James Dingley

PhD Candidate, MIT/WHOI | jdingley@mit.edu | www.youtube.com/AtomicFrontier

Early career oceanographer and instrumentation engineer with experience in remote fieldwork, sub-zero environments, and autonomous systems. Strong background in electronics repair, data quality control, and maintaining scientific instruments in harsh conditions. Experienced working in small teams under isolation.

EDUCATION

PhD Candidate, Massachusetts Institute of Technology 2023 – present
Department of Aeronautics and Astronautics with ongoing collaboration at the Woods Hole Oceanographic Institution. Research on remote instrumentation and autonomous systems in extreme environments. GPA: 5.00/5.00

MS in Systems Engineering, Massachusetts Institute of Technology 2021 – 2023
Department of Aeronautics and Astronautics. Coursework and research in system design for satellite constellations. GPA: 5.00/5.00

Bachelor of Philosophy (First Class), University of Western Australia 2017 – 2021
Graduated with a first-class honors in Mechanical Engineering. GPA: 6.93/7.00

Relevant coursework
- **Oceanographic Instrumentation & Field Methods (2.688):** Techniques for deploying CTD rosettes, ADCPs, and ocean sensors; data logging and quality control.
- **Systems Safety Engineering (16.862):** Risk analysis and safety protocols for complex engineering systems with applications in marine and aerospace domains.
- **Robotics & Autonomous Systems (2.740, 6.4212):** Design of robotics for remote and extreme environments (underwater ROVs and space systems).
- **Power Electronics (6.2222):** Advanced power systems design from fundamental components with heavy hands-on implementation component.
- **Zero-Gravity Robotics (16.88):** Microgravity robotics experimentation, including a parabolic flight.

WORK

Project Lead - Orbital Locker (MIT STAR Lab / Air Force Research Laboratory) 2023 – present
Led a multi-disciplinary team in a million-dollar satellite systems research project, developing an orbital payload "locker" for small satellites. Managed development of a ruggedized orbital instrument platform—experience directly transferable to maintaining sensors, electronics, and power systems in harsh field conditions. Cambridge MA

Co-founder & Project Lead – UWA Aerospace Rocketry Team 2018 – 2021
Co-founded and lead my university's high-powered rocketry and balloon experiment group. Conducted launch operations in remote desert environments, requiring logistics planning, risk assessment, equipment maintenance, and team coordination under constrained conditions. Perth, Australia

Researcher – Indian Ocean Marine Research Institute 2019
Developed scale ship models and conducted flume tank experiments to simulate ocean conditions for vessel dynamics research. Maintained meticulous experiment logs and calibration records, reinforcing skills in data analysis and laboratory teamwork. Perth, Australia

Host & Producer – Atomic Frontier Science Media   2017 – present
Founder and host of a science communication project producing documentary-style   Global
videos on physics and engineering with a strong on-location focus. Created 50+
educational videos, growing an audience of 300,000+ subscribers and over 22 million
views globally. Demonstrated exceptional science communication skills by breaking
down complex concepts for public audiences.

Notable project: Awarded a grant to perform science outreach in the high Arctic. Spent
ten days in Svalbard's polar environment during the permanent night of the Arctic winter,
documenting scientific research on cold-environment adaptations. Gained experience
filming in harsh weather, operating equipment outdoors in sub-zero temperatures, and
working in small expedition teams under isolation.

CRUISE EXPERIENCE

R/V Armstrong - North Atlantic NES-LTER Oceanographic Cruise   January 2026
Selected participant for the January 2026 Northeast U.S. Shelf Long-Term Ecological   Woods Hole, MA
Research expedition. Will perform physical oceanography duties including CTD rosette
deployments, water sampling, and plankton processing.

STS Leeuwin II - Trainee Engineer   2018
Sailed as a trainee engineer on a multi-week voyage aboard a sail-training ship. Assisted   Perth, Australia
with engine room duties, electrical systems checks, and daily vessel maintenance while
at sea. Gained practical seamanship skills and experience living in close quarters on a
ship, contributing to comfort with shipboard life.

AWARDS

National Academies Excellence in Science Communication (First Place)   2024
Recognized for outstanding contribution to science communication. Global winner for
"best science communication for university student".

Fulbright Future Scholarship (First Place)   2020
First place winner of prestigious full postgraduate scholarship for postgraduate study.

TECHNICAL AND FIELD SKILLS

Programming: Python, MATLAB, Julia, C++
Oceanographic instrumentation: CTD rosettes, ADCPs, winch operation, GPS & IMU data logging, calibration
Electrical systems: Power distribution, wiring, PCB work, telemetry, field repairs
Mechanical: Light machining, assembly, rigging
Excellent physical fitness (1:19 HM; accustomed to long-duration expedition work)
Experience working in sub-zero environments (Svalbard, winter filming, sea duty)
PADI Advanced Diver
First aid and safety training