



**University of Massachusetts
Center for Clinical and Translational Science
(UMCCTS)**

**IMPACT REPORT
2024 - 2025**



**CENTER FOR CLINICAL AND
TRANSLATIONAL SCIENCE**

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From the UMCCTS Director: The Power of Partnerships

The University of Massachusetts (UMass) Center for Clinical and Translational Science (UMCCTS) is an integrated partnership that spans the **UMass five campus system** and three of the state's largest health systems (**UMass Memorial Health**, UMMH, Worcester, MA; **Baystate Health**, Springfield, MA; and **Lahey Health**, Burlington, MA). Together, we share an **overarching goal** of **speeding the development of evidence-driven, real-world approaches to promoting health, treating disease, and responding to urgent public health needs** locally, regionally, and nationally. Since 2010, NIH/NCATS funding through the CTSA program has allowed us to leverage the significant scientific and clinical strengths of the UMass campuses and clinical partners to advance **transdisciplinary collaboration**, *which integrates different perspectives and knowledge across scientific disciplines to generate new frameworks for creating solutions to complex, real-world problems*. This report details ways in which the UMCCTS has supported our investigators and trainees as they have worked together with community partners to: identify and overcome scientific roadblocks and operational inefficiencies; advance our mechanistic understanding of disease; apply insights and novel technologies to develop new prevention and treatment strategies; contribute to guidelines and policies that changed clinical care or public health practice; and trained the next generation of clinical and translational scientists.

Over the past year, we used the process of preparing our CTSA renewal application for submission in May 2025 to evaluate our strategic goals. Looking ahead to the next seven years, we will continue to build our capacity for creating solutions to clinical or public health needs through translation of discoveries and innovative technologies. This includes expanding our capacity for aggregating and analyzing data at scale as we build a Learning Health System. In this regard, we are especially pleased to report that Allan Walkey, MD, Division Chief of Health Systems Science in the Department of Medicine, has joined our leadership team as UMCCTS Co-Director. Since joining us, Dr. Walkey has led several key UMCCTS initiatives, including his service as the Interim Director of the joint Lahey-UMass Chan Institute for Health System Science, and the development of the Health Systems Science (H3S) Scholar Program. Together with Dr. Apurv Soni (Asst Prof of Medicine; UMCCTS TL1 alumnus) and the Program in Digital Medicine, Dr. Walkey is building capacity for extending our LHS into home and community settings. Our Translational Outreach Research Center, developed by Dr. John Harris (Dermatology, UMass Chan) provides access to human specimens and models, novel assay systems, and translational services that help investigators to better define the molecular mechanisms of disease and bring novel targeted therapies to early-stage clinical trials.

Our Bridging Engineering and Medicine (BEAM) program, led by Dr. Rachael Sirianni, capitalizes on the strengths of engineering programs across the UMass system to advance faculty collaboration and transdisciplinary, experiential training. Drs. Jan Nissly (UMass Chan) and Laura Hayman (UMass Boston) will continue to build out our highly successful EXCEL-UP program to engage UMass undergraduates in clinical and translational science career pathways. In the coming years, we will expand training in Commercialization and Entrepreneurship through our I-Corps®NCATS Program. Our K12 and T32 programs will include new concentrations in informatics and clinical trials and will be expanded to include participants from all partners.

As always, we are incredibly grateful to our community partners for informing and enriching our research efforts, our dedicated teams of investigators and collaborators, our trainees who inspire us with their enthusiasm and energy, and our UMCCTS staff for their tireless efforts. We are also grateful to the National Center for Advancing Translational Science for grant support through our Clinical and Translational Science Award. Last and not least, we thank UMass and UMass Chan leadership, and especially President Marty Meehan, Chancellor Michael Collins, and Provost Terry Flotte for their unwavering institutional support over the years.

We look forward to continuing to advance our important work with you in the years to come.

Katherine Luzuriaga, M.D,

UMass Memorial Health Care Endowed Chair in Biomedical Research Professor,
PI and Director, UMass Center for Clinical and Translational Science; Vice Provost for Research, UMass Chan

UMCCTS Vision

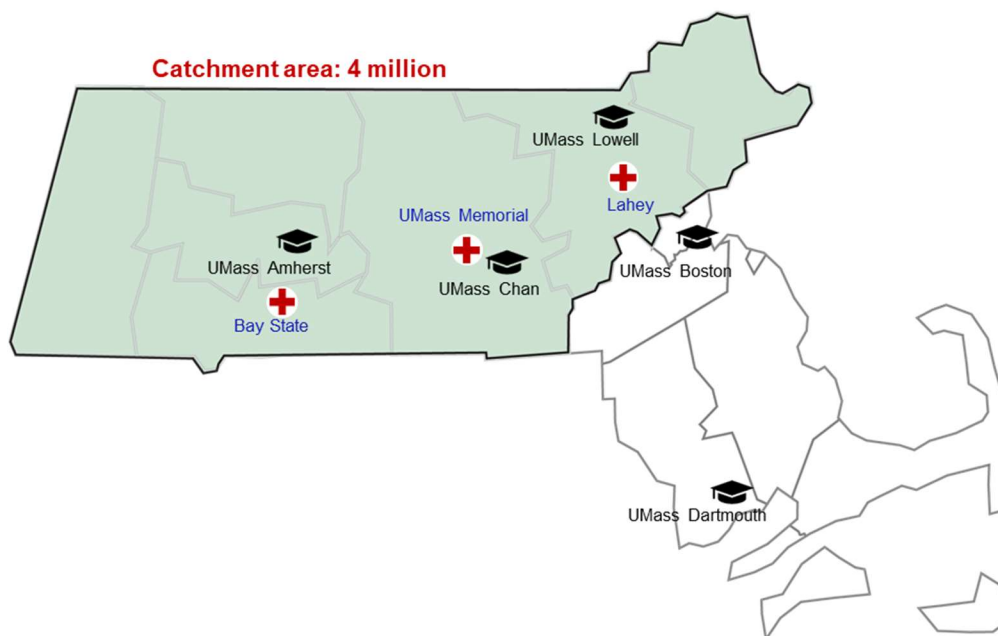
Build healthier communities together through translational innovation

UMCCTS Mission

Advance learning and discovery to solve health challenges and improve health by:

1. catalyzing, rigorously testing, and disseminating evidence-driven approaches that remove translational science barriers to efficient, high quality, inclusive, and impactful clinical and translational research
2. building a scientifically skilled workforce of professional staff and investigators capable of changing paradigms in translational science and clinical and translational research

Our Partners




Total beds
~1,986


Annual ER visits
260K


Annual outpatient visits
2.1M


Annual admissions
104K

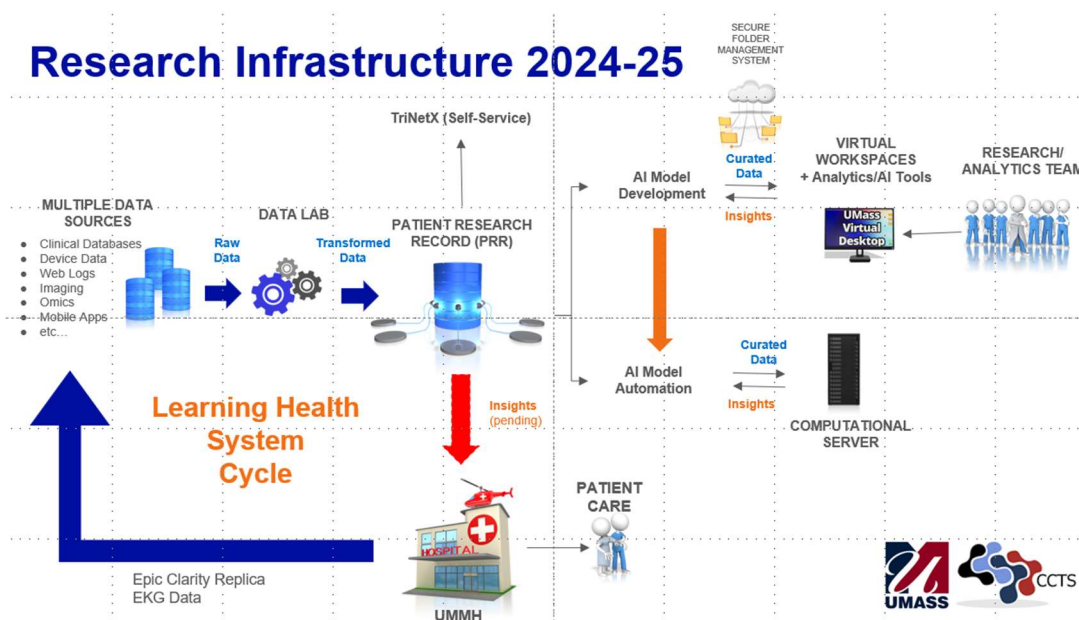
RESOURCES

Research Informatics Core (RIC)

The UMCCTS Research Informatics Core (RIC) is the nucleus and driver for biomedical data access, analytics, and informatics tools across our five UMass campuses, three clinical partners, and community collaborators.

Expansion of our PLUM architecture to support AI development and validation.

Over the past year, we have expanded our **Platform for Learning Health System at UMass (PLUM)** architecture to incorporate a broader range of data and to include support for AI development and validation. We have added virtual workspaces and analytics/AI tools for researchers. Our AI model development and analytic tools have allowed investigators to collaborate on exciting research, develop the AI Assurance Lab, and form partnerships for evaluating healthcare AI tools.



Worcester Integrated Health Data Exchange

Over the past year, the City of Worcester provided funding for the **Worcester Integrated Health Data Exchange (WIHDE)** initiative, a partnership between multiple Worcester institutions. **Adrian Zai, MD, PhD, MPH**, director of the UMCCTS Research Informatics Core (RIC) is leading the efforts at UMass Chan. WIHDE uses a data-sharing platform developed by RIC that enables institutional partners to share secure health and demographic data, and to build tools to facilitate data analyses and the application of insights for improving public health approaches. The first WIHDE project conducted over the past year focused on building tools that use aggregated data to integrate care and improve the health of individuals with opioid use disorder in the Worcester area community. Dr. Kavita Babu, Chief Opioid Officer for UMass Memorial Health Care, and her team worked with data from UMass Memorial Health System and Family Health Center of Worcester to develop dashboards to identify gaps in Hepatitis C (HCV) and HIV treatment among people with opioid use disorder. The dashboards are being used to support screening for HCV and HIV, linkage to care, and policy planning.

A second year of funding will include a focus on maternal health equity and infant mortality. "We are prioritizing maternal health equity because we're doing very poorly addressing the infant mortality rate in this state. It's a big problem we need to address from a public health perspective, and to do that we need the ability to collate and analyze more data," Zai said.

Newly Established Massachusetts AI Assurance for Healthcare (MAIAH) Lab



The Massachusetts AI Assurance for Healthcare (MAIAH) Lab provides human-in-the-loop evaluation of health AI, focusing on fairness, safety, security, usability, and transparency. MAIAH is supported by a multidisciplinary team including experts from UMass Chan Medical School, UMass Lowell, the Coalition for Health AI (CHAI), and MITRE (a leader in AI assurance and systems engineering). Funding is supplied by a MassTech Grant.

MAIAH Value Propositions

- **Independent & Impartial AI Evaluation:** Unlike industry-funded alternatives, MAIAH provides **unbiased** AI assurance.
- **Regulatory & Compliance Support:** Help companies meet **FDA** and other regulatory standards.
- **Human-in-the-Loop (HITL) Testing:** Access to **real-world clinical testing environments**
- **Access to Clinical & Research Data:** Leverage **PLUM & RIC** to evaluate AI on real-world datasets.

Research Informatics Core partners with Red Cell Partners to test and certify Healthcare AI Products

The UMass Chan Health AI Assurance lab, directed by **Adrian Zai, MD, PhD, MPH**, has begun a two-year collaboration with Red Cell Partners to test and certify healthcare artificial intelligence products including products for healthcare delivery and regulatory compliance.

"This collaboration enables a rapid yet rigorous pathway to develop, test and evaluate AI tools using real-world clinical data," Zai said. The goal is not only to help clinicians make better decisions about patient care, but to develop trust in AI and subsequent adoption by involving clinicians in the development and evaluation of AI technology and products. ([For more information, click here.](#))



Predictive analytics for patient outcomes and disease progression using EHR data

Together with Kimiyoshi J Kobayashi, MD, UMMH Chief Medical Officer, and Richard T Ellison, MD, UMMH infectious disease physician, RIC developed and compared machine learning models to predict potential surgical site infection (SSI) cases following colon surgeries thereby enabling healthcare professionals to better prioritize patient care. The study used data obtained from electronic health records focusing on colon surgery patients between 2018 and 2023. Initial results indicate that machine learning can enhance the efficiency of SSI surveillance by enabling healthcare professionals to prioritize high-risk patients. ([Celik U et al. JMIR Formative Research. 2025](#))

Research Informatics Block Rotation Course Curriculum for Clinical Informatics Fellows

To expand and strengthen a health informatics-savvy workforce, RIC has recently developed a rotation course for the Clinical Informatics and Program in Digital Medicine Fellows in the Department of Medicine at UMass Chan Medical School.



8-Week Program developed by Research Informatics Core (RIC)

- Provides a comprehensive understanding of research informatics, data management, and advanced analytical techniques
- Focuses on the application of AI and machine learning in clinical and research settings

Alignment with Clinical Informatics Subspecialty (CIS DoP)

- Program designed in line with AMIA's 2018 Clinical Informatics Subspecialty Practice Analysis

Emphasis on Domain 4: Data Governance and Data Analytics

- Content tailored to address key aspects of data governance and analytics

Transforming Informed Consent Generation Using Large Language Model

Large Language Models Use Case

Creating Informed Consent Forms (ICFs) for clinical trials that cover all required elements in a format that is easily understandable by study participants is time-consuming for investigators. **Qiming Shi, MS, Adrian Zai, MD, PhD, MPH** and colleagues studied the performance of a large language model (LLM) in generating ICFs that are readable and understandable while maintaining accuracy and completeness. Their study found that the LLM was able to generate ICFs which were comparable to human generated ICFs with regards to readability, content, accuracy, and completion. Using this tool, investigative teams will be able to reduce clinical trial start-up times and enhance participants' understanding of clinical trials through AI-generated ICFs. ([Shi Q, et al JMIR Med Inform. 2025](#))



ICFs remain too complex: Most informed consent forms (ICFs) far exceed the recommended 8th-grade reading level. In a review of over 5,200 ICFs, 91% were above that threshold, averaging a 10.9 grade level, and many were longer than the recommended 10 pages

Time to Generation: Up to **90% reduction in effort** reported **Quality of ICFs:**

- Comparable accuracy and completeness to human-generated forms
- Improved readability (7.95 vs 8.38 grade level)
- Significantly higher understandability (90.6% vs 67.2%)
- Perfect actionability (100% vs 0%)

Satisfaction (Investigators/IRB): Not directly measured, but improved participant-friendliness and clarity suggest potential for greater acceptance



Unveiling readability challenges: An extensive analysis of consent document accessibility in clinical trials

Published online by Cambridge University Press: **16 September 2024**

Adrian H. Zai , Jamie M. Faro and Jeroan Allison

Show author

Community and Stakeholder Engagement (CASE)

Education and Workforce Development

CASE provided educational programs for the research community through a variety of channels meeting the researchers' needs.

- Trainings, consultations, and tools
- Workshops for academic and community partners
- Didactics within several graduate-level courses and workforce development programs
- Mentorship in community engagement
- Strengthening Translational Research in Diverse Enrollment (STRIDE) for researchers
- Seminars and Symposiums

In February 2025, in collaboration with other CTSA hubs in Massachusetts, CASE hosted 150 attendees at an ***AI and Community Engaged Research*** symposium for researcher and community perspectives on artificial intelligence and community-engaged research.

Consultation Service

Toward CASE's goal of advancing the science and practice of collaboration and community engagement, CASE continues to provide consultations to the research community. CASE provides consultations to about 2-3 research projects a month, offering guidance and resources to researchers.

Common Questions

- How do I integrate a community engaged approach in my research?
- How do I get started?

Basics, partner identification

- How do I build a community engaged infrastructure?

Project panels, community advisory boards, community investigators

Melissa Goulding, PhD (KL2) *"Improving Identification and Management of Pediatric Hypertension through Community Clinical Linkages: Development and Beta Testing of BP-Link"*

Lara Kovell, MD (former KL2) (K23HL163450) *"Development of a mobile health intervention for blood pressure management in pregnancy"*

Grace Ryan, PhD, MPH (U48DP006883) *"ARISE Center for Rural Vaccination at UMass Chan Medical School"*

Community-Led Rapid Qualitative Research

CASE supported the Worcester Community Food Assessment (WCFA) by providing survey and analytical support. During our participation in the WCFA, we developed, tested, and evaluated a model, adapted from Rapid Qualitative Inquiry methods, for conducting community-partnered qualitative research. Our developed model was disseminated via trainings (9 departments 6 other institutions), YouTube (~1,200 views), series at U Minnesota, integrated in the Qualitative Research class, and published. ([*Goulding, 2025 Progress in Community Health Partnerships \(PCHP\)*](#))

The method is being used in at least 5 funded projects (UMass Chan, Harvard University, Brown University, University of Oregon).

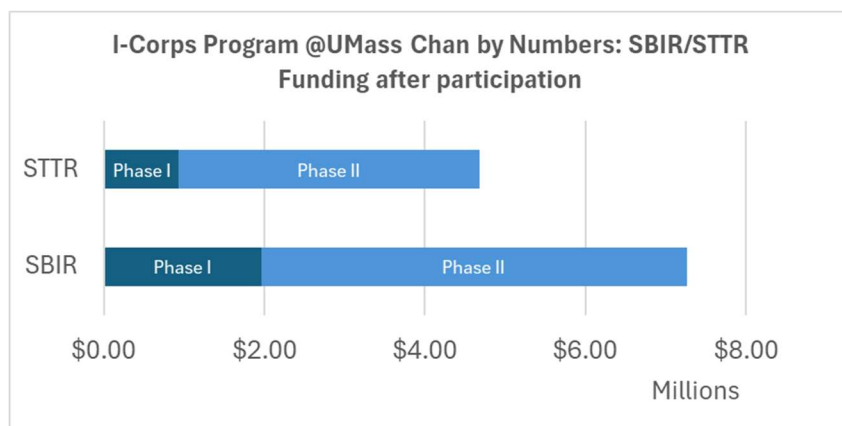
Worcester Community Food Assessment

Learning from the Lived Experience of Worcester Residents



I-Corps @ UMCCTS

UMCCTS and supplementary NCATS funding support the translation of biomedical research by providing early-stage education and strategic guidance during the ideation phase of technology development through the NCATS-funded, NSF-developed I-Corps program. Immersive training focuses on enhancing entrepreneurship competencies that enable translation and that prepare participants to apply for additional funding through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.



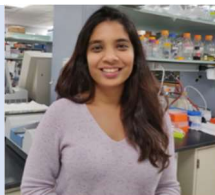
Numbers to date

Number of Teams	46
Number of Startups	13
Number of STTR awards	7
Number of SBIR awards	11



Hector Torres, MSc
Co-Founder & CEO, Hemorai
2024 Cohort

The structured approach to customer discovery challenged our assumptions, exposed blind spots in our initial strategy, and ultimately helped us clarify our market priorities. It was through I-Corps that we shifted our focus from broad technical development to addressing specific unmet needs in postoperative and postpartum hemorrhage monitoring, two areas with significant clinical urgency and commercial potential. The experience not only improved our product-market fit, but it also strengthened our ability to communicate value to clinicians, investors, and strategic partners. I still reference the frameworks we learned when making decisions about product design, regulatory strategy, and commercialization.



Sneha Shah, PhD
Assistant Professor
UMass Chan Medical School
2024 Cohort

As a lab-based research scientist, the idea of transitioning into entrepreneurship initially felt daunting. My work had led to a potential new therapeutic for a rare disease, and a patent had been filed—but was I truly ready to step beyond the familiar world of basic science research? The I-Corps program gave me a clear introduction to the fundamentals of building a business model. Through the customer discovery process, we gained a much broader understanding of the market. I valued the post-course opportunities, including grant-focused sessions like the Department of Defense (DoD) and NIH SBIR/STTR Proposal Preparation Workshops.



Nate Hafer, PhD
UMass Chan, Worcester
I Corps Program Leader



Monika Chitre, PhD
UMass Chan, Worcester
I Corps Project Manager

UMCCTS Pilot Project Program

UMCCTS pilot funding supports trans-disciplinary research focused on transcending a translational roadblock with the goal of yielding new products or approaches that address unmet health needs. The UMCCTS Pilot Funding Program places a high priority on awards that engage multiple partners; 40% of awards to date are multi-campus. A total of 207 grants have been awarded to investigators in 43 departments across our partners, subsequently generating \$96.8 million in external funding (10.8X return on investment).

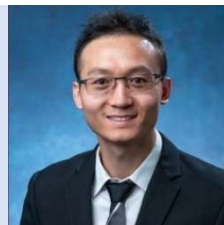


Maurizio Cattaneo,
PhD
UMass Lowell

CELiD Gene Therapy for the Treatment of Type I Diabetes



Sylvain Cecchini, PhD
UMass Chan

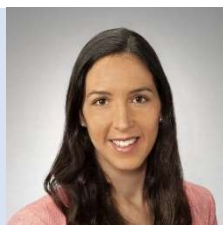


Yonghui Ding, PhD
Worcester Polytechnic Institute

3D-Printing of Bioresorbable, Micropatterned Vascular Grafts for Arterial Regeneration



Douglas Jones, MD
UMass Memorial Health



Stephanie Puig, PhD
UMass Chan

Circulating growth factors as biomarkers for risk of adverse opioid outcomes



Stephanie Carreiro, MD, PhD
UMass Chan



Leslie Shaw PhD
UMass Chan

Cell Specificity of siRNA Uptake and Silencing in the Tumor Microenvironment



Anastasia Khvorova, PhD
UMass Chan

Research Infrastructure

We are here to help...

IRB Office Hours

1444 Consultations

245 Sessions

~ 6 attendees per session

OCR Office Hours

186 Consultations

109 Researchers

41 Departments

"It is incredibly helpful to have these office hours and we really appreciate it!"

~Principal Investigator

"I love that you guys have office hours!"

~Student

"I'm so glad you have these office hours.... they're awesome. I can contact you with questions without feeling like I'm bothering you all."

~Staff

FY 25

Office Of Clinical Research (OCR)

The Office of Clinical Research (OCR) provides clinical research education and training, budget development, contract negotiation, Medicare coverage analysis, financial management, and related services to advance the quality and efficiency of our research. Budget, contracting, and coverage analysis staff are centralized in the UMCCTS to save time for investigators. UMCCTS services are submitted to our Translational Accelerator (TRAcS) system and are handled by OCR staff.

OCR- Research Informatics Core Collaboration: Using AI for Recruitment Platform

OCR partnered with RIC to use the UMass Chan in-house AI tool to streamline content processing for our clinical trials recruitment site, [ConqueringDiseases.org](https://conqueringdiseases.org). The study consent and protocol are provided to the AI tool and study recruitment content is quickly generated for inclusion in the Conquering Diseases platform. This process has significantly reduced the time involved in writing study descriptions for the platform. Further, by utilizing the in-house AI tool, information related to the protocol and consents remain confidential.

UMCCTS Clinical Research Center (CRC)

The UMCCTS CRC is dedicated to efficient, reliable, and high-quality study support at a reasonable cost for UMass clinical investigators. It is home to integrated clinical research programs including those focused on Duchenne Muscular Dystrophy, Vitiligo, and Amyotrophic Lateral Sclerosis. Resources include exam rooms and infusion spaces for study visits; touchdown space with computers for researchers, study teams, and external monitors; an in-unit BSL-2 laboratory; and a pneumatic tube system linked to the hospital laboratories. The CRC is staffed with experienced clinical research nurses and coordinators who provide study coordination, lab processing and shipping, and regulatory support. Adult and pediatric clinical research nurse services include study drug administration as well as collection of patient data and biospecimens. CRC staff mentor participants in the EXCEL Undergraduate Pathway (EXCEL-UP) program providing clinical research training and clinical trial experiences across a variety of studies. (See below for a description of the EXCEL-UP program.)

Supported in FY 2025

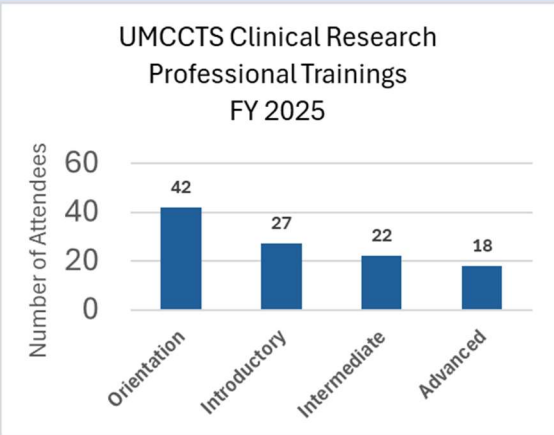


Client Testimonial: I want to recognize the outstanding work of the CRC nursing staff. They have consistently gone above and beyond expectations to meet our study participants' needs, even adapting procedures when necessary to ensure success. Their dedication and flexibility have been instrumental in making our studies not only possible but successful (well beyond their job "duties"). I truly believe that our progress would not have been achievable without their commitment and professionalism.

Workforce Development

Clinical Research Professional Career Development

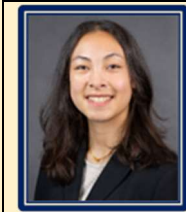
The Clinical Research Professionals Group (CRPG), led by UMCCTS OCR staff, develops training and career development activities for clinical research professionals, including study coordinators and research nurses. Monthly meetings included a variety of topics including best practices in clinical research and human research protection, and updates from UMCCTS cores, including the RIC, Investigational Pharmacy, and CRC. Membership has steadily grown to 283 members, with an average monthly meeting attendance of 85 members. UMCCTS professional training includes an orientation for onboarding new clinical research professionals, as well as a series of three Clinical Research Professional Training Courses focused on developing increasing levels of competencies.



Orientation	Introductory	Intermediate	Advanced
- Introduction to UMCCTS clinical research resources - Systems account access - Institutional policies	- Institutional Review Boards - Study Documentation and Essential Files - Adverse Event Reporting	- Billing Completion - Feasibility, Recruitment, and Study Start-up - Quality Management - Reportable New Information and Corrective Action Plans	- ClinicalTrials.gov - FDA Inspection Preparedness - OnCore Reporting / Advanced Features - On-Boarding and Off-Boarding staff

Bridging Engineering and Medicine (BEAM)

BEAM engages Biomedical Engineering undergraduates from UMass Amherst, UMass Dartmouth, and UMass Lowell through a structured 10-week summer research internship at UMass Chan and a two-semester, faculty mentored Engineering Senior Design experience. In 2024-2025, 40 students participated in 10 Senior Design teams with eight students working on research projects affiliated with UMass Chan.

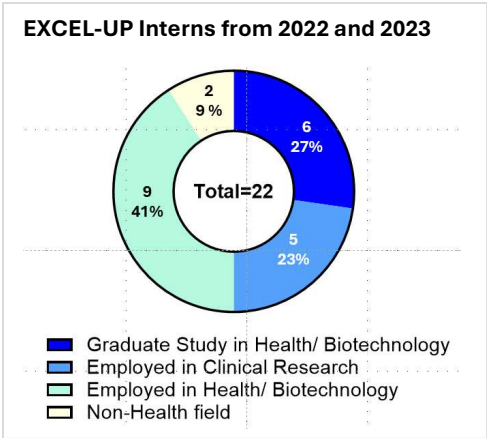


Lily Bigelow, UMass Amherst student and 2024– 2025 BEAM Participant Lily has been conducting research at UMass Chan through the BEAM program since Spring 2024. Her work is the focus of a multi-site clinical collaboration as well as an R01 in preparation.

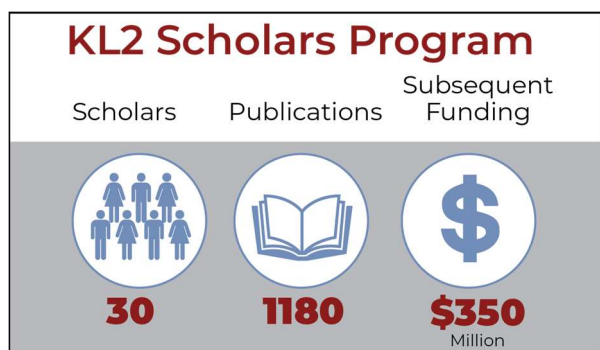
- Research for Course Credit and Summer internship (MD mentor)
- 2-semester Honor’s Thesis and Pursuit of a Master’s degree (PhD mentor)
- Considering pursuit of a doctorate at UMass Chan

EXCEL Undergraduate Pathway (EXCEL-UP)

EXCEL-UP is a 10-week summer program which includes team-based experiential training to engage rising juniors and seniors from the 4 UMass undergraduate campuses in clinical research professional careers. Thirty-four students participated over the first 3 summers. A follow up of the 22 participants in the 2022 and 2023 cohorts revealed that most of the participants (91%) are working or studying in the health or biotechnology fields. Five (23%) are currently employed in clinical research.



KL2 Scholars



Spotlight on **Laurel O'Connor, MD, MS – KL2 Scholar, 2023-25**

As an Emergency Medicine physician, Dr. Laurel O'Connor is accustomed to operating at a rapid pace. Her career development as physician-researcher has, accordingly, moved similarly during her time as a KL2 Scholar. As the UMass Memorial Health KL2 Health Systems Scholar from 2023-25, Dr. O'Connor forged working relationships with the UMass Chan Program in Digital Medicine and Worcester-based first responders, conducting innovative, community-based research involving the use of mobile health interventions to improve the health of medically complex older adults. During this time, she secured an institutional PACE award that funded a separate pilot study, submitted multiple grant proposals, and published 30 scholarly journal articles, all while completing a Master of Science degree in Clinical Investigation.

In July 2025, she was awarded a K23 Career Development Award by the National Heart, Lung, and Blood Institute, a division of the National Institutes of Health. The new award will allow her to design and implement the PEACE Intervention: a paramedic-driven intervention designed to prevent exacerbations and emergency services encounters among individuals with Chronic Obstructive Pulmonary Disease (COPD).

	Hawa Abu, MD, PhD Department of Medicine Mentor: Alok Kapoor, MD Project Title: Partner informed interventions to guide clinical decision-making processes and overcome identified barriers to the uptake of stroke prevention strategies among older adults with atrial fibrillation and coexisting multiple chronic conditions
	Raquel Binder, PhD, MPH Department of Medicine Mentor: Ann Moormann, PhD Project Title: Unraveling the Transmission Dynamics of Respiratory Viruses among Latinx and Black Communities in MA: Translating Basic Science into Intervention Policy
	Evan Bradley, MD PhD Department of Emergency Medicine Mentor: John Haran, MD Project Title: The Impact of the Oropharyngeal Microbiome on Clinical Outcomes and Model Systems of Respiratory Viral Infection
	Maira Castañeda Avila, MS, PhD Population and Quantitative Health Sciences Mentor: Kate Lapane, PhD Project Title: Multiple chronic conditions and colorectal cancer in older Hispanic adults: a mixed methods approach.
	Nisha Fahey, DO, MSc Population and Quantitative Health Sciences Mentor: Jeroan Allison, MD Project Title: Enabling community-based Kangaroo Care to mitigate health inequities among preterm infants
	Melissa Goulding, PhD Population and Quantitative Health Sciences Mentor: Stephenie Lemon, PhD Project Title: Improving Identification and Management of Pediatric Hypertension through Community Clinical Linkages: Development and Beta Testing of BP-Link
	Laurel O'Connor, MD, MS Department of Emergency Medicine Mentor: Edwin D. Boudreaux, PhD Project Title: A Mobile Integrated Health Intervention for the Management of Acute-Phase Exacerbations of Congestive Heart Failure and Chronic Obstructive Pulmonary Disease
	Anna Whelan, MD Department of Obstetrics & Gynecology Mentor: Tiffany A Moore Simas, MD, MPH, MED Project Title: Improving Perinatal Mental Health Through the Adaption of a Health at Every Size Intervention to Obstetric Care
	Martha Zimmermann, PhD Department of Psychiatry Mentor: Nancy Byatt, DO, MS, MBA Project Title: Developing a Scalable Intervention to Prevent Perinatal Anxiety in Obstetric Settings

Where are they now? KL2 Scholar Alumni success stories

Asthma Link: An Innovative, School-based Program to Improve Outcomes for Children with Asthma

Asthma is the most common chronic disease of childhood. About 4.7 million children under the age of 18 live with asthma in the United States; childhood asthma affects 12-15% of urban children. Asthma is associated with high rates of school absences and poor performance, parental lost workdays, and is responsible for billions of dollars of health care expenditures. While school-based asthma management programs have proven effective in research settings, such programs have not been widely implemented in practice due to high costs and lack of coordination between community and healthcare providers.



Michelle Trivedi, MD, MPH

Funded by a UMCCTS KL2 Scholar Award (KL2TR001455) and a subsequent five-year K23 Career Development Award (K23HL150341) from the NIH National Heart, Lung and Blood Institute, **Michelle Trivedi, MD, MPH** worked with pediatric primary care practices, schools, and families to design and test an innovative program that provides school nurse-supervised asthma therapy to children experiencing frequent asthma flares. Asthma Link™ is a low-cost, sustainable model of school-supervised asthma therapy that leverages the established infrastructure and collaboration of medical providers, school staff, and families, making it highly sustainable in the real-world.

A pilot trial conducted in Worcester showed that children enrolled in Asthma Link experienced a 54% decline in emergency room visits, a 95% decline in hospital admissions, and 46% decline in asthma rescue medication use. Dr. Trivedi and her team found that Asthma Link particularly benefitted children experiencing adverse social conditions, such as unstable family or housing situations, economic instability, and culture and language barriers. “We’ve seen that families and pediatric clinics appreciate practical support to help children to take their medications as prescribed, especially since not doing so is the leading cause of asthma symptoms for so many children,” Dr. Trivedi said.

Based on the results of her pilot program, Dr. Trivedi was awarded NIH R01 funding (R01HL169229) to expand the Asthma Link program in two of the highest asthma burden cities in the nation, Worcester and Springfield, Massachusetts. A second NIH R01 application, “Examining the Effectiveness of School-based Health Centers (SBHCs) to Improve Pediatric Asthma Care,” recently received a very favorable review and score. Altogether, Dr. Trivedi’s work will determine the effectiveness of school-based community partnerships in improving the health and well-being of children with asthma.



Increasing Access to Medications for Opioid Use Disorder Improves Outcomes After Release from Incarceration



Ekaterina Pivovarova, PhD

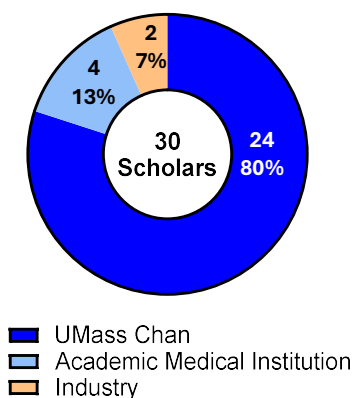
Overdose is the leading cause of death for people reentering the community after incarceration. Yet most individuals with justice involvement fail to receive or access Medications for Opioid Use Disorder (MOUD) following release, which can cut overdose mortality by up to 50%. **Ekaterina Pivovarova, PhD** focuses her research on developing effective implementation strategies to increase access to lifesaving MOUD for individuals transitioning from incarceration to the community. A UMCCTS KL2 Scholar Award (KL2TR001455) in 2017 led to a subsequent K23 Career Development Award (K23DA049953) from the NIH Institute on Drug Abuse (NIDA). In 2025, Dr. Pivovarova was awarded an NIH/NIDA grant to study a set of implementation strategies for bringing drug court staff and MOUD providers together to increase the number of individuals in drug courts who access MOUD treatment (R01DA064508).

Along with Peter D. Friedmann, M.D., M.P.H. (UMass Chan Baystate), Dr. Pivovarova and colleagues recently reported in the *New England Journal of Medicine* the results of a study investigating the use of FDA-approved MOUD in incarcerated populations in Massachusetts. They used state data to examine post release MOUD receipt, overdose, death, and reincarceration of individuals who had probable opioid use disorder while incarcerated. The study found that only half of individuals who received MOUD in jail continued in the community after release. Individuals who received MOUD in jail were more likely to access post release MOUD and had a decreased risk of overdose, death from any cause, and reincarceration when compared to people who did not receive MOUD while incarcerated. (*Friedmann, NEJM, 2025*).

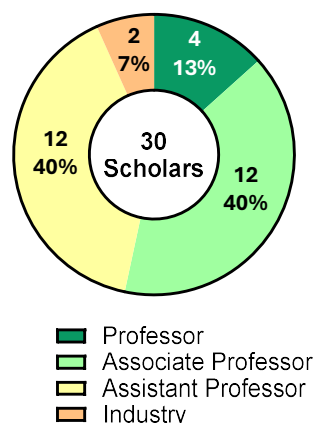
The federal Medicaid Inmate Exclusion Policy (MIEP), which removes Medicaid eligibility during incarceration, is an obstacle to transitional treatment during community reentry. Led by Dr. Pivovarova and Dr. Elizabeth Evans (UMass Amherst), a Phase II Justice Community Opioid Innovation Network Hub (NIH RM1DA064500) will evaluate a pilot Massachusetts MIEP waiver program to determine and disseminate best practices in MIEP waiver implementation in jails. They will also adapt and evaluate a telehealth model of reach-in counseling to enhance MOUD continuity after release.

KL2 Scholar Outcomes

KL2 Scholars' Current Institution



KL2 Scholars' Current Academic Position



TL1 Trainees



Spotlight on Esther Boama-Nyarko, PhD, MPH – TL1 Trainee 2021-2023

Dr. Esther Boama-Nyarko, PhD, MPH entered the TL1 training program as a pre-doctoral student with the goal of becoming an independent investigator focusing on promoting mental health equity by uncovering disparities in care for women of color and creating approaches to sealing those gaps. Her goals were very much aligned with her mentor, Nancy Byatt, DO, MS, MBA (previous KL2 scholar). Together they investigated the differences in treatment participation for women of color in Massachusetts Child Psychiatry Access Program (MCPAP) for Moms and Program In Support of Moms (PRISM) Interventions. She published five papers with her mentor, Dr. Byatt, including one as first author.

She is currently a post-doc fellow at the Center for Health Optimization & Implementation Research, U.S. Department of Veterans Affairs.

“The TL1 Pre-Doctoral Fellowship grant has been an unparalleled opportunity and a critical launchpad for my career. I have established a foundation of epidemiological and biostatistical methodology for research. ...My excellent mentors, have provided extensive mentorship and support toward the success of this project proposal.”

	Stephen Diggs, PhD RNA Therapeutics Institute Mentor: Andrei A Korostelev PhD Project Title: Visualizing Cells and Characterizing Ribosomes in ALS Patient derived Motor Neurons
	Harris Feldman, MD Department of Medicine Mentor: Apurv Soni, MD PhD Project Title: Characterization of Inflammatory Bowel Disease Flares using Electronic Medical Record and Home-based Collection of Data and Identifying Multimodal Predictors of Flares
	Nathaniel Glassy, ALM Department of Psychiatry Mentor: David Smelson, Psy. Project Title: Examining Relationships Between Dispositional Mindfulness, Response Inhibition, Depression and Drug Craving Among Civilian Populations with Co-occurring Mental Health and Opioid Use Disorders in Massachusetts
	Hyein Sarah Lee, BS Department of Medicine Mentor: Apurv Soni, MD PhD Project Title: Investigating Rural-Urban Differences in Associations between Structural Racism and Suicide in the United States
	Laël Ngangmeni, MBS Population and Quantitative Health Sciences Mentor: Kristin Michelle Mattocks PhD, MPH Project Title: Racial/ethnic differences in provider referrals and perceptions of prenatal care among pregnant veterans
	Natalia Nielsen, MPH Population and Quantitative Health Sciences Mentor: Kate Lapane, PhD Project Title: Spanish-speaking Hispanics/Latinos in US Nursing Homes: The role of language in mental health status and pain management
	Gretchen Weaver, MPH Population and Quantitative Health Sciences Mentor: Sarah Forrester, PhD, MS Project Title: Investigation of COVID-Related Discrimination and Racial Bias Experiences of Black and Latinx Research

In the News

[Student Engineers: Bridging Engineering and Medicine \(BEAM\) Pathway Program](#)

The BEAM program, led by Rachael Sirianni, PhD, UMass Chan, provides training, mentorship, and research opportunities for UMass Amherst and UMass Lowell undergraduates.

Read about the UMass Amherst undergraduates who participated in the program share their experiences.

[Nutrition program for high-need patients reduces health care utilization](#)

Matthew J. Alcusky, PhD, PharmD, MS (TL1 alum and current UMass Chan Associate Professor) and colleagues looked at the impact of providing nutritious foods to patients who were experiencing food insecurity. Program participation was associated with a 23 percent reduction in hospitalizations and 13 percent reduction in emergency department visits compared with eligible non-participants.

[Healthy at Home](#)

Apurv Soni, MD, PhD (TL1 alum and current UMass Chan Assistant Professor) and Laurel O'Connor (current KL2 scholar) recently completed a study showing the use of a digital community-based program decreased illness-related distress in treating patients with chronic obstructive pulmonary disease (COPD). The program included home-based mobile health services, a team of paramedics available 24/7 to perform in-home medical care, and a mobile integrated health dashboard that displayed biometric data from wearable sensors.

[Baby's developing social brain related to mother's postpartum mental health](#)

Funded through a UMCCTS KL2 Award, Soyhe Kim, PhD has found a relationship between maternal mental health and her baby's social development using functional near-infrared spectroscopy (fNIRS) and functional MRI (fMRI). She found that a mother's depression and anxiety can have a negative effect on her baby's social development in the first year of life.

[Helping tech startups address health outcome disparities](#)

Anna Whelan, MD (current KL2 scholar) and Martha Zimmermann, PhD (current KL2 scholar) will be assisting Candlelit Care, a virtual perinatal mental health provider, to develop its mental health screening and treatment platform. The platform provides mental health support for Black women with the additional goal of early intervention for perinatal mood and anxiety disorders.

[Clinical trial studying skilled nursing care in the home](#)

The state of Massachusetts awarded a multi-investigator grant to Apurv Soni, MD, PhD (TL1 alum and current UMass Chan Assistant Professor) and Peter Lindenauer, MD, MSc, chair of Baystate's Department of Healthcare Delivery and Population Sciences to run a clinical trial to study post-acute skilled nursing facility services provided in the patient's home.

(Click on titles for link to full stories.)

Publications

[Healthy at Home for COPD: An Integrated Digital Monitoring, Treatment, and Pulmonary Rehabilitation Intervention](#)

Laurel O'Connor, MD (KL2)
BMC Digit Health, 2025

[Challenges oncologists face when caring for hispanics living in Puerto Rico with colorectal cancer and multiple chronic conditions](#)

Maira A. Castañeda-Avila, MS, PhD (KL2)
BMC Cancer, 2025

[Relationship Between Acute SARS-CoV-2 Viral Clearance and Long COVID-19 \(Long COVID\) Symptoms: A Cohort Study](#)

Carly Herbert MD/PhD Candidate (TL1)
Clin Infect Dis, 2025

[Anxiety Sensitivity in the Perinatal Period: A Scoping Review](#)

Martha Zimmermann, PhD (KL2)
Ment Health Prev, 2025

[Digital Health Tools and Behavioral Strategies to Increase Engagement With Diabetes Self-Management Education and Support: Design and Feasibility of DM-BOOST](#)

Daniel Amante, PhD (KL2)
Sci Diabetes Self Manag Care. 2024

["It's Harder to Chase Pain Than It Is to Prevent It": Perinatal Individual and Care Professional Attitudes Towards Preventing Perinatal Mood and Anxiety Disorders in Obstetric Settings](#)

Martha Zimmermann, PhD (KL2)
Psychiatr Q, 2025

[Acute infectious mononucleosis generates persistent, functional EBNA-1 antibodies with high cross-reactivity to alpha-crystalline beta](#)

Katherine Luzuriaga, MD (PI)
Cell Reports, 2025

[Implementation and preliminary evaluation of an entrepreneurship, biomedical innovation, and design pathway in a school of medicine curriculum](#)

Nathaniel Hafer, PhD (WFD)
Journal of Clinical and Translational Science, 2025

[Lessons learned in developing a model for academic-community partnered rapid qualitative research](#)

Melissa Goulding, PhD (KL2)
Progress in Community Health Partnerships: Research, Education, and Action, 2025

[Patterns of Adherence to Home Blood Pressure Monitoring Among Older Adults With Ischemic Heart Disease: An Analysis From the RESILIENT Trial of Mobile Health Cardiac Rehabilitation](#)

Lara Kovell, MD (KL2)
J Cardiopulm Rehabil Prev, 2025

[Implementing virtual desktops for clinical research at an academic health center: a case report](#)

Adrian Zai, MD (RIC)
JAMIA Open, 2024

[Medicaid Accountable Care Organizations and Disparities in Pediatric Asthma Care](#)

Arlene Ash, PhD (BERD) Peter Lindenauer MD (BayState)
JAMA Pediatr, 2024

Programs and Resources

Workforce Development Programs

Clinical Research Professional

- Clinical Research Professional Group (CRPG)
- Clinical Research Professionals Training
- Human Research Protection Program (HRPP) Quality Assurance/Quality Improvement

Undergraduate Career Pathways

- Bridging Engineering and Medicine (BEAM)
- Excellence in Clinical Research Education and Leadership – Undergraduate Pathway (EXCEL-UP)

Technology Transfer and Business Development

- I-Corps Program at the UMCCTS
- Postdoctoral Fellowship in Innovation & Business Development (BRIDGE)

Investigator Training

- Clinical/Translational Research Scholars Program
- Master of Science in Clinical Investigation (MSCI) Program
- Clinical and Population Health Research PhD Program
- Doctoral Specialization in Translational Science (DSTS)
- "K-Club" - Research Career and Writing Group
- Mentored Career Development (KL2) Training Program
- Pre- and Post-doctoral Fellowship (TL1) Training Program
- "R Club" Research Writing Group
- Projects in Progress Seminar Series (PiPSS)

Research Support Infrastructure

- Bioinformatics
- Biorepository & Tissue Bank
- Biostatistics, Epidemiology, and Research Design (BERD)
- Clinical Research Center
- Community and Stakeholder Engagement
- Research Informatics Core
- Investigational Drug Services
- M2D2
- Pilot grants
- Translational Outreach research Center (TORC)
- Clinical Trials recruitment support
- Research Navigator
- Small Molecule Screening Facility
- Umbilical Cord Blood Facility

Executive Leadership

Katherine Luzuriaga, MD
PI & Director

Allan Walkey, MD
Co-Director

Program Leadership

Biostatistics, Epidemiology & Research Design (BERD)

Bruce Barton, PhD | Director
Arlene S. Ash, PhD | Co-Director
Sharina Person, PhD | Co-Director

Community and Stakeholder Engagement (CASE)

Stephenie Lemon, PhD, MS | Director
Jeroan Allison, MD, MSc | Director

Institutional Review Board

Allison Blodgett, PhD | Director

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Beth McCormick, PhD | Co-Director
Milagros C. Rosal, PhD | Co-Director

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Nathaniel Hafer, PhD | Director

Regulatory Knowledge and Support

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CPNP-PC | Director

Research Informatics Core (RIC)

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(TL1) NRSA Training Program

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TORC

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