



CENTER FOR CLINICAL AND TRANSLATIONAL SCIENCE

UNIVERSITY OF MASSACHUSETTS CENTER FOR CLINICAL & TRANSLATIONAL SCIENCE
6TH ANNUAL RESEARCH RETREAT
May 20, 2016
Albert Sherman Center, UMass Medical School

POSTER SESSION

12:30 – 2:30 PM

Faculty Conference Room and Medical School Lobby
University of Massachusetts Medical School

1. Piloting Signs of Safety: A Deaf-Accessible Toolkit for Trauma and Addiction

Melissa L. Anderson, PhD¹, Kelly S. Wolf Craig, PhD², Amanda Sortwell, MS, IMF³, Douglas M. Ziedonis, MD, MPH¹

¹Department of Psychiatry, Systems & Psychosocial Advances Research Center (SPARC), University of Massachusetts Medical School, Worcester, MA; ²Department of Developmental Services, East Hartford, CT; ³Deaf Community Behavioral Health Services, San Diego, CA

2. Plasma PLP Concentration and Depressive Symptomatology, Over Time, in Older Latino Adults

Sandra P. Arévalo, PhD¹, Tammy Scott, PhD, MPH², Luis M. Falcón, PhD³, Katherine L. Tucker, PhD¹

¹Department of Clinical Laboratory and Nutritional Sciences, University of Massachusetts Lowell; ²Department of Psychiatry, Tufts University School of Medicine; ³College of Fine Arts, Humanities and Social Sciences, University of Massachusetts Lowell

3. Race/Sex Group Modification of the Association between Allostatic Load and Depression: Findings from the National Health and Nutrition Examination Survey, 2005-2010

Ganga Bey, MPH, Sharina Person, PhD

Department of Quantitative Health Sciences, University of Massachusetts Medical School

4. Prospective Relations between Red Blood Cell ω -6 and ω -3 Fatty Acid Composition and Cognitive Function among Older Puerto Rican Adults

Sherman J Bigornia¹, Tammy M Scott², William S Harris³, and Tucker L Katherine¹

¹Clinical Laboratory & Nutritional Sciences, University of Massachusetts Lowell; ²USDA Jean Mayer Human Nutrition Research Center on Aging, Tufts University; ³Department of Medicine, Sanford School of Medicine of the University of South Dakota

5. Implantable Microenvironments to Capture Stable-to- Aggressive Tumor Transition

Ryan Carpenter, Jungwoo Lee

Department of Chemical Engineering, Institute for Applied Life Sciences University of Massachusetts Amherst

6. Utilizing the Green Nursing Project Initiative to Educate Nurses about Health Effects Related to Exposure of Chemicals Contained in Household and Personal Care Products and to Inspire Them to Take Action

Lisa Chan MSN, RNC-OB¹, Stephanie Chalupka, EdD, RN, PHCNS-BC, FAAOHN, FNAP²

¹UMass Memorial Medical Center, ²Worcester State University

- 7. A Reduced Order Model For Efficient Physiological Flow Analysis In Aneurysms by Proper Orthogonal Decomposition**
Gary Han Chang, Yahya Modarres-Sadeghi
Mechanical Engineering, University of Massachusetts Amherst
- 8. The Effect of Mobile Self-monitoring on Self-care Behaviors in Heart Failure and COPD Patients: A Feasibility Study**
Elizabeth Chin, PhD, RN¹, Kristen Sethares, PhD, RN, CNE¹, Paul Fortier, PhD², Benjamin Viall, PhD²
¹College of Nursing, ²College of Engineering, University of Massachusetts Dartmouth
- 9. Workplace Predictors of Perceived Quality of Care in Nursing Homes**
Winnie Chin, MS¹, Laura Punnett, ScD², Rebecca Gore, ScD², Laura Kernan, MS², Procare Research Team²
¹Occupational Ergonomics and Safety Program, ²Department of Work Environment, University of Massachusetts Lowell
- 10. Community-based Participatory Research to Promote Healthy Diet and Nutrition and Prevent and Control Obesity among African Americans: A Literature Review**
Steven Coughlin, PhD¹, Selina Smith, PhD, MDiv²
¹Division of Public Health, University of Massachusetts Lowell; ²Institute of Public and Preventive Health, Augusta University, Augusta, GA
- 11. Bioavailability of the Antimalarial Drug Artemisinin Delivered Orally as Dried Leaves of *Artemisia annua*: the Role of Solubility and Protein**
Matthew Desrosiers, Pamela Weathers
Department of Biology and Biotechnology, Worcester Polytechnic Institute
- 12. Sulforaphane Treatment of Children with Autism Spectrum Disorder**
Eileen Diggins, BA, Andrew Zimmerman, MD, Kanwaljit Singh, MD, Susan Connors, MD
Division of Neurology, Department of Pediatrics, University of Massachusetts Medical School
- 13. Predicting Early Failure in Total Knee Arthroplasty: A Critical Review of Oxinium Femoral Components**
Steven T. DiSegna, MD, Wenyun Yang, BS, David C. Ayers, MD, Patricia D. Franklin, MD, MBA, MPH
Department of Orthopedics and Physical Rehabilitation, University of Massachusetts Medical School
- 14. Change in Anti- gp120 Human Monoclonal Antibody Isotype Significantly Improves HIV-1 Neutralization**
Mark Duval, Melissa Gawron, Lisa Cavacini
MassBiologics of the University of Massachusetts Medical School
- 15. Identification of GDF-6 Blocking Antibodies as Anti-melanoma Therapeutics**
Monir Ejemel¹, Danielle Wisheart¹, Alec Gramann², Arvind Venkatesan², Mark S. Klempner¹, Craig J. Ceol², Yang Wang¹
¹MassBiologics of the University of Massachusetts Medical School, ²Program in Molecular Medicine, University of Massachusetts Medical School
- 16. Anthelmintic Screening for Parasitic Nematodes**
Mostafa Elfawal, PhD¹, Dan Lawler M.Eng², Dirk Albrecht, PhD², Raffi Aroian, PhD¹
¹Program in Molecular Medicine, University of Massachusetts Medical School, ²Quantitative Neurology Laboratory, Worcester Polytechnic Institute

17. Herpes Zoster and Cardiovascular Events in Adults: A Systematic Review

Nathaniel A. Erskine, BA¹, Hoang Tran, MD, MPH¹, Leonard L. Levin, MS, LIS, MA², Christine M. Ulbricht, PhD, MPH¹, Joyce D. Fingerroth, MD³, Catarina I. Kiefe, PhD, MD¹, Robert J. Goldberg, PhD^{1,4}

¹Department of Quantitative Health Sciences, ²Lamar Soutter Library, ³Division of Infectious Diseases and Immunology, Department of Medicine, ⁴Division of Cardiovascular Medicine, Department of Medicine, University of Massachusetts Medical School

18. Geometric Control of YAP-dependent Mechanotransduction: A Proposed Model

Ngozi A. Eze, Heather A. Cirka, Kristen L. Billiar

Department of Biomedical Engineering, Worcester Polytechnic Institute

19. Sustained Expression with Partial Correction of Neutrophil Defects 5 Years After Intramuscular rAAV1 Gene Therapy for Alpha-1 Antitrypsin Deficiency

Terence R. Flotte^{1,2}, Christian Mueller^{1,2}, Gwladys Gernoux¹, Alisha M. Gruntman^{1,3}, Jeffery Chulay⁴, Dave Knop⁴, Noel G. McElvaney⁵, Martha Campbell-Thompson⁶, James M. Wilson⁷

¹Horae Gene Therapy Center, ²Department of Pediatrics, University of Massachusetts Medical School, ³Tufts Cummings School of Veterinary Medicine, ⁴Applied Genetic Technologies Corporation, ⁵Royal College of Surgeons of Ireland, ⁶University of Florida, ⁷University of Pennsylvania

20. The Impact of Changing Guidelines on Prostate Cancer Screening in a Population-based Setting, 2000-2014

Daniel M. Frenzl¹, Mara M. Epstein^{2,3}, Hassan Fouayzi³, Richard Krajenta⁴, Benjamin A. Rybicki⁴, Mitchell H. Sokoloff⁵

¹Department of Quantitative Health Sciences, ²Department of Medicine, ³The Meyers Primary Care Institute, University of Massachusetts Medical School; ⁴Department of Public Health Sciences, Henry Ford Health System, Detroit, MI; ⁵Department of Urology, University of Massachusetts Medical School

21. A Novel Population of Natural Killer Cells Plays a Critical Role in the Depletion of Splenic B2 B Cells During Experimental African Trypanosomiasis

Deborah Frenkel PhD, Samuel J. Black PhD

Department of Veterinary and Animal Sciences, University of Massachusetts Amherst

22. Transferrin Conjugated Polymeric Nanomedicine for Targeting Pancreatic Cancer using Paclitaxel and Gemcitabine

Aniket Gad, MS¹, Michael Tilton, BS², Brandon Piel BS², Prakash Rai, PhD^{1,3}

¹Biomedical Engineering and Biotechnology Program, University of Massachusetts Lowell, ²Research Associates, ³Department of Chemical Engineering, University of Massachusetts Lowell

23. ErbB2 Signaling Increases Androgen Receptor Expression in Abiraterone-Resistant Prostate Cancer

Shuai Gao¹, Huihui Ye², Sean Gerrin³, Hongyun Wang⁴, Ankur Sharma⁵, Sen Chen⁶, Akash Patnaik⁷, Adam G. Sowalsky⁸, Olga Voznesensky⁶, Wanting Han¹, Ziyang Yu³, Elahe Mostaghel⁹, Peter S. Nelson¹⁰, Mary-Ellen Taplin¹¹, Steven P. Balk¹², Changmeng Cai¹

¹Center for Personalized Cancer Therapy, University of Massachusetts Boston, ²Pathology, Beth Israel Deaconess Medical Center, ³Hematology-Oncology Division, Beth Israel Deaconess Medical Center, ⁴Medicine, BIDMC, ⁵Department of Cancer Biology, Thomas Jefferson University, ⁶Medicine, Beth Israel Deaconess Medical Center, ⁷Medicine-Hematology/Oncology, University of Chicago, ⁸Laboratory of Genitourinary Cancer Pathogenesis, National Cancer Institute, ⁹Human Biology and Clinical Research, Fred Hutchinson Cancer Research Center, ¹⁰Division of Human Biology, Fred Hutchinson Cancer Research Center, ¹¹Dana-Farber Cancer Institute, ¹²Division of Hematology and Oncology, Department of Medicine, Beth Israel Deaconess Medical Center and Harvard Medical School

24. Humanized Mice for the Generation of HIV-1 Human Monoclonal Antibodies

Melissa Gawron¹, Mark Duval¹, Michael Brehm², Dale Greiner², Leonard Shultz³, Smita Jaiswal², Sean McCauley², Ann Dauphin², Jeremy Luban², Lisa Cavacini¹

¹MassBiologics of the University of Massachusetts Medical School, ²University of Massachusetts Medical School, Worcester, MA and ³The Jackson Laboratory, Bar Harbor, ME

25. Sex Differences in Cognition, Emotional Reactivity, and Motor Ability in Gonadally-intact Middle-aged Marmosets (*Callithrix jacchus*)

Nicole J. Gervais, PhD¹, Kathryn P. Workman, BS³, Matthew LaClair, BS², Agnès Lacreuse, PhD^{1,2,3}

¹Center for Neuroendocrine Studies, ²Neuroscience and Behavior Program, ³Department of Psychological and Brain Sciences, University of Massachusetts Amherst

26. Burden of Adverse Metabolic Factors is Associated with Increased Left Ventricular Concentricity in Adults with Normal-Range Body Mass Index: The Framingham Heart Study

Philimon Gona, PhD, MPH¹, Jane Lee, MS, PhD², Carol J. Salton, BA³, Christopher J. O'Donnell, MD, MPH^{2,5}, Warren J. Manning, MD³, Michael L. Chuang, MD⁴

¹Department of Exercise and Health Sciences, University of Massachusetts, Boston; ²The NHLBI's Framingham Heart Study; ³Cardiovascular Division and ⁴Department of Radiology, Beth Israel Deaconess Medical Center; ⁵Harvard Medical School

27. Developing anti-GDF6 Therapeutics for Treatment of Advanced Melanoma

Alec Gramann¹, Arvind Venkatesan¹, Monir Ejemel², Danielle Wisheart², Yang Wang, MD, PhD², Craig Ceol, PhD¹

¹Program of Molecular Medicine, University of Massachusetts Medical School, ²MassBiologics of the University of Massachusetts Medical School

28. Implementation and Utilization of Mobile Technology In Adolescent Bariatric Surgery Patients

Jonathan Green, MD¹, Jeremy T. Aidlen, MD², Sherry Pagoto, PhD³, Jennifer Bram, MD⁴

¹Department of General Surgery, ²Division of Pediatric Surgery, Department of General Surgery, ³Division of Preventive and Behavioral Medicine, Department of Medicine, ⁴Department of Pediatrics, University of Massachusetts Medical School

29. Serum Levels of Alpha-1 Antitrypsin Following Vascular Limb or Intra-Muscular Delivery of AAV1 or AAV8 Gene Therapy Vectors in Rhesus Macaques

Alisha M. Gruntman, DVM^{1,2}, Gwladys Gernoux, PhD¹, Gensheng Wang, PhD³, Janet Benson, PhD³, Jeff Chulay, MD⁴, Dave Knop⁴, Christian Mueller, PhD^{1,5}, Terence R. Flotte MD^{1,5}

¹Horae Gene Therapy Center, University of Massachusetts Medical School, ²Department of Clinical Sciences, Tufts Cummings School of Veterinary Medicine, ³Lovelace Respiratory Research Institute, ⁴Applied Genetics Technologies Corporation, ⁵Department of Pediatrics, University of Massachusetts Medical School

30. Discovery and Development of Human Monoclonal Antibodies to Block RhD Alloimmunization During Pregnancy

Tushar Gupta¹, Melissa Gawron¹, Colby Souders¹, Michael Brehm², Dale Greiner², Leonard Shultz³, Smita Jaiswal², Sean McCauley², Ann Dauphin², Jeremy Luban², Lisa Cavacini¹

¹MassBiologics of the University of Massachusetts Medical School and ²University of Massachusetts Medical School, ³The Jackson Laboratory, Bar Harbor, ME

31. Older Women's Muscle and Gait Response to a Bout of Exercise Differs by Physical Activity Level

Jocelyn F. Hafer, MA, Katherine A. Boyer, PhD

Department of Kinesiology, University of Massachusetts Amherst

32. Advancing Medical Device and Biotech Innovations

Nathaniel Hafer, PhD¹, Margaret Koziel, MD¹, Stephen McCarthy, PhD², Steven Tello, EdD³

¹UMass Center for Clinical and Translational Science, University of Massachusetts Medical School,

²Massachusetts Medical Device Development Center (M2D2), University of Massachusetts Lowell,

³Entrepreneurship and Economic Development, University of Massachusetts Lowell

33. Analysis of A Novel Nonsense Mutation of Androgen Receptor Gene in Castration-Resistant Prostate Cancer

Dong Han, PhD¹, Kevin Valencia¹, Shuai Gao, PhD¹, and Changmeng Cai, PhD¹

¹Center for Personalized Cancer Therapy, University of Massachusetts Boston

34. Racial/Ethnic Disparities in Meeting 5-2-1-0 Recommendations among Adolescents in the United States

Christina Haughton, MPH¹, Stephenie Lemon, PhD²

¹Graduate School of Biomedical Sciences, ²Division of Preventive and Behavioral Medicine, Department of Medicine, University of Massachusetts Medical School

35. Theoretical and Experimental Analysis of the Antioxidant and Anti-amyloid Features of Synthetic Resveratrol Mimics

William Horton, Anne Kokel, Fanni Török, Chris Tran, Marianna Török, Béla Török

Department of Chemistry, University of Massachusetts Boston

36. Hospice and Pain Management in Nursing Home Residents with Cancer

Jacob N. Hunnicutt, MPH, Jennifer Tjia, MD, Kate L. Lapane, PhD

Department of Quantitative Health Science, University of Massachusetts Medical School

37. Remotely Triggered Polymeric Nanoparticles for the Treatment of Triple Negative Breast Cancer

Rahul Jadia¹, Brandon Piel², Michael Tilton², Prakash Rai^{1,3}

¹Biomedical Engineering and Biotechnology Program, ²Research Associates, ³Department of Chemical Engineering, University of Massachusetts Lowell

38. Which are the Primary Factors Influencing Running Stride Parameters: Age or Lower Limb Strength?

Carl Jewell¹, Eric Rohr², Joseph Hamill¹, Katherine A. Boyer¹

¹University of Massachusetts Amherst, ²Brooks Sports, Inc.

39. Translating Dosage Compensation to Trisomy 21

Jun Jiang¹, Yuanchun Jing¹, Gregory J. Cost², Jen-Chieh Chiang¹, Heather J. Kolpa¹, Allison M. Cotton³, Dawn M. Carone¹, Benjamin R. Carone¹, Meg Byron¹, Philip D. Gregory², Carolyn J. Brown³, Fyodor D. Urnov², Lisa L. Hall¹, and Jeanne B. Lawrence¹

¹Department of Cell and Developmental Biology, University of Massachusetts Medical School, ²Sangamo BioSciences, ³Department of Medical Genetics, University of British Columbia

40. Reducing Phlebotomy-Induced Blood Loss in the PICU: A Quality Improvement Study

Amanda Johnson, MD, Ariel Hoch, DO, Scot Bateman, MD, Stacey Valentine, MD, MPH

Division of Pediatric Critical Care, Department of Pediatrics, University of Massachusetts Medical School/UMass Memorial Children's Medical Center

41. Towards Pharmacovigilance Using Machine Learning To Identify Unknown Adverse Reactions Triggered By Drug-Drug Interaction

Tabassum Kakar, BS¹, Xiao Qin, MS¹, Susmitha Wunnava, MS¹, Prof. Elke A. Rundensteiner, PhD¹

¹Department of Computer Science, Worcester Polytechnic Institute

- 42. Neighborhood Differences in the Availability of Healthy Foods in the City of Worcester**
Kevin Kane, MS, Maximilian Hoffman, BS, Jie Cheng, MS, Barbara Olendzki, MPH, RD, Wenjun Li, PhD
Health Statistics and Geography Lab, Division of Preventive and Behavioral Medicine, Department of Medicine, University of Massachusetts Medical School
- 43. Characterization of Respiratory Phenotype in Very Long-chain Acyl-CoA Dehydrogenase Deficient Mice**
Allison Keeler, PhD, Kaitlyn Desrochers, BS, Mai ElMallah, MD
Department of Pediatrics, Gene Therapy Center, University of Massachusetts Medical School
- 44. Long-lasting Effects of Perinatal Exposure to Brominated Flame Retardant on Male Reproductive Outcomes in Rat Model**
Ahmed Khalil PhD, Daneal Portman, Jake Jensen, Michael Panchenko, Alexander Suvorov PhD
Department of Environmental Health Sciences, University of Massachusetts Amherst
- 45. A Pilot Randomized Controlled Trial of a Videoconferencing Smoking Cessation Intervention for Korean American Women: Preliminary Findings**
Sun S. Kim, PhD, APRN¹, Somporn Sitthisongkram, MS¹, Kunsook Bernstein, PhD, APN², Hua Fang, PhD³, Won S. Choi, PhD, MPH⁴, Douglas Ziedonis, MD, MPH⁵
¹University of Massachusetts Boston-College of Nursing and Sciences, ²Hunter College City of New York-School of Nursing, ³Department of Quantitative Health Sciences, University of Massachusetts Medical School, ⁴Department of Preventive Medicine and Public Health, University of Kansas Medical Center
⁵Department of Psychiatry, University of Massachusetts Medical School
- 46. Health Applications of Social Network Analysis and Computational Social Science**
James Kitts
Department of Sociology, Computational Social Science Institute, University of Massachusetts Amherst
- 47. Crystal Protein Cry5B as a Novel and Powerful Anthelmintic**
David Koch, BS, Zeynep Mirza, MS, Yan Hu, PhD, Thanh-thanh Nguyen, BS, Gary Ostroff, PhD, Raffi V. Aroian, PhD
Program in Molecular Medicine, University of Massachusetts Medical School
- 48. Estimated and Self-reported Workloads and Lower Extremity Symptoms for Nurses and Nursing Assistants**
Alicia Kurowski, ScD, Laura Punnett, ScD
Work Environment Department, University of Massachusetts Lowell
- 49. Synthetic Intestinal Mucosal Barrier Using a Hydrogel Slab Integrated Microfluidic Chip**
Jun-Goo Kwak¹, Abhinav Sharma¹, Jungwoo Lee¹⁻³
¹Department of Chemical Engineering, ²Molecular and Cellular Biology Graduate Program, ³Institute for Applied Life Sciences, University of Massachusetts Amherst MA
- 50. Does the Indication for Breast Surgery Impact Surgical Outcomes? A Contemporary Analysis of the ACS-NSQIP Database**
Connie Lee, MD¹, Ann-Kristin U. Friedrich, MD¹, Anne C. Larkin, MD², B. Marie Ward, MD², Ashling O'Connor, MD², Robert M. Quinlan, MD², Giles F. Whalen, MD², Jennifer LaFemina, MD²
¹Department of Surgery, ²Division of Surgical Oncology, University of Massachusetts Medical School
- 51. Effective Pain Information Pre-operatively is Associated with Improved Functional Gain after Total Joint Replacement**
Celeste A. Lemay, RN, MPH; David Ayers, MD; Patricia D. Franklin, MD, MBA, MPH
Department of Orthopedics and Physical Rehabilitation, University of Massachusetts Medical School

- 52. Using Interviews to Understand Patients' Post-operative Pain Management Educational Needs Before and After Elective Total Joint Replacement Surgery**
 Celeste A. Lemay, RN, MPH and Patricia D. Franklin, MD, MBA, MPH
 Department of Orthopedics and Physical Rehabilitation, University of Massachusetts Medical School
- 53. Correlates of Hyaluronic Acid and Corticosteroid Injections among Patients with Radiographically Confirmed Osteoarthritis**
 Shao-Hsien Liu, MPH¹; Catherine E. Dubé, EdD²; Jeffrey B. Driban, PhD³; Timothy E. McAlindon, MD, MPH³; Charles B. Eaton, MD, MS^{4,5}, Kate L. Lapane, PhD, MS²
¹Clinical and Population Health Research Program, Graduate School of Biomedical Sciences, University of Massachusetts Medical School, ²Division of Epidemiology of Chronic Diseases and Vulnerable Populations, Department of Quantitative Health Sciences, University of Massachusetts Medical School, ³Division of Rheumatology, Tufts Medical Center, Boston, MA, ^{4,5}Center for Primary Care and Prevention, Memorial Hospital of Rhode Island, Pawtucket, RI and Departments of Family Medicine and Epidemiology, Warren Alpert Medical School, School of Public Health, Brown University, Providence, RI
- 54. Emergency Medicine Providers Systematically Underestimate Their Opioid Prescribing Practices**
 Sean S. Michael, MD¹, Kavita M. Babu, MD¹, Christopher Androski Jr., MS², Martin A. Reznick, MD, MBA¹
¹Department of Emergency Medicine, University of Massachusetts Medical School, ²University of Massachusetts Medical School
- 55. Terpenes as 'Resistance-busting' Anthelmintic Drug**
 Zeynep Mirza, MS, David Koch, Thanh Nguyen, Yan Hu, PhD, Raffi Van Aroian, PhD, Gary Ostroff, PhD
 Program in Molecular Medicine, University of Massachusetts Medical School
- 56. Physiological and Social Stress on Cognitive Performance**
 Doreet Nagatti, Daniele Anina, Maria Daigle, Kymberlee M. O'Brien
 Worcester Polytechnic Institute
- 57. The Use of Complementary and Alternative Medicine (CAM) and Imported Medications by Brazilians in Massachusetts**
 Adriana Negrini, BA, Renata Dalla Costa, BS, Christina Herson, MD
 University of Massachusetts Medical School
- 58. Human Monoclonal Antibodies to *Plasmodium falciparum* Circumsporozoite Protein for Transient Passive Protection of Malaria Travelers to Endemic Areas**
 Stuart Nelson¹, Douglas Golenbock², Ann Moormann³, Colby Souders¹, Lisa Cavacini¹
¹MassBiologics of the University of Massachusetts Medical School, ²Program in Infectious Diseases and Immunology, University of Massachusetts Medical School, ³Program in Molecular Medicine, University of Massachusetts Medical School
- 59. Total Hip Arthroplasty and Mental Health Status**
 Uyen-Sa D. T. Nguyen, DSc, MPH¹, Thomas Perneger, MD, PhD², Patricia D. Franklin, MD, MBA, MPH¹, Christophe Barea, PhD³, Pierre Hoffmeyer, MD³, Anne Lübbecke, MD, DSc³
¹Department of Orthopedics and Physical Rehabilitation, University of Massachusetts Medical School, ²Clinical Epidemiology Service, and ³Division of Orthopaedic and Trauma Surgery, Geneva University Hospitals, Geneva, Switzerland
- 60. 6-Month Change in Pain and Function by Pre-Operative Pain and Function among Patients Selected for Total Knee Replacement in the United States**
 Uyen-Sa D. T. Nguyen, David C. Ayers, Wenjun Li, Leslie Harrold, Patricia D. Franklin
 Department of Orthopedics and Physical Rehabilitation, University of Massachusetts Medical School

- 61. Angina Characteristics as Predictors of Trajectories of Quality of Life Following Acute Coronary Syndrome in the Transitions, Risks and Actions in Coronary Events-Center for Outcomes Research and Education Cohort (TRACE-CORE)**
 Lisa Nobel¹, Jennifer Tjia², Jane Saczynski², Molly E. Waring¹, Milena D. Anatchkova¹, Arlene Ash¹, Catarina Kiefe¹, Jeroan Allison¹
¹Department of Quantitative Health Sciences, ²Geriatrics Medicine, University of Massachusetts Medical School
- 62. Lipoaspirate and Adipose Stem Cells as Potential Therapeutics for Chronic Scars**
 Dylan Perry, BA¹; Jorge Lujan-Hernandez, MD¹; Michael Chin, MD¹; So Yun Min²; Ava Chappell, BA¹; Raziel Rojas-Rodriguez¹; Raghu Appasani, BA¹; Patrick Teebagy, BA¹; Silvia Corvera, MD²; Janice F. Lalikos, MD¹
¹Division of Plastic Surgery, Department of Surgery, ²Program in Molecular Medicine, University of Massachusetts Medical School
- 63. Predisposed Health Conditions of Children Exposed to Methamphetamine In Utero**
 Seth Peters, MPH
 Ph.D. student, 1st Faculty of Medicine, Charles University, Prague Czech Republic
- 64. Rational Design of an Epitope-Based Hepatitis C Virus Vaccine**
 Brian G. Pierce, PhD¹, Elisabeth Boucher, BS², Monir Ejemel, BS², William D. Thomas Jr., PhD², Zhiping Weng, PhD³, Yang Wang, MD, PhD²
¹University of Maryland Institute for Bioscience and Biotechnology Research, Rockville, MD, ²MassBiologics of the University of Massachusetts Medical School, ³Program in Bioinformatics and Integrative Biology, University of Massachusetts Medical School
- 65. Advanced MRI Center: A 3 Tesla Magnetic Resonance System for Preclinical, Translational and Clinical Imaging Studies**
 Letterio S. Politi, MD, Shaokuan Zheng, PhD, Matthew J. Gounis, PhD
 Advanced MRI Center and Department of Radiology, University of Massachusetts Medical School
- 66. The Effect of Oral Antibiotic's on the Development of Community Acquired *Clostridium Difficile* Colitis in Medicare Beneficiaries**
 Charles M. Psoinos, MD, Courtney E. Collins, MD, M. Didem Ayturk, MS, Julie M. Flahive, MS, Frederick A. Anderson Jr., PhD, Heena P. Santry, MD, MS, FACS
 Department of Surgery, University of Massachusetts Medical School
- 67. The Therapeutic Effects of *per os* Artemisinin Delivered as Dried Leaf *Artemisia annua* vs. Artesunate in Non-small Cell Lung Cancer**
 Dina Rassias¹, Pamela Weathers^{1,2}
¹Department of Biomedical Engineering, ²Department of Biology and Biotechnology, Worcester Polytechnic Institute
- 68. Immune Features that Afford Protection from Clinical Disease Versus Sterilizing Immunity to *Bordetella pertussis* Infection in a Nonhuman Primate Model of Whooping Cough**
 Keith A. Reimann, DVM¹, Aaron J. Belli, BS¹, Sarah Fulco, BS¹, Jason M. Warfel, PhD², Rijian Wang, MD, PhD¹, Lisa A. Cavacini, PhD¹, James F. Papin, PhD³, Tod J. Merkel, PhD², Mark S. Klempner, MD¹
¹MassBiologics of the University of Massachusetts Medical School, ²Division of Bacterial, Parasitic, and Allergenic Products, Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, MD, ³University of Oklahoma Health Sciences Center, Oklahoma City, OK
- 69. Contemporary Analysis of Malignancies in Women of Child-Bearing Age: An NSQIP Analysis**
 Eva Rouanet, MSII, Ann-Kristin Friedrich, MD, Kate Dinh, MD, Kevin P. Baratta, MD, MPH, Giles F. Whalen, MD, FACS, Heena Santry, MD, FACS, Jennifer LaFemina, MD, FACS
 University of Massachusetts Medical School

- 70. Collecting Histories of Education and Employment Activities from Young Adults with Serious Mental Health Conditions**
 Kathryn Sabella, MA, Peter Bui, BA, Laura Golden, BA, Kathleen Biebel, PhD
 Transitions Research and Training Center, Systems of Psychosocial Advance Research Center,
 Department of Psychiatry, University of Massachusetts Medical School
- 71. Show Back: Evaluation of Scoresheet for Identifying Self-Management Medication Problems of Older Adults**
 Laura Sandford, BS^{1,2}, Janice B. Foust, PhD, RN³, Maureen Sarno, RN, BSN⁴, Alok Kapoor, MD, MSc^{1,2}
¹University of Massachusetts Medical School, ²Meyers Primary Care Institute, ³University of Massachusetts Boston, College of Nursing and Health Sciences, ⁴VNA Care Network and Hospice
- 72. Effect of Left Atrial Function Index on Late Atrial Fibrillation Recurrence after Pulmonary Vein Isolation**
 Mayank Sardana, MBBS, Owusu Asamoah, MD, Glenn Stokken, MD, Matthew Spring, Amir Shaikh, MD, Adedotun Ogunsua, MD, Barinder Hansra, MD, Deeqo Mohamud, MD, Michael Gagnier, MD, Summer Aldrugh, MD, Nada Esa, MD, Kevin C. Floyd, MD, Clifford Browning, MD, Cynthia Ennis, DO, J. Kevin Donahue, MD, Lawrence S. Rosenthal, MD, Gerard P. Aurigemma, MD, Dave D. McManus, MD
 University of Massachusetts Medical School
- 73. Identification of Fully Human Monoclonal Antibodies Against the Adhesin Domain of Colonizing Factor Antigen I of *Escherichia coli***
 Maja Sedic, PhD¹, Danielle Wisheart, BS¹, Monir Ejemel, BS¹, Matteo Stoppato, PhD¹, Serena Giuntini, PhD¹, Eileen M. Barry, PhD², William D. Thomas Jr., PhD¹, Mark S. Klempner, MD¹, Yang Wang, MD PhD¹
¹MassBiologics of the University of Massachusetts Medical School, ²University of Maryland Baltimore, Center for Vaccine Development, Baltimore, Maryland
- 74. 5-Hydroxymethylcytosine Immunohistochemical Staining Correlates with Overall Survival in Patients with Chronic Myelomonocytic Leukemia**
 William Selove, MD, Karen Dresser BS, HT(ASCP), Benjamin J. Chen, MD, PhD
 Department of Pathology, University of Massachusetts Medical School
- 75. Association between First Trimester Pregnancy Associated Plasma Protein–A and the Development of Gestational Diabetes Mellitus**
 Aylin Sert, MEd¹, Katherine Leung, MPH², Molly E. Waring, PhD^{2,3,4}, Raziell Rojas-Rodriguez^{4,5}, Silvia Corvera, MD^{4,5}, Tiffany A. Moore Simas, MD MPH MEd^{2,4,6}
¹Clinical Translational Research Pathway, ²Division of Research, Department of Obstetrics & Gynecology, ³Department of Quantitative Health Sciences, ⁴Graduate School of Biomedical Sciences, ⁵Program in Molecular Medicine, ⁶Department of Pediatrics, University of Massachusetts Medical School/UMass Memorial Health Care
- 76. Structural and Molecular Analysis of a Protective Epitope of Lyme Disease Antigen OspA and Antibody Interactions**
 Shivender Shandilya, PhD¹, Nese KurtYilmaz, PhD¹, Ejemel Monir, BS², Andrew Sadowski, BS², William D. Thomas, Jr., PhD², Mark S. Klempner, MD², Celia A. Schiffer, PhD¹, Yang Wang, MD, PhD²
¹Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, ²MassBiologics of the University of Massachusetts Medical School
- 77. Microfluidic Platforms to Study Host-microbiome Interactions**
 Abhinav Sharma, MS, Neil Forbes, PhD, Jungwoo Lee, PhD
 Department of Chemical Engineering, Institute for Applied Life Sciences, University of Massachusetts Amherst

- 78. A Pilot Study to Assess the Feasibility, Safety and Acceptability of Soy-based Diet for Pregnant Women at High Risk for Gestational Diabetes Mellitus**
Ling Shi¹, Vidya Iyer², Emily Jones¹, Errol Norwitz², Tiffany A. Moore Simas³, Alice H. Lichtenstein⁴, Laura L. Hayman¹
¹University of Massachusetts Boston, ²Tufts Medical Center, ³University of Massachusetts Medical School, ⁴JM USDA Human Nutrition Research Center on Aging, Tufts University
- 79. Sedentary Behavior and Cardiovascular Disease Risk Factors among Latino Adults**
Valerie J. Silfee, PhD¹, Stephenie C. Lemon, PhD¹, Vilma Lora², Milagros C. Rosal, PhD¹
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- 80. Interrogating Plant Cell Culture Library for Novel Antimicrobial Agents**
John Solitro¹, Yong Zhang¹, Vanessa Bartolo¹, Alexander Popchuk¹, Sergey Savinov¹, Li-Jun Ma¹, Jennifer Normanly¹, Tristram Seidler², Elizabeth Vierling¹
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- 81. Can Physician Champions Improve Kangaroo Care? Trends over 5 Years in Rural Western India**
Apurv Soni¹, Ameer Amin², Dipen Patel², Nisha Fahey³, Nikhil Shah², Ajay Phatak², Jeroan Allison¹, Somashekhar Nimbalkar²
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- 82. Microengineering Approaches for Regenerative Medicine**
Yubing Sun, PhD
Department of Mechanical and Industrial Engineering, University of Massachusetts Amherst
- 83. Characterization of Neutrophils and Macrophages from *ex vivo* Cultured Murine Bone Marrow for Morphologic Maturation and Functional Responses by Imaging Flow Cytometry**
Klaudia Szymczak, MS¹, Margery G.H. Pelletier, MS¹, Anna M. Barbeau², Kevin O'Fallon, PhD³, Peter Gaines, PhD^{1,2}
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- 84. Reprogramming of mTOR Signaling by Perinatal Exposure to Brominated Flame Retardant**
Cassandra Thorburn¹, Benjamin Kim¹, Michael Panchenko¹, Aser Abrha¹, Ahmed Khalil, PhD¹, Alexander Suvorov, PhD¹
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- 85. Multiple Chronic Conditions and Psychosocial Limitations in a Contemporary Cohort of Patients Hospitalized with an Acute Coronary Syndrome**
Mayra Tisminetzky, MD, PhD^{1,2}, Jerry Gurwitz, MD^{1,2,3}, David D. McManus, MD, ScM^{1,2,4}, Jane S. Saczynski, PhD^{1,2,3}, Molly E. Waring, PhD¹, Nathaniel Erskine, BA¹, Milena Anatchkova, PhD¹, David C. Parish, MD, MPH⁵, Darleen Lessard, MS¹, Catarina Kiefe, PhD, MD¹, Robert Goldberg, PhD^{1,2,4}
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- 86. Impact of Multimorbidity on Clinical Outcomes in Older Adults with Cardiovascular Disease**
Mayra Tisminetzky, MD, PhD^{1,2,3}, Robert Goldberg, PhD^{1,2,4}, Jerry Gurwitz, MD^{1,2,3}
¹Department of Quantitative Health Sciences, ²Meyers Primary Care Institute, Divisions of ³Geriatric and ⁴Cardiovascular Medicine, Department of Medicine, University of Massachusetts Medical School

- 87. Triad of Suffering: Pain, Depression, and Anxiety among Newly Admitted Nursing Homes Residents**
Christine M. Ulbricht, PhD¹, Jacob N. Hunnicutt, MPH², Kate L. Lapane, PhD^{1,2}
¹Division of Epidemiology of Chronic Diseases and Vulnerable Populations, Department of Quantitative Health Sciences, ²Clinical and Population Health Research Program, Graduate School of Biomedical Sciences, University of Massachusetts Medical School
- 88. Role of TSH and Excess Heart Age in Predicting Atrial Fibrillation Recurrence Post-Ablation**
Aditya Vaze, MD¹, Adedotun Ogunsua, MD¹, Jakub Pach, MD¹, David McManus, MD^{1,2}
¹Department of Medicine, ²Division of Cardiology, Department of Medicine, University of Massachusetts Medical School
- 89. Targeted Combination Treatment for Glioblastoma Multiforme (GBM) Using Polymeric Nanoparticle**
Praveena Velpurisiva, MS¹, Michael J. Tilton, BS², Brandon Piel, BS², Prakash Rai, PhD^{3,4}
¹Department of Biological Sciences, ²Research Associates, ³Department of Chemical Engineering, ⁴Biomedical Engineering and Biotechnology Program, University of Massachusetts Lowell
- 90. Pre-exposure Prophylaxis with OspA-specific Human Monoclonal Antibodies Protects Mice Against Tick Transmission of Lyme Disease Spirochetes**
Yang Wang, MD PhD¹, Aurélie Kern, PhD², Naomi K. Boatright, BS¹, Zachary Schiller, BS¹, Andrew Sadowski, BS¹, Monir Ejemel, BS¹, Colby A. Souders, PhD¹, Keith A. Reimann, DVM¹, Linden Hu, MD², William D. Thomas, Jr., PhD¹, Mark S. Klempner, MD¹
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- 91. Differences in Complication Rates Between Roux-en-Y Gastric Bypass and Longitudinal Sleeve Gastrectomy**
Zachary Weitzner, Julie Flahive, Gordon Fitzgerald, Donald Czerniach, MD, Philip Cohen, MD, John Kelly, MD, Richard Perugini, MD
Department of Surgery, University of Massachusetts Medical School
- 92. Comparison of Diabetic Remission Rates following Roux en-Y Gastric Bypass and Longitudinal Sleeve Gastrectomy**
Zachary Weitzner, Julie Flahive, Gordon Fitzgerald, Donald Czerniach, MD, Philip Cohen, MD, John Kelly, MD, Richard Perugini, MD
Department of Surgery, University of Massachusetts Medical School
- 93. Text Mining From Drug Surveillance Report Narratives**
Susmitha Wunnava, MS¹, Tabassum Kakar, BS¹, Xiao Qin, MS¹, Prof. Elke A. Rundensteiner, PhD¹
¹Department of Computer Science, Worcester Polytechnic Institute
- 94. Airway Smooth Muscle Pathology in Pompe Disease**
Lang Xiong^{1,2}, Allison M. Keeler^{1,2}, Donghai Liu³, Kaitlyn V. Desroshers^{1,2}, Ronghua Zhuge³, Mai K. EIMallah^{1,2}
¹Horae Gene Therapy Center, ²Department of Pediatrics, ³Department of Microbiology and Physiological Systems, University of Massachusetts Medical School
- 95. Statistical Analysis for Hospital Length-of-Stay and Readmission Rate Study**
Hong Yan¹, Shaheryar F Ansari³, Jian Zou¹, Robert M. Worth^{2,3,4}, Nicholas M. Barbaro^{3,4}
¹Worcester Polytechnic Institute Department of Mathematical Sciences, ²Indiana University Department of Mathematical Sciences, ³Indiana University Department of Neurological Surgery, ⁴Goodman Campbell Brain and Spine

96. Rapid Diagnostics for Infectious Disease Using Noble Metal Nanoparticles

Chun-Wan Yen, PhD,² Helena de Puig MS,³ Justina O. Tam, PhD,² José Gómez-Márquez,⁴ Irene Bosch, PhD,¹ Lee Gehrke, PhD,^{1,5} Kimberly Hamad-Schifferli, PhD^{3,6}

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97. Structural Activity Relationship Study on Dual PLK1 /BRD4 Inhibitor, BI- 2536

Hailemichael Yosief¹; Shuai Liu¹, Dennis L. Buckley², Justin M. Roberts², Alex M. Muthengi¹ Francesca M. Corsini¹, Bradner E. James² and Wei Zhang¹

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98. Optimization of the Design of an Amphiphilic Biodegradable Polymer for Tissue-engineering Application

Ben Zhang, PhD, Tera Fillion, PhD, Jie Song, PhD

Department of Orthopedics & Physical Rehabilitation, University of Massachusetts Medical School

99. A Non-Restrictive Weight Loss Diet Focused on Increasing Fiber and Lean Protein: Results of a Pilot Trial

Lijuan Zhang, Sherry L. Pagoto, Barbara C. Olendzki, Gioia Persuitte, Linda C. Churchill, Jessica Oleski, Yunsheng Ma

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100. Prenylated Retinal Ciliopathy Protein RPGR Regulates Ciliary Localization of Joubert Syndrome-Associated Protein INPP5E in Cooperation with PDE6 δ

Wei Zhang, PhD, Kollu N. Rao, PhD, Linjing Li, PhD, Manisha Anand, MA, Hemant Khanna, PhD

Department of Ophthalmology, Horae Gene Therapy Center, University of Massachusetts Medical School

101. Translating Comparative TJR Outcomes for Performance Improvement to Guide Surgical Quality Improvement

Hua Zheng, PhD¹, Wenjun Li, PhD², Celeste Lemay, RN, MPH¹, David Ayers, MD¹, Patricia Franklin, MD, MBA, MPH¹

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