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)
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• Wanda Burns, Center for Child & Family Policy, Duke
• Sarah Kwiatek, RAISE Project, Duke
• Stephen Smith, Ph.D., Survey and Data Collection Operations, NORC
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Aims

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, PIs., 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, PIs., 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, PIs, NIMH
- "Great Smoky Mountains Study of Rural Aging(GSMS-RA),” CPHA/CHABLIS, Copeland, Cagney, Dodge, Hotz, PIs, 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 reliability 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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