CATSLife Meeting, Monday July 25, 2016

1pm - 3pm (MDT)

updates/corrections added August 1, 2016

Present: Chandra Reynolds, Sally Wadsworth, John DeFries, John Hewitt, Mike Stallings, Soo Rhee, Naomi Friedman, Andy Smolen, Robin Corley, Corinne Gunn, Amy Ledbetter; Saskia Selzam, Liz Munoz, & Paige Trubenstein.

Agenda

1. Project updates
   1. Open floor for project updates
   2. Administrative supplement submitted June 28th [pending internal review]

Minority supplement now is an F32 to be submitted Aug 5th (Liz Munoz)

* 1. Geocoding/GIS progress
  2. Data management/Wiki updates
  3. New project proposals

1. Data collection updates
   1. Participant testing, other updates
   2. DNA genotyping/Blood Sample updates
2. Upcoming gerontology meetings (see www.geron.org)
   1. GSA 2016 – New Orleans, November 16-20, 2016
      1. Late Breaker Poster, Submission Deadline: Sept 13, 2016
   2. GSA/IAGG 2017 – San Francisco, CA, July 23-27, 2017
      1. Three abstracts submitted for regular sessions
      2. Late Breaker Session, Submission Deadline: Feb 15, 2017

Group meetings July 26th - 29th

Geocoding, GIS: Tues 7/26 1-2pm

Robin, Soo, Corinne, Chandra & Liz and Paige via Skype

Brett discussed geocoding interests with Sally & Chandra Friday 7/27

CATSLife wiki updates, data management: Tues 7/26 2 - 3pm

Robin, Soo, Corinne, Amy, Sally, Chandra

CATSLife data collection (updates, planning): Weds 7/27 1-2pm

Corinne, Amy, Sally, Chandra

Longitudinal Cognitive data: Wed 7/27 2-3pm

Robin, Naomi, Mike, Chandra, Corinne & Annie

--creating comparable scores within & across CAP, LTS (e.g., WISC-R, WAIS)

--EF data coding (variability)

Other topics, TBA

Current projects, progress and planning 🡪 discussed Friday 7/27 1:30-2:15

Brett, Sally & Chandra

DNA, blood sample preps (data management, planning) 🡪 discussed at end of team meeting, plan for assays.

**Meeting summary**

1. Project updates
   1. Open floor for project updates
      1. Brett's summary was presented (see appended summary — if any feedback, contact Brett)
      2. Mike's projects include collaboration on some discussed on Brett's list. A main project on cannabis use considers desisted versus persistent users, and examines delay in adult transitions. While Naomi will be looking at cannabis use and cognition she won't be considering transitions in the same way, or with these categories, so Mike may add this to his project.
      3. Soo and her group are working mainly on LTS projects with coded data from the last grant. Soo's student Carrie is considering a dissertation with CAP looking at early predictors of substance use with outcomes at age 23.
      4. Naomi and her group are looking at Internalizing and Externalizing and EF at ages 17 and/or 23.
      5. Saskia Selzam from Robert's group is looking at GWAS for age-related disorders and calculating polygenic risk scores for use with a variety of risk scores. Chandra will bring up Saskia’s project at next IGEMS consortia phone meeting to see if there are any other studies that could be useful.
      6. Neighborhood stress and cognition, brief discussion. Liz has explored the early life neighborhood items in CATSLife, but this was not part of the GSA 2017 abstract that focused so far on the CAP ARRA data using the self-reported neighborhood measure.
      7. John DeFries asked about APOE-cognition analyses and whether results differ using 1 sibling per family given the limited within-family df. John and Chandra will meet to go over further; meanwhile initial examinations selecting 1 sibling suggested that the standard errors were larger, and some of the p-values weakened, but patterns were still the same.
   2. Supplements:
      1. Chandra updated group on the administrative supplement submission 6/28/16. It was good timing per PO Jon King for end of fiscal year. The supplement brings in Marty Sliwinski of Penn State who has developed the cell phone apps.
      2. Liz updated plans for a F32 mechanism as diversity supplement mechanism not applicable any longer through NIA. She discussed neighborhood geocoding plans across CATSLife and ESCAPE and the subjective neighborhood measures across these studies plus MIDUS II.
   3. Geocoding:
      1. Chandra described ESRI discussions regarding practicalities of working across site and ethics issues. ESRI is the maker of ArcGIS software geocoding tools. They offer offline software to do the lat/long here at IBG (StreetMap) and all other ESRI geocoding software can likewise be set up offline at UCR's end. IRB amendment at UCR to do geocoding with this software and with SocialExplorer and SimplyMaps.
      2. Paige T mentioned her work in the ArcGIS intensive course; she is gathering up materials including maps, starting with Colorado. Course ends Aug 5th. Materials and software will be discussed further in the geocoding meeting.
   4. CAP data management/wiki.
      1. Robin suggested that perhaps there should be a CAP data dump accessible via the CATSLife wiki. This would support current projects and project developments (e.g. Soo's student Carrie).
      2. Robin and Mike mentioned that there is Affy chip data imputed up to 1000 genomes for 213-300 LTS and 60 CAP participants. Imputed data contains 48 million SNPs and their with MAF > .02 is 9 million SNPs. These could be made available ahead of the CATSLife chip genotyping which has not yet been sent to UCLA.
      3. Project manuscripts need to be updated on the CATSLife wiki. There are more manuscripts citing the grant that are now listed on PubMed and NIHMS (Soo was able to find more than on wiki). Sally & Chandra need to be aware of manuscripts, as NIHMS is not always notifying them (typically one and not both PIs are notified and sometimes neither are notified).
   5. New project proposals
      1. Brett and others interested to pursue UK biobank sample for replication work. Requires filling out detailed application.
2. Data collection updates
   1. Participant testing. As of end of July the data collection has occurred for 239 LTS and 129 CAP. CAP participants more reluctant to participate. A newsletter may help to recruit. This will be discussed further in the data collection/planning meeting.
   2. DNA genotyping/Blood Sample updates. All proceeding with CTRC, and sample storage. We are getting 1 plasma, 2 serum, 1 buffy coat and salvia for each participant. Clear majority of participants are agreeing to the blood sampling, with fasting.
      1. Andy prepping and plating existing DNA. Needs additional approvals to work with blood.
      2. December 1st target to send first round for Psych Chip genotyping at UCLA
         1. Twins plated separately, otherwise the samples will be placed to avoid batch effects, etc.
      3. November 1st target for 1st 400 biomarker assays at ic42. Requires some paperwork/approvals to do work. Andy does not foresee a problem.
3. Upcoming gerontology meetings (see www.geron.org)
   1. GSA 2016 – New Orleans, November 16-20, 2016
      1. Late Breaker Poster, Submission Deadline: Sept 13, 2016
         1. Plan on submission to introduce CATSLife
         2. Considered a pilot analysis of APOE & AD polygenic risk scores and hippocampal volume but effects size for the polygenic risk varies in the lit, but if ~.2% may not be enough power
         3. Brett or Saskia’s work may be relevant/timely
   2. GSA/IAGG 2017 – San Francisco, CA, July 23-27, 2017
      1. Three abstracts submitted for regular sessions
         1. APOE & Cognition, Activities & Cognition, Neighborhood Stress & Cognition
      2. Late Breaker Session, Submission Deadline: Feb 15, 2017
         1. Brett or Saskia’s work may be relevant/timely
4. Meeting times of subgroup topics mentioned, and all welcomed.

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HABESTICK BC

*Manuscripts In Preparation*

***Genetic and environmental influences on five blood pressure measures among early middle aged adults (in preparation)*.** Haberstick BC, Lessem JM, Wadsworth S, Corely RP, Stallings MC, + others

This manuscript will report the heritability of diastolic, systolic, mean arterial pressure, pulse pressure and hypertension among adults 32 to 38 years of age in the Add Health sample. CATSLife subjects can be added into this analysis or be reported in a separate manuscript. Previous literature has highlighted some degree of genetic overlap on various blood pressure measures and this manuscript will explore those relationships. These measures can then associated with other health phenotypes

***Hypertension and the DRD5 di-nucleotide repeat polymorphism (in preparation).*** Haberstick BC, Smolen, A, Stetler G, Lessem JM, Wadsworth S, Stallings MC, + others

At Wave IV, the di-nucleotide repeat was genotypes in the full Add Health sample. This resulted in over 12,000 genotypes and represents the largest characterization of this polymorphism. Consistent and a growing animal literature suggests that DRD5 receptor functioning is associated with hypertension. Dopaminergic functioning in the renal system is primarily modulated by the DRD5 receptor. To date, the DRD5 di-nucleotide repeat has not been examined. We will conduct our analyses using a quantitative measure of hypertension in full-sample and a QTDT test among siblings for replication testing.

***Genetic and environmental influences on the Big Five personality domains as assessed by the Mini-IPIP (in preparation).*** Haberstick BC, Stallings MC, Corely RP, Wasdsworth S, + others

This manuscript will report the magnitude of heritable and environmental influences on the big five personality domains of extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience as measured by the items from the International Personality Item Pool (IPIP). This will be the first study of its kind. As these same items have been assessed in the Family Transitions Project (FTP, Conger), we are considering conducting a GCTA analysis using whole-genome snp data to determine a snp-based heritability.

***Genetic influences on attention problems at home and school: A twin study of stability during middle childhood and early adolescence.*** Haberstick BC, Young SE, Wadsworth S, Friedman N, Stallings MC, Hewitt JK, + others

This manuscript explores the extent genetic and environmental influences are common or transmitted across ages. Developmentally and within both settings, stability was due largely to the contribution of common genetic effects and child-specific environmental experiences differed between the home and school settings in how they exerted their influence.

**Six-year outcomes of treatment based adolescents in young adulthood.** Haberstick BC, Stallings MC, Hopfer CJ, Corley RP, Wadsworth S, + others

This manuscript will report relationships between employment, relationship status, health status, and drug use during young adulthood of subjects assessed at Wave 1 in the CADD study. This work will be done in conjunction with medical students at the Anschutz Medial Campus.

*Short-term goals for analyses/manuscripts:*

Other avenues that I would like to pursue more of is to determine what phenotypes we might be able to examine in conjunction with data that is available from the UK BioBank in addition to the Add Health samples. My thoughts are that using snp-based genetic information in the CATSLife samples will be aided by replication or extension studies in these two other samples. I would like to build off of the blood pressure phenotypes but also look at other health related outcomes/measures.