News, Literature, and Events in Braingenethics

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Braingenethics Update

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In the Literature

Defining Personal Utility in Genomics: A Delphi Study
Jennifer N Kohler et al.
Personal genomic sequences have value to patients outside of their clinical utility. This value can be described as “personal utility.” This study systematically identifies elements of personal utility, which may be used to anticipate patient expectation and inform genetic counseling prior to screening.

Antidepressant Pharmacogenetics
Ajeet B. Singh & Chad A. Bousman
The search for clinically useful genomic biomarkers for psychiatric conditions has been disappointing thus far. Marshe et al. (see here) add to the evidence base for genetic treatment biomarkers in

Genetics of Intelligence

In ‘Enormous Success,’ Scientists Tie 52 Genes to Human Intelligence
Carl Zimmer
Using a genome-wide association meta-analysis, a team of American and European researchers identified 52 genes influencing (but not determinative of) intelligence in 78,308 people. The identified genes (3 loci and 12 genes confirmed, 15 loci and 40 new genes discovered) were predominantly expressed in brain tissue, are involved in regulating cell development, and show genetic overlap with several neuropsychiatric and metabolic disorders.

antidepressant prescribing.

Genome-wide Mediation Analysis of Psychiatric and Cognitive Traits Through Imaging Phenotypes

Xuan Bi et al.

The Philadelphia Neurodevelopmental Cohort was investigated using genome-wide association studies (GWAS) and mediation analyses, where neuroimaging phenotypes were utilized as intermediate variables. Mediation analyses were employed to understand the mechanisms in which genetic variants have influence on pathological behaviors implicitly through neuroimaging phenotypes, and identified SNPs that would not be detected otherwise.

Norepinephrine Transporter Gene Variants and Remission From Depression with Venlafaxine Treatment in Older Adults

Victoria S. Marshe et al.

The function of five gene variants was investigated in a study of 350 adults with major depressive disorder. The NET variant rs2242446 (C/C genotype) was significantly associated with remission, indicating that the variant may serve as a biomarker to predict the likelihood of remission in older adults with major depression, especially with the use of certain serotonin and norepinephrine inhibiting antidepressants.

In The Media

Canada's iTARGET Consortium Aims to Develop Multi-Omics-Based Diagnostic Tools for Autism

Elizabeth Newbern

Canada's Individualized Treatments for Autism Recovery using Genetic-Environment Targets (iTARGET) Consortium aims to develop omics-

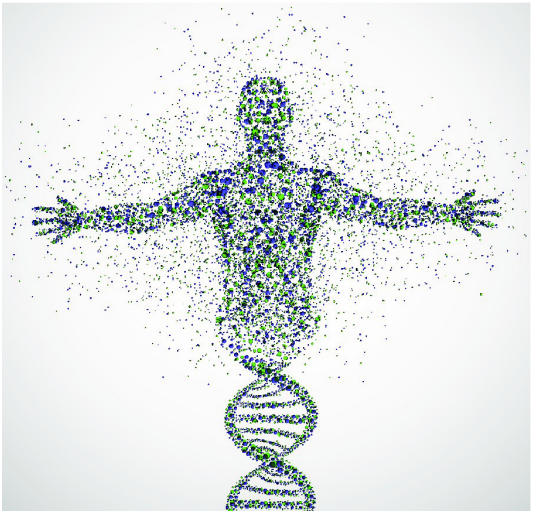
The original article in *Nature*:
Genome-wide Association Meta-analysis of 78,308 Individuals Identifies New Loci and Genes Influencing Human Intelligence

Read the Hastings Center Special Report on *The Genetics of Intelligence*, edited by CEER Director Paul Apelbaum and Hastings Center Senior Research Scholar Erik Parens.

Heritability of Working in a Creative Profession

Mark Patrick Roeling et al.

Creativity has a strong cognitive component, and correlates strongly with intelligence. There is ample evidence of genetic influence, but less supporting its heritability. This study of self-reported data found creativity to be about 70% heritable.



In the Literature, cont.

Significant Locus and Metabolic Genetic Correlations Revealed in Genome-Wide Association Study of Anorexia Nervosa

Laramie Duncan et al.

This study uncovers the first significant genome-wide locus for anorexia nervosa.These results encourage a

based early diagnostic tools to change clinical practice for people with autism spectrum disorder.

Tourette Disorder Risk Linked to Variants in Four Genes
GenomeWeb Staff Reporter
Using whole-exome sequencing, researchers have identified de novo coding variants linked to Tourette disorder in four likely risk genes.
Original paper in *Neuron*.

Genetic Evidence Indicates Post-Traumatic Stress Disorder Risk Is Partially Heritable
GenomeWeb Staff Reporter
Through analyses of multi-ethnic genome-wide and SNP-level genetic data, the Psychiatric Genomics Consortium PTSD Working Group identified sex differences in heritability of Post Traumatic Stress Disorder (PTSD) and genetic overlaps in risk factors for PTSD and schizophrenia.
Paper in *Molecular Psychiatry*.

The House Health Plan Makes Your Genes a Preexisting Condition
Adam Rodgers
The Affordable Care Act's protections for genetic test results may no longer exist under the American Health Care Act. Genetic privacy rights could be further challenged by a separate House bill, which would repeal parts of the Genetic Information Nondiscrimination Act (GINA).

Canadian Genetic Testing Law to Face Constitutional Review
Peter Menyasz
The Canadian government intends to challenge the constitutionality of a new law prohibiting companies from requiring genetic testing or

reconceptualization of this frequently lethal disorder as one with both psychiatric and metabolic etiology.

Swedish Register Analysis of Divorce and Alcohol Use Disorder Highlights Social Relationships as a Target for Preventive Psychiatry and Genetic Research
Leah S. Richmond-Rakerd & Daniel W. Belsky
Psychiatric epidemiologists have long observed that married adults have fewer mental health problems compared with unmarried age peers, but it has been difficult to disentangle selection from causation. The authors point to prospective longitudinal design as a way to both account for premarriage health differences and test the effects of marriage on health.

Mutations in Epigenetic Regulation Genes Are a Major Cause of Overgrowth with Intellectual Disability
Katrina Tatton-Brown et al.
This study identifies mutations in three genes that can alter the effectiveness of an enzyme known to control growth, resulting in increased growth and intellectual disability in children.

Molecular, Clinical and Neuropsychological Study in 31 Patients with Kabuki Syndrome and KMT2D Mutations
Natacha Lehman et al.
Kabuki syndrome (KS) is a rare developmental disease characterized by the association of multiple congenital anomalies and intellectual disability. This study investigated intellectual performance in children with KS and links the performance to several clinical features and molecular data.

A Homozygous Potentially Pathogenic Variant in the PAXBP1 Gene in a Large Family with Global Developmental Delay

disclosing test results. The Act to Prohibit and Prevent Genetic Discrimination, which took effect May 4, prohibits any person from requiring an individual to undergo genetic testing or disclose the results of a genetic test as a condition of providing goods or services or entering into or continuing a contract or agreement.

and Myopathic Hypotonia

Essa Alharby et al.

PAX binding protein 1 (PAXBP1) is an adaptor protein linking the transcription factor PAX3 and PAX7 to the histone methylation machinery. This study finds that a variant in the PAZ7 binding domain underlies a syndrome of global developmental delay and myopathic hypotonia.

Robert Sapolsky's *Behave*

Stanford professor Robert Sapolsky's new book *Behave: The Biology of Humans at Our Best and Worst* examines human behavior and its neural, hormonal, social, developmental and evolutionary underpinnings. Read about Dr. Sapolsky's TED talk on the topic here, and read reviews on his book below:

How the Brain Makes Us Do It

David P. Barash

Human Behavior: Guns and Roses

Anne Harrington

A Stanford Scientists On the Biology of Human Evil

Sean Illing

Upcoming Events

2017 Genomics and Society: Expanding the ELSI Universe (The 4th ELSI Congress)

June 5-7, 2017, The Jackson Laboratory for Genomic Medicine and UConn Health, Farmington, CT

This is the latest in a series of major conferences for ELSI researchers and others interested in the ethical, legal, and social implications of genomic research.

June Seminar on Ethical, Legal and Social Implications of Genetics

Monday, June 12th, 2017, 12:00 pm, New York State Psychiatric Institute Auditorium, Columbia University Medical Center

This month's speaker is R. Alta Charo, J.D., the Warren P. Knowles Professor of Law and Bioethics at the University of Wisconsin at Madison Law School and Department of Medical History.

NYU Nature Conference on Neurogenetics

August 9-11, 2017

Kimmel Center for University Life, New York University, New York, NY, USA
This conference will facilitate interdisciplinary collaborations aimed at developing a more integrated understanding of how genes influence behavior, neuronal development and neurological disease.

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