Baltimore Experience Corps Trial and Next-Gen Linkage Data

Michelle C. Carlson, PhD

on Behalf of the Baltimore Experience Corps Team

mcarlso2@jhu.edu. www.thebrainhealthlab.com

Johns Hopkins Bloomberg School of Public Health, Center on Aging and Health, Johns Hopkins School of Nursing

For the Research Centers Collaborative Network

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Disclosures

- Scientific Advisor to NeuroAnimation Inc.

Why Promote Activity in "the Wild"/ Real World?

* *Because we all move each day with purpose*

* *Let's find ways in retirement to reframe and maintain purpose*

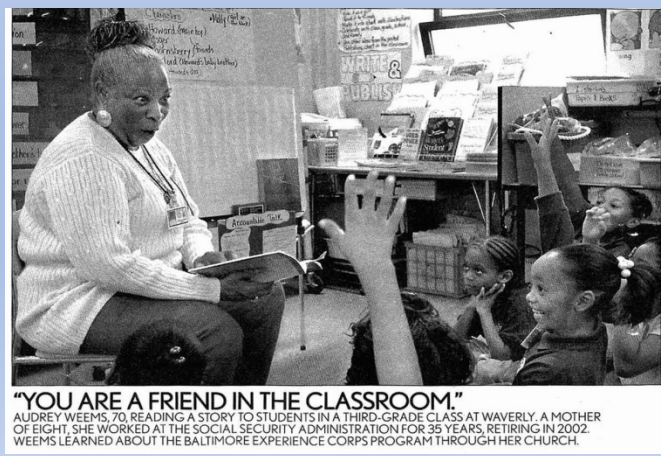
- Incorporate Beneficial Behaviors into Everyday Life
- Multi-modal engagement
  - Physical activity/exercise
  - Cognitive activity
  - Moving with social purpose

Engagement with a Purpose: Experience Corps

-Desire to remain generative & productive

-Harnessing one's lifetime of accumulated wisdom

- Teams of Volunteers 60 and older
- **Social roles**: Serve in public elementary schools: K-3 with teachers, team mates, and children
- **Cognitive roles** to exercise executive function, memory
  - Reading literacy
  - Library support
  - Math support
  - Behavioral support
- ≥15 hours per wk
- **Physical Activity**: Travel to & from schools; walking within schools, stooping into children's chairs
- Sustained dose: full school year



"YOU ARE A FRIEND IN THE CLASSROOM."
AUDREY WEEMS, 70, READING A STORY TO STUDENTS IN A THIRD-GRADE CLASS AT WAVERLY. A MOTHER OF EIGHT, SHE WORKED AT THE SOCIAL SECURITY ADMINISTRATION FOR 35 YEARS, RETIRING IN 2002. WEEMS LEARNED ABOUT THE BALTIMORE EXPERIENCE CORPS PROGRAM THROUGH HER CHURCH.

Freedman & Fried, 1997; Fried et al., 2004;

Fried et al., 2013; Glass et al., 2004

MC Carlson RCCN mcarlso2@jhu.edu

Value of a Model of Generativity: Merging 2 Developmental Needs

- What older adults do affects their health
  - remaining relevant, engaged, & active
  - access to health promotion varies, particularly among those at risk for health disparities
- Teaching children during critical developmental window:
  - Pressing need to close the achievement gap among socioeconomically disadvantaged students
- An aging society can share wisdom & compassion with a generation of young minds:
  - Potential societal “win-win” on both ends of the life course

Baltimore Experience Corps Trial

- Evaluation funded by NIA BSR: initiated in 2006 & concluded in Dec. 2011 (NIA BSR Grant # P01AG027735; Fried, Rebok)
- Randomized:
  - 702 60 yrs. and older to EC or low-activity control
  - Matched 25 public elementary schools with EC to control
- Exposure: 2 years of high-intensity service
- Outcomes:
  - Physical: Disability, mobility, walking speed
  - Cognitive: Memory, executive function
  - Psychosocial well-being
- Nested Brain Health Substudy(N=120)

- Fried LP, Carlson MC, McGill S, et al., Contemp Clin Trials. 2013

Summary of Results of an At-Risk Urban Population of Retired Adults

Baseline Demographics

Age	Sex female	Race % Black	Mean MMSE	Educ ≤HS)	Income <$15,000	Obese BMI>30	Hyperten	Diabetes	Physical Activity (kcal/week)
67	85%	90.4%	28	43%	29%	57%	74%	32%	4175

Observed Intervention-specific and dose-dependent benefits in:

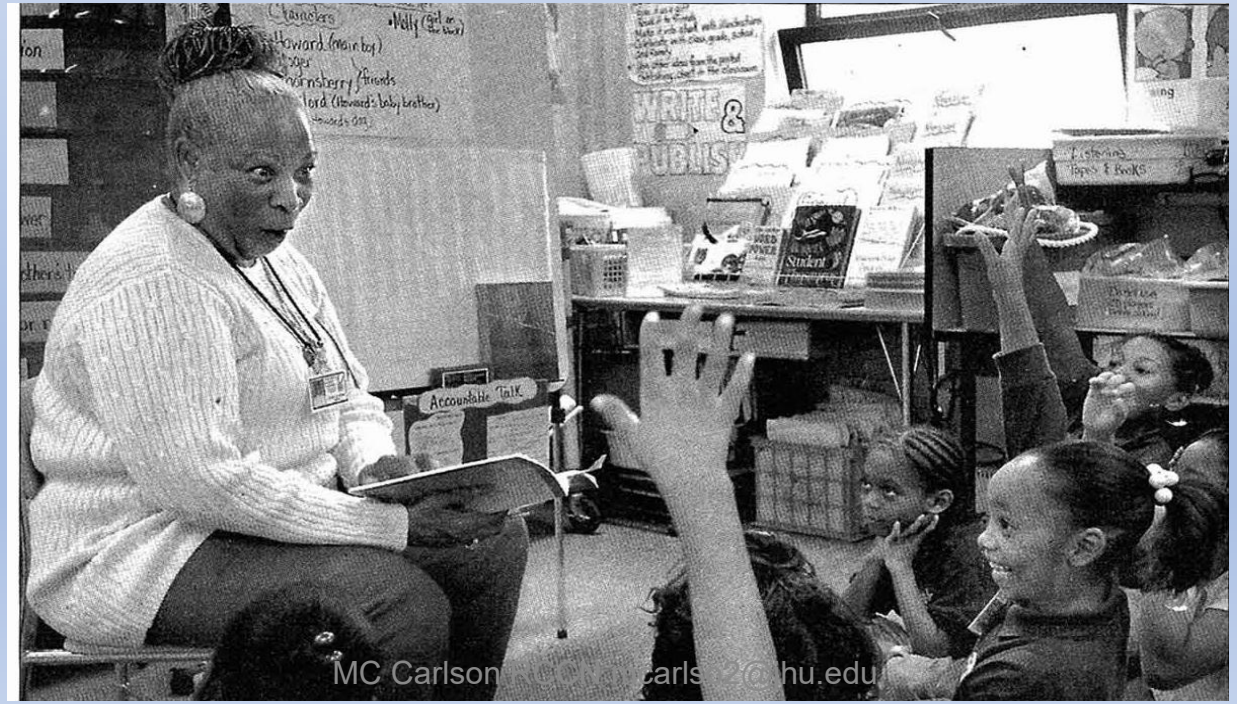
- Generative desire and achievement (Greunewald et al., 2016)
- Overall lifestyle activity, led by Intellectual activity category (Parisi et al., 2015)
- Objective walking activity in women (Varma et al., 2015)
- Speed of processing (Brydges CR, 2020)
- Whole brain volume & hippocampus in men (Carlson et al., 2015)

To give is to receive-- brain benefits

"Volunteering removed the cobwebs from my brain."

"It feels good to be accepted, that **you have worth, value, and wisdom**. That you **made a difference** in the lives of others."

~Experience Corps volunteers



Success Stories of Scale-Up Internationally… But Progress Slow

- collaboration with fellow researcher, Nancy Morrow- Howell to aid AARP in taking mantle of national leadership of implantation across cities in 2011 (post-trial) with some success
- Glasgow, Scotland, led by Louise Brown (2018-2024)
- Japan- REPRINTS program (2015- present)– many publications
- Singapore, China- In development

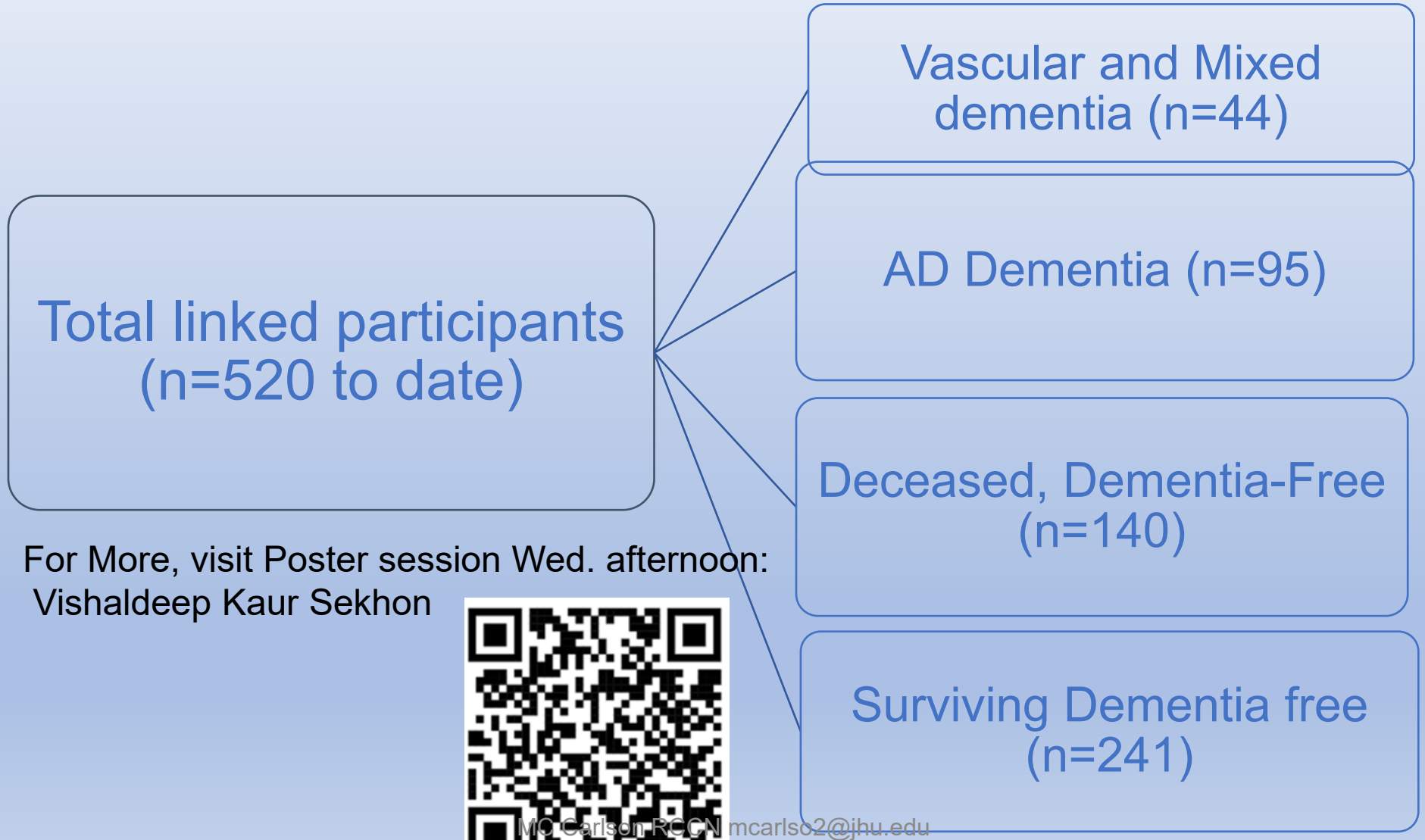
But, Scaling Up Remains a Challenge, particularly in under-resourced settings

- Cost: currently responsibility of each city's school system and resources
  - Need a state or federal line item to provide initial support to prime the pump
- School Infrastructure
- Tool book: 1 week training and role play to prepare volunteers for tutoring children & for acclimating to school environments
- Address and mitigate "age" bias
- Covid restrictions

One Cost-Effectiveness Solution: Examine Long-term Benefits to Health Care 11-15 Years Later (NIA R01AG066153: Carlson)

- **Question:** *Do short-term benefits accrue to lower longer-term risk for dementia and chronic diseases?*

Classifying Dementia Diagnoses Using Medicare and Maryland's Health Data



For More, visit Poster session Wed. afternoon:
Vishaldeep Kaur Sekhon

MC Carlson RCCN mcarlso2@jhu.edu

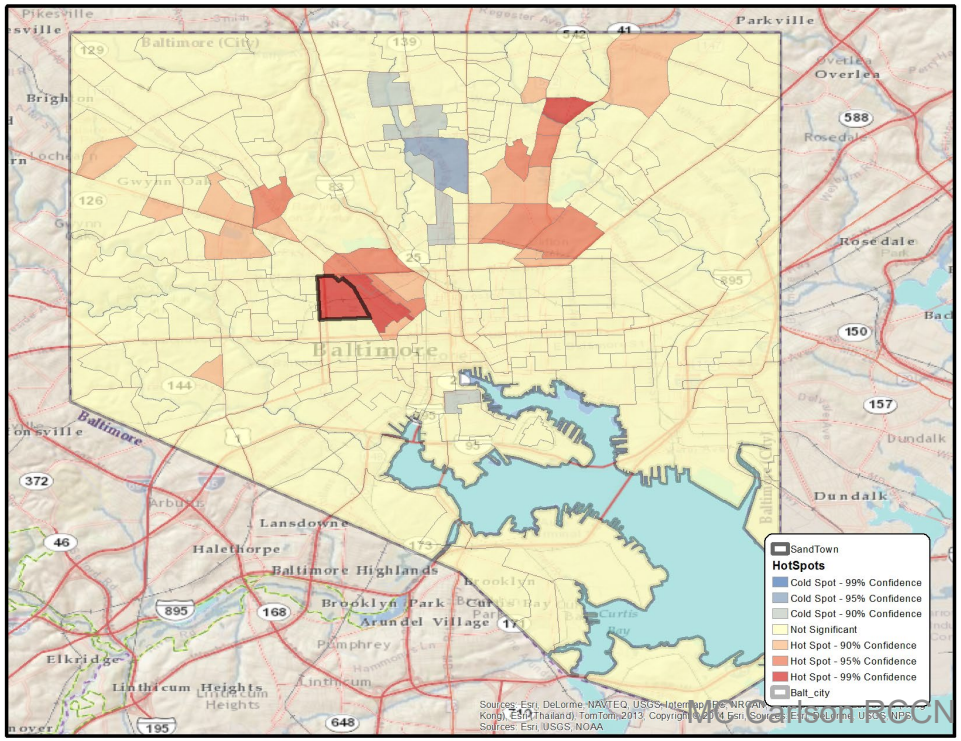
Challenges of Linkage Analyses

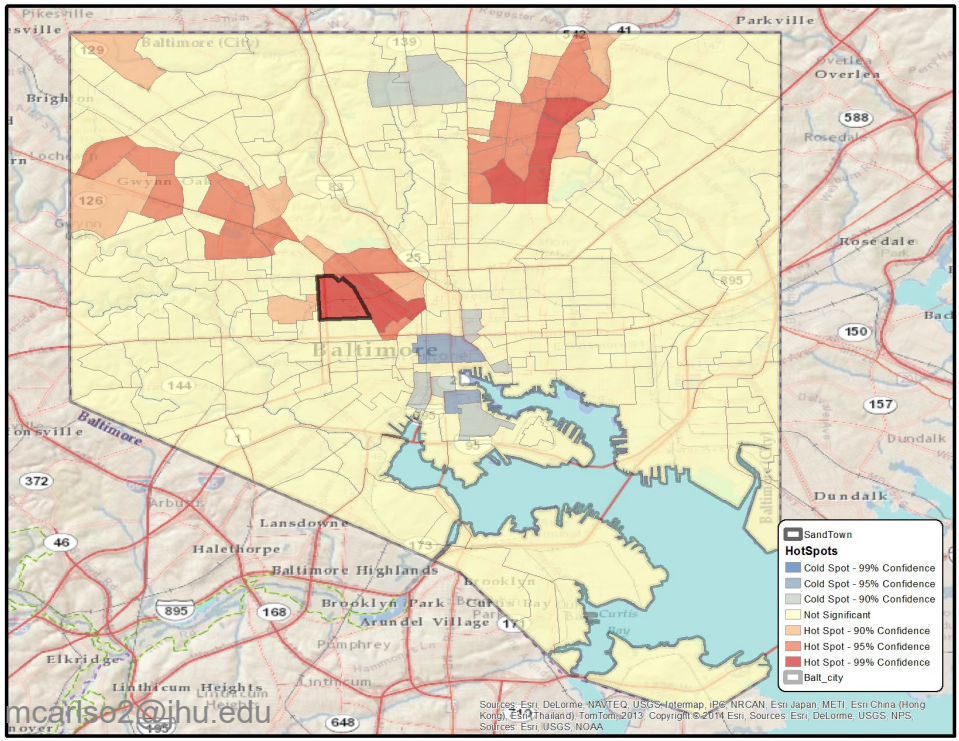
- 4 Cohorts due to rolling recruitment over 4 years (2006-2010)
- 11-15-yrs follow-up: Examine by time periods
  - 5 year, 10 year and 15 year incidence rates
- Recognizing time trends in:
  - ICD dementia and MCI disease coding, clinical guidelines
  - New ADRD drugs on the market
- Power to detect
- Comorbid diseases and potentially related conditions: diabetes, depression, etc.

How Does One's Living Environment Inform Program Benefits?

EC operated in geographically and socially diverse neighborhoods across Baltimore

- Spatially link layers to individual behavior & health & to Identify low-resourced areas with more at-risk individuals where interventions may be targeted





Carlson RCCN mcarlso2@jhu.edu

Opportunities for Leveraging NIA Linkage Data in Cross-Collaboration Analyses

- *Compare Interventions for Effectiveness in Reducing Incident Dementia, Mortality, and Chronic Disease Risks*
- *Do Multi-modal interventions derive equivalent benefits to more focued therapies?*
- *Or, do benefits take time to derive?*

See also: Thursday afternoon poster session

Lifestyle Activities and Incident Dementia from Claims in the Baltimore Experience Corps Study

Kyle D. Moored et al.

Hint: Activity Variety Predicts dementia diagnoses in Linkage Data

MC Carlson RCCN mcarlso2@jhu.edu

It Takes a Village: Experience Corps Research Team and Collaborators

- George Rebok - JHU
- Teresa Seeman - UCLA
- Linda Fried - Columbia U
- Erwin Tan – AARP
- Elizabeth Tanner – JHU
- Vijay Varma – NIA, LBN
- Qian-Li Xue - JHU
- Jeremy Barron - JHU
- Yi-Fang Chuang - Natl Yang Ming U
- Kirk Erickson - U Pittsburgh
- Kevin Frick – JHU
- Alden Gross - JHU
- Tara Gruenewald – USC
- Jin Huang - JHU
- Arthur Kramer - Northeastern U
- Jeanine Parisi - JHU
- William Romani – AARP

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Breanna Crane, BS
Dana Eldreth, PhD
Emily Richards, BA
Patrick Donahue, BA
Thomas Chan, PhD
Kyle Moored, BA
Vijay Varma, PhD
Ryan Andrews, PhD
Yi-Fang Chuang, MD, PhD

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3-D Video Gaming to Simulate Safe Real-World Engagement

Optimizing Cognitive, Environmental and Neuromotor Stimulation (OCEANS)