Department of Population and Quantitative Health Sciences

Celebrating our faculty, staff, and students through crowdsourcing

UMass Chan Medical School

JANUARY 11, 2022
Our vision is for the best health and well-being for all through science, community-engagement and education.

Our values include

• Science that makes a difference
• Health equity and social justice
• Lifelong learning that supports growth for all
• Collective creativity through collaboration and engagement
• Diversity and inclusion as drivers of scientific inquiry and excellence
Developing this presentation allowed me to:

- Reflect on the joy of working with engaged faculty, students, and staff who “have their heart in the right place” and who are deeply committed to high-quality science and health equity
- Reflect on the privilege to be trusted with the care of such a magnificent resource
- Reflect on the tremendous support from central administration
- Build the presentation about “crowd sourcing,” so that many may speak about their work in their own voice
- Grapple with an “embarrassment of riches”
We have an outstanding cadre of new faculty

Primary
• Ben Gerber, Professor, HIIS
• Austin Lee, Professor, BIO
• JungAe Lee, Assistant Professor, BIO
• Elise Stevens, Assistant Professor, PBM
• Lakshmana Swamy, Assistant Professor, BIO
• Chengwu Yang, Associate Professor, BIO
• Adrian Zai, Associate Professor, BIO

Secondary
• Nisha Fahey, Assistant Professor, Pediatrics
• Arvin Garg, Professor, Pediatrics
• Apurv Soni, Assistant Professor, Medicine

Affiliate
• Ekaterina (Katya) Anderson, Assistant Professor
• Rebecca Kinney, Instructor
PQHS Awards, Appointments, Promotions

- Ariel Beccia—2021 Academy for Eating Disorders Student/Early Career Fellowship
- Esther Boama-Nyarko—“40 Under Forty Award”
- Cathy Dube—Faculty Award for Outstanding Contributions to Curriculum Development
- Zach Dyer—21-22 Barbara Starfield Medical Care Scholar; Student Trustee
- Julia Hua Fang—2021 award recipient from UMass CTSA Pilot Project Program (PPP)
- Stephanie Lemon—Women’s Faculty Committee Annual Award for “Outstanding Community Service”
- Catherine Nagawa—awarded the Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship
- Josh Rumbut—Computer and Information Science (CIS) Graduate Research Award
- Apurv Soni—“29 Who Shine” Award
- Milagros Rosal—is among Worcester Business Journal’s 21 people to meet in 2021
- Sharina Person and Sarah Forrester—appointed to the Tenure Track
- Sarah Cutrona, Rajani Sadasivam and Bo Wang—promoted to Professor
- Julie Volkman—adjunct faculty—promoted to Associate Professor
We are blessed with top-notch faculty, staff, students, and productivity

Sarah Yeboah
Senior Administrator, PQHS
Our people are the “heart and soul” of PQHS

- 45 primary faculty
- 35 secondary faculty
- 40 voluntary or adjunct faculty
- 9 doctoral students, 16 graduate students
- 64 staff
  - 13 administrative
  - 51 research
Staff translate our vision into reality

14 administrative staff
- PQHS Chief Academic Administrator: Yeboah
- 6 Financial: Byron, Desai, Holden, Lou, McNally, O’Reilly
- 7 Secretarial: Baron, Kelly, McDonald, Raymond, Riley, Saber, Stankus

51 research staff
- 15 Quantitative Methods Core technical staff
  - Statistical computing: Ayturk, Bhatia, Flahive, Frisard, Lessard, Min, Morrison, Olaitan, Williams
  - Data management: Lazar, Orvek, Rosenberg, Rumbut
  - Project Management/Coordination: Granillo, McGrath
- 2 Research Informatics Core staff
  - Informatics Systems: Wong
  - Informatics Operations: Guilarte-Walker
- 34 program directors, research coordinators & assistants, project directors
We are growing ...

New Staff
• Jennifer Batista, Research Coordinator, EPI
• Elayn Byron, Academic Administrator
• Yan (Kathy) Guo, Research Assistant, BIO
• Carolyn Kelly, Executive Assistant to the Chair
• Anamika Kumari, Intern, HIIS
• Vivien Lou, Academic Administrator
• Camilla Madzial, RD LDN, Registered Dietitian and Nutritionist, PBM
• Emily McPhillips, Research Assistant, EPI
• Princilla Minkah, Research Coordinator, PBM
• Stacey Wainaina, Clinical Research Assistant, HIIS
• Jiayi (Jessie) Wang, Research Coordinator, EPI
• Koon (Steven) Wong, Director, Research Informatics Systems, Research Informatics Core

New post-docs
• Maira CastanedaAvila
• Donghee Lee
• Grace Ryan
• Elizabeth (Izzy) Schieber
And growing... with new arrivals

- Zahra (Maryum Zaidi)
- Hailey Marie (Jamie Faro)
- Eva Theodora (Deborah Mack)
- Eli (Zixiu Li)


## Service Awards

<table>
<thead>
<tr>
<th>Name</th>
<th>Years of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew Alcusky</td>
<td>5</td>
</tr>
<tr>
<td>Dhruti Desai</td>
<td>5</td>
</tr>
<tr>
<td>Karin Valentine Goins</td>
<td>5</td>
</tr>
<tr>
<td>Carl Hollins</td>
<td>5</td>
</tr>
<tr>
<td>Jeffrey Williams</td>
<td>5</td>
</tr>
<tr>
<td>Kavitha Balakrishnan</td>
<td>10</td>
</tr>
<tr>
<td>German Chiriboga</td>
<td>10</td>
</tr>
<tr>
<td>Eric Mick</td>
<td>10</td>
</tr>
<tr>
<td>Sharina Person</td>
<td>10</td>
</tr>
<tr>
<td>Jennifer Tjia</td>
<td>15</td>
</tr>
<tr>
<td>Christine Foley Frisard</td>
<td>20</td>
</tr>
<tr>
<td>Karen Ronayne</td>
<td>20</td>
</tr>
</tbody>
</table>
PQHS has a robust portfolio of sponsored projects dedicated to its core mission\(^1\)

<table>
<thead>
<tr>
<th>Sponsored Projects</th>
<th>Total Award Value</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>$98,992,336</td>
<td>67</td>
</tr>
<tr>
<td>Completed</td>
<td>$82,378,919</td>
<td>126</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$181,371,255</strong></td>
<td><strong>193</strong></td>
</tr>
<tr>
<td>Pending</td>
<td>$15,614,889</td>
<td>15</td>
</tr>
</tbody>
</table>

\(^1\)Only projects for which PQHS investigator is PI or Multi-PI are included.
Diversity Action Committee

Sharina D. Person, PhD
Professor and Vice-Chair, PQHS
**History of the Diversity Action Committee (DAC)**

**Purpose of the DAC:**
To provide information and education about diversity and inclusion to PQHS as it relates to our mission and effectiveness.

**Inaugural Members:**
- Esther Boama-Nyarko
- Amy Borg
- Germán Chiriboga
- Tammy Falla
- Katarina Ferruci
- Julie Flahive
- Rob Goldberg
- Yurima Guilarte-Walker
- Carly Herbert
- Ariana Kamberi
- Grace Masters
- Eric Mick
- Barbara Olendzki
- Jyothi Pendharkar
- Sharina Person
- Milagros Rosal
- Jessica Wijesundara
- Yiyang Yuan

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**UMass Chan Medical School**
Present Activities and Accomplishments

• Current Webpage: https://www.umassmed.edu/pqhs/diversity-and-inclusion/diversity-action-committee/

• Reviewed all guiding departmental documents (e.g., strategy map, mission and vision) through a diversity and inclusion lens. Made recommendations for changes as warranted.

• Developed a Charter for the DAC and webpage highlighting PQHS efforts in Diversity and Inclusion

• Developed Diversity Statement for PQHS
  • Key Points
    • Fostering equity with the purpose of improving quality of life and health through our work
    • Striving to foster a safe, proactive, and dynamic environment of respect and trust for all
    • Promote diversity in PQHS through enhancing recruitment and retention of diverse individuals
    • Collaboration with institutional leadership, other departments, and programs to advance diversity and inclusion

• Participated in departmental strategy sessions with Dr. Marlina Duncan, Vice Chancellor for Diversity and Inclusion
Future Plans

• Develop a Diversity Digest of currently existing resources for interaction, education and training (e.g., Affinity Groups, courses, suggested readings)
• Determination of current diversity of PQHS to set a baseline
• Cultural and Organizational Assessment of PQHS

Current DAC Membership

• Esther Boama-Nyarko
• Amy Borg
• Germán Chiriboga
• Katarina Ferruci
• Sarah Forrester
• Julie Flahive
• Yurima Guilarte-Walker
• Ariana Kamberi
• JungAe Lee
• Eric Mick
• Alice Min
• Barbara Olendezki
• Sharina Person
• Milagros Rosal
• Chengwu Yang
• Barret Zimmermann

Diversity Consultant: Gwen Cochran Hadden
Office of Health Equity

Milagros C. Rosal, PhD
Vice Provost for Health Equity
**Background**

- Population at large is becoming increasingly diverse
- Widely recognized lack of progress in building diversity among biomedical research faculty. Extrapolation of trends without intervention:
  - It will take nearly 50 years for women to reach parity among full professors
  - It will take centuries for racial/ethnic groups underrepresented in medicine (URiM) to reach parity among medical school faculty
- Pressing need to enhance diversity in NIH-funded institutions across the U.S
  - LCME accreditation
  - Only 2-6% of NIH funding to URiM faculty
  - Diversity improves institutional excellence in teaching, research & scholarship and patient care. It determines:
    - What questions we ask
    - How we ask those questions
    - How we go about answering them / methods
    - How we interpret the answers / what we do or how we use the data
- Diverse knowledge, lived experiences and world views benefit faculty, learners and patients alike:
  - Improvements in the quality of educational programs – cognitive diversity
  - Innovations AND faster pace of innovations
  - URiM faculty are mentors that can relate to URiM learners and role models for success
Current Initiatives

- Infrastructure to support programming
  - Fully staffing a new office
  - Co-lead DEI Liaisons committee; support FFEI, AALANA
  - Contribute to new data warehouse: diversity metrics and progress
- New strategic initiatives to facilitate recruitment of URiM faculty
  - Cluster recruitment pilot initiative – 6 departments actively recruiting, tenure track positions - Includes cluster hire and iCAP
  - Health Equity and Career Advancement (HERCA) compensation benefit for clinical hires
  - Collaborate with OFA, Department Chairs, DIO, CDIO: workflows that facilitate best practices for equitable faculty recruitment
  - FIRST Cohort grant proposal to NIH
- Pipeline development
  - Identification of top talent, including library searches – NIH toolkit
  - Networking with minority-serving institutions
  - Warm connections: Voices in Science, Ground Rounds
PQHS Education

Kate Lapane, PhD, MS
Associate Dean and Director of the Doctoral Program in Clinical and Population Health Research
“Education is the most powerful weapon which you can use to change the world.”

—NELSON MANDELA
## MD/PhD CPHR TRACK
(10 students, 30% diverse, 60% T awardees, 20% F awardees)

<table>
<thead>
<tr>
<th>Student</th>
<th>Mentor</th>
<th>Topic (Grant funding)</th>
<th># papers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MD/PhD students finishing medical school</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eric Ding</td>
<td>McManus</td>
<td>Smartwatches to aid in the diagnosis and management of cardiac arrhythmias (CVD T32, F31)</td>
<td>22*</td>
</tr>
<tr>
<td>Grace Masters</td>
<td>Byatt</td>
<td>Perinatal mental health, particularly in women with severe mental illnesses like bipolar disorder (TL1)</td>
<td>12</td>
</tr>
<tr>
<td><strong>MD/PhD candidates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eric Romo</td>
<td>Friedmann</td>
<td>Distance to sterile syringe source and hepatitis C virus (HCV) infection (PREP, TL1, F31)</td>
<td>3</td>
</tr>
<tr>
<td>Julie Hugunin</td>
<td>Lapane</td>
<td>Healthcare utilization in youth and young adults with serious mental health conditions (TL1, R36 pending, promising score)</td>
<td>6</td>
</tr>
<tr>
<td>Zach Dyer</td>
<td>Ash</td>
<td>Constructing a structural racism effect index (TL1, F31 pending, promising score)</td>
<td>1</td>
</tr>
<tr>
<td><strong>MD/PhD students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carly Herbert; Mentor: Soni, 5 publications (NCI T32). Pryce Michener; Mentor: Friedmann, 4 publications. Laël Ngangmeni; Mentor: Mattocks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claire Branley and Hye In Sarah Lee newly matriculated in 2021!</td>
<td></td>
<td></td>
<td>* Includes conference proceedings</td>
</tr>
</tbody>
</table>
# PhD—Clinical and Population Health Research

(19 students, 37% diverse, 32% international, 63% TL1, T32, F, IMSD)

<table>
<thead>
<tr>
<th>Candidates</th>
<th>Mentor</th>
<th>Topic (Grant funding)</th>
<th># papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maira Castaneda-Avila</td>
<td>Epstein</td>
<td>The Role Of A Monoclonal Gammopathy Of Undetermined Significance Diagnosis In Healthcare Utilization</td>
<td>12</td>
</tr>
<tr>
<td>Nien-Chen Li</td>
<td>Ash</td>
<td>Assessing and Modeling Quality Measures for Healthcare Systems (IMSD)</td>
<td>4</td>
</tr>
<tr>
<td>Ariel Beccia</td>
<td>Lapane</td>
<td>Intersectionality of sexual orientation, gender expression, and weight status on risk of disordered eating behaviors (CVD T32, F31)</td>
<td>15</td>
</tr>
<tr>
<td>Catherine Nagawa</td>
<td>Sadasivam</td>
<td>Smoking cessation in persons with mental health conditions (IMSD,T32,F31)</td>
<td>11</td>
</tr>
<tr>
<td>Danni Zhao</td>
<td>Lapane</td>
<td>The Use of Gabapentinoids for Pain in the Ongoing US Opioid Epidemic</td>
<td>5</td>
</tr>
<tr>
<td>Bunmi Emidio</td>
<td>Lemon</td>
<td>Mixed Methods Study of Psychosocial Distress Screening in Newly Diagnosed Lung Cancer Patients (NCI T32, IMSD)</td>
<td>4</td>
</tr>
<tr>
<td>Yiyang Yuan</td>
<td>Lapane</td>
<td>Trajectories of physical frailty and cognitive impairment among nursing home residents and community-dwelling older adults (F99/K00)</td>
<td>10</td>
</tr>
</tbody>
</table>
## PhD—Clinical and Population Health Research

<table>
<thead>
<tr>
<th>Candidate/Student</th>
<th>Mentor</th>
<th>Topic (Grant funding)</th>
<th># papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divya Shridharmurthy*</td>
<td>Liu</td>
<td>Management of spondyloarthritis in pregnancy</td>
<td>6</td>
</tr>
<tr>
<td>Qiaoxi (Tracy) Chen*</td>
<td>Alcusky</td>
<td>Improving Oral Anticoagulant Use among Nursing Home Residents with Atrial Fibrillation</td>
<td>2</td>
</tr>
<tr>
<td>Melissa Goulding*</td>
<td>Lemon</td>
<td>Pediatric Hypertension Screening and Follow-up: A Mixed Methods Assessment (IMSD, TL1, F31 pending)</td>
<td>6</td>
</tr>
<tr>
<td>Katarina Ferrucci*</td>
<td>Jesdale</td>
<td>Eating disorders among transgender populations(TL1, R36 scored)</td>
<td>4</td>
</tr>
<tr>
<td>Syed Naqvi</td>
<td>Nunes</td>
<td>Pressure ulcer in nursing home residents (PREP, IMSD)</td>
<td>1</td>
</tr>
<tr>
<td>Esther Boama-Nyarko</td>
<td>Byatt</td>
<td>Perinatal mental health services for women of color (IMSD, TL1)</td>
<td>2</td>
</tr>
<tr>
<td>Seun Osundolire</td>
<td>Lapané</td>
<td>Heart failure management in nursing home residents (IMSD)</td>
<td>2</td>
</tr>
<tr>
<td>Peng (Billy) Zhou</td>
<td>Zhou</td>
<td>Noncoding RNAs and epigenomics for personalized medicine</td>
<td></td>
</tr>
</tbody>
</table>

**Welcome incoming students 2021!**

- Clevanne Julce (mentor: Byatt, IMSD)  
- Stephane Labossiere (mentor: Lemon, IMSD)  
- Arvis Mortimer (mentor: Wang)  
- Atinuke Oyinbo (mentors: Lapané/Epstein)  
- Meagan Sabatino (mentor: Alcusky, T32 funded)
Master of Science in Clinical Investigation

Incoming 2021 class
• 3 medical students (1 year MSCI option)
  • Adam Cellurale, Eileen ‘Riley’ McNichols, Dawn Truong
• 4 physicians
  • Kathryn Delaney (Maternal Fetal Medicine)
  • Jacqueline Furbacher (Emergency Medicine, Health Equity Fellow)
  • Kamaris Merritt (Pediatrics)
  • Kara Smith (Neurology, K awardee)

8 completed MSCI in 2021
• Jordy Mehawej (CVD T32, 14 publications)
• Max Hazeltine (Surgery, 10 publications)
• Nisha Fahey (Pediatrics, 5 publications)
• Sarah Davenport (Pediatrics, 1 publication)
• Gianna Wilkie (Maternal Fetal Medicine, 2 publications)
• Lauren Orr (Maternal Fetal Medicine, 1 publication)
• Jessica Kloppenburg (medical student, 1 publication)
• Wanlu Xu (medical student, 1 publication)
PQHS Research and Service

Jeroan Allison, MD, MS
Professor and Chair, PQHS
Adolescent HIV-related behavioural prediction using machine learning: a foundation for precision HIV prevention
Bo Wanga,*, Feifan Liu a,*, Lynette Deveauxb, Arlene Asha, Samiran Goshc, Xiaoming Lid, Elke Rundensteinerb, Lesley Cottrellf, Richard Adderleyb and Bonita Stantonn

AIDS 2021, 35 (Suppl 1):S75–S84

Integrating Self-Report and Psychophysiological Measures in Waterpipe Tobacco Message Testing: A Novel Application of Multi-Attribute Decision Modeling
Elise M. Stevens 1, *, Andrea C. Villanti 2, Glenn Lesnuer 3, Theodore L. Wagener 4, *, Brittny Keller-Hamilton 5, 6 and Darren Mays 7, 8

Effect of Poloxamer 188 vs Placebo on Painful Vasocclusant Episodes in Children and Adults With Sickle Cell Disease: A Randomized Clinical Trial
James F. Casella, MD, Bruce A. Barton, PhD, Julie Kanter, MD, L. Vandy Black, MD, MSc, Suvanjak Majumdar, MD, Adilette Inati, MD, Yasser Wall, MD, Richard A. Drachman, MD, Miguel R. Abbad, MD, Yordanur Kilinc, MD, Beng-R. Fung, MD, Murat Kung, MD, Clifford M. Takekoto, MD, Emad Salama, MD, Sharada A. Samaik, MD, Nirnosh Shah, MD, Claudia R. Barritt, RN, MSc, Jennifer Keates-Baleanu, MD, Ashok Raj, MD, Ofelia A. Alvarez, MD, Lewis L. Hou, MD, PhD, Alexis A. Thompson, MPH, MPH, India Y. Sider, MD, Betty S. Pace, MD, Suzie A. Noronha, MD, Joseph L. Lasky III, MD, Elena Cela de Julian, MD, MSc, PhD, Kamar Goldde, MD, Courtney Dawn Thornburg, MD, MS, Natalie L. Kambers, DO, Rachelle Nuss, MD, Anne M. Marsh, MD, William C. Owen, MD, Anne Schaefer, MD, Cameron K. Tebbi, MD, Christine F. Chantraine, MD, PhD, Debza E. Cohen, MD, Stylianos Karalas, MD, Connie M. Piccone, MD, Alex George, MD, Jason M. Fishk, MD, Tammussia C. Singleton, MD, Thomas Moulton, MD, Charles T. Quinn, MD, MS, Clarisse Lopes de Castro Lobo, MD, PhD, Abdulkareem M. Almom, MD, Meenakshi Goyal-Khemka, MD, Philip Mers, MD, Marty Emame, PhD, MBA, Rebecca T. Gormey, MS, Claire S. Pyllett, PhD, Ed Parsley, DO, Shari S. Kornsberg, MS, Gregory J. Kate, MD, Mark T. Gladen, MD

Disease Burden and Health-Related Quality of Life Among Women and Men with Spondyloarthritis: An Exploratory Analysis of a Population-Based Sample
Divya Shritharmurthy, MBBS, MPH, 1, 2 Danni Zhao, MS, 1, 2, Kate L. Lapane, PhD, 1 Jonggyu Baek, PhD, 3 Jonathan Kay, MD, 1, 4, 5 and Shao-Hsien Liu, MPH, PhD 1, 5

JOURNAL OF WOMEN'S HEALTH
Volume 00, Number 00, 2021
DOI: 10.1089/jwh.2020.8763

JAMA | Original Investigation

Article

International Journal of Environmental Research and Public Health

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COVID-19 Mortality Prediction among Patients with Cancer Using a Large National Cohort

Feifan Liu, PhD1, Noha Sharafieldin, MD, MSc, PhD2, Vithal Madhira, MS3, Kate Bradwell, PhD4, Qianqian Song, PhD5, Benjamin Bates, MD6, Yu Raymond Shao, MD, PhD7, Jing Su, PhD8, Alfred Jerrod Anzalone, MS9, Tim Bergquist, PhD10, Sarah L. Cutrona, MD, MPH11, Ben S. Gerber, MD, MPH12, Peter N. Robinson, MD, PhD13, Justin Gainey, PhD14, Umit Topaloglu, PhD, FAMA15

1University of Massachusetts Medical School, Worcester, MA; 2 University of Alabama at Birmingham, Birmingham, AL; 3 Palilia Software, Reno, NV; 4 Palantir Technologies, Denver, CO; 5 Wake Forest School of Medicine, Winston Salem, NC; 6 Rutgers Center for Pharmacoepidemiology and Treatment Science, New Brunswick, NJ; 7 Duke Cancer Institute, Durham, NC; 8 Indiana University School of Medicine, Indianapolis, IN; 9 University of Nebraska Medical Center, Omaha, NE; 10 Sagen Bioworks, Seattle, WA; 11 The Jackson Laboratory, Farmington, CT

American Medical Informatics Association Symposium, 2021

Actions to Transform US Preventive Services Task Force Methods to Mitigate Systemic Racism in Clinical Preventive Services

US Preventive Services Task Force

Article Information

An Efficient Segmentation Algorithm to Estimate Sleep Duration from Actigraphy Data

Jonggyu Baek1,2 · Magaret Banker2 · Erica C. Jansen3 · Xichen She3 · Karen E. Peterson3 · E. Andrew Pitchford4 · Peter X. K. Song2

https://doi.org/10.1007/s12561-021-09309-3
Physical Activity, Mental Health, and Technology Preferences to Support Cancer Survivors During the COVID-19 Pandemic: Cross-sectional Study

Jamie M Faro¹, PhD; Kristin M Mattocks¹,², MPH, PhD; Catherine S Nagawa¹, MS; Stephenie C Lemon³, PhD; Bo Wang⁴, PhD; Sarah L Cutrona¹,³, MD, MPH; Rajani S Sadaviam¹, PhD

JMI Cancer 2021 | vol. 7 | iss. 1 | e25317

Annals of Internal Medicine

Extending a Lifeline to Nonhospitalized Patients With COVID-19 Through Automated Text Messaging

Jamie M. Faro, PhD
University of Massachusetts Medical School, Worcester, Massachusetts

Sarah L. Cutrona, MD, MPH
Bedford VA Healthcare System, Bedford, Massachusetts
Developing a behavioral support texting protocol for hypertension incorporating African American Veterans’ success stories


Pathogen and Surrogate Survival in Relation to Fecal Indicator Bacteria in Freshwater Mesocosms

Christopher A. Baker,* Giselle Almeida,† Jung Ae Lee,‡ Kristen E. Gibson

Qualifying Certainty in Radiology Reports through Deep Learning–Based Natural Language Processing

†F. Liu, ‡P. Zhou, †S.J. Baccei, †M.J. Masciocchi, ‡N. Amornsiripanitch, †C.I. Kiefe, and †M.P. Rosen

“Recuerda La Memoria”

Germán Chiriboga, MPH
Program Director
“Recuerda La Memoria”  “Remember the Memory”

- A Health Equity Multi-Media Installation including recycled sculpture, drawing, and public health storytelling

- This is a 3-piece installation to discuss health equity for Latinos during the COVID pandemic. We used a blend of recycled material sculpture, drawing, and public health storytelling to convey messages of vaccination, hesitancy, empathy, and discussion of data through deep cultural symbology.

- The work was funded by the Creative Intersections grant from the Greater Worcester Community Foundation and was presented originally for a Health Equity Celebration during Día de los Muertos in the City of Worcester.

- Authors: José Criollo (sculpture and concept), Fernando Ponce (Video Editing), Germán Chiriboga (sculpture and concept, drawing, and storytelling development).

- Unveiled during the “Día de Los Muertos” Celebration on Oct. 30 in Worcester.
“Recuerda La Memoria”

Funded by The Greater Worcester Foundation’s Creative Intersections Grant

Supported by Health and Human Services—City of Worcester
A special shoutout to a fellow artist and health equity partner: Geraldine Puerto for her contribution.
Worcester COVID Vaccine Ambassador Public Health Campaign

Stephenie Lemon, Ph. D.
Chief, Division of Preventive and Behavioral Medicine
Worcester Vaccine Ambassador Public Health Campaign

Evidence-informed behavioral medicine and public health

Voices of youth and families

Theory-based and locally adapted

• Youth empowerment, social norms/modeling approaches to behavior change
• Informed by focus groups and local experts

Campaign approach

• Young adults, teens, younger children, parents
• Provide structured, foundational training in COVID, vaccinations and effective messaging
• Work with ambassadors to find their “Reason Why”
• Showcase local locations and ambassadors ‘safe spaces’
• Step back and allow creativity of Ambassadors, Photographers, Videographers, etc…
Local dissemination

- Television and radio PSAs
- Billboards
- Bus ads
- Posters and flyers in community organizations
- Social media campaign
- JMAC vaccination event with BCBS and the City

Community engaged approach

Key Partner

- City of Worcester Department of Health and Human Services

Additional Collaborators

- City of Worcester Division of Youth Opportunities
- Girls Inc. of Worcester
- El Buen Samaritano
- Seven Hills/Family Resource Center
- YMCA of Central MA
- Local photographers and videographers
- UMass Chan Office of Human Resources
"I’m vaccinated. For my mom, for my dad, for my grandmother…for myself. I love them, so I want to protect them. Protect yours!"

— Ja’Marion, Age 17
Worcester Youth Vaccine Ambassador
Worcester, Massachusetts
Favorite Neighborhood: Furnley Village

Questions about the vaccine or vaccine clinics?
Call the Massachusetts Department of Health and Human Services Mobile Clinics at 508-860-4646. Or visit https://vaccine.mass.gov/for more information about vaccines in Worcester.

COVID-19 Vaccines in Worcester Available at:
- Alden Park Worcester, 165 Southbridge Street; Fridays from 1–4 PM
- Edward M. Kennedy Community Health Center, 19 Tatnuck Street; Mondays, Fridays, 5 AM – 1 PM
- UMass Memorial Medical Center, Howe Street; Mondays, PM – 4 PM; Tuesdays, 10 AM – 3 PM; Thursdays, PM – 3 PM
- Worcester Public Library Main Branch, 2 Saint Street; Wednesdays, PM – 7 PM; Saturdays, 11 AM – 6 PM

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#PostVaxLife
Vaccine Ambassador Campaign Next Steps

• Provider message campaign
• Integration with communications trainings for providers

Additional Vaccine Promotion Activities

• Youth agency workshops and social media competition (YMCA, REC, Girls Inc., Boys & Girls Club, Job Corps)
• ~25 Community forums
• “Navigation” best practices trainings for community agencies
UMass Worcester PRC Vaccine Ambassador Campaign Team

- Amy Borg
- Chris Frisard
- Melissa Goulding
- Stephenie Lemon
- Princilla Minkah
- Milagros Rosal
- Grace Ryan
Research Informatics Core

Adrian Zai, MD, PhD, MPH
Chief Research Informatics Officer, Director, Research Informatics Core
Research Informatics Core (RIC)
Institutional Core co-sponsored by PQHS and CCTS

Access to clinical data:
We provide clinical data from the Epic electronic health record system for grant preparation, Patient Recruitment and Retrospective Research.

Get Data Analytics or Geo-Mapping Support:
We provide investigators with clinical research support in statistics, experimental design, data analytics, project management, and geo-mapping.

Enable Natural Language Processing and Machine Learning:
We assist researchers in the design and implementation of solutions to complex data-related problems involving Natural Language Processing and Machine (Deep) Learning.

Collaborate with our partners for additional informatics services:
We work closely with our partners to support other informatics needs with, for example, Epic research tools, or advance AI analytics for imaging.

Partners:
Quantitative Methods Core
Program in Digital Medicine
Health Informatics and Implementation Sciences
Introducing...

The Research Informatics Core has 2 main objectives:

1. to provide excellent informatics services to our Researchers
2. to design and build the best research informatics infrastructure in the future.

Yurima Guilarte-Walker
Director of Research Informatics Operations

Steven Wong
Director of Research Informatics Systems

RIC Website: https://www.umassmed.edu/research-informatics/

Click on “Contact Us”, select an office hour and schedule a free consult
Storytelling Interventions in the Time of COVID
Breaking down barriers to diverse research participation and vaccine uptake

Sarah Forrester, PhD
Assistant Professor, PQHS
Background

Clinical Research
Lacks diversity

COVID Research
Similar pattern as general clinical research

Vaccine Hesitancy
Affects all populations but particularly dangerous for populations at the highest risk for bad outcomes

Solutions?
How do we change behavior without coming up against cognitive barriers?
Storytelling
Culturally appropriate, universal human appeal, grounded in shared experiences

Community
Partnerships and buy-in from conceptualization to completion

COVIDStory
Overcome barriers to participation in COVID research among Black and Hispanic communities in Worcester

COVIDVaxStories
Address community identified barriers to vaccine hesitancy in populations of color in Worcester

NIH
NATIONAL CANCER INSTITUTE

MERCK
INVENTING FOR LIFE
UMass Memorial Health–UMass Chan Medical School
Health Policy Task Force

Eric Mick, ScD
Assistant Professor, PQHS
Health Policy Task Force

Collaboration with PQHS and UMass Memorial Health

• Mission is to bring our research expertise to pressing healthcare policy issues prioritized by UMass Memorial Health’s leadership.

• To-date we’ve had introductory meetings as we flesh out the short- and medium-term agenda for the task force.

• We aim to be responsive to needs of hospital leadership in this inaugural year.

• First project underway is focused on the impact of Medicare for All on our system.
Health Policy Task Force Project 1: Impact of Medical for All on Safety Net Systems

Collaboration with PQHS and UMass Memorial Health

- This is a collaboration between UMass Chan Medical School (PQHS) and UMass Memorial Medical Center (Finance)
- Our Main Aim is to identify key components of an M4A system transformation that would enable UMMC to maintain the same quality of care as under the current system

Diagram:

Jul/Aug  Aug/Sep  Oct/Nov  Dec

- Environment Scenarios
- Interviews
- Cost Modeling
- Revenue Modeling
- Initial Results

- Develop interview templates
- Identify admin cost areas likely impacted
- Interviews
- Cost Modeling
- Revenue Modeling
- Initial Results
Health Policy Task Force

- Eric Dickson, MD MHCM FACEP
- Eric Mick, ScD
- Susan Stinson, VP Finance
- Arlene Ash, PhD
- David Polakoff, MD MSc
- Apurv Soni, MD PhD
- Jeroan Allison, MD MS
Quantitative Methods Core: Central to our Department’s Mission

Bruce Barton, PhD
Professor and Director of Quantitative Methods Core, PQHS
Quantitative Methods Core central to PQHS mission

- QMC is the outreach arm of PQHS to offer support to UMMS researchers
- Consults and Projects from 05/2010: 2,944
- Investigators: 700+
- Departments: All UMMS
- Staffing (full- and part-time):
  - Faculty: 7
  - Statistical Analysts/informatics: 12
  - Data Management: 4
  - Project management: 3
- Based on fiscally responsible model balancing staffing levels with income
Selected QMC Research Projects

- RADx (Rapid Accelerated Development of Diagnostics) Data Team—Multiple studies/designs
- Alcoholic Hepatitis Research Network Data Coordinating Center—Manage 10 translational and pilot studies and biorepository—House/support genomic and clinical data on 2,000 AH patients and healthy controls
- Fitbit Clinical Trial Data Coordinating Center for 700 participant RCT of study link between activity and biomedical data
- BedJet/Fitbit Study of sleep quality: UMMC staff on swing shifts
- Moderna CMV transmission study in daycare centers
- External collaborators: Baystate, WPI, UML, UMB, VA, CorEvitas
UMass Chan Independent Evaluation of the Massachusetts Delivery System Reform Incentive Payment Program (DSRIP)

Matthew Alcusky, PhD, Pharm D, MS  
Assistant Professor, PQHS

Jay Himmelstein, MD, MPH  
Professor Emeritus, PQHS

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Massachusetts health policy innovations have been funded through Medicaid 1115 Demonstration Waivers

The current Demonstration (2017–2022) included a $1.8 billion DSRIP program to transform the delivery system, integrate care, and hold providers accountable for quality and costs

- DSRIP funds are being used to develop Medicaid Accountable Care Organizations (ACOs) and Community Partners (CPs), to pay for services related to health-related social needs, and to expand the statewide healthcare workforce
  - More than 1 million (>80%) eligible members were shifted from traditional managed care into 17 Medicaid ACOs
  - Hundreds of new ACO-CP partnerships formed; >18,000 members engaged by CPs in 2018 –2019
  - An innovative Flexible Services program (housing and nutritional supports) launched in 2020 with >60 ACO-Social Service Organization partnerships and >3,300 members served in the initial year
- UMass Chan, through a collaboration between PQHS and Commonwealth Medicine, was chosen to serve as the Independent Evaluator for the Demonstration and the DSRIP program.
  - This $7+million, 7-year mixed methods study is one of the first to be conducted and reviewed under recently adopted CMS scientific guidelines
The UMass Interim Report (IEIR) was submitted with the Massachusetts Demonstration extension request

The IEIR found significant progress during early implementation and made recommendations for the next phase of the Demonstration

IEIR recommendations included:

• Target funding to areas of greatest need to continue and sustain delivery system improvements
• Add new program elements to engage and align provider incentives with those of the ACO
• Improve collection of race, ethnicity, language, disability, and health-related social needs data to better understand how reforms affect these populations

The goals of the new (2022-2027) MA Demonstration extension reflect UMass input and include:

• Continue the path of restructuring and accountable, value-based care
• Make new investments in primary care, behavioral health, and pediatric care
• Advance health equity, with a focus on initiatives addressing health-related social needs and specific disparities
Enhancing diabetes self-management training with Behavioral Economics + Patient-facing Technologies

Daniel J. Amante, PhD, MPH
Assistant Professor, PQHS
DM-BOOST
Diabetes Mellitus program using Behavioral economics to Optimize Outreach and Self-Management support with Technology

Evidence: Diabetes self-management training helps.
Problem: Not enough patients complete it.
Possible solution: Leverage behavioral economics + patient-facing tech!!

- What is Behavioral Economics (BE)?
  - Choice Architecture/Defaults
  - Herd Behavior
  - Loss Aversion
- How can patient-facing tech help?
  - Text-messaging
  - Patient Portal (MyChart)
  - Telehealth
- Intervention Development Approach:
  - User-centered Design Thinking

Design Thinking: A 5-Stage Process

Empathize → Define → Ideate → Prototype → Test
**DM-BOOST Approach, Components + Future Directions**

**KL2 Approach:**
1. Community Engagement Studios with Patient Research Expert Panel (PREP)
2. Intervention content development with PREP
3. Usability/Acceptability testing with PREP
4. Randomized Feasibility Pilot (ongoing)

**Intervention Components:**
1. Mailed Active Choice Invitations + Recruit Call
2. Peer tips + goal-setting nudge text messages
3. Telehealth training + MyChart Message

**Pending K01 Proposal:**
- Culturally adapt: Spanish-speaking Latinx pts
- BE enhancements: Default Invitation, personalized tips, loss aversion @ telehealth training
- Pilot testing: Acceptability/Usability/Feasibility

**Future:**
- R01 proposal to test efficacy in English + Spanish

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mHealth Messaging to Motivate Quitline Use and Quitting in People living with HIV-PLWH (M2Q2-HIV)

NIH Award #: 1U01CA261604-01
MPIs: Rajani Sadasivam, PhD and Hoa Nguyen, MD, PhD
Smoking in PLWH in Vietnam

- Vietnam has 250,000 PLWH, with 13,000 new infections and 2,800 HIV-related deaths annually
- Smoking is higher among PLWH than general population (men: 60% vs. 42%; women: 3% vs. 2%)
- Intersection between smoking and HIV/AIDS poses a serious public health threat leading to disproportionate suffering and mortality among PLWH
- HIV stigma are highly prevalent and frequently paired with substance use stigma, which are important barriers to quitting
- Need novel interventions tailored for PLWH in Vietnam to promote smoking cessation and reduce stigma
Study Design

• **Setting:** Hai Phong and Quang Ninh provinces in northern Vietnam

• **Aim 1:** Adapt the existing M2Q2 peer messaging, computer-tailored texting intervention for PLWH smokers

• **Aim 2:** Conduct a 2 arm- RCT including 750 PLWH smokers from 26 HIV clinics
  - **Intervention:** Motivational text messages to promote Quitline use, smoking cessation, and reduce HIV related stigma
  - **Comparison group:** Minimal texting
  - **Outcomes:** 6-month verified cessation rate (primary), self-efficacy, QOL, stigma, mental health, and HIV outcomes (viral load, CD4, ART adherence)

• **Aim 3:** Prepare for national dissemination by assessing acceptability and contextual factors using qualitative interviews with key stakeholders and PLWH smokers

• **Capacity Building**
Dissertation Research

Smoking cessation in persons with mental health conditions (MHC): exploring the role of family and peers

Catherine S. Nagawa, PhD
Dissertation Work: Background

- Smokers with MHC are interested in quitting, but their quit rate has not increased over the past decade
- Family/peer support is a promising strategy for reducing smoking rates in persons with MHC who smoke
  - Family/peers’ influence on health is well established in behavior change
  - Family or close friend/peers are often a principal resource for accessing care
- Knowledge gap: Influence of family and peers’ attitudes (and behaviors) on smoking cessation is understudied in smokers with mental health conditions
Dissertation Work: Specific Aims

1. Examine associations between family/peer attitudes on tobacco use and smoking cessation
2. Evaluate relationships between family/peer influences and smoking cessation using structural equation models
3. Explore social barriers and facilitators to smoking cessation
Dissertation Work: Findings

Associations between family or peer attitudes on tobacco use and smoking cessation

Relationships between family or peer influences and smoking cessation

- Family/peer attitudes on tobacco use → intentions → cessation
- Rules against smoking in the home & non-smoking family/peers → cessation

Social barriers & facilitators to smoking cessation (Aim 3)

1. Level of readiness to quit
2. Family dynamics
3. Insufficient support
Learning to Step Outside your Lane: Building VA/UMMS Partnerships

Kristin M. Mattocks, PhD, MPH
Associate Dean for Veterans Affairs
Professor, Population and Quantitative Health Sciences

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Worcester VA Community Based Outpatient Clinic: A lesson in venturing outside your lane and not giving up

We were all trained as researchers and/or clinicians, but where is your greatest impact?

2013: First draft of “Joint Venture” proposal sent to VA
2015: UCLA baseball stadium stopped progress of Worcester CBOC
2018: Some clinical services moved to 7th floor ACC
2019: Ground-breaking ceremony
July 2020: Promise to Provost Flotte to try to move UMMHC/Optum contract forward
July 2020–October 2021: Work with VA Undersecretary for Community Care and UMMHS
October 2021: UMMHC signs Optum contract
November 2021: Ribbon cutting ceremony
UMass Chan Veterans Health Research and Education Fund

• New UMass fund to support research and education focusing on Veterans receiving care at Worcester CBOC

• **Spring 2022:** an RFA will be released that will allow UMMS investigators to apply for pilot funding to examine health/healthcare utilization for Veterans at Worcester CBOC

• Pilot funding amounts to be determined

• UMMS employees may donate to Veterans Health Fund through UMass Chan Cares Campaign: [https://umasschancares.org](https://umasschancares.org)
The Solidarity Project

Arlene Ash, PhD
Division of Biostatistics and Health Services Research
PQHS seeks ways to support our workers, encourage collaboration, and improve morale

• The pandemic has changed our lives… productivity is up, but so are isolation and burnout … the new “normal” will be different

• We must adapt to thrive
  • “Pause weeks” - to concentrate on creativity and catch up on important looming tasks
  • Funding for (employee initiated) training ideas
  • New ideas welcome

Social Solidarity (how we feel connected and united with one another and to the society as whole) is key!
The Solidarity Project

• Hypothesis: Social solidarity \( \rightarrow \) improves happiness and productivity

• Methods:
  • Identify ideas for improving connections among faculty, staff, administrators
  • Pilot promising interventions, generate feedback and improve them
  • Longer term: Seek funding to test and disseminate successful interventions

• First step
  • Gift cards for all staff (funded by senior faculty)

• Second step, coming in the spring
  • Gift cards for taking someone you haven’t socialized with before out for a “coffee”—to learn a little about each others’ lives (COVID permitting) with foundation funding

• Seeking volunteers to plan Solidarity Project activities
“If you have a strong purpose in life, you don't have to be pushed. Your passion will drive you there.”

—ROY T. BENNETT, THE LIGHT IN THE HEART

“Leadership is not about titles, positions or flowcharts. It is about one life influencing another.”

—JOHN MAXWELL