



NEWSLETTER

**INSTITUTE FOR
SUCCESSFUL LONGEVITY**

**ISL researchers
are turning tech
into tools
to aid
older
adults**



Community muscle memory is key to responding to worst of hurricanes

By Eren Erman Ozguven, Ph.D.

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When I first arrived in Florida in 2013, Florida State University hadn't experienced a hurricane for decades, and the Florida Panhandle wasn't hit by a major storm for many years. But Hurricane Hermine hit Tallahassee in 2016, and Hurricane Michael made landfall around Mexico Beach in 2018.

Since then, we have learned the importance of muscle memory in successfully responding to these extreme events.

Today, cities and communities are more prepared than ever before with more concrete plans and guidelines drawn from the unfortunate experience of these hurricanes.

The Tampa Bay area, for example, has not been directly hit by a hurricane since 1921 and so has no muscle memory. This means the challenges that a major hurricane may pose would be serious problems. Florida must ensure that the lessons learned in the Panhandle and elsewhere can be put to use to in communities across the state that could one day be in a storm's path.

There is no way to predict where the hurricanes of 2023 will hit or how broad an area the storms will impact. However, we know that every storm will be destructive. Experience tells us that tropical storms are both water and wind events. The storm surges will be dangerous in coastal areas, and trees and debris will fall on buildings and infrastructure (e.g., roadways and power lines), whether by the coast or inland.

As storms draw near, we need to make sure people have sufficient information to make informed decisions on whether to evacuate or to shelter-in-place. People will need to know if their houses can withstand the strength of a truly monstrous hurricane. They will need to understand if flooding or the storm surge will affect their neighborhoods.

They will need to know what kinds of shelters are available — regular, special needs (SpNS) or pet-friendly. We do not want people with dogs or cats being turned away from regular no-pets shelters and not knowing where else to go.

When storms strike, it is especially important that we take care of our vulnerable populations such as the elderly. Evacuation, stressful for everyone, can be a nightmare for an older adult or a person with special needs or disabilities. We can lessen these stresses by planning ahead so we can give vulnerable populations the extra time they need to evacuate so as to keep them away from congested roadways and not struggling with closed roads and gasoline outages.

At a National Science Foundation-funded emergency-preparedness workshop earlier this year at FSU, researchers determined that we should focus on community centers, libraries, churches and other facilities that can serve as resilience

FROM THE DIRECTOR



“We hope all of you enjoy a happy, healthy, and successful New Year.”

— Neil Charness, Ph.D., William G. Chase Professor of Psychology, Distinguished Research Professor at Florida State University and Director of the Institute for Successful Longevity

hubs in times of calm by providing a mixture of physical and digital resources. Development of resilience hubs will help communities prepare in advance for the worst of Florida's weather.

One example of a library-turned-resilience-hub is a National Science Foundation-funded project in partnership with Calhoun County, which was drastically impacted by Hurricane Michael (Libraries as Resilience Hubs).



Dr. Eren Erman Ozguven is Director of the Resilient Infrastructure and Disaster Response Center.

With these functioning resilience hubs, we can build the muscle memory against hurricanes and not lose that knowledge over years, even if an area does not experience a hurricane for a long time. That is the key to make sure our communities are resilient against the catastrophic events that hurricanes bring to our state. ■

You can volunteer to help with ISL's research

FSU's Institute for Successful Longevity needs research volunteers to help us achieve our mission of improving health and well-being for Florida's aging population.

You can be paid to advance the science of successful longevity, helping your friends and family achieve longer, more productive, and enjoyable lives. You will be able to choose what studies you participate in.

To volunteer, visit <https://www.isl.fsu.edu/volunteer>, or call 850-644-8571 or send an email message to isl@fsu.edu.



The Institute for Successful Longevity conducts research into how to live longer, stay active and be fully engaged in life. The institute takes a multidisciplinary approach to better explore the complexities of life as an older individual. Visit our web site at <https://isl.fsu.edu/>. ■

The CREATE project – Transforming technology to improve lives of older adults

Technology has long held great promise as a tool to improve the lives of older adults, but in practice this tool has often proved out of reach. Design limitations are a big part of the problem.

Researchers with the Institute for Successful Longevity are working to bridge this divide through their participation in a multidisciplinary, collaborative center that studies issues surrounding older adults and their interactions with technology.

The CREATE project — the Center for Research and Education on Aging and Technology Enhancement (<https://create-center.ahs.illinois.edu/>) — is focused on developing, implementing, and evaluating technology-based solutions to support older adults and enhance their interactions, social engagement, and health management.



The FSU CREATE team, from left: Dr. Shayok Chakraborty, Assistant Professor of Computer Science and a Faculty Affiliate of the Institute for Successful Longevity; Dr. Walter Boot, Professor of Psychology and Associate Director of ISL; and Dr. Neil Charness, Distinguished Research Professor of Psychology and ISL’s Director.

“CREATE’s aim is to enhance well-being and social connectedness through well-designed technology solutions,” said Neil Charness, Ph.D., Distinguished Research Professor and Director of the Institute for Successful Longevity. Charness is a founding researcher of the CREATE project.

CREATE goes way back. The research effort began in 1999 and is now in its fifth incarnation, with a recent award of a \$14.7-million grant from the National Institute on Aging. The research consortium operates across sites at FSU, at the Weill Medical College of Cornell University in New York, at the University of Illinois at Urbana-Champaign, and at the University of Miami.

“Our research is designed to meld emerging and existing technologies to promote the well-being, quality of life, and independence of older adults and to provide support for older adults with cognitive impairments,” said Walter Boot, Ph.D., Professor of Psychology and ISL’s Associate Director. Boot joined CREATE in 2009.

CREATE's latest research is tied to three specific efforts:

- To develop virtual-reality tools to support cognitive health and engagement and socialization among aging adults.
- To develop technology support for cognition and social engagement for aging adults with mild cognitive impairment.
- To create technology tools for health-management activities for aging adults, including those with mild cognitive impairment.

The first study will look at how virtual-reality technology can be used to foster cognitive and social engagement among aging adults. The goal is to design and evaluate an immersive Cognitive Activity Social Technology (CAST) virtual-reality intervention that provides aging adults a suite of virtual cognitive, social, and activity applications.

Boot sees tremendous potential in the uses for virtual reality. "The technology has advanced quickly and is now ready to be put to new and innovative uses and at a reasonable cost," Boot said. "The CREATE team will explore those possibilities for immersive interventions to promote social and cognitive engagement."

Boot, as part of a team of programmers, psychologists, and engineers, will develop and test virtual-reality approaches that can help keep older adults connected with friends and family and community. "Social isolation is a profound problem for some older individuals," Boot said. "We want to fight that isolation and are developing virtual reality as an effective way to do so."

The second CREATE V project will focus on providing support for adults with mild cognitive loss and use innovative technologies to assess further cognitive decline. The research team will collaborate with the IBM Watson Research Center to develop a speech-analysis software support tool that will engage older adults in storytelling. The aim of the tool will be to help detect changes in an individual's cognitive status.

The research will bring to bear FSU's expertise in computer science. "We will use machine learning and artificial intelligence to develop technology systems that will learn about and adapt to the user," said Shayok Chakraborty, the third ISL member of the CREATE team. "This will make technology interactions easier, especially for older adults experiencing cognitive challenges," he said.

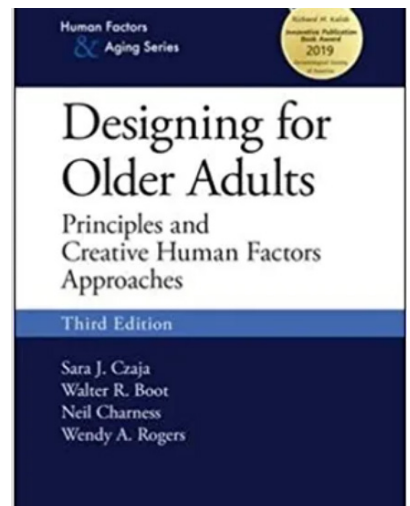
Chakraborty is Assistant Professor of Computer Science and a Faculty Affiliate of the Institute for Successful Longevity. He joined the CREATE team under the latest round of NIH funding.

The third research project will develop digital assistant tools to help older adults with cognitive impairments manage health-care tasks such as enrolling in Medicare. The digital assistants will help individuals:

- Find or use reputable online sources of information on health care.
- Make decisions about health-care finances, which can be complex and confusing.
- Make decisions related to Medicare.gov resources, such as selecting a drug plan.

CREATE's goals include not only development and testing of new technologies but dissemination of the research findings. This has been a core part of CREATE's mission throughout its five stages over the years. The research group has published "Designing for Older Adults," a guide for technology designers now in its third edition, and other books related to making technology more helpful and more accessible for older adults.

"CREATE has deep experience – more than two decades — in research on technology for older adults," Charness said, "and our team is committed to sharing that expertise with the larger research and design community. The potential benefits of modern technology to older adults are great, and we are determined to bring those benefits to the daily lives of individuals." ■



Designing for Older Adults, one of many publications of the CREATE research team, has proven valuable to designers seeking to create technology accessible to all ages. The guide is now in its third edition.

Dawn Carr, Miles Taylor win \$400,000 NIH grant to study psychological resiliency

Dawn Carr and Miles Taylor, both Faculty Affiliates of the Institute for Successful Longevity, have received a grant from the National Institutes of Health for more than \$400,000 to study the health effects of psychological resiliency.

Carr, Associate Professor of Sociology and Director of FSU's Claude Pepper Center, and Taylor, Professor of Sociology and Director of FSU's Pepper Institute on Aging and Public Policy, will be co-principal investigators on the study "Psychological Resilience as a Health Resource in the Context of Stressful Life Events in Later Life." They will lead a team including Florida State students and outside consultants.

"I'm very pleased Dr. Carr and Dr. Taylor received this NIH grant to expand our knowledge about resiliency," said Tim Chapin, dean of the College of Social Sciences and Public Policy. "This study will help us to illuminate how people can become more adaptable and create effective, targeted interventions to bolster resilience prior to experiencing stressors."



Dr. Dawn Carr, left, and Dr. Miles Taylor

The project builds on previous collaborative research by Carr and Taylor that shows resilience is four to 10 times more beneficial to health outcomes than other psychological resources such as sense of control and optimism.

They hypothesize that people with high levels of psychological resilience tend to handle stressful experiences more effectively, decreasing physical and mental health consequences over time.

The NIH grant will allow Carr and Taylor to evaluate further whether resilience benefits all people and which stressors it particularly helps.

"Our previous work has established that psychological resilience has a strong connection to health overall," Taylor said. "But now we get to dig deeper to understand more about when, how and for whom this resource is most protective."

Rather than a "one size fits all" model of resilience, the researchers hope to draw from a range of personal and social resources when dealing with stress and adversity.

Carr explained how their research could help pinpoint when resilience is most beneficial.

"In later life, we are more likely to experience a variety of stressors such as spousal loss, a major job transition, or a health event," she said. "This project can establish under which circumstances psychological resilience has a protective effect."

The research team will use longitudinal data nationally representative of adults over 50 years old to capture a diverse pool of people, experiences, and long-term health outcomes. ■

American Academy of Nursing names Lucinda J. Graven and Geraldine Martorella to 2022 Class of New Fellows

Dr. Lucinda J. Graven and Dr. Geraldine Martorella, both Faculty Affiliates of the Institute for Successful Longevity, have been inducted in the American Academy of Nursing's 2022 Class of New Fellows.

Graven, Martorella and their fellow inductees were recognized for their significant contributions to health and health care at the academy's recent Health Policy Conference in Washington.

"This is an incredible accomplishment and milestone in recognition of their contributions to advance nursing," said College of Nursing Dean Jing Wang, in announcing the honor for Graven and Martorella, both associate professors. "This is one of nursing's highest honors."

Dr. Graven is a family nurse practitioner with 20 years of nursing education experience at both the undergraduate and graduate levels and over 25 years of cardiovascular nursing experience.

Her research focuses on improving outcomes for heart failure patients and their families through the development and testing of cognitive-behavioral interventions. Her preliminary research in heart failure patients and their care partners generated knowledge on the impact of psychosocial factors, such as social support and social problem-solving on self-care and depressive symptoms. These findings were fundamental to development of the Coping in Heart Failure (COPE-HF) Partnership Program for patients and dyads living in community settings.

Dr. Graven is currently enrolling rural heart-failure patients and their care partners in a study to test the effect of the COPE-HF Partnership program on patient and care partner physical and mental health. The study is funded by the Florida Blue Center for Rural Health Research and Policy. If you are interested in learning more about this study, please contact Dr. Graven at lgraven@fsu.edu or at 850-644-5601.

Using experimental and mixed method designs, Dr. Martorella in her research has been targeting psychosocial factors of pain. Her interventions include the utilization of information technologies, and complementary and alternative therapies, such as massage.

She has been in the forefront of pain management for more than a decade. Her sustained contributions to clinical practice and policies related to pain management coincide with an enhanced attention to the opioid epidemic.

Dr. Martorella developed telehealth approaches contributing to health equity for underserved populations. The applicability and sustainability of her scientific advancements has allowed her to be granted a patent for her intervention. Her scholarly work significantly impacts practice at the national and international levels by promoting a paradigm shift that raises awareness regarding chronic pain. She contributes to the development of interprofessional pain management guidelines through panels such as the American Psychological Association's Clinical Practice Guideline Development Panel for the treatment of Chronic Musculoskeletal Pain in Adults and the Society of Critical Care Medicine's ICU Liberation Initiative. Dr. Martorella currently conducts two pilot studies testing a brief mindfulness-based intervention and a combination of mindfulness meditation and brain stimulation. ■



Dr. Lucinda J. Graven, left, and Dr. Geraldine Martorella

Five researchers join ISL as Faculty Affiliates



Hyejin Park,
College of
Nursing



Caterina Gratton,
Department of
Psychology



**Zilong Xie, School
of Communication
Science and
Disorders**



**Leo Liu, FAMU-
FSU College of
Engineering**



Joseph C. Watson,
Department of
Nutrition and
Integrative
Physiology

Five Florida State University researchers recently joined the Institute for Successful Longevity as Faculty Affiliates. The institute now has more than 90 Faculty Affiliates in departments across the FSU campus. The backgrounds of the new ISL members illustrate how the mission of the Institute for Successful Longevity is to take a multidisciplinary approach in its research on aging.

Hyejin Park — Dr. Hyejin Park, who earned her Ph.D., from the University of Iowa, is Associate Professor in the College of Nursing and a Registered Nurse. Her research interest focuses on implementing and evaluating standardized nursing languages-based electronic nursing documentation systems across health-care settings. Her work provides evidence that using standardized nursing language can improve health care and play a vital role in building a body of evidence-based outcomes for nursing by supporting nursing data comparisons for benchmarking at national and international levels, providing valuable information to healthcare organizations regarding patient care, and improving communication among healthcare providers.

Dr. Park also conducts research on eHealth literacy to decrease disparities in accessing online health information.

Caterina Gratton — Dr. Caterina Gratton, who earned her Ph.D. from the University of California at Berkeley, is Associate Professor in FSU's Department of Psychology.

Dr. Gratton, focuses her research focuses on characterizing how human brain networks are organized and how they contribute to complex, goal-directed behaviors such as attention. Her lab team studies the neural substrates underlying these processes in the healthy population as well as how they vary across individuals and break down with damage.

The team uses a broad methodological toolkit including fMRI, cognitive tasks, and TMS, focusing on deep “precision” measures to precisely-phenotype brain and behavior in individual people. Recent work in the lab has focused on individual differences in brain networks across the adult lifespan and how these are related to preservation and loss of goal-directed behavior with age.

Zilong Xie — Dr. Zilong Xie is Assistant Professor in the School of Communication Science and Disorders. Previously, he was with the University of Kansas Medical Center. Xie earned his doctorate in Communication Sciences and Disorders from the University of Texas at Austin.

Xie's research involves understanding how age-related changes in auditory and cognitive functions limit speech understanding and translating this new knowledge into clinical strategies to improve the outcomes of older listeners,

especially those with cochlear implants.

His work focuses on older adults with cochlear implants and on older adults with mild cognitive impairment.

Leo Liu — Dr. Leo Liu is an Assistant Professor of Chemical and Biomedical Engineering. He received his Ph.D. from the Woodruff School of Mechanical Engineering and Pettit Institute of Bioengineering and Biosciences at Georgia Institute of Technology.

Dr. Liu directs a research group that studies biofluid mechanics of living fluids such as blood. His current research focuses on understanding the effect of hemodynamics on blood-clot formation at the molecular, cellular and tissue level using multiscale computational modeling and experimental micro/macro-fluidic techniques. His research aims to facilitate successful longevity through developing diagnostic, preventive and therapeutic strategies for cardiovascular and hematologic problems such as heart attacks and strokes that are the leading causes of death in the United States.

Joseph C. Watso — Dr. Joseph C. Watso is Assistant Professor in the Department of Nutrition & Integrative Physiology in the College of Health and Human Sciences. He earned his Ph.D. in Applied Physiology from the University of Delaware in 2019.

His research focuses on prevention and treatment strategies for cardiovascular disease, with specific interests in obesity, hypertension, and aging. ■

Almond Board of California awards Ravinder Nagpal grant to explore the effect of almonds on gut health

Dr. Ravinder Nagpal, Assistant Professor in the Department of Nutrition & Integrative Physiology and a Faculty Affiliate of the Institute for Successful Longevity, has been awarded a \$177,000 research grant from the Almond Board of California through the U.S. Department of Agriculture.

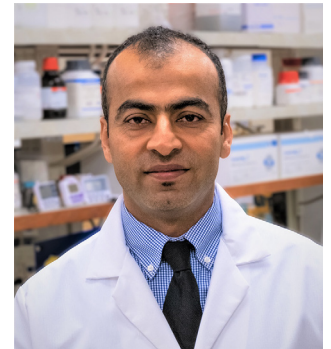
The award will fund research on the effect of almonds on gut health in people who are classified as overweight or obese.

Almonds are known to promote cardiometabolic health, but our understanding of the mechanisms underlying the benefits is incomplete. Nagpal believes the health benefits of almonds may be mediated, at least in part, via an improved microbiome composition.

The project is a collaboration with Dr. Claire Berryman, Assistant Professor in the Department of Nutrition & Integrative Physiology. Additionally, Dr. Bahram Arjmandi, Professor of Nutrition & Integrative Physiology at FSU and an ISL Faculty Affiliate, and Dr. Penny Kris-Etherton, Professor of Nutritional Sciences at the Pennsylvania State University, are senior collaborators on the project.

“It is our great pleasure and honor receiving this grant,” said Nagpal. “We are highly appreciative to the Almond Board of California and the USDA for believing in our science and we are excited about this timely project that aims to shed new light pertaining to the role of almonds in human health.”

Almonds are a rich source of fiber, unsaturated fat, phytosterols, vitamins, minerals, and other bioactive components, all nutrients that also foster a healthier microbiome. However, little is known about how almond intake regulates gut microbiome and intestinal permeability in subjects who are overweight or have obesity. The project examines if and how cardiometabolic improvements may be associated with positive modulation of the gut bacterial and fungal microbiomes, and microbial metabolites. ■



Ravinder Nagpal, Ph.D., is Assistant Professor in the Department of Nutrition & Integrative Physiology.

Study by Brad Schmidt uses computer tech to combat loneliness in older adults

An estimated 30 percent of American adults aged 70 and older report experiencing heightened loneliness and increasing evidence suggests that perceived social isolation is a major risk factor for physical and mental illness in later life.

Now, a Florida State University psychologist is working to find computer-based interventions to combat that problem.

Distinguished Research Professor Brad Schmidt, director of the Anxiety and Behavioral Health Clinic at FSU and a Faculty Affiliate of the Institute for Successful Longevity, uses emerging tech to help develop interventions for a variety of psychological challenges. Previous studies using technology-based interventions to improve loneliness among military service members have yielded promising results.

“Over the last five years or so, we have been conducting research into the experiences of military veterans and active-duty military, focusing on addressing two related constructs — perceived burdensomeness and thwarted belongingness — which are centrally related to loneliness,” Schmidt said. “We’ve been using a computer to deliver content and have developed a brief intervention that we’ve shown to be effective in reducing these issues, thereby improving symptoms of loneliness and anxiety, and positively impacting quality of life.”

Schmidt, the Chair of the Department of Psychology, said his lab researchers will apply what they’ve learned from years of work with both clinical populations and the military in hopes of addressing a growing public health issue in older adults.

The project has already received a boost from the RRF Foundation for Aging, previously known as the Retirement Research Foundation. The foundation provided funding for Schmidt’s lab to begin clinical trials. The RRF Foundation for Aging is a nongovernmental, nonprofit organization incorporated in 1950 by John D. MacArthur and endowed upon his death in 1978. Since 1979, the RRF has awarded more than \$239 million to support programs and research aimed at improving the quality of life for older people.

“The foundation’s priority of social and intergenerational connectedness was inspired by increasing evidence suggesting that social isolation and loneliness contribute to adverse physical and mental health in older adults,” Schmidt said.

The new study will be conducted in two main phases; first, researchers will adapt the content from the existing intervention program — used in previous trials with military members — to focus on the needs of older adults; next, the team will conduct a clinical trial with older adults who have been experiencing loneliness. The group will be randomly selected to receive either the refined intervention program targeting loneliness and other related adverse outcomes such as depression, or a control program that focuses on healthy lifestyle choices.

Schmidt said what makes these intervention programs so valuable is that, in a real-world setting, they would not require administration by a therapist or specialist and could be completed by anyone with access to a computer.

“The remarkable thing about our interventions is that they are very brief, only taking about an hour to complete, and people can do them on their own,” Schmidt said. “So, if we can show that this intervention is beneficial, it will be quite easy to disseminate broadly and quickly.”

Visit the FSU Anxiety and Behavioral Health Clinic’s web site for more information and a list of current studies seeking volunteers. ■



Distinguished Research Professor Brad Schmidt is a Faculty Affiliate of the Institute for Successful Longevity and Chair of the Department of Psychology.

ISL Faculty Affiliate Dave Gussak honored by American Art Therapy Association

Dr. Dave Gussak, Professor of Art Therapy and a Faculty Affiliate of the Institute for Successful Longevity, was recognized by the American Art Therapy Association with an Honorary Lifetime Membership, the highest honor awarded by the organization.

Gussak was recognized for accomplishments throughout his career, which has spanned over 30 years — more than 20 of those as an instructor at FSU.

“It’s so humbling, and a true honor, to receive this recognition from my colleagues,” Gussak said. “To be ranked among people who I have looked up to for so many years is truly moving and overwhelming.”

Gussak accepted the award in front of his fellow art therapists in a formal ceremony at the AATA national conference in Minneapolis.



Dr. Dave Gussak receives the Honorary Lifetime Membership award from the American Art Therapy Association.

The Honorary Lifetime Membership is given in recognition of “major contributions and broad influence” in the field of art therapy. Its recipients are considered leaders and pioneers in the field.

In addition to his work on the FSU faculty, Gussak currently serves as program coordinator for the FSU/FDC

Art Therapy in Prisons program, a partnership between FSU and the Florida Department of Corrections. He has published over 50 articles and book chapters, and six books, including his most recent, “The Frenzied Dance of Art and Violence.”

During his college years, Gussak worked as a professional clown. After revealing this in his address, he then spent most of it drawing a comparison between performing as a clown and the work of the art therapist.

“All of our life experiences, our struggles and challenges, contribute to our success,” he said. “I wanted to remind everyone that each one of us has a great deal to offer and that there is humor in everything we do.”

Gussak’s passion for the field and love for his work are evident. He is currently working on expanding the Art Therapy in Prisons program to two new states and advocating for legislation to establish licensing for art therapists in the state of Florida.

As he reminded everyone during his speech, “At the end of it all, ask yourself: ‘Is this what makes me happy? Is this what excites me? Have I found my circus?’ And I have.” ■