Section I. Description of Center

Established in 2013, the UCSF Claude D. Pepper Older Americans Independence Center focuses on addressing predictors, outcomes, and amelioration of late-life disability in vulnerable populations. Late-life disability, defined as needing help with daily activities, is common, burdensome, and costly to patients, families, and society. Late-life disability is influenced by medical vulnerabilities (including comorbid illnesses, aspects of medical care, medicines, procedures, neuropsychiatric conditions, and behaviors), social vulnerabilities (social supports, financial resources, communication and literacy, and ethnicity), and their interaction. The overriding goal of the UCSF OAIC is to improve the health care and quality of life of vulnerable older adults with or at risk for disability through the following aims:

1) Catalyze research on disability in vulnerable older persons at UCSF by serving as a hub that brings together scholars and leverages resources
2) Provide tangible, high-value support to funded projects at UCSF that stimulates new research on disability, and leads to new research opportunities for senior and junior investigators
3) Support pilot studies that accelerate gerontologic science and lead to research funding in late life disability
4) Identify the future leaders of geriatrics research and support them with career development funding and exceptional mentoring
5) Develop a leadership and administrative structure that spurs interdisciplinary collaboration, making the OAIC greater than the sum of its parts

Our Center supports researchers who share our passion for improving the well-being of older persons. We view our resources as venture capital that will catalyze the careers and research paths of investigators who will do cutting edge research that advances the care, health, and wellbeing of older persons, both within the UCSF community and nationally.

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Section II. Research, Resources and Activities

A. Cores:

The Leadership Administrative Core (LAC) plays the central role in coordinating the five UCSF OAIC cores, in maintaining communication across programs, and identifying new opportunities, both within and outside the OAIC. The LAC monitors the success of each core based on tangible metrics of productivity: Research leading to publications in the highest impact journals and new NIH grant funding. The LAC monitors, stimulates, evaluates, remediates, and reports progress toward the goals of the OAIC. The LAC also maintains the substantial collaborations with other UCSF research centers, including the UCSF CTSI and RCMAR, and seeks to establish new collaborations which will leverage OAIC resources and develop new and established investigators in aging research. The overall goal of the LAC is to provide the leadership and administration to support the activities of the entire UCSF OAIC.

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The Research Education Component (REC) identifies, supports, and nurtures talented junior investigators who will become national leaders in aging research through the REC Scholars Program and Advanced Scholars Program. The REC Scholars Program targets early career faculty and seeks to accelerate their path towards NIA K awards. The Advanced Scholars Program targets current K award recipients and accelerates the path towards their first R01. Both programs provide extensive mentoring and opportunities to participate in an innovative series of seminars designed to develop skills essential to success in aging research, facilitate interdisciplinary communication, build knowledge and relationships that will stimulate translation between basic and clinical research, and accelerate their productivity. The REC leadership also works with leaders of the Resource Cores to provide scholars access to additional support. These mentorship and curricular programs help junior investigators progress along the pathways that lead to high impact publications and grant funding that develops the scholar’s national reputation as a leader in their area. Mentoring services, seminar series, resource core services, and programmatic support are also available to Associate Scholars whose goals are to develop careers in aging research. A particular focus of the Associate Scholars Program is junior faculty who have trained outside of geriatric medicine, but seek to incorporate Geriatric principles into their developing research program. The Research Education Component also sponsors a diversity supplement program to increase the number of faculty members from underrepresented and diverse backgrounds conducting aging research at UCSF.

Current REC Scholars:

**Meredith Greene, MD,** Assistant Professor, Division of Geriatrics
“Integrating Geriatric Assessment with HIV Care”

Dr. Greene’s research focuses on improving care for vulnerable older adults including those that are homebound or living with HIV. In this current project, she continued her project within Ward 86 based at the San Francisco General Hospital to examine outcomes of comprehensive geriatric assessments in HIV-positive older adults and to determine optimal care strategies for this vulnerable population, building on her GEMSSTAR R03 grant. Dr. Greene has identified 1,358 HIV-positive adults age 50 and older at Ward 86 and has completed interviews on a subset of this population and is in the process of analyzing her findings. This research also provided preliminary results that led to a successful application for a NIA Beeson K76 award.

**Krista Harrison, PhD,** Assistant Professor, Division of Geriatrics
“Residence & End-of-Life Care among Elders with Dementia: Medical & Social Predictors”

Dr. Harrison’s work focuses on understanding experiences and palliative care needs of people with dementia in the community. She has recently presented at the 2018 American Academy of Hospice and Palliative Medicine Annual Meeting on her findings after analyzing the National Health Aging and Trends Study (NHATS) to compare the social, functional and medical characteristics of people with severe dementia living at home compared to more supportive settings (e.g. assisted living or skilled nursing). This past year Dr. Harrison continued her quantitative and qualitative research defining the needs,
experiences and values of home-dwelling older adults with severe dementia and their caregivers. She is using the National Health and Aging Trends Study (NHATS) to determine the medical, functional and social factors associated with time to first long-term nursing home stay and death. She completed a manuscript on the medical, functional and social factors across different setting of care (home, residential care and nursing homes), which has been published by the Journal of the American Geriatrics Society. Dr. Harrison is also conducting interviews with patients and families regarding their experiences and needs for palliative care at different stages of dementia. Dr. Harrison recently received a NIA K01 award.

**Melisa Wong**, Assistant Professor, Division of Hematology and Oncology

“Life-Space Mobility in Older Adults with Lung Cancer”

Dr. Wong’s research is centered on bringing a geriatric focus into the treatment regimen of Hematology and Oncology. In her current project, she is actively enrolling English and Chinese speaking patients at the San Francisco VA Medical Center and San Francisco General Hospital into her prospective cohort study of older adults age 65+ with metastatic lung cancer starting a new systemic treatment. Each patient will be assessed on functional status (Timed Up and Go, Short Physical Performance Battery, activities of daily living [ADL], instrumental activities of daily living [IADL], life-space mobility), comorbidity, cognition, mood, social support, nutrition, quality of life, and symptoms. Dr. Wong’s REC support has been successfully leveraged into a NIA K76 Beeson Award.
The Data and Analysis Core (DAC) provides OAIC investigators access to statistical services at all stages of the research lifecycle. Through the establishment of a central hub of statistical expertise, the DAC ensures smooth delivery of statistical knowledge and rigor across the spectrum of scientific research at the OAIC. This improves the quality of OAIC research studies, helps nurture trainees, facilitates interdisciplinary research groups, and ultimately enhances research on prediction, outcomes, and amelioration of late-life disability, especially in vulnerable populations. The DAC promotes wider use of state of the art statistical practice, lowers barriers of access to basic statistical services to all research groups including trainees, provides access to specialized statistical resources (such as state of the art prognostic model development, complex longitudinal and latent class analysis, and causal inference methods), and develops statistical procedures targeted to solving problems in aging research, and more specifically to challenges that commonly arise in research on disability and function.

In addition to supporting OAIC investigators with these services, the DAC has identified a substantial number of UCSF investigators holding extramurally funded grants that support a broad range of interdisciplinary translational research on age-related impairment and disability. DAC’s seamless collaboration with VARC allows for a smooth integration of service and research support to UCSF OAIC’s supported researchers. This is strongly demonstrated through the following highlighted projects.

Drs. Boscardin and Steinman provided close consultation on analytic planning and study design and direct access to statistical analysis resources for Timothy Anderson, MD (UCSF Division of General Internal Medicine) for a series of high-impact studies that use national VA data to investigate the epidemiology and outcomes of unnecessary intensification of therapy for chronic diseases in the peri-hospital setting among older adults. This line of research has resulted in publications in BMJ, Pharmacoepidemiology, and Drug Safety. His UCSF OAIC support played a crucial role in his successful GEMSSTAR application.

Drs. Boscardin, Covinsky, and Smith provided similarly intensive support to Elizabeth Whitlock, MD (UCSF Department of Anesthesia) for a project that used Health and Retirement Study data to investigate the association between persistent pain and memory decline in older adults. The resulting paper was published in JAMA Internal Medicine and led to a successful KL2 career development award for Dr. Whitlock.

Drs. Boscardin, Steinman, and Lee provided close analytic support and intensive mentorship to Dr. Rebecca Brown (UCSF Division of Geriatrics, now at University of Pennsylvania) for a series of studies using data from the Health and Retirement Study to investigate early-onset of functional impairment in adults in late middle age. This has resulted in publications in Annals of Internal Medicine and JAMA Internal Medicine, and a K76 Beeson Award for Dr. Brown.

Drs. Lee and Ritchie consulted closely with Dr. Caroline Stephens (UCSF School of Nursing) on methods for a study investigating poor symptom control and access to palliative care services among a multisite cohort of nursing home residents in Northern California. This resulted in a publication in JAGS and a grant award for Dr. Stephens.
Drs. Boscardin, Finlayson, and Walter provided analytic and study design support to Dr. Anne Suskind (UCSF Department of Urology) for a study investigating functional and mortality outcomes of minor urologic procedures in older nursing home residents, using data from the national Minimum Dataset (MDS). This resulted in a publication in JAGS and a R01 grant award for Dr. Suskind.

Dr. Covinsky provided close support to Dr. Victoria Tang (UCSF Division of Geriatrics) for a study considering psychosocial predictors of surgical outcomes using data from the Health and Retirement Study, resulting in receipt of a K76 Beeson career development award for Dr. Tang.

Drs. Covinsky, Steinman, and Boscardin provided analytic and conceptual guidance and access to data analytic resources to Dr. Sachin Shah (UCSF Division of Hospital Medicine) that led to a successful NIA GEMSSTAR award application focused on developing an index of psychosocial morbidity in older adults.

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The **Vulnerable Aging Recruitment and Retention Core (VARC)** was established in the UCSF Pepper Center grant renewal application. It was developed in response to increased demand both within and outside UCSF to support research focused on improving the knowledge base regarding the needs of medically vulnerable (e.g., complex chronic disease, serious illness, profound cognitive or functional impairment) and/or socially vulnerable (e.g., isolated, impoverished, homeless, incarcerated, with limited literacy or limited English proficiency) older adults. Because these older adults are often particularly difficult to recruit and retain in clinical research, their representation in research is often limited. This impairs our knowledge about how to optimize their care. Therefore, the VARC core focuses on supporting OAIC-affiliated investigators to (1) recruit, enroll, and retain vulnerable older adults in research; (2) use appropriate measures to study their healthcare needs; and (3) engage communities in research about medically and/or socially vulnerable older adults.

The VARC provides exceptional opportunities for all OAIC-affiliated investigators, REC and PESC awardees, and UCSF investigators engaging in vulnerable aging research by leveraging the diverse, multidisciplinary training and research infrastructure at the University of California, San Francisco, the Zuckerberg San Francisco General Hospital, and the San Francisco VA Medical Center. It has supported a wide range of research projects about medically or socially vulnerable older adults. This work, provided by core leaders Drs. Rebecca Sudore and Brie Williams, has included both one-time consultations and active, ongoing project involvement. Since the last reporting period, our faculty have provided substantial support for multiple peer-reviewed publications that directly relate to our research mission of evaluating physical and cognitive function and related outcomes in vulnerable older adults.

The following are illustrative examples of VARC-related consultative services:

**UCSF, Division of Geriatrics**
- Dr. Vicky Tang, MD, MAS, Assistant Professor in the Division of Geriatrics, has been receiving VARC consultative services and co-mentoring by VARC co-Director, Dr. Sudore, to test a psychosocial intervention among older pre-surgical patients. She obtained consultation on qualitative methods and primary data collection method for a successful NIA, K76 Beeson application.
- Dr. Meredith Greene, MD, Assistant Professor in the Division of Geriatrics, has been receiving VARC consultative services and co-mentoring by VARC co-Director, Dr. Sudore, to develop a tailored geriatric assessment and initial management guide focused on the specific needs of older HIV-positive adults. She obtained consultation on qualitative methods and primary data collection method for her recently awarded NIA, K76 Beeson project.
- Dr. Leah Witt, MD, Assistant Professor in the Division of Geriatrics, has been receiving VARC consultative services and co-mentoring by VARC co-Director, Dr. Williams, to develop guidelines and programs for older travelers as well as to begin to draft implementation science research aims for subsequent career development grants.

**UCSF, Outside the Division of Geriatrics**
- Dr. James Harrison is a research trainee within the UCSF Department of Hospital...
Medicine who is passionate about care transitions and patient engagement. He consulted with the VARC to help him expand on his prior work in telehealth by studying how to optimize care transitions for older adults who are discharged from the hospital. He has a particular emphasis on the role of this technology for older patients with social vulnerabilities. The focus of this consultation was on developing appropriate aims, and methods for engaging patients in clinical research. Dr. Sudore will be his co-mentor on his future research projects relating to this topic.

- Dr. Margot Kushel, a former UCSF Pepper Center Research Education and Career Scholar, receiving guidance and partnership from the VARC to explore advance care planning in homeless older adults. VARC consultations played a key role in her February 2019 application for a R34 about with VARC Co-Director Sudore.
- Dr. Hillary Seligman, Associate Professor at the University of California San Francisco, whose research is focused on the health effects of food insecurity in younger adults is receiving consultation from VARC to extend her research to understand the unique impact of food insecurity on older adults. Dr. Sudore and Dr. Seligman published a paper in JAGS on food insecurity in older adults in 2019.
- Vanessa Grubs, MD, Associate Professor of Medicine in the Division of Nephrology is receiving consultation from the VARC on advance care planning outcomes among vulnerable older adults receiving hemodialysis in the public hospital system.
- Dr. Anoop Sheshadri, MD, Assistant Professor in Nephrology at UCSF with an interested in physical functioning and social support and outcomes related to kidney transplant. Dr. Sheshadri is receiving consultation about qualitative methods and randomized trial designs. He also received consultation on a K23 submitted to NIA in Feb 2019.

Outside of UCSF, nationally and internationally

- Dr. Johan Frederik is faculty at the University of Tretheim, Norway in the Department of Sociology. The VARC advised him on the use of health measures appropriate for those with serious and chronic illness in the criminal justice system. He will incorporate this knowledge into his work studying health of patients in the Norwegian criminal justice system.
- Dr. Kei Quichi is a Junior Faculty member at the Brigham and Women's Hospital who received guidance from the VARC on which measures to use to optimally assess cognitive impairment and health literacy in his cohort of Emergency Department-based older adults.
- Dr. Brenda Perez is an Atlantic Fellow of the Global Brain Health Institute, a program focused on nurturing leaders to make transformative change in their own countries and communities. Dr. Perez received in-depth mentorship from the VARC in her successful application for pilot funding related to developing and testing a video-based intervention about advance care planning for family caregivers of patients with advanced dementia in Mexico.
- David Cloud, JD, MPH is a post-doctoral student at Emory University in the Department of Behavioral Sciences and Health Education. The VARC has provided him with mentorship to engage the prison healthcare system in Louisiana to study and improve the care of older adults and patients with serious, life-limiting illness. To this end, the VARC is assisting Dr. Cloud to prepare a 3-year grant focused on transforming an existing prison housing unit into a geriatrics healthcare and housing unit. Pending acceptance and
funding of this application, this program will be the first of its kind in the US.

- Dr. Benjamin Howell, Yale University Fellow RWJ National Clinician Scholars Program, is receiving mentorship from VARC for his project conducting a landscape analysis of “end-of-life” policies in prisons throughout the nation and to develop a core set of recommended policies.

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The Pilot and Exploratory Studies Core (PESC) facilitates the development and progress of innovative research relating to the Pepper Center focus on the predictors, outcomes and outcomes of late-life disability, especially in vulnerable older populations. We are especially interested in the interaction of serious clinical conditions, disability, and social disadvantage. The goals of the PESC include: 1) Solicit and select innovative proposals from highly qualified applicants; 2) Provide investigators of PESC studies with the support and infrastructure of the OAIC Cores; 3) Integrate PESC studies and investigators with resources from the UCSF Clinical and Translational Science Institute (CTSI) and other relevant resources at UCSF; 4) Monitor the progress of PESC studies; and 5) Provide mentorship and resources to transform PESC funded studies into successful independently-funded projects. The PESC focuses on identifying projects from outstanding investigators who are conducting aging research that is likely to lead to external funding and is aligned with the OAIC theme.

Current Pilot Studies:

Wendy Katzman, DPTSc: A Pilot Randomized Trial of the Digital Technology Assisted Posture Training (D-TAPT) Program in Older Adults With Hyperkyphosis

Emily Finlayson, MD, MS: PrehabPal: A clinical trial of a digital health tool to prepare older adults for surgery

Deborah Barnes, PhD, MPH: Predicting Risk for Cognitive Decline in High-Risk Patients to Optimize Decision-making and Improve Quality of Life.

Christine Miaskowski, RN, PhD, FAAN: Exploring Chronic Pain and Attitudes Towards Pain Treatment in Older Adults

Previous Pilot Studies:

Rebecca Brown, MD: Factors Associated with Early Versus Late Life Homelessness in a Cohort of Older Homeless Adults

Meredith Greene, MD: Addressing Medical Complexity for Older Adults Living with HIV infection: Development of an Integrated HIV Geriatric and Palliative Care Program


Margot Kushel, MD: Symptoms and Their Management in Older Homeless Adults – a Qualitative Study

Eleni Linos, MD, DrPH: Involving Older Adults in Decision Making for Skin Cancer

Carmen Peralta, MD: Associations of Blood Pressure with Adverse Outcomes in Persons 65 Years who are Considered to be in the Complex Aging Process

Christine Valdez, PhD: Spanish Translation and Adaptation of a Trauma Cognitions Measure for Posttraumatic Stress Disorder: Validation in Latinos across the Adult Lifespan.

Maya Vijayaraghavan, MD, MAS: Development of a Tobacco Control Intervention for Older African American Homeless Adults

Wolf Mehling, MD: Paired Integrative Home Exercise for Seniors With Dementia And Their Caregivers: A Pilot Study

Elena Portacolone, PhD, MBA, MPH: The Social Isolation of Older Americans Living in
High-Crime Neighborhoods: Root Causes and Possible Solutions

**Caroline Stephens, RN, PhD, GNP:** Improving Palliative Care Access Through Technology (ImPacTT): A Pilot Study

**Andy Auerbach, MD:** Characterizing Post-Acute Care Costs for Older Patients Discharged from an Academic Medical Center

**Emily Finlayson, MD, MS:** Functional Outcomes after Breast Cancer Surgery in Older Nursing Home Residents

**Salomeh Keyhani, MD:** Improving 30-day Readmission Risk Prediction for Hospitalized Older Adults Using Measures of Social Risk and Functional Status from Electronic Medical Records

**Rebecca Sudore, MD:** Piloting a Guide to Prepare Older Adults to Make Informed Decisions for Disability and Serious Illness

**Joaquin Anguera, PhD:** Self-Guided Internet and Mobile Health Technologies for the Delivery of Behavioral Interventions in Hispanic/Latino Populations

**Margot Kushel, MD and Rebecca Sudore, MD:** Improving Advanced Care Planning in Homeless Populations

**Sei Lee, MD:** Development and Validation of a Life Expectancy Calculator for Veterans

**Maria Ventura, PhD:** Reducing Disparities in Access to Dance Therapy for Diverse Older Adults Diagnosed with Parkinson’s Disease

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B. Research:

Pepper Development Project:

Time Cost Information Criterion (TCIC)

The OAIC faculty have been leaders in the development of methods for prognostic modeling and their translational use in clinical medicine in settings such as cancer screening, diabetes, and in broader aging populations. Validation of the prognostic model is critically important to guarantee that its predictive accuracy will not degrade when applied in external data sources. However, an often-overlooked aspect when utilizing large datasets in quantitative analysis is understanding the time cost of the variable. Before a variable can ever be integrated into statistical modelling, there was a provider, caregiver, and patient who has invested time and energy in completing the assessment and recording the result. Traditional modeling design calls for utilizing the variable with the highest predictive power but fails to consider the time cost criterion that occurs with data collection. Investigators of the UCSF OAIC have undertaken the challenge of developing a prognostic model that will be able to account for this time cost criterion to weigh the benefits of a straightforward assessment without the loss of predictive power within a variable. Lead by Drs. Sei Lee, Alex Smith, Ken Covinsky, this development project aims to innovate such a prognostic model.
Pepper Supported External Projects: Year 6

In Year 6, the UCSF OAIC has supported a diverse range of External Projects (EP) which reflect the key aims of our resource cores. Some of those projects are illustrated below:

The first external project is led by Dr. Amy Byers and comprises a VA Merit Review grant to investigate suicidal behavior and suicide in older veterans using a series of linked national VA datasets. Drs. Steinman, Boscardin, and Covinsky have each provided close methodologic support for this work, mostly notably in supporting a successful grant renewal application and a likely-to-be funded R01 that expand Drs. Byer’s work with a particular focus on the role of medications as predictors and mediators of suicidal behaviors.

The second external project is led by Dr. Sei Lee and is a VA Merit Review grant focused on development and validation of 10-year life expectancy calculators to individualize veterans’ decision-making about preventive interventions. Dr. Boscardin has been working closely with Dr. Lee both for the complex analytic methods necessary for this grant, and has provided direct access to analytic resources and data analyst supervision to conduct this ongoing research.

The third external project is a multicenter U01 grant led by Dr. Geoff Manley that is collecting extensive data on a prospective cohort of patients presenting with traumatic brain injury, with the goal of creating a high-value resource for studies to better establish diagnosis, outcomes, and treatment effectiveness for TBI. They have a special interest in TBI among older adults, who commonly suffer head injury as a result of falls. Drs. Covinsky and Steinman have consulted with the project team on incorporating geriatric-relevant measures such as geriatric syndromes, function, and frailty into data collection efforts, and to use these data to develop research studies that can address critical questions among older TBI victims.
C. Pilots:

**Year 6 Pilots: 2018-2019**

PES-1: A Pilot Randomized Trial of the Digital Technology Assisted Posture Training (D-TAPT) Program in Older Adults With Hyperkyphosis

Investigator: Wendy Katzman, DPTSc, Professor of Medicine, UCSF Department of Physical Therapy

Hyperkyphosis is defined as the accentuated thoracic curvature that tends to increase with age, and is common among up to 40% of older adults. Hyperkyphosis is associated with reduced quality of life, impaired physical function, falls, and elevated fracture risk and to date, there is no standard of care to inform providers how to treat or reduce the rate of age-related kyphosis progression. While the efficacy of a kyphosis-specific exercise and postural training program to reduce kyphosis is now established, to change the standard of care for age-related hyperkyphosis, a cost-effective program is needed. The next logical step is to develop a cost-effective technology-assisted postural training program, and if this is feasible, Dr. Katzman will compare the treatment effects of the technology-assisted postural training intervention to the SHEAF PT-led intervention in a future randomized controlled trial. Thus, Dr. Katzman and her team’s long-term goal is to provide sustainable kyphosis-specific exercise and postural programs to older community dwelling adults with hyperkyphosis. Her study builds on the findings of her previous research conducted over the past decade on hyperkyphosis in the older adult communities.

This study was a 6-week pre-post design pilot study. Dr. Katman and her team has screened 64 potential participants, enrolled 17 community-dwelling adults aged ≥ 65 years with hyperkyphosis ≥ 40° (±5°) and access to a mobile phone, and 12 participants, mean age 71.6 (SD 4.9) years, completed post-intervention testing at 6 weeks.

The intervention had two parts: (1) exercise and posture training via video clips sent to participants daily via text messaging, which included 6 weekly video clip links to be viewed on the participant’s mobile phone, and (2) text messaging prompts to practice good posture. We analyzed the subject recruitment, adherence, retention, and acceptability of the intervention. Outcomes included change in kyphometer-measured kyphosis, occiput to wall (OTW) distance, Short Physical Performance Battery score, Scoliosis Research Society (SRS-30) score, Center for Epidemiological Studies Depression score, and Physical Activity Scale for the Elderly (PASE) score. The median adherence to daily video viewing was 100% (range, 14%-100%) and to practicing good posture at least three times per day was 71% (range, 0%-100%). Qualitative evaluation of acceptability of the intervention revealed that the mobile phone screen was too small for participants to view the videos well and daily prompts to practice posture were too frequent. Kyphosis, occiput to wall (OTW) distance, and physical activity significantly improved after the 6-week intervention. Kyphosis decreased by 8° (95% CI: −12 to −5; P<.001), OTW decreased by 1.9 cm (95% CI: −3.3 to −0.7; P=.007), and physical activity measured by PASE increased by 29 points (95% CI: 3 to 54; P=.03).
The health-related quality of life SRS-30 score increased by 0.11 point (SD 0.19), but this increase was not statistically significant (P=.09). Technology-based exercise and posture training using video clip viewing and text messaging reminders is feasible and acceptable for a small cohort of older adults with hyperkyphosis. Technology-based exercise and posture training warrants further study as a potential self-management program for age-related hyperkyphosis, which may be more easily disseminated than in-person training. A manuscript “Feasibility and Acceptability of Technology-based exercise and posture training in older adults with age-related hyperkyphosis: A pilot study” has been accepted for publication in the JMIR Aging. Results from this study are preliminary data for an NIH-funded U54 program project grant investigating sex differences in musculoskeletal issues across the lifespan, and a NIH-funded RO1 randomized controlled trial.

**PES-2: PrehabPal: A clinical trial of a digital health tool to prepare older adults for surgery**  
**Investigator:** Emily Finlayson, MD, MS, Professor of Medicine, UCSF Department of Surgery

Older adults are at high risk for morbidity, mortality, and functional decline after major surgery. In addition to the presence of medical comorbidities that increase the risks of surgery, many older adults have conditions such as cognitive and functional impairment, malnutrition, and social vulnerability that put them at risk for poor outcomes. To enhance dissemination and implementation of comprehensive interdisciplinary pre-op optimization of geriatric vulnerabilities across a diverse range of care settings, Dr. Finlayson has designed digital health and health coach solutions to help older patients prepare for surgery through the project PrehabPal. The PrehabPal app is a new-generation hybrid mobile app and website designed to assess vulnerabilities in older adults preparing for surgery and engage and support them in making behavioral changes to improve their outcomes after surgery.

To date, Dr. Finlayson made substantial progress on the PrehabPal web-application. Using funding from the Pepper Pilot, her team has revised the app architecture with REACT javascript and completed the extensive risk assessment and data safety approval process at UCSF. They have performed additional product content pilot testing and patient surveys at the UCSF Prepare pre-op clinic and identified domains that needed additional content development (management of anxiety, exercise instructions). They plan to conduct a micro-pilot of the completed web-app to identify any bugs before launching our pilot trial. Both Kaiser San Francisco and MD Anderson have expressed interest in participating in a larger trial in the future.

**PES-3: Predicting Risk for Cognitive Decline in High-Risk Patients to Optimize Decision-making and Improve Quality of Life**  
**Investigator:** Deborah Barnes, PhD, MPH, Associate Professor of Psychiatry, UCSF Department of Medicine

The goal of this pilot study is to collect feasibility data to support an R01 application to develop and validate an EMR risk score for detection of undiagnosed dementia and to test its impact on clinical outcomes. This is important because there are currently more than 5
million people in the U.S. living with Alzheimer’s disease and other dementias, and only half of them have been diagnosed. Lack of diagnosis in these patients can cause major problems for the healthcare system and society at large. For example, patients with undiagnosed dementia are more likely to need emergency care for comorbid conditions and to engage in risky behaviors such as driving. Therefore, it is critical to develop simple, scalable tools to identify patients who may have undiagnosed dementia.

Dr. Barnes and her team’s long-term goal is to improve quality of life and health outcomes in patients living in the community with Alzheimer’s and dementia. They have completed an Alzheimer's Association-funded pilot trial of the Paired PLIE (Preventing Loss of Independence through Exercise) program in groups of people with dementia and their caregivers. Most outcome measures focus on the effects of the program in people with dementia, and the primary objective of this Pepper pilot was to add caregiver measures. In consultation with Pepper Center cores, Dr. Barnes decided to add the SF-36. We have collected baseline and mid-point data in the current cohort of 10 caregivers. Final data collection was completed June 30, 2018.

Since completion of data collection, Dr. Barnes has been testing a novel integrative group movement program for dyads of persons living with dementia and care partners called Paired PLIE (Preventing Loss of Independence through Exercise). The primary outcomes for the main study are physical function, cognitive function and quality of life in persons with dementia and burden in caregivers. However, several caregivers told the study team anecdotally that they were also experiencing physical and emotional benefits from participating in the program. The goal of the original Pepper pilot study was to collect additional data to measure the impact of the Paired PLIE program on outcomes in care partners. The study team has accomplished this goal by administering the SF-36 in the final group of participants at baseline (n=10), midpoint (n=8) and endpoint (n=7) and by distributing anonymous evaluation surveys that included open-ended questions about the impact of the intervention in care partners. The goals of our Year 2 pilot were to analyze the data collected in Year 1 and to collect pilot data on the feasibility of delivering Paired PLIE through a telehealth delivery model.

During the first half of year 2, Dr. Barnes and her study team has completed qualitative analyses of the anonymous evaluation surveys from the first group of study participants (manuscript in press). Key themes related to care partner benefits included: improvements in physical functioning (such as standing from kneeling, posture and turning from stomach to back); increased mindfulness; and social/emotional benefits (reduced stress, increased positive emotion, social connection, improve relationship with person with dementia). They are in the process of analyzing the quantitative SF-36 data.

In addition, Dr. Barnes and her study team are partnering with Together Senior Health, Inc., to develop and pilot-test a telehealth delivery platform for PLIE as part of a Small Business Innovation Research (SBIR) Phase I grant. This subcontract provides funding for overseeing the IRB process, providing guidance on research study methods, and ensuring fidelity to the original PLIE program. Pepper funds are being used to support academic products related to this work. Specifically, Dr. Barnes assisted with
development of a semi-structured interview guide related to technology usage in PLIÉ graduates and are analyzing qualitative data from 14 interviews completed. They are finding that, in this sample, all caregivers and most persons with dementia use electronic devices daily. The most commonly used devices are smartphones, TVs and desktop computers; 64% (9/14) has smart TVs. All participants had used technology as part of their work or personal lives. Challenges to technology usage included physical limitations such as visual or hearing impairment as well as declining ability to learn complex new tasks or manage technology updates. Paper-based support tools were often utilized (such as attaching written instructions to an electronic device). Dr. Barnes and her study team conclude that many persons with dementia and caregivers are using technology in their homes that could potentially be used for telehealth program delivery if appropriately designed to meet their needs. Together is currently developing a prototype that will be pilot-tested over the next several months in preparation for a Phase II SBIR grant.

PES-4: Exploring Chronic Pain and Attitudes Towards Pain Treatment in Older Adults
Investigator: Christine Miaskowski, RN, PhD, FAAN, Professor in Department of Physiological Nursing, UCSF School of Nursing

In order to better understand older adults’ experience of pain and pain management, Dr. Miaskowski has conducted a qualitative study of adults ≥65 with 3 or more chronic conditions and chronic pain for ≥6 months. This mixed-methods pilot is seeking to quantitatively and qualitatively assess community-dwelling older adults’ chronic pain experience, the impact of their pain on disability and quality of life, and their perceptions of and access to pharmacologic and nonpharmacologic treatments.

Dr. Miaskowski and her study team has concluded recruitment and interviewing at 25 respondents after observing saturation on key study themes. They have initiated formal analysis of qualitative data analysis via coding and memo-ing in ATLAS.ti, a computer-assisted qualitative data analysis software.

Among 25 participants, all described high levels of pain and pain interference with function, quality of life, and social engagement. Participants described multiple types of pain and an array of pharmacologic and nonpharmacologic approaches used to manage their pain. The majority reported use of medications and included intermittent opioid use. The majority noted that their providers did not routinely offer non-medication alternatives. Many described their providers as attributing their pain to age with little understanding of what it means to live with chronic pain. Most described the profound impact of their pain on their daily life experience.

This Pepper pilot study has been instrumental in providing necessary preliminary data to support Dr. Miaskowski’s aging research development. With this pilot data, Dr. Miaskowski has submitted an application for an R01 study to the NIA, titled “Chronic Pain in Older Adults: Characterization of the Problem, Its Impact on Cognition and Function, and Its Management in the Era of the Opioid Epidemic,” which seeks to understand the complex chronic pain experience of older adults and its impact on
function, cognition and quality of life. The study design is a longitudinal survey of older adults that will also assess unmet pain needs and gaps in optimal pain management.

Dr. Miaskowski and her study team has also initiated drafting a first manuscript, which focuses on older adults’ experiences of pain management in the context of the U.S. opioid epidemic. They will complete and submit this manuscript to a peer-reviewed journal Spring 2019.

**Joint Support with the Center for Aging in Diverse Communities**

**Improving Pain Management among Low-Income, Minority Elders: Broadening Treatment Options in the Primary Care Safety Net**

Investigator: Maria Chao, Associate Professor, UCSF Department of General Internal Medicine

Chronic pain affects about one third of the population of adults and is difficult to manage, particularly among vulnerable populations (e.g., low income, racial/ethnic minorities) who have a higher prevalence of pain and are more likely to be undertreated. Prescription painkillers such as opioids can effectively address pain for some, but are not appropriate for all patients because of side effects, contraindications, and treatment preferences. With limited treatment options, patients are treated with opioids for chronic pain despite the sometimes considerable risks involved with regularly prescribing controlled substances. Dr. Chao’s long-term goal is to transform chronic pain management in the primary care safety net by broadening treatment options, maximizing effectiveness, and minimizing harm of current treatment approaches that are predominantly pharmacologic. Toward this goal, she piloted an Integrative Pain Management Program (IPMP) in one of the primary care clinics of the San Francisco Department of Public Health. The IPMP provides patients with pain management education, behavioral health interventions, rehabilitation services, and integrative health modalities (i.e., acupuncture, massage, and mindfulness) for chronic pain. The initial pilot was based at the Tom Waddell Urban Health Clinic in the Tenderloin, the San Francisco neighborhood experiencing the greatest concentration of deaths related to prescription opioids. The Tenderloin is one of the most racially/ethnically diverse neighborhoods in San Francisco with residents that are 33% Asian/Pacific Islander, 32% non-Latino White, 18% Latino, and 10% Black. In addition, the Tenderloin has more low-income seniors than any other neighborhood: more than half the residents are 60 or older and over one-third are at or below the federal poverty level.

As part of ongoing efforts to expand treatment options available for chronic pain in the primary care safety net, Dr. Chao developed the Integrative Pain Management Program (IPMP), to provide patients with pain management education, behavioral health interventions, rehabilitation services, and integrative health modalities (i.e., acupuncture, massage, and mindfulness). She is currently testing the feasibility and acceptability of the IPMP among low-income, minority elders with chronic pain in the Tenderloin, the San Francisco neighborhood experiencing the greatest concentration of deaths related to prescription opioids. To date, she has collected pre-IPMP baseline data—including demographics, patient-reported outcomes, and qualitative experiences of pain—for 16 patients aged 65 or older. Transcriptions of qualitative interviews are in process. Post-IPMP follow up interviews will be completed in early May.
Section III. Career Development: funding subsequent to Pepper pilot funding

Research Education Component (REC) Scholars

Pi-Ju (Marian) Liu, PhD
Assistant Professor, School of Nursing (SON)
Faculty Associate, Center on Aging and the Life Course (CALC)
Purdue University

Susceptibility to Mass Marketing Fraud among the Elderly: The goal of this project is to examine the impact of emotional arousal and age on intent to respond to a mass marketing scam.
Borchard Foundation Center on Law & Aging (PI: Wood, S.)
Jan 1, 2019 – Dec 31, 2019
Role: Co-PI

Elder Financial Justice Program by Legal Aid Society of Metropolitan Family Services: To sustain and strengthen legal advocacy and incorporate multidisciplinary services for elder victims of financial exploitation.
U.S. Department of Justice, Office for Victims of Crime: 2018-V3-GX-K046
Oct 1, 2018 – Sep 30, 2019
Role: Evaluator

Jennifer Lai, MD
Appointed: Director of Hepatology Clinical Research

Speaker for OAIC Early Career Faculty Working Group Webinar - Writing your K as a Springboard to R Success

Grant Title: Predicting Post-Transplant Mortality And Global Functional Health Based On Pre-Transplant Functional Status In Liver Transplantation
Grant Type: R01
Grant Funder: NIH/NIA
Funding Period: June 2018-2023

Raquel Gardner, MD
Grant Type: R01
Grant Funder: NIH/NIA
Funding Period: June 2018-2023

Jane Jih, MD, MPH
Grant Title: Identifying and Assessing Food Insecurity In Older Diverse Primary Care Patients
Grant Type: R03 (GEMSSTAR)
Grant Funder: NIH/National Cancer Institute
UCSF Pilot in Integrative Medicine (Co-I), Osher Center. Pilot RCT of integrative nutritional counseling to improve diet self-management among Chinese Americans with type 2 diabetes

Mount Zion Health Fund: Developing and Implementing a Heart Healthy Integrative Diet for Chinese American Patients

Hellman Family Awards for Early Career Faculty  
Jul 1, 2018 - Jun 30, 2020  
Role: Hellman Fellow

Identifying and Addressing Health-Related Social Needs in the UCSF General Medicine Practice  
Mount Zion Health Fund P0527989  
Jul 1, 2018 - Jun 30, 2019  
Role: Principal Investigator

UCSF CTSI KL2 Career Development Award  
NIH/NCATS KL2 TR001870  
Jun 1, 2018 - May 31, 2021  
Role: KL2 Scholar

**Anne Suskind, MD, MS**  
promoted to Associate Professor of Urology and of Gynecology, Obstetrics and Reproductive Sciences  

made adjunct faculty of IHPI and Director of Neurourology, Female Pelvic Medicine and Reconstructive Surgery

Grant Title: Optimizing Surgical Decision-Making For Nursing Home Residents Undergoing Surgery For Bladder And Bowel Dysfunction  
Grant Type: R01  
Grant Funder: NIH/NIA  
Funding Period: June 2018-2022

**Elena Portacolone, PhD, MBA, MPH**

Grant Title: Identifying Scalable and Culturally Relevant Strategies for Recruitment of African Americans with Cognitive Impairment into Dementia Research  
Grant Type: R03  
Grant Funder: NIH/NIA  
Funding Period: 9/01/2018 – 8/31/2020

Grant Title: Access and Use of Long-term Services and Supports for Older Adults Living Alone with Alzheimer's Disease and Related Dementias from Four Racial/ethnic Groups  
Grant Type: R56  
Grant Funder: NIH/NIA  
Funding Period: Sep 2018 – Sep 2019
Grant Title: Scalable Strategies to Recruit African Americans into Dementia Research
Grant Type: Research Grant
Grant Funder: Alzheimer’s Association
Funding Period: Dec 2018 – Dec 2020

**Elizabeth Dzeng, MD, MPH, PhD**
5 Year Alzheimer's Disease Research Award from the California Department of Public Health

Grant Title: Burdensome end-of-life treatments in older adults with advanced dementia”
Global Brain Health Leaders
Role: PI
Grant Funder: GBHI, Alzheimer’s Society UK
Funding Period: Sep 2018 - Dec 2020

“Identifying contributing factors to burdensome ICU treatments in older adults with Alzheimer's disease and related dementias in the United States and United Kingdom”
National Institute of Aging (NIA) Grants for Early Medical/Surgical Subspecialty Transition to Aging Research (GEMSSTAR) R03.
Role: PI
Funding Period: Aug 2018 - Dec 2020

**Victoria Tang, MD, MAS**
2018 NIA RCCN Workshop "Achieving and Sustaining Behavior Change in Older Adults" Travel Award

2018 American Geriatrics Society 2018 New Investigator Award

Grant Type: K76
Grant Funder: NIH/NIA
Funding Period: Jul 2019 - 2020

**Heather Leutwyler, RN, PhD, NP**
VIP smoking cessation intervention for adults with serious mental illness
Role: PI
Funding Period: Apr 2019 - Apr 2021

**Rebecca Brown, MD**
Expert Committee Member, National Quality Forum, Serious Illness Strategy Session

Grant Title: Improving Aging In Place For Older Adults Living In Subsidized Housing
Grant Type: K76
Grant Funder: NIH/NIA
Funding Period: Jul 2018 – Mar 2021

**Margot Kushel, MD**
2018 - American Society for Clinical Investigation

2018 - Harold S Luft Award for Mentoring in Health Services and Health Policy Research

2018 - American Public Health Association (APHA) Caucus on Homelessness Innovative Researcher Award
Section IV. 2018-2019 Publications:


Section V. External Advisory Board Members

The UCSF Pepper Center’s External Advisory Committee was selected in 2013 and performed their most recent site visit in June 2019. During this latest session, the committee discussed future growth opportunities for aging research.
Committee Members:
Jean Kutner, MD, MSPH, University of Colorado School of Medicine (2013-present)
Mark Lachs, MD, Weill Medical College of Cornell University (2013-present)
Seth Landefeld, MD, University of Alabama at Birmingham (2013-present)


Victoria Tang, MD, MAS
2018 American Geriatrics Society 2018 New Investigator Award

Margot Kushel, MD
2018 - American Society for Clinical Investigation

2018 - Harold S Luft Award for Mentoring in Health Services and Health Policy Research

2018 - American Public Health Association (APHA) Caucus on Homelessness Innovative Researcher Award

Christine Ritchie, MD
UCSF Academic Senate Distinction in Mentoring Awards at the Professor Level

Alex Smith, MD
UCSF Academic Senate Distinction in Mentoring Awards at the Associate Professor level