

Nick Rovito

CONTACT INFORMATION

Department of Mechanical Engineering
ECME 217 & 1B64, University of Colorado, Boulder
Boulder, CO 80309-0427

Phone: (972) 674-7755
E-mail: nick.rovito@colorado.edu

RESEARCH INTERESTS

- **Biomedical:** Computational modeling for biofluids and biomechanics. Thrombosis and thrombolysis modeling; Hemodynamics and vascular transport; Cerebrovascular flow; Biomechanics of cardiovascular diseases - stroke, thrombosis; Drug delivery.
- **Computational:** Computational fluid dynamics and transport processes; Fluid-particle and Fluid-structure interactions; Multiscale modeling; Finite element method; Discrete element method; Molecular Dynamics; High-performance computing.

EDUCATION

University of Arkansas, Fayetteville, AR

- *B.S., Mechanical Engineering: May, 2023*
- *B.A., Spanish Language: May, 2023*
- *Minor, Mathematics: May, 2023*

AWARDS & HONORS

1. **Outstanding Teaching Assistant Award;** *Awarded to teaching assistants recognized by both faculty members and students for providing exemplary service in teaching support; Spring 2024*
2. **Chair's Graduate Fellowship;** *Fall 2023*
3. **Graduated with High Distinction;** *May, 2023*

PEER-REVIEWED PROCEEDINGS

1. **Rovito, N.,** Walters, D.K. (2023). CFD-BASED OPTIMIZATION OF AN OSCILLATING FOIL ENERGY HARVESTER WITH 8-DOF KINEMATIC OPERATION. *Proceedings of the International Mechanical Engineering Congress and Exposition (IMECE): New Orleans, Louisiana, United States*

ABSTRACTS & PRESENTATIONS

1. **Rovito, N.,** Mukherjee, D. An In Silico Model of Flow-Mediated Fibrinolysis in Acute Ischemic Stroke. *9th Annual Rocky Mountain Fluid Mechanics Research Symposium.* August 2024.

RESEARCH EXPERIENCE

- **Computational fluid dynamics modeling for thrombolysis**
 - Coupled thrombolysis and fluid dynamics models to study thrombolysis treatment and reperfusion injury risk.
- **Computational fluid dynamics modeling for hydroelectric energy systems**
 - Designed mathematical models in conjunction with computational fluid dynamics for optimization analysis of 8 degree-of-freedom oscillating foil energy harvesting systems.

TEACHING & ACADEMIC EXPERIENCE

- Teaching Assistant: University of Colorado, Boulder
 1. MCEN 3021: Introduction to Fluid Mechanics, Spring 2024
 2. MCEN 3021: Introduction to Fluid Mechanics, Fall 2023
- STEM Tutor: Do College Better, Fayetteville AR (Jan 2022 - Aug 2023)
 - MATH 1213: Plane Trigonometry
 - MATH 1284: Precalculus Mathematics
 - MATH 2043: Survey of Calculus
 - MATH 2554: Calculus I

- MATH 2564: Calculus II
- MATH 2574: Calculus III
- MATH 2584: Elementary Differential Equations
- MEEG 2023: Dynamics
- PHYS 2054: University Physics I
- Teaching Assistant: University of Arkansas, Fayetteville
 1. MATH 3083: Linear Algebra, Fall 2021

PROFESSIONAL
SERVICE

- **American Society of Mechanical Engineers (ASME):** Augsut 2024 - Present

PROFESSIONAL
EXPERIENCE

- **EPIROC Internship, Garland, TX**
 - Improved cab assembly and production, electrical documentation, and engineering drawings using tools such as Creo Illustrate, Visual Factory, and the principals of lean engineering.

REFERENCES

Prof. Debanjan Mukherjee *Email:* debanjan@colorado.edu
 Assistant Professor, Paul M Rady Department of Mechanical Engineering
 University of Colorado Boulder

Prof. James H. Leylek *Email:* jleylek@uark.edu
 Professor, Department of Mechanical Engineering
 University of Arkansas

Prof. Keith Walters *Email:* keithw@uark.edu
 Professor, Department of Mechanical Engineering
 University of Arkansas