

TIPS FOR DEVELOPING AND SUBMITTING GRANT PROPOSALS IN DEMENTIA CARE SCIENCE

FEATURING THE EMBRACE
& ASU ROYBAL CENTERS



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ARIZONA STATE UNIVERSITY
ROYBAL CENTER FOR OLDER ADULTS
LIVING ALONE WITH COGNITIVE DECLINE



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EMBRACE ROYBAL CENTER



ASU Roybal Center

Funding/Disclaimer

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ASU Roybal Center for Older Adults Living Alone with Cognitive Decline

Technology-Enabled Behavioral and Lifestyle Change
to Delay Alzheimer's Disease and Improve Quality of
Life

NIA 1P30AG086561; PI: Fang Yu, PhD, GNP-BC, RN, FGSA, FAAN

Scientific Foci



Serving Older Adults Living Alone with Cognitive Decline



Advancing Through the NIH Stage Model

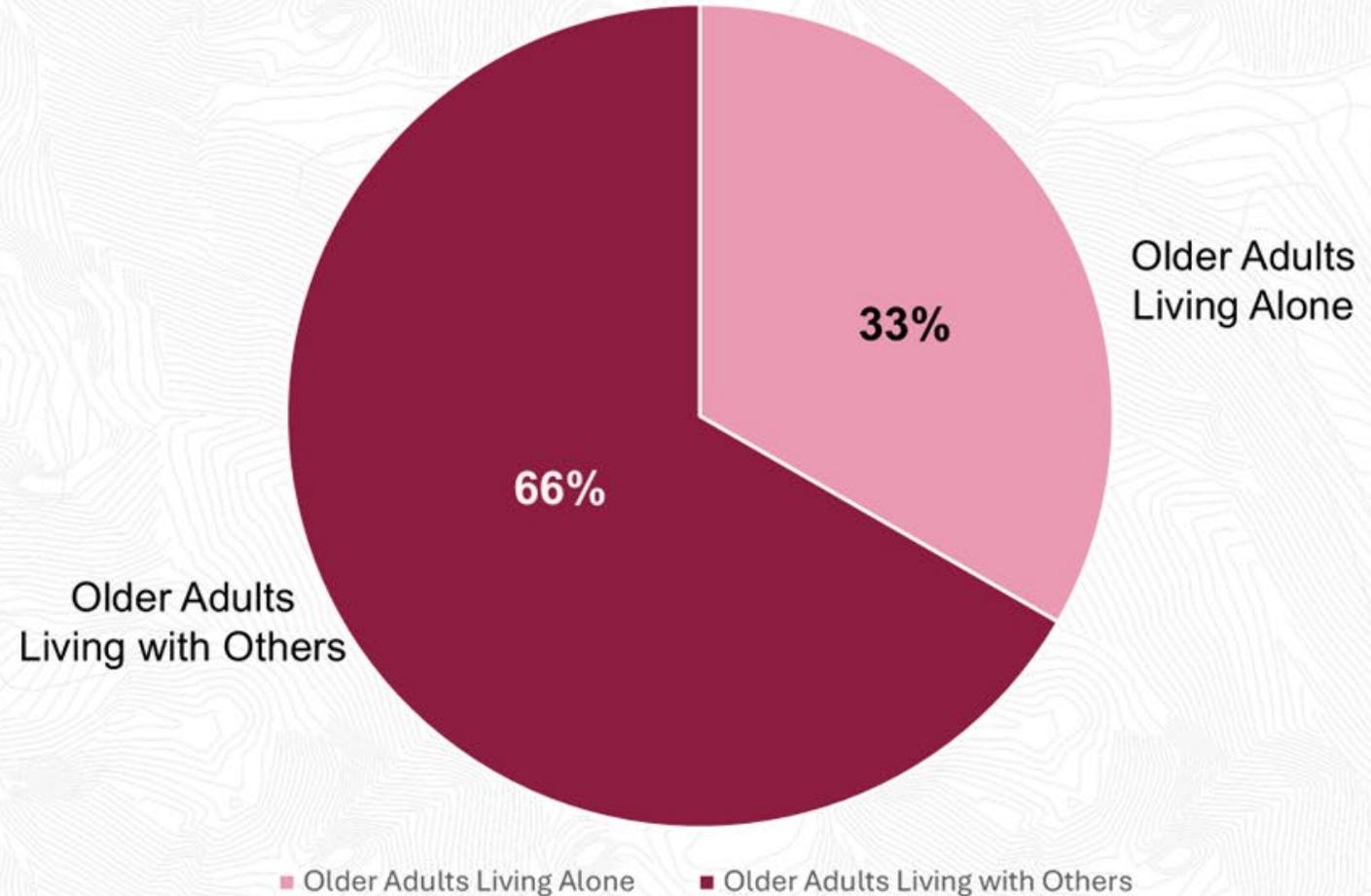


Mechanism- and Technology-Driven Interventions



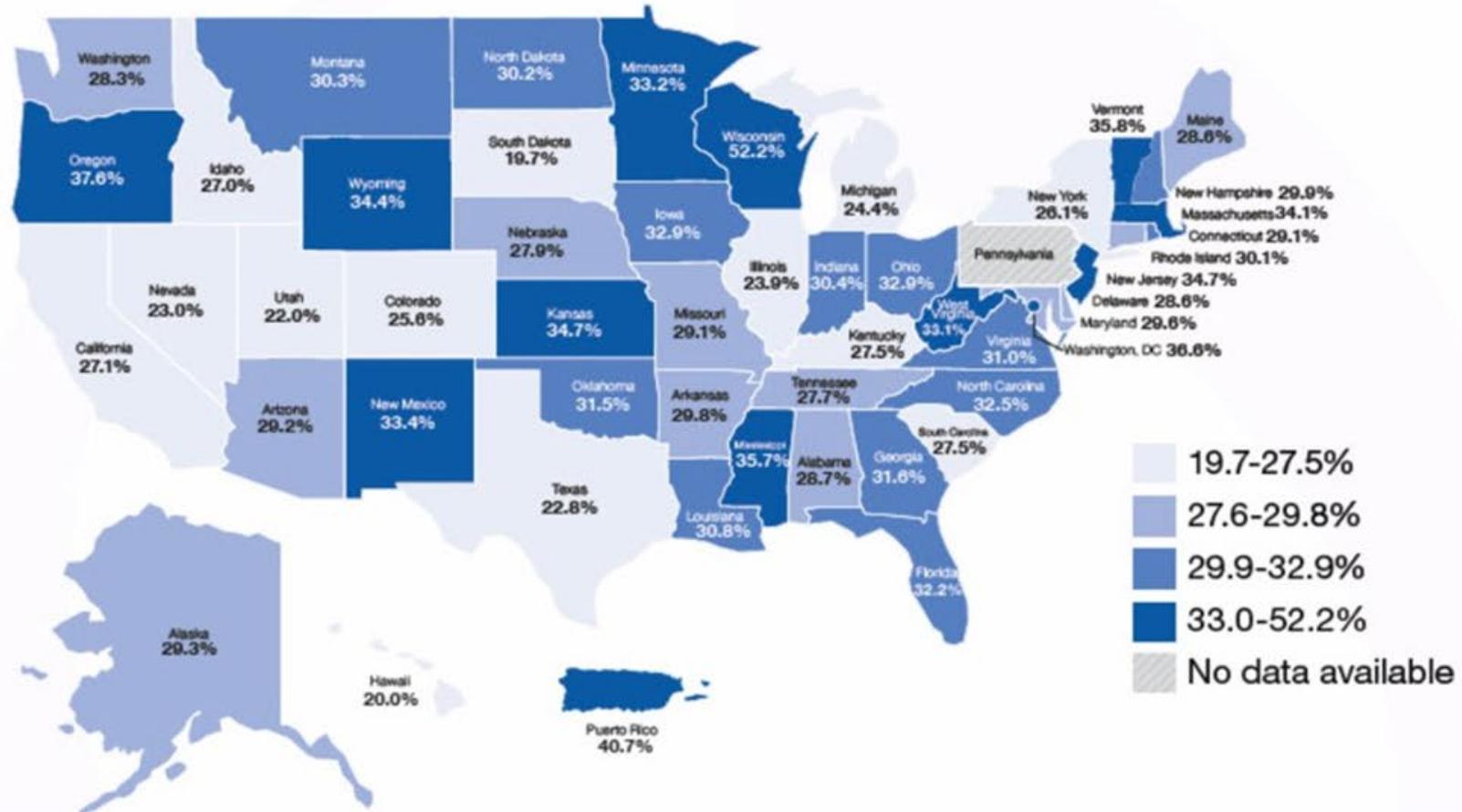
Consideration of health-influencing factors

**4.3 million adults
≥55 years and
older live alone
with cognitive
impairment**



Percentage of Adults Living Alone with Subjective Cognitive Decline

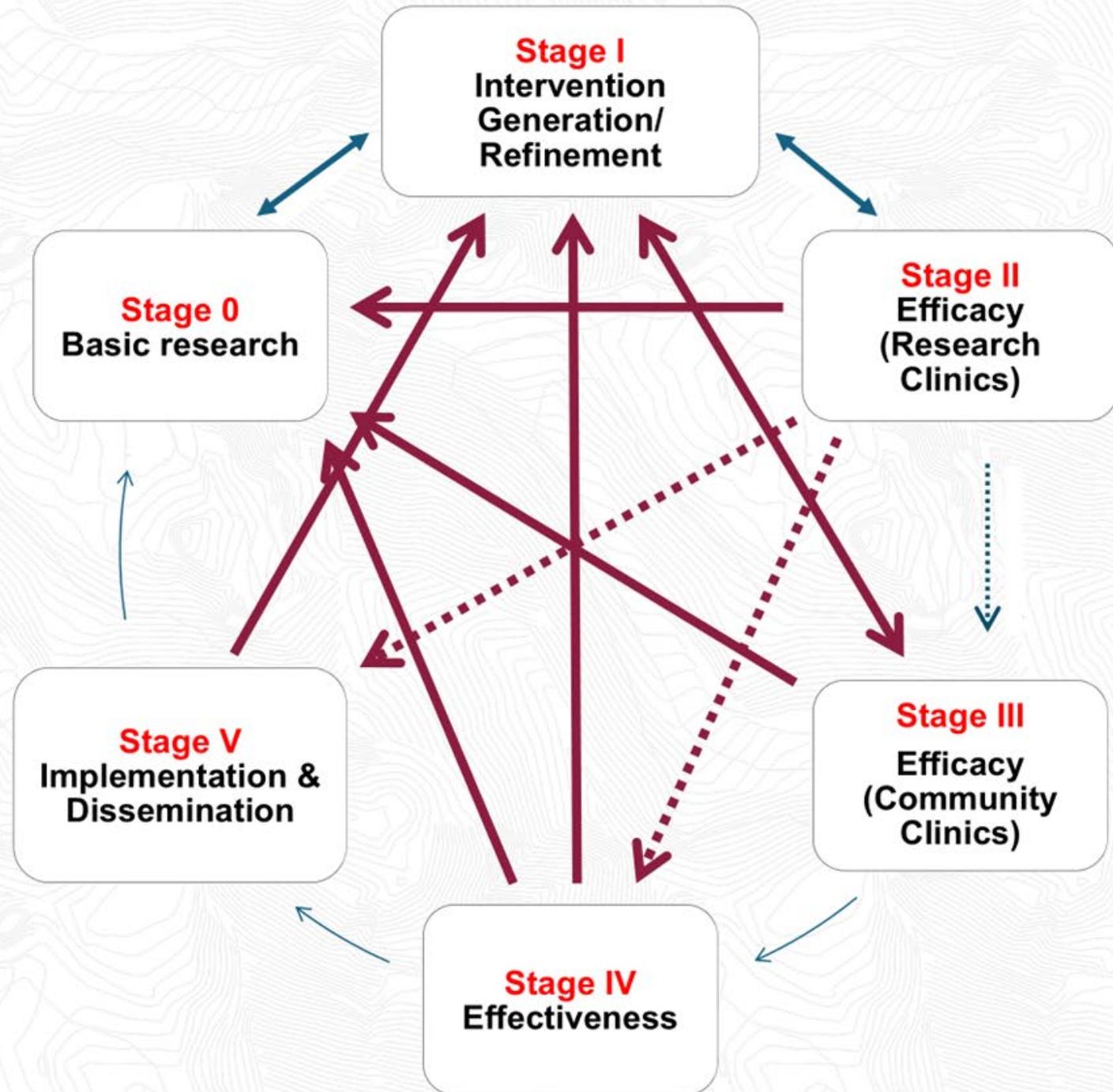
Figure 2: Adults 45 years of age and older with Subjective Cognitive Decline who live alone



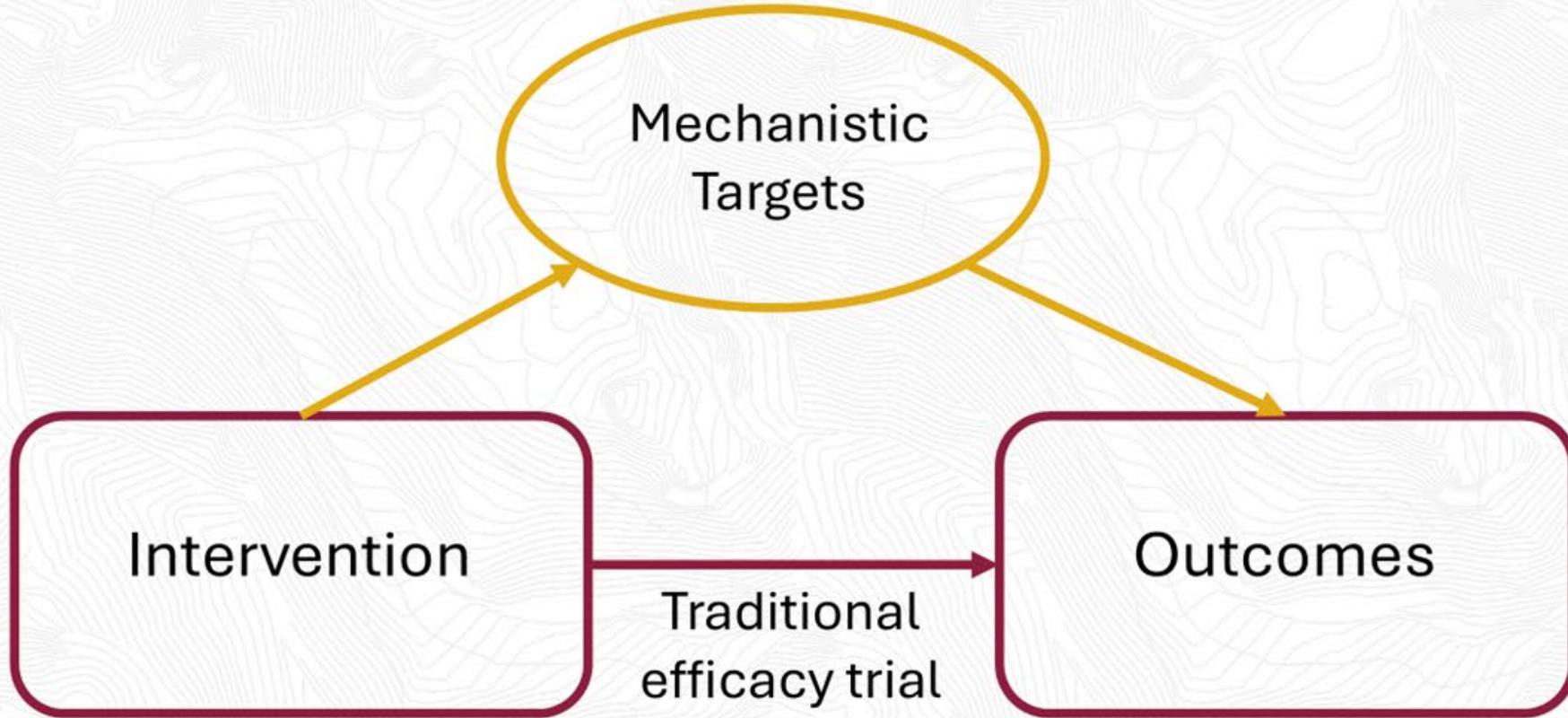
The NIH Stage Model

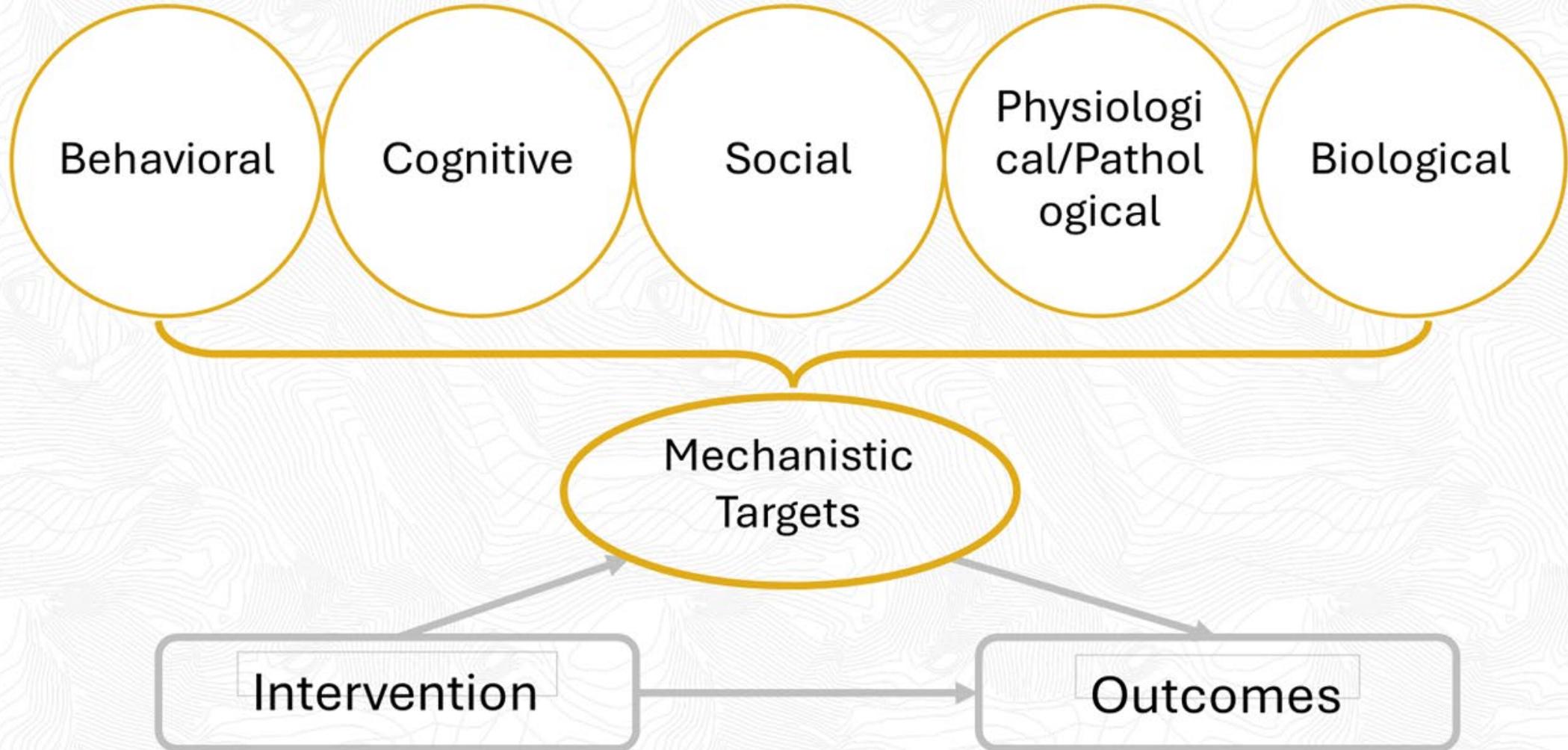


... a conceptual framework that supports the development of **maximally potent, maximally implementable behavioral interventions** to achieve meaningful improvements in health and well-being









Technology-Enabled Interventions

“

... behavioral and lifestyle interventions that are supported by technology to maximize potency and implementability

Technology-Enabled Interventions

- Telehealth & Virtual Care
- Mobile Health (mHealth) Applications
- AI & Data Analytics
- Virtual Reality (VR), Augmented Reality (AR) & Exergaming
- Health Hubs
- Digital Health Literacy & Equity
- Provider & Caregiver Support
- Electronic Health Records (EHRs) & Interoperable Systems



Gao, Z., & Yu, F. (2024). Hot Topic | Personalized Fitness Plans via Mobile Health Technology. ACSM BULLETIN. <https://tinyurl.com/4dmbu86j>

NIH Health Disparities Research Framework

Environmental

- Geographical and Political Factors
- Socioeconomic Factors
- Health Care

Sociocultural

- Cultural Factors
- Social Factors
- Psychological Factors

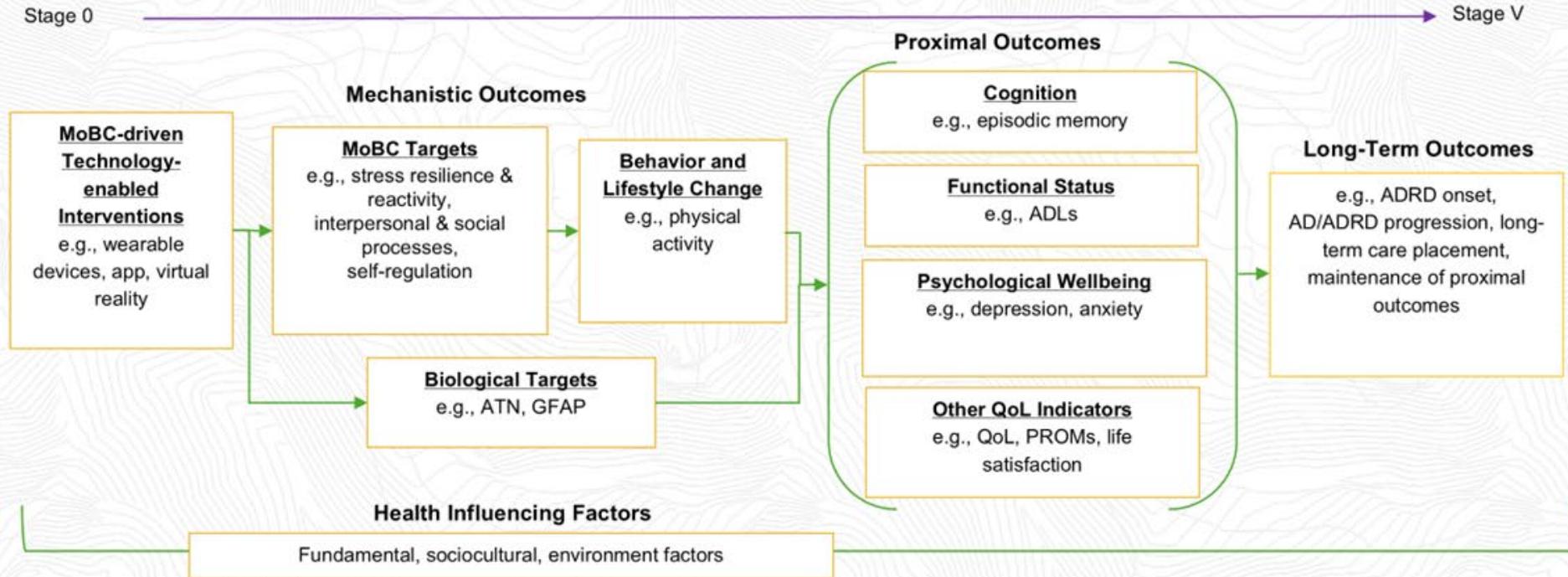
Behavioral

- Coping Factors
- Psychosocial Risk/Resilience
- Health Behaviors

Biological

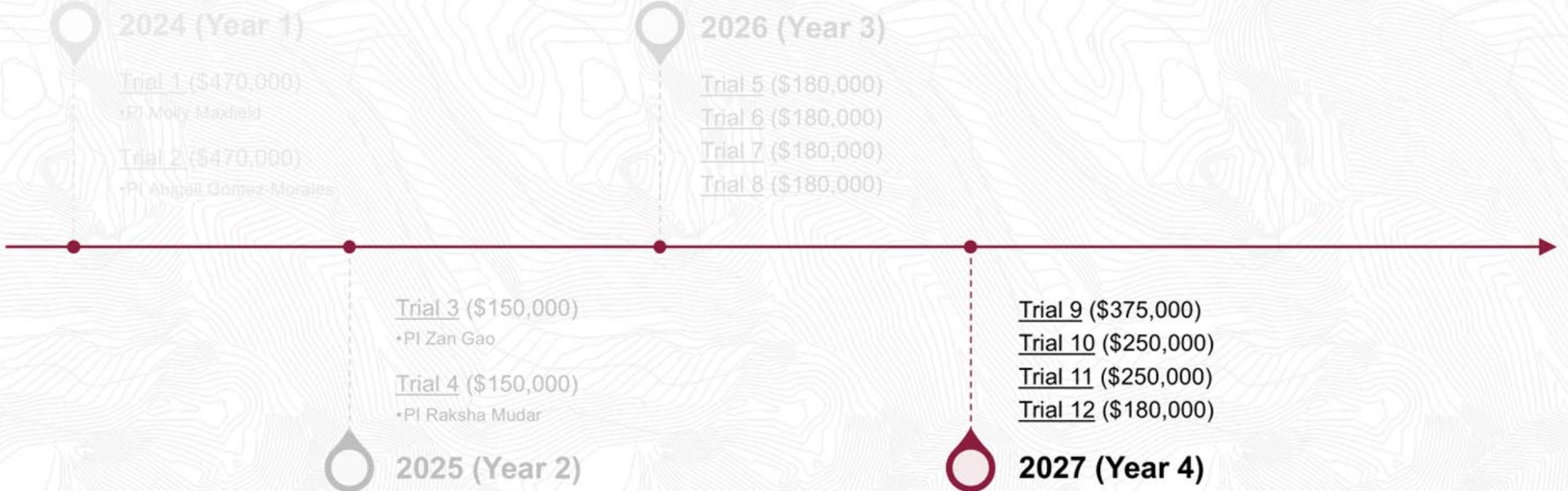
- Physiological Indicators
- Genetic Stability
- Cellular Function and Communication

Conceptual Framework



Note. ADLs: Activities of Daily Living; AD/ADRD: Alzheimer's Disease and Related Dementias (ADRD); ATN: Amyloid, Tau, Neurodegeneration; GFAP: Glial Fibrillary Acidic Protein; PROMs: Patient-Reported Outcome Measures; QoL: Quality of Life.

Funding Timeline





Establishing Mechanisms of Benefit to
Reinforce the Alzheimer's Care Experience

EMBRACE TEAM

EMBRACE Leadership Team



**JOSEPH
GAUGLER**

Center Director

**ANDREA
GILMORE-BYKOVSKIY**

Center Director

**NANCY
HODGSON**

BIDC Co-Lead

**LAURA
GITLIN**

BIDC Co-Lead

EMBRACE MENTORS



**Heather
Allore**
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**Marie
Boltz**
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**Kimberly
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**Sheryl
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**David
Roth**
(Emeritus JHU)

EXTERNAL ADVISORY COMMITTEE



Melissa Riddle
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Alex Rothman
UMN

Jennifer Wolff
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Julie Zissimopoulos
USCPrice

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NYU



SUPPORT

- Investigators testing mechanistically driven dementia care interventions across the NIH Stage Model through resources and consultation

ADVANCE

- Science on mechanisms of action for dementia care interventions in home and community settings

ENGAGE

- With the Roybal Network to foster a vibrant scholarly community engaged in mechanism-driven dementia care research

EMBRACE Resources



Check Out Our Webinars



CLIMBR Checklist

A guide for conducting rigorous mechanistic research with behavioral interventions:

Introducing the Checklist for Investigating Mechanisms in Behavior-Change Research

Jeffrey Birk, PhD
Columbia University



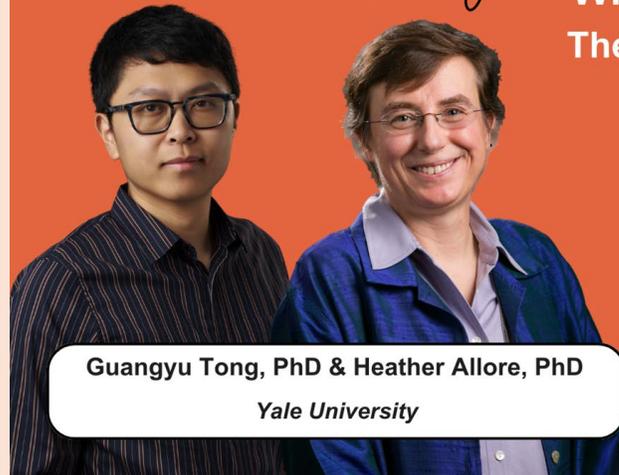
Examining Mechanisms of Intervention Impact Using Statistical Mediation Methods



David Roth, PhD, MA
Professor Emeritus
Johns Hopkins University



Webinar Featuring



Guangyu Tong, PhD & Heather Allore, PhD
Yale University

**What is the Right Dose?
The Role of Heterogeneity in Behavioral and Social Interventions**



Website

UNIVERSITY of WISCONSIN-MADISON

UNIVERSITY OF MINNESOTA



EMBRACE Roybal Center

Establishing Mechanisms of Benefit to Reinforce the Alzheimer's Care Experience AD/ADRD Roybal Center

Home

Our Approach

Our Team

Funded Trials

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Events

Resources

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<https://embraceroybal.wisc.edu/>

EMBRACE Trials





- Test **mechanisms of action** for interventions that target:
 - Individuals living with AD/ADRD
 - Living environment
 - Family/social network/provider
 - Neighborhood/community
- Evaluate **tailored** interventions
- **Home and community** settings

Trial Foci

1. Test **mechanisms of action** for interventions that target:
 - Individuals living with AD/ADRD
 - Living environment
 - Family/social network/provider and/or
 - Neighborhood/community
2. Evaluate **tailored** interventions
3. **Home and community** settings

INTRODUCING OUR INVESTIGATORS



**Manka
Nkimbeng, PhD**

University of
Minnesota

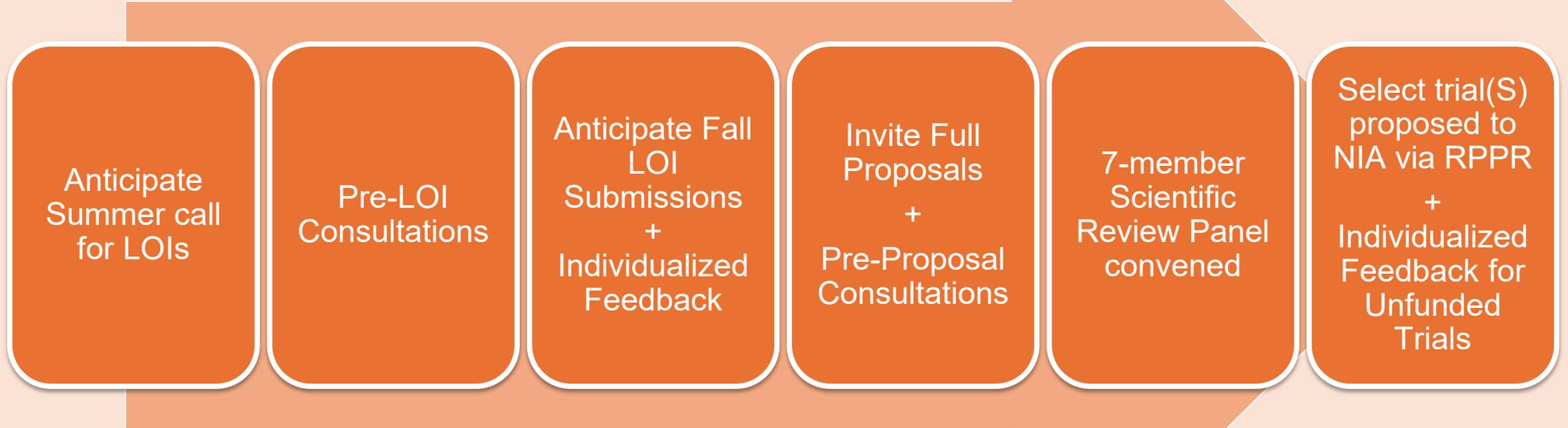


**Elizabeth
Fauth, PhD**

Utah State University

Learn about their EMBRACE-funded research:
<https://embraceroyal.wisc.edu/trials/>

Trial Selection



Grantsmanship Tips

Mechanisms

- Find sensitive mechanism & outcome
 - Alignment of intervention, hypothesized mechanism, and target outcomes
 - Consider: Does mechanism offer causal explanation?

EMBRACE Example Aims
Provided by Elizabeth Fauth, PhD

LOI Aim 1

Determine the efficacy of an online, self-guided ACT for Caregivers program for improving dementia caregivers' mental, physical, and relational wellbeing. We hypothesize that between-persons comparisons (treatment-to-waitlist conditions) and within-person examinations of quantitative and qualitative data will show improved and sustained mental, physical, and relational wellbeing over time.

Final Aim 1

Aim 1 (Fully Powered): Determine the efficacy of an online, self-guided ACT for Caregivers program for improving dementia caregiver psychological distress (CLIMBR: X \rightarrow Y pathway). We hypothesize that treatment-to-waitlist condition (X), will be associated with reductions in psychological distress (Y) over time, pre-to-post intervention, where those in the treatment group will show greater improvements in distress compared to those in the waitlist condition.

LOI Aim 2

Identify how, and to what extent, ACT-related skills work as mechanisms of change in improving mental, physical, and relational wellbeing. We hypothesize that Ecological Momentary Assessment data of individuals' psychological flexibility, the primary mechanism of ACT, will explain changes in mental, physical, and relational wellbeing. Additionally, we hypothesize that qualitative analyses will highlight the use of ACT skills by caregivers (applied in and outside of caregiving challenges) that yield improved wellbeing.

Final Aim 2

Aim 2 (Fully Powered): Determine if and how treatment effects explain changes in psychological flexibility (CLIMBRX: M pathway) and how changes to psychological flexibility account for changes in distress (CLIMBR: M → Y pathway). We hypothesize that caregivers in the treatment group (X) will show improvements in psychological flexibility (M), above and beyond, those in the control group. Further, we hypothesize that these changes to psychological flexibility (M) will account for changes in distress (Y).

LOI Aim 3

Identify caregivers' preferred methods for implementation and dissemination of ACT for Caregivers. This exploratory aim will inform areas to target in future implementation strategies.

Final Aim 3

Aim 3 (Fully Powered): Determine if and how user adherence to the program at time 2 (i.e., number of online sessions completed) is associated with the proposed mechanism, psychological flexibility (at time 3). We hypothesize that, within the treatment group, greater adherence to ACT modules will be associated with greater psychological flexibility (M) and greater improvements in distress (Y).

Important Components

- Make sure your proposal is a good fit for EMBRACE
- Concept counting - consider how many concepts you're introducing and are they the same?
- Anything in Aims should be mentioned in first paragraph
- Provide a clear description of your intervention
- Show your expertise (prior trials with similar techniques, clinical experience, etc.)
- Normalize that strong grants are sharpened by revision - not just wordsmithing

Positioning

- Show how you are positioning yourself for your next grant
- Consider the NIH stage model

Utilize External Support

- Relevant resources: CLIMBR webinar, etc.
- Involve your statistician
- Consider grant peer review or workgroup

Response to Feedback

- Respond to each critique directly and individually
- Be open to suggestions
- Clearly show how you applied the feedback

Questions & Resources

Questions?

Thank you!

ASURoybalCenter:

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