

News, literature, and events on the ethical, social, and legal implications of psychiatric, neurologic, and behavioral genetics.

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Braingenethics Update

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In the Literature

**[When Neurogenetics Hurts:
Examining the Use of Neuroscience
and Genetic Evidence in Sentencing
Decisions Through Implicit Bias](#)**

By John Pyun

Pyun argues that neurogenetic evidence in criminal sentencing frames mental illness as rooted purely biologically. Such evidence elicits stigma-reducing and stigma-enhancing biases against mental illness, which manifest in beliefs that a person with mental illness is

In the Popular Media

[Ohio Seeks to Criminalize Abortion Based on a Prenatal Diagnosis of Down Syndrome. Can They do That?](#)

By Laura Hercher

This fall, the Ohio State Legislature will vote on a bill that would make it illegal for a woman to get an abortion if she is terminating the pregnancy because her fetus has Down syndrome. In this post, Hercher argues that anti-abortion activists are taking aim at prenatal diagnosis.

[23andMe Will Resume Giving Users Health Data](#)

By Andrew Pollack

less blameworthy for her condition, but more dangerous and less receptive to treatment. These biases affect jurors and influence sentencing decisions.

[Genetic Testing and Neuroimaging for Youth at Risk for Mental Illness: Trading off Benefit and Risk.](#)

By Grace Lee, Ania Mizgalewicz, Emily Borgelt, and Judy Illes

Thirty-eight psychiatrists, psychologists, and allied mental health professionals who work primarily with youth were interviewed about their receptivity toward the use of either neuroimaging or genetic testing. Interviews probed the role they foresee for these modalities for prediction, diagnosis, treatment planning, and the benefits and risks they anticipate. Continued expansion of brain imaging and genetic testing into clinical care will require a delicate balance of brain biology and respect for autonomy in the still-evolving cognitive and affective world of young individuals.

[Exploring the Potential Emotional and Behavioral Impact of Providing Personalised Genomic Risk Information to the Public: A Focus Group Study](#)

By A.K. Smit et al.

The authors explored the potential emotional and behavioral impact of

The genetic testing company 23andMe became a Silicon Valley sensation by providing consumers with health and ancestry information based on a sample of their saliva, but suffered a setback when the Food and Drug Administration told it to stop presenting health data in 2013. Now, after nearly two years, 23andMe is announcing on Wednesday that it will begin providing customers with health information again, though much less than before and with F.D.A. approval.

[More Harm Than Good: Use of Genetic Mental Health Tests Has Grown Rapidly, But Evidence They Work Is Scant](#)

By Beth Daley

Genetic tests to identify the most effective psychiatry drugs are the hot new technology in the race to create personalized treatments based on people's DNA. In a nod to the tests' growing acceptance, the federal Medicare program agreed last year for the first time to pay for the GeneSight test for some depressed patients. But a review by the New England Center for Investigative Reporting has found that virtually all the evidence that these psychiatric tests work is based on limited studies funded by the companies themselves or researchers they fund, including all five studies used to promote GeneSight on the company's website.

[The Myth of the 'Autistic' Shooter](#)

By Andrew Solomon

In the wake of the shooting at Umpqua Community College in Oregon, many suggested without sufficient evidence that Christopher Harper-Mercer, who killed nine people and injured several others, may have been autistic.

providing information on personalized genomic risk to the public, using melanoma as an example, to aid research translation. They conducted four focus groups in which 34 participants were presented with a hypothetical scenario of an individual's lifetime genomic risk of melanoma (using the term 'genetic risk'). Participants recognized the potential for both positive and negative emotional and behavioral impacts related to receiving information on the personalized genomic risk of melanoma.

[The Fourth Law of Behavior Genetics](#)

Christopher F. Chabris et al.

Turkheimer (2000) proposed “Three Laws of Behavior Genetics” based on empirical regularities observed in studies of twins and other kinships. On the basis of molecular studies that have measured DNA variation directly, the authors here propose a Fourth Law of Behavior Genetics: “A typical human behavioral trait is associated with very many genetic variants, each of which accounts for a very small percentage of the behavioral variability.” They review the evidence in favor of the Fourth Law and discuss its implications for the design and interpretation of gene-behavior research.

[The Serotonin Transporter Gene: What's New?](#)

By James Phelps

However, Solomon argues that tarring the autistic community in this manner — like presuming that most black people are thieves or that most Muslims are terrorists — is an insidious form of profiling. It exacerbates the tendency for people with autism to be excluded, teased and assaulted in childhood and adulthood.

[Thresholds of Violence: How School Shootings Catch On](#)

By Malcolm Gladwell

Gladwell asks, what if the way to explain the modern school-shooting epidemic is to think of it as a slow-motion, ever-evolving riot, in which each new participant's action makes sense in reaction to and in combination with those who came before? It is important to look at the group as a whole, rather than merely an individual's norms and motives — we may call shooters “copycats,” but even a group of school shooters is heterogeneous.



[Gene-Environment Interaction in](#)

Phelps reviews recent and past studies of the serotonin transporter gene, the S allele. Researchers have demonstrated that the allele is neither a risk gene nor a bad gene, but rather a plasticity gene—one that makes an individual more sensitive to his or her childhood environment.

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[Youth Depression: Replication of the 5-HTTLPR Moderation in a Diverse Setting](#)

Thiago Botter-Maio Rocha et al.

The authors sought to replicate a 2003 study on gene-environment interaction (GxE) in youth depression in a large birth cohort from a diverse setting.

Using data from the 1993 Pelotas Birth Cohort Study, and adopting a design as similar as possible to that of the original study, the authors tested whether the relationship between childhood maltreatment and a subsequent depressive episode diagnosis was moderated by 5-HTTLPR genotype.

The results replicated important findings of the original study, this time in a sample of young adults from a middle-income country: there was a differential dose-response relationship between childhood maltreatment and major depression according to 5-HTTLPR genotype.

[Optogenetics and Deep Brain Stimulation Neurotechnologies](#)

By Krishnakanth Kondabolu et al.

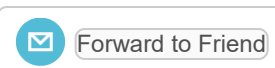
Over the past decade, a novel neurotechnique, optogenetics, which combines light and genetic methods to control or monitor neural activity patterns, has proven to be revolutionary in understanding the functional role of specific neural circuits. The authors here briefly describe a recent advance in optogenetics and compare optogenetics with deep brain stimulation technology that holds the

promise for treating many neurological and psychiatric disorders.

[Genomic Integrity and the Aging Brain](#)

By Hei-Man Chow and Karal Herrup

DNA damage is correlated with and may drive the aging process. Neurons in the brain are postmitotic and are excluded from many forms of DNA repair; therefore, neurons are vulnerable to various neurodegenerative diseases. The challenges facing the field are to understand how and when neuronal DNA damage accumulates, how this loss of genomic integrity might serve as a "time keeper" of nerve cell aging and why this process manifests itself as different diseases in different individuals.



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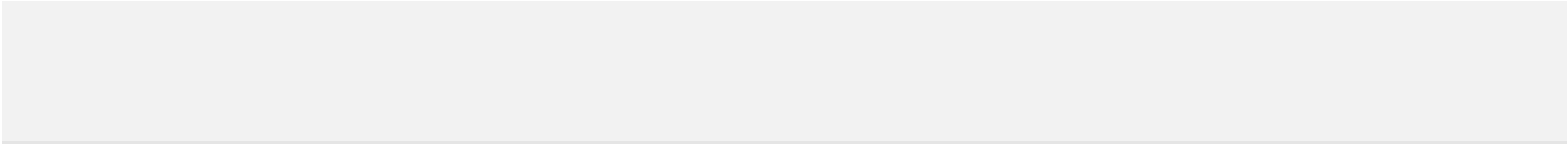
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