2025

KATHLEEN CAROLYN (KACEY) SUVADA

Business Address: Northwestern University

Department of Physical Therapy and Human Movement Sciences

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EDUCATION

Northwestern University
PhD in Neuroscience 9/2016-6/2025
Thesis Project: Quantifying the Effect of Trunk Postural Control on Reaching Ability post Hemiparetic Stroke
Primary Advisor: Ana Maria Acosta, Ph.D.
Co-advised by: Julius Dewald, PT, Ph.D.
Awarded Research Training Grant in Sensorimotor Neurorehabilitation (RT-SNR T32)

Elmhurst College (Now University)
BS cum laude in Physics and Mathematics 8/2012-6/2016

RESEARCH EXPERIENCE

Northwestern University 8/2017-Current
Graduate Researcher in Physical Therapy and Human Movement Sciences
Ana Maria Acosta, Ph.D. and Julius Dewald PT, Ph.D.
The Effect of Trunk Postural Control on Reaching post Hemiparetic Stroke

- Created protocols, data collection/analysis code, and integrated multiple systems for development of novel thesis project on reaching and trunk coordination post hemiparetic stroke with a focus on motor control, neurorehabilitation, and biomechanics.
- Recruited stroke participants and ran over 20 experimental sessions each averaging 6 hours
- Submitted and accepted 13 abstracts for poster presentations at local and national conferences
- Accepted for 5 talks locally and nationally

Elmhurst College 2013-16
Undergraduate Researcher in Department of Physics
Venkatesh Gopal, Ph.D.

Modeling Rat Whisker Air Interactions 2015-16

- Utilized experimental setup consisting of HeNe laser, motor allowing rotation of a reflective surface thus creating a laser "sheet" to illuminate and track small bubbles as a proxy for air particles, and a rat whisker suspended in the created turbulent air field
- Used spline interpolation to fit rat whisker and quantify whisker behavior in realistic wind environments with a focus on sensory transduction
- Presented findings at Elmhurst College Honors Program Research and Performance Showcase and Department of Mathematics seminar series

Motion-Triggered Camera "Trap" via Arduino 2013

- Awarded National Science Foundation funded Keystone Program Fellowship with focus on retention of first year STEM majors
- Utilized Adafruit Industries kit for designing an Arduino motion triggered camera
- Cameras were used to track elephant migratory patterns in India to minimize Human/Elephant conflict

University of Chicago Summer 2014
Research Experience for Undergraduates (REU) through Materials Research Center and Physics Department
Sidney Nagel, Ph.D.
Tracking Flows in Fluid Instabilities in the Hele Shaw Cell

- Built setup in machine shop common in fluid mechanics called the Hele Shaw Cell consisting of two glass plates
- The goal was to gain understanding the role of viscosity of two immiscible fluids in fractal pattern formation and fluid mechanics. ImageJ was used to compute velocity profiles and displacements of the fluids with graphite powder as a tracker particle
- Presented at University of Chicago REU Presentation Day

RESEARCH PRESENTATIONS

TALKS

The Effect of Trunk Postural Control on Reaching Deficits post Hemiparetic Stroke 2024
Northwestern University Movement Rehabilitation Sciences Training Day. Invited Speaker-Podium Talk.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Reaching in Hemiparetic Stroke 2023
Elmhurst University Mathematics/CS&IS/Physics Seminar Series Talk. Elmhurst, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Reaching Coordination in Hemiparetic Stroke 2023
Northwestern University Interdepartmental Neuroscience Annual Retreat. Podium Talk. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Impact of Hemiparetic Stroke on Trunk Motor Control 2021
Graduate Women Across Northwestern Symposium. Virtual Talk.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

A Method for Quantifying Trunk Motor Control During Reaching in Individuals Post Hemiparetic Stroke 2020
International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC). Virtual Talk.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

POSTER PRESENTATIONS

Quantifying the Effect of Trunk Postural Control on Reaching Deficits in Hemiparetic Stroke 2024
American Society of Biomechanics Conference. Poster Session Presentation. Madison, WI.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.
Finalist in 3 Minute Thesis Competition

Quantifying the Effect of Trunk Postural Control on Reaching Deficits post Hemiparetic Stroke 2024
American Society for Neurorehabilitation Conference. Poster Session Presentation. San Antonio, TX.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Reaching in Hemiparetic Stroke 2023
Annual Society for Neuroscience Conference. Poster Session Presentation. Washington, DC.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Reaching Coordination in Hemiparetic Stroke 2023
Annual Lewis Landsberg Research Day: Feinberg School of Medicine. Poster Session Presentation. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Reaching Coordination in Hemiparetic Stroke 2023
Movement Rehabilitation Sciences Training Day. Poster Session Presentation. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Reaching Coordination in Hemiparetic Stroke. 2023
Progress in Clinical Motor Control II. Poster Session Presentation. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Arm Reaching in Hemiparetic Stroke 2022
Annual Society for Neuroscience Conference. Poster Session Presentation. San Diego, CA.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Arm Reaching in Hemiparetic Stroke 2022
Northwestern University Movement Rehabilitation Sciences Day. Poster Presentation. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the effect of trunk postural control deficits on arm reaching in hemiparetic stroke 2021
Society for Neuroscience. Virtual Poster Session Presentation.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Impact of Hemiparetic Stroke on Trunk Motor Control During Reaching. 2021
American Society of Neurorehabilitation. Virtual Poster Presentation.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

A Method for Quantifying Trunk Motor Control During Reaching in Individuals Post Hemiparetic Stroke 2021
Northwestern University Movement Rehabilitation Sciences Day. Poster Presentation. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Impact of Hemiparetic Stroke on Trunk Motor Control During Reaching. 2021
American Society of Neurorehabilitation. Virtual Poster Presentation.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Arm Reaching in Hemiparetic Stroke 2019
Society for Neuroscience Conference. Poster Session Presentation. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Arm Reaching in Hemiparetic Stroke 2019
Movement Rehabilitation Sciences Day. Poster Presentation Session. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Quantifying the Effect of Trunk Postural Control Deficits on Arm Reaching in Hemiparetic Stroke 2019
Northwestern University Interdepartmental Neuroscience Annual Retreat. Poster Presentation. Chicago, IL.
Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta.

Modeling Gap Junction Regulation in a Network of Nitric Oxide Releasing Amacrine Cells in the Retina 2016
Northwestern University Interdepartmental Neuroscience Recruitment Poster Session, Chicago, IL.
Kathleen Suvada and Gregory Schwartz.

Modeling Rat Whisker Air Interactions 2016
Elmhurst College Mathematics Research Seminar Presentation, Elmhurst, IL.
Kathleen Suvada and Venkatesh Gopal.

Visualizing Whisker Air Interactions. 2016
Elmhurst College Honors Program Research and Performance Showcase, Elmhurst, IL.
Kathleen Suvada and Venkatesh Gopal.

Tracking Flows in Fluid Instabilities 2014
University of Chicago Research Internship Trainee Presentation Day, Chicago, IL.
Kathleen Suvada and Sidney Nagel.

PUBLICATIONS

Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta. Quantifying the Impact of Hemiparetic Stroke on Trunk Motor Control During Reaching. ANSR Poster Abstracts. Neurorehabilitation and Neural Repair. 2021;35(11):NP1-NP41. doi:10.1177/15459683211027047. 2021

Kathleen Suvada, Jasjit Deol, Julius P.A. Dewald, and Ana Maria Acosta. A Method for Quantifying Trunk Motor Control During Reaching in Individuals Post Hemiparetic Stroke. 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), Montreal, QC, Canada, 2020, pp. 3743-3746, doi: 10.1109/EMBC44109.2020.9176096. 2020

HONORS AND AWARDS

Northwestern University Travel Award: The Graduate School. 11/2023
Salvino Memorial Travel Award. 9/2023
Northwestern University Interdepartmental Neuroscience Student Service Award 9/2023
Northwestern University Interdepartmental Neuroscience Travel Award 10/2019
National Honors Mathematical Society (Pi Mu Epsilon) 2013-16
Elmhurst College Physics Department Chair Award 6/2016
Elmhurst College Dean's List 2012-13
Elmhurst College Honors Program 2012-16

TEACHING AND PROFESSIONAL DEVELOPMENT

NUIN Teaching Fellow: Northwestern University Winter 2022
Advised by Dr. Tiffany Schmidt for Neurobiology of Sensation and Perception (NEUROSCI_377)
Peer Mathematics and Physics Tutor at Tutoring Center: Elmhurst College 2013-16
First Year STEM Majors Mentor: Elmhurst College 2013-15

LEADERSHIP AND SERVICE

Northwestern University Chicago Women in STEM Initiative 2018-present
Vice President 2021-22
Leadership Committee 2022-24
STEM Circuits Coordinator 2020-21
Social Media Coordinator 2018-23

- Create network of early career professionals in STEM across Chicago and beyond to promote equity in STEM fields
- Developed monthly event topics, reaching out to speakers, coordinating event logistics through Northwestern network and beyond
- Create material for marketing and social media such as posters, videos, and posting to social media platforms to increase visibility of events

Management for Scientists and Engineers Kellogg Business School Certificate 2021

- Certificate program through the Kellogg Business School at Northwestern to gain skills in business and commercialization of research

National Alliance on Mental Illness (NAMI) 2018-21
Volunteer Speaker

- Traveled to Chicago Public Schools to educate youth about mental health and illness giving talks to lecture halls of over 200 students, parents, and teachers.
- Contributed to "Ending the Silence" program to destigmatize mental illness amongst adolescents

Science Club and Junior Science Club: Northwestern University 2016-19
Volunteer

- Traveled to elementary and middle schools to teach introductory scientific principles to increase interest in STEM
- Judged science fair projects for high school students

SCIENCE COMMUNICATION

Skills and Careers in Science Writing: Medill School of Journalism at Northwestern University 2023

- Joint program with Medill School of Journalism and the Graduate School
- Teaches best practices for science writing to STEM PhD students

ComSciCon 2022: University of Chicago 2022

- Applied and accepted to science communication conference established initially at Harvard University
- Designed to encourage PhD students to pursue careers in science communication and teaches how to communicate technical details to general audiences

Volunteer on Graduate Information Panel: Elmhurst College 2017- 23

- Invited speaker on panel for STEM undergraduate students interested in pursuing PhDs or Medical School.

Northwestern University Brain Awareness Organization: Northwestern University 2017-19
Teacher's Workshop Presenter 2017-19
Brain Fair Volunteer 2017-18

- Graduate student organization with the primary goal of educating the Chicago-land area about neuroscience and STEM principles in general and encouraging integration of neuroscience into science curriculums

MEMBERSHIPS AND AFFILIATIONS

- American Society of Biomechanics
- American Society of Neurorehabilitation
- Northwestern University Chicago Women in STEM Initiative.
- Society for Neuroscience
- American Heart Association
- Northwestern University Brain Awareness
- Society for Women in Physics
- Conferences for Undergraduate Women in Physics

TECHNICAL SKILLS

Tableau, Photoshop, Illustrator, MakeHuman, Blender, MATLAB, RStudio,Biomechanics, Kinematics, Motion Capture Analysis, and Electromyography Analysis (EMG)

Motor Control, Stroke Neurorehabilitation, Neural Engineering, Brain Injury.

REFERENCES

Dr. Ana Maria Acosta, Associate Professor and Associate Chair of Graduate Research Education. Physical Therapy and Human Movement Sciences. Northwestern University. a-acosta@northwestern.edu

Dr. Julius PA Dewald, PT. Professor and Chair Physical Therapy & Human Movement Sciences. Professor Biomedical Engineering. Physical Med & Rehab. Northwestern University. jdewald@northwestern.edu

Dr. Venkatesh Gopal. Associate Professor and Chair. Department of Physics. Elmhurst University.vgopal@elmhurst.edu

Dr. Catherine Crawford. Associate Professor. Department of Mathematics. Elmhurst University. crawford@elmhurst.edu