Vicon Nexus, Mimics

Other Software

LabView, Solidworks