



**CENTER FOR CLINICAL AND
TRANSLATIONAL SCIENCE**

UMass Center for Clinical and Translational Science Past, Present and Future

Katherine Luzuriaga, MD

Director, UMass Center for Clinical and Translational Science

Vice Provost, Clinical and Translational Research

UMass Memorial Health Care Chair in Biomedical Research

Professor, Program in Molecular Medicine, Pediatrics, and Medicine



University of
Massachusetts
Medical School

umassmed.edu

Disclosure

I have no actual or potential conflict of interest in relation to this program/presentation.





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Thank you!

2016 UMCCTS Research Retreat Planning Committee

Vanni Bucci, PhD	UMass Dartmouth
Bonnie Goddard	UMass Medical School
Wanda DePasquale	UMass Medical School
Jean A. Frazier, MD	UMass Medical School
Nate Hafer, PhD	UMass Medical School
Catarina Kiefe, MD, PhD	UMass Medical School
Margaret Koziel, MD	UMass Medical School
Jill A. Macoska, PhD	UMass Boston
Stephen McCarthy, PhD	UMass Lowell
Beth McCormick, PhD	UMass Medical School
David McManus, MD	UMass Medical School
Peter Reinhart, PhD	UMass Amherst



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The Future of Cardiovascular Epidemiology: Current Trends?

Vasan S. Ramachandran, MD

**Principal Investigator, Framingham Heart Study
Director, Echocardiography/Vascular Laboratory
Chief, Preventive Medicine and Epidemiology,
Department of Medicine
Professor of Medicine and Epidemiology
Boston University School of Medicine**





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MassBiologics

Medicine for Better Lives



University of
Massachusetts
Medical School



UMassMemorial
Medical Center

A Member of UMass Memorial Health Care



UMASS
AMHERST



UMass | Dartmouth



University of
Massachusetts
Lowell

Graduate School of Nursing
Shaping the future of Nursing



Innovation & Business
Development

PARTNER WITH US

Baystate Health

Office of Research



UMass Memorial
Children's Medical Center

abbvie



M2D2

Massachusetts Medical
DEVICE DEVELOPMENT CENTER

MASSACHUSETTS
LIFE SCIENCES CENTER



Centers for Therapeutic Innovation
A Pfizer-supported collaboration



PHILIPS
Healthcare



MassBio
MASSACHUSETTS BIOTECHNOLOGY COUNCIL



Tufts
UNIVERSITY

Cummings School of
Veterinary Medicine



MassTERi
Translation • Entrepreneurship • Realization

CUBIST
PHARMACEUTICALS



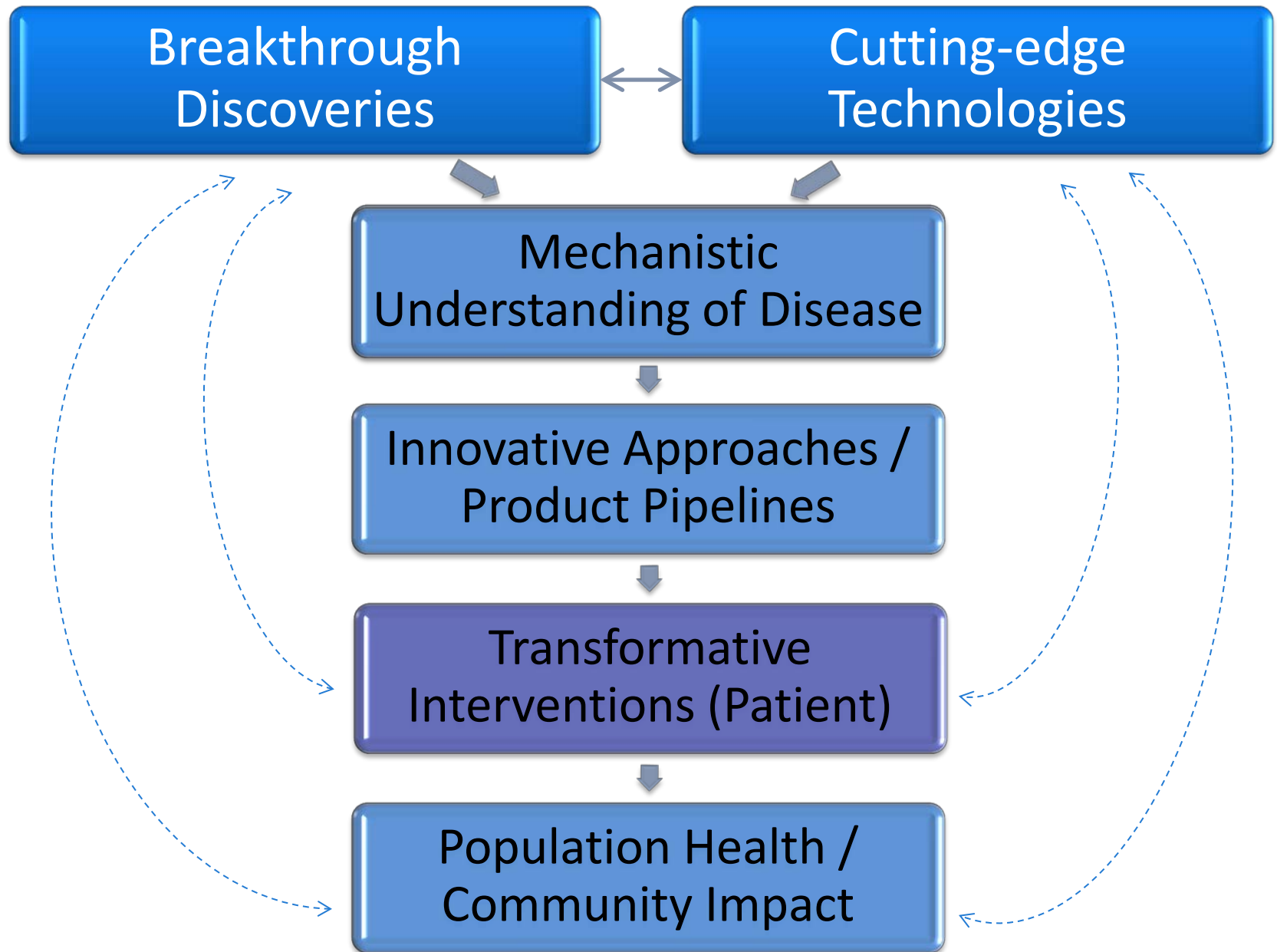
WPI



**CENTER FOR CLINICAL AND
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A Short History of the UMCCTS

- 2006:** UMass Center for Clinical and Translational Science organized
- 2008:** NIH Development Grant
- 2010:** Funded as one of 62 NIH centers nationwide
\$20M / 5 years; CTR infrastructure
(cores, services, pilot funding)
- 2015:** Renewed funding (\$17.3M / 4 years)





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The Health System as a Learning Lab

Patient Care

Research & Education



*UMassMemorial
Health Care*



University of
Massachusetts
Medical School



Collaborative Support for Health System as Learning Lab for:

- Research
- Improvement (Quality, Efficiency, Cost)
- Clinical & Translational Science
- Education
- Health systems strengthening and Public Health

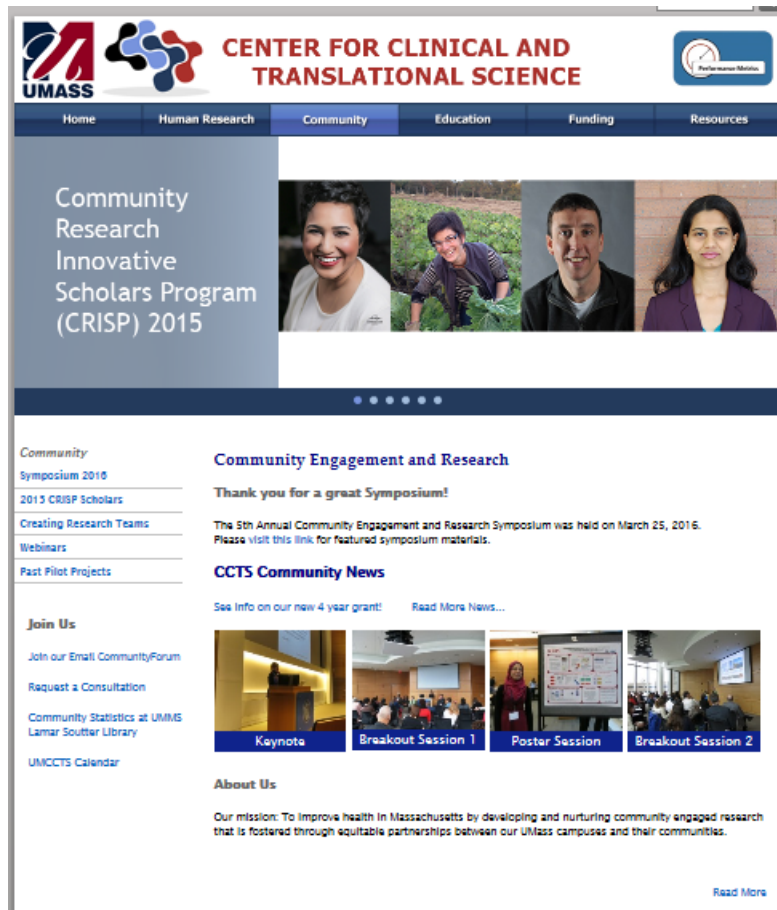
Achieved through collaboration on:

- Data warehouse (*integrates clinical/research data*)
- Clinical trial management system
- Policies and procedures (governance, access, security)



CENTER FOR CLINICAL AND
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Community Engagement and Research



Mission: *Build capacity for community-engaged research*

Builds on our strengths in community engaged research:

- **Community-engaged Research Network models**
 - Urban and rural
- **Five campus-based community-engaged research mentorship and training**
 - **Community Research Scientist Program (CRISP)**

www.umassmed.edu/ccts/community



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Special Population Resource Center (SPRC)

“Research Participation across the Lifespan through Community Engagement”

MISSION: *To increase engagement of special populations in translational research through tailored, culturally responsive strategies.*

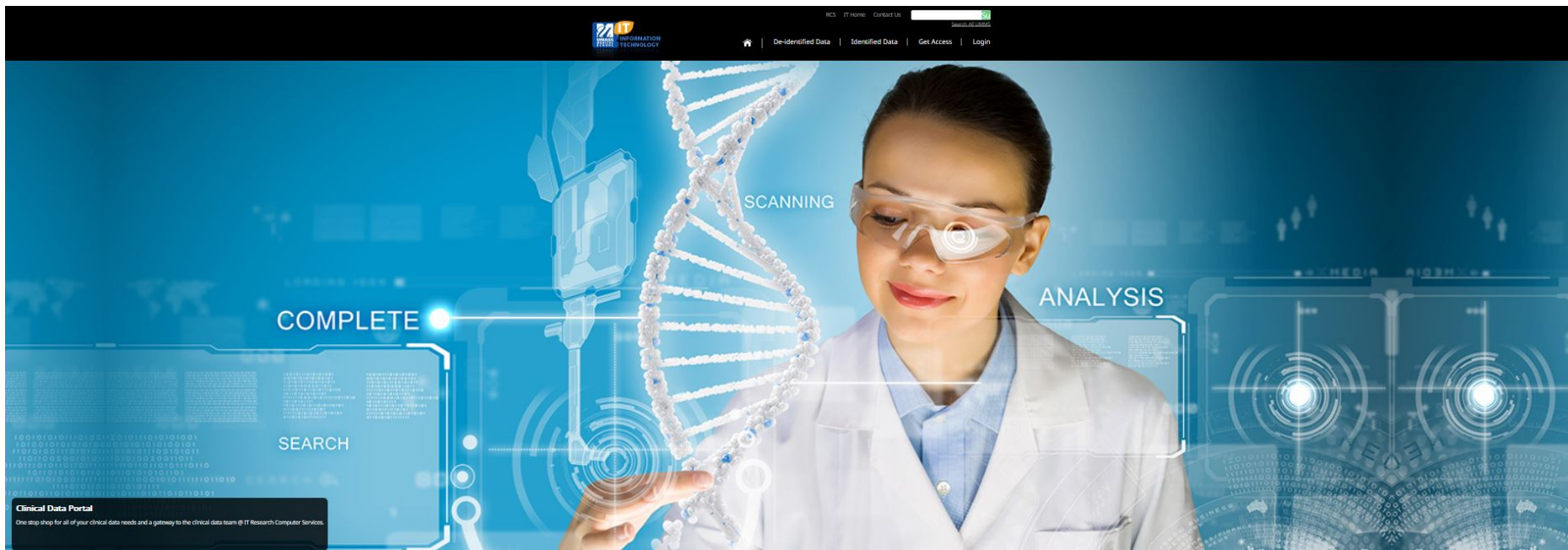
Special populations are those under-represented in translational research because of age (i.e., pediatrics, geriatrics), race/ethnicity, low socioeconomic status, geographic location (rural or urban), or being Lesbian, Gay, Bisexual, or Transgender (LGBT).

Three service areas:

1. **Special Population Consultation:** provides support to researchers on how to improve recruitment and retention strategies as part of their research design
2. **Cultural Competency Training:** engages community members in training research staff on implementing culturally appropriate approaches during the informed consent process
3. **Community and Patient Participation:** hosts research-focused events in the community to strengthen local capacity to respond to critical research needs and participate in research at UMMS

<http://www.umassmed.edu/ccts/sprc/about-us>

Clinical Data Portal



The UMass Center for Clinical and Translational Science (CCTS) is part of a national Clinical and Translational Science Award (CTSA) consortium created to accelerate laboratory discoveries into treatments for patients. The CTSA program is led by the National Institutes of Health's National Center for Advancing Translational Sciences (NCATS).



Informatics for Integrating Biology and the Biobank (i2b2) is an NIH-funded National Center for Biomedical Computing (NCBC) based at Partners HealthCare System in Boston, Mass.



Constituted as the Committee for the Protection of Human Subjects in Research, the UMass IRB serves as IRB of record for all human research conducted by UMass faculty and investigators at the UMass communities.



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Conquering Diseases Clinical Research Volunteer Registry



<https://www.umassmedresearchvolunteer.org>

A partnership between community members, the patients being cared for by the health professionals of UMassMemorial Health Care, and the research community at the University of Massachusetts Medical School. People can **learn more about research**, **donate blood samples to the Biorepository**, **enroll in the Clinical Research Volunteer Database**, and **participate in clinical research studies**.



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Human Research Protection Program

Mission: Facilitate excellence in human research by

- **Safeguarding and promoting the health and welfare of human research participants**

www.umassmed.edu/ccts/human-research

CENTER FOR CLINICAL AND TRANSLATIONAL SCIENCE

Home Human Research Community Education Funding Resources

Center for Clinical and Translational Science > Human Research Protection Program (HRPP)

Human Research Protection Program (HRPP)

Mission Statement

The mission of the University of Massachusetts Medical School **Human Research Protection Program (HRPP)** is to facilitate excellence in human research by:

- Safeguarding and promoting the health and welfare of human research participants by ensuring that their rights, safety, and well-being are protected;
- Educating our community about research and the rights and responsibilities of research participants;
- Providing timely and high quality review and monitoring of human research studies.

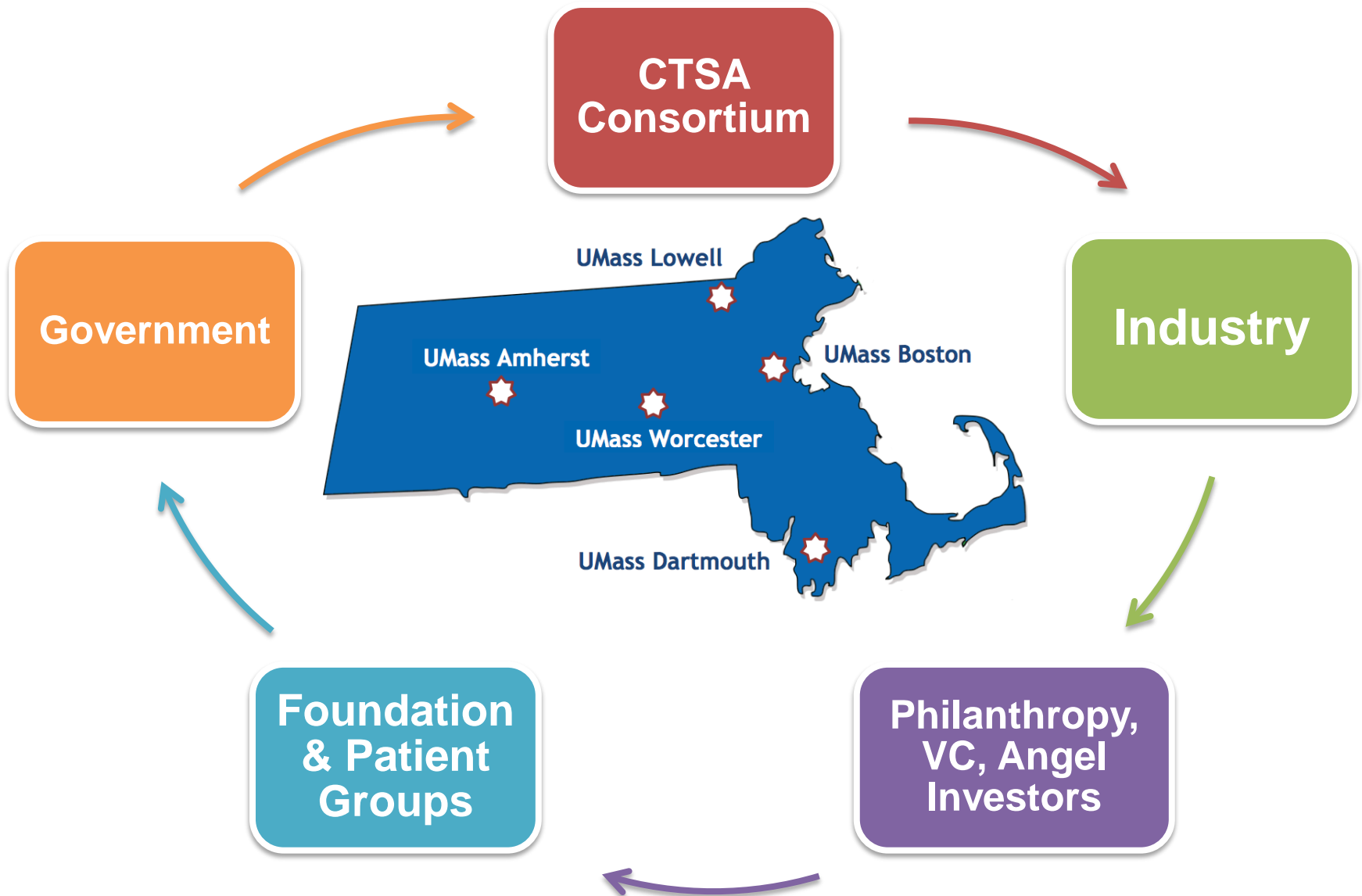
Human Research Protection Program

IRB Home
Ancillary Reviews
Checklist for New Researchers
Clinical Data Portal
Clinical Research at UMMS
Clinical Research Agreements
Clinical Research Resources
Conflict of Interest
Community Engagement and Participation Outreach
Global Health and Research
HRPP QA/QI and Education
Information for Industry Collaborators
Policies and Procedures
Privacy and Security (HIPAA)
Research Integrity Office
Events Calendar
Contact Us

This Organization's Human Research Protection Program is a comprehensive system to ensure the protection of the rights and welfare of subjects in Human Research. We operate under the principles first established by the Belmont report (<http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html>) namely standards of honesty, justice, integrity, respect and a sense of responsibility to others. The HRPP adheres to federal regulations and laws, state law, as well as UMass Medical School policies that govern human participant research programs and ensuring the right of every human being to voluntary, informed consent. The



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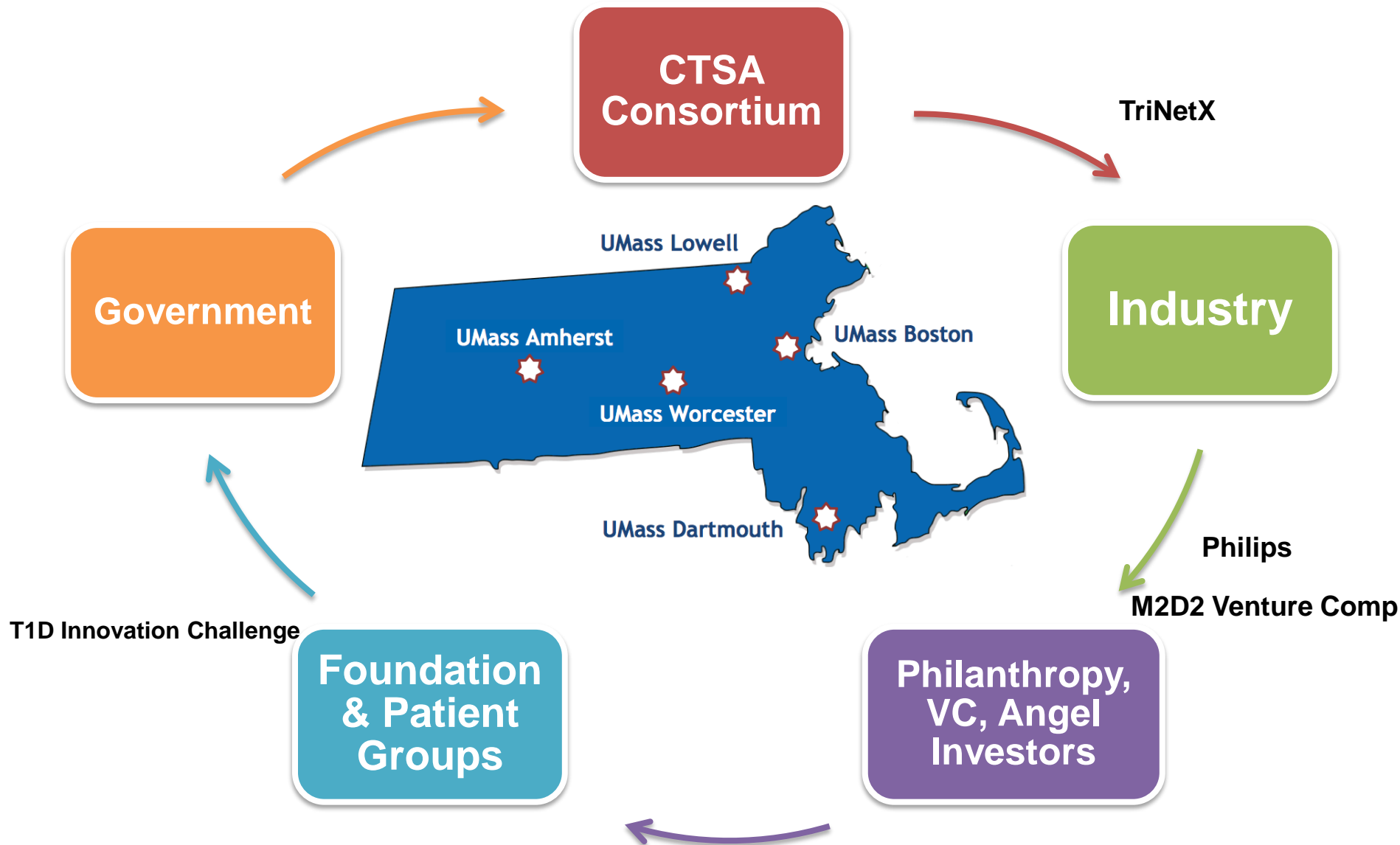
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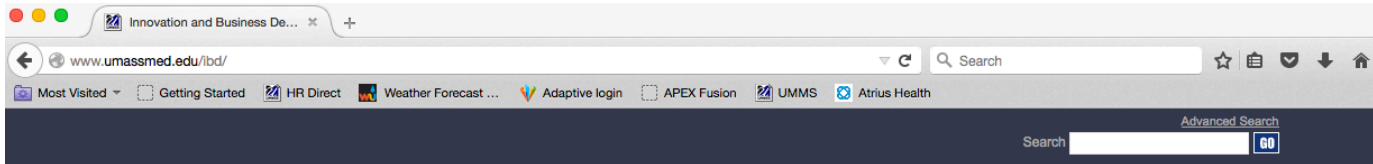
Multi-Campus Transdisciplinary Programs

- **Center for Microbiome Research**
- **Medicine to Models**
- **Chemical Screening Initiative**
- **Avatar Mice**
- **Center for mHealth**



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Innovation & Business Development



HOME TEAM EXTERNAL PARTNERS INTERNAL PERSONNEL

Research Awards

FY 2014 ~ \$244M & 3rd largest recipient of NIH funds among New England medical schools

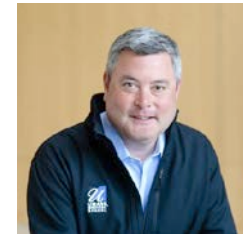
[Read more >](#)



Welcome to the Office of Innovation & Business Development UMass Medical School

- We are the "Welcome Lobby" for all external and internal parties interested in partnering interactions.
- We catalyze and enable all types of mutually beneficial relationships between our campus and the world---and resolve any issues that may get in the way.
- If you don't find the information you need on this website or if you have any questions, please **contact us** right away.

www.umassmed.edu/ibd



Small Molecule Screening Facility (SMSF)

SMSF helps identify novel biomolecules for various biological processes using biochemical, cell based and *in vivo* approaches.

Established in 2003 and rebooted in 2014 with joint funding from UMCCTS and the Institute for Applied Life Sciences, the SMSF is a joint core between UMMS and UMass Amherst.



Dr. Paul Thompson
Core Director, Professor BMP



Dr. Sergey Savinov
Co-Director, Professor at UMass Amherst

- **58,000 pharmacological small molecules collection occupying novel chemical space**
- **UMass Plant Cell Culture Collection (Monsanto; 1417 phytochemicals)**
- **In house medicinal chemistry, cheminformatics and molecular modeling expertise for hit to lead progression**

Structure Activity Relationship (SAR): Moving the Goal Posts



Raj Kalkeri, PhD

Project Leader, In Vitro Antiviral Drug Development, Department of Infectious Disease Research, Southern Research Institute
Pharma experience includes Vertex Pharmaceuticals

Raj is a project leader in the Infectious Disease Drug Development Division, Southern Research Institute, Frederick, MD, where he currently focuses on the evaluation of small molecule drugs, development of in vitro and in vivo models for the treatment of viral infections. He is responsible for several government and commercial contracts for evaluation of antiviral activity of small molecules and biological entities. He has 16 years of experience in the industry and is published in peer-reviewed journals.

Thursday, June 16, 2016

**Albert Sherman Center
Multi-Purpose Room WEST (1st floor)
University of Massachusetts Medical School**

4:00-5:00 pm LECTURE and CASE STUDY

Lecture and Case Study: This lecture will discuss why the FDA requires animal models for most therapeutic indications and what we hope to learn from animal studies that we can't learn from in vitro experiments in a test tube. The speaker will discuss the limitations of animal models and ethical considerations in the use of animals, from zebra fish to non-human primates. The speaker will also describe the development of an animal model for drug discovery, how it was used and what was learned.

5:00-5:30 pm NETWORKING

Register Now!



MassTERi
Translation • Entrepreneurship • Realization

Education Series Continues!



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UMCCTS Educational Programs

OPPORTUNITIES	ELIGIBILITY					
	Students	Postdocs	Residents	Fellows	Jr. Faculty	Faculty
"K-Club" - Research Career and Writing Group		X		X	X	X
"R-Club" - Basic Elements and Process for a Successful Grant Application		X		X	X	X
Mentored Career Development (KL2) Training Program		X		X	X	
Pre- and Post-doctoral Fellowship (TL1) Training Program	X	X	X	X		
Community Research Innovative Scholars Program (CRISP)					X	
Master of Science in Clinical Investigation Program	X	X	X	X	X	X
MD/PhD (MSTP) Program	X					
Clinical/Translational Research Pathway Program	X					
Millennium PhD Program			X	X		
Clinical and Population Health Research PhD Program	X					
Master in Public Health Program			X	X		

<http://www.umassmed.edu/ccts/education>

Mentored Career Development (KL2) Training Program

Program Leaders



John F. Keane, Jr., MD



Jeroan Allison, MD, MSc



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[Home](#) [Human Research](#) [Community](#) [Education](#) [Funding](#) [Resources](#)

Center for Clinical and Translational Science > Education > KL2-Training-Program

Mentored Career Development (KL2) Training Program



A major goal of the **University of Massachusetts Center for Clinical and Translational Science (UMCCTS)** is to develop and support the next generation of leaders in clinical and translational research. Success in today's complex and competitive environment requires training that is truly transdisciplinary in nature, encompassing the full spectrum of translational research from first-in-human studies to implementation science with additional continuous feedback to basic science research.

Training of investigators who will make a career of innovative, hypothesis-driven clinical and translational research is a top priority, and the **Mentored Career Development (KL2) Training Program** is designed to address this need. The KL2 Training Program will combine coursework, seminars, and mentored research.

The Aims of the KL2-Training Program are:

- Promote a research career development program across the basic, clinical, and population health disciplines geared towards translating research into effective clinical practice and policy, as well as generating new questions spanning the entire spectrum of research.
- Recruit promising post-doctoral scholars resulting in a diverse scholar pool with respect to sociodemographic characteristics, clinical background, and disciplinary perspectives. We expect that a significant proportion of our scholars will become clinician-investigators in academia and industry.
- Provide scholars with the individual mentoring, academic career development, and technical skills necessary to ensure their success as independent investigators as well as contributors to team science.
- Provide an independence-targeted research experience within transdisciplinary teams that builds on the strengths of the current environment of linkages between UMass campuses, departments, centers, and institutes.

Resources Available to Scholars

It is expected that applicants will take advantage of the many resources available at UMass, such as:

- Translational Research Lecture series and Grand Rounds
- A Scientific Journal Internship
- Opportunities to develop writing skills
- K to R Club Workshop
- Annual UMCCTS Research Retreat (May 20, 2016)
- Junior Faculty Development Program



A group of people, including students and faculty, are gathered around a table, engaged in a discussion or meeting.

Letter of Intent Due:
December 10, 2015 by 5:00 pm EST

Email Applications to:
ccts@umassmed.edu

Application Materials:

-  KL2 RFA
-  KL2 Awards

Program Leaders



John F. Keane, Jr., MD

Director, Heart and Vascular Center of Excellence
Chief, Division of Cardiovascular Medicine
Mary C. Duffield Chair in Biomedical Research
UMMS, Worcester



Jeroan Allison, MD, MSc

Professor and Vice Chair,
Department of Quantitative Health Sciences
Associate Vice Provost,
Health Disparities Research
UMMS, Worcester



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Mentored Career Development (KL2) Awardees 2016



Stephanie P. Carreiro, MD

Assistant Professor

Department of Emergency Medicine, UMMSO

**iSense: Wearable Biosensors to Evaluate
the Evolution of Opioid Tolerance**

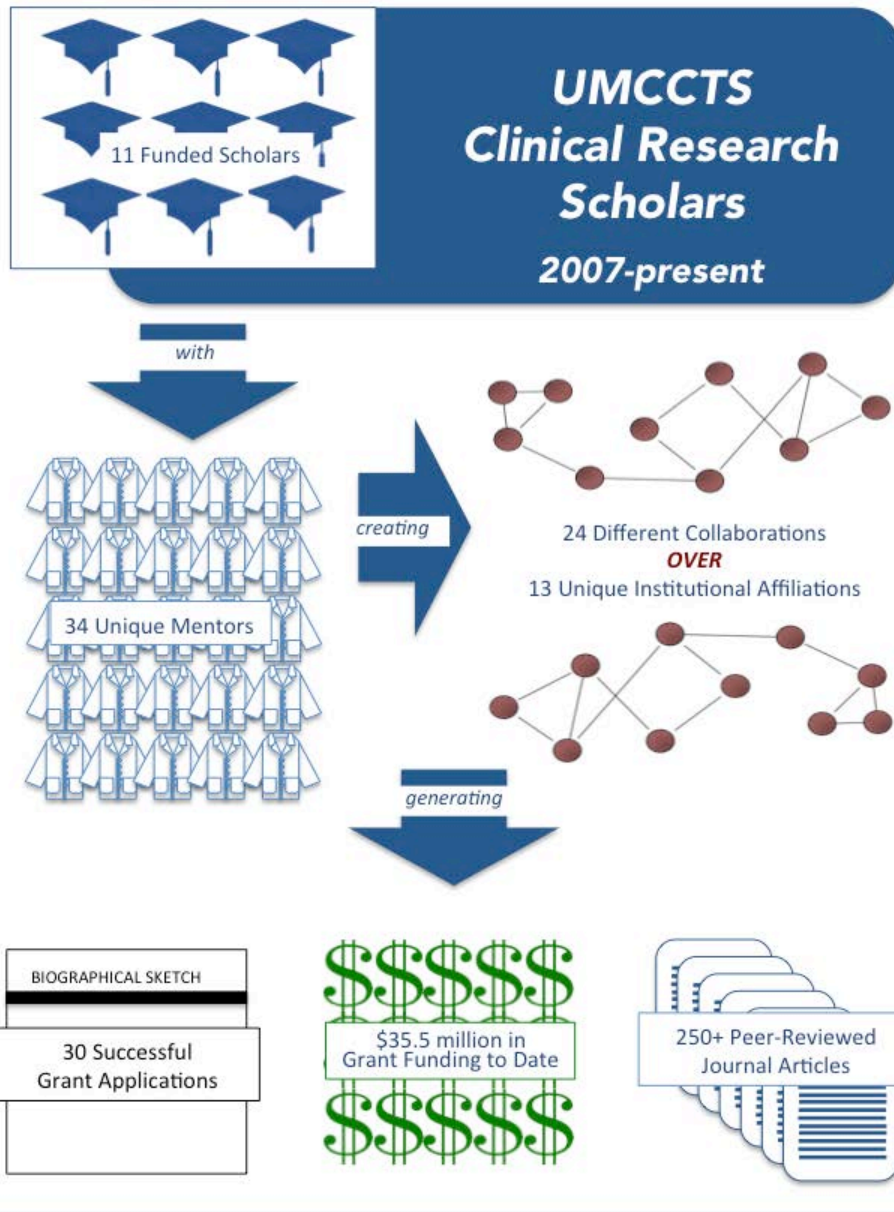


Mara Meyer Epstein, ScD

Assistant Professor

Department of Medicine, UMMS

**Population-based Research on Monoclonal
Gammopathy of Undetermined Significance
(MGUS)**



Spring 2016



Pre- and Post-Doctoral Fellowship Training Program

Program Leaders



Silvia Corvera, MD



Kate Lapane, PhD



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Center for Clinical and Translational Science > Education > T-Training Program

Pre- and Post-doctoral Fellowship (TL1) Training Program

Transdisciplinary Science at the University of Massachusetts Medical School

The UMass Center for Clinical and Translational Science (UMCCTS) and UMMC Graduate School of Biomedical Sciences is pleased to offer a new **Pre- and Post-doctoral Fellowship (TL1) Training Program** located at the University of Massachusetts Medical School (UMMS) – an emerging leader in translational research to move laboratory discoveries into treatments for patients. UMMS is a member of the national Clinical and Translational Science Award consortium, receives federal research funding exceeding \$807.6 million, and is home to the leading research journal Medical Care. Our world-renowned faculty has received honors from the Institute of Medicine, the American Statistical Association, the National Academy of Inventors, and the American Medical Informatics Association. Affiliated programs, centers and institutes include the Diabetes Center of Excellence, the Meyers Primary Care Institute, the Program in Molecular Medicine, the RNA Therapeutics Institute, MassBiologics, the Institute for Applied Life Sciences, to name a few.

Located in Worcester, MA

Worcester was recently recognized as one of the “10 most livable cities in the nation” by Forbes.com. The campus is 85 miles from Boston and is within a region known for its concentration of high-technology, healthcare, biotechnology, and biomedical engineering research and industry. Worcester offers many affordable living opportunities with accessible educational, cultural, and historical activities.

Program Leaders



Silvia Corvera, MD
Associate Director, MD, PhD
Program
Professor, Program in Molecular Medicine
UMMS, Worcester



Kate Lapane, PhD

Our competency-based concentration provides rigorous training in:

- Clinical and translational science
- Research ethics
- Epidemiologic methods
- Biostatistics
- Team science
- Scientific writing

Our Training Program values:

- Collective creativity
- Diversity and mutual respect
- Integrity and excellence

Pre- and Post-doctoral Training in Clinical and Translational Science at UMass Medical School



Program Highlights

- Rigorous concentration in Clinical and Translational Science (20 credits)
- Competency based curriculum providing opportunities to gain skills in quantitative research methods, scientific writing, team



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Pre- and Post-Doctoral Fellowship Training Program Awardees 2016

Pre-Doctoral Awardees

Alec Gramann, MD

Evaluating anti-GDF6 Treatment as Potential Therapy for Advanced Melanoma and Breast Cancer

Apurv Soni, MD

Understanding Predictors and Trends of Maternal and Child-Health in India at an Individual, Community, and Population Level: Challenges and Opportunities for Improvement

Jacob Hunnicutt, MPH

Building the Evidence Base to Improve Pain Management in Nursing Home Residents with Cancer

Post-Doctoral Awardees

**Matthew Alcusky,
PharmD, MS**

Neglected by the Evidence: Pharmacoepidemiologic Research in Older Adults with Cardiovascular Disease

Vijaya Daniel, MD, MPH

Microbial Determinants of Gastrointestinal Perforation Incidence and Outcomes

Jonathan Green, MD

Implementation and Utilization of Mobile Technology in Adolescent Bariatric Surgery Patients



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Team Science Webinar Series

Transdisciplinary, Translational Team Science: What is the Optimal Role for Nurse Scientists?



Laura L. Hayman, PhD, MSN, FAAN

Associate Vice Provost for Research and Graduate Studies
Professor of Nursing
University of Massachusetts Boston

Adjunct Professor of Medicine, Division of Preventive and Behavioral Medicine
University of Massachusetts Medical School

Wednesday, May 11, 2016
10:00 – 11:00 am
Webinar



January 26, 2016	Sherry Pagoto, PhD and Ed Boudreaux, PhD	<i>Team Science in mHealth Research</i>
February 22, 2016	Robert Milner, PhD	<i>Myths and Realities of Mentoring</i>
March 24, 2016	Nancy J. Cooke, PhD	<i>Enhancing the Effectiveness of Team Science</i>
April 28, 2016	Beth McCormick, PhD <i>joined by</i> Doyle Ward, PhD and Jeff Blanchard, PhD	<i>The Center for Microbiome Research and Our Approach to Team Science</i>



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MINI SYMPOSIA PROGRAM

10:00-11:10	1. Biomechanical Gait Analysis for Improving Clinical Outcomes: Applications for Orthopedics, Geriatrics and Community Based Research <i>Moderators: Katherine Boyer, PhD and Patricia Franklin, MD</i>
	2. Innovations for Vulnerable Populations in Massachusetts <i>Moderator: Melissa Clark, PhD</i>
	3. Interdisciplinary Mobile Health and Sensing Research <i>Moderators: David D. McManus, MD, ScM and Deepak Ganesan, PhD</i>
11:15-12:25	4. Advancing Translational Research at the UMass Amherst Center for Personalized Health Monitoring <i>Moderator: Patty Freedson, PhD</i>
	5. Shark Tank-UMass Spin-out Life Sciences Start-ups <i>Moderator: Stephen McCarthy, PhD</i>
	6. The Challenge of Maintaining Our Physician-Scientist Workforce <i>Moderator: Heena Santry, MD, MS</i>





Massachusetts Facility for High-Resolution Cryo Electron Microscopy opening at UMMS

The state-of-the-art Massachusetts Facility for High-Resolution Cryo Electron Microscopy, the first of its kind in New England, is slated to open at UMass Medical School by year's end under the direction of cryo-EM expert Chen Xu, PhD.

[Read more »](#)



UMMS taking part in
international study on
genetics of postpartum
depression

MAR 24, 2016



Subset of *E. coli* bacteria
linked to deadly disease in
pre-term infants

MAR 17, 2016



Researchers isolate Ebola
antibodies in quest for
vaccine, treatment

MAR 15, 2016



Sassetti, Sontheimer
elected fellows of the
American Academy of
Microbiology

MAR 10, 2016



Massachusetts Facility for
High-Resolution Cryo
Electron Microscopy
opening at UMMS

MAR 9, 2016

New Website!

Research @ UMMS

www.umassmed.edu/research-home

Research at a Glance

Faculty

- 3084 faculty members
- 1 Nobel Laureate
- 1 Lasker Award Winner
- 7 Howard Hughes Medical Institute Investigators

The Research Enterprise

- FY 2015 Grant Funding: \$249 M
- FY 2015 NIH Funding: \$141 M
- 1108 externally Sponsored projects
- 400 Postdoctoral Scholars
- 440 Graduate Students
- \$33M in licensing revenue in 2014-15

Basic Research

- What is Basic Research?
- Basic Research Departments

Participate in Clinical Research

- Clinical Research Opportunities

Research Education

- Graduate School Of Biomedical Sciences
- Graduate School of Nursing
- School of Medicine
- Office of Postdoctoral Scholars
- Office of Graduate Medical Education
- Degree Programs and Training Opportunities
- Human Research Protection Education

Resources for Researchers

- Office of Research
- Center for Clinical & Translational Sciences
- Office of Sponsored Programs
 - Fact Sheet
- Clinical Research Resources
- Institutional Review Board
- Limited Submissions
- Funding Opportunities
- Research Core Services
- Research Compliance
- Library
- Media Inquiries

Research Centers and Institutes

- Programs, Centers, and Institutes

Research Partnerships

- Office of Innovation & Business Development
- Office of Technology Management
- Information for Industry Sponsors of Clinical Trials

Tweets by @UMassMedNow

UMassMedNow Retweeted

AAMC
@AAMCtoday

.@UMassMedical School conducting #research on

Innovation & Business
Development

PARTNER WITH US

Support Research@UMMS

Take Action
MAKE A GIFT
TODAY



Events

Publications

Find an Investigator