

MINDSCAPES

MASS GENERAL DEPARTMENT OF PSYCHIATRY NEWSLETTER FOR FRIENDS AND SUPPORTERS | FALL 2019

Intimate Partner Violence and Brain Injuries

Making the Connection Through Imaging

Eve Valera, PhD, is a psychologist and neuroscientist at Massachusetts General Hospital. When she speaks of her research on brain injuries suffered by women, it is with a certain violence of expression.

A mild traumatic brain injury, or TBI, is a concussion, typically associated with injuries to football players on the field or military personnel in the line of duty. “What people don’t think of are women being smashed in their heads by their partners on a regular basis,” Dr. Valera says. “Or thrown off porches. Or hit on the head with a baseball bat. Or having refrigerators thrown on them. Concussions behind closed doors are horrible things.”



Eve M. Valera, PhD

Intimate Partner Violence is “an invisible public health epidemic.”

— EVE VALERA, PhD

Intimate Partner Violence (IPV) is “an invisible public health epidemic,” she states.

In her lab at the Athinoula A. Martinos Center for Biomedical Imaging at Mass General, Dr. Valera uses a combination of careful interviewing, advanced imaging scans, and neuropsychological tests to identify abuse-related brain injuries and relate these injuries to cognitive and

psychological functioning. Citing estimates that as many as 33 percent of women worldwide experience intimate-partner violence, Dr. Valera contends large-scale, comprehensive studies are urgently needed—and long overdue.

An Important Connection

Dr. Valera first became interested in the topic when she volunteered at a domestic violence shelter during her time at the University of Illinois. A PhD candidate in clinical psychology, she was curious about the connection between partner abuse and women living with mild traumatic brain injuries. When she conducted a literature

search, she was dumbfounded by what she found: absolutely nothing.

In response, Dr. Valera began to collect data that would become her published dissertation work. In a sample of 99 women, she found that 74 percent of them suffered at least one abuse-related TBI including brain injuries from strangulation; 51 percent sustained repetitive TBIs, many of whom sustained “too many to count.” Most did not seek medical treatment for and/or were not aware they had sustained what she describes as “IPV-related TBIs.”

Unlike a broken arm or punctured lung, these injuries are not immediately

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A Message from the Chief

This is my first message to you as Chief of Psychiatry at Massachusetts General Hospital. I am deeply honored to lead this extraordinary department and excited for the opportunities and challenges that lie ahead.

First and foremost, I am proud of the department for its strong focus on patient care. Patients always come first here, in the clinical care setting, and in our research. That *U.S. News & World Report* named the department number one in the country—for the 20th time in the last 25 years—is a welcome honor but is no surprise to us. It is, indeed, a legacy of former chief Jerrold Rosenbaum, MD, who I wish to thank for his tremendous leadership over the past two decades. Jerry has served as a wonderful role model for me and all of us who have had the privilege to work with him. I am deeply grateful for all that he has done for the department and the field.

Since my appointment, I have been fond of repeating a phrase that clarifies my vision: the best way to predict the future is to make it. This is the time for us to shape the future of psychiatry and take advantage of the latest technologies that will drive new therapies and treatment approaches.

To this end, one of my priorities is to launch a new Center for Precision Psychiatry. The center's focus will be on the discovery and development of tailored, individualized treatments that will eliminate the clinical practice of "trial and error." Through the work of the center, we will also be able to identify patients at high risk for mental illness and enable early screening, diagnosis and treatment.

Above all, we need to increase access to quality care for people who are struggling with mental illness and have nowhere to turn. One of my priorities is to address this difficult issue and work to develop new models of care.

We cannot accomplish this alone. To improve the mental health and well-being of people no matter their circumstance and to make their lives better, we need your help. Together I know we can reach new heights because the horizon from the chief's office looks bright.

MAURIZIO FAVA, MD
Psychiatrist-in-Chief

Maurizio Fava, MD, appointed new chief of Psychiatry

Maurizio Fava, MD, is the new chief of the Department of Psychiatry at Massachusetts General Hospital. An esteemed clinician, educator and mentor for more than three decades, and one of the world's leading scientists in the field of depression, Dr. Fava assumed his new post on October 1. He succeeds Jerrold Rosenbaum, MD.

"I'm thrilled and honored," Dr. Fava said. "My professional life has always been at Mass General."

Dr. Fava previously served as executive vice chair of Psychiatry and remains director of the Division of Clinical Research for the Mass General Research Institute. He founded the Depression Clinical and Research Program (DCRP) in 1990 and served as its director for



Maurizio Fava, MD (right) was celebrated by colleagues in the DCRP following the announcement that he had been named as the new chief of Psychiatry.

nearly 25 years, shaping it into what is arguably the preeminent academic program focused on advancing the understanding of depression disorders and improving treatment.

"We know you are going to have a tremendous tenure as our chief, and take our department to unprecedented heights," David Mischoulon, MD, the current director of DCRP,

said in his toast to Dr. Fava at a celebration in the DCRP offices.

Dr. Fava has trained, guided and inspired many of today's most notable leaders in psychiatry. Hundreds of people who interacted with, learned from and worked beside him endorsed his candidacy through a letter-writing initiative, extolling his qualities as a wise problem-solver, patient listener, and supportive and caring colleague.

"I can't tell you how gratifying it was to see the outpouring of support for Maurizio," said Timothy G. Ferris, MD, the CEO of the Massachusetts General Physicians Organization. "It was a little overwhelming, actually."

Born in Valdarno, Italy, Dr. Fava earned his medical degree from the University of Padua School of Medicine, where he completed his residency in endocrinology before coming to Mass General to begin a residency in psychiatry. He served as chief resident in the Clinical Psychopharmacology Unit before joining the Psychiatry staff in 1988.

A new chapter for the former chief

Jerrold F. Rosenbaum, MD, stepped down as chief of Psychiatry on September 30 after providing 19 years of extraordinary leadership to the department. He remains a vital presence at Mass General, serving as director of the Center for Anxiety and Traumatic Stress Disorders, co-chair of philanthropy for the hospital, and a supervisor of resident clinical work.

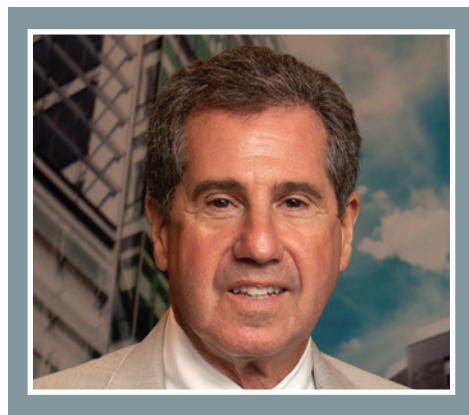
Dr. Rosenbaum also seeks to launch innovative research on the effects of psychedelic drugs on the brain. He is working to establish a Program for the Study of Neuroplasticity to Advance Psychotherapeutic Discovery at Mass General. Remarkable advances in imaging human brain function — many pioneered at the hospital — now afford scientists the unique opportunity to study psychedelic drugs on brain networks, brain chemistry and the

capacity of the brain to change, he says.

Dr. Rosenbaum is considered one of the world's authorities on mood and anxiety disorders, with a special emphasis on the pharmacotherapy of these conditions. Ongoing studies of children at risk for anxiety disorders and depression continue to be a focus of his work. His research contributions include the development of new therapies and the design of trials that yield innovative treatments.

"We're not just here to absorb what we were taught, apply it, and pass it on," Dr. Rosenbaum once said. "We've got to make the world better. That's always been the tradition of this hospital."

"[Dr. Rosenbaum] represents the best of Mass General, striving for excellence and fulfilling our mission to alleviate pain and make the world a better place," said



Jerrold F. Rosenbaum, MD

Mass General President Peter L. Slavin, MD. "It has been a privilege working with him and sharing a deep commitment to psychiatry services in a general hospital. For all that he has given to his patients, to Mass General and the field of psychiatry, we are forever grateful."

Joseph Biederman, MD, Honored with Endowed Chair in Pediatric Psychopharmacology

Joseph Biederman, MD, chief of the Clinical and Research Program in Pediatric Psychopharmacology and Adult ADHD, was recently honored as the inaugural incumbent of the MGH Trustees Endowed Chair in Pediatric Psychopharmacology. The celebration took place on October 7, 2019 at the Paul S. Russell, MD Museum of Medical History and Innovation.

Dr. Biederman "is one of the world's most influential psychiatrists," Massachusetts General Hospital President Peter L. Slavin, MD, said at the gathering. "He remains one of the strongest advocates for children and families."

A pioneer in his field, Dr. Biederman founded the The Pediatric Psychopharmacology and Adult ADHD Program at Mass General in 1981. He revolutionized child psychiatry by demonstrating through careful diagnosis that mental illnesses such as bipolar disorders in children exist and that they usually persist in childhood. He developed tools for early identification and diagnosis of psychiatric disorders to prevent development into serious mental illnesses. He highlighted the importance of high-quality research to balance the potential risks with the very real benefits to children who suffer. His work helped to erase stigma and



Joseph Biederman, MD, right, at the October 7 celebration, with his wife, Helen Charlupski, MSW, center, and Peter L. Slavin, MD, left.

remove blame, allowing children to be treated in multiple ways.

"Joe's scientific research made it possible for generations of children to lead productive lives," said the new chief of Psychiatry, Maurizio Fava, MD.

Dr. Biederman is the most cited psychiatrist in the field and a prolific author, publishing more than 1,400 articles, scientific abstracts and book chapters. A devoted mentor to junior investigators, he is also director of the Alan and Lorraine Bressler Clinical Research Program for Autism Spectrum Disorder.

"Research and treatment of children with serious mental health problems have been my life's work here at Mass General," Dr. Biederman said. "This chair is an important milestone in my journey that I hope to continue for many years to come."

Philanthropist Arthur Epstein Helps Im

“Beautiful,”

is how Arthur Epstein describes the rooftop garden and the children’s courtyard in the Epstein Center for Behavioral Health which opened in October at the North Shore Medical Center (NSMC) in Salem, Mass. Affiliated with the Massachusetts General Hospital Department of Psychiatry, the facility features the state’s largest inpatient psychiatric service embedded in a full-service hospital.

“Have you ever been in a mental hospital?” Epstein asks. “It’s a scary place for a lot of people to go visit. But we shouldn’t be afraid.” With purposeful design features that allow light to stream into the facility and outdoor space for kids to play and adults to enjoy fresh air, the new Epstein Center provides a more positive environment for patients and families.

Epstein donated \$5 million to the center, the largest single gift in the history of the North Shore hospital. The addition of 54 new psychiatric and behavioral health beds to the region improves access to care while providing a safe place for families in crisis.

A Marblehead, Mass. resident for over 50 years, Epstein is a generous philanthropist who has served on the NSMC board since 2006. His transformative gift also honors his late wife, Eunice, who had bipolar disorder for most of her adult life.

“I am proud of my father’s decision to make this generous and meaningful donation, in my mother’s memory, to the North Shore Medical Center,” his daughter, Lauren Rubin, said at the center’s dedication ceremony in September. “Not only will it provide more access for North Shore families suffering from these complex illnesses, but hopefully help reduce the stigma by simply sharing our own family’s journey.”



Arthur Epstein and his wife, Bryna Litchman.

A Family’s Difficult Journey

Epstein now lives in Boca Raton, Florida with his wife, Bryna Litchman, whom he married in 2018 at the age of 81. Unpretentious and informal, with a zest for life and for fun, he is also candid about the difficult journey that began when Eunice, the mother of two small children and an infant, received her bipolar diagnosis at age 30.

“It was tough on her. It was tough on me,” he admits. “When she was good, she was very good, when she wasn’t...”. Her illness was severe, intractable and treatment resistant. “She could never get it controlled the right way. You name the mental hospitals in Boston, I was in them.”

He says he understands why spouses and family members sometimes walk away, recognizing there is a breaking point. But he speaks of his deep sense of obligation to Eunice, his high school sweetheart who comforted him at age 16 when his father died. “She was there for me, period.”

For their generation, mental illness was hidden in plain sight, the suffering exacerbated by shame and incomprehension. “I always tell people, if you went by a car accident and somebody was bleeding, wouldn’t you stop? Well, you can bleed internally as well as externally.”

A Collaboration to Improve Access and Care

Mass General was one of the health care facilities that took care of Eunice. “I think the Psychiatry Department is superior,” Epstein says. Access to psychiatric treatment remains a huge challenge, he notes. “You can’t get to see people. And people don’t know where to turn.”

Mass General Psychiatry is one beneficiary of his many charitable contributions. He also donated \$1 million to the Mass General/North Shore Center for Outpatient Care in Danvers. The new Epstein Center is a strong collaboration between the Mass General and NSMC Psychiatry departments. The MDs who

Improve Access to Psychiatric Care

work on the inpatient units in Salem will have appointments at both institutions.

“Access to care is a huge problem,” says Joy B. Rosen, vice president for behavioral health at Mass General. “We are incredibly appreciative of Arthur’s gift, which will allow more people who need inpatient psychiatric care to receive the help they need, and in such a calming and caring environment.”

throughout New England. He was also a partner in the real estate firm Cres Development.

“If people have a certain amount of success, they have an obligation to give back, in many forms,” Epstein says, summing up his philosophy. “There’s so much out there that people need help with.” Giving back, he adds, “just feels good.”

do good.’ He wants to do the right thing, and feel useful, and be of service to others. I admire that.”

Rubin is a philanthropist like her father. Together with Epstein and his wife, Bryna, Rubin and her husband, Mark, are members of the Mass General Leadership Council for Psychiatry, made up of individuals and families dedicated to expanding awareness of mental illness and reducing its stigma. Epstein was asked by Council Co-Chair Michele Kessler to become a member, and he did.

“I was thrilled when Arthur agreed to become a member of the Leadership Council,” Kessler said. “He is a wonderful, generous man who knows all too well the toll of mental illness on a family—but also understands how philanthropy can help others and lessen their pain. I am proud to know him.”

“It’s important,” Epstein says of the Council’s work. The Council’s motto, “No Family Goes Untouched,” holds special resonance for Epstein. “We all walk on a very fine thread and you can tip either way,” he says, softly.

“He is a wonderful, generous man who knows all too well the toll of mental illness on a family—but also understands how philanthropy can help others and lessen their pain.”

— MICHELE KESSLER, *co-chair, MGH Leadership Council for Psychiatry*

An Obligation to Give Back

Epstein, who grew up in Malden, Mass., is a successful entrepreneur and investor. He bought his first Midas Muffler tire shop in 1965, eventually holding 30 locations

Her father, says Rubin, imparted valuable lessons to her, her sister, Julie, and brother, Jonathan. “He taught us to live in the world in an unselfish way. He would tell us, ‘it’s not enough to be good, you need to



At left, Arthur Epstein, Lauren Rubin, Mark Rubin, J.B. Nadal and Bryna Litchman at the Sept. 10 dedication ceremony; at right, the Epstein Center for Behavioral Health in Salem, Mass.

The MGH Leadership Council for Psychiatry Eighth Annual Visiting Day

On June 3, outgoing Chief of Psychiatry, Jerrold Rosenbaum, MD, and Mass General President, Peter L. Slavin, MD, welcomed more than 150 guests to a day of seminars on the topics of Research Advances and Treatment Innovations, Substance Use Disorders, the Mental Health of LGBTQ Individuals, OCD and Related Disorders, Caring for Loved Ones While Caring for Yourself and ADHD Throughout the Lifespan. A lunch plenary session at the Harvard Club brought physicians and patients together for 'Stories of Recovery.' The day concluded with dinner for Leadership Council members at the Four Seasons Hotel.



Carroll Carpenter, Co-Chair, MGH Leadership Council for Psychiatry, with David Harkins



Charles and Patty Ribakoff and Christopher and Binkie Orthwein



Mary Davidson and Paula K. Rauch, MD



Peter L. Slavin, MD



Dinner in honor of Dr. Rosenbaum, right, with Michele Kessler, Co-Chair, MGH Leadership Council for Psychiatry



Jay Seyfert and Heidi Cox



Darin Dougherty, MD, MSc; Liss Murphy; Lee Cohen, MD; Laura Kehoe, MD and Mike Reid

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obvious. A range of behavioral, cognitive and psychological symptoms commonly reported after mild TBIs include headaches, nausea, forgetfulness, insomnia, poor concentration, dizziness, feeling depressed or anxious, and being irritable or easily angered. These symptoms can have negative effects on the ability to react and respond effectively — in essence, to get help and to get out of an abusive situation.

A First-of-its-Kind Study

The brain has two major hemispheres, and axons are nerve fibers that connect those two hemispheres as well as other regions of the brain. Cognitive impairments in TBI are thought to arise from damage to axons during a concussion that disconnects these brain networks. For Dr. Valera's — and the world's — first imaging study examining the effects of IPV-related brain injuries, she scanned the brains of 20 women abused by their partners.

Though the sample was small, the findings showed that the women's injuries reflected abnormalities in functional neural network interactions associated with memory and learning. It was the first neuroimaging study to systematically examine and provide evidence of brain injury in women who had been physically abused by their partners. Dr. Valera has since published another neuroimaging study showing a relationship between *structural* connectivity and the brain injuries these women received from their partners.

"No one else has done this," she says, "This is my passion."

Mass General is the ideal place to carry out her TBI research, Dr. Valera says, pointing to the Martinos Center and its state-of-the-art imaging capabilities, and Mass General Neuroscience, the interdisciplinary initiative which offers collaboration and shared knowledge. Mass General leadership has also been "highly supportive" of her work, she says, providing bridge funding until she received federal grants.

Raising Awareness, Reducing Stigma

An assistant professor of psychology at Harvard Medical School, Dr. Valera's work extends beyond her lab in other ways too. She considers awareness building and information sharing significant parts of her job. "One of the reasons we know so little about partner violence is because it is an ugly topic," she says. "It's very stigmatizing."

Dr. Valera gives lectures and presentations on TBIs and IPV to a range of audiences throughout the country and internationally, including judges and probation officers, and has become adept at explaining not only the science behind her brain research, but also the private suffering of women she hopes it will alleviate. She helps train police officers who are the first to respond to a domestic violence call and provides information to shelter directors. "Much of the general public doesn't know what a concussion is," she states.



Dr. Valera with three of her students — Olivia Scott, Nathalia Quiroz Molinares and Annie-Lori Joseph — in her office at the Martinos Center.

All that is required for someone to sustain a TBI is what Dr. Valera calls an "alteration of consciousness" after some type of external trauma or force to the brain. A loss of consciousness is not required, and, in fact, does not occur in most mild TBIs.

In football, she explains, spectators see the hit, which makes the injured player's response — unsteady on the feet, slightly dazed — easy to understand. But a police officer responding to a domestic situation, who sees the same unsteady behaviors, but smells alcohol at the scene, may conclude that the unsteadiness is a result of inebriation. "Mild TBIs can mimic intoxication," she notes. Her advice to police is to ask what happened. "If the answer is, 'he slammed my head against the wall,' entertain the idea that maybe a concussion just occurred."

Women with undiagnosed TBIs may also face problems at shelters, when they are confronted with bright lights and excessive noise and a disruptive change in routine. They may be perceived as "uncooperative," when they are really grappling with a brain injury.

More Research—and Funding—is Needed

Dr. Valera says that long-term studies are needed, with larger sample sizes and control groups. Recently, she was awarded what is the first federally funded large-scale grant to use neuroimaging to study the effects of TBI on women who have experienced IPV. She plans to study 144 women, all of whom have experienced IPV, but half with TBIs. She also wants to research the long-term impact of repetitive brain traumas, which she thinks, based on preliminary evidence, will likely include significant neurodegenerative changes. However, she will need additional funding to do that.

Imaging studies are costly, she explains, at \$625 an hour for a scan that may take 2.5 hours.

But the costs to women are incalculable. "Look around and talk about it in the open," she advises. "It's more common than people think."

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Profiles in Care

This new column will present the personal and professional stories of early to mid-career psychiatrists and psychologists at Mass General.

Simmie L. Foster, MD, PhD

Staff Psychiatrist at Massachusetts General Hospital and Instructor in Psychiatry at Harvard Medical School

Simmie Foster's parents—her mother of Eastern European Jewish descent and her father an African American from Georgia—were no strangers to struggle. They ran multiple small businesses and were perennial students, committed above all else to educating their children. Simmie was three when she asked her father, “Dad, what am I made of?” He replied, “Simmie, my love, you are made of thousands of little Simmies called cells.” Thus began the odyssey of Simmie Foster's research into resilience.

When she was nine, living in Richmond, California, Simmie joined a performing arts center devoted to social justice and healing. This experience of storytelling in action led her to question the commonly held belief that there is a strict line between the mind and the body.

She entered the University of California at Berkeley at age 16. From there she took a circuitous route to the study of how cells remember pain and how this memorization helps cells adapt. She was not initially interested in psychiatry, but her first



experience with talk therapy changed that and changed her life. Later, at Yale University, where she received her doctorate and medical degree in 2010, she worked in an immunology lab. All this led to the question at the heart of her work today: how do the immune system and the sensory neurons (the mind and body) talk to each other? And could this communication be what resilience is, at its core?

“It follows,” says Simmie, now Dr. Foster, “that if we can make the individual cells more resilient, we can help the whole person to be stronger.” Arguably, this sturdiness is the key to good mental health because, while we all suffer, it is the management of that suffering that makes for either a happy or a wretched life. Simmie L. Foster, MD, PhD, a physician in the Depression Clinical and Research Program at Mass General, is hot on the trail of discovering what environments and treatments enhance the ability of cells to adapt. “What works for our cells may also work for ourselves,” she says.

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