

Adam W. Lester, PhD

Postdoctoral Research Fellow

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[Portfolio](#) · [GitHub](#) · [Google Scholar](#)
[LinkedIn](#) · [Detailed CV \(PDF\)](#)

About

Neuroscientist and biomedical engineering postdoc with 15 years of basic and clinical research and 12 years of end-to-end research instrumentation development, including 10+ instruments deployed and in active use.

Education

PhD Neuroscience [University of Arizona](#)

BA Philosophy [UC Santa Cruz](#)

Core Competencies

- Technical & Project Leadership
- Cross-functional Leadership
- Industry-Research Collaboration
- System Architecture
- Iterative Design & Validation
- Basic & Clinical Research Methods

Technical Skills

Languages & Platforms

- Python, C/C++, C#, MATLAB, R
- ROS, PlatformIO, Linux, Git/GitHub

Control & Robotics

- Embedded systems (Pi, AVR, ARM)
- Closed-loop & real-time control
- Motion control (stepper, servo, GRBL)
- I/O (I²C, SPI, UART, TTL, EtherCAT)

Design & Fabrication

- Mechanical CAD (SolidWorks)
- DFM, BOMs, QC, jigs & fixtures, ECAD
- Wiring harnesses, soldering/rework
- Additive/subtractive manufacturing

Analytical Methods

- Data integration & standardization
- State-space modeling
- Computational modeling
- Signal processing
- Data visualization & statistics

Publications: see [CV](#) for selected list

Selected Experience

- 2021 – **Postdoctoral Research Fellow** [University of British Columbia](#)
Present • Led end-to-end design and deployment of 2 NC4 Lab open-source behavioral platforms ([Omniroute](#), [NC4touch](#)) and 3 subsystems, used collectively across 6 studies and 2 UBC labs
• Published 2 first-author methods: 1 in press (*eNeuro*) and 1 preprint
• Designed and co-led a human VR clinical study (completed, article in preparation) and a rodent navigation-network study (ongoing)
• Conceived, wrote, and won 2 competitive project grants
• Co-founding an early-stage UBC spinout with cross-department backing, open-sourcing custom instruments from UBC partner labs
- 2019 – 2021 **Postdoctoral Research Associate** [University of Arizona](#)
• Designed, led, and published an aging navigation study (*Behav Neurosci*, 2022) and wrote a funded NIA R01 renewal Specific Aim
• Designed a dual-site electrode implant used in 2 studies
• Led lab-side validation for 2 industry collaborations (NeuralLynx, TBSI), developing wireless neural-recording from beta to release
• Supervised a 4-student engineering capstone through to release
- 2013 – 2019 **Graduate Research Associate** [University of Arizona](#)
• Architected, built, and deployed the ICR Arena behavioral platform with first-author published methods (*J Neurosci Methods*, 2020)
• Contributed to 4 co-authored studies on neural-behavioral mechanisms in navigation, learning, and decision making
• Stood up lab's UA and UC Davis rat and primate electrophysiology
- 2011 – 2012 **Computational Modeling Intern** [HRL Laboratories, LLC](#)
• Built a temporal-lobe gating ANN for the IARPA [ICarUS](#) human-sensemaking program, and published a first-author *IJCNN* paper

Selected Projects

- Omniroute** Integrated closed-loop research systems, with portfolio links
90x90 cm rat maze with 60 addressable gates ([NC4gate](#)), projected cues, 3D tracking, [XY feeder gantry](#), and ROS control
End-to-end lead: CAD (SolidWorks), ROS (Python, C++), GUI (Python), firmware (C/C++); led build, PCB dev, and validation teams
- NC4touch** 3-touchscreen chamber for mice and rats with automated reward, overhead video, and multi-chamber Raspberry Pi-based control
Co-architect & hardware lead: CAD (SolidWorks), hardware integration, firmware; led build and embedded systems teams
- ICR Arena** 1.4 m augmented-reality rat arena with 360° projected cues, video tracking, and [mobile reward delivery](#)
End-to-end lead: CAD (SolidWorks), fabrication, control stack/GUI (MATLAB, C#, C/C++), led build and validation teams

Leadership & Service

- Founding Product Lead: MAPS Canada, Research Database (dev team of 4)
- Guest lecturer: BMED 400F Biomedical Robotics; NRSC 315 Neuro Methods
- Organizer: NRSC 595B Theoretical Neuro JC; Ephys Summer Workshop
- Open-Source: 3 full releases with build docs (OSF) + code (GitHub)
- Mentorship: 17 trainees (UBC); 10 (UA); supervised 3 Honors theses