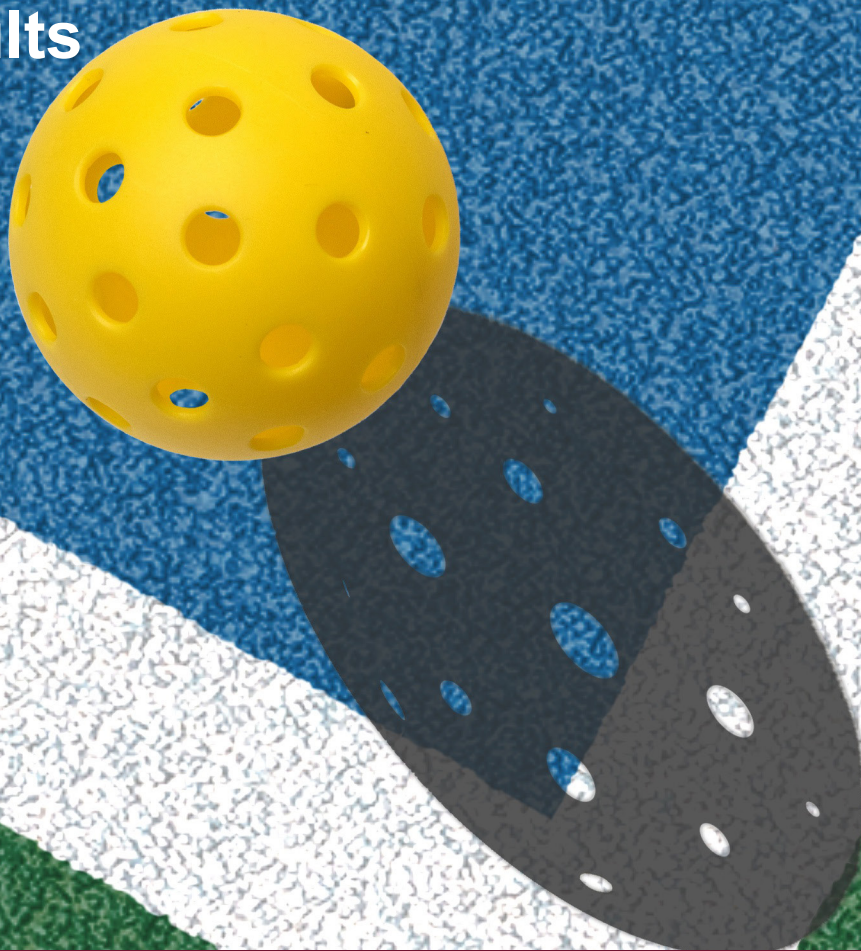




***NEWSLETTER***  
**INSTITUTE FOR SUCCESSFUL LONGEVITY**

# The Popularity of Pickleball

ISL Faculty Affiliate Amy Chan  
Hyung Kim is researching  
the game and its benefits for older  
adults





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# Reducing your risk of developing Alzheimer's disease, related dementias

The U.S. Department of Health and Human Services recently updated information about their plan to address Alzheimer's Disease and Related Dementias (ADRD). You can find details here: <https://aspe.hhs.gov/sites/default/files/documents/66904c18bb1f0843c3c113d7099e98c1/napa-national-plan-2021-update.pdf>. Goal 6 of their approach involves a prevention focus: Accelerate Action to Promote Healthy Aging and Reduce Risk Factors for Alzheimer's Disease and Related Dementias.

What I want to consider here is the value of this frequently used approach to addressing diseases without cures, such as Alzheimer's disease. It involves stressing prevention and using association data to identify risk factors. The reasoning behind this approach is that when you do not understand the mechanism by which a disease is acquired, you look for factors that occur more frequently in those with the disease than those without the disease. Then you work on ways to minimize those risk factors.

The logic is that one or more of these factors may eventually be linked to the mechanisms underlying the disease. Ultimately, you hope to find an intervention that targets the mechanisms underlying disease development, but in the interim, you attack risk factors that you hope are linked to those mechanisms. Of course, those risk factors may not be causally linked to the disease, and the correlation observed may be due to a confounding factor.

For Alzheimer's disease, many of the identified risks, or correlates, include both difficult to modify and modifiable factors. Association studies, comparing those with the syndrome and those without it, have uncovered dozens of risk factors, such as:

**Chronological age** — The older you are the greater the probability you will have the disease. After age 65, the risk doubles every five years (<https://www.alz.org/alzheimers-dementia/what-is-alzheimers/causes-and-risk-factors>). Now age is what we term a proxy variable. Age, measured in years, represents the number of times you, as a resident of planet Earth, have circled around the star we call the sun since you were born. Age stands for a host of potential causal processes for changes in cellular and body functioning (including brain functioning). The passage of time by itself does not cause much of anything. Time is by itself a very difficult to define concept and we mainly resort to concepts in physics, such as the measurement of time by vibrations of cesium atoms used in atomic clocks.

Typically, each additional year of being alive increases your risk of being diagnosed with dementia. Alzheimer's disease is the most frequently occurring dementia, along with vascular dementia. With no time machines in sight, not much can be done to modify this risk factor.

**Sex/Gender** — Females are more likely than males to develop Alzheimer's disease <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6198681/>. In fact, Alois Alzheimer's initial identification of the disease was in a 50-year-old female patient. Given that women tend to live longer than men and that age is a major risk factor, it is not that surprising to find women more likely than men to become demented. However, gender is often an independent predictor, meaning that it is not just women's greater longevity that accounts for greater risk. Still, it is difficult, statistically speaking, to parse out the age-gender-disease relationship with strongly associated factors like age and gender.

In a sense, men who live as long as women typically do tend to be unusual for their sex and probably possess protective

## FROM THE DIRECTOR



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

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factors that work for both lifespan and healthy lifespan. Given that we don't yet have much evidence that sex changes from female to male minimize this risk factor (hormonal influence?), there is little to be done with this part of your genetic legacy.

**Race/Ethnicity** — Blacks and Hispanics are more likely than whites to be diagnosed with dementia. <https://www.alz.org/alzheimers-dementia/what-is-alzheimers/causes-and-risk-factors> Because being a minority (e.g., here in the United States) is associated with many other negative outcomes, it may be due to general health that is worse in those encountering greater stress (discrimination-induced?) and for those with less income/health insurance. Poor health takes its toll on bodily systems, such as the cardiovascular system. See below for cardiovascular system status as a risk factor. There is not much to be done at the individual level about race and ethnicity-associated disadvantages. Those risks call for societal interventions.

**Education** — The more educated you are the less likely you are to be diagnosed with this disease. So, should we all be enrolling in more college courses to upgrade our educational qualifications? There is a bit of a dark side story here. Although more educated people are less likely to be diagnosed with dementia than their less educated counterparts, when they are diagnosed, they appear to go downhill more quickly. This pair of observations has led to the cognitive-reserve hypothesis by Yaakov Stern that suggests that education provides the brain with richer connectivity, meaning that the disease must progress further along in its course before a well-educated person shows clinical signs compared to a less-educated person.

However, given that they are farther along in brain deterioration, the well-educated person succumbs sooner after diagnosis. There are many association studies touting protective factors such as having complex jobs and leisure activities, using computer technology, etc. However, cause and effect studies in the form of clinical trials have not been that supportive of these interventions doing much to preserve cognition or to mitigate the risk of contracting Alzheimer's disease.

**Family history and genetics** — There are some family and genetic factors that have been identified. The Alzheimer's Society uses both words to indicate that families tend to share environments and genes. Possessing one form of the Apolipoprotein E allele (the e4 variant, particularly a double e4 allele) makes you much more likely to be diagnosed with dementia than other variants of the allele. Given that we don't have many ways to modify our genes safely, there is not much to do with the genetic hand dealt by our parents. Eventually, we may see genetic engineering treating gene disorders, particularly the relatively rare genetic conditions that appear to cause dementia, though they account for a very small percent of all dementia cases.

**Head injuries** — The more you damage your brain from head injuries, the more likely you are to develop dementia. We can easily envision a causal link here as head injuries damage brain tissue, and brain tissue is what cognition depends on. So, avoid head injuries across your lifespan! If you are a woman and wear high heels that can impair balance and lead to a traumatic brain injury through a fall, beware! Wear helmets when biking, seatbelts when riding in vehicles, and avoid contact sports, such as football and hockey, that can damage your cortex when you are hit, particularly when such collisions result in concussions.

**Heart disease** — Cardiovascular disease is associated with a greater risk of developing dementia. Here, too, envisioning a causal mechanism is not difficult. Given that your brain needs blood and its accompanying oxygen and nutrients to function, anything diminishing blood supply to the brain could cause cell death. In the case of strokes, which tend to be

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progressive (one leads to the next), cell death diminishes cognitive capacity. Brain cells (and heart cells) do not appear to regenerate the same way skin cells do so progressive loss is a bad thing for cognitive health. Adopting heart-healthy diets and engaging in regular exercise is likely to help not only your heart but also your brain (“what’s good for the heart is good from the brain”). Check with your doctor about appropriate diet and exercise.

**Psychotropic medication** — There is an association between use of psychotropic medication (antidepressants, antipsychotics, benzodiazepines) and Alzheimer’s disease. That is, such medication use seems to be associated with a faster rate of cognitive decline <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3448859/>. So, check with your physician or geriatrician about use of specific medicines.

**Exercise** — Exercise appears to be a protective and causal factor for enhancing cognition and hence likely to help with dementia avoidance. Incorporating regular aerobic exercise into your daily routine through a brisk walk is one of the easier lifestyle changes to make.



The bottom line now is that the strategy of attacking risk factors is risky business, given our lack of understanding about the mechanisms (causes) for dementing diseases like Alzheimer’s. Nevertheless, common-sense risk mitigation is the best we can currently do to improve our chances of successful longevity. ■

## ISL Director interviewed for research podcast

Neil Charness, Ph.D., Director of the Institute for Successful Longevity, is featured in a podcast produced by FSU’s Office of Research Development.

“Aging is kind of the poster child for multidisciplinary teams to solve,” Charness told the Office of Research Development’s Evangeline Coker. She noted that the prospect of cross-campus collaboration makes him genuinely enthusiastic. “Biology ... social science, sociology, psychology of aging, motor performance, you name it, everybody has a little piece of the puzzle that they can provide.” Charness finds those puzzle pieces by sending out open calls and hosting interest meetings related to upcoming opportunities.

The interview was part of Coker’s *Journeys in Research* podcast. She spoke to Charness for the podcast’s Episode 4, “Teaming Up for the Long Haul: How to Build a Strong Research Team that Lasts.” You can access the episode here: <https://www.research.fsu.edu/research-offices/ord/journeys-in-research-podcast/teaming-up-for-the-long-haul-how-to-build-a-strong-research-team-that-lasts/>.

In the podcast, Charness explains how the Institute for Successful Longevity uses grant opportunities as catalysts for getting teams together. When he hears about aging-related research opportunities, he spreads the word. “I say, OK, if anybody’s interested in this, get back to us. And if at least two of you indicate interest, we’ll put together a meeting to try to see if we can move this forward.” ■



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# Amy Chan Hyung Kim explore the benefits of Pickleball participation for older adults

Pickleball — even the name is fun.

Created one summer's day by a group of dads trying to keep the kids busy, Pickleball has evolved into a friendly competitive sport with appeal that spans generations. One ISL Faculty Affiliate, Amy Chan Hyung Kim, Ph.D., Associate Professor in the Department of Sport Management in the College of Education, is researching the game's appeal to older adults and whether participation in the sport brings social and psychological benefits.

For those new to Pickleball, a quick primer: It sprang from a pile of used sports equipment and the ingenuity of the three Washington State dads back in 1965. What emerged was a hybrid of Ping-Pong (the paddles), badminton (the net) and wiffle ball (the hard plastic ball with holes). The game is now played on what appears to be a miniature tennis court.

“Pickleball is very easy to learn, and it is appropriate for players of all ages and skill levels,” said Kim, who is also Co-Director of FSU's Center for Sport, Health, and Equitable Development: <http://shed.coe.fsu.edu/>. “Basically, anyone can play, from children who can swing a paddle to older adults post-retirement.”

The game's ease of play and its inherent fun — credit to the wiffle ball — give it great appeal and accessibility. If you can whack at something with a paddle, you can play. “Newcomers can learn pickleball pretty easily,” Kim said, “so anyone can start to enjoy the game, regardless of skill level.”



**Amy Chan Hyung Kim is Associate Professor in the Department of Sport Management in the College of Education and a Faculty Affiliate of the Institute for Successful Longevity.**



**Angel Trejo, a Tallahassee Pickleball player.**

Also key to Pickleball's popularity are its social aspects. “Compared to other racket sports, the court is quite small, so you can easily have conversations while playing,” Kim said. Bringing players together is a growing network of leagues and tournaments, and pickup games are common.

The paddles and the balls are inexpensive and durable, so cost is a low hurdle. And the game is easy on knees, ankles and elbows, which has made it popular among those who used to play tennis, badminton or racquetball.

According to USA Pickleball Association, more than 4 million Americans play the game (31% are 55 or older). For some, it has become a regular part of their lives. “I like the people — they're so nice — and I like the action,” said Mickey Capeletti of Tallahassee, who is now retired. “So this is what I do, and I've been doing it like four days a week.” She heard about the game through her family. “My daughter kept telling me I needed to go play Pickleball, because she knew I liked sports,” said Capeletti, a lifelong athlete who played basketball and volleyball as a student at FSU.

Angel Trejo, also retired, described his relationship with Pickleball as love at first sight. “The game seems to be made for me at my age,” said Trejo, who described himself as a cancer survivor. “Fun, active and the Pickleball players are also fun folks to be around.” He testifies to the game’s addictive appeal. “My wife and I started playing,” he said, “and we have continued to play, even when we go on vacation.”

Bob Rivers, also retired, played tennis for 35 years but found that Tallahassee’s heat made it hard for him to enjoy the game as he grew older. He learned of the new game socially. “A couple of friends play Pickleball,” he said. “I came in and tried it once and decided that it was it for me. I was going to be a Pickleball player from now on.”

Rivers said he likes the flexibility of the game. “Cold doesn’t matter, windy doesn’t matter, because most of the time we play inside, or play outside a little bit,” he said. He found the transition from tennis came easily. “You’ve got a smaller court and a shorter paddle,” Rivers said. “And you don’t have to run as far, so it just fits in very well for people who are older.” He plays about twice a week, but sometimes three or four times a week, playing singles and doubles.

This popularity among older adults gives Kim access to participants for her research into the social and psychological benefits of Pickleball play. Her research has found the game’s sociality can enrich the lives of older adults. “Involvement in this type of sport-based community

**Pickleball players Mickey Capeletti and Bob Rivers, at the Tallahassee Senior Center, show the game’s large paddles — much larger than the Ping-Pong paddles used in the first days of the sport.**



**Dr. Kim on a Pickleball court. The court is similar to a tennis court but only about a fourth the size, with a lowered net and a smaller playing area, both of which make the game easier and less tiring to play.**





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can enhance one's sense of belonging and sense of community, which can enhance one's social support, social connections, and so forth," Kim said. "These types of social elements are well-known to reduce negative psychological outcomes such as loneliness, depression, or stress and strengthen positive psychological outcomes such as life satisfaction, quality of life, and happiness."

The *Journal of Happiness Studies* recently published a study led by Kim that found that Pickleball participation among older adults can associate with social capital and happiness. You can read Kim's study here: <https://link.springer.com/article/10.1007/s10902-020-00288-8>. "So, I suggest that sport-based social capital intervention can add significant value to older adults' general happiness for successful aging," Kim said. "This is one of my current projects that I am working on in the Tallahassee community."

The Tallahassee community certainly loves Pickleball. Michelle Bono, who runs a communications business, is regularly on the courts, to her own surprise. "I am not one of these athletes," Bono said. "I was the nerdy kid that played violin. So, I mentioned that because I think Pickleball is a super easy game for people to pick up the learning curve." She was, she admits, skeptical at first. "I'm like, 'I'm not going to go to the Senior Center and play with all these really old people,'" she recalled. "But I went and found people like the other Michele [Mickey Capeletti], all these athletes that have played at FSU, and there were people like Bob who were so good." Though she lost her first matches, she found the game was fun and engaging. "The other part of it for me was there's the most wonderful sense of camaraderie.... I have been addicted to Pickleball ever since."



**Michelle Bono, with teammate Abdel Gonzalez; the pair won silver medals for their Pickleball play in the 2021 Tallahassee Senior Games.**

And, like many other players, happily so. ■

## 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](mailto: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/>.

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# Carla Prado of University of Alberta to speak March 3 on body composition

Carla Prado, Ph.D., R.D., of the University of Alberta will speak March 3 on “Body Composition in Aging: More than Meets the Eye” in a talk for researchers and the public.

Her talk, at 5 p.m. EST via Zoom, is part of the Institute for Successful Longevity’s Speaker Series and is co-sponsored by FSU’s Pepper Institute on Aging and Public Policy. The public is invited. To register for the Zoom webinar, please click here: [https://fsu.zoom.us/webinar/register/WN\\_Y9G6oRBbQESmN1cxvTZx3w](https://fsu.zoom.us/join/9876543210).

In her talk, Prado will address the assessment of body composition in older adults, particularly focusing on low muscle mass, and sarcopenia in research and clinical settings. We will additionally discuss the health consequences of these conditions to the aging population, and the role of nutrition interventions in optimizing body composition.

“We all know, more or less, what happens to our bodies as we age,” Prado told the Institute for Successful Longevity, but, she said, not all changes are obvious. “In my talk, I’m going to focus on the loss of muscle that can occur,” she said. “It can be a hidden condition. Having low muscle mass can also be present in people who have normal body weight or are overweight or obese.”

Prado has considerable expertise on the issue of body composition. At the University of Alberta, Prado is Professor and Campus Alberta Innovate Program chair in Nutrition, Food and Health. She is also Director of the Human Nutrition Research Unit, the best facility in Canada, and is one of the top researchers worldwide for body composition and energy metabolism assessments. Prado is an expert in assessing nutritional status through the precise measurement of body composition and energy metabolism, and she will explain how this works in her March 3 talk.

Prado is concerned that many older adults are unaware of the problem of loss of muscle mass. “Nowadays, many of our older adults, they have a larger body weight,” she said. “So, people don’t usually think that they may have little muscle because their body weight is so large.” Research shows, however, that often their muscle mass has diminished with age. “For some proportion of people, they gain fat, but they don’t gain muscle,” she said. “That’s what I’m going to talk about.”



**Carla Prado, Ph.D., R.D., is an expert in body composition and will speak on the hidden problem of loss of muscle mass in older adults. Her talk, via Zoom, is open to the public.**



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The hidden loss of muscle mass can occur in older adults at any body weight and any body size, Prado said. “We may see people who have weight stability, so their weight doesn’t fluctuate, but they may be shifting their body composition environment,” Prado said. “They may be losing muscle and gaining fat. And someone in that situation is really unaware of all these changes taking place.”

In her talk, Prado will address sophisticated ways of looking for these abnormalities in body composition but also practical ways in which people can identify low muscle mass.

Prado said many individuals are unaware of the many and important roles muscles play in the body and in maintaining good health. “The reason I focus on muscles, with or without high fat, is because muscle is such an important organ in our body,” she said. “It’s important for movement and balance, it’s important for posture, but it also has a lot of metabolic functions. It’s a reservoir of amino acids, which are the building blocks of protein, and that helps with our immune system. It’s also important for cross talk among organs.”

The benefits of adequate muscle mass are broad, Prado said. “Muscle is very important,” she said. “The more muscle we have, the better health we have. And, muscle not only helps us have better physical function, helps us move around. Muscle also is an independent predictor of survival. People who have more muscle live longer.”

Prado said people with good muscle mass who are hospitalized will likely leave the hospital faster. If they need surgery, they will likely have fewer surgical complications.

To explain how this critical component of healthy body can be easily overlooked, Prado and her center have created a video that illustrates the hidden nature of muscle mass. You can watch the video here: [https://www.youtube.com/watch?v=pDSX\\_jaDCDM](https://www.youtube.com/watch?v=pDSX_jaDCDM).

In addition to being Director of the Human Nutrition Research Unit at the University of Alberta, Prado is an Editorial Board member of *Clinical Nutrition, the Journal of Cachexia, Sarcopenia and Muscle, and Current Opinion in Clinical Nutrition and Metabolic Care*.

Prado is a past recipient of Canada’s Top 40 Under 40, an award that celebrates exceptional young Canadian leaders of all sectors, and she was recently inducted into the Royal Society of Canada, the highest academic honor in her country. ■



**ISL** Institute for Successful Longevity Speaker Series 2022

**Carla Prado, Ph.D.**  
**University of Alberta**  
**“Body composition in Aging:  
More Than Meets the Eye”**  
**March 3, at 5 p.m. EST  
via Zoom**

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# Through designs and decisions, automakers are leaving behind persons with disabilities

Transportation innovation has been evolving significantly for at least 10 years. But this evolution of electric, automated, and on-demand services is leaving persons with disabilities (PWDs) and many older adults on the curb.

First, we witnessed the introduction of the Prius. It was the first hybrid car that ran on both battery and gas. As the reader may recall, the Prius was not cheap. It required tax incentives that were mostly available for people in high tax brackets. Moreover, both the size and the power of the Prius prohibited the integration of PWDs who uses mobility devices and who use adaptative controls to drive. These same observations could also be applied to the Tesla. These innovative, environmentally sensitive, and low maintenance vehicles are once again being designed in a way that prohibits persons with disabilities from using them.

In between these two types of vehicles, we have witnessed a significant jump in lighter, smaller, and more technology driven vehicles. Innovative vehicles have made the full-size van less marketable, restricted supply, and hence made it less available to PWDs. Newer technology-driven vehicles have not been designed so that they have the space and power to accommodate PWDs. They simply do not have the space or power to accommodate power wheelchairs, scooters, or other mobility devices. The battery systems interfere with lifts and other control devices.

My recent trip to my dealership was not disappointing, but rather depressing. They indicated quite clearly that even if I had the \$50k for a basic vehicle, it could not be modified at an additional \$30-\$40k expense to accommodate my adaptive driving needs. What's the point of advancing technology if it doesn't accommodate the needs of those who are already transportation disadvantaged? Innovation should solve a problem, not exacerbate it. To make matters worse, the auto industry is continuing to shrink the size of vehicles at an accelerated rate. As a result, I am very concerned for my future independent mobility needs. Driving allows me to work, make medical appointments, shop for groceries, recreation, and otherwise be an active member of the community.

If this problem of costs and function is not enough, persons with disabilities are also left on the curb by the non-accessible on demand transportation system available to those without disabilities.

The much-discussed hype behind driverless vehicles is going to leave PWDs and older adults with significant mobility challenges once again stranded. No one is advocating for affordable and functional transportation for PWDs and older adults. It will take a significant policy shift, new incentives, and a targeted effort to include those who have the greatest transportation needs into a future of affordable, efficient, and environmentally clean vehicles.

Until this policy shift occurs, I will remain fearful for my independence, ability to earn a living, and my community engagement. I will pray that my 2017 vehicle can last a very long time because everything available today and in the near future, leaves me and thousands of others left on the curb. ■



**JR Harding, Ed.D., is a Teaching Faculty II in the College of Business and an author, speaker and advocate. He recently joined the Institute for Successful Longevity as a Faculty Affiliate.**



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# Wen Li's research links key parts of brain to Alzheimer's disease and other disorders

Associate Professor of Psychology and Neuroscience Wen Li, Ph.D., a Faculty Affiliate of the Institute for Successful Longevity, has identified a link between two key parts of the brain that play significant roles in conditions such as Alzheimer's disease, post-traumatic stress disorder, schizophrenia and depression.

Working with psychology doctoral candidate Kevin Clancy and with support from the National Institutes of Health, Li found that stimulating the system in the brain that deals with attention and imagery also enhances the efficiency of what's called the default mode network, a key part of the brain's functional organization. The default mode network is disrupted in a host of neurological disorders.

Their study was published in the [\*Proceedings of the National Academy of Sciences of the United States of America\*](#).

“This research has significant implications for so many different disciplines of science,” Clancy said. “From a cognitive neuroscience perspective, the brain activity we targeted is implicated in a range of core human mental faculties, such as consciousness, self-awareness, attention and memory. Our ability to directly manipulate this brain activity could afford greater insight into how these mental processes unfold. From a clinical perspective, disruption of this neural activity has been implicated in the development and maintenance of various severe neuropsychiatric disorders.”

The brain's functioning is organized by intrinsic inter-regional connectivity, which is how the different regions of the brains interact, and inter-neuronal synchrony, which is the simultaneous activation of neurons in multiple areas of the brain. These processes are represented by the brain's default mode network and alpha oscillations — or neural activity associated with attention and imagery — and these systems are mechanistically linked.

“Our results showed that transcranial stimulation of alpha oscillations can help regulate and enhance the efficiency of the default mode network,” Li said. “The fact that this stimulation upregulates the default mode network highlights an effective, non-invasive therapy to normalize the functioning of the network in neuropsychiatric disorders.”

This work was made possible through use of Florida State University's functional magnetic resonance imaging facility. The top-of-the-line neuroimaging facility fosters cutting-edge research and collaboration among the fields of neuroscience, psychology, medicine and engineering.

Li and Clancy utilized the main components of the fMRI facility, including a Siemens Prisma scanner and a high-density EEG/ERP system, which stands for electroencephalography and event-related potential. EEG is a method that records a brain's electrical activity through sensors on an individual's scalp that detect brain activity underneath, and ERP is the measured brain response resulting from a stimulus. These methods help capture neural activity related to sensory and cognitive processes, and Li and Clancy further integrated transcranial stimulation with MRI-EEG recordings.



**Wen Li is Associate Professor of Psychology and Neuroscience and a Faculty Affiliate of the Institute for Successful Longevity.**

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Providing transcranial stimulation while concurrently measuring brain activity and response to the stimulation is a delicate process, as participants must be kept comfortable in the scanner while attached to various electrodes and sensors.

“Achieving this kind of technical sophistication and rigor within simultaneous recordings is a great accomplishment. While these are effective techniques on their own, the study would lose its power if these methods were not conducted at the same time,” said Li, who played a major role in design and establishment of this protocol at the MRI facility. “Kevin was ingenious in the ways he set up the electrodes for stimulation and the cap for recordings in order to keep participants comfortable.”

The technology used in this research acts directly on the brain, and this neuromodulation technique is cost-effective, ambulatory or outpatient, and does not require significant training. Clancy hopes that this work can help establish a bridge between community-based mental health and interventional psychiatry to facilitate accessibility of high-quality, evidence-based mental health treatments.

“I’m currently writing grant applications for further research in this area — we want to apply these findings to post-traumatic stress disorder and chronic pain,” Li said. “Eventually, we hope to investigate this link’s effect on Alzheimer’s and additional neuropsychiatric disorders.”

Other contributors to this work are FSU graduate student Jeremy Andrzejewski, former FSU postdoctoral researcher Yuqi You, National High Magnetic Field Laboratory researcher Jens Rosenberg and University of Florida Professor Mingzhou Ding. *This article, by McKenzie Harris, originally appeared via FSU News.* ■

## NIH awards Zhe He, Michael Killian with R21 grant for predictive technology

The National Library of Medicine of the National Institutes of Health has award ISL Faculty Affiliate Zhe He., Ph.D., and Michael Killian, Ph.D., a grant of \$395,020 for their project “Prediction of Health Outcomes and Adverse Events in Pediatric Organ Transplantation in Florida.”

“This research is a successful multidisciplinary effort with folks from FSU and UF,” He said. “The R21 grant is a major milestone for my collaboration with Dr. Michael Killian from FSU’s College of Social Work.”

He, Associate Professor in the School of Information, launched the project three years ago with Killian, with support through a seed grant from the UF-FSU Clinical and Translational Science Institute. The project will build on prior research that provided initial evidence that machine-learning algorithms could be used to predict post-transplant outcomes in pediatric organ transplantation. The evidence, though promising, has only shown limited predictive utility in identifying high-risk cases.

“The current modeling offers unsatisfactory predictive accuracy,” He said. “Our long-term goal is to harness various types of patient data including clinical notes to improve the ability of pediatric transplant teams to predict emerging poor posttransplant outcomes, identify high-risk patients, reduce health disparities, and promote health outcomes and quality of life in these patients.”

Results from the study will aid the research team in development of a clinical decision-making tool for transplant physicians and teams. “This tool will allow more efficient and timely identification and appropriate interventions with children and families who are at the greatest risk for poor posttransplant outcomes,” He said. “Our project seeks to improve the ability and reliability of the predictions of health outcomes and adverse events.” In the future, He said, the team will evaluate the prediction models on older adults.

Killian and He are the principal investigators on the project, working with Dipankar Gupta of the University of Florida and Paolo Rusconi and Jenn Garcia of the University of Miami. ■



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