He raised our awareness about the importance of the environment and the value of individualized care. We build on that work today. The focus of this 2019 Powell Lawton award presentation is on sharing my lifetime work, starting in 1972, on helping older adults, particularly those who are institutionalized and may have cognitive changes, maintain their functional ability and increase time in physical activity. Along with Dr. Lawton’s experiences, I and the teams I have worked with, have met challenges ranging from the use of Houdini vests to bed alarms and wheelchairs, to the persistent call out by caregivers to older adults—“don’t get up you might fall.” I will share information, resources and data from over a 20 year period developing and testing Function Focused Care, an approach to care that helps caregivers optimize function and increase physical activity among institutionalized older adults. Further, the process for how to disseminate and implement Function Focused Care across multiple settings and how to be a resilient researcher will also be reviewed. Participants will be able to take the findings and resources from this presentation and implement this approach into their own settings of care.

SESSION 9200 (SYMPOSIUM)

IRVING S. WRIGHT AWARD OF DISTINCTION LECTURE

Chair: Nir Barzilai
Co-Chair: Stephanie Lederman

The Irving S. Wright Award of Distinction Lecture will feature an address by the 2020 recipient James L. Kirkland, MD, PhD. This award is given by the American Federation for Aging Research, Inc.

AGING, SENESCENT CELLS, AND SENOLYTIC DRUGS: THE PATH TO TRANSLATION

James Kirkland, Mayo Clinic, Rochester, Minnesota, United States

Senescent cells (SC) accumulate with aging and at causal sites of multiple chronic disorders and diseases, including those accounting for the bulk of morbidity, mortality, and health expenditures. SC do not replicate. Some SC release factors that cause tissue dysfunction, the senescence-associated secretory phenotype (SASP). Transplanting small numbers of SC into younger mice to above a critical threshold leads to frailty, early onset of multiple age-related diseases, and premature death. A report in 2004 showing caloric restriction causes both healthspan extension and delayed SC accumulation prompted us to begin efforts to discover senolytic drugs, agents that selectively eliminate SC. We used a hypothesis-driven, mechanism-based strategy to discover senolytics, reasoning that senescent cell anti-apoptotic pathways (SCAPs) exist that defend SC against their own SASP, allowing them to survive, despite killing neighboring cells. Senolytics cause SC apoptosis by transiently disabling these SCAPs. Because SC take weeks to re-accumulate, senolytics can be administered intermittently – a “hit-and-run” approach. Senolytics delay, prevent, or alleviate frailty and cardiovascular, neuropsychiatric, liver, kidney, musculoskeletal, lung, eye, hematological, metabolic, and skin disorders as well as complications of organ transplantation, radiation, and cancer treatment in pre-clinical models. As anticipated for agents targeting the fundamental aging mechanisms that are “root cause” contributors to multiple disorders, potential uses of senolytics are protean, potentially alleviating over 40 conditions in preclinical studies, opening a new route for treating age-related dysfunction and diseases. We review the discovery of senolytics and potential strategies for translation into the clinic. Early trials indicate effectiveness of senolytics in humans.

SESSION 9205 (SYMPOSIUM)

VINCENT CRISTAFALO AWARD LECTURE

Chair: Nir Barzilai
Co-Chair: Stephanie Lederman

The Vincent Cristofalo Rising Star Award in Aging Research lecture will feature an address by the 2020 recipient, Sean P. Curran, PhD. This award is given by the American Federation for Aging Research, Inc.

DIET-BASED STRATEGIES, INFORMED BY GENETICS, TO IMPROVE HEALTHSPAN

Sean Curran, Leonard Davis School of Gerontology, University of Southern California, Los Angeles, California, United States

Diet is one of the most variable aspects of life history, as most individuals have a large diversity of choices, varying in the type and amount that they ingest. In the short-term, diet can affect metabolism and energy levels. However, in the long run, the net deficiency or excess of calories from diet can influence the progression and severity of age-related diseases. An old and yet still debated question is: how do specific dietary choices impact health- and lifespan? It is clear that genetics can play a critical role - perhaps just as important as diet choices. For example, poor diet in combination with genetic susceptibility can lead to metabolic disorders, such as obesity and type 2 diabetes. We have identified the existence of diet-gene pairs, where the consequence of mutating a specific gene is only realized on specific diets. Although only a handful of these diet-gene pairs have been characterized, there are potentially thousands of such interactions, which may explain the variability in the rates of aging in humans and the incidence and severity of age-related diseases.

SESSION 9250 (SYMPOSIUM)

MARGRET M. AND PAUL B. BALTES AWARD

Chair: Merrill Silverstein

The lecture will be given by the 2019 Baltes Award recipient, Allison Bielak, PhD, FGSA, of Colorado State University. The recipient of the 2020 Baltes Award is William J. Chopik, PhD. The Margret M. and Paul B. Baltes Foundation Award in Behavioral and Social Gerontology recognizes outstanding early-career contributions in behavioral and social gerontology. The award is generously funded by the Margret M. and Paul B. Baltes Foundation.