

Innovation in Data & Measurement in Aging Research

A Collaboration of
CHABLIS@UChicago & **CPHA**@Duke

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DUPRI Seminar Presentation

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- P30 AG066619, *Center for Healthy Aging Behaviors and Longitudinal InvestigationS (CHABLIS)*, UChicago, David Meltzer, M.D., Ph.D. (PI), Kathleen A. Cagney (Core D PI)
- P30 AG034424, *Center for Population Health and Aging (CPHA)*, Scott Lynch, Ph.D. (PI), V. Joseph Hotz, Ph.D. (Core D PI)

Investigators & Staff

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- Sarah Kwiatek, RAISE Project, Duke
- Stephen Smith, Ph.D., Survey and Data Collection Operations, NORC
- Kevin Brown, Ph.D., Survey and Data Collection Operations, NORC

1. **Design data collection & measurement innovations** – *referred to as **Rapid Assessments*** – for existing population- and hospital/clinical-based studies of aging
2. **Conduct Rapid Assessments**, either on **existing studies** within **CPHA** and **CHABLIS** or on **test samples** that mimic such studies
3. **Disseminate and educate** the field on **successes and shortcomings** of **Rapid Assessments** conducted by Collaborative

Advances & Challenges in data collection & measurement in population-based studies of aging

- Collection of biospecimens & measures of health conditions
- Adding admin & electronic health records (EHRs)
- Adding contextual data
- Advancing use of mobile technologies
- Respondent/subject concerns about **confidentiality** of their data
- Declining response rates & challenges to maintaining population-representativeness
- Differential access to & familiarity with mobile technologies, especially among older populations

Existing Studies Represented in Collaborative

- “Activity Space, Social Interaction and Health Trajectories in Later Life (Activity Space),” CHABLIS, Cagney, PI, funded by NIA
- “National Social Life, Health and Aging (NSHAP),” CHABLIS, Waite, PI, Cagney, O’Murcheartaigh, Co-Is, funded by NIA
- “UChicago Medicine Hospitalist Project,” CHABLIS, Meltzer, PI, funded by NIA
- “Using Response Time Data from Social Science Surveys to Model Cognition and Early Alzheimer’s Disease” CHABLIS, Sanders & Waite, PI
- “Add Health Parent Study (AHPS)” CPHA, Hotz, Harris, Pls., funded by NIA.
- “The MURDOCK Study Consenting Project,” CPHA, Hotz, PI
- “Measuring Stress, Well-Being & Connectedness across Two Generations with Mobile Technologies” CPHA, Hotz, Odgers, Pls., funded by NIA
- “Mechanisms Regulating Complex Social Behavior” Duke, Huettel, PI, funded by NIMH
- “Project RAISE,” Duke, Hoyle, PI, funded by NIDA
- “Great Smoky Mountains Study (GSMS),” Copeland, Dodge, Pls, NIMH
- “Great Smoky Mountains Study of Rural Aging(GSMS-RA),” CPHA/CHABLIS, Copeland, Cagney, Dodge, Hotz, Pls, NIA

Guiding Principles & Criteria for Rapid Assessments

- Innovations targeted for studies of aging, especially social & behavioral determinants of health/well-being
- Innovations assessed for scalability, adaptability, & cost-effectiveness
- Innovations assessed in existing studies of aging or with “test” samples with eye toward applicability to in-field, population-based studies
- Innovations assessed will not be resource-intensive & assessments will be completed quickly (1 year)

Guiding Principles & Criteria for Rapid Assessments (cont.)

- Prioritize use of mobile and “new” technologies in data collection
- Assess issues of sample recruitment & respondent/subject consenting
- Disseminate findings from our Rapid Assessments quickly and widely to a broad-based research community
- Train next generation of researchers and data collection professionals through training institutes & workshops

1. *Bringing Lab-based Neuroscience Measurement to Social Science Surveys*

- Assess feasibility of using lab-based measurements of cognitive processing & decision-making to field studies
- Measures:
 - Response Time (RT); Eye Tracking; Mouse Tracking; others
 - All have been used in lab setting to measure cognitive functioning/processing in decision contexts
- Investigators: Huettel, Sanders, Cagney, Hotz, Florey Eischen
- Design of Assessment underway

2. *Assessing Alternative Strategies for Consenting for Administrative Data Linkages*

- Admin records (Medicare, SS earnings) & EHRs key source of data for wide range of studies of aging
- Often linked to population- & community-based studies
- Such linking usually requires **informed consent**. Failure to obtain it can complicate coverage & representativeness of studies
- Rapid Assessment:
 - Sample of participants in on-going **UChicago Medicine Hospitalist Project** (Meltzer, PI)
 - Assess alternative ways of obtaining consent based on predictive models of “willingness to consent” drawing on findings in **MURDOCH Study of Consent**
- Investigators: **Meltzer, Cagney, Hotz**
- Initial planning has begun

3. *Examining Daily Activity Space in Rural and Non-Rural Settings: A Feasibility Study*

- Rapid Assessment of the feasibility of examining the **daily activity space** of individuals **and measures of overall well-being** in **rural & non-rural settings**
- Almost all studies of activity space have been **in urban environments**. Increasingly, tracking done with mobile devices (smartphones)
- Smartphones also increasingly used to conduct **Ecological Momentary Assessments** (EMA) to obtain high-frequency measures of behaviors, mood, affect & overall well-being

3. *Examining Daily Activity Space in Rural and Non-Rural Settings: A Feasibility Study (cont.)*

- Important question is how activity spaces and momentary well-being differs in **rural & non-rural** (urban) **environments**
- Is it feasible to reliably conduct comparable studies in rural environments, using same protocols?
- Can one conduct these studies with individuals' own mobile devices?
- Will compliance to intensive protocols (EMA 3 x a day for 7 days & continuous monitoring of individuals' geo-spatial locations) be the same?
- Can you conduct study during COVID-19 pandemic, following “no physical contact” protocols?

Rapid Dissemination and Education Plan

- Open Science Framework archive
- Seminars
- Workshops
- Professional Association Meetings
- NIH funded networks and other professional networks
- Extensive use of web and ancillary social media, including video and podcasting
- Outreach to survey and contract research organizations
- Summer Institute

We are interested in your suggestions!

- Please send any **suggestions/ideas** for areas of innovation and their rapid assessment to:
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