News, Literature, and Events in Braingenethics

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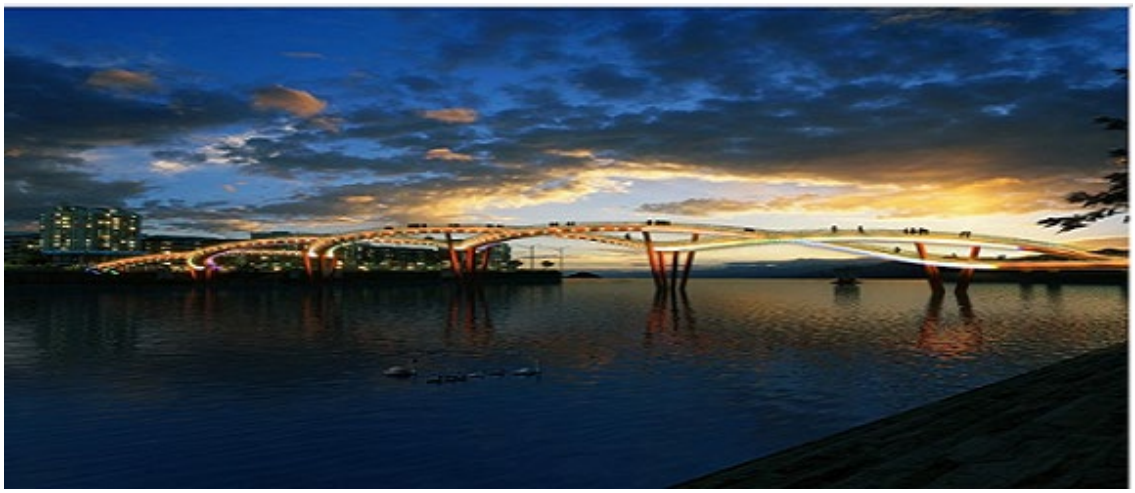

In the Literature

Understanding Validity in Empirical Legal Research:The Case for Methodological Pluralism in Assessing the Impact of Science in Court

Teneille R. Brown, James Tabery, and Lisa G. Aspinwall

The authors argue that experimental and archival projects complement each other by asking and answering different questions aimed at different forms of validity.

Genetic Essentialist Biases, Stigma, and

Giving Genes Their Due, But Not More

Erik Parens

A review of Behaving: *What's Genetic, What's Not, and Why Should We Care?* by Kenneth B. Schaffner.

In the Media

Is Addiction a Brain Disease?

Sally Satel

The opioid abuse epidemic is a full-fledged item in the 2016 campaign, and with it questions about how to combat

Lack of Mitigating Impact on Punishment Decisions

Colleen M. Berryessa

This commentary responds to "The Blunt-Edged Sword: Genetic Explanations of Misbehavior Neither Mitigate Nor Aggravate Punishment" by Nicholas Scurich and Paul Appelbaum. The author discusses one potential set of countervailing beliefs, called genetic essentialist biases, that might help to explain the lack of a mitigating effect of genetic predispositions on sentence severity.

Will Precision Medicine Move Us beyond Race?

Vence Bonham et al.

Self-identified race does not predict the genotype or drug response of an individual patient. Will precision medicine revolutionize our understanding of race and its utility (or lack thereof) in clinical practice?

Genome-Wide Association Study Identifies 74 Loci Associated with Educational Attainment

Aysu Okbay et al.

The authors' findings demonstrate that for educational attainment — a behavioral phenotype that is mostly environmentally determined — a well-powered genome-wide association study identifies replicable associated genetic variants that suggest biologically relevant pathways.

the problem and treat people who are addicted.

Is Academic Achievement Written into Your DNA? It's Complicated

Sharon Begley

The largest study of its kind (Okbay et al, linked in this issue) has found 74 genetic variants that influence how many years of school people finish, but their effect is relatively minor, underlining how a complex behavior like going to college is not written in our DNA.

The Genes of Left and Right

Marta Zaraska

Our political attitudes may be influenced by our DNA.

SFARI Launches SPARK, an Online Research Initiative That Aims to Recruit 50,000 Individuals With Autism

SFARI News

The Simons Foundation Autism Research Initiative (SFARI) today announced the launch of SPARK, an online research initiative designed to become the largest autism study ever undertaken in the United States. SPARK will collect information and DNA for genetic analysis from 50,000 individuals with autism — and their families — to advance our understanding of the condition's causes and accelerate the development of new treatments and supports.

The Gene Hunters

[Estimating the Roles of Genetic Risk, Perinatal Risk, and Marital Hostility on Early Childhood Adjustment: Medical Records and Self-Reports]

Jenae M. Neiderhiser et al.

Much of work linking perinatal risk factors to later developmental outcomes in children has relied on either birth/medical records or mothers' self-reports collected after delivery.This paper examines the correspondence between medical record data and self-report data; examines how perinatal risk factors may influence child behavior at age 4.5 years; and explores interactions among genetics, perinatal risk, and rearing environment on child behavior during early childhood.

[Detection and Interpretation of Shared Genetic Influences on 42 Human Traits]

Joseph K Pickrell et al.

The authors scanned for genetic variants by comparing large genome-wide association studies of 42 traits or diseases. They identified 341 loci associated with multiple traits, and then used them to identify traits that have multiple genetic causes in common. They then developed a method to identify pairs of traits showing evidence of a causal relationship.

[The New Era of Informed Consent: Getting to a Reasonable-Patient Standard Through Shared Decision-Making]

Erica S. Spatz, Harlan M. Krumholz, &

Ingfei Chen

Criss-crossing the globe on a quest for unusual DNA, researchers have discovered a rare mutation that promises insights into both epilepsy and autism — and points to a treatment.

In the Literature, Cont.

[Biocertification and Neurodiversity: the Role and Implications of Self-Diagnosis in Autistic Communities]

Jennifer C. Sarrett

This article describes the debate about self-diagnosis amongst autistic self-advocates and argues for the acceptance of the practice in light of the difficulties in verifying autism as a "natural kind."

[Autism and Cancer Share Risk Genes, Pathways, and Drug Targets]

Jacqueline N. Crawley, Wolf-Dietrich Heyer, Janine M. LaSalle

Benjamin W. Moulton

The reasonable-patient standard views the informed consent communication process from the patient's perspective. The authors suggest that embracing this standard through the promotion of shared decision making will benefit patients, the health system, and society.

The Ethics of Large-Scale Genomic Research

Benjamin E. Berkman et al.

Large-scale genomic repositories (LSGRs) raise ethical concerns about privacy, participant autonomy, public trust in research, and justice. The authors suggest that there is not yet sufficient evidence to motivate enactment of major policy changes to safeguard welfare interests, though there might be strong reasons to worry about subjects' non-welfare interests.

DNA Methylation in Newborns and Maternal Smoking in Pregnancy: Genome-wide Consortium Meta-analysis.

Bonnie R. Joubert et al.

The authors formed the Pregnancy And Childhood Epigenetics (PACE) consortium and did a meta-analysis of the association between maternal smoking in pregnancy and newborn blood DNA methylation at over 450,000 CpG sites by using the Illumina 450K BeadChip. They identified numerous loci involved in response to maternal smoking in pregnancy with persistence into later

Autism is a neurodevelopmental disorder, diagnosed behaviorally by social and communication deficits, repetitive behaviors, and restricted interests. Recent genome-wide exome sequencing has revealed extensive overlap in risk genes for autism and for cancer. Understanding the genetic commonalities of autism(s) and cancer(s), with a focus on mechanistic pathways, could lead to repurposed therapeutics.

Genetic Risk for Autism Spectrum Disorders and Neuropsychiatric Variation in the General Population

Elise B Robinson

Almost all genetic risk factors for autism spectrum disorders (ASDs) can be found in the general population, but their effects are unclear for many people. This study found several genome-wide links between ASDs and typical variation in social behavior and adaptive functioning, which indicates that multiple types of genetic risk for ASDs influence a continuum of behavioral and developmental traits.

Gene Expression in Human Brain Implicates Sexually Dimorphic Pathways in Autism Spectrum Disorders.

Donna M. Werling, Neelroop N. Parikshak, and Daniel H. Geschwind

This study examines competing hypotheses to explain why autism spectrum disorders (ASDs) are more prevalent in males.It finds no evidence for systematic sex-differential expression of ASD risk genes; rather, it suggests that naturally occurring sexually

childhood and provide insights into mechanisms underlying effects of this important exposure.

Epigenetic Germline Inheritance of Diet-Induced Obesity and Insulin Resistance

Peter Huypens

The authors show that a parental high-fat diet renders offspring more susceptible to developing obesity and diabetes. The epigenetic inheritance of acquired metabolic disorders may contribute to the current obesity and diabetes pandemic.

Behavioral Functioning in Cardiofaciocutaneous Syndrome: Risk Factors and Impact on Parenting Experience

Elizabeth I. Pierpont and Melinda Wolford

This study investigates behavioral functioning in children with cardiofaciocutaneous syndrome (CFC). Results of this study suggest avenues to help families cope with CFC-related stressors and enhance overall functioning. In particular, this study highlights the need for educational and treatment interventions aimed at addressing sensory needs, increasing functional communication, and identifying and managing challenging behaviors.

dimorphic processes modulate the impact of risk variants and contribute to the sex-skewed prevalence of ASD.

A Syndromic Intellectual Disability Disorder Caused by Variants in TELO2, a Gene Encoding a Component of the TTT Complex

Jing You et al.

Early-onset intellectual disability (ID) describes a common and highly heterogeneous group of phenotypes. These results indicate that variants in TELO2, a gene identified in a screen for genes involved in maintenance of telomere length, cause an autosomal-recessive syndromic form of ID.

Circuit-wide Transcriptional Profiling Reveals Brain Region-Specific Gene Networks Regulating Depression Susceptibility

Rosemary C. Bagot et al.

This study reveals novel transcriptional networks that control stress susceptibility and offers fundamentally new leads for antidepressant drug discovery.

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