

Eric Wait, PhD

Professional Summary

Strategic technology leader driving the adoption of state-of-the-art data science and AI to accelerate research across academia, business, and government partnerships. Currently expanding data science services and growing a specialized team at UW-Madison's Data Science Institute to support institutional priorities like the RISE-AI initiative. Combines 21 years of military leadership (2x Meritorious Service Medal) with deep technical expertise and a proven track record across academic research (HHMI Janelia), corporate startups (Elephas Biosciences), and high-stakes operations. Uniquely positioned to bridge complex, multi-agency objectives (DoD, DoE) by translating ambitious vision into deliverable technological systems while aligning cross-functional teams. Published outcome-driven framework (*J Cell Science* 2020) guiding 170+ scientists. Champions explainable AI with appropriate guardrails and demonstrates a commitment to project longevity through 12+ years maintaining scalable, production-grade systems.

Professional Skills

Strategic Technology Leadership Cross-functional stakeholder engagement, portfolio value articulation, business case development, regulatory alignment (CLIA, FDA, HIPAA), and AI/ML strategy development. Connects biology, engineering, software, marketing, and finance teams by translating technical constraints into business strategy and aligning execution with organizational vision through systematic accountability frameworks.

Core Technical Depth **Expert:** C, C++, CUDA, MATLAB, Python, SQL; **Production systems:** CI/CD, cloud (AWS, Azure), enterprise API design, distributed compute, GPU acceleration, ML/deep learning; **Domain:** LIMS integration, HPC, real-time signal processing, imaging, terabyte-scale data pipelines, cancer diagnostics.

Work Experiences

2026–Present **Associate Director for Data Science Services, DSI, UW-Madison, Madison, WI**

Lead the Data Science Services group delivering data, software, and AI capability to campus researchers, industry partners, and federal sponsors. Own hiring, process, and budget so a bench of senior technical staff stays on deep work instead of administrative overhead.

- **Team Leadership & Hiring:** Manage an eight-person bench of data scientists and research software engineers. Chaired the 2026 search adding three positions, designing the multi-level posting, locked scoring rubric, and staged committee review that took nearly 1,000 applicants to a shortlist.
- **Operations & Process:** Replaced ad hoc coordination with a documented operating model: a single front door for project intake, a published catalog consolidating six service lines, capacity forecasting, and two-deep project staffing that removes single-point-of-failure risk.
- **Strategic Partnerships:** Manage research relationships across campus, industry, and federal agencies, and build the delivery capacity behind DSI support commitments to 22 newly hired RISE-AI faculty.
- **Service & Revenue Model:** Built the cost-recovery pricing model behind DSI fee-for-service work, setting audit-defensible internal and external rates and a four-tier engagement menu now used for campus and industry agreements.

2021–2025 **Principal Data Scientist**, *Elephas Biosciences*, Madison, WI

Bridged executive vision with technical execution to accelerate cancer diagnostics from research prototype to production clinical tools. Managed 12+ personnel (6 microscopists, embedded FTE, 3 contractors, 2 vendors) with hiring authority, achieving 90% KPI success rate while ensuring regulatory compliance.

- **Product Innovation:** Accelerated diagnostics 9x (45min to 5min) by translating oncology needs into novel scanning methodology; reduced data volume 16x while maintaining accuracy.
- **Strategic AI/ML Advisory:** Advised executives on AI/ML strategy, aligning capabilities with business differentiation and translating technical possibilities into investment decisions.
- **Outcome-Driven Culture:** Instituted validation frameworks and CI/CD practices ensuring regulatory compliance (CLIA, FDA, HIPAA) and multi-site reproducibility.
- **Enterprise Systems:** Integrated LIMS platforms (Benchling, custom SQL) with Azure cloud workflows and enterprise APIs; established CI/CD pipelines for clinical data management.

2017–2021 **Data Scientist, Advanced Imaging Center**, *HHMI, Janelia Research Campus*, Ashburn, VA

Accelerated scientific discovery for 170+ researchers across 50+ labs (domestic and international) by linking cutting-edge computational capabilities with experimental biology. Partnered with 3 internal labs and scientific computing; published outcome-driven framework aligning cross-disciplinary teams.

- **Strategic Translation:** Translated AI/ML capabilities into experimental strategies for diverse scientific audiences, guiding resource allocation within critical 2-week windows.
- **Published Framework:** Published quantitative framework (*J Cell Science* 2020) developed with 170+ scientists to align experimental design with research outcomes.
- **Scalable Infrastructure:** Built GPU-accelerated workflows scaling from laptops to HPC (25K+ cores, 400 GPUs) for terabyte-scale biological datasets.

2015–2019 **Cofounder & Principal Consultant**, *Winter Wait Consulting LLC*, Sterling, VA

Advised senior leadership on solution architecture for global logistics modeling; transformed development culture through mentorship and enterprise-grade engineering practices.

- **Culture Transformation:** Transformed lone-wolf coding into disciplined engineering through code review, version control, and testing frameworks.
- **Technical Mentorship:** Mentored developers in combinatorial optimization and distributed systems for computationally intractable problems, building capabilities that outlasted engagements.

1998–2019 **Command Post Superintendent** (Director-equivalent), *Air National Guard*, Minneapolis, MN

Held **Top Secret** clearance. Earned **2x Meritorious Service Medals** (highest peacetime award for senior NCOs). Managed 7-person controller team with hiring/performance authority. 21 years military leadership teaching four transferable skills: communication under pressure, training as force multiplier, cross-functional coordination, and operational discipline.

- **High-Stakes Communication:** Briefed commanders and Pentagon officials during critical operations; translated between intelligence, operations, and leadership.
- **Force Multiplication:** Developed training program adopted Air Force-wide; built systems enabling team independence that reduced supervision requirements and accelerated onboarding.
- **Cross-Functional Coordination:** Orchestrated real-time information flow across intel, ops, logistics, surfacing critical info and facilitating consensus.

Education

2019 **Ph.D. in Electrical & Computer Engineering**, *Drexel University*, Philadelphia, PA

2012 **M.S. in Computer Science**, *University of Wisconsin*, Milwaukee, WI

2010 **B.S. in Computer Science**, *University of Wisconsin*, Milwaukee, WI

Patents

2024 Smith, J., Chao, L., **Wait, E.**, et al., *Label-free methods for assessing cell state in a biological sample*, *WIPO WO2024220558A2*

2019 Cohen, A., Dion, G., Winter, M., **Wait, E.**, Koerner, M., *Wearable Robotic Devices for Clinical Applications (remote PT for hand injuries, augmented strength for degenerative muscle diseases)*, *US 10,466,784*; *US 10,248,200*

2016 Bailey, T., Colletti, B., **Wait, E.**, King, A., Gandhi, B., *Parallel Processing for Solution Space Partitions*, *US 20160335568A1*

Open-Source Software

Hydra Image Processor (HIP): Creator and lead developer of an open-source, GPU-accelerated 5-D image analysis library with MATLAB and Python interfaces. Maintained for 12+ years and adopted by researchers worldwide; published in *Bioinformatics* (2019).

Direct 5D Viewer: Creator of the companion real-time viewer for 5-D microscopy data (x, y, z, channel, and time). Supports A/B comparison of processed output against the raw acquisition. That validation step is what gives researchers confidence in automated results from state-of-the-art instruments.

LEVER: Co-developer of an open-source toolset for cell segmentation, tracking, and lineaging; published in *Nature Protocols* (2011) and *Bioinformatics* (2016).

Selected Publications

Co-authored 25+ peer-reviewed publications in high-impact journals (Nature, Bioinformatics, IEEE) translating complex technical innovations into validated scientific and clinical outcomes. Full list at <https://ericwait.com/pubs>

- 2021 Moore, A.S., Coscia, S.M., et al. (incl. **Wait, E.C.**), Lippincott-Schwartz, J., Holzbaur, E.L.F., *Actin cables and comet tails organize mitochondrial networks in mitosis*, Nature
- 2020 **Wait, E.C.**, Reiche, M.A., Chew, T.-L., *Hypothesis-driven quantitative fluorescence microscopy: the importance of reverse-thinking in experimental design*, Journal of Cell Science
- 2019 **Wait, E.**, Winter, M., Cohen, A.R., *Hydra Image Processor: 5-D GPU image analysis library with MATLAB and Python wrappers*, Bioinformatics
- 2017 Valm, A.M., Cohen, S., Legant, W.R., et al. (incl. **Wait, E.**), Betzig, E., Lippincott-Schwartz, J., *Applying systems-level spectral imaging and analysis to reveal the organelle interactome*, Nature
- 2016 Winter, M., Mankowski, W., **Wait, E.**, Temple, S., Cohen, A.R., *LEVER: software tools for segmentation, tracking and lineaging of proliferating cells*, Bioinformatics

Invited Talks

- 2020 **Speaking Qualitatively: Communicating your research**, *Black American Biologists*
- 2019 **Quantifying Cellular Dynamics: Bridging Bio and a Data Sci**, *Syracuse University*
- 2017 **GPU Processing and Visual Validation of Lattice Lightsheet Data**, *Janelia Research Campus*

Awards & Service

- 2015 **Koerner Family Fellowship**, *Drexel University*, Philadelphia, PA
- 2014 & 2019 **Meritorious Service Medal**, *United States Air Force*, Minneapolis, MN
Highest peacetime award given to senior non-commissioned officers.
- 2018-2021 **Crisis Action Team Advisor**, *Janelia Research Campus*
High-stakes decision-making and coordination during operational emergencies.