Introduction to NIAGADS

ADC Director's Meeting Spring 2014

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Principal Investigator

NIA Genetics of Alzheimer's Disease Data Storage Site

University of Pennsylvania Perelman School of Medicine

U24-AG041689

Perelman School of Medicine University of Pennsylvania

Institute for Biomedical Informatics

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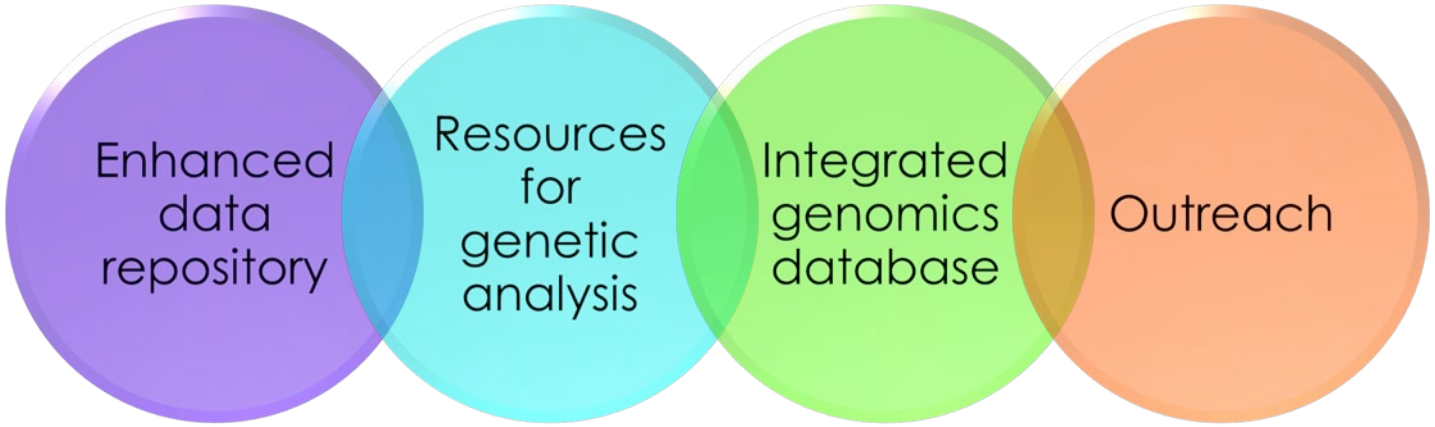
NIAGADS Objectives

One-step data access portal and community resource for AD genetics research

- Supported by NIA cooperative agreement U24-AG041689
- Facilitate data sharing, reanalysis, and collaboration
- Post-GWAS: integration to functional genomics knowledge and data
- Path to therapeutic discovery



NIAGADS

Datasets

- We currently host 26 datasets with 42,531 subjects and 29.5 billion genotypes
- Most of ADGC1 data are available for download; cohort PIs are committed to make data available at NIAGADS
- Secondary data
  - ADGC GWAS summary statistics
  - Imputation data
  - Quality control and population structure
- Data portal for ADNI WGS data (Summer 2014). Login with your ADNI account to download VCF and BAM files

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AD Sequencing Project

adsp
Alzheimer's Disease Sequencing Project

- Announced in Feb. 2012
- Participants
  - NIA, NHGRI
  - ADGC and CHARGE
  - Large-Scale Genome Sequencing and Analysis Centers (Broad/Baylor/WashU)
  - NACC (phenotype) and NCRAD (sample)
  - NIAGADS (data coordinating center)
  - NCBI dbGaP/SRA
- Visit ADSP website www.niagads.org/adsp to learn about study design, apply for data access, download data
- WGS data of 584 subjects available from our ADSP data portal
- Applications will be reviewed by NIH DAC and NIAGADS DUC for secondary data sharing

Photo from http://nihrecord.od.nih.gov/newsletters/2012/03_02_2012/story5.htm

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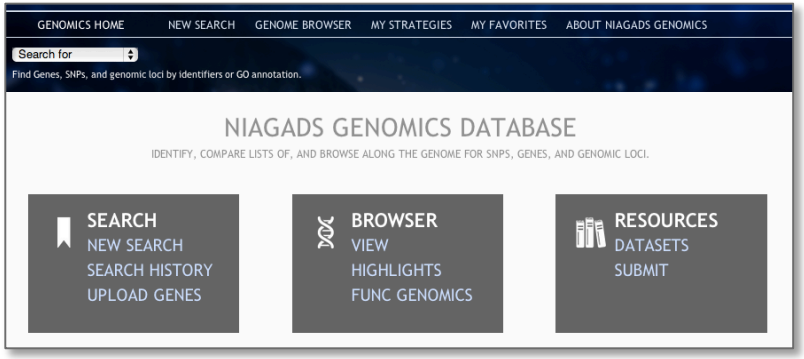
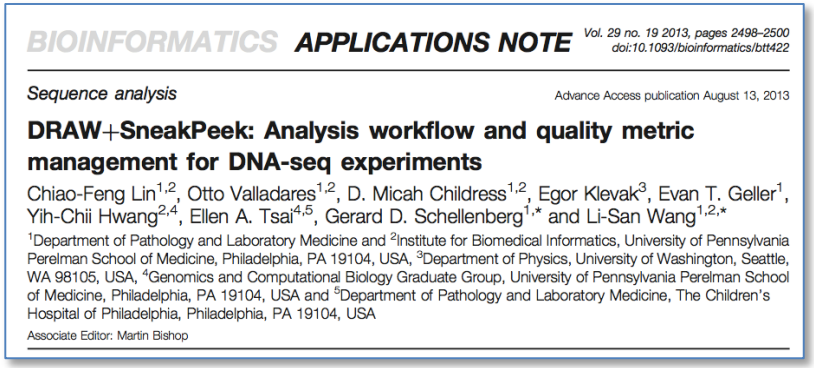
Resources

- **NIAGADS Genomics Database**
  - Query top SNPs and view gene and pathway annotations
  - Jbrowse genomic browser interface
- **DRAW**: DNA-Seq analysis on Amazon Cloud (onsite demo)
- ADGC GWAS analysis best practices and workflow (forthcoming)



amazon web services



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Sequence analysis Advance Access publication August 13, 2013

DRAW+SneakPeek: Analysis workflow and quality metric management for DNA-seq experiments

Chiao-Feng Lin[1,2], Otto Valladares[1,2], D. Micah Childress[1,2], Egor Klevak[3], Evan T. Geller[1], Yih-Chii Hwang[2,4], Ellen A. Tsai[4,5], Gerard D. Schellenberg[1,*] and Li-San Wang[1,2,*]

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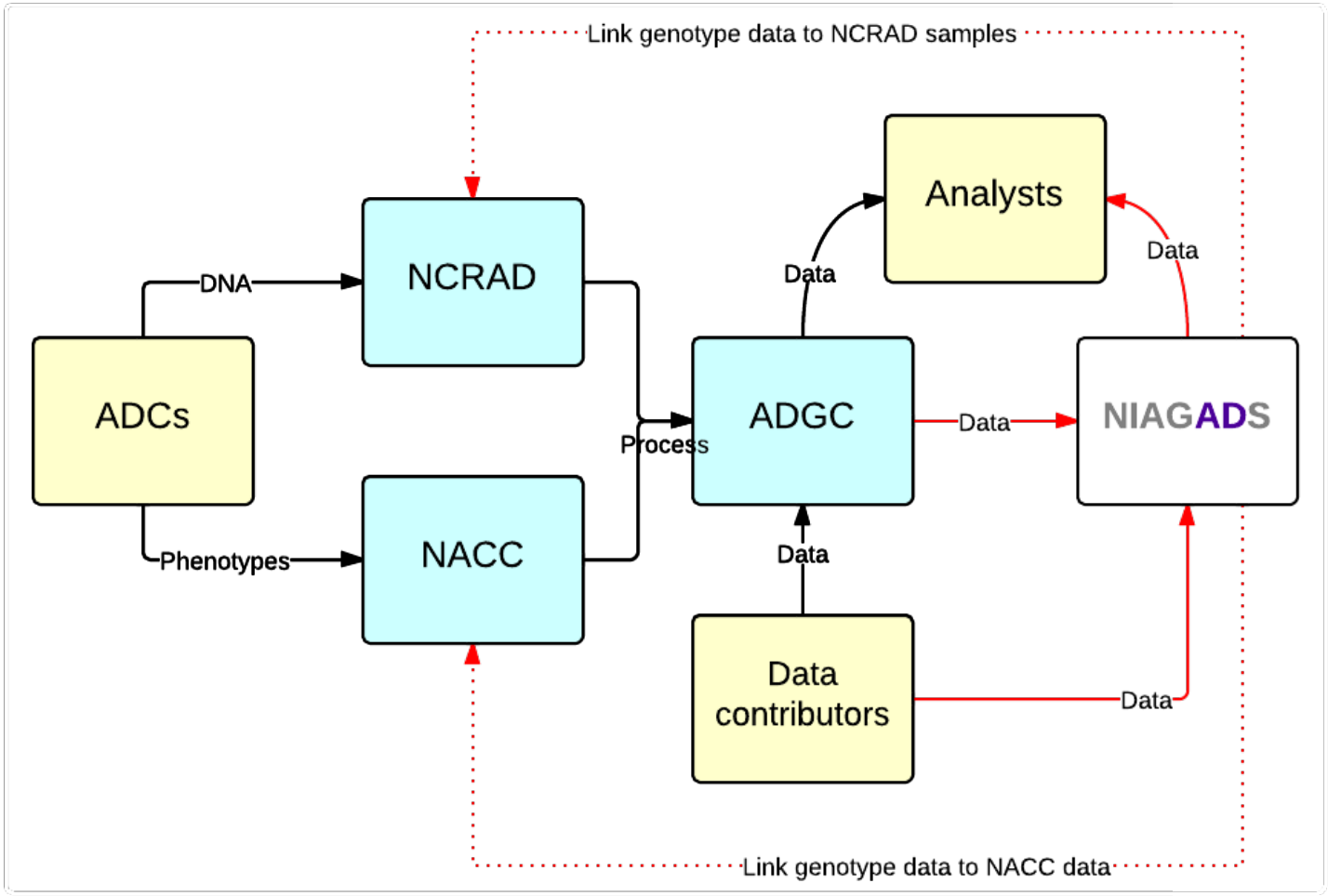
NIAGADS and AD Genetics Resources



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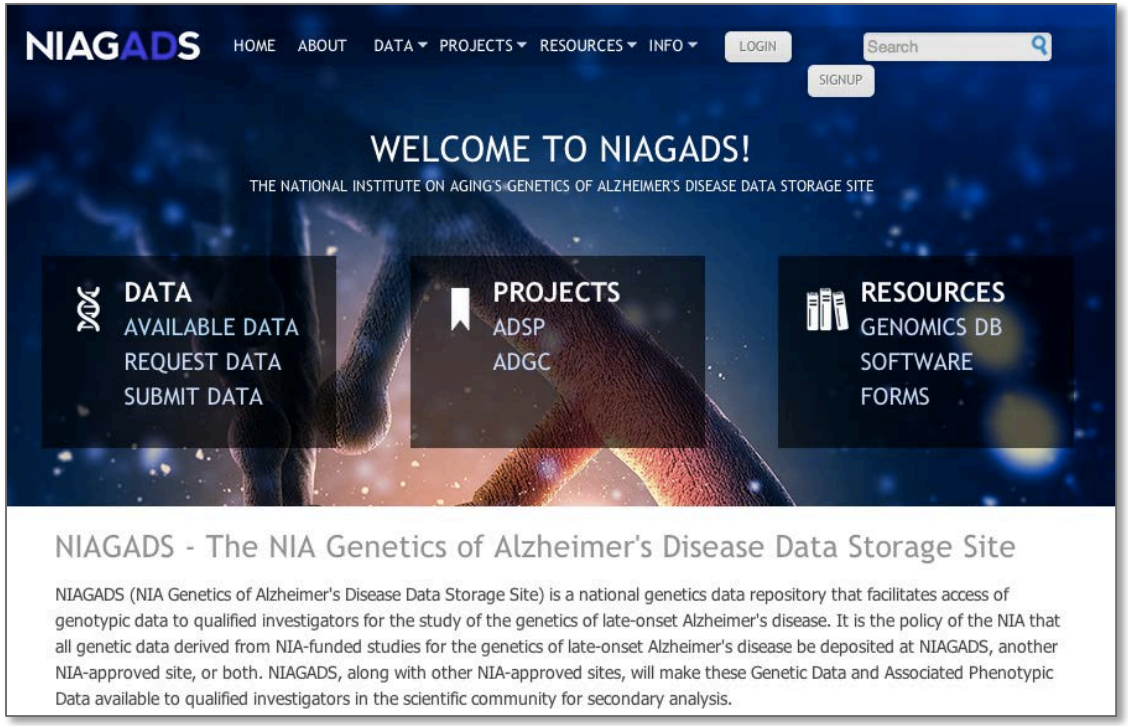
- Visit our website at www.niagads.org



- We would like to visit your center to introduce NIAGADS and talk with your team to see how we can help

- **Let us know what features you would like to see**

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