

# Center for Law, Brain & Behavior

*Neuroscience for Justice*

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## Annual Report 2019-2020

CENTER FOR LAW  
BRAIN & BEHAVIOR



MASSACHUSETTS  
GENERAL HOSPITAL



MASSACHUSETTS  
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HARVARD MEDICAL SCHOOL  
TEACHING HOSPITAL

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# From the Executive Director

Dear Friends,

In 2019-20 the Center for Law, Brain and Behavior (CLBB) expanded and sharpened its work in our key programmatic areas. At the same time, we leveraged our expertise to make contributions related to COVID-19—explaining why social distancing is a challenge for the adolescent brain and advocating for compassionate release of older inmates.

Looking ahead, the Center is planting the seeds for systemic reform. For instance, at age 17 years, 364 days, 23 hours, 59 minutes, and 59 seconds old, a youth who commits a crime cannot be put to death, cannot receive mandatory life without parole, and will have access to rehabilitative programs. One second later, at age 18, these protections disappear. The injustice falls disproportionately on minority youth.

From a neuroscience perspective this makes no sense. CLBB is thus developing the leading scientific white paper and toolbox to support those advocating for courts to redraw the line from 18 to 21 (and beyond). Through our neuroscience informed work, CLBB can fundamentally change the justice system for every single young adult in the country. We are also working to improve prosecutorial decision-making with young adults through an innovative *Justice and the Developing Brain* initiative, in partnership with prosecutors, public defenders, and youth advocates.

Each week CLBB receives a new inquiry from an attorney seeking our help, a judge seeking our expertise for training, or a student looking to get involved. With growing demand comes a need for capacity building. This past year CLBB hired a full-time Project Manager, expanded the student research internship program, received a new grant from the Dana Foundation, and continued strong growth in private philanthropy.

I am grateful to Center leadership, the Advisory Board, staff, faculty, and our supporters for helping us reach this point. But let me be clear: it is not enough.

The justice system is resistant to change, especially the sort of fundamental reimagining invited by a science-informed perspective. Thus, we need to expand private philanthropic efforts, seek new grant opportunities, and develop strategic partnerships to scale up our work.

As CLBB grows into the social change organization it is poised to become, we will continue to rely on strategic insights, financial support, and friendship during challenging moments.

On behalf of co-directors Judy Edersheim and Bruce Price, we thank you for your steadfast support of our mission and look forward to working with you in the year ahead.



Francis X. Shen, *Executive Director*

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# Mission

**The Center for Law, Brain and Behavior** strives to put the most accurate and actionable neuroscience in the hands of judges, lawyers, policymakers and journalists—people who shape the standards and practices of our legal system and determine its impact in people’s lives. We work to make the legal system more effective and more just for all those affected by the law.

Although the brain and the law are both complex, CLBB’s work is quite simple. We provide expert training, tools and counsel, helping members of the legal community understand and apply the most relevant brain science to the cases, courtroom procedures and policies they influence.

We also support those working across the media landscape who can accurately inform the public about the brain, human behavior and the justice system.

The Center is led by accomplished legal and medical experts—practitioners, researchers and thought leaders—based at Harvard Law School, Mass General Hospital, Harvard Medical School and other leading institutions of learning.

CLBB works with partners as diverse as the Federal Judicial Center, Securities and Exchange Commission, National District Attorneys Association, American Bar Association, and Flaschner Judicial Institute.

Since CLBB’s founding in 2008, we have demonstrated the clear benefits of accurately applied neuroscience: better decisions aligned with science lead to better outcomes aligned with justice.



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# Strategic Priorities

**1 Establishing more effective standards and practices for criminal sentencing** by helping judges and lawyers understand the most relevant applications of the neuroscience of decision-making.

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**2 Ensuring more accurate evaluations and more effective solutions for juvenile and emerging adult justice** by helping judges, lawyers and other key members of the legal ecosystem understand the most relevant applications of the neuroscience of developing brains.

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**3 Ensuring more accurate judgments in immigration and asylum cases**, and changing legal standards through impact litigation, by helping lawyers and judges understand the most relevant applications of the neuroscience of trauma, family separation and memory.

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**4 Ensuring better protection and agency for older adults**, especially in the process of estate planning and financial decision-making, by helping judges, lawyers, families and financial planners understand the most relevant applications of the neuroscience of aging brains.

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# Leadership



**Judith G. Edersheim, JD, MD**

Founder and Co-Director

Assistant Professor of Psychiatry, Harvard Medical School  
Attending Psychiatrist, Massachusetts General Hospital



**Bruce H. Price, MD**

Founder and Co-Director

Chief, Department of Neurology, McLean Hospital  
Senior Clinical Neurologist, Massachusetts General Hospital  
Associate Professor of Neurology, Harvard Medical School



**Francis X. Shen, JD, PhD**

Executive Director

Senior Fellow in Law and Applied Neuroscience, Petrie-Flom Center,  
Harvard Law School  
Instructor in Psychology, Harvard Medical School  
Professor, University of Minnesota Law School



**Nancy Gertner, JD, MA**

Managing Director

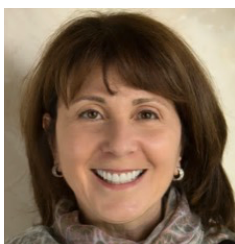
Senior Lecturer on Law, Harvard Law School  
Federal Judge, U.S. District Court of Massachusetts (Ret.)



**Robert Kinscherff, JD, PhD**

Associate Managing Director; Director of Juvenile & Emerging Adult  
Justice Project

Associate Vice President, Professor, Doctoral Clinical Psychology Program,  
William James College



**Lisa Feldman Barrett, PhD**

Chief Scientific Officer

Distinguished University Professor of Psychology, Northeastern University  
Department of Psychiatry and Martinos Center for Biomedical Imaging,  
Massachusetts General Hospital/Harvard Medical School

# Board of Advisors

**Silda Wall Spitzer, JD, Chair**, Co-founder and CEO, *NewYorkMakers.com*

**Jennifer Jones Austin, JD, MA**, Chief Executive Officer and Executive Director of the *Federation of Protestant Welfare Agencies*

**Neal Baer, MD, MA**, Emmy-winning Executive Producer and Writer

**Joan Belkin**, Former First Grade Teacher; Philanthropist

**Steven Belkin**, Founder, *Trans National Group*; Philanthropist

**Avis Buchanan, JD**, Director, *Public Defender Service for the District of Columbia*

**Paul Butler, JD**, Professor in Law, *Georgetown University Law Center*

**Raluca Buttner**, Artist; MIT Chemical Engineering graduate

**The Honorable Katherine M. Clark, JD**, Congresswoman, *Massachusetts 5<sup>th</sup> District*

**Leslie A. Cornfeld, SJD**, Founder/CEO, *National Education Equity Lab*

**Ophelia M. Dahl**, Co-Founder and Board Chair, *Partners in Health*

**Judge (Ret.) Andre Davis, JD**, Circuit Judge (ret.), *United States Court of Appeals for the Fourth Circuit*, City Solicitor (ret.), *Baltimore City Department of Law*

**Andre De Fusco**, CEO and President, *Hawkeye Bio, Inc.*

**Bianca De Fusco**, International Marketing

**Rodney S. Dowell, JD**, Director, *Massachusetts Law Office Management Assistant Program*

**Lisa Frantzis**, Senior Vice President, *Advanced Energy Economy*

**Martin Garbus, JD**, First Amendment Attorney

**Susan Eve Haar, JD**, Attorney; Author and Playwright, *Ensemble Studio Theatre*

**Adam Haar Horowitz**, PhD Candidate, *MIT Media Lab*

**Robert R. Hopper, JD, MPP**, Founder and Managing Partner, *Robert R. Hopper & Associates, LLC*

**James L. Joslin, CFP**, Founding Principal, *TFC Financial Management, Inc.*

**Joan Kahn**, Vice President, *Women's International Zionist Organization, USA*

**Peggy Edersheim Kalb**, Senior Editor, *Yale Alumni Magazine*

**Scott E. Kalb**, Executive Director, *Sovereign Investor Institute*

**Andrew M. Moravcsik, PhD**, Professor, *Princeton University*; Senior Fellow, *Brookings Institution*

**Anne Peretz, MSW**, Founder and Chair, *Parenting Journey*

**William Pietragallo, II, JD**, Founding Partner, *Pietragallo Gordon Alfano Bosick & Raspanti, LLP*

**Kevin Prussia, JD**, Partner, *WilmerHale*

**John Reinstein, JD**, Attorney; Former Legal Director, *Massachusetts ACLU*

**Jerrold F. Rosenbaum, MD**, Immediate Past Chief of Psychiatry, *Massachusetts General Hospital*

**Anne-Marie Slaughter, PhD, JD**, Professor, *Princeton University*; President, *New America Foundation*

**Eliot Spitzer, JD**, Principal, *Spitzer Enterprises*; Former Governor of *New York*

**Carol W. Taylor, MA**, Executive Director of Development (ret.), *Mass General Hospital*

## Emeritus Advisors

**Rangita de Silva de Alwis, SJD**, *Associate Dean, University of Pennsylvania Law School*

**Judi Sorenson Flom, JD**, *Attorney*

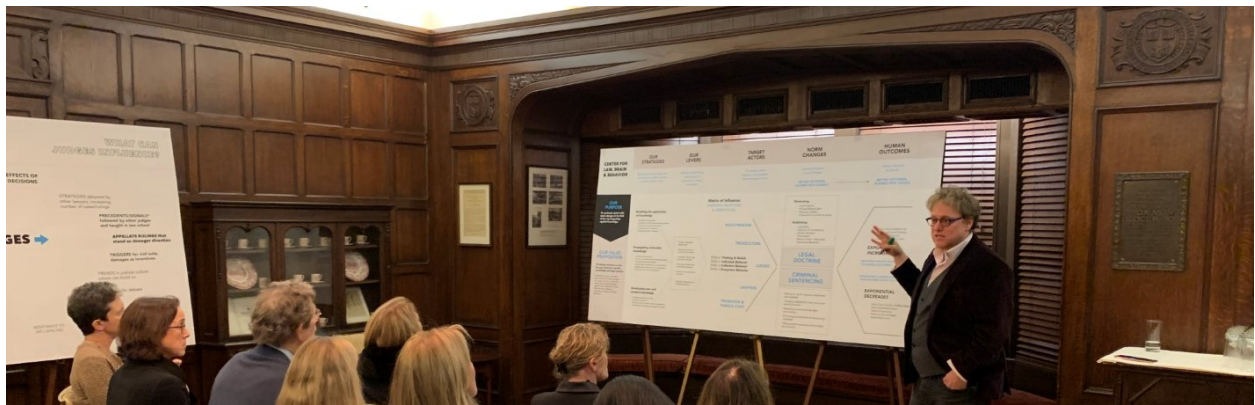
**Laurie L. Gildan, JD**, *Attorney and Principal, Greenberg Traurig, LLP*

**Phillip C. Gildan, JD**, *Attorney and Principal, Greenberg Traurig, LLP*

**Therese Rosenblatt, PhD**, *Psychologist*

**Lidia Rosenbaum**, *Educator*

**H. Marshall Sonenshine, JD**, *Chairman and Managing Partner, Sonenshine Partners*



### ***The Advisory Board in Action***

The Center recently completed an 18-month strategic planning process, led by CLBB leadership with facilitation by consultant Ryan Senser. As part of this strategic planning process, the Center's Board of Advisors provided key feedback and insight on the Center's mission, programmatic priorities, and levers of change.

The photo above is from the last (pre-COVID) in-person meeting of the Advisory Board. Since that time, the Board has transitioned to online virtual meetings.

# Core and Affiliated Faculty

## **Justin T. Baker, MD, PhD**

Dir, Laboratory for Functional Neuroimaging & Bioinformatics; Scientific Director, Institute for Technology in Psychiatry, McLean Hospital; Asst. Professor of Psychiatry, HMS

## **Jay D. Blitzman, JD**

Former First Justice for the Middlesex County Juvenile Court Division (Ret.); Lecturer on Law, Harvard Law School

## **Joshua W. Buckholtz, PhD**

Associate Professor of Psychology, Harvard University; Director, Systems Neuroscience of Psychopathology lab; Assistant in Research, Department of Psychiatry, MGH

## **Fiery Cushman, PhD**

John L. Loeb Associate Professor of the Social Sciences, Dept. of Psychology, Harvard University; Director, Moral Psychology Research Laboratory

## **Adam J. Foss, JD**

Founder and Executive Director, Prosecutor Impact; Former Assistant District Attorney in the Suffolk County District Attorney's Office

## **Edward Hundert, MD**

Dean for Medical Education, Harvard Medical School; Daniel D. Federman, MD Professor in Residence of Global Health and Social Medicine and Medical Education, HMS

## **Charles A. Nelson, PhD**

Professor of Pediatric and Neuroscience, HMS; Director, Laboratories of Cognitive Neuroscience, Boston Children's Hospital

## **Kerry Ressler, MD, PhD**

Professor of Psychiatry, Harvard Medical School; Chief Scientific Officer, McLean Hospital; Director, Grady Trauma Project

## **Margaret Sheridan, PhD**

Associate Professor of Psychology, University of North Carolina; Director, Child Imaging Research on Cognition and Life Experiences (CIRCLE) Laboratory

## **Leah Somerville, PhD**

Professor of Psychology, Harvard University; Director, Affective Neuroscience and Development Laboratory; Faculty, Center for Brain Science

## **Eugene V. Beresin, MA, MD**

Executive Director, MGH Clay Center for Young Healthy Minds; Director of Child and Adolescent Psychiatry Residency Training Program, MGH and McLean Hospitals; Professor of Psychiatry, HMS

## **David Borsook, MD**

Director, Pain and Analgesia Imaging Neuroscience (P.A.I.N) Group, Children's Hospital Boston, MGH, and McLean Hospital; Professor of Anaesthesia, Children's Hospital Boston

## **Randy L. Buckner, PhD**

Professor of Psychology and of Neuroscience, Harvard University; Neuroscientist in Psychiatry and Radiology, MGH; Director, Psychiatric Neuroimaging Research Program, MGH

## **Brad Dickerson, MD**

Professor of Neurology, Harvard University; Director of Clinical Applications, Morphometry Service, MGH; Director, Dickerson Neuroimaging Laboratory

## **Joshua Greene, PhD**

Professor of Psychology, John and Ruth Hazel Professor of the Social Sciences, Harvard University; Director, Moral Cognition Lab

## **Steven E. Hyman, MA, MD**

Director, Stanley Center for Psychiatric Research, Broad Institute of MIT and Harvard; Distinguished Service Professor of Stem Cell and Regenerative Biology, Harvard University

## **Amanda Pustilnik, JD**

Professor of Law, University of Maryland School of Law; 2014-2015 Senior Fellow in Law & Applied Neuroscience, CLBB and the Petrie-Flom Center

## **Daniel L. Schacter, PhD**

William R. Kenan Jr. Professor of Psychology, Harvard University; Director, Memory Lab, Harvard University

## **Jordan W. Smoller, MD, ScD**

Director, Psychiatric and Neurodevelopmental Genetics Unit, MGH; Associate Chief for Research and Director of Psychiatric Genetics, MGH Department of Psychiatry; Professor of Psychiatry, HMS; Professor of Epidemiology, HSPH

## **Gina Vincent, PhD**

Associate Professor of Psychiatry, UMass Medical School; Director, Translational Law & Psychiatry Research, UMass Medical School



# Staff

## CLBB Project Manager



**Emily L. Rehmet, BA**, joined CLBB in July 2020 as Project Manager. Emily graduated from Brown University *magna cum laude* as a double major in cognitive neuroscience and public policy with a track in law and ethics. At Brown, she was inducted into the Phi Beta Kappa and Sigma Xi (scientific research) societies and received the John Hazen White Jr. Public Policy Award, Undergraduate Teaching and Research Award, and LINK Award.

At Brown University, Emily was a co-captain of the Brown Mock Trial team, co-president of the Cognitive Neuroscience Departmental Undergraduate Group, contributing writer and editor for the Triple Helix Bioethics Blog, and member of the Brown Pre-Law society. Emily also worked as a research fellow at the Center for Science and Law located in Houston, TX, where she became interested in juvenile justice and the use of neuroscientific technologies to predict human behavior and decision-making.

As Project Manager, Emily works to promote the sound translation of brain-based and behavioral science into law through assisting CLBB leadership with various administrative and research projects. Emily is excited to further the Center's commitment to serve as an academic and professional resource for the education, research, and understanding of neuroscience and the law.

## CLBB Student Research Assistants

The Center for Law, Brain and Behavior regularly engages students to advance its mission. Student research interns come from diverse backgrounds and include undergraduates, law students, medical students, and post-docs. In the 2019-20 academic year, CLBB hosted 20 students, working from three different continents and including many schools such as Harvard College, Tufts University, Northwestern University, College of the Holy Cross, Harvard Law School, Harvard Medical School, and Harvard School of Public Health. Recently, in Summer 2020, the center **received over 120 applications** for **five** available slots.




# Highlights

- **Partnered** with the Office of Suffolk County District Attorney Rachael Rollins, and the Massachusetts Committee for Public Counsel Services, and social enterprise non-profit More than Words for the summer learning series ***Justice and the Developing Brain***, and for continued efforts to improve justice system response to emerging adults.
- **Expanded program capacity through multiple grants**, including a grant from the ***Dana Foundation***, funding a new repository on updated law and neuroscience cases, and a grant from the Harvard, Mind, Brain, and Behavior Interfaculty Initiative, to support work in juvenile and emerging adult justice during the 2020-21 academic year.
- **Presented and hosted seven talks and events** at Harvard Law School, including: *Computational Justice: How Artificial Intelligence and Digital Phenotyping Can Advance Social Good*; *The Next Frontier of Neuroscience and Juvenile Justice*; *Law and Neuroscience: From Theory to Practice*; *Juvenile Justice: Approaches to Reforming Juvenile Justice Institutions*; and *Trauma, Memory, and the Brain: Implications for Immigration Law*; with total attendance across all talks over 400 participants.
- **Continued significant educational outreach**, training over 350 judges and attorneys, including further development of programs with the Federal Judicial Center and creation of a new partnership with the Flaschner Judicial Institute to produce an ongoing learning series for Massachusetts judges.
- **Strengthened the Project on Law and Applied Neuroscience**, a collaboration between CLBB and the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics at Harvard Law School.
- **Recruited** seven highly qualified Advisory Board Members, adding to CLBB's substantive expertise and expanding our geographic, racial and professional diversity.
- **Published** 19 scholarly publications and 15 news media publications and **produced** 57 professional talks. Core and affiliated faculty published an additional 428 articles related to CLBB priorities.
- **Led policy reform through** prominent roles in standard-setting bodies, including: the Massachusetts Forensic Science Oversight Board, and the Massachusetts Supreme Judicial Court Standards on Substance Abuse Advisory Board.
- **Consulted on individual cases**, including high profile cases such as that of *Billy Joe Wardlow v. State of Texas*, and a clemency petition for Brendan Dassey. CLBB provided scientific support for the clemency petition and was a signatory to an amicus brief in the Wardlow case, providing the most up-to-date data from adolescent and emerging adult neuroscience.



# Programs and Initiatives

## Juvenile and Emerging Adult Justice



**JUSTICE AND THE DEVELOPING BRAIN**

**A LEARNING SERIES WITH  
LEAD TRAINER ROBERT KINSCHERFF,  
PHD, JD**

May 26 through July 21, 1:00-2:00 PM



Emerging adults are more likely to be arrested, be incarcerated, and to recidivate after release. Join the Juvenile Unit/Juvenile Alternative Resolution Program (JAR) at the Office of Suffolk County District Attorney Rachael Rollins, the Committee for Public Counsel Services, the brain-science experts at the MGH Center for Law, Brain & Behavior, and the staff and youth at More Than Words to learn why and discuss how we can reverse this trend.

- MAY 26** Framing the Issue and Overview of Adolescent Neurodevelopment
- JUNE 9** The Developing Brain in Social Environments: Adverse Childhood Experience and Positive Youth Development Assets
- JUNE 23** Behavioral Health in Delinquency: Substance Use and Mental Health Disorders
- JULY 7** Implications for Juvenile Justice Practices: Research-Based Responses Along the Sequential Intercept
- JULY 21** The "Heuristic Brain:" Implicit Bias in Responding To Challenging Youth

### PRESENTED BY

**More Than Words** is a nonprofit social enterprise that empowers youth who are in the foster care system, court-involved, homeless, or out of school to take charge of their lives by taking charge of a business.

**The Office of Suffolk County District Attorney Rachael Rollins** supports the communities of Boston, Chelsea, Revere, and Winthrop and handles approximately 35,000 new cases each year.

**The MGH Center for Law, Brain & Behavior** draws on faculty expertise at Harvard Medical School, Harvard Law School, and affiliated institutions to develop accurate and actionable neuroscience for judges, attorneys and policymakers in the criminal justice system.

**The Committee for Public Counsel Services** provides lawyers and social workers to indigent children and youth accused of crimes in Massachusetts. These advocates assist clients in achieving legal and life success.

*This series is made possible by support from the Massachusetts Juvenile Detention Alternatives Initiative.*

# The Next Frontier



## of Juvenile Justice

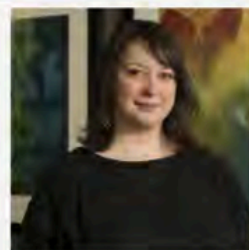
In the fifteen years since the United State Supreme Court outlawed the juvenile death penalty, neuroscientists have uncovered new knowledge about the developing brain, including brain maturation through emerging adulthood. These scientific developments suggest the need for new innovations at the intersection of neuroscience and juvenile justice. This panel will explore the next frontier of neuroscience and juvenile justice.



**Robert Kinscherff, PhD, JD**  
Faculty, Doctoral Program in  
Clinical Psychology and  
Associate Vice President for  
Community Engagement,  
William James College;  
Associate Managing Director,  
Center for Law, Brain, and  
Behavior, MGH



**Marsha Levick, Esq.**  
Chief Legal Officer and  
Co-Founder, Juvenile Law  
Center



**Leah Somerville, PhD**  
Professor of Psychology  
and Director of Graduate  
Studies in Psychology,  
Harvard University and  
faculty, Center for Brain  
Science

**Wed., Feb. 26 | 12:00pm | Harvard Law School | Wasserstein Hall | Milstein West (2019)**



Part of the Project on Law and Applied Neuroscience, a collaboration between the Center for Law, Brain & Behavior at Massachusetts General Hospital and the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics at Harvard Law School.



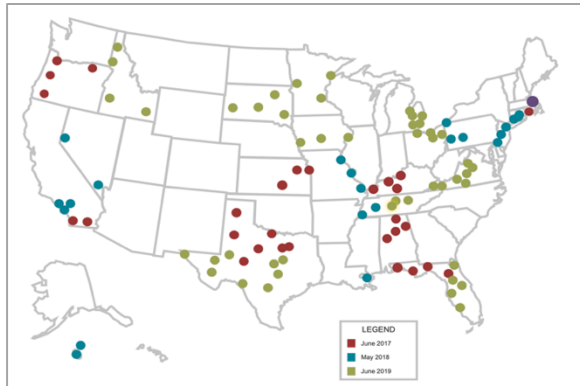
**RSVP online! <http://petrieflom.law.harvard.edu/events>**

## Juvenile and Emerging Adult Justice: Additional Activities

CLBB engages the public and scholarly communities in many ways:

- **Implications of Neuroscience in Juvenile and Young Adult Justice**  
Robert Kinscherff and Jay Blitzman | Harvard Law School Alumni Association | February 2020
- **Developmental Neuroscience and Juvenile Justice: Approaches for Innovation and Reform**  
Judith Edersheim | Harvard Law School | February 2020
- **Adolescent Confession: What Does Science Have to Say?**  
Judith Edersheim | Harvard Law School | March 2020
- **Ethical, Legal, and Social Implications and Applications of Research on the Developing Brain**  
Francis Shen | University of Minnesota Masonic Institute for The Developing Brain | 2020
- **Expert Consultation or Testimony in Post-Miller Juvenile and Young Adult Homicide Sentencing/Resentencing Hearings and Parole Board Hearings**  
Robert Kinscherff | Florida, Louisiana, Massachusetts, New Hampshire, New Mexico | 2020
- **Post-Miller Parole/Resentencing Evaluations: Brain and Social Development in Juvenile Homicide Cases**  
Robert Kinscherff | 21st Annual Conference on Contemporary Applications of Psychological Assessment | December 2019
- **Adolescent Social and Neurodevelopment: Implications for Youth Justice Systems**  
Robert Kinscherff | International Legal Foundation (NGO), Ramallah, Palestine | January 2019
- **Challenges and Opportunities in Work with Transitional Aged Youth**  
Robert Kinscherff | US Dept. Health and Human Services (HRSA Summer Training Institute) | August 2020

# Criminal Sentencing



In partnership with the Federal Judicial Center (FJC), and with leadership from Judge Gertner, Dr. Edersheim, and Dr. Kinscherff, CLBB has become the nation's leading provider of neuroscience-informed education for the federal judiciary. The core of this work is a signature three-day summer workshop on Science-Informed Decision Making (postponed in summer 2020 due to COVID-19). In addition to attending the annual workshop, a subset of judges returns to Harvard to participate in Judge Gertner's sentencing seminar, in order to continue their training and education.

The FJC is the research and education agency of the judicial branch of the U.S. government. The Center was established by Congress in 1967, and the Center's governing board is chaired by the Chief Justice of the United States. Our lead partners at the FJC are Mark Sherman, the Assistant Division Director, Probation & Pretrial Services Education, and Cassandra Snyder, Education Attorney.

**“The information needs to be spread far and wide.”**

**“This training is by far and above the best I have experienced thus far in my career.”**

**“I can't say what a lightbulb moment it has been for me ... Science saves lives.”**

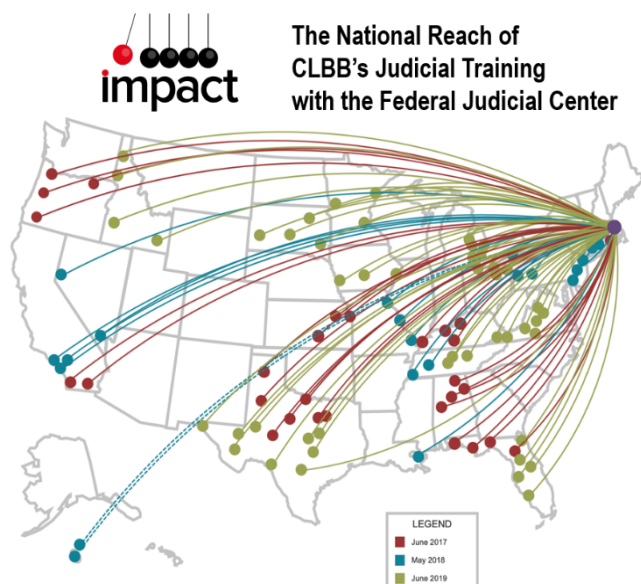
**“The information was really altering to the fiber of our district.”**

**“My philosophy has changed.”**

**— Quotes from Federal Judges, Pretrial and Probation Officers who have participated in CLBB's Law and Neuroscience Seminars**



## Workshops on Science-Informed Decision Making



The purpose of the annual summer Workshop on Science-Informed Decision Making is to support systemic improvements in pretrial and presentence evaluations. We help judges integrate science-informed understandings of behavior in determining sentences, including the neuroscience of trauma, impaired judgment, addiction and withdrawal, brain injury, genetic vulnerabilities, toxic stress, environmental triggers, developmental trajectories and mental disorders.

In service of these improvements, we also educate a range of legal actors on how to use neuroscience to understand and respond to systemic issues that impact the treatment of justice-involved individuals, including false confession, lie detection and implicit bias.

Additionally, we take a uniquely hands-on approach to helping stakeholders across the legal system adopt new models of science-informed collaboration. We convene federal and magistrate judges, pretrial service officers, presentence officers, probation officers and clinical experts to work together to assess the risks and needs of a wide range of justice-involved individuals and develop appropriate action plans for their cases. In March 2020, these efforts were the focus of the Off Paper podcast – Episode 14: ***The Case of the Addicted Bank Robber: How the FJC and Harvard are Educating the Courts*** (featuring Mark Sherman, Francis Shen, Nancy Gertner, Judith Edersheim, Cassandra Snyder).

### Program Goal

To help legal decision-makers develop improved responses to justice-involved individuals with mental health and substance use disorders from initial appearance to sentencing.



# Immigration and Asylum Justice



## Memory, Trauma, and Asylum Law: A Role for Neuroscience?

research on trauma, memory, and traumatic brain injury. For instance, neuroscience of trauma evidence can aid litigants in making visible and more concrete the types of emotional and mental trauma that is often difficult to substantiate in a hostile legal environment. The neuroscience of memory can be used to inform credible fear determinations by adding support to claims that inconsistencies in recall of events by asylum seekers does not necessarily suggest an inference of dishonesty.

Asylum seekers and their attorneys are in need of new tools to overcome the substantial barriers they face in the immigration system, and the neuroscience of trauma and memory are well positioned to be applied in these contexts. CLBB is the first organization working at this important intersection of brain science and law.

For an update on project progress, see [\*\*Memory, Trauma, and Asylum Law: A Role for Neuroscience?\*\*](#), presented at the Harvard Law School Petrie-Flom Center on December 6, 2019.

In 2019 CLBB launched a new initiative around neuroscience, trauma and immigration justice.

We kicked off this program in 2019 at Harvard Law School with the event *Trauma at the Border*, featuring Harvard neuroscientist Dr. Charles Nelson and the Harvard Law School Immigration and Refugee Clinical Program. This event was part of the [\*\*Project on Law and Applied\*\*](#)

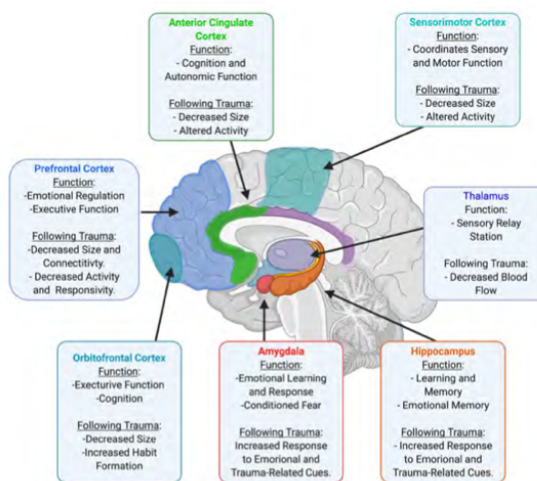
[\*\*Neuroscience\*\*](#), a collaboration between CLBB and the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics at Harvard Law School.

Currently, we are in the early stages of developing **litigation support materials** based on the most up to date neuroscience

## Neurobiology of Traumatic Stress: Webinar and White Paper

In developing a toolkit for practitioners, CLBB has prepared a white paper and accompanying webinar on the neurobiology of traumatic stress. CLBB will be releasing:

1. **A short white paper** that will detail 1) the relationship between traumatic stress and functional changes to brain-wise neural circuits, and 2) traumatic stress and psychiatric, developmental, and behavioral disorders.
2. **A 45-minute webinar** that will be an introduction to the neurobiology of traumatic stress, and will include a brief overview and discussion of important regions and circuits associated with stress-related neurobiological changes.
3. **A curated electronic library** of key sources for further reference.



CLBB will integrate this white paper into future amicus briefs and litigation materials. The project consultant for this work is Dr. Kenneth McCullough completed his PhD under Dr. Kerry Ressler (CLBB Affiliated Faculty member and McLean Hospital Chief scientific officer and James and Patricia Poitras Chair in Psychiatry).

## Immigration and Asylum Justice: Additional Activities



### Yale Worker and Immigration Rights Advocacy Clinic

Judith Edersheim | Yale Worker and Immigration Rights Advocacy Clinic | 2020  
Dr. Edersheim, in collaboration with Professor Diana Blank, JD, PhD, Visiting Clinical Lecturer at Yale Law School and Director of the Yale Worker and Immigration Rights Advocacy Clinic, is currently consulting on a seminal case involving neuropsychiatric impairments and due process rights in the immigration law setting.



### Neuroscience and Human Rights Advocacy: Promise and Peril—(postponed/rescheduled)

Francis Shen | Health & Human Rights Conference at the University of Minnesota  
Minnesota James H. Binger Center for New Americans  
The presentation will explore the ways in which neuroscience might aid in advocacy for those seeking asylum in the United States.



### Neuroscience, Memory, and Credibility in Immigration Court

Aldis Petriceks, Erin Shortell and Francis Shen | The Asylumist | May 2020  
In this article, CLBB student research assistants, Aldis Petriceks of Harvard Medical School and Erin Shortell of Harvard law school, joined Dr. Francis Shen to discuss how the neuroscience of memory can inform issues regarding credibility in immigration court.



# Aging Brains and Elder Justice

Since its founding, CLBB has explored how neuroscience might aid the law's efforts in improving elder justice by supporting and protecting older adults in the realm of financial decision-making. Dr. Bruce Price and Dr. Judith Edersheim regularly consult on elder law cases, and annually address law and dementia issues in the renowned Harvard Medical School educational program, *Dementia: A Comprehensive Update* (a program led by CLBB Affiliated Faculty member Bradford Dickerson, MD).



## Elder Financial Fraud Roundtable

U.S. Securities and Exchange Commission | October 2019

Dr. Francis Shen joined other experts in government, law, and finance to discuss contributing factors to elder exploitation, including cognitive decline, capacity issues, social isolation and institutional vulnerabilities that create entry points for fraudsters and other unscrupulous actors. The panelists also discussed strategies for proactively providing investors with safeguards and educational tools from regulatory and industry standpoints.



## New Scholarship: *Aging Judges*

Ohio State Law Journal | November 2019

Dr. Francis Shen's new article is a comprehensive analysis of neuroscience and the challenge of cognitive decline in aging state and federal judges.



## Dementia and the Law: The Neurologist's Dilemmas

Massachusetts General Hospital and Brigham and Women's Hospital | November 2019

Dr. Bruce Price and Dr. Francis Shen presented at the Massachusetts General Hospital and Brigham and Women's Hospital Neurology Residency Pilot Neuroethics Seminars.

- **Harvard Medical School CME Course, Dementia Update: Testamentary Capacity and Undue Influence**  
Bruce Price and Judith Edersheim | Harvard Medical School | May 2020
- **Cognitive Performance Over the Lifespan. 130th Anniversary in Celebration of the Founding of Qilu Hospital**  
Bruce Price | Jinan, Shandong Province, China | October 2020
- **Ethics, Law and the Aging Brain**  
Bruce Price | Harvard Neurology Residency Neuroethics Course | 2019

## Postponed Events

- **Cognitive Decline: Practical Benchmarks for Financial Professionals** (Boston Economics Club | April 2020)
- **Aging and Cognitive Function: Risks and Rewards** (Judith Edersheim and Francis Shen | Federal Judicial Center's Conference | May 2020)
- **Senior Investor Protection Symposium** (Francis Shen | Northwestern Pritzker School of Law | May 2020)

## Detecting Dementia: Technology Access, and the Law

Upcoming Event: November 2020 (originally scheduled for April 2020)

# Detecting Dementia Technology, Access, and the Law

Advances in neuroimaging, genetics, and mobile health apps are creating unprecedented opportunities to detect subtle brain changes that may predict the onset of Alzheimer's disease and other types of dementia. But how much trust should we have in these new technologies, who will have access to them, and how should the law respond when litigants proffer novel evidence of their brain states? This panel will explore technological innovations in dementia detection, and their ethical, social, and legal implications.



**Jonathan Jackson, PhD**  
Founding Director, Community Access, Recruitment and Engagement (CARE) Research Center at Massachusetts General Hospital and Harvard Medical School



**Bruce H. Price, MD**  
Co-Founder, Co-Director of the Massachusetts General Hospital Center for Law, Brain and Behavior  
Associate Professor of Neurology, Harvard Medical School  
Chief of Department of Neurology, McLean Hospital



**Ipsit Vahia, MD**  
Medical Director, Geriatric Psychiatry Outpatient Services and McLean Institute for Technology in Psychiatry  
Assistant Professor of Psychiatry, Harvard Medical School



Wed., April 1 | 12:00pm | Harvard Law School | Wasserstein Hall, Milstein East C



Part of the Project on Law and Applied Neuroscience, a collaboration between the Center for Law, Brain & Behavior at Massachusetts General Hospital and the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics at Harvard Law School



# Responding to COVID-19

Amidst the challenges brought on by COVID-19, the public's demand for trustworthy scientific and medical guidance to shape policy has increased. This provides the Center with a unique opportunity to amplify our message that better decisions, aligned with science, will produce better outcomes, aligned with justice. This position is further strengthened by CLBB's deep roots in Massachusetts General Hospital. As MGH leads the fight against the novel coronavirus in the hospital, we aim to lead the fight against injustice in the courtroom.

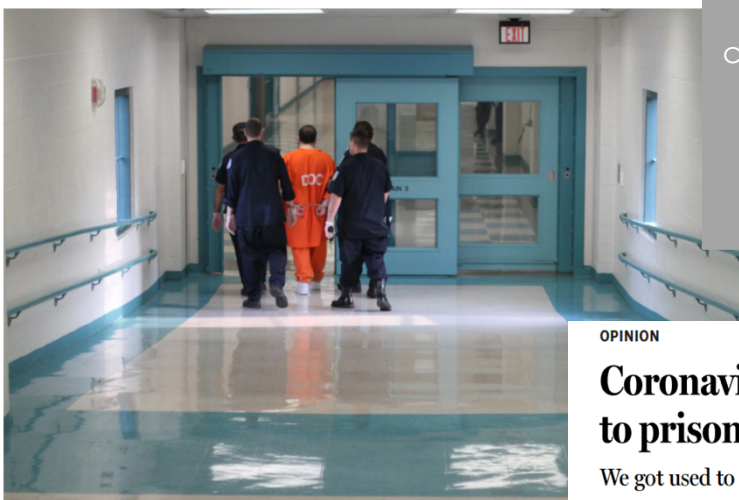
In light of COVID-19, we turned our attention in 2020 to some of the many legal implications of the pandemic. As noted below, our work on adolescent decision-making and compassionate release for older inmates takes on added significance with the COVID-19 pandemic.

OPINION

## Compassionate release now for prisoners vulnerable to the coronavirus

We have the tools to deal with this impending calamity of COVID-19 in Massachusetts prisons. We only need the political will.

By **Nancy Gertner and John Reinstein** Updated March 23, 2020, 12:00 a.m.



Corrections officers moved an inmate in leg and handcuffs at Souza-Baranowski Correctional Center, the maximum-security FOR THE BOSTON GLOBE

"Releasing prisoners who are elderly and vulnerable is not just compassionate, it's a matter of public safety."

-Nancy Gertner and John Reinstein,  
*Boston Globe*

OPINION

## Coronavirus can mean a death sentence to prisoners

We got used to treating people as categories, not human beings.

By **Nancy Gertner** Updated May 5, 2020, 3:28 p.m.

"We got used to treating people as categories, not human beings."

-Nancy Gertner, *Boston Globe*



Prison staff blocks the entrances to MCI Framingham during a drive-by rally organized by Families for Justice as Healing. The women's prison hit hard by the coronavirus, with 71 confirmed cases as of May 3. BLAKE NISSEN FOR THE BOSTON GLOBE





*"Why can't these young adults simply follow the rules like everyone else?"*

As experts in neuroscience and the law, my colleagues and I urge you not to judge these youths too harshly. Their brains are very much to blame."

**-Dr. Judith Edersheim, USA Today**

### **Why are Young People so Bad at Coronavirus Social Distancing? Blame their Brains**

Judith Edersheim | USA Today | May 2020

This op-ed by Dr. Judith Edersheim offers a neurobiological view of young people's lack of social distancing.



"Exploring is a neurobiological mandate ... In most instances, they don't set out to do risky things. It's that they're programmed to do these things."

**-Dr. Judith Edersheim, Wall Street Journal**

### **Why the Teenage Brain Pushes Young People to Ignore Virus Restrictions**

Nancy Keates | Wall Street Journal | May 2020

Dr. Judith Edersheim was quoted in the *Wall Street Journal* about the neurobiological factors underlying young people's need to interact with peers, even to the point of skirting public health mandates.

## Responding to COVID-19: Additional Activities



### **Coronavirus Can Mean a Death Sentence for Prisoners**

Nancy Gertner | The Boston Globe | May 2020



### **Protecting Older Adults from Financial Scams Amidst COVID-19**

Bruce Price | CLBB | April 2020



### **Criminal Justice Reform in the Age of COVID-19**

Judith Edersheim | Hollywood, Health & Society | July 2020



### **The Forgotten: Juveniles in Detention during COVID-19**

Fenella McLuskie, Sina Sadeghzadeh, & Oliver Q. Sussman | The Harvard Crimson | April 2020



### **COVID-19: Law, Economics, Governance - COVID and the Incarcerated**

Nancy Gertner | Yale Law School | Aug 2020



### **Compassionate Release Now For Prisoners Vulnerable to the Coronavirus**

John Reinstein, and Nancy Gertner | *Boston Globe* | March 2020



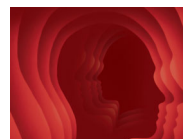
### **The Forgotten: Juveniles in Detention During COVID-19**

Fenella McLuskie, Sina Sadeghzadeh, & Oliver Q. Sussman | The Harvard Crimson | April 2020



### **Seven Ways to Support Kids and Teens Through the Coronavirus Pandemic**

Eugene V. Beresin | Boston 25 News | March 2020



### **Mind, Body, Illness: Amidst Pandemic, Opportunities for Discovery**

Lisa Feldman Barrett, PhD | Association for Psychological Science | April 2020

# Additional Public Engagement

BOSTON SOCIETY OF NEUROLOGY,  
NEUROSURGERY, & PSYCHIATRY  
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MGH CENTER FOR LAW, BRAIN & BEHAVIOR  
*ESTABLISHED 2008*

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## NEUROANATOMY OF A FALSE CONFESSION

**JUDITH G. EDERSHEIM, JD, MD**  
FOUNDER AND CO-DIRECTOR  
MGH CENTER FOR LAW, BRAIN & BEHAVIOR

*INTRODUCTORY REMARKS BY*  
**BRUCE H. PRICE, MD**  
FOUNDER AND CO-DIRECTOR  
MGH CENTER FOR LAW, BRAIN & BEHAVIOR



**Judith Edersheim, MD, JD**, is Co-Founder and Co-Director of the Center for Law, Brain and Behavior, an Assistant Professor of Psychiatry at Harvard Medical School, and an attending Psychiatrist in the Department of Psychiatry at Massachusetts General Hospital. Dr. Edersheim graduated magna cum laude and Phi Beta Kappa from Brown University and attended law school at Harvard, where she graduated cum laude. She was a law clerk to the Honorable Robert W. Sweet, United States District Judge for the Southern District of New York, and practiced law at the firm of Hill and Barlow before returning to Harvard Medical School. She was an intern at the Mount Auburn Hospital and received her clinical psychiatry training at the Cambridge Hospital adult psychiatry residency program. Dr. Edersheim completed a fellowship in the Law and Psychiatry service at Massachusetts General Hospital. She is a member of the Bar of the Commonwealth of Massachusetts, is licensed to practice medicine in Massachusetts and is Board Certified by the American Board of Psychiatry and Neurology, with added qualifications in Forensic Psychiatry. Dr. Edersheim performs a wide variety of civil and criminal forensic psychiatric evaluations and teaches extensively in the legal arena. Her research interest is in the translation of psychiatric and neurologic behavior into legal settings. She has published articles regarding the intersection of legal and medical concepts in peer reviewed medical journals and has been a featured speaker locally, regionally and nationally regarding issues pertaining to neuroscience, psychiatry and the law.

**Thursday, September 17, 2020, 7-8:30pm**

Virtual Meeting, <https://partners.zoom.us/j/2943927859>  
RSVP and Register at <https://bit.ly/2EVyYrK>

MGH Center for Law, Brain & Behavior  
*Neuroscience for Justice*



## TED MED Talk: Every Story Is A Brain Story

March 2020 | Boston

CLBB Executive Director Dr. Francis Shen, JD, PhD, spoke at TED MED 2020 in Boston. Dr. Shen's session, Every Story is a Brain Story, explored how neuroscience might transform the law. TED MED 2020's theme is "Make Way for Wonder." Dr. Shen's talk reflected his view that: When I make way for wonder, I see the law and the legal system not as they are, but as they can become.



## Stephen Morse on Law and Neuroscience

March 2020 | Harvard Law School

How will neuroscience, including the new science of functional neuroimaging, change the way we address questions of criminal responsibility and criminal justice policy? University of Pennsylvania Law School Professor Stephen Morse discussed these and other questions at the forefront of the emerging field of neuroscience and the law. Other topics addressed included juvenile responsibility and the treatment of drug addicted offenders. Professor Morse is the Ferdinand Wakeman Hubbell Professor of Law, Professor of Psychology and Law in Psychiatry, and the Associate Director of the Center for Neuroscience & Society at the University of Pennsylvania. This event was co-sponsored by CLBB along with Law and Behavioral Science at Harvard Law School and the Harvard Health Law Society.

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### « ALL EVENTS

This event has passed.

## Law and Behavioral Science Lunch Talk: Prof. Stephen Morse

March 11 @ 12:00 pm - 12:45 pm

How will neuroscience, including the new science of functional neuroimaging, change the way we address questions of criminal responsibility and criminal justice policy? University of Pennsylvania Law School Professor Stephen Morse will discuss these and other questions at the forefront of the emerging field of neuroscience and the law. Other topics to be addressed include juvenile responsibility and the treatment of drug-addicted offenders.

Professor Morse (JD '70) is the Ferdinand Wakeman Hubbell Professor of Law, Professor of Psychology and Law in Psychiatry, and the Associate Director of the Center for Neuroscience & Society at the University of Pennsylvania. Recent publications include Law, Responsibility, and the Sciences of the Brain/Mind, Neuroscience in Forensic Contexts: Ethical Concerns, and Addiction, Choice and Criminal Law. Lunch will be provided.



# Computational Justice



How Artificial Intelligence and Digital Phenotyping Can Advance Social Good



**Rediet Abebe**  
Junior Fellow, Harvard  
Society of Fellows and  
PhD candidate in  
Computer Science, Cornell  
University



**Justin T. Baker, MD, PhD**  
Scientific Director, Institute for  
Technology in Psychiatry;  
Director of Functional  
Neuroimaging & Bioinformatics,  
Schizophrenia & Bipolar  
Disorder Research  
Program, McLean Hospital; Asst.  
Professor of Psychiatry, HMS



**Francis X. Shen, PhD, JD**  
Executive Director, Center  
for Law, Brain & Behavior,  
MGH; Senior Fellow in Law  
and Applied Neuroscience,  
CLBB & Petrie-Flom Center,  
HLS

October 23, 2019 · 12:00pm

Harvard Law School · Wasserstein Hall · Milstein East (2036)



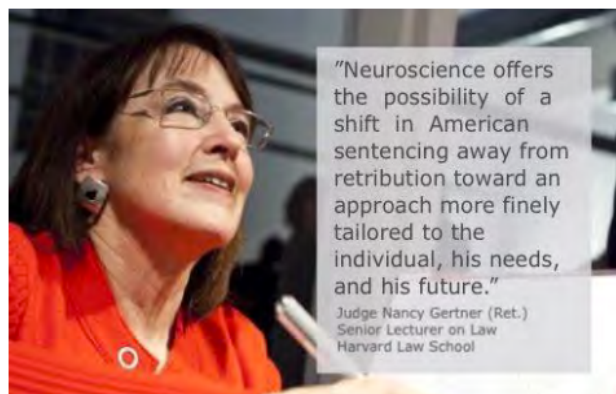
Part of the **Project on Law and Applied Neuroscience**, a collaboration between the Center for Law, Brain & Behavior at Massachusetts General Hospital and the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics at Harvard Law School.



RSVP online! <http://petrieflom.law.harvard.edu/events>

# CLBB Teaching

## Spring 2020: Law and Neuroscience Seminar at Harvard Law School



CLBB's flagship seminar is Law and Neuroscience, which this year includes students from Harvard Law School, Harvard Medical School, the College, the School of Public Health, and the Education School. Law and Neuroscience is taught by Judge Gertner, Senior Lecturer on Law at Harvard Law School. The seminar features a world-class roster of CLBB affiliated faculty and guest scientists to help explore core topics in law and neuroscience. Dr. Edersheim and Dr. Shen join class each session to provide medical and legal perspectives. Guest speakers for the seminar are drawn from CLBB's Affiliated Faculty.



**Description:** What's going on inside the minds of criminal defendants? And what about the judges, jurors, and attorneys who adjudicate them? Are addicts responsible? Can violent offenders be rehabilitated? Do we have free will? How can neuroscience inform criminal sentencing? This seminar on law and neuroscience explores questions such as these through the innovative lens of modern neuroscience. It features guest lectures by world-leading experts in neuroscience, and explores how criminal law's ancient assumptions about human decision-making, emotions, and memory are increasingly being challenged by modern neuroscience through novel evidence and innovative legal arguments.

Students explore the legal implications of the neuroscience of hate, love, memory, lying, trauma, stress, violence, addiction, false confessions, adolescence, juvenile justice, and much more. We look critically at efforts to use neuroimaging in court, and this necessarily leads us to consider the relationship between law and science, more generally, and neuroscience in particular. The seminar develops legal writing skills, as well as prepares students for engagement with expert testimony, criminal law and procedure, and complex litigation involving science and law.

## Fall 2020: Criminal Law and Administration at Yale Law School

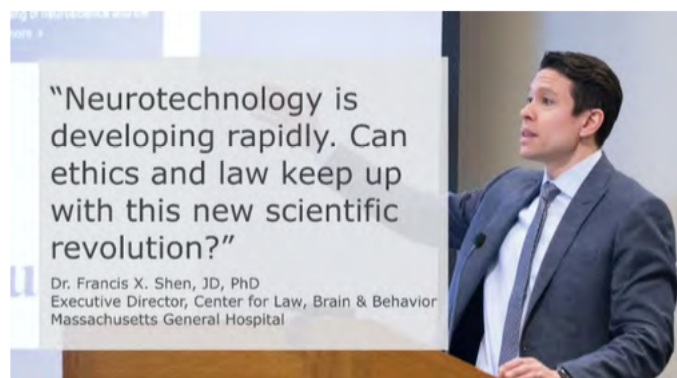
Nancy Gertner and Francis Shen



**Description:** This section primarily addresses foundational issues in substantive criminal law, including the justifications of punishment, the requisites of criminal responsibility, defenses to liability, and inchoate and group crimes. While the underlying concepts derive from English common law, we seek to view them through a different lens. First, the cases are those that we call "ripped from the headlines," modern cases raising age-old criminal law conundrums. Second, where appropriate, we consider the impact of science on common law folk psychological concepts — principally neuroscience and psychology. Finally, we examine the substantive case law in the context of the institutions

that enforce and shape it, notably, legislatures, prosecutors, defense lawyers, and courts.

## Spring 2020: Neuroethics at Harvard Medical School



In spring 2020, Dr. Francis Shen co-taught Neuroethics with Dr. Joe Giacino, PhD. The course was part of Harvard Medical School's Masters in Bioethics Program.

**Description:** This seminar-style course undertakes a survey of the ethical issues related to current and future neurotechnologies. These include such topics as consciousness, selfhood, and free will; human-computer interaction (including artificial intelligence and deep learning); brain-computer interfaces; the use of

neuroscience in the courts; and cognitive enhancement. The course covers many topics related to medical care for patients with neurological disorders, including disorders of consciousness, deciding for others, preclinical imaging and genetic testing for patients with neurological disorders, and clinical research on neural engineering devices. Guest speakers include Leigh Hochberg, MD, PhD on brain-machine interface, Robert Truog, MD on brain death, and Justin Baker, MD, PhD and Benjamin Silverman, MD on deep phenotyping.



# Social Media and Newsletter Year in Review

**4.37k views and  
121 engagements**  
from top tweets

**248 impressions**  
of tweets per day

**21.9k opens**  
of our newsletters

**Over 53k hits**  
on our website

**Added 400+ new  
contacts**  
to our newsletter list

## From the CLBB Twitter Feed:





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GENERAL HOSPITAL



HARVARD MEDICAL SCHOOL  
TEACHING HOSPITAL

Center for Law, Brain & Behavior  
Department of Psychiatry  
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