

CHAD ANNUAL REPORT 2020-2021

**CENTER ON HEALTH,
AGING, AND DISABILITY**



**College of Applied
Health Sciences**

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN



Table of Contents

Letter from the Director 3

Pilot Grants 6

Research Academy 8

CHART Update 10

McKechnie Family LIFE Home 12

Our Team 14



Letter from the Director

Welcome back to campus!! What a joy it is to say those words after an arduous 2020-2021 dealing with a world-wide pandemic. While we may not have been on campus much, we certainly were productive. I want to thank all in the college for their creativity and perseverance during these trying times. Especially, I want to thank the Center on Health, Aging, and Disability staff: Wendy Bartlo, Heidi Krahling, Brian Pastor, Sa Shen, and Harshal Mahajan for their continued excellent service to our faculty and their research efforts. Next time you are working with them, please take my lead and thank them for the instrumental service they provide. I'd also like to thank the CHAD Senior Faculty Committee (Toni Liechty [Chair], Jeni Hunnicutt, Nick Burd, Chung-Yi Chiu, and Raksha Mudar) for their hard work in service to CHAD. As you return to campus this fall, please continue reach out to our office for your research and outreach support needs.



Dr. Laura Rice

I want to recognize the contributions of our colleague Dr. Jake Sosnoff, who served as the Associate Director of CHAD from 2016 to 2021. Dr. Sosnoff made many contributions in the areas of corporate relations, entrepreneurship, and veteran's research. We wish him well in his new role as Professor and Associate Dean for Research at the University of Kansas Medical Center. Additionally, I am excited to welcome Dr. Laura Rice as the new Associate Director of CHAD. Given her experience with corporate, foundation, and federally funded research and her successful interdisciplinary research collaborations, Dr. Rice will be a wonderful addition to CHAD and AHS leadership. Please reach out to her for assistance with corporate research funding.

As CHAD supports the AHS research and public engagement missions, one metric that we indirectly use to gauge our effectiveness is the number of external research proposals submitted and their success rate. Despite the pandemic and remote working conditions in 2020, AHS faculty submitted 94 proposals and received 27 awards (29% success rate) for a total of \$18,062,884 in external research funding. I am thrilled to announce that this is the most external funding awarded to our college in the past decade by almost \$8 million dollars. While we have historically been very strong in non-profit and foundation research funding, I am pleased to see how our portfolio has expanded to include more federal and corporate awards. In 2020, almost half of our awarded grants were from federal



sponsors such as the NIH or NIDILRR. Thank you for your hard work and I would like to specifically thank and recognize Heidi Krahlung for the outstanding work she does in assisting our faculty obtain these grants. Let's keep up the great work!

CHAD is very excited to announce the opening of the McKechnie Family LIFE Home, a cutting-edge research center focused on innovations in home environments (see pages 12-13). Although the grand opening event was unfortunately delayed due to the pandemic, research was able to begin in the home under the leadership of Director, Wendy Rogers and Assistant Director for Research, Harshal Mahajan. For more information about visiting or conducting research in the McKechnie Family LIFE Home, please visit their website.

Congratulations to our recent CHAD Pilot Grant awardees: Professor Zou in 2020 and Professors Allen, Raj, and Hernandez in 2021 (see pages 6-7 for more details on their projects). Past recipients have been very successful in leveraging the pilot research supported by CHAD to obtain larger external funding, build collaborative relationships with other researchers, and publish results in peer-reviewed journals.

Lastly, as you begin to think about traveling again, please keep in mind that CHAD supports tenure stream faculty, specialized faculty, and academic professors to travel to conferences to present research findings in the amount of \$1,000 per year for tenure track faculty and \$500 for specialized and academic professionals. Please visit our website for more details and to apply. This is a nice supplement to the campus Scholar's Travel Fund and other resources you may have. As always, please reach out to our office for assistance with your research support and public engagement needs. We are here to help.

Yours in science,

Jeff Woods, Ph.D., Director for the Center on Health, Aging, and Disability



Since 2010, the Center on Health Aging, and Disability has awarded more than \$700,000 dollars to AHS researchers for pilot research. Our talented faculty have leveraged these initial pilot projects into larger externally funded projects from the National Institutes of Health, National Multiple Sclerosis Society, and other federal, foundation, and corporate sponsors. We are pleased to report that for every \$1 CHAD has awarded in pilot grants over the past decade, \$16 of external research funding has been returned to our campus as a result.

2020 Recipient

Sharon Zou, Ph.D., Assistant Professor, Recreation Sport and Tourism was awarded a 2020 CHAD Pilot Grant for her project, “Exploring an Efficient and Equitable Entrance Fee for Public Lands: A Community-based Investigation in the Indiana Dunes National Park.” This study aims to address a pressing problem for public land managers: how to set an efficient and equitable fee. Dr. Zou and her research team are currently collecting data through interviews with both park visitors and residents of surrounding communities, to explore the determinants of an optimal fee structure that balances revenue generation and equitable access in the Indiana Dunes National. One of the preliminary findings from the interviews is that both visitors and residents were ambivalent about what equity meant when it comes to park fees, although most of them agree that it was important to cover costs through park fees. Moreover, visitors’ willingness-to-pay (WTP) was much higher than residents’, but there was more variance in WTP among residents.



2021 Recipients



Dr. Mina Raj, Assistant Professor, Kinesiology and Community Health, was awarded a 2021 CHAD Pilot Grant for her project, “Towards the development of guidelines for inclusive foods in long-term care.” This project, focused on the sociocultural needs of racial and ethnic minority older adults in U.S. long-term care facilities (LTC) will 1) assess LTC personnel experiences with resident preferences for inclusive diets and identify the practice and regulatory barriers and facilitators to promoting inclusive diets into LTC facilities, 2) identify key considerations for new guidelines for inclusive diets and 3) develop guidelines for implementing inclusive diets in three states.



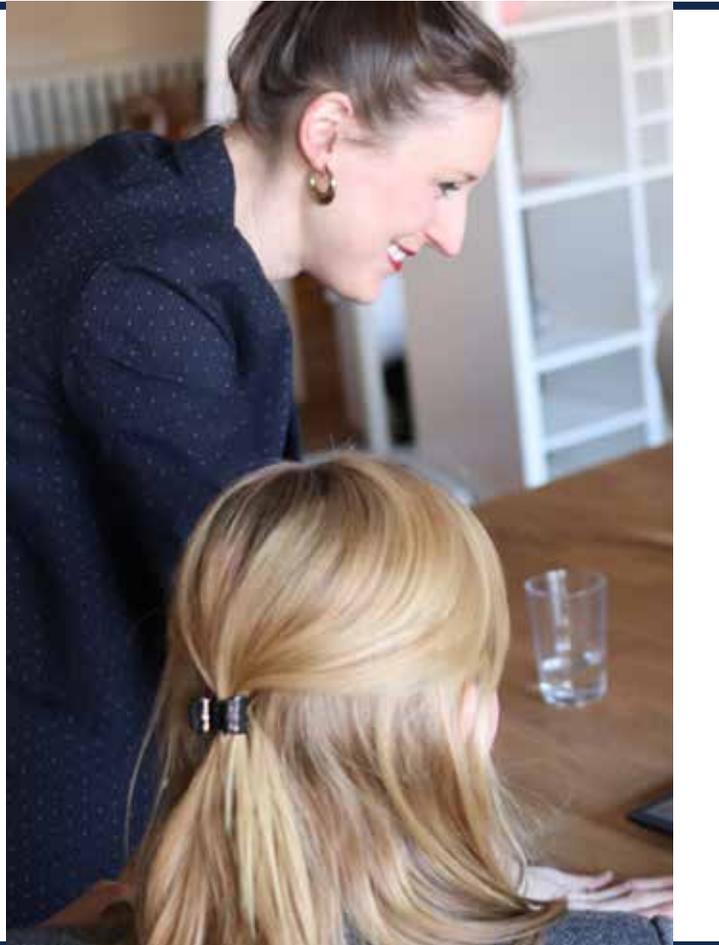
Dr. Jacob Allen, Assistant Professor, Kinesiology and Community Health, was awarded a 2021 CHAD Pilot Grant for his project, “Gastrointestinal And Metabolic Effects from a Prebiotic, Lifting, and Aerobic iNtervention (GAMEPLAN).” This project, focused on the independent and combined effects of prebiotic fiber supplementation and exercise on the gut microbiome and human health, will determine whether exercise and prebiotics can 1) modify human gut microbiome and metabolic profiles and 2) improve body composition, endurance capacity, and systemic inflammation.



Dr. Manuel Hernandez, Assistant Professor, Kinesiology and Community Health was awarded a 2021 CHAD Pilot Grant for his project, “Artificial intelligence energy-regulation modeling to predict and classify fatigue levels and types in people with multiple sclerosis: A feasibility study.” This project aims to integrate data from wearable multimodal sensors in persons with multiple sclerosis (PwMS) and evaluate the feasibility of a novel machine learning (ML)/ artificial intelligence (AI) framework to detect and predict fatigue in PwMS.



Since 2016, the Center on Health, Aging, and Disability and academic departments have supported 23 AHS faculty to attend the ACES Research Academy. This semester-long program is designed to help new principal investigators navigate the tenure and promotion process through a series of workshops focused on grantsmanship, planning and time management, publications, and mentoring from senior faculty.



2021 Faculty

Sarah Geiger
Assistant Professor, KCH

Dominika Pindus
Assistant Professor, KCH

Mina Raj
Assistant Professor, KCH

Miki Sato
Assistant Professor, RST

Joelle Soulard
Assistant Professor, RST

Jules Woolf
Assistant Professor, RST

"Participating in the Research Academy provided me with access to materials and expertise to support grant writing. Most helpful was working on specific aims pages with feedback from experts and peers, which highlighted how important it is to remember that those who are not in your area will evaluate your grant. The specific aims I developed in the Research Academy, led to my receiving a Campus Research Board Grant. This project was expanded to a CHAD Pilot Grant and then a NIH NIDCD Early Career R21. In addition to the grants training, networking with colleagues from other departments and units was very helpful. Through my participation in the program, I connected with Nancy McElwain, from the Department of Human Development and Family Studies. Together, with other collaborators, we received an Social and Behavioral Sciences Research Initiative Grant."

Laura Mattie, Ph.D. Associate Professor, SHS



"Research Academy was a great experience for me. It helped to orient me to campus and introduced me to other new faculty members from across the university. I have stayed in touch with a few of them since the program ended, which from my perspective is an important outcome. The Research Academy helped me to better understand the inner workings of the external funding and the importance of developing a high-quality specific aims page and contacts with granting agencies. Applying for federal grants such as these was not part of my background and training, and something for which I felt underprepared. In addition to the state and foundation funding I have received for my work, my collaborators and I are preparing for future federal submission that will draw from some of the materials I developed as part of the Research Academy and the federal program officer contacts I made during the trip to Washington, D.C."

Kevin Richards, Ph.D. Assistant Professor, KCH

"I really appreciate that CHAD and my department provided me with an opportunity to participate in the Research Academy this year. As a new faculty, I learned various aspects of developing a successful research career at UIUC. Based on the grantsmanship training learned from the Research Academy, I plan to submit a few grants in the coming academic year. One thing the Research Academy was different from other workshops I participated in before would be the community we were able to build with colleagues with outside my department for the last six months. I hope these relationships will lead to new research collaborations in the future."

Miki Sato, Ph.D. Assistant Professor, RST



CHAD Research Theme Update

Collaborations in Health, Aging, Research, and Technology

As 2020 has ended and we review our CHART activities, I am reflecting on our vision to harness technology to support successful aging. This year more than ever we have seen the need for technology tools that can enable older adults to remain socially connected; manage their health and wellness needs; maintain their environments; obtain the goods and services they require; be cognitively enriched; and remain productively engaged with their communities. We have heard from our community partners that older adults are becoming increasingly interested in learning how to harness technology to help themselves – and their expectations are that such technologies should be easy to use, low cost, and effective.

Moreover, by necessity, older adults are increasingly using technologies for healthcare appointments, family visits, shopping, and for social activities such as clubs and religious services. Although current and emerging technologies have tremendous potential, usability challenges, minimal instructional support, and lack of accessibility remain.

Advancements in technology that will support aging adults require interdisciplinary teams and we are developing a strong foundation for CHART activities. The newly completed **McKechnie Family LIFE Home** will provide an invaluable setting for these efforts. We provide additional details in this report and are excited to announce the launch of our new website.

The establishment of Illinois as an **Age Friendly University (AFU)** will advance our efforts across campus. Our bid for this designation received broad campus support and is well described by Chancellor Robert Jones in his letter supporting the effort. *“The AFU principles provide a valuable guiding framework for distinguishing and evaluating how we can shape age-friendly programs and practices, as well as to identify gaps and opportunities for growth.”* We are proud to have CHART coordinate this initiative.

I am grateful for the wonderful people I get to work with in my role as CHART Director. Brian Pastor provides excellent support for all that we do and is our CHART ambassador in the community and across campus. We recently developed a list of the benefits of having a CHART affiliation, many of which Brian coordinates. They include participant recruitment support; research regulatory and ethics consultation; research dissemination; student recruitment; and connections with our interdisciplinary researcher network, industry collaborators, community organizations, and healthcare agencies. One notable theme of this year’s report is the **breadth of our collaborations** – across campus, with other universities, industry partners, and in the community – and our engagement of students at all levels.



WENDY ROGERS
DIRECTOR

≡ OUR VISION

Harnessing Technology to Support Successful Aging

≡ WHO WE ARE



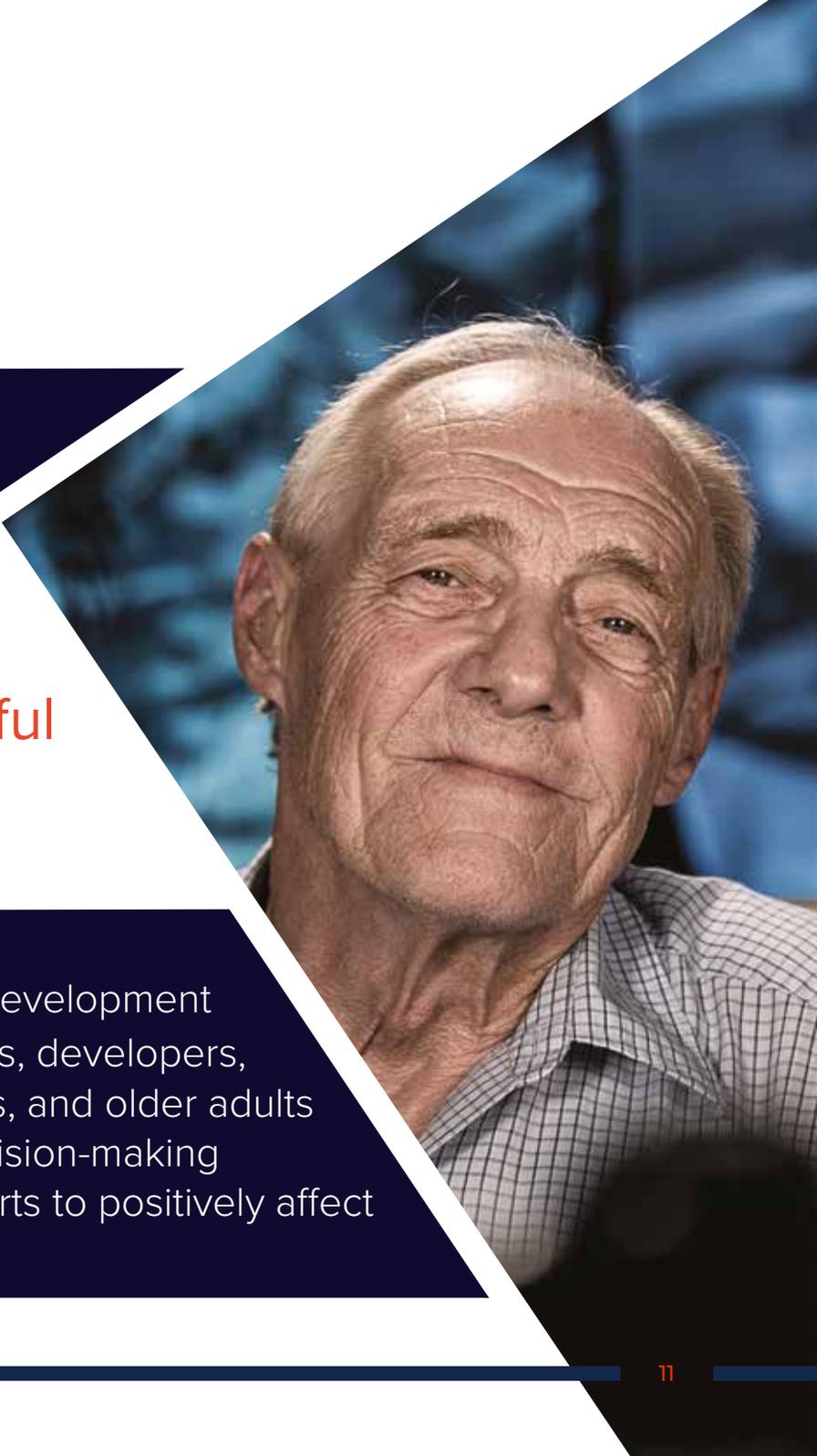
Collaborations in Health, Aging, Research, & Technology is an interdisciplinary research program comprised of University of Illinois

Urbana-Champaign faculty, community members, industry partners, and healthcare providers devoted to supporting research efforts that promote aging successfully through the use of technology.

≡ OUR MISSION

To enable **successful aging** through:

- Fundamental research
- Advanced technology development
- Education of researchers, developers, healthcare professionals, and older adults
- Guidance for policy decision-making
- Translation of these efforts to positively affect the lives of older adults.



McKechnie Family LIFE Home

LIVING IN INTERACTIVE FUTURE ENVIRONMENTS

A CUTTING-EDGE RESEARCH FACILITY



The McKechnie Family LIFE Home is a cutting-edge research center focused on innovations in home environments. This facility mimics existing home dwellings (i.e., typical home of today) as well as provides space for the development of next generation smart homes (i.e., house of tomorrow) that would allow people of all ages and abilities to live fuller, healthier, and autonomous lives. Spaces include a two-bedroom home; an attached garage; multi-purpose research and collaboration rooms; outdoor areas; and capacity for community engagement. Research and development efforts focus on a range of topics related to in-home activities to improve quality of life and independence. To learn more about conducting research in this innovative research center, please visit the [website](#).



FROM IDEA TO REALITY

2019

2020



- May - Ground breaking
- June - Foundation poured
- July - Walls framed
- August - Structure poured
- September - Structure fully-enclosed
- October - Team's first visit inside facility
- November - Facade installed
- December - Flooring and lighting installed
- January - Construction continues despite COVID
- February - Furniture delivered to move in
- March - Decor planning begins
- April - LIFE Home hosts first event
- May - McKechnie Family visits
- June - AV installation complete
- July - Preparation for use
- August - Stretch robot arrives
- September - Stretch robot first event
- October - Stretch robot first event
- November - Stretch robot first event
- December - Stretch robot first event

OUR TEAM

The Center on Health, Aging, and Disability provides research support and guidance for the College of Applied Health Sciences, offering a variety of subject matter expertise. Our team is key to the success of the services that we provide, bringing together an interdisciplinary set of skills to benefit the researchers that we serve.



Jeffrey Woods

Jeffrey Woods, Ph.D. is the Director for the Center on Health, Aging, and Disability. He also serves as the Associate Dean for Research in the College of Applied Health Sciences, and the Mottier Family Professor in the Department of Kinesiology and Community Health. In addition to his administrative roles at the college-level, Dr. Woods maintains an active research program in exercise physiology, and more specifically the effects of exercise on the immune system, the gut microbiome, and aging.



Laura Rice

Laura Rice, Ph.D. is the Associate Director the Center on Health, Aging, and Disability and Associate Professor in the Department of Kinesiology and Community Health. Dr. Rice is responsible for advising faculty on corporate sponsored research and technology management. Dr. Rice's research focuses on management of secondary impairments associated with physical disabilities and increasing quality of life and community participation.



Heidi Krahlung

Heidi Krahlung, M.S. is the Grant Proposal Specialist and manages pre-award grant services for the College of Applied Health Sciences. Heidi works directly with AHS PIs on all phases of the development of grant proposals and acts as a liaison between faculty PIs, co-PIs, investigators, collaborators, subaward institutions, the university Sponsored Programs Administration, and external sponsors. She has extensive experience with all aspects of the pre-award grants process and working with federal, for-profit, and non-profit sponsors.



Wendy Bartlo

Wendy Bartlo, Ph.D. is the Assistant Director for Strategic Initiatives and Research Relations for the College of Applied Health Sciences. Dr. Bartlo works closely with senior AHS leadership to provide strategic direction, design, and implementation of college initiatives and develops academic and community relationships to explore and maintain innovative research, education, and engagement opportunities.



Sa Shen

Sa Shen, Ph.D. is the Director of Biostatistical Services for the Center on Health, Aging, and Disability and works closely with AHS researchers to support their biostatistical needs. Dr. Shen provides critical expertise for all stages of the research process from sampling design to final data analysis. She is available to work with AHS faculty on grant proposal submissions, data analysis, and manuscript preparation.



Harshal Mahajan

Harshal Mahajan, Ph.D. is a Research Assistant Professor in the Department of Kinesiology and Community Health and the Assistant Director of Research for the McKechnie Family LIFE Home and the where he manages research and development activities with smart home and robotic technologies. Dr. Mahajan is currently the principal investigator of a NIDILRR funded project for evaluating feasibility and efficacy of a fear of falling intervention for individuals with Multiple Sclerosis.

Special thanks to the CHAD Senior Faculty Committee who support the CHAD Mission throughout the year. We especially appreciate their hard work reviewing and scoring the CHAD Pilot Grant applications.

Toni Liechty

Chair, Associate Professor, RST

Raksha Mudar

Associate Professor, SHS

Nick Burd

Associate Professor, KCH

Chung-Yi Chiu

Associate Professor, KCH

Jeni Hunnicutt

Assistant Director of Research

Engagement and Educational

Programming,

Chez Veteran's Center



CONNECT WITH **CHAD**



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