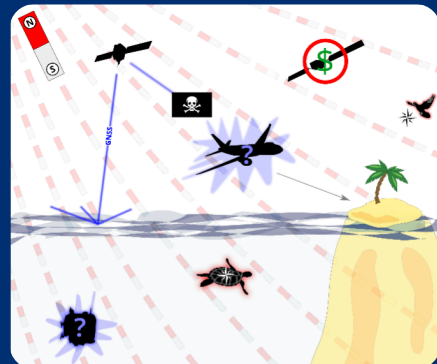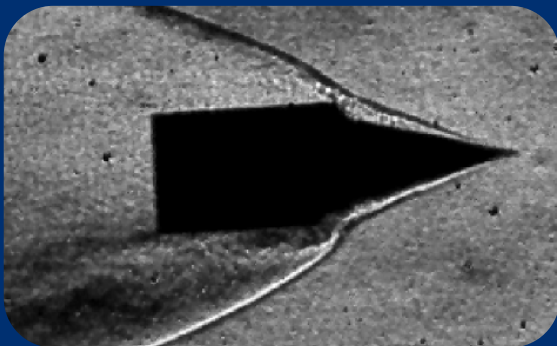# CASE WESTERN RESERVE UNIVERSITY
Case School of Engineering

Open PhD Positions in
Mechanical and Aerospace Engineering
in the areas of

Fluid Mechanics
Navigation
Robotics

PhD Opportunity at Flow Simulation & Flow Physics Lab

Position Description:

One PhD position is available in Mechanical & Aerospace Engineering at Case Western Reserve University (CWRU) to conduct numerical simulations of biological and physiological flows. The position includes full financial support and tuition coverage. We seek motivated candidates with a BS or MS in Engineering, Mathematics, Computer Science, or related fields, with strong skills in numerical methods for PDEs, programming (Fortran/C++/Python/Julia), and effective communication. Prior in-house code development experience is strongly preferred. The **expected start date is Fall 2026**.
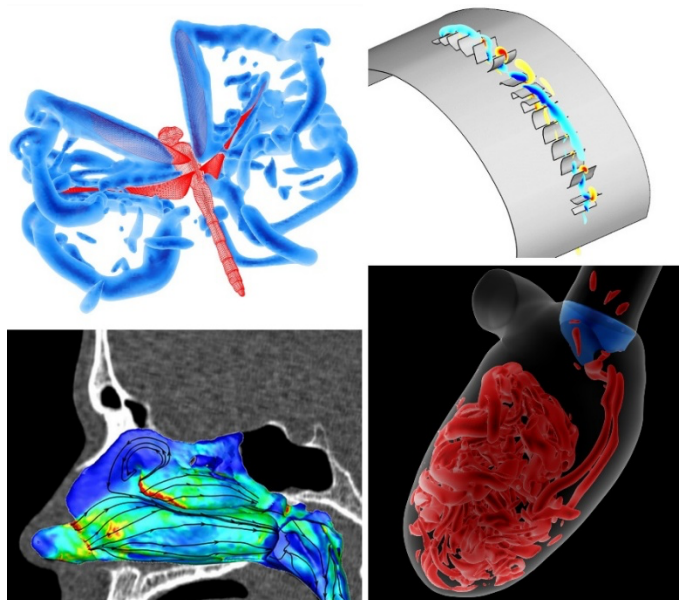
Preferred Qualifications and Skills:

- Strong knowledge of fluid mechanics and computational methods
- Programming skills in Fortran/C++/Python/Julia
- TOEFL>=90 or IELTS>=7.0 (international students only)

How to Apply:

To apply, please send an email to Dr. Chengyu Li (cxl1692@case.edu) with the following application materials attached. Please title the email as "CWRU-PhD-Application-CFD" in the subject line. The review will start immediately until the position is filled. Top candidates will be invited for an interview via Zoom. For details regarding Dr. Li's research, please visit https://www.chengyuli.net/.

- Curriculum vitae
- Transcripts from all previous institutions (official or unofficial)
- TOEFL or IELTS score (international students only)
- The names and email addresses of two references

Department of Mechanical & Aerospace Engineering

PhD Opportunity in the Flow Physics and Imaging Lab
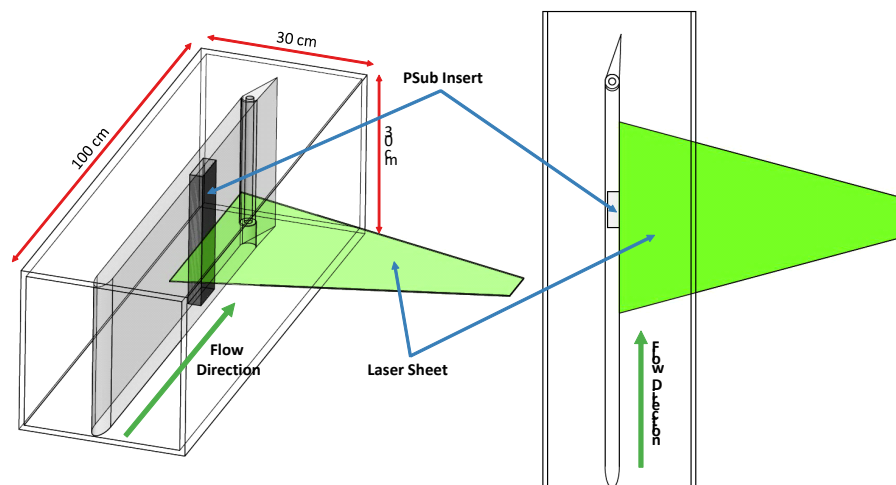
Position Description:

One PhD position is available in Mechanical & Aerospace Engineering at Case Western Reserve University (CWRU) to conduct research on a passive flow control strategy for controlling boundary layer transition in incompressible flows. The position includes full financial support and tuition coverage. We seek motivated candidates with a BS or MS in Engineering, Mathematics or Physics with a track record of executing complex projects and effective communication. The **expected start date is Fall 2026**.

Preferred Qualifications and Skills:

- Strong background in mathematics, especially multivariable calculus
- Experience in project planning and data analysis
- Quantitative/Verbal percentiles of 80/60 or 90/50 or higher on the GRE

How to Apply:

Apply through the CWRU graduate school, and send me an email to let me know and I will have your application forwarded to me. Please title the email as "CWRU-PhD-Application-FlowControl" in the subject line. If you would like to talk with me before submitting your application I am happy to do so, please contact me via email with the same subject line. The review will start immediately until the position is filled. Top candidates will be invited for an interview via Zoom. For details regarding Dr. Schmidt's research, please visit https://case.edu/engineering/labs/fpi/.

PhD Opportunity in the Flow Physics and Imaging Lab
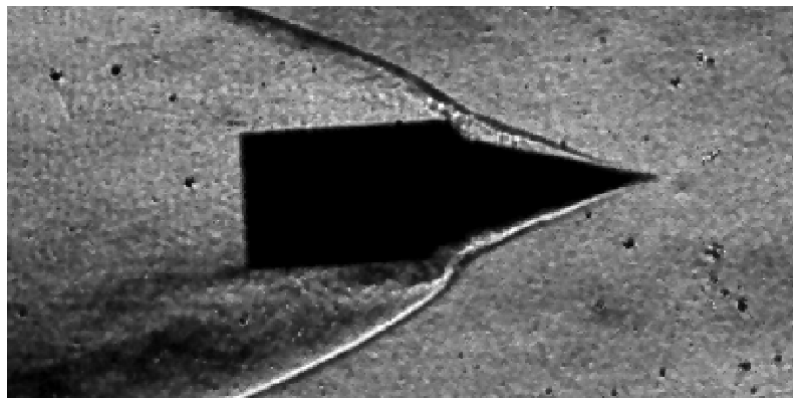
Position Description:

One PhD position is available in Mechanical & Aerospace Engineering at Case Western Reserve University (CWRU) to conduct experiments in hypersonic aerodynamics. The position includes full financial support and tuition coverage, pending support from AFOSR. We seek motivated candidates with a BS or MS in Engineering, Mathematics or Physics with a track record of executing complex projects and effective communication. U.S. citizenship is required, and candidates who have applied for SMART and/or NDSEG fellowships are strongly encouraged to apply. The **expected start date is Fall 2026**.

Preferred Qualifications and Skills:

- Strong background in mathematics, especially multivariable calculus
- Experience in project planning and data analysis
- Quantitative/Verbal percentiles of 80/60 or 90/50 or higher on the GRE

How to Apply:

Apply through the CWRU graduate school, and send me an email to let me know and I will have your application forwarded to me. Please title the email as "CWRU-PhD-Application-Hypersonics" in the subject line. If you would like to talk with me before submitting your application I am happy to do so, please contact me via email with the same subject line. The review will start immediately until the position is filled. Top candidates will be invited for an interview via Zoom. For details regarding Dr. Schmidt's research, please visit https://case.edu/engineering/labs/fpi/.

PhD Opportunity at Two-Phase Flow and Theral Management Lab

Position Description:

One PhD position is available in Mechanical & Aerospace Engineering at Case Western Reserve University (CWRU) to conduct a combination of experimental, numerical, and/or machine learning research on two-phase configurations for future cooling solutions. The position includes full financial support and tuition coverage. We seek motivated candidates with a BS or MS in Engineering, Physics, Mathematics, Computer Science, or related fields, with strong skills in thermal-fluids sciences, and effective communication. Prior in-house code development experience is strongly preferred. The **expected start date is Fall 2026**.
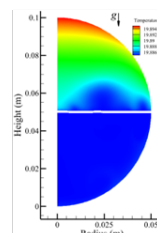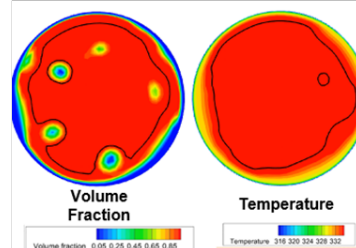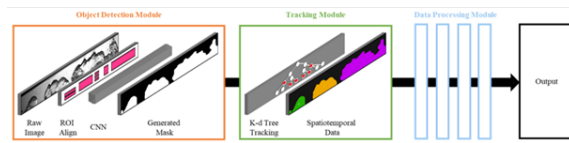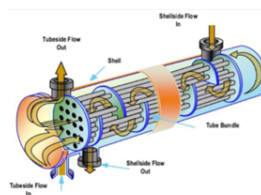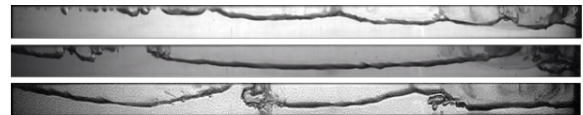
Preferred Qualifications and Skills:

- Strong knowledge of thermal-fluids systems with computational or machine learning experience a plus.
- Programming skills in ANSYS Fluent/Matlab/Python
- TOEFL>=90 or IELTS>=7 (international students only)

How to Apply:

To apply, please send an email to Dr. Chirag Kharangate (crk91@case.edu) with the following application materials attached. Please title the email as "CWRU-PhD-Application-TPFTML" in the subject line. The review will start immediately until the position is filled. Top candidates will be invited for an interview via Zoom. For details regarding Dr. Kharangate's research, please visit https://case.edu/engineering/labs/tpftml/ .

- Curriculum vitae
- Transcripts from all previous institutions (official or unofficial)
- TOEFL or IELTS score (international students only)
- The names and email addresses of two references

PhD Opportunity: Widsom and Knowledge from Animal Navigation, Direction, and Action (WAKANDA) Laboratory

Position Description:

One PhD position is available in Mechanical & Aerospace Engineering at Case Western Reserve University (CWRU) to conduct computer simulations and robot experiments aimed at understanding animal magnetoreception, multimodal sensing, and engineered navigation without GPS. The position includes full financial support and tuition coverage. We seek motivated candidates with a BS or MS in Engineering, Applied Mathematics, Computer Science, Neuroethology, Computational Neuroscience, Quantitative Biology, or related fields. Competitive candidates should be able to work independently, as part of a team, and be effective communicators. **Expected start date: Fall 2026**.

Preferred Qualifications and Skills:

- Proficiency with differential equations, including qualitative methods
- Willingness to learn and become proficient in engineering and biology topics (e.g., dynamics, controls, and computational neuroscience).
- Programming ability and willingness to learn new languages as necessary
- TOEFL>=90 or IELTS>=7.0 (international students only)

How to Apply:

To apply, please send an email to Dr. Brian Taylor (bkt2@case.edu) with the following application materials attached. Please title the email as "CWRU-PhD-Application-WAKANDA" in the subject line. The review will start immediately until the position is filled. Top candidates will be invited for an interview via Zoom.

- Curriculum vitae
- Transcripts from all previous institutions (official or unofficial)
- TOEFL or IELTS score (international students only)
- The names and email addresses of two references
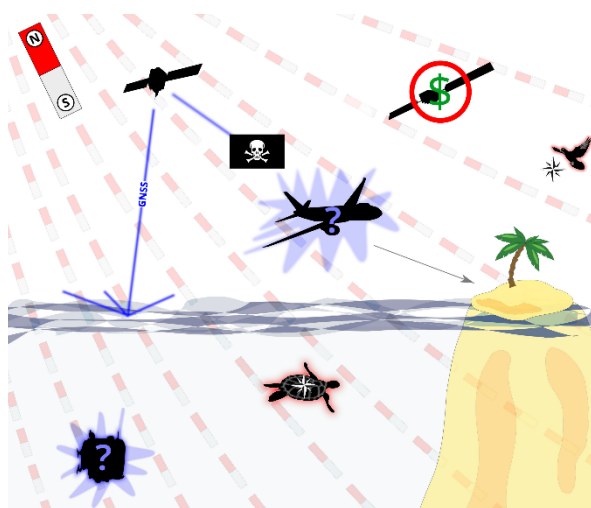
2123 Martin Luther King Jr Dr • Glennan Building 881 • Cleveland • OH 44106
E-mail: bkt2@case.edu • Phone: (216) 368-5787
Web: https://engineering.case.edu/research/labs/wakanda-lab

PhD Opportunity in Underwater Biorobotics

Position Description:

We are recruiting PhD students and Postdocs to conduct funded research into control and state estimation for underwater bioinspired robotics. The position will be a collaborative project jointly supervised by Dr. Kati Daltorio and Dr. Zach Patterson. We seek motivated candidates with a BS or MS in Engineering, Computer Science, or related fields, with strong skills in control, machine learning, physics simulation, programming (Python/ROS), and effective communication. Prior experience in robotics and especially in some combination of control/RL and marine robotics is strongly preferred. The **expected start date is Fall 2026**.

Preferred Qualifications and Skills:

- Strong knowledge of robotics and control
- Programming skills in Python/ROS

How to Apply:

To apply, send an email to Dr. Zach Patterson (zpatt@case.edu) with a CV and include in the body of the email a brief description of your interest and fit for the position. Please title the email as "CWRU-PhD-Application-Crab" in the subject line. Top candidates will be invited for an interview via Zoom. For details regarding Dr. Daltorio's research, please visit the Biorobotics lab website. For details regarding Dr. Patterson's research, please visit the CyPhiLab website.