Tensor Lab: Training the Next Generation of Clinical AI Leadership

An Information Session for Medical Students

Prepare for residency. Accelerate your research.

Our Mission

Train future physicians and AI leaders to conduct reproducible, high-impact clinical research that translates from bench to bedside.

Our Vision

Build a future where AI-integrated clinical practice becomes the standard, and physician-leaders work alongside AI experts to drive innovation.

The Triad Model: Core Research Unit

Each research project is led by three complementary roles working together toward publication-ready, clinically significant research.

Fellow

Technical Lead

- Lead technical design & coding
- Ensure reproducibility
- Own day-to-day execution
- Present at conferences

Med Mentor

Clinical Guide

- Provide clinical framing
- Guide project scoping
- Ensure clinical rigor
- Support manuscript prep

Faculty Mentor

Principal Investigator

- Provide clinical question
- Approve methodology
- Ensure IRB compliance
- Support publication

Enhance Your Required Summer Research: AI-Focused Support

The Reality

As a first-year medical student, you're required to do summer research anyway. Tensor Lab is an enhancement to that experience—not an additional burden.

Faculty Connections

- Access to top-tier mentors
- Institutional leaders in your field
- Networking opportunities
- Career guidance

Coding Support

- Learn AI & technical skills
- Hands-on programming mentorship
- Code review & feedback
- Technical infrastructure

AI Slant

- Transform your project with AI
- Clinical + technical expertise
- Publication-ready research
- Competitive advantage

The Bottom Line

Tensor Lab is an additional resource for your summer research if you want to give your project an AI focus and clinical significance.

Why AI Integration Matters: The Urgent Need for Tensor Lab

The AI Revolution

AI is fundamentally reshaping clinical practice. Most physicians lack the technical expertise to understand, validate, and deploy AI responsibly.

The Critical Gap

Severe shortage of physician-scientists who bridge AI and clinical medicine. AI researchers lack clinical context; clinicians lack AI expertise.

Why Tensor Lab Exists

- **Cultivate physician-scientists** who speak both languages
- **Produce rigorous research** that translates AI from lab to bedside
- **Lead the transition** into the new era of AI-integrated medicine

The Clinical Relevance Gap: Where Medical Students Make the Difference

The Problem

Many AI projects lack clinical relevance and real-world application. Brilliant algorithms don't translate to better patient care without clinical context.

The Solution

Medical students provide the clinical input and context that transforms AI research into clinically significant, impactful work.

What Medical Students Bring

→ **Clinical Perspective:** Frame AI problems in ways that matter to patient care

→ **Domain Expertise:** Understand clinical workflows and real-world constraints

Research Incubator: Accelerating Clinical AI Publications

The triad model and mentorship create a multiplier effect that accelerates publication and creates authorship opportunities for all participants.

How It Works

- → **Fellow leads** technical execution and owns the project
- → **Med Mentor provides** clinical guidance and manuscript support
- → **Faculty Mentor ensures** rigor and publication strategy
- → **Result:** Faster publication timeline with mentorship at every step

Authorship Opportunities

- → **Fellow:** First or lead author on publications
- → **Med Mentor:** Co-first-author on their fellow's clinical papers and manuscripts and potentially co-authorship on other projects
- → **Faculty Mentor:** Senior author and publication advocate
- → **Bylaws ensure** fair attribution and recognition

Publication Impact

- → **Accelerated timeline:** From project to publication **in one summer** is **very realistic** in the AI research space
- → **High-impact venues:** Peer-reviewed journals and conferences
- → **Career advantage:** Publications strengthen residency applications

Two Pathways: Learn AI Skills or Leverage Existing Skills

Pathway 1

No AI Skills? Learn & Lead Clinically

Learn technical & AI skills through mentorship and hands-on work

Provide clinical direction and clinical input to the project

Perfect for: Medical students wanting to bridge AI and medicine

Develop residency-valued skills: Clinical judgment + technical literacy

Pathway 2

Have AI Skills? Contribute Programming

Do programming & technical work on the AI project

Apply clinical context to your technical contributions

Develop leadership skills: Mentoring fellows and guiding strategy

Perfect for: Medical students with technical background

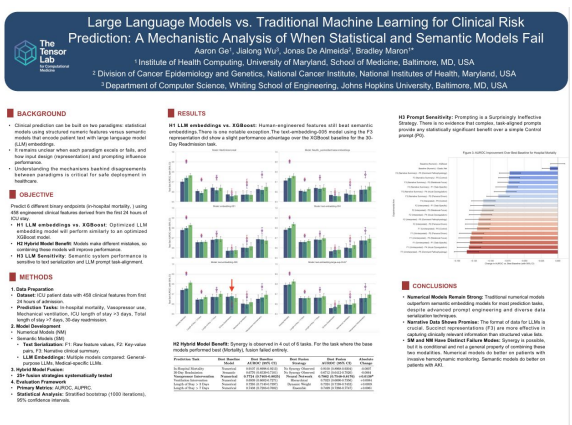
Pilot Program: Demonstrated Success

Our inaugural pilot program demonstrated the power of the Tensor Lab model with exceptional outcomes across all metrics.

Talent Pool

200+

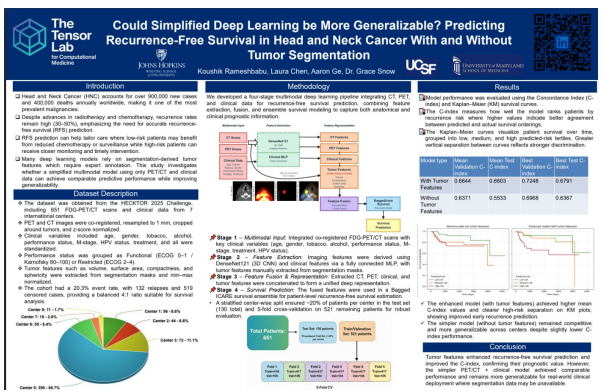
- ✓ Applications received
- ✓ $50K NIH grant winners
- ✓ NASA, Google, Apple internships



Research Output

8/10

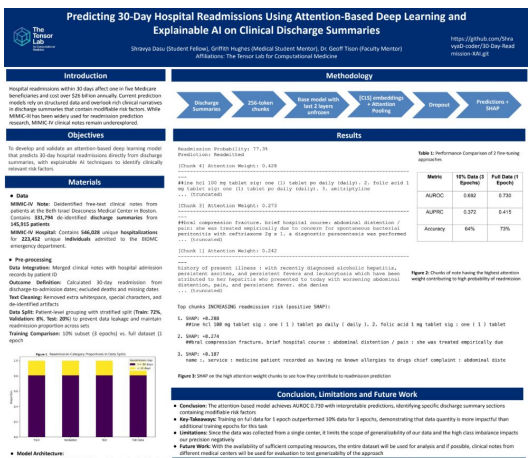
- ✓ Fellows presented posters
- ✓ 10 total in cohort
- ✓ 80% presentation rate



Publication Impact

4+

- ✓ In submission to journals/conferences
- ✓ High-impact venues
- ✓ Rigorous, reproducible research



Pilot Program: Strong Mentorship Network

Network Strength

Mentored by **established leaders in clinical AI and data science** from top-tier institutions.

Featured Institutions

- University of California, San Francisco (UCSF)
- University of Maryland, School of Medicine

> **Unparalleled networking with PIs and department heads shaping the future of medicine.**

Featured Mentors

> **Dr. Andreas Rauschecker, MD, PhD**
>
> Co-Director, Center of Intelligent Imaging, UCSF. Leader in advanced medical imaging and AI-driven diagnostics.

> **Dr. Stefano Bini, MD**
>
> Maria Manetti Shrem Endowed Professor, Orthopedic Surgery, UCSF. Expert in surgical innovation and outcomes research.

> **Dr. Jonas De Almeida, pHD**
>
> Director of data science and senior investigator, National Cancer Institute. Leader in clinical AI research and data science.

> **Dr. Bradley A. Maron, MD**
>
> Director of Pulmonary Hypertension Program & Co-Director of UM-IHC, University of Maryland. Director of Scientific Operations.

Plus faculty mentors across oncology, radiology, and other specialties.

Commitment Timeline for Chapter Directors

Time commitment is **strategically managed** to be **high-impact without being overwhelming**.

Feb – May

Recruitment Phase

Heaviest commitment period

- **Market** the program broadly
- **Recruit & interview** fellows and mentors
- **Finalize project scopes**

May – August

Fellowship Phase

Manageable advisory role

- **Oversee progress** & milestones
- **Provide guidance** as needed
- **Host** cohort meetings and the research symposium

Designed for Demanding Schedules

Front-loaded recruitment occurs when you have more flexibility. Summer role becomes **manageable advisory position** compatible with your existing commitments.

Recruitment Timeline: Three Phases

A sequential recruitment flow ensures the right people are in place at each stage to build a successful chapter.

Jan 15 – Jan 31

Phase 1: Directors Onboarding

Leadership recruitment

- ➔ **Handover:** Directors receive the Tensor Lab "Chapter Playbook", communication channels (Discord), and administrative credentials.
- ➔ **Strategy:** Executive Director meets with National Directors to align on strategic vision.
- ➔ **Infrastructure:** Technical Director establishes the project repository (website/portal) where proposals will be hosted.

Feb 1 – Feb 28

Phase 2: Med mentors recruitment

Mentor recruitment

- ➔ **Recruitment:** Directors market the program to the M1 class to secure Med Mentors who have summer research blocks.
- ➔ **Proposals:** Med Mentors submit project proposals.
- ➔ **Feasibility Check:** Technical Director reviews proposals to ensure the AI scope is realistic before they are published.

March – May

Phase 3: Project Scoping

Project & fellow selection

- ➔ **Launch:** Directors publish approved proposals to the central chapter website.
- ➔ **Applications:** Fellows apply via the portal (Limited to 3 applications per Fellow).
- ➔ **Selection:** Directors route applications to Med Mentors/PIs.
- ➔ **Drafting:** Med Mentors and PIs interview and select their top choice Fellow to finalize their Triad.

Roles and Responsibilities

Each chapter is led by a balanced leadership triad with complementary expertise and responsibilities.

Executive Director

Strategic Leadership & External Relations

Institutional Alignment: Interface with medical school administration to ensure program compliance.

Faculty Recruitment: Secure high-level PI buy-in.

Cohort Oversight: Monitor the selection phase to ensure every viable project secures a Fellow; resolve any "unmatched" project issues.

Technical Director

Research Quality & Technical Infrastructure

Feasibility Review: Screen all Med Mentor project proposals before they go live to ensure the "Ask" is technically possible for a summer timeline.

Technical Advisor: Act as a consultant for Med Mentors during the selection process (e.g., "Does this applicant's GitHub show the right skills for your specific project?").

Standardization: Ensure all projects use the standard Tensor Lab repository structures.

Operations Director

Logistical Execution & Workflow Management

Application Workflow: Collect project abstracts from Med Mentors and organize them for the website. Manage the application portal.

Distribution: Route incoming applications to the respective Med Mentors and PIs for review.

Onboarding: Once Med Mentors select their Fellow, send final acceptance letters and onboarding packets.

Med Student Mentor

Clinical Mentorship & Publication Guidance

Define the Scope: Identify a specific clinical problem and submit a project proposal/abstract for the recruitment portal.

Select the Team: Review Fellow applications from the portal, interview top candidates, and select the best technical fit for the project.

Lead Publication: Drive the manuscript preparation process and ensure the final research meets clinical publication standards

ERAS: What this looks like to program directors

The **Founding Chapter Director role** demonstrates initiative, organizational drive, and program management—qualities that set you apart.

Demonstrated Initiative

Built a program from the ground up, demonstrating entrepreneurial thinking and proactive leadership that residency programs value.

Organizational Drive

Proven ability to manage complex projects across recruitment, operations, and technical infrastructure .

Networking

Network with **Faculty PIs as a program leader**, building relationships at the institutional level with established researchers and mentors.

Program Management

Leadership experience in building research infrastructure systems (the "Marketplace") that scale research output across an institution.

Join the Next Generation of Clinical AI Leaders

This is a **unique opportunity** to build a legacy, gain **high-level leadership credentials**, and **exponentially accelerate your research career**.

ERAS Differentiator

Leadership role that sets you apart from competition in residency applications.

Expand Your Network

Direct access to top-tier PIs and clinical AI experts from leading institutions.

Authorship Volume

Co-authorship opportunities far exceeding single research projects.

Key Timeline

Late December	Early January	Mid January
Application Deadline	Interview Invitations	Final Decisions

Next Steps

Visit our website to **review the application packet** and submit your materials. Secure your place in this elite network of clinical AI researchers and leaders.

Thank You

Thank you for considering this **unique opportunity** to build a legacy and **exponentially accelerate your research career**.

Get in Touch

Email
contact@thetensorlab.org

Website
www.thetensorlab.org

Follow Us
@TBD

Next Steps

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Applications open December 1st • Interviews December 15th-31st • Final decisions in January 1st