



DIMENSIONS-FACILITATED STRATEGIES FOR RESEARCH PORTFOLIO GROWTH

UNIVERSITY OF MASSACHUSETTS LOWELL

Anne Maglia, Associate Vice Chancellor for Research

UMASS LOWELL 2020 STRATEGIC PLAN

UMASS LOWELL 2020—PILLARS AND COMMITTEES:

Jacqueline Moloney, Chancellor
Strategic Planning Steering
Committee: Patricia McCafferty,
Lauren Turner, Michael Vayda,
Joanne Yestranski

I. TRANSFORMATIONAL EDUCATION

Committee on Transformational
Education: Anita Greenwood,
Julie Nash, Co-chairs
Academic Sustainability Committee:
Rich Lemoine, John Wooding,
Co-chairs
Academic Technology Committee:
Michael Cipriano, George Hart,
Co-chairs
Curriculum Enhancement
Committee: Paula Haines,
Jim Nehring, Co-chairs
Faculty Success Committee:
Pradeep Kurup, Marlowe Miller,
Co-chairs
Faculty Honors Subcommittee:
Jim Canning, Supriya Chakrabarti,
Tony Szczesiul, Co-chairs
Graduate Education Committee:
Alkim Akyurtlu, Scott Latham,
Co-chairs
Intercollegiate Athletic Council:
Todd Avery, Stacy Szczesiul,
Frank Talty, Co-chairs
Student Success Committee:
Nicole Champagne, Kerry Donohoe,
Larry Siegel, Co-chairs
Financial Wellness Subcommittee:
Brenda Evans, Joyce McLaughlin,
Steve O'Riordan, Co-chairs
Work Readiness Committee:
Peter Gaines, Stefanie Tate,
Co-chairs

II. GLOBAL ENGAGEMENT & INCLUSIVE CULTURE

Committee on Global Engagement
and Inclusive Culture: Nouredine
Melikechi, Lauren Turner,
Leslie Wong, Co-chairs
Equity Climate Committee:
Meg Bond, Joe Hartman, Co-chairs
International Experience Committee:
Maria Conley, Carole Salmon,
Co-chairs
Title IX Committee: Ann Ciaraldi,
Clara Orlando, Co-chairs

III. INNOVATIVE RESEARCH & ENTREPRENEURSHIP

Committee on Innovative Research:
Andy Harris, Anne Maglia, Co-chairs
Dissemination and External Visibility
Committee: Bob Giles, Christine
Gillette, Shortie McKinney, Co-chairs
Intellectual Property and Technology
Transfer Committee: Rekha
Paleyanda, Xingwei Wang, Co-chairs
Research Infrastructure and Faculty
Support Committee: Matt Nugent,
Susan Puryear, Co-chairs
River Hawk Venture Fund Investment
Advisory Council: Don LaTorre,
Jack Wilson, Co-chairs;
Nancy Saucier, Fund Managing
Director
University Research and Engagement
Centers Committee: Andy Harris,
Ram Nagarajan, Co-chairs

IV. LEVERAGE OUR LEGACY AND OUR PLACE

Economic Development Committee:
Scott Latham, Steve Tello,
Jack Wilson, Co-chairs
Corporate Engagement
Subcommittee: Tom O'Donnell,
Arlene Parquette, Co-chairs
Campaign Executive Committee:
Nancy Donahue, Charles Hoff and
Robert Manning, Co-chairs
Marketing Committee: Bryce
Hoffman, Sandy Richtermeyer,
Co-chairs
Web Advisory Committee:
Gerry Nelson, Jim Sherwood,
Co-chairs

V. ENTREPRENEURIAL STEWARDSHIP

Art, Artifacts and Archives
Committee: Mehmed Ali,
Adam Baacke, Co-chairs
Campus Safety Committee:
Randy Brashears, James Kohl,
Co-chairs
Climate Action Plan Committee:
Rich Lemoine, Chris Niezrecki,
Co-chairs
Facilities Renewal and Master
Planning Committee: Tom Dreyer,
Joe Hartman, Co-chairs
Financial Planning Committee:
Monica Galizzi, Steve O'Riordan,
Co-chairs

Building the Research Portfolio:

- Extramural funding
- Interdisciplinary research
- External partnerships
- Research centers
- Visibility, reputation
- Student research
- Entrepreneurship

DATA-DRIVEN STRATEGIES



1. Programmatic Growth
Focused on Increase Funding
Competitiveness

2. Increased Interdisciplinary
Collaborations to Leverage
Existing Strengths

3. Targeted Engagement for
High ROI External
Partnerships

FOCUSED GROWTH FOR INCREASING EXTRAMURAL FUNDING

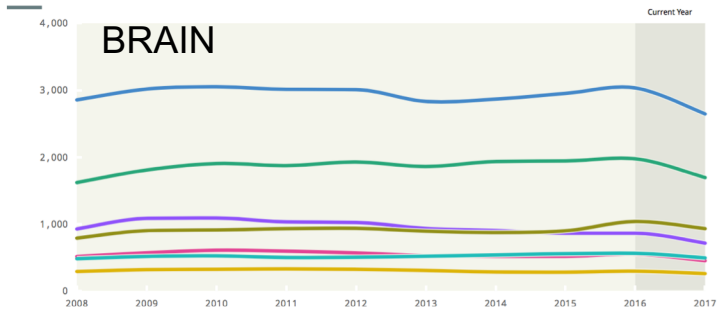


- Health promotion
- Microbiome
- Gerontology
- Maternal/child health
- Digital health
- Brain research
- Food safety

DATA ANALYZED FOR EACH STRENGTH AREA

- Top funders (\$\$ and # projects)
- Funder trends (\$\$ and # active projects)
- Top funded state and region
- Top funded US

Active projects ▾

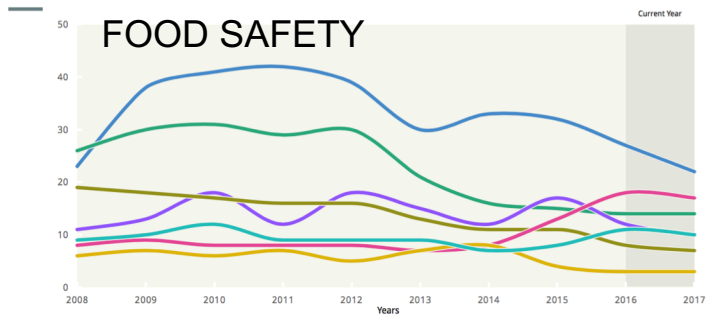


Add an organization

- ☒ NINDS
- ☒ NIMH
- ☒ NIDA
- ☒ NIA
- ☒ NICHD
- ☒ NCI
- ☒ NHLBI

FUNDING TRENDS

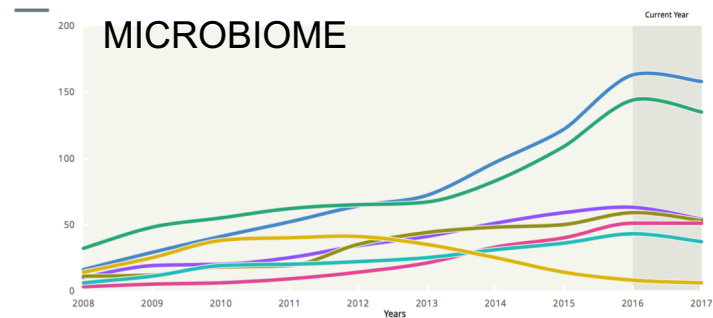
Active projects ▾



Add an organization

- ☒ NIAID
- ☒ NHLBI
- ☒ CDC
- ☒ NCI
- ☒ NIDDK
- ☒ NINDS
- ☒ NIGMS

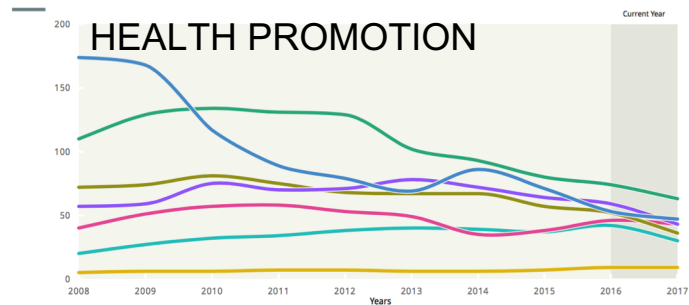
Active projects ▾



Add an organization

- ☒ NIAID
- ☒ NIDDK
- ☒ NHLBI
- ☒ NIGMS
- ☒ NCI
- ☒ NIDCR
- ☒ NHGRI

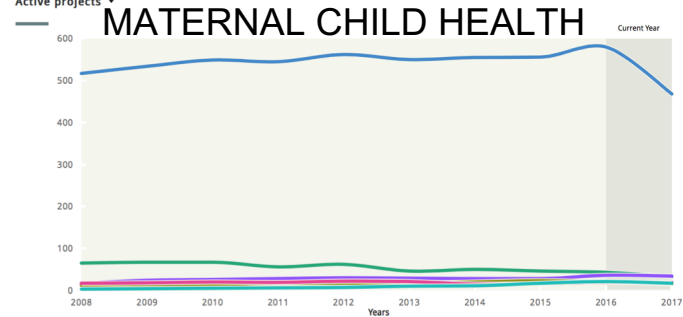
Active projects ▾



Add an organization

- ☒ CDC
- ☒ NCI
- ☒ NICHD
- ☒ NIMH
- ☒ NHLBI
- ☒ NIMHD
- ☒ NSF-ENG

Active projects ▾



Add an organization

- ☒ NICHD
- ☒ NIMH
- ☒ NIEHS
- ☒ WT
- ☒ NIAID
- ☒ BMGF

DATA-DRIVEN STRATEGIES



Dimensions

1. Programmatic Growth
Focused on Increase Funding
Competitiveness

2. Increased Interdisciplinary
Collaborations to Leverage
Existing Strengths

3. Targeted Engagement for
High ROI External
Partnerships

2017 SR CABINET STRATEGIC PLANNING RETREAT

- Life Sciences - Biomed Devices
- BIG Data - Imaging/graphics/viz.
- Education - STEM education
- Energy - Sustainable/Renewable
- Big Data - Digital health
- Social Issues - Comm. engage.
- Risk/Resilience
- Adv. Manufact - Flex elec/Fibers+Textiles

Innovations in Health Promotion

ROBOTICS/AUTONOMY

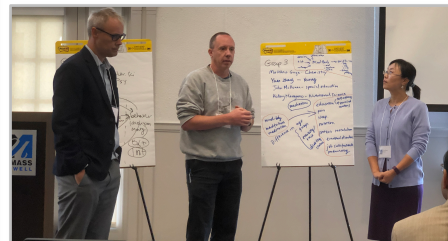
Fundamental Science/Pure Math.

Security and Risk

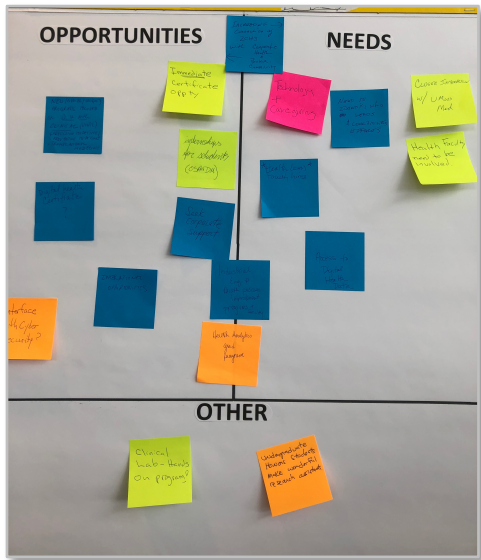
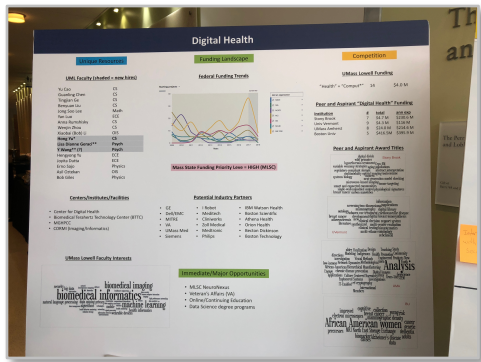
Leadership + International Perspectives

ROBOTICS
&
Autonomy

Leadership
&
Int. Persp.



Digital Health



Unique Resources

UML Faculty (shaded = new hires)

Yu Cao	CS
Guanling Chen	CS
Tinglian Ge	CS
Benyuan Liu	CS
Jong Soo Lee	Math
Yan Luo	ECE
Anna Rumshisky	CS
Wenjin Zhou	CS
Xiaobai (Bob) Li	OIS
Hong Yu*	CS
Lisa Dianne Geraci**	Psych
Y Wang** (?)	Psych
Hengyong Yu	ECE
Joyita Dutta	ECE
Erno Sajó	Physics
Asil Oztekan	OIS
Bob Giles	Physics

Centers/Institutes/Facilities

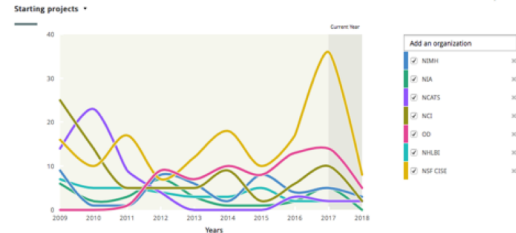
- Center for Digital Health
- Biomedical Terahertz Technology Center (BTTC)
- MGH PCC
- CORMI (Imaging/Informatics)

UMass Lowell Faculty Interests



Funding Landscape

Federal Funding Trends



Mass State Funding Priority Leve = HIGH (MLSC)

Potential Industry Partners

- GE
- Dell/EMC
- MITRE
- VA
- UMass Med
- Siemens
- I Robot
- Meditech
- Clinworks
- Zoll Medical
- Medtronic
- Philips
- IBM Watson Health
- Boston Scientific
- Athena Health
- Orion Health
- Becton Dickinson
- Boston Technology

Immediate/Major Opportunities

- MLSC NeuroNexus
- Veteran's Affairs (VA)
- Online/Continuing Education
- Data Science degree programs

Competition

UMass Lowell Funding

"Health" + "Comput*"	14	\$4.0 M
----------------------	----	---------

Peer and Aspirant “Digital Health” Funding

<u>Institution</u>	<u>#</u>	<u>total</u>	<u>ann exp</u>
Stony Brook	7	\$4.7 M	\$230.6 M
Univ Vermont	9	\$4.3 M	\$116 M
UMass Amherst	8	\$24.0 M	\$214.6 M
Boston Univ	5	\$416.5M	\$395.9 M

Peer and Aspirant Award Titles

digital divide
wild primates
hyperthermia treatment
variable weaning strategies
aging populations
regulatory-compliant storage
abstract interpretation
multimodality optical imaging
tools/cocaine
systems biology
camera
next-generation model checking
microwave-based imaging
tumor-targeting
smart and connected communities
single-walled embedded control
physiological signatures
breast cancer carbon nanotubes

information
screening two-dimensional applications
mammography digital library
ontology tobacco use treatment cardiovascular disease
breast cancer development digital breast tomosynthesis
atherosclerosis new clinical decision support system
literature synthesized multi-center evaluation
clinical testing biosystems
multi-ethnic ontology
subclinical
U Vermont

[illegible]

DATA-DRIVEN STRATEGIES



Dimensions

1. Programmatic Growth
Focused on Increase Funding
Competitiveness

2. Increased Interdisciplinary
Collaborations to Leverage
Existing Strengths

3. Targeted Engagement for
High ROI External
Partnerships

FILTERS

FAVORITES

- START YEAR
- ACTIVE YEAR
- RESEARCHER (BETA)
- FUNDER
- FUNDER GROUP
- COUNTRY OF FUNDER
- RESEARCH ORGANIZATION
- COUNTRY

STATE/REGION

- ☐ Massachusetts 135
- ☐ New York 120
- ☐ Connecticut 51
- ☐ New Hampshire 15
- ☐ Rhode Island 9
- ☐ Maine 3
- ☐ Vermont 2

PUBLICATIONS

49,444

GRANTS

335

Title, Funder, Researcher

[Carboxycellulose Nanofibers from Underutilized Biomass](#)

National Science Foundation - Directorate for Mathematical & Physical Sciences
to Benjamin Hsiao

[NSF REU-Site: Research Experience for Undergraduate Students](#)
[Opening World Energy Resources" \(REU - POWER\)](#)

National Science Foundation - Directorate for Engineering
to Bradley Lehman

1	Research Organization - origi	Title
10	James Silv GE Global Research	Model-Based Extracted Water Desalination
13	Charles Xi Concord Consortium	Next Step Learning: Bridging Science and Engineering
20	Tamara Le TECHNICAL EDUCATION RESEARCH	Climate Literacy and Energy Awareness
25	Hui Xu Giner, Inc.	High-Performance, Long-Lifetime Carbon Nitride Supported Iridium Oxide
26	Ratcharit ITIAX LLC	Software Tool for Code-compliant Analysis
27	Tamara Le TECHNICAL EDUCATION RESEARCH	Climate Literacy and Energy Awareness
35	Hui Xu Giner, Inc.	Carbon Nitride Supported Iridium Oxide
36	Mark Zahr Aerodyne Research, Inc.	High Sensitivity HNO3 Monitor using Laser-Induced Fluorescence
41	Mark Zahr Aerodyne Research, Inc.	High Sensitivity HNO3 Monitor using Laser-Induced Fluorescence
42	Scott Herr Aerodyne Research, Inc.	High Sensitivity SO2 Monitor using Laser-Induced Fluorescence
43	Kanal Shal Radiation Monitoring Devices, Inc	Mixed Barium Halide Scintillators for Radiation Monitoring
45	Purushottam Radiation Monitoring Devices, Inc	Ultra-High Resolution High Sensitivity Radiation Monitoring
46	Jodi Asbel TERC Inc	Arcadia Resource Center: Targeted Research
47	Eric Ingers General Compression	Fuel-Free, Ubiquitous Compressed Air
51	BENJAMIN ALTAEROS ENERGIES INC	ROBUST AIRBORNE WIND TURBINE
54	Frank Mac FloDesign Wind Turbine	Breakthrough High-Efficiency Shrouded Wind Turbine
56	Tamara Le TERC Inc	Collaborative Research: Climate Literacy and Energy Awareness
57	Scott Herr Aerodyne Research, Inc.	High Sensitivity SO2 Monitor using Laser-Induced Fluorescence
58	Ana Racov Physical Sciences Inc.	Novel Oxidizers for Solid Propellants
59	Kris Kozuc Springfield Technical Community College	The At Ease Project
60	VIVEK V N RADIATION MONITORING DEVICES	Tunable Wavelength, High Efficiency, Low Cost Large Volume Lanthanide Scintillators
69	Bipin Singh Radiation Monitoring Devices, Inc	Low Cost Large Volume Lanthanide Scintillators
73	Vivek Nag RADIATION MONITORING DEVICES	Improvements in Scintillation Technology
84	James Kes Brayton Energy, LLC	Modular Undersea Compressed Air Energy Storage
86	Barry Holl SEA CORP	Inflator-Based Submerged Missile Ejection System
91	Michael V Gordon Research Conferences	Renewable Energy: Interdisciplinary Research
103	Cheryl L W University of Illinois at Urbana-Champaign	Black Carbon Emissions from Association of...



Energy Innovation Forum

Where Startups, Innovators, Researchers, Investors and Industry Converge

UMASS LOWELL & MASSECC PRESENT: ENERGY INNOVATION FORUM

The Energy Innovation Forum, held on October 18, 2017, brought together experts in the emerging energy markets, with an interest in the real-world applications of innovative technologies. The forum hosted startups, innovators, university researchers, investors, and industry leaders. The event included rapid fire presentations, keynote address, expert panels and plenty of time for networking.

[View the Rapid Fire Presentations](#)

Learn more about [Energy Initiatives at UMass Lowell](#).



MASSACHUSETTS
CLEAN ENERGY
CENTER
PREMIER SPONSOR





anne_maglia@uml.edu



[@ammaglia](https://twitter.com/ammaglia)



[linkedin.com/in/annemaglia](https://www.linkedin.com/in/annemaglia)