Alzheimer's Disease Genetics Global Symposium:
Pathway to Translation

Supported by the Alzheimer's Association and the National Institute on Aging

Virtual Conference
July 25, 2021 — On-demand webinars become available
Sept. 1, 2021 — Live Q&A discussion

Welcome
Margaret A. Pericak-Vance, Ph.D., organizing committee

Overview
Maria Carrillo, Ph.D., Alzheimer’s Association
Alzheimer’s Association Impact on Global Research: Fueling Discovery at Any Given Moment

Francis Collins, M.D., Ph.D., National Institute on Aging
Alzheimer’s Genes to Drugs: Getting the Translation Right

Session 1: Genetics: Discovery and Risk Scores
Lead: Elizabeth Blue, Ph.D.
• Identification of risk variants: The how and why behind deciding validated risk variants.
• Using genetic ancestry to identify risk-variants specific to ethnically diverse populations.
• Combining information across loci using genetic risk scores (GRS) or polygenic risk scores (PRS).

Introduction: Elizabeth Blue, Ph.D.

Keynote: Julie Williams, B.Sc., Ph.D.
How Can the Genetic Architecture of AD Inform Disease Mechanism?

Jeffery Vance, M.D., Ph.D.
APOE4, Ancestry and Clinical Implications

Giuseppe Tosto, M.D., Ph.D.
Polygenic Risk Scores for AD: Applications and Optimization for Diverse Populations
Sudha Seshadri, M.D.
Endophenotypes Provide Novel Insight into the Genetics of Alzheimer's Disease

Amit Khera, M.D., M.Sc.
Human Genetics of Cardiometabolic Disease

David Pulford, Ph.D.
Genetics in Drug Discovery: Cognitive Decline in Alzheimer’s Disease

Session 2: Genes and the Environment Across Populations
Lead: Jonathan Haines, Ph.D.
- Environmental risk factors and interventions.
- Gene X environment interactions.

Introduction: Jonathan Haines, Ph.D.

Keynote: Rufus Akinyemi, M.B.B.S., M.Sc., Ph.D., M.W.A.C.P., F.M.C.P.
The Epidemiology and Genetics of AD in Africa

Richard Mayeux, M.D., M.Sc.
The Comorbid Effects of Cerebrovascular Disease and Genetic Risk in AD

Ralph Sacco, M.D, M.S., F.A.H.A., F.A.A.N.
Vascular Risk Factors and Cognitive Decline in Diverse Populations

Kristine Yaffe, M.D.
Modifiable Risk Factors for ADRD

Jinkook Lee Ph.D.
Harmonized Diagnostic Assessment: The Longitudinal Aging Study in India

Eden Martin, Ph.D.
Sex Differences in Alzheimer’s Disease and Implications for Precision Medicine
Session 3: Biomarkers and Endophenotypes
Lead: Richard Mayeux, M.D., M.Sc.
• Application in a clinical setting.
• Consideration of ancestry.
• Biomarkers really point to precision medicine because they can help lead to diagnosis of AD vs. other.

Introduction: Richard Mayeux, M.D., M.Sc.

Keynote: Peter St George-Hyslop, M.D.
TREM2 and sTREM2 Signalling in Microglia

Henrik Zetterberg, M.D., Ph.D.
Update on Fluid Biomarkers for Neurodegenerative Diseases

Jeff Dage, Ph.D.
Measuring Phosphorylated Tau in Blood as a Biomarker for Alzheimer's Disease

Yakeel Quiroz-Gaviria, Ph.D.
Imaging and Blood Biomarkers in the Colombian Kindred with Autosomal Dominant AD

Christian Haass, Ph.D.
Modulation of Protective Microglial Activities in Alzheimer's Disease

Nathan Price, Ph.D.
Mechanistic and Dynamic Systems Modeling of Alzheimer's Disease Across Lifespan

Allan Levey, M.D., Ph.D.
Brain Proteomics Therapeutic Target and Biomarker Discovery

Beau Ances, M.D. M.Sc., Ph.D.
Gut Microbiome Alterations Associated with Alzheimer's Disease

Session 4: Towards Precision Medicine
Lead: Eric McDade, D.O.
• Patient perspectives and impact.
• Current applications.
• Development of ADRD approaches.

Introduction: Eric McDade, D.O.
Keynote: Phil De Jager, M.D., Ph.D.
Multi-Scale Data Integration to Transition Genetic Associations to Therapeutics

Cornelia Van Duijn, Ph.D.
Bridging the Gap Between Genetic Research and Prevention

Robin Bennett, M.S., C.G.C., Ph.D.
Genetic Counseling and Testing for Alzheimer’s Disease: A View from the Trenches

Stephanie Malia Fullerton, D.Phil.
From Gene Discovery to Clinical Translation: Ethical and Social Implications

Bruce Lamb, Ph.D.
Understanding Neuroimmune Biology and Targets in AD Through MODEL-AD and TREAT-AD

Ralph Minter, Ph.D., F.R.S.B.
Finding Novel Targets Via Antibody Repertoire Analysis of Resilient Patients

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Session 5: Therapeutic Targets
Lead: Carlos Cruchaga, Ph.D.
- Functional mapping.
- Druggable targets.
- Clinical trials.

Introduction: Carlos Cruchaga, Ph.D.

Keynote: Brian Traynor, M.D., Ph.D.
Using Genomics to Identify Therapeutic Targets for Non-Alzheimer’s Dementias

Rudy Tanzi, Ph.D.
Targeting Innate Immunity in Alzheimer’s Disease

Hervé Rhinn, Ph.D.
Genetically-Defined Therapies for Neurodegenerative Disorders

Ralph Nixon, M.D., Ph.D.
Pathways to Endosome Dysfunction in Alzheimer’s Disease
John “Keoni” S.K. Kauwe III, Ph.D.
-Omics Analysis to Small Molecule Drug Development: RAB10 and NEK7

Paul Thompson, Ph.D.
Artificial Intelligence Approaches for Discovery in Alzheimer’s Disease
Biobanks

Eric McDade, D.O.
Targeting Pre-Symptomatic AD Using Autosomal Dominant AD

Janna Hutz, Ph.D.
Maximizing the Application of Human Genetics for AD Drug Discovery

Summary
Badri Vardarajan, Ph.D., organizing committee