UF IOA Investigators awarded a Pepper Center

The University of Florida’s Institute on Aging, or IOA, has been awarded a Claude D. Pepper Older Americans Independence Center five-year grant. As the American population grows older, the work conducted at the Pepper Centers to address the loss of independence in elders becomes increasingly important.

In 2006, the National Institute on Aging supported 10 Pepper Centers across the United States, each with a specific area of emphasis beyond the basic role in research and training.

Created in honor of the former Florida Senator and Congressman Pepper, who dedicated his legislative career to improving the lives of older Americans, the nation’s Pepper Centers target research on one common fear people have about growing older — the decline of physical function and loss of independence.

The research programs at the IOA’s Pepper Center are organized around several core areas that effectively bring together its interdisciplinary team of researchers, geriatricians and educators to address the IOA’s central mission of “sarcopenia, prevention and rehabilitation of disability.”

Please turn to page 2 to learn more about the IOA cores and mission.
The research programs at UF’s IOA Pepper Center are organized around several core areas that foster multidisciplinary collaborations and integrate and bridge the many available resources at UF and its affiliates.

The leadership and administration core, led by Marco Pahor, M.D., is responsible for strategic planning, organization, administrative operations and evaluation of the IOA.

Upcoming geriatricians and gerontology researchers are mentored and guided by the efforts of the research career development core, led by Rebecca Beyth, M.D., and Christiaan Leeuwenburgh, Ph.D., which promotes and augments the development of future research leaders.

Ron Shorr, M.D., and Christy Carter, Ph.D., lead the pilot and exploratory studies core, which administers pilot studies that are intended to result in larger independently funded studies, and supports research to acquire information to select or design future crucial studies in the IOA areas of focus.

The clinical research core leader Marco Pahor, M.D. and co-leader Michael Perri, Ph.D., coordinate the center’s focus of managing clinical research facilities for projects with a particular emphasis on epidemiologic studies and randomized controlled trials.

The preclinical and translational research core, led by Philip Scarpace, Ph.D., and Christy Carter, Ph.D., focuses on work on the biology of aging and developing rodent models for assessing the age-related physical function decline in humans.

Data entry, database maintenance, analyses and quality control procedures are handled by the biostatistics, data management and methodology core, which is led by Michael Daniels, Sc.D., and Elizabeth Shenkman, Ph.D.

The recruitment, adherence and retention core, led by Michael Marsiske, Ph.D., oversees the effective and efficient screening, enrollment and retention of older participants into Pepper-affiliated and supported studies.

The main role of the genomics, metabolism and biomarkers core, led by Christiaan Leeuwenburgh, Ph.D., and Henry Baker, Ph.D., is to identify and obtain genetic, gene expression, metabolic and biological measures to be assessed in the basic and clinical research studies.

With a prescription of regular structured exercise, sedentary elderly are able to safely improve their physical function and may reduce the likelihood they will experience difficulty walking a quarter mile, according to findings from a multicenter pilot study led by the University of Florida Institute on Aging.

UF researchers announced the results of their Lifestyle Interventions and Independence For Elders pilot, or LIFE, at the Gerontological Society of America’s annual meeting in Dallas. The research was also published in the November issue of the Journal of Gerontology.

The findings confirm the feasibility of a full-scale clinical trial using physical activity in older people, said Marco Pahor, director of the UF Institute on Aging and the study’s principal investigator.

“This pilot demonstrates that the physical activity was extremely safe for the study participants — elderly people at a high risk of becoming disabled,” Pahor said.

The LIFE study was conducted at four centers — the Cooper Institute, Stanford University, the University of Pittsburgh and Wake Forest University — and was funded by the National Institute on Aging. The coordinating center was based at UF.

The pilot study was the first to gather evidence that physical activity can improve the score on a standardized test of lower extremity physical mobility called the Short Physical Performance Battery, or SPPB, the researchers said.

“We have shown a 29 percent reduction of incapacity to walk. That is highly promising for the success of the full-scale study,” Pahor said.

**IOA Accomplishments**

**Christy Carter**, Ph.D., an assistant professor in the department of aging and geriatric research, has been appointed associate director for Research, in the Geriatric Research, Education and Clinical Center (GRECC) at the Malcom Randall VA Medical Center.

**Arnold Seo**, Ph.D., a graduate student, was awarded an American Heart Association Fellowship to research the basic biology of mitochondrial biogenesis and work to develop heart disease treatments.

**Christiaan Leeuwenburgh**, Ph.D., an associate professor in the department of aging and geriatrics, was awarded a continuation grant from the NIA to study mitochondrial function, energy production and oxidative stress with age in cardiac and skeletal muscle.
Opportunities to increase strength and independence

A major goal of the Institute on Aging and the Older American's Independence Center is to help develop treatments in the elderly population for combating sarcopenia.

The UF IOA Pepper Center supports research on extending independence by maintaining physical and muscular strength. Two ongoing studies are taking different approaches to tackle the issue.

Weight loss and muscle strength

Obesity has been linked with an elevated level of cellular inflammation that can contribute to sarcopenia, muscle loss, as well as an overall decline in physical function.

Elderly people who experience a combination of weight gain and muscle loss are often stuck in a vicious cycle that can lead to inactivity, increasing immobility, disease and early death.

Michael Perri, Ph.D., associate director of the UF Institute on Aging and associate dean for research in the College of Public Health and Health Professions, has been awarded an opportunity grant by the University of Florida to conduct a pilot study that will gather data at baseline and after six months of lifestyle treatment to determine whether weight loss plus exercise produces beneficial changes in biochemical indicators of inflammation and muscle loss as well as improvements in body composition and overall physical functioning.

Low-impact exercise

Beverly Roberts, Ph.D., a professor and researcher with the Institute on Aging and the UF College of Nursing, became interested in the effects of tai chi on elders’ balance and strength as she researched exercise interventions for people weakened with sarcopenia. Through the support of the Pepper Center and a UF opportunity grant, Roberts is testing tai chi as a possible exercise intervention for inactive elderly people.

Of the 45 study participants, 20 performed low-impact tai chi, the rest acted as a control group. Over the course of the study, Roberts will assess participants’ ability to perform daily activities and their physical and psychological health.

Roberts records baseline measurements and uses a Biodex machine to measure the strength of muscle groups around joints. In addition, Roberts is looking at dual balance motor and thinking tasks. She is also assessing confidence in doing daily activities and frequency and difficulty in doing certain daily tasks.

Featured Faculty

The strengths of testosterone

With others in his laboratory, Steve Borst, Ph.D., an associate professor of applied physiology & kinesiology at the University of Florida and the Geriatric Research, Education, and Clinical Center at the Malcom Randall VA Medical Center, focuses on the study of sarcopenia and osteopenia, or the losses of muscle and bone that occur as a result of the aging process.

Although treating older hypogonadal men with replacement doses of testosterone has benefits, this treatment does not produce substantial increases in strength and bone mineral density. As a result of this unmet need, Borst is testing several alternative strategies.

His lab’s strategy is to combine a high dose of testosterone with a 5-alpha reductase inhibitor. Borst has shown that the latter blocks the prostate-enlarging effects of testosterone, without blocking the positive anabolic effects.

For his work Borst is the recipient of a VA Merit Award. His goals are to test the mechanisms of this response in a rat model and to test the effectiveness of this strategy in a human study.

In addition, Borst has also found that high-dose testosterone has a powerful cardioprotective effect in rats, as revealed in ischemia/reperfusion studies performed in the working heart preparation. His team is investigating the role of testosterone metabolism within the bone in mediating its effects on bone mineral density and bone remodeling.
Legacy of Giving

With the new Pepper Center awarded by the National Institute on Aging, the University of Florida becomes a nationally recognized leader in research, education and patient care relating to increasing the likelihood for independence in daily living for us as we grow older.

The IOA needs partners who are committed to joining the effort to ensure that good health and independence are more likely to happen for us all as we age. Your support of aging research and education at UF will educate future health-care providers in how to care for older persons, support our world-class faculty in cutting-edge research, and create a legacy for UF to remain a leader in providing a healthier tomorrow for us all.

Please contact Troy Munn, director of development, at (352) 265-7227 or tmunn@aging.ufl.edu, if you would like to make a gift or would like information regarding deferred gifts providing tax incentives and income for you.