

University of Michigan
Claude D. Pepper Older Americans Independence Center

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SECTION I. CENTER DESCRIPTION

Funded by the NIA as the nation's first Geriatric Research and Training Center in 1989, the University of Michigan (UM) Pepper Center has evolved to meet the objectives of the OAIC program with successful competing renewals as an OAIC in 1994, 1999, 2004, 2009 and 2015. Thus, our Center is completing its 26th consecutive year of operation in 2015. The overall goal of the UM Pepper Center is to enhance the ability of older people to live independently by maintaining activities of daily living (ADLs) and to function well by maintaining mobility and levels of physical activity. Impairments of these factors predict poor health outcomes, poor quality of life, and mortality. Drawing on the large base of research currently underway in the fields of geriatrics and gerontology at UM, the UM Pepper Center fosters collaborative multidisciplinary research to integrate basic science, clinical science, and health services research relevant to the health care problems of older adults. The UM Pepper Center grant supports important research activities of the UM Geriatrics Center. Founded in 1987, the Geriatrics Center is the umbrella organization for geriatrics research, education, and patient care at the University of Michigan.

The specific goals of the UM Pepper Center are:

- 1) To support research that will improve understanding of how metabolic factors and inflammation interact with age-related diseases and comorbidities to determine key health outcomes related to mobility and functional status.
- 2) To support translational research on the interaction of metabolic factors and inflammation with age-related diseases and comorbidities to improve health outcomes related to mobility and functional status. To achieve this aim, the UM Pepper Center will work closely with other UM programs including the NIH funded Michigan Institute for Clinical and Health Research (MICHHR), the home of the UM's Clinical and Translational Science Award (CTSA).
- 3) To provide Resource Cores that support and assist investigator-initiated projects related to the UM Pepper Center's research focus.

4) Through its Research Career Development Core (RCDC), to strengthen the UM environment for training of future academic leaders in geriatrics and aging who can conduct research related to the UM Pepper Center's research focus.

5) Through its Pilot and Exploratory Studies Core (PESC), to attract UM junior faculty, as well as selected senior faculty not previously involved in aging research, to develop new research projects related to the UM Pepper Center's research focus.

Faculty from the following UM Schools and Institutes are involved: the Institute of Gerontology, School of Public Health, Institute for Social Research, Medical School, College of Engineering, School of Nursing, School of Social Work, and College of Literature, Science, and the Arts. As of April 2014 there were 100 active NIA grants at the UM (29 of which are subawards for collaborative studies) with over \$32 million/year of direct costs. The UM OAIC's faculty participant data base includes a total of 239 current UM faculty who have 221 current external grants relevant to the UM Pepper Center's focus totaling over \$57 million/year direct costs.

SECTION II. RESEARCH, RESOURCES AND ACTIVITIES

A. CORES

1. BIOMECHANICS CORE

James Ashton-Miller, Ph.D., Core Leader	734-763-2320	jaam@umich.edu
Neil B. Alexander, M.D., Core Co-Leader	734-736-3172	nalexand@umich.edu

The Biomechanics Core, (BC) enables its personnel to devote time to assist and train investigators in the conduct of new and expanded research on how metabolic disease and inflammation interact with age-related disease to determine key health outcomes related to mobility and functional status, the biomechanics of aging, and to the training of geriatric physicians and other clinicians in the biomechanics relevant to impaired mobility, falls and fall-related injuries, urinary incontinence and prolapse in the elderly. They also enable substantial use by Core-supported investigators of the equipment and facilities that exist in the Biomechanics Research Laboratory of the Department of Mechanical Engineering, as well as facilities in the Mobility Research Laboratory at the Geriatrics Center.

2. METHODOLOGY, DATA MANAGEMENT AND ANALYSIS CORE

Andrzej T. Galecki, M.D., Ph.D., Core Leader	734-936-2138	agalecki@umich.edu
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The primary goal of MDMAC is to provide methodological, data management, and analytical support to OAIC affiliated investigators, that address the focus of the OAIC - inflammation, metabolism, predictors and interventions for function of elderly people - as well as aging research in general. In collaboration with other OAIC Cores MDMAC will improve the quality of OAIC research studies, help foster development of junior researchers, will nurture forming interdisciplinary research groups, and ultimately enhance quality of research on late-life processes. MDMAC faculty will address the following four aims: 1. Advise and assist OAIC investigators in methodological design, data management, and analytical tasks in conducting projects; 2. Training and mentoring for OAIC investigators; 3. Facilitate the access of OAIC investigators to (large) archived survey and administrative secondary data sets describing elderly

persons; 4. Undertake a limited number of internal efforts/projects to identify in existing literature or develop novel methodological approaches, and implement and disseminate them as software tools.

3. CORE FACILITY FOR AGED RODENTS

Richard Miller, M.D., Ph.D., Core Leader **734-936-2122** **millerr@umich.edu**

CFAR, the Core Facility for Aged Rodents, has been a major feature of the University of Michigan Claude Pepper Center since its inception in 1989. CFAR will continue to serve the needs of Pepper Center investigators through four Specific Aims. Aim 1: We will continue work initiated in the previous five years on four varieties of mice: (a) Mice lacking PAPP-A, a protease that controls IGF-1 availability; (b) Mice overexpressing Syntaxin-4, a modulator of insulin sensitivity; (c) Mice in which p16-positive (senescent) cells can be pharmacologically deleted at adult ages; and (d) Mice treated by linagliptin, a modulator of post-prandial glucose spikes. Aim 2: We will develop new mouse models based on amino acid restriction, which follows our previous demonstration of slow aging and delayed disease in mice given limiting amounts of dietary methionine. Aim 3: We will explore the role of juvenile, adult, and liver-specific growth hormone responses to four drugs that extend mouse lifespan, specifically the TOR inhibitor rapamycin, the diabetic drug acarbose, the non-feminizing steroid 17- β -estradiol, and the anti-inflammatory agent NDGA. Aim 4: We will select one or two new mouse models per year, through collaboration with UM scientists, pilot project awardees, and colleagues at other research universities, for initial discovery research on questions related to the biology of aging, emphasizing interventions that alter metabolism and inflammation in ways that postpone late life illnesses and disabilities.

4. HUMAN SUBJECTS AND ASSESSMENT CORE

Raymond Yung, M.D., Core Leader **734-647-9746** **ryung@umich.edu**
Kenneth Langa, Ph.D., M.D., Core Co-Leader **734-615-8403** **klanga@umich.edu**
Linda Nyquist, Ph.D., Clinical Trials Coordin **734-936-6078** **lnyquist@umich.edu**

The University of Michigan Human Subjects and Assessment Core (HSAC) provides the infrastructure and resources critical to UM OAIC investigators performing clinical and translational research. The HSAC is closely aligned with the UM OAIC's goal of integrating bench, clinical and outcome research with clinical practice. By working closely with the LAC, RCDC and the three other Resource Cores, the HSAC will assist OAIC-funded pilots and other externally funded projects (EPs) related the central research theme of the OAIC. Important priorities for the HSAC will be to support junior faculty new to aging research, the translation of basic research discoveries into human studies, and to support high impact clinical trials that have the promise of reducing disability and improving physical/cognitive function in older adults. The specific aims of the HSAC are 1) to facilitate access to human subjects and related data sets by investigators implementing research related to the central OAIC theme, 2) to provide training and consultation to OAIC researchers on issues related to experimental design (pre- and post-award), recruitment/retention of human subjects, translation from animal into human studies, techniques to compare national databases, 3) to expand and promote research on racial, ethnic, and cultural influences affecting the predisposing factors, metabolic/inflammatory mediators, and functional and health outcomes in older adults. In the present cycle, the HSAC has leveraged substantial institutional resources to expand the HSAC Registry of human volunteer subjects,

and to provide longitudinal physical and functional assessment in a cohort of subjects within the HSAC registry who are at heightened risk of developing physical and cognitive impairment.

5. RESEARCH CAREER DEVELOPMENT CORE (RCDC)

Neil B. Alexander, M.D., Core Leader **734-736-3172** **nalexand@umich.edu**

The overarching goal of the UM OAIC Research Career Development Core (RCDC/KL2) is to recruit, select, support, mentor, and train junior faculty to become independent investigators in aging-related research and academic leaders in geriatrics and gerontology within their respective disciplines. A key additional objective is to train the next generation of investigators about the UM OAIC focus of how metabolic factors and inflammation interact with age-related diseases and comorbidities to determine key health outcomes related to mobility and functional status. A substantial pool of UM junior faculty from a wide range of disciplines across the UM campus who are doing research relevant to the OAIC focus will be targeted to participate in the proposed RCDC training activities.

6. PILOT and EXPLORATORY STUDIES CORE (PESC)

Lona Mody, M.D., Core Leader **734-763-4002** **lonamody@umich.edu**

The goal of the Pilot and Exploratory Studies Core (PESC) is to provide support for studies that will develop and test new research ideas of high relevance to the Center's overall theme: improve understanding of how metabolic factors and inflammation interact with age-related diseases and comorbidities to determine key health outcomes related to mobility and functional status. The PESC will thus fund pilot research studies over a wide range of disciplines, from basic, pre-clinical, clinical patient-oriented research through behavioral and health services research. Each submitted proposal will first receive an evaluation for scientific merit by at least three external reviewers and then be further evaluated by OAIC leaders for relevance to the Center objectives. The PESC has made 121 pilot grants since its inception in 1989, mostly to junior faculty, many of whom have now established themselves as productive independent researchers in geriatric medicine and cognate disciplines.

7. LEADERSHIP/ADMINISTRATIVE CORE

Raymond Yung, M.D., Program Director **734-647-9746** **ryung@umich.edu**
Jeffrey Halter, M.D., Co-Program Director **734-764-3493** **jhalter@umich.edu**

A well-defined and effective Leadership Administrative Core (LAC) that supports the activities of the OAIC is already in place at the UM Geriatrics Center. The faculty and staff in the LAC have proven leadership and administrative skills. The LAC fosters interactions among the OAIC Program Director and Co-Program Director (who also serve as UM Geriatrics Center Director and Co-Director), the OAIC Core Directors and the leadership structure of the Institution as a whole. These interactions will be fostered by the administrative structure, which requires these interactions on a regular and ongoing basis, and by key advisory committees: the UM Geriatrics Center's Research Operating Committee (ROC) and the OAIC External Advisory Board. The

ROC provides coordination and oversight for all OAIC activities and an important advisory function for the OAIC Program Director and Co-Program Director. The membership of the ROC includes the Core Directors of the OAIC, four additional UM senior scientists, and Geriatrics Center administrative leaders.

The overall goal of the LAC reflects that of the OAIC as a whole: to create, enhance and maintain an intellectual, technological, and administrative environment to maximize geriatrics research that will improve understanding of how metabolic factors and inflammation interact with age-related diseases and comorbidities to determine key health outcomes related to mobility and functional status. The LAC has four Specific Aims: 1. To encourage, stimulate and guide the development and review of OAIC goals and policies by: integrating, monitoring and evaluating the activities of the OAIC's components; and assisting them in achieving the OAIC's goals and objectives. 2. To manage and to develop resources to effectively achieve the OAIC's goals and objectives. 3: To ensure communication and interaction among members of the University community who are engaged in research and training in health care problems of the elderly. 4. To attract and develop outstanding faculty and staff to participate in the research and training missions of the OAIC; and to provide leadership training to junior faculty who may become future program directors in geriatrics and aging-related programs.

B. PILOT- PROJECTS -YEAR 01 TO PRESENT

5 Year Cycle 1989-1990

Year 01

Biomechanics of rising from a chair in the elderly

Neil Alexander, M.D., Assistant Professor of Internal Medicine (Geriatrics)

Gene expression in aging muscle

Kate Barald, Ph.D., Associate Professor of Anatomy

The role of Interleukin-6 in aging

Suzanne Bradley, M.D., Assistant Professor of Internal Medicine (Geriatrics)

Effect of aging on repair of the kidney following ischemic injury

David H. Humes, M.D., Professor of Internal Medicine (Nephrology)

Studies on receptor-mediated Polyphosphoinositide turnover and intracellular calcium metabolism in fibroblasts from Alzheimer's patients and healthy controls

Alan Mellow, M.D., Ph.D., Assistant Professor of Psychiatry

Wisdom in later adulthood: Psychological correlates

Lucinda Orwoll, Ph.D., Research Fellow, Institute of Gerontology

Protease Nexin 1: A model for trophic factor production in normal and pathologic aging

Dorrie Rosenblatt, M.D., Ph.D., Assistant Professor of Internal Medicine (Geriatrics)

Sympathetic function in elderly human hypertensives

Mark Supiano, M.D., Assistant Professor of Internal Medicine (Geriatrics)

Pilot for a survey of Arthritis and disability in daily life

Lois Verbrugge, Ph.D., Research Scientist, Institute of Gerontology

Year 02 1990-1991

HSV-mediated gene transfer studies of Amyloid and NGF

David Fink, M.D., Associate Professor of Neurology

Effect of aging on acute phase response

Matthew Kluger, Ph.D., Professor of Physiology

Hospital admissions from VA nursing homes

David Mehr, M.D., Instructor of Family Practice

Gene regulation in senescent cells

Bruce Troen, M.D., Assistant Professor of Internal Medicine (Geriatrics)

Functional properties of nerve-repaired vascular intact grafts in young, adult, and old rats

Edwin Wilkins, M.D., Instructor of Surgery

Year 03 1991-1992

The cross-age effect in transplanted nerve segments

Bruce Carlson, M.D., Ph.D., Professor of Anatomy and Cell Biology

Genetic investigation of Alzheimer and Creutzfeldt-jakob diseases

John Fink, M.D., Assistant Professor of Neurology

The effects of aging on vascular gene expression

Rory Marks, M.D., Assistant Professor of Internal Medicine (Rheumatology)

Role of charge-transfer interactions in age-related protein modifications

Joseph Schauerte, Ph.D., Research Investigator, Biological Chemistry

Effect of aging on calcium channel function in gastrointestinal neuromuscular preparations

John Wiley, M.D., Assistant Professor of Internal Medicine (Gastroenterology)

Year 04 1992-1993

Gene expression in the aging hepatocyte

Bahri M. Bilir, M.D., Lecturer, Internal Medicine (Gastroenterology)

Characterization of protein Tyrosine phosphates in yeast activation of the kinase cascade in mitogenic growth factor signal transduction

Kunliang Guan, Ph.D., Assistant Professor and Assistant Research Scientist, Biological Chemistry and Assistant Research Scientist, Institute of Gerontology

Aging and immunologic homeostasis: Regulation of Osteopontin production in T-lymphocytes

Laurie K. McCauley DDS, Assistant Professor of Periodontics/Prevention/Geriatrics, School of Dentistry

Myosin phenotype and altered contractile function in heart during aging

Joseph M. Metzger, Ph.D., Assistant Professor of Physiology

Trends in self-reported health and the prevalence of chronic conditions

Timothy A. Waidmann, Assistant Professor of Public Health Policy and Administration, School of Public Health

Assessing the quality of medical care in nursing homes using routinely collected information

Brent C. Williams, M.D., Instructor of Internal Medicine (Geriatrics)

Year 05 1993-1994

The impact of chronic diseases on health outcomes

Caroline Blaum, M.D., Lecturer, Internal Medicine (Geriatrics)

Stability of gene repression during mammalian aging

David Burke, M.D., Assistant Professor of Human Genetics

Characterization of protein Tyrosine phosphates in yeast activation of the kinase cascade in mytogen mitogenic growth factor signal

Kunliang Guan, Ph.D., Assistant Professor and Assistant Research Scientist, Biological Chemistry and Assistant Research Scientist, Institute of Gerontology

Transcriptional regulation in T cells from mice of different ages

David Markovitz, M.D., Assistant Professor of Internal Medicine (Infectious Diseases)

Expression of the extracellular matrix protein Thrombospondin in the aging

Sue K. O'Shea, Ph.D., Assistant Professor, Anatomy and Cell Biology

Age-dependent changes in adhesion molecule expression and function on T lymphocytes

Yoji Shimizu, Ph.D., Assistant Professor, Microbiology and Immunology

Year 06 1994-1995

Effects of nerve growth factor on age-associated changes of neuronal calcium signaling

Karen Hall, M.D., Ph.D., Research Investigator, Internal Medicine (Gastroenterology)

T cell mediated host defenses in the lungs of aged mice

Gary B. Huffnagle, Ph.D., Research Investigator, Internal Medicine (Pulmonary)

Telomere sequence variations as a possible mechanism of programmed cellular senescence

Vladimir L. Makarov, Ph.D., Assistant Research Scientist, Biophysics Research Division

Breathlessness during maximal exercise in elderly humans

Fernando Martinez, M.D., Assistant Professor of Internal Medicine (Pulmonary)

Neurobehavioral studies of age-related changes in working memory

Patricia A. Reuter-Lorenz, Assistant Professor of Psychology

Year 07 1995-1996

The use of Mupirocin as a model for the prevention of Staphylococcal infection and emergence of antibiotic resistance in elderly patients

Suzanne F. Bradley, M.D., Assistant Professor of Internal Medicine (Geriatrics)

New diagnostic measures of balance performance in elderly

Arthur D. Kuo, Ph.D., Assistant Professor of Mechanical Engineering and Applied Mechanics, Assistant Professor of Biomechanical Engineering, College of Engineering, Institute of Gerontology

Regulation of IL-4 production and its role in aging

Cheong-Hee Chang, Ph.D., Assistant Professor of Microbiology and Immunology

Year 08 1996-1997

The contribution of antagonistic interactions among T cell subsets

Igor Dozmorov, Ph.D., Assistant Research Scientist (Pathology)

Nursing home to nursing home transfers: The neglected transition

Richard A. Hirth, Ph.D., Assistant Professor of Health Management (SPH)

Vasomotor insulin resistance in NIDDM: Endothelial mechanisms

Robert Hogikyan, M.D., Assistant Professor of Internal Medicine (Geriatrics)

The effect of aging on cell mediated immunity in the lungs

Gary B. Huffnagle, Ph.D., Assistant Research Scientist of Internal Medicine (Pulmonary)

Relationship of age to the osteogenic potential of marrow stroma

Paul H. Krebsbach, Ph.D., Assistant Professor of Dentistry

NOS mRNA expression of the gastric myenteric plexus

Toku Takahashi, M.D., Ph.D., Assistant Research Scientist of Internal Medicine (Gastroenterology)

Year 09 1997-1998

Health care outcomes and utilization in older patients with coexisting dementia and depression

Helen Kales, M.D., Lecturer in Psychiatry

The effect of Acetyl-L-Carnitine on the quality and function of senescent skeletal muscle

Lisa Larkin Ph.D., Assistant Research Scientist, Internal Medicine (Geriatrics)

Corticosteroid receptors and the aging hippocampus

Maria Morano, Ph.D., Research Investigator, Mental Health Research Institute

Lymphocyte homing in age

Raymond Yung, M.D., Assistant Professor of Internal Medicine (Geriatrics)

Year 10 1998-1999

Genetic mapping of a qualitative trait loci using four-way crosses

Andrzej Galecki, Assistant Research Scientist, Institute of Gerontology

Recipient age as a determinant of GVHD

James Ferrara, M.D., Director, Combined BMT Program

Year 11 1999-2000

Effects of age and exercise training on skeletal muscle protein turnover

Donald Dengel, Ph.D., Assistant Research Scientist of Internal Medicine (Geriatrics)

Prospective evaluation of losartan in preventing age-dependent endothelial dysfunction (PREVAILED)

Sanjay Rajagopalan, M.D., Assistant Professor of Internal Medicine (Cardiology)

Leukotriene overproduction and aging

Thomas Brock, Ph.D., Assistant Research Scientist of Internal Medicine (Pulmonary)

Year 12 2000-2001

Age associated alterations in T cell activation revealed by gene expression analysis

Igor Dozmorov, Ph.D., Assistant Research Scientist (Pathology)

Effect of aldosterone receptor blockade on cardiovascular aging

Marvin Boluyt, Ph.D., Assistant Professor (Kinesiology)

Inter-relationships between diabetes and periodontal disease in aging veterans

George W. Taylor, DM.D., DrPh, Associate Professor, School of Dentistry

Year 13 2001-2002

Hospice utilization and end-of-life costs among end-stage renal disease patients

Richard Hirth, Ph.D., Associate Professor, Health Management & Policy, School of Public Health

Skeletal muscle gene expression profile in aging and exercise

Lisa Larkin, Ph.D., Assistant Research Scientist (Geriatrics)

Home training of elderly CHF patients

Peter Vaitkevicius, M.D., Assistant Professor (Geriatrics)

Relationship of stem cell numbers to aging of the immune system in UM HET-3 mice

Michael Clarke, M.D., Professor of Internal Medicine (Hematology/Oncology)

Year 14 2002-2003

Functional stratification of older adults with diabetes

Caroline Blaum, M.D., Assistant Professor, Internal Medicine (Geriatrics)

Cognitive demands while walking in older individuals with and without cognitive impairment

Carol Persad, Ph.D., Clinical Assistant Professor, Division of Neuropsychology

Year 15 2003-2004

Age-related declines in bimanual coordination: neural mechanisms and potential for compensation

Rachael Seidler, Ph.D., Assistant Professor, Division of Kinesiology and Department of Psychology

Oxidative stress in age-related hearing loss

Suhua Sha, M.D., Research Investigator, Kresge Hearing Research Center

Alcohol trajectories of older persons in Japan

Gilbert Gee, Ph.D., Assistant Professor, Department of Health Behavior and Health Education, School of Public Health

A tailored physical activity program for patients with congestive heart failure

Kimberler Gretebeck, Ph.D., Assistant Professor, School of Nursing

Year 16-2004-2005

Insulin responses of muscle cells in vitro

Gregory D. Cartee, Ph.D., Professor of Kinesiology

Patterns and predictors of alcohol use trajectories among aging Americans

Gilbert C. Gee, Ph.D., Assistant Professor of Health Behavior and Health Education, School of Public Health

Mechanical consequences of genetically-influenced bone composition

McCreadie, Barbara, Ph.D., Research Investigator, Orthopaedic Research Labs

Factors moderating falls risk while turning among frail and healthy old adults

Carol Persad, Ph.D., Clinical Assistant Professor, Division of Neuropsychology

Year 17-2005-2006

Anal sphincter structure-function relationships in aging and fecal incontinence

Dee Fenner, Associate Professor of Obstetrics and Gynecology

Role of mineralocorticoid receptor in age-related deficits in hippocampal function

Audrey Seasholtz, Research Professor of Biological Chemistry

Influence of PKC isoform expression on myocyte contractile function during aging

Margaret Westfall, Assistant Professor of Surgery

Using electronic pharmacy fill and refill data to understand and promote appropriate medications use among elderly patients with hypertension

Michele Heisler, Assistant Professor of Internal Medicine

Perceptions of oral health adequacy and access in long-term care

Barbara Smith, Assistant Professor of Periodontics

Year 18-2006-2007

Age-dependent dendritic cell function: implication for cancer vaccine therapy

Annabelle Grolleau, Ph.D., Research Investigator, Division of Geriatric Medicine

Modulation of stress resistance and aging in mice

James Harper, Ph.D., Research Investigator, Pathology

Non-fatal suicidal behavior in home care elderly: The role of physical symptoms, functional disability, and cognitive impairment

Lydia Li, Ph.D., Associate Professor of Social Work, School of Social Work

Enhancing caregiver support for chronically ill older adults

John Piette, M.D., Associate Professor of Internal Medicine

Role of fatty acid transport in aging *Drosophila* heart

R.J. Wessells, Ph.D., Clinical Lecturer, Division of Geriatric Medicine

Lymphocyte apoptosis in elderly emergency patients

John Younger, M.D., Associate Professor of Emergency Medicine

Year 19-2007-2008

A tailored clinical intervention for older adults with leg OA

Susan Murphy, M.D., Assistant Professor, Physical Medicine and Rehabilitation

Use of a single underfoot perturbation to assess how age, peripheral neuropathy, and divided attention affect gait stability

Joseph Nnodim, M.D., Assistant Professor, Division of Geriatric Medicine

Molecular mechanisms of oxidative stress in frailty and diabetes

Subramaniam Pennathur, M.D., Assistant Professor of Nephrology

REM sleep modulation as a target for age-related learning and memory deficits

Gina Poe, M.D., Associate Professor of Anesthesiology

The effect of vibrotactile tilt feedback on postural and gait stability in older adults

Kathleen Sienko, Ph.D., Assistant Professor of Mechanical Engineering, College of Engineering

Year 20-2008-2009

Do depressive symptoms lead to disability and vice versa?

Xiao Xu, Ph.D., Research Investigator, Department of Obstetrics and Gynecology, Medical School

Utility of aerobic rat models for the study of frailty

Lauren Koch, Ph.D., Assistant Professor, Department of Physical Medicine and Rehabilitation, Medical School.

The relationships between brain white matter abnormalities, cognition and the biomechanics of (dual task) balance and gain in older adults

Martijn Mueller, Ph.D., Research Investigator, Department of Radiology Medical School

Molecular epidemiology of methicillin-resistant *Saphylococci* in nursing homes

Lona Mody, M.B.B.S., Assistant Professor, Department of Internal Medicine, Medical School.

Falls and urinary incontinence in the older adult population

Christine Cigolle, M.D. Clinical Lecturer, Department of Family Medicine, Medical School

The prevalence of cognitive decline in older adults with chronic heart failure

Tanya Gure, M.D., Clinical Lecturer, Department of Internal Medicine, Medical School

The effect of dietary fatty acids on the sarcopenia of aging

Angela Subauste, M.D., Lecturer, Department of Internal Medicine /MEND

The role of cognitive and affective variables in explaining increased risk of falls

Sara Wright, Ph.D. Clinical Lecturer, U-M Department of Psychiatry, Medical School

Randomized, placebo controlled study to evaluate the safety and efficacy of efalizumab

Bruce Richardson, M.D., Ph.D., Professor, Rheumatology, Department of Internal Medicine, Medical School

Functioning after severe sepsis

Theodore Iwashyna, M.D., Ph.D., Assistant Professor of Internal Medicine, Pulmonary & Critical Care, Medical School

Year 21-2009-2010

Elucidation of the role of mitochondrial protein acetylation in calorie restriction in mammals

David B. Lombard, M.D., Ph.D., Assistant Professor of Pathology, Medical School

A theory-informed intervention to reduce hip fracture

Lustig, Cindy A., Ph.D., Assistant Professor, Psychology

The effect of COMT genotype on age-related declines in motor function

Rachael Seidler, Ph.D., Associate Professor, Psychology and School of Kinesiology.

Estimating health trajectories in old age: How much does selection bias matter?

Wen Ye, Ph.D., Assistant Professor in the Department of Biostatistics, School of Public Health

Year 22- 2010-2011

Protection of auditory function in late life by heat shock factor 1

David Kohrman, Ph.D., Associate Professor Department of Human Genetics, Department of Otolaryngology/Head and Neck Surgery

Racial differences in cognitive decline: The influence of stroke

Deb Levine, M.D., M.P.H., Assistant Professor of Internal Medicine and Neurology

Nitric oxide in aging and longevity

Nancy Linford, Ph.D., Research Investigator of Molecular and Integrative Physiology

Improvement of immune function in CD4 cell from old mice.

Gonzalo Garcia, Ph.D., Research Investigator of Pathology

P2X7 Receptors in the retinal pigment epithelium: Effect of aging.

Dongli Yang, M.D., Ph.D., Research Investigator of Ophthalmology and Visual Sciences

Hospitalists and the care of older adults

Lena Chen, M.D., M.S., Clinical Lecturer of Internal Medicine

Diabetes management in the oldest old adults

Pearl Lee, M.D., Assistant Professor, Geriatrics

Year 23- 2011-2012

MicroRNA-21 modulates fatty acid metabolism in renal aging

Markus Bitzer, M.D., Assistant Professor, Internal Medicine - Nephrology

Improving the repair and rehabilitation of rotator cuff tears in old rats by autologous satellite cell transplantation

Christopher Mendias, Ph.D., Assistant Professor, Kinesiology

Hippocampal response to oxidative stress in long-lived mutant mice

Liou Sun, Ph.D., Research Investigator, Pathology

Does age-related visual decline index GABA depletion?

Daniel Weissman, Ph.D., Assistant Professor, Psychology

C. difficile isolates, biomarkers, and gut microbiota in younger vs. older patients

Seth Walk, Ph.D., Research Investigator, Internal Medicine – Infectious Diseases

Year 24- 2012-2013

Do available measures of hospital quality predict long-term outcomes among older patients?

Lauren Hersch Nicholas, Ph.D., Research Investigator, Survey Research Center, Institute for Social Research

The role of myeloid-derived suppressor cells in immunosenescence

Ryan Wilcox, M.D., Ph.D., Assistant Professor, Internal Medicine – Hematology/Oncology

The role of Sestrin 2 and 3 against age and obesity associated metabolic derangements

Jun Hee Lee, Ph.D., Assistant Professor, Molecular and Integrative Physiology and Institute of Gerontology

Predictors of mortality among older patients with cirrhosis: Is MELD sufficient?

Mina Rakoski, M.D., Clinical Lecturer, Internal Medicine - Gastroenterology

Improving diabetes management among older adults by enhancing informal caregiver effectiveness

Ann-Marie Rosland, M.D., M.S., Assistant Professor, Internal Medicine – General Medicine

Influence of age on rectal mechanics in men with dysynergic defecation

Richard J. Saad, M.D., M.S., Assistant Professor, Internal Medicine - Gastroenterology

Vulnerable elderly surgical patient assessment (VESPA)

Kathleen M. Diehl, M.D., Associate Professor, General Surgery

Year 25- 2013-2014

Molecular markers for early detection of renal function decline in older adults

Wenjun Ju, Ph.D., M.S., Research Assistant Professor, Internal Medicine – Nephrology

Clinical, microbiological, and biochemical predictors of severe Clostridium difficile infection in older adults

Krishna Rao, M.D., Clinical Lecturer, Internal Medicine – Infectious Diseases

Prevalence, patterns and problems associated with long-term venous access in skilled nursing facilities: A mixed-methods study

Vineet Chopra, M.D., M.Sc., Assistant Professor, Internal Medicine – General Medicine

Mechanisms of functional disability among older patients with Cirrhosis

Michael Volk, M.D., M.Sc., Assistant Professor, Internal Medicine – Gastroenterology and Hepatology

Aging is associated with an impaired regulatory T cell function

Sanjay Garg, Ph.D., Assistant Research Scientist, Internal Medicine – Geriatrics and Palliative Medicine

Hypothalamic regulation in crowded litter mice: Early life control of aging and longevity

Marianna Sadagurski, Ph.D., Assistant Research Scientist, Internal Medicine – Geriatrics and Palliative Medicine

Development of an injurious fall outcome measure in older individuals

Lillian Min, M.D., Assistant Professor, Internal Medicine – Geriatrics and Palliative Medicine

Year 26- 2014-2015

Body-composition Phenotypes, Inflammation, and Functional Status in Older Adults

Anda Botosaneanu, Ph.D., M.D., Assistant Professor, Health Policy Studies

Assay of archived specimens from participants in the Michigan Study of Women's Health Across the Nation (MSWAN) for the anti-inflammatory biomarker interleukin-10 (IL-10)

Carrie Karvonen-Gutierrez, M.P.H., Ph.D., Assistant Research Scientist, Epidemiology

Microbial Concordance Between Urinary and Wound Cultures in Institutionalized Adults

Jennifer A. Meddings, M.D., M.Sc., Assistant Professor, Internal Medicine – General Medicine

Hypothalamic regulation in crowded litter mice: early life control of aging and longevity

Marianna Sadagurski, B.Sc., Ph.D., Assistant Research Scientist, Internal Medicine – Geriatrics and Palliative Medicine

The feasibility of a lifestyle intervention for older adults with diabetes

Pearl Lee, M.D., M.S., Assistant Professor, Internal Medicine – Geriatrics and Palliative Medicine

Year 27- 2015-2016

Autophagy activity and adipose tissue mediated inflammation in aging

Amiya Kumar Ghosh, Ph.D., Research Investigator, Internal Medicine – Geriatrics and Palliative Medicine

Cognitive, functional, & behavioral risks for hospitalization of older adults

Donovan Maust, M.D., Assistant Professor, Psychiatry

Genomic analysis of multi-drug resistant organism transmission within and between nursing homes

Evan Snitkin, Ph.D., Assistant Professor, Internal Medicine – Division of Infectious Diseases

Olfactory social cues as regulators of mouse aging

Michael Garratt, Ph.D., Assistant Professor, Pathology

Hearing aid receipt by geographical, socioeconomic status, and health literacy

Michael McKee, M.D., Assistant Professor, Family Medicine

Intracortical biomarkers for promoting neural plasticity post-stroke

Sean Meehan, Ph.D., Assistant Professor, Kinesiology

SECTION III. Career Development (Listing from 2004-2016). Current academic titles are provided. All at University of Michigan, unless noted otherwise.

James Harper, Ph.D., Research Investigator, Pathology (2006-2008)

Grants Awarded

American Federation for Aging Research, “Modulation of Stress Resistance and Aging in Mice,” Harper, PI, Period of Award 07/01/2006 to 06/30/2008.

Nathan Shock Center, “Cellular and Molecular Biology of Aging: Administrative Supplement,” Harper, Co-Investigator, Period of Award 9/15/2008 to 06/30/2009.

Allison Aiello, Ph.D., Professor and Social Epidemiology Program Leader, Epidemiology, Gillings School of Global Public Health, University of North Carolina (2006-2008)

Grants Awarded

NIH “Reducing Transmission of Influenza by Face Masks” Monto-PI, Period of Award 09/30/2006 to 9/29/2008, Aiello, Co-PI.

5R01DA022720 “Ecologic Stressors, PTSD, and Drug Use in Detroit” Galea-PI, Period of Award 09/01/2007 to 8/31/2012, Aiello, Co-PI.

3R01DA022720-03S1 “Ecologic Stressors, PTSD, and Drug Use in Detroit” Period of Award 4/1/2010-8/31/2010.

NIH “Neighborhood cultural isolation and biomarkers of cardiovascular disease among Latinos” A. Aiello-PI, Part of larger consortium grant P60 (PI: A. Diez-roux), Period of Award 09/01/07-08/31/12.

1R56DK087864 “Life Course Socioeconomics, Acculturation, & Type-2 Diabetes Risk Among Latinos” A. Aiello-PI, 5/1/2010-4/30/2011

1RC1MH088283 “Candidate Epigenetic Biomarkers For PTSD: Insights From Detroit” 9/30/2009-8/31/2010.

Annabelle Grolleau-Julius, Ph.D., Research Investigator, Internal Medicine (Geriatrics), left University 2010 (2006)

Cindy Lustig, Ph.D., Associate Professor of Psychology, College of Literature, Science and the Arts (2006)

Grants Awarded

NIH “Memory Training: Strategies Underlying Success and Transfer” Lustig-PI, Period of Award 09/15/2007 to 08/31/2009.

NSF “Acetylcholine, Cortex and Control” Lustig-PI, Period of Award 08/01/2007 to 02/28/2010

Honors, awards, promotions:

2009-10 Henry Russel Award

Allison Rosen, M.D., Ph.D., Associate Professor, University of Massachusetts Medical School, Department of Quantitative Health Sciences (2006)

Grants Awarded

Harvard University “Development of National Health Accounts” Rosen-PI, Period of Award 07/01/2006 to 06/30/2007

HHS-NBER “NBER Center for Aging and Health Research” Rosen-PI, Period of Award 09/01/2007 to 06/30/2008

John A. Hartford Foundation, Center of Excellence in Geriatrics.

Gonzalo Garcia Ph.D., Assistant Research Scientist, Department of Pathology

Grants Awarded

American Federation for Aging Research, “Effects of Surface Glycosylation in the Age-related Decline of T Cell Function” Gonzalo, PI. Period of Award 07/01/2003 to 06/30/2004.

NIH, “ERM and Rho Signal Pathways in T Cell Immune Senescence” Gonzalo, PI. Period of Award 09/01/2007 to 08/31/2009.

NIH, “Activation Defects in T-Cells of Aged Mice” Gonzalo, Co-Investigator. Period of Award 09/01/2006 to 08/31/2007.

Pearl Lee M.D., Assistant Professor, Division of Geriatric Medicine, Department of Internal Medicine (2008-2010)

Grants Awarded

John A. Hartford Foundation, Center of Excellence in Geriatrics. 7/1/2010-6/30/2011.

NIA: AG024824, University of Michigan Older Americans Independence Center; Pilot/Exploratory Studies Core Diabetes Management and Physical Function of Older Adults Role: Pilot project PI 07/01/2009- 06/30/2010.

Angela Subauste M.D., Assistant Professor, School of Medicine, University of Mississippi (2008-2010)

Grants Awarded

John A. Hartford Foundation, Center of Excellence in Geriatrics, Pilot Grant. 7/1/2010-6/30/2011.

The University of Michigan OAIC, Pilot Grant “Modulation of Age Related Sarcopenia by Fatty Acids” Subauste, PI, Period of Award 9/1/2008-8/31/2009.

University of Michigan Metabolomics and Obesity Center, Pilot Grant , “Role of AGPAT in obesity induced insulin resistance” Subauste, PI, Period of Award 7/1/2007-6/30/2008.

Lan Yao Ph.D., RN, Assistant Professor, College of Nursing, Michigan State University (2008-2009)

Grants Awarded

Michigan Center for Health Intervention, Pilot Study Grant, “Effects of a positive emotion-charged Tai Chi home program on mobility, balance, and fall risks in elders with Alzheimer’s disease: a pilot controlled trial” Yao (Pilot PI), Period of Award 05/01/2007-04/30/2009.

American Academy of Nursing/John A. Hartford Foundation, Claire M. Fagin Postdoctoral Fellowship “Effects of a positive emotion-charged Tai Chi home training program on elders with Alzheimer’s Disease and their caregivers” Yao (Awardee), Period of Award 07/01/2006-12/31/2008.

University of Michigan Integrative Health Care Pilot Research Grant, “Feasibility of a positive emotion-charged Tai Chi home training program and its effects on patients with dementia and caregivers,” Yao (Pilot PI), Period of Award 12/01/2006-11/30/2008.

University of Michigan Office of the Vice President for Research Pilot Research Grant, “Impact of Social Interactions on Locomoting Behaviors of Elders with Dementia: A Pilot Study using Noldus Observer” Yao (Pilot PI), Period of Award 07/01/2005-06/30/2006.

Sara Wright Ph.D., Assistant Professor, Department of Psychiatry, School of Medicine, University of Alabama at Birmingham (2008)

VA Career Development Award, Level One, “The Role of Psychological Factors in Predicting Fall Risk in Elders,” (Wright), 9/2008-9/2010, Principal Investigator

Michigan Institute for Clinical and Health Research Pilot Grant Fund, “The Role of Cognitive and Affective Factors in Explaining Increased Risk of Falls among Patients with Geriatric Depression,” (Wright), 1/2009-09/2011, Principal Investigator

Jack L. Berman, M.D. and Barbara A. Berman, Ph.D. Depression Research Fund Award (Geriatric Depression), University of Michigan Department of Psychiatry Depression Center, “The Role of Cognitive and Affective Variables in Explaining Increased Risk of Falls among Patients with Geriatric Depression,” (Wright), 5/2008- 9/2010, Principal Investigator

Meader Research Fund for Depression/Genetics/Pain, University of Michigan Department of Psychiatry Depression Center, “Neurobiological Measures of Lifetime Depression Burden: Stability and Relationship with Treatment Status,” (Langenecker/Wright), 01/2008- 01/2011, Co-Principal Investigator

Michigan Alzheimer’s Disease Research Center Pilot Grant Fund, “Investigation of Neuroanatomical Networks to Understand Late Onset Depression,” (Langenecker/Wright), 6/2009-06/2011, Co-Principal Investigator

VA Career Development Award, Level Two, “Cognitive, Clinical, and Neural Markers of Late Life Depression,” (Wright), Principal Investigator, Intent to Award Letter Received.

Kara Zivin Ph.D., Associate Professor, Department of Psychiatry, (2008)

Grants Awarded

Blue Cross Blue Shield of Michigan Foundation, “Implementation of a Depression Stepped Treatment Protocol and Management System for Cardiovascular Patients” Zivin, Co-Investigator, 12/01/2007 to 11/30/2008

VA CDA-1 examining the relationship between depression and older adult workforce participation

Anjali Desai Ph.D., Project Manager, Trialynx Inc. (2008-2010)

Grants Awarded

University of Michigan Cardiovascular Center McKay Grant, “The role of nitric oxide in erythropoietin-mediated atherosclerosis in chronic kidney disease” Desai (PI), 6/1/08-5/31/09.

American Heart Association Scientist Development Grant, “Role of erythropoietin and iron therapy in the development of atherosclerosis in chronic renal disease,” Desai (PI), 1/1/03-12/31/05.

Renal Research Institute Grant “Role of Alpha-Tocopherol (Vitamin E) in reducing oxidative Stress, Endothelial Dysfunction and Advanced Glycosylation End Products in Chronic Renal Insufficiency: a Pilot Study”Saran, PI ; Desai Co-Investigator, 9/1/01-3/30/06.

Amir Sadghi-Akha M.D., Ph.D., Research Investigator, Department of Pathology (2009)

Tanya Gure M.D., Assistant Professor, Department of Internal Medicine, Ohio State University (2009-2010)

Grants Awarded

John A. Hartford Foundation, Center of Excellence in Geriatrics, Pilot Grant. 7/1/2010-6/30/2011.

MICHR KL2, "The prevalence of cognitive impairment among older adults with heart failure" 7/1/10-8/31/11

Christine Cigolle M.D., Assistant Professor, Department of Family Medicine (2011)

Grants Awarded

National Institute on Aging, K08 AG031837 Mentored Clinical Scientist Research Career Development Award (Cigolle PI) Geriatric Conditions and Disablement in the Older Adult Population 9/30/2010-9/29/2015

Hartford/AFAR National Centers of Excellence Career Development Award 7/1/2010-6/30/2012

Michigan Center on the Demography of Aging (MiCDA) 2010 Pilot Grant (Cigolle PI), Cognitive Impairment and Frailty in the Older Adult Population: Do the Outcomes Differ? 7/1/2010-6/30/2011

Department of Veteran Affairs Innovative Patient Alternatives to Institutional Extended Care Bridging the Gap: Care Management Targeting Veterans with Cognitive Impairment at Times of Transition (Cigolle PI) 10/1/2009-9/30/2011

Daniel Leventhal, M.D./Ph.D., Assistant Professor, Neurology (2011-2012)

Grants Awarded

Dystonia Medical Research Foundation (Leventhal PI), Optogenetic manipulation of striatal fast spiking interneurons in vivo, 4/15/2010-4/14/2012

Tourette Syndrome Association (Leventhal PI) In vivo striatal fast spiking interneuron suppression using optogenetic techniques 7/01/2010-6/30/2011

Lillian Min, M.D., M.S.H.S, Assistant Professor, Department of Internal Medicine/Geriatrics (2011-2012)

Grants Awarded

Hartford/AFAR National Centers of Excellence Career Development Award 7/1/2011-6/30/2013
Older American Independence Center (Halter PI) Research Career and Development Core (RCDC) Career Development Award (50% salary support x 1 year, renewable to 2 years), 9/1/2010-8/30/2012

R21 HS017621-01 (Min PI) \$250,000/3 years, DHHS/Agency for Health Care Research and Quality Prioritizing care of complex elders using survival and functional status outcome, 9/1/2008-8/30/2012

R24 HS019459 (PI Blaum, Caroline). Clinical Database to Support Comparative Effectiveness Studies of Complex Patients. Agency for Healthcare Research and Quality. Role: Faculty pilot study investigator, 10/1/2011-8/30/12

Centers for Medicare and Medicaid Services, Research and Demonstration (contract to RAND) HHSM-500-2005-000281 (Wenger PI, Min consultant) Evaluation and Development of Outcome Measures for Quality Assessment in Medicare Advantage and Special Needs Programs 9/1/2011-8/30/2012

R01 AG047178 (Min, PI) Optimizing Treatment of Older Adults with Hypertension: A Net Benefit Analysis of Falls Injury vs Cardiovascular Outcomes 9/1/2015-4/30/2020

Mark Palmer, M.D., Ph.D., Assistant Professor, Department of Movement Science, School of Kinesiology, Department of Biomedical Engineering, College of Engineering (2011-2012)

Seth Walk, Ph.D., Assistant Professor, Department of Microbiology and Immunology, Montana State University (2012-2013)

Kathleen H. Sienko, Ph.D., Arthur F Thurnau Professor, Department of Mechanical Engineering (2013)

Grants Awarded (relevant only)

NSF-RAPD/GARDE, “CAREER: Improving postural balance and rehabilitation outcomes using vibrotactile sensory substitution,” \$492,374. August 2009-August 2014. PI: Kathleen Sienko.

Candidate’s share: \$492,374. Support 1-2 GSRA’s per semester.

NIH-NIDCD R21, “The effect of frequent sensory substitution training on short- and long-term balance outcomes,” \$415,327. PI: Kathleen Sienko, Co-PI: Sue Whitney. Candidate’s share: \$309,232. Support 2 GSRA’s.

NSF-GARDE, “Telerehabilitation Balance Training for Community Dwelling Older Adults,” \$297,927. PI: Kathleen Sienko. Candidate’s share: \$297,927. Support 1 GSRA.

Jun Hee Lee, Ph.D., Assistant Professor, Department of Molecular and Integrative Physiology (2013-2014)

Grants Awarded

American Liver Foundation/American Association for the Study of Liver Diseases, “Protective role of Sestrin2 against obesity-associated pathologies in liver” Liver Scholar Award (PI: Lee, Jun Hee) 07/01/2012-06/30/2015

Ellison Medical Foundation (AG-NS-0932-12), “Sestrins at the crossroads between nutrition, aging and metabolism” New Scholar Award in Aging (PI: Lee, Jun Hee) 08/01/2012-07/31/2016

ADA Basic Science Award (PI: Lee, Jun Hee) 01/01/2013-12/31/2015

American Diabetes Association (1-13-BS-106), “Maintenance of insulin signaling sensitivity by sestrin2-mediated feedback loop” ADA Basic Science Award (PI: Lee, Jun Hee) 01/01/2013-12/31/2015

Emily Joy Nicklett, Ph.D., M.S.W., Assistant Professor, School of Social Work (2013-2014)

Vineet Chopra, M.D., M.Sc., Assistant Professor, Internal Medicine – General Medicine (2014-2015)

Grants Awarded

Agency for Health Care Research and Quality, “Improving Peripherally Inserted Central Catheter use in Hospitalized Patients” K08 HS022835-01 (PI: Chopra, Vineet) 4/1/2014-3/31/2018

Krishna Rao, M.D., Assistant Professor, Internal Medicine – Infectious Diseases (2014-2016)

Marianna Sadagurski, B.Sc., Ph.D., Research Assistant Professor, Internal Medicine – Geriatrics and Palliative Medicine (2014-2016)

Carrie Karvonen-Guiterrez, Ph.D., Research Assistant Professor, Epidemiology (2015-2016)

Vikas Kotagal, M.D., Assistant Professor, Neurology (2015-2016)

Grants Awarded

Department of Veterans Affairs, “Cardiovascular Risk Factors and Rapid Disease Progression in Parkinson Disease” VA CDA-2 (PI: Kotagal) 4/1/2016-03/31/2020

SECTION IV. PUBLICATIONS: Provide only those that are a direct result of Pepper Center resources and list publications published in the 2015-2016 funding year only (7/1/15 – 6/30/16).

Albin, R. L., and R. A. Miller. 2016. Mini-review: Retarding aging in murine genetic models of neurodegeneration. *Neurobiol Dis.* 85:73-80. PMID: 26477301.

Altschuler R. A., D. F. Dolan, K. Halsey, A. Kanicki N. Deng, C. Martin, J. Eberle, D. C. Kohrman, R. A. Miller, and J. Schacht. 2015. Age-related changes in auditory nerve – inner hair cell connections, hair cell numbers, auditory brain stem response and gap detection in UM-HET4 mice. *Neuroscience* 292:22-33. PMID25665752. PMC4511166.

Bauer ME, Lorenz RP, Bauer ST, Rao K, Anderson FWJ. Maternal Deaths Due to Sepsis in the State of Michigan 1999-2006. *Obstet Gynecol.* 2015;126(4):747-52. PMC4564866.

Blaum C, Han B, Ferris R, Min L, Lee PG: Older Adults Reporting More Diabetes Care Have Greater 9-year Survival. *J Am Geriatr Soc.* 2016 Article first published online: 11 DEC 2015. DOI: 10.1111/jgs.13839. PMC4688231

Callaghan B, Kerber K, Langa KM, Banerjee M, Rodgers A, McCammon R, Burke J, and Feldman E. Longitudinal patient-oriented outcomes in neuropathy: importance of early detection and falls. *Neurology.* 2015; 85(1): 71-19. PMC4501944

Cigolle CT, Ha J, Min LC, Lee PG, Gure TR, Alexander NB, Blaum CS. The epidemiologic data on falls, 1998-2010: More older Americans report falling. *JAMA Internal Medicine* 175(3): 443-445, 2015. PMID: 25599461.

Choi H, Schoeni R, Langa KM, Heisler M. Older adults’ residential proximity to their children: changes after cardiovascular events. *Journal of Gerontology: Social Sciences.* 2015; 70(6): 995-1004. PMC4817072

Choi H, Schoeni R, Langa KM, Heisler M. Spouse and child availability for newly disabled older adults: socioeconomic differences and potential role of residential proximity. *Journal of Gerontology: Social Sciences.* 2015; 70(3): 462-469.

Chou KL, Kotagal V, Bohnen NI. Neuroimaging and clinical predictors of fatigue in Parkinson disease. *Parkinsonism Relat Disord* 2016 Feb;23:45-9. doi: 10.1016/j.parkreldis.2015.11.029. Epub 2015 Dec 2. PMID:26683744. PMC4724499.

Chopra V, Montoya A, Joshi D, et al. Peripherally inserted central catheter use in skilled nursing facilities: A pilot study. *J Am Geriatr Soc* 2015;63:1894-1899. PMC4626207.

Crnich CJ, Jump R, Trautner B, Sloane PD, Mody L. Optimizing Antibiotic Stewardship in Nursing Homes: A Narrative Review and Recommendations for Improvement. *Drugs Aging* 2015;32:699-716. PMC4579247.

Davydow D, Levine D, Zivin K, Katon W, Langa KM. The association of depression, cognitive impairment without dementia, and dementia with risk of ischemic stroke: A cohort study. *Psychosomatic Medicine*. 2015; 77(2): 200-208. PMC4333011

Delaney C, Garg SK, Yung R: Analysis of DNA Methylation by Pyrosequencing. *Methods Mol Biol* 1343:249-64, 2015. PMC4772880

Dominick, G., D. Berryman, E. List, J. Kopchick, X.Li, R. A. Miller, and G. G. Garcia. 2015. Regulation of mTOR activity in Snell dwarf and growth hormone receptor knockout mice. *Endocrinology* 156:565-575. PMID: 25456069. PMC4298324.

Donaghy A, DeMott T, Allet L, Kim H, Ashton-Miller J, Richardson JK. Accuracy of clinical techniques for evaluating lower limb sensorimotor functions associated with increased fall risk. *PMR*. 2015 Sep S1934-1482. PMC4808474.

Friedman EM, Shih RA, Langa KM, Hurd MD. US prevalence and predictors of informal caregiving for dementia. *Health Affairs*. 2015; 34(10): 1637-1641.

Gabel NM, Crane NA, Avery ET, Kay RE, Laurent A, Giordani BJ, Alexander NB, Weisenbach SL. Dual-tasking gait variability and cognition in late-life depression. *Int J Geriatr Psychiat* 30(11): 1120-1128, 2015. PMID: 26251013.

Ghosh AK, Garg SK, Mau T, O'Brien M, Liu J, Yung R: Elevated Endoplasmic Reticulum Stress Response Contributes to Adipose Tissue Inflammation in Aging. *J Gerontol A Biol Sci Med Sci* 70(11): 1320-9, 2015 PMC4612381

Ghosh, A.K.* Garg, S.K. Mau T. O'Brien, M. Liu, J. & Yung, R.* (2015). Elevated Endoplasmic Reticulum (ER)-stress response contributes to adipose tissue inflammation in aging. *Journal of Gerontology: Biological Sciences*, 70(11), 1320-1329. (* corresponding author). PMID:PMC4612381

Herranz, N., S. Gallage, M. Mellone, T. Wuestefeld, H. Hamza, J. P. Morton, S. Raguz, J. C. Acosta, A. J. Innes, A. Banito, A. Montoya, C. J. Hanley, A. Georgilis, G. Dharmalingam, D. N. Gotthard, F. Lasitschka, T. Longerich, P. Faull, P. Cutillas, R. A. Miller, O. J. Sansom, Y. Ben-Neriah, D. Withers, L. Zender, G. J. Thomas, and J. Gil. 2015. mTOR regulates the senescence-associated secretory phenotype via MK2 phosphorylation of ZFP36L1. *Nature Cell Biology* 17:1205-17. Erratum in: *Nat Cell Biol*. 17:1370. PMID: 26280535. PMC4589897.

Hofmann, J. W., X. Zhao, M. De Cecco, A. Peterson, J. Manivannan, G. B. Hubbard, Y. Ikeno, Y. Zhang, B. Feng, W. Qi, H. Van Remmen, R. A. Miller, R. de Cabo, H. Xu, N. Neretti, and J. M. Sedivy. 2015. Reduced expression of *Myc* enhances healthspan in mice. *Cell* 160:477-88. PMID: 25619689. PMC4624921.

Hubbard RE, Peel NM, Samanta M, Gray LC, Fries BE, Mitnitski A, Rockwood K. Derivation of a frailty index from the interRAI acute care instrument. *BMC Geriatr*. 2015 Mar 18;15:27. doi: 10.1186/s12877-015-0026-z. PubMed PMID: 25887105; PubMed Central PMCID: PMC4373301. PMID:PMC4373301

Hurd M, Martorell P, Langa KM. Future monetary costs of dementia in the United States under alternative dementia prevalence scenarios. Journal of Population Ageing. 2015; 8: 101-112. PMC4410878

Jasiak NM, Alaniz C, Rao K, Veltman K, Nagel JL. Recurrent Clostridium difficile Infection in Intensive Care Unit Patients: Incidence and Risk Factors. Am J Infect Control. 2015; published online 2015 Sep 29. PMID: 26432184.

Jepsen KJ, Bigelow EMR, Ramcharan M, Schlecht S, Karvonen-Gutierrez C. Moving toward a prevention strategy for osteoporosis by giving a voice to a silent disease. J Women's Midlife Health 2016;2:3

Kinnaird C, Lee J, Carender WJ, Kabeto M, Martin B, Sienko KH. The effects of attractive vs. repulsive instructional cuing on balance performance. J Neuroeng Rehabil. 2016 Mar 16;13(1):29. PMC4793655.

Kotagal V, Langa KM, Plassman B, Fisher G, Giordani B, Wallace R, Burke J, Steffens D, Kabeto M, Albin R, Foster N. Factors associated with cognitive evaluations in the United States. Neurology. 2015; 84(1): 64-71. PMCID:PMC4336093

Kotagal V, Bohnen N, Muller M, Koeppe R, Frey K, Langa KM, Albin R. Educational attainment and motor burden in Parkinson's disease. Movement Disorders. 2015; 30(8): 1143-1147. PMC4504749

Langa KM. Is the risk of Alzheimer's disease and dementia declining? Alzheimer's Research and Therapy. 2015; 7(1): 34. PMC4374373

Langa KM, Cutler D. Opportunities for insights on the life-course risks and outcomes of cognitive decline in the Kavli HUMAN Project. Big Data. 2015; 3(3): 189-192. PMC4605212

Levine, D.A., Galecki, A.T., Langa, K., Unverzagt, F.W., Kabeto, M., Giordani, B., Wadley, V. G., (2015) Trajectory of Cognitive Decline After Incident Stroke, JAMA, 314 (1):41-51. PMC4655087

Levine D, Galecki A, Langa KM, Unverzagt F, Kabeto M, Giordani B, Wadley V. Trajectory of cognitive decline after incident stroke. JAMA. 2015; 314(1): 41-51. PMC4655087

Levine, D.A., Kabeto, M., Langa, K.M., Lisabeth, L.D., Rogers, M.A.M., Galecki, A.T., (2015) Does Stroke Contribute to Racial Differences in Cognitive Decline?, STROKE, 46 (7)1897-1902. PMC4480064

Levine D, Kabeto M, Langa KM, Lisabeth L, Rogers M, Galecki A. Does stroke contribute to racial differences in cognitive decline? Stroke. 2015; 46(7): 1897-1902. PMC4480064

Levy H, Janke A, Langa KM. Health literacy and the digital divide among older Americans. J. of General Internal Medicine. 2015; 30(3): 284-289. PMC4351282

List, E. O., D. E. Berryman, Y. Ikeno, G. B. Hubbard, K. Funk, R. Comisford, J. A. Young, M. B. Stout, T. Tchkonja, M. M. Masternak, A. Bartke, J. L. Kirkland, R. A. Miller, and J. J. Kopchick. Removal of growth hormone receptor (GHR) in muscle of male mice replicates some

of the health benefits seen in global GHR-/- mice. *Aging* 7:500-512. 2015; PMID: 26233957 PMC4543039.

Littlejohns T, Kos K, Henley W, Cherubini A, Ferrucci L, Lang I, Langa KM, Melzer D, Llewellyn D. Serum leptin and risk of cognitive decline in elderly Italians. *J. of Alzheimer's Disease*. 2015; 44(4): 1231-1239.

Ma, S., S. H. Yim, S. G. Lee, E. B. Kim, S.-R. Lee, K.-T. Chang, R. Buffenstein, T. J. Park, R. A. Miller, C B. Clish, V. N. Gladyshev. 2015. Organization of the mammalian metabolome according to organ function, lineage specialization and longevity. *Cell Metabolism* 22:332-343. PMID: 26244935. PMC4758382.

Manu ER, Mody L, McNamara SE, Vitale CA. Advance Directives and Care Received by older nursing home residents. *Am J Hosp Palliat Care* 2015. pii: 1049909115611875. [Epub ahead of print] PMID: 26494830.

Martinson JNV, Broadaway S, Lohman E, Johnson C, Alam MJ, Khaleduzzuman M, Garey KW, Schlackman J, Young VB, Santhosh K, Rao K, Lyons RH, Walk ST. Evaluation of portability and cost of a fluorescent PCR ribotyping protocol for *Clostridium difficile* epidemiology. *J Clin Microbiol*. 2015;53(4):1192-7. PMC4365229.

Mody, L., Krein, S.L., Saint, S.K., Min, L.C., Montoya, A., Lansing, B., McNamara, S.E., Symons, K., Fisch, J., Koo, E., Galecki, A.T., (2015) A Targeted Infection Prevention Intervention in Nursing home Residents with Indwelling Devices: a Randomized Clinical Trial, *JAMA internal medicine*, 175 (5):714-723. PMC4420659

Mody L, Gibson KE, Horcher A, et al. Prevalence of and risk factors for multidrug-resistant *Acinetobacter baumannii* colonization among high-risk nursing home residents. *Infect Control Hosp Epidemiol* 2015;36:1155-1162. PMC4626246.

Mody L, Meddings J, Edson BS, et al. Enhancing Resident Safety by Preventing Healthcare-Associated Infection: A National Initiative to Reduce Catheter-Associated Urinary Tract Infections in Nursing Homes. *Clin Infect Dis* 2015;61:86-94. PMC4481599.

Micic D, Rao K, Trindade BC, Walk ST, Chenoweth E, Jain R, Trivedi I, Santhosh K, Young VB, Aronoff DM. Serum 25-hydroxyvitamin D levels are not associated with adverse outcomes in *Clostridium difficile* infection. *Infect Dis Rep*. 2015; 7(3):5979. PMC4593886.

Min, L., Galecki, A., Mody, L., (2015) Functional Disability and Nursing Resource Use Are Predictive of Antimicrobial Resistance in Nursing Homes, *Journal of American Geriatrics Society*, 63 (4): 659-666. PMC4406786

Min L, Mazzurco L, Gure T, Cigolle C, Lee P, Bloem C, Chan C, Romano M, Nallamothu B, Langa KM, Prager R, Malani P. Longitudinal functional recovery after geriatric cardiac surgery. *Journal of Surgical Research*. 2015; 194(1): 25-33. PMC4346442

Nnodim JO, Yung RL: Balance and its Clinical Assessment in Older Adults - A Review. *J Geriatr Med Gerontol* 1(1): 003, 2015. PMC4773046

Noohi F, Boyden NB, Kwak Y, Humfleet J, Burke DT, Muller ML, Bohnen NI, Seidler RD. Association of COMT val158met and DRD2 G>T genetic polymorphisms with individual differences in motor learning and performance in female young adults. *J Neurophysiol.* 2014 Feb;111(3):628-40. PMC3921405.

Oh, E., R. A. Miller, and D. C. Thurmond. 2015. Syntaxin 4 overexpression ameliorates effects of aging and high-fat diet on glucose control and extends lifespan. *Cell Metabolism* 22: 499-507. doi: 10.1016/j.cmet.2015.07.023. PMID: 26331606. PMC4560841.

Pickering, A. M., M. Lehr, and R. A. Miller. 2015. Mouse and primate lifespan is correlated with immunoproteasome expression. *J. Clin. Investigation* 125:2059-2068. PMID: 25866968. PMC4463211.

Prescott H, Langa KM, Iwashyna TJ. Readmission diagnoses after severe sepsis and other severe hospitalizations. *JAMA.* 2015; 313(10): 1055-1057. PMC4760618

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SECTION V. EXTERNAL ADVISORY BOARD: Members names, institutions and years of service.

We do not have a standing EAB. We invite different external reviewers each year, depending on the focus.

External reviewers during the 2015-2016 grant year included:

Raul Mostoslavsky, M.D., Ph.D., Associate Professor of Medicine, Harvard Medical School / Massachusetts General Hospital

Daniel Goldstein, M.D. Professor of Internal Medicine/Cardiology, Yale University

Other recent external reviewers include:

James L. Kirkland, M.D., Ph.D., Professor and Consultant, Departments of Medicine and Physiology, and Director, Robert and Arlene Kogod Center on Aging, Mayo Clinic

Andrzej Bartke, Ph.D., Professor and Director of Geriatric Medicine, Departments of Internal Medicine and Physiology, and Distinguished Scholar, Southern Illinois University School of Medicine

Adam Antebi, Ph.D., Director, Max Planck Institute for Biology of Ageing, Cologne, Germany, and Associate Professor, Huffington Center on Aging and Dept. of Molecular and Cellular Biology, Baylor College of Medicine

Randal Kaufman, Ph.D., Director, Degenerative Disease Research, Center for Neuroscience, Aging, and Stem Cell Research, Sanford|Burnham Medical Research Institute

Dongsheng Cai, M.D., Ph.D., Professor, Department of Molecular Pharmacology, Albert Einstein College of Medicine.

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Recognition and Awards: Prize or honors, NOT grant awards, should be a listing of all major scientific awards received by your center's personnel in 2016.

- David Lombard, former pilot grant awardee and RCDC participant: promoted to Associate Professor with tenure; 2016 Elected Member, American Society for Clinical Investigation (ASCI)
- Lillian Min, former pilot grant and RCDC awardee: promoted to Associate Professor with tenure
- Lona Mody, director of the PESC, promoted to Professor with tenure and selected by the Department of Internal Medicine to receive the Amanda Sanford Hickey Professorship.
- Vineet Chopra, former pilot grant and RCDC awardee: 2016 Jerome Conn Award (outstanding junior faculty investigator in the UM Dept of Internal Medicine)
- Jeffrey Halter, OAIC Director: Selected to be the Parkway Visiting Professor in Geriatrics, Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore

University of Michigan
Claude D. Pepper Older Americans Independence Center
Minority Research

List activities with minority trainees and research focusing on hypotheses dealing with minority health. Clinical research that has an expected number of minority subjects (a NIH requirement) is NOT what is desired for this section. Only work that has a comparison of minority members to majority members such as work on health disparities should be included.

The Human Subjects and Assessment Core has been instrumental in the success of the University of Michigan recruitment of minority participants for the NIA-sponsored ASPREE (Aspirin in Reducing Events in the Elderly) Study. This multicenter clinical trial of low-dose aspirin has a targeted enrollment of 70% minorities across the U.S. sites. The University of Michigan enrolled only non-Caucasians until March 2014 and has exceeded site-specific enrollment goals since joining the study in 2012. Currently 85% of enrollees at the UM site are non-Caucasian.

The Human Subjects and Assessment Core is supporting the doctoral research of Annie Harman, School of Public Health, through our linkages with Wayne State University Institute of Gerontology Research Participant Program. Based on this linkage, Ms. Harmon will oversample older African Americans in her study entitled “Expectations and Planning for Future Transportation-Related Mobility in Adults 55-84.”

Minority Trainee(s):

Joseph Nnodim MBBS, PhD, Assistant Professor, Department of Internal Medicine, is mentored by James Ashton-Miller (Core Leader, Biomechanics Core). Dr. Nnodim has been funded with a PESC pilot award and is mentored by Dr. James Ashton-Miller, Co-Leader of the Biomechanics Core).

Vicky Johnson-Lawrence, Ph.D., Assistant Professor, Department of Public Health and Health Sciences, University of Michigan at Flint will be a KL2 scholar in the Research Career Development Core in the coming year. Her research interests are socioeconomic determinants of multimorbidities and racial/ethnic health disparities over the life course.

Trainees Focusing on Minority Health Issues.

Deborah Levine, M.D., Assistant Professor, Departments of Internal Medicine and Neurology, was funded with a PESC award and is mentored by Ken Langa (Co-Leader, Human Subjects and Assessment Core): Dr. Levine’s research interests are the epidemiology, prevention and care of stroke and cardiovascular disease with a focus on vascular risk factors, medication adherence, and health disparities. Dr. Langa is also mentoring Elena Byhoff, a Robert Wood Johnson Clinical Scholar, whose research focuses on racial and ethnic differences in Medicare expenditures.

Dr. Emily Nicklet, Assistant Professor, School of Social Work, was an RCDC awardee. Dr. Nicklett's current research focuses on contextual predictors of diabetes management among native elders and is funded through the NIA’s Resource Center for Minority Aging Research Health and Aging Policy (RCMAR) Native Elder Research Center (NERC).

Research Articles:

Nnodim JO, Kim H, Ashton-Miller JA. Dual-task performance in older adults during discrete gait perturbation. *Exp Brain Res*. 2016 Apr;234(4):1077-84. [PubMed - in process]

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Levine DA, Galecki AT, Langa KM, Unverzagt FW, Kabeto MU, Giordani B, Wadley VG. Trajectory of Cognitive Decline After Incident Stroke. *JAMA*. 2015 Jul 7;314(1):41-51. PMID: PMC4655087

Skolarus LE, Lisabeth LD, Burke JF, Levine DA, Morgenstern LB, Williams LS, Pfeiffer PN, Brown DL. Racial and Ethnic Differences in Mental Distress among Stroke Survivors. *Ethn Dis*. 2015 Spring;25(2):138-44. PMID: PMC4578710

Levine DA, Kabeto M, Langa KM, Lisabeth LD, Rogers MA, Galecki AT. Does Stroke Contribute to Racial Differences in Cognitive Decline? *Stroke*. 2015 Jul;46(7):1897-902. PMID: PMC4480064

Gillett SR, Thacker EL, Letter AJ, McClure LA, Wadley VG, Unverzagt FW, Kissela BM, Kennedy RE, Glasser SP, Levine DA, Cushman M. Correlates of Incident Cognitive Impairment in the REasons for Geographic and Racial Differences in Stroke (REGARDS) Study. *Clin Neuropsychol*. 2015;29(4):466-86. PMID: PMC4504009.

Byhoff E, Harris J, Langa KM, Iwashyna T. An examination of racial and ethnic differences in end-of-life Medicare expenditures. *Journal of the American Geriatrics Society*, in press.

Nicklett EJ, Omidpanah A, Whitener R, Howard BV, Manson SM. Access to Care and Diabetes Management Among Older American Indians With Type 2 Diabetes. *J Aging Health*. 2016 Mar 3. PMID: 26944805 [PubMed - as supplied by publisher].