**University of South Florida** – Tampa, FL

Department of Neurosurgery & Brain Repair

*fek@usf.edu*

**EDUCATION**

**2022 - Present**  **University of South Florida – Morsani College of Medicine**

PhD, ***Medical Sciences***, Neuroscience*,*

Mentor: Nathan Schilaty

GPA: 3.75

**2021 – 2022** **University of South Florida – Morsani College of Medicine**

Master of Science, ***Medical Sciences****, magna cum laude*

GPA: 3.73

**2017 – 2021** **University of Louisiana at Monroe**

BS, ***Chemistry***, *Magna cum Laude*

GPA: 3.73

**CAREER**

**2022 – Present** Graduate Research Assistant, Medical Sciences – University of South Florida

**FUNDING**

**2022 – 2023** **Florida High Tech Corridor Matching Grant**

Excite Medical of Tampa Bay LLC (FHT 23-01) *– $242,000*

*Retrospective Review of Non-Surgical Spinal Decompression as a Therapeutic for*

*Low Back Pain*

PI: Nathan Schilaty, DC, PhD | Role: Graduate Student

**HONORS / AWARDS**

**2024** **Krzanowski Career Development Award** – University of South Florida; Tampa, FL

Travel award to cover cost to present at the ANA Annual Meeting in Fall 2024

**2017 – 2018** **Emerging Scholars Award (2x recipients)** – University of Louisiana at Monroe; Monroe, LA

 Stipend for research-oriented work

**2017 – 2021** **Presidential Scholarship(4x recipient)** – University of Louisiana at Monroe; Monroe, LA

 Academic Award granted for 30+ ACT Score

**2017 – 2021** **Out of State Tuition Waiver Award(4x recipient)** – University of Louisiana at Monroe; Monroe, LA

Award to cover the cost of Out-of-State Tuition awarded by participation in the Marching Band and Concert Band: The Sound of Today

**PUBLICATIONS**

***Under review/revision***

1. **Walters KF**, Shukla R, Kumar V, Schueren S, Yadav H, **Schilaty ND**, Jain S. Cortical Waveform Characteristics in Resting-State between Healthy and Cognitively Impaired Subjects.

***Published Abstracts / Conference Presentations***

1. **Feroben KE**, Alvarez I, Bhandari M, Byford A, Desselle J, Duong Q-N, Dupree A, Garrison M, Higginbotham J, Hunter C, Knight B, Lee J, Lewis I, Long E, Nguyen L, Rimal A, Roan C, Sinnasone S, Tandukar J, Willis C, Nguyen A, Hancock AM, Dicus A, Gallien G, Wiedemeier AMD, Wiedemeier PD, Gissendanner CR, Findley AM. Functional Analysis of *Gordonia terrea* Phage Sombrero, Catfish and Dogfish. *SEAPhages Summer Symposium*; Ashburn, Virginia, USA; June 8 – 10, 2018.
2. **Katherine E. Feroben**, Nathan D. Schilaty, Nathaniel A. Bates, Takashi Nagai. Lost to the Decades: A Promising Variable for Postural Intervention. *ASB Annual Conference*; Knoxville, Tennessee, USA; August 8 – 11, 2023.
3. **Katherine Walters**, Shannon Schueren, Rohit Shukla, Vivek Kumar, Hariom Yadav, Nathan Schilaty, Shalini Jain. Patterns in Cortical Waveforms between Healthy and Neurocognitively Impaired Participants during Resting-State. *USF Graduate Student Research Symposium*; Tampa, Florida, USA; March 22, 2024.
4. **Katherine F. Walters**, Nathaniel A Bates, Schuyler van den Nieuwenhuizen, Adolfo Viloria, Puya Alikhani, Nathan D. Schilaty. Vertebral Body Implant Biomechanical Assessments with a Novel Spine Simulator. *ASB Annual Conference*; Madison, Wisconsin, USA; August 5 – 8, 2024.
5. Jacob Connolly, Theresa S. Brown, Shannon Schueren, **Katherine F. Walters**, Nathan D. Schilaty. Cervical forced-based manipulation increases jugular vein flow velocity. *ASB Annual Conference*; Madison, Wisconsin, USA; August 5 – 8, 2024.
6. Schilaty ND, **Feroben KE**, Bates NA, Viloria A, Alikhani P. Biomechanical Behavior of a New Vertebral Body Implant: Vertiwedge. *Society for Minimally Invasive Spine Surgery 2024*, Las Vegas, Nevada, USA; Sept. 5 – 7, 2024.
7. **Katherine Walters**, Shannon Schueren, Rohit Shukla, Vivek Kumar, Hariom Yadav, Nathan Schilaty, Shalini Jain. Cortical Waveform Characteristics in resting-state between Healthy and Neurocognitively Impaired. *149th ANA Annual Meeting*; Orlando, Florida, USA; September 14 – 17, 2024.

**PRESENTATIONS**

***Institutional Seminar Presentations***

1. **Walters KF** (2024, February). EEG: Translating cortical waveforms to clinically meaningful outcomes. *NSI Seminar Series*, Tampa, FL.
2. **Walters KF** (2024, October).Reading the Brain's Pulse: Can EEG Patterns Predict TBI Severity and Outcomes? *3-Minute Thesis Medical Sciences Program Heat*, Tampa, FL.

**MEMBERSHIPS**

**2024 – Present** American Neurological Association

**2023 – Present** American Society of Biomechanics

**2022 – Present** Association of Medical Sciences Graduate Students

**2020 – 2021** American Chemical Society

**PROFESSIONAL DEVELOPMENT**

 **LabVIEW Programming –** *Beginner*

Generate user-friendly software to interface research hardware for data collection, post-processing, automation, and analysis.

 **JMP Pro –** *Beginner*

Perform appropriate simple and complex statistical models for *in vitro*, *in vivo*, and *clinical trials* research.

 **MATLAB Programming** – *Intermediate*

Experienced in developing and implementing algorithms, data analysis, and mathematical modeling. Familiar with various MATLAB toolboxes. Continuously enhancing skills through self-directed learning and staying updated with the latest MATLAB functionalities.

**Professional Development**

**Title:** AI in the Classroom: An Unseen Force

**Session:** WS3

**Organizing Institution:** American Society for Biomechanics (ASB) Annual Conference 2024

**Date:** Monday, August 5, 2024

**Location:** Madison, WI

**Duration:** 4 hours

**Speakers:**

 JJ Wallace, Transylvania University

 Matt Wittstein, Elon University

 Kristyne Wiegand, Eastern Washington University

 Dustin Bruening, Brigham Young University

 Tara Diesbourg, Oakland University

 Allison Altman-Singles, Penn State Berks

**Description:** This workshop focused on the growing influence of AI in education and how educators can effectively integrate it into the classroom. Participants were introduced to foundational AI knowledge and explored case studies and hands-on activities illustrating AI’s potential to enhance educational tasks like writing, course development, and student success strategies.

**Key Learnings:**

* + - Learned foundational AI knowledge applicable to education.
		- Examined case studies on the utility of AI in classrooms.
		- Participated in hands-on activities to experience AI tools in action.
		- Discussed ethical considerations and responsible AI integration in education.

**Title:** Optimizing Your ANA2024 Meeting Experience to Build Your Professional Network and Your CV

**Session:** Empowering Progress: Advancing Science, Education, and Careers to Enhance Neurologic Health for All; Unlocking Opportunities: The Benefits of Junior and Early Career Membership in the American Neurological Association; Panel Discussion

**Organizing Institution:** American Neurological Association (ANA)

**Date:** Sunday, September 15, 2024

**Location:** Orlando, FL

**Duration:** 1 hour, 30 minutes

**Speakers:**

 Dr. Lesli Skolarus, MD, MS, FANA, Northwestern University

 Dr. Wilfreda Lindsey, MD, MS, Kennedy Krieger Institute

 Dr. Letitia Weigand, PhD, National Institute of Neurological Disorders and Stroke

**Description:** This panel session offered valuable insights on how to leverage the American Neurological Association (ANA) membership and annual meetings for professional growth. Attendees gained advice on maximizing opportunities for networking and career advancement, with a particular focus on utilizing ANA’s resources for building a strong CV and professional network.

**Key Learnings:**

* + - * Developed strategies for expanding professional networks and utilizing ANA membership benefits.
			* Gained insight into building a strong CV through ANA resources.
			* Increased confidence in networking at professional events and ANA meetings.

**Title:** Game-Based Learning in Neurology

**Session:** InteractiveLunchWorkshop

**Organizing Institution:** American Neurological Association (ANA)

**Date:** Sunday, September 15, 2024

**Location:** Orlando, FL

**Duration:** 1 hour

**Speakers:**

 Zachary London, MD, FANA, University of Michigan

 Alison Christy, MD, PhD

 Michael Cosimini, MD

**Description:** This interactive session introduced the concepts of game-based learning for neurologists, with a focus on building engagement and retention through educational games. The session covered diversity and inclusion in game development, with practical exercises to help attendees design their own educational games for teaching and outreach in the neurology field.

**Key Learnings:**

* + - * Gained insight into the principles of game-based learning and its application in medical education.
			* Explored the importance of diversity in game design, considering factors like gender, race, and ability.
			* Engaged in hands-on activities for creating educational games tailored to neurology.

**Title:** Communicating Your Science: How to Promote Your Science to Scientists and Non-Scientists

**Session:** JEC (Junior and Early Career)

**Organizing Institution:** American Neurological Association (ANA)

**Date:** Monday, September 16, 2024

**Location:** Orlando, FL

**Duration:** 1 hour, 30 minutes

**Speakers:**

 Stephan Mayer, MD, FANA – Communicating on Social Media

 Andrew Josephson, MD, FANA – Communicating with Philanthropists

 Bridget Stratton, MA – Engaging the Media

**Chair:** Kelly Sloane, MD, MS, University of Pennsylvania

**Co-Chair:** Romergryko Geocadin, MD, FANA, Johns Hopkins University

**Description:** This workshop emphasized the importance of effectively communicating research to both scientific and non-scientific audiences. Attendees were guided through strategies for engaging with philanthropists, the media, and the general public, and participated in exercises to craft concise and adaptable research “elevator pitches.”

**Key Learnings:**

* + - Learned strategies for effectively communicating research to diverse audiences.
		- Practiced creating and delivering an “elevator pitch” for scientific research.
		- Gained skills in communicating science through social media, media outlets, and philanthropic networks.

**Title:** Neurology in the ChatGPT Era: Artificial Intelligence Advances in Literature-Based Discovery

**Session:** Interactive Lunch Workshop

**Organizing Institution:** American Neurological Association (ANA)

**Date:** Monday, September 16, 2024

**Location:** Orlando, FL

**Duration:** 1 hour

**Speakers:**

 Cassie Mitchell, PhD, Georgia Institute of Technology

 David Kartchner, PhD, Georgia Institute of Technology

**Description:** This session explored the use of natural language processing (NLP) and large language models (LLM), such as ChatGPT, to automate and streamline the discovery of new research findings in neurology. The session provided a deep dive into AI’s role in accelerating research by assisting with drug repurposing, literature-based discovery, and meta-analyses for clinical trials. The session also featured case studies demonstrating the application of AI in Parkinson's disease and glioblastoma research.

**Key Learnings:**

* Gained an understanding of NLP and LLM applications in neurology research.
* Explored how AI-driven tools can assist in drug discovery and identifying novel disease mechanisms.
* Engaged with case studies showcasing the potential for AI to automate meta-analyses and streamline large-scale literature review processes.

**Professional Development Webinars**

**Title**: Intro to Scheduler Webinar

**Organizing** **Institution**: LabArchives

**Date**: Tuesday, October 1, 2024

**Location**: Online Webinar

**Duration**: 30 minutes

**Speakers**: LabArchives Support Team

**Description**: This introductory webinar provided a comprehensive overview of LabArchives Scheduler, a calendar and scheduling tool designed for managing and reserving lab resources. The session covered key features of the platform, including the uploading of resources, setting reservation rules, inviting users, and starting reservations. Attendees gained hands-on guidance for effectively managing lab equipment and workspaces using this customizable solution.

**Key** **Outcomes**:

* Gained an understanding of the basic features and functions of LabArchives Scheduler.
* Learned how to upload resources and manage access to lab spaces and equipment.
* Acquired skills to set reservation rules and invite users.
* Understood how to initiate and manage reservations for various lab resources.

**Title**: Intro to ELN Webinar

**Organizing Institution**: LabArchives

**Date**: Thursday, October 3, 2024

**Duration**: 30 minutes

**Location**: Online, 1:00 PM EDT

**Description**: This introductory webinar provided an overview of the LabArchives Electronic Lab Notebook (ELN), offering essential guidance for both new and existing users on the platform's core features. It focused on strategies for creating, managing, and organizing digital lab notebooks and data.

**Key Topics Covered**:

* + - Creating notebooks.
		- Adding and managing data entries.
		- Setting notebook access controls.
		- Using collaboration tools for team-based projects.
		- Exporting and sharing notebooks.

**Key Outcomes**:

* + - Acquired knowledge of notebook creation and data management in LabArchives ELN.
		- Learned best practices for collaboration and sharing tools.
		- Gained understanding of how to control access and export notebooks for external use.

**FOREIGN LANGUAGE**

**French** Read/write capability, limited conversation