

MINDSCAPES

MASS GENERAL DEPARTMENT OF PSYCHIATRY NEWSLETTER FOR FRIENDS AND SUPPORTERS | **SUMMER 2022**

Who's Your Avatar?

A research team lead by Daphne Holt, MD, PhD, is developing a virtual reality-based tool to build resilience and improve mental health

“**W**orking on your mental health can be really, really hard,” says Daphne Holt, MD, PhD, a psychiatrist and neuroscientist at Mass General and the founder of a pioneering program focused on ways to prevent psychiatric illness. “A lot of times when people are struggling with a mental health issue, they can get stuck in repetitive patterns of thought and behavior. It can feel like you are in a hole you can’t get out of.”

Department of Psychiatry researchers like Dr. Holt are investigating the feasibility of digital technologies to build resilience, treat conditions such as anxiety and depression, and even serious mental illness such as schizophrenia — and help patients climb out of those holes. Digital tools have enormous potential to alleviate the crisis in mental health — exacerbated by the COVID-19 pandemic — by expanding access to care, particularly in underserved areas, and reducing the stigma that prevents too many people from seeking help in the first place.

Dr. Holt and her team are in the forefront of developing an innovative digital mental health intervention using virtual reality, or VR. Individuals put on a headset, create their own character, or “avatar”, and visit computer-simulated “virtual” rooms designed to encourage interaction and connection. This immersive environment, where



Dr. Holt in her office at the Athinoula A. Martinos Center for Biomedical Imaging with her virtual reality avatar, also named Daphne.

“Virtual reality allows a new kind of learning to happen. It can be a catalyst for new behaviors.”

— DAPHNE HOLT, MD, PHD

participants can be anonymous, gives new meaning to the phrase “change of scenery,” all without leaving the comfort of home.

VR, according to Dr. Holt, “allows a new kind of learning to happen. It can be a catalyst for new behaviors. Suddenly people

realize it may not be so hard to change.”

As the founder and director of the Resilience and Prevention Program and MGH Research Scholar 2018-2023, Dr. Holt focuses on preventing mental illnesses or reducing serious symptoms through evidence-based behavioral interventions and insights from cognitive neuroscience. Psychological skills such as mindfulness, which is the ability to remain in the present, can enable people to manage stress and improve resilience. Dr. Holt’s research also showed that these skills provide a protective factor, prompting her ambitious goal to develop a protective “vaccine” for mental health.

VR has been used in psychiatry for the past decade to treat anxiety disorders,



A Message from the Chief

Fall is the true season of fresh starts and new beginnings when we resume our regular schedules and send our children back to school after a summer respite. I hope you were able to relax and enjoy good times with family and friends. It is appropriate that this issue focuses on our young people and their families and highlights the innovative and varied work of the department in clinical care, research, education and outreach as we continue to navigate the “mental health pandemic within the pandemic.”

Our cover story features the groundbreaking work of Dr. Daphne Holt, who is developing virtual reality (VR) programs to build resilience. The results from her initial VR sessions for health care workers and college students show great promise. New digital technologies and tools are some of our best hopes in our quest to expand access to care and reduce stigma.

We also celebrate the 10th anniversary of the Research Recovery Institute, founded and directed by Dr. John Kelly. He is launching a national center

for youth treatment and recovery to address addiction in young people through prevention and early intervention strategies. At the hospital, our clinical psychologists are responding to the soaring demand for child and adolescent mental health services by piloting an embedded care program with their colleagues in pediatrics.

It is important to note that philanthropy propelled these initiatives, and we are deeply grateful to our supporters. Transforming the mental health landscapes and reducing barriers and obstacles to care will require the involvement of all of us who care about our families and friends and the vulnerable and underserved in our communities. We all imagine a brighter future, now we need to work together to make it a reality.

MAURIZIO FAVA, MD
Psychiatrist-in-Chief

Visiting Day

“IT’S GREAT TO BE BACK IN PERSON.” That was the overwhelming sentiment of attendees at the 11th Annual MGH Leadership Council for Psychiatry Visiting Day at the Harvard Club of Boston on June 6. The day-long seminar, the Council’s first in-person event in more than two years, featured presentations by 12 stellar faculty.

Maurizio Fava, MD, expressed his gratitude to all faculty for going “above and beyond” during the pandemic and pivoting to provide care for more patients than ever. Across the department’s 50 distinct clinical programs, clinicians have provided more than 200,000 outpatient visits, representing more than half of the visits of the entire Mass General Brigham system, he said. The department’s research budget increased by 18% in the past year, approaching \$100M in fiscal year 2022.

Hospital President David F. M. Brown, MD, re-affirmed Mass General’s historic commitment to comprehensive psychiatric services. Faculty addressed a range of topics at the four seminars: *Aging as We Come Out of COVID*, *Digital Technology*, *Mood Disorders and Children* and *Substance Use Disorder*. Luncheon guests were inspired by the event’s traditional “stories of recovery,” moving and candid testimonials by a grateful patient and a grateful parent of a young patient.



Aging As We Come Out of COVID seminar speakers Robert Waldinger, MD, Sabine Wilhelm, PhD (moderator), Olivia Okereke, MD, MS, and Tony Weiner, MD, with Maurizio Fava, MD.

Please see page 6 for a story on Dr. Janet Wozniak’s keynote address. Scan the QR code to view the morning plenary, seminar recordings and photographs of the event and the Council dinner at the Four Seasons Hotel.



Meeting Youth and Families Where They Are

Pediatric primary care clinics are the “de facto mental health clinics” for youth in the U.S., notes Mass General psychologist Archana Basu, PhD. “They are often the front lines in helping children and families with mental health concerns.”

At Mass General for Children (MGfC), the number of children and adolescents who visited the primary care clinic because of mental health issues rose sharply during the COVID-19 pandemic. More than half of those patients report symptoms of emotional distress, sleep disruptions, mood and behavior problems and others.

While initial mental health screenings are routinely provided by pediatric primary care teams, further evaluation and intervention are the crucial but often unavailable next steps. “Access to mental health services, and specifically for psychotherapy, has been an ongoing challenge in our outpatient clinic,” says Nancy Rotter, PhD, Director of Psychology, Child and Adolescent Psychiatry, Ambulatory Care Division.

In response to the escalating demand for timely and accessible pediatric mental health services, Drs. Basu and Rotter launched a pilot program in 2021 to embed child psychologists in MGfC primary care clinics. The Integrated Primary Care Program (IPC) began as a partnership with pediatricians Katherine Brigham, MD, and Shannon Scott-Vernaglia, MD.

The integrated care model enables the team to provide more resources to more youth and families by meeting them where they are — in the clinic, where they see their pediatricians. The initiative focuses on evidence-based prevention and early intervention strategies to lessen the likelihood of developing more serious mental health disorders. It features three main components:

- A *psychologist or psychology fellow* embedded in the primary care clinic and providing mental health screening, education and resources and consultations to children, adolescents



Nancy Rotter, PhD, and Archana Basu, PhD, have launched a pilot program with Mass General for Children to embed mental health care in outpatient pediatric clinics.

and families during their appointments with their pediatricians.

- *Brief follow-up interventions* for families in the outpatient child psychiatric clinic, based on mental health needs identified during primary care visits.
- *Group-based mental health interventions* for parents and adolescents, designed to increase capacity, reduce wait time for care, and help families draw on a sense of community.

Embedding psychologists in a primary care setting reduces the stigma typically associated with receiving mental health care, Drs. Basu and Rotter point out. That the pediatrician is able to introduce the psychologist to family members in the clinic also encourages connection and promotes follow-up care. “Having a psychologist available in the clinic is very important,” says Dr. Rotter, noting that patients do not always act upon referrals to mental health services.

Telehealth has made it possible for the program to expand access to care and build capacity. “Many teenagers and parents find the virtual format to be convenient and accessible,” says Dr. Rotter. “Parents don’t have to take three hours off from work or pay for parking, and teenagers often have busy schedules.”

Already, the program is making a difference. Recently, an older adolescent came to the clinic with vertigo. The pediatrician treated the physical symptoms, but the psychology fellow performed a detailed mental health screening and helped to immediately address the patient’s significant mental health needs.

Seed funding provided by the Division of Child and Adolescent Psychiatry, led by Timothy Wilens, MD, along with support from the Marino Health Foundation, enabled the launch of the pilot phase. More resources are needed to expand the program. “Insurance reimbursements simply do not cover all costs,” says Dr. Basu.

“The Marino Health Foundation works to support organizations that advance a holistic, integrative approach to health, particularly for children,” says Foundation Board Chair Lorraine Marino Snyder. “Considering the recent increase of mental health problems, it makes perfect sense to us to support a program like the IPC. It is progressive and we have confidence it will show positive results.”

If you are interested in supporting the Integrated Primary Care Program (IPC) at MGfC, contact Molly McCarthy at mmccarthy50@mgh.harvard.edu.

The Recovery Research Institute: A Trusted Resource on Addiction Issues

Addiction to drugs and alcohol continues to be one of the most pressing and complex public health challenges of our time, says clinical psychologist and noted addiction expert John F. Kelly, PhD.

But in the midst of an unparalleled crisis, Dr. Kelly maintains optimism that stable and long-term recovery from addiction is possible and that rates of recovery can improve through rigorous scientific research and public education. That hopeful commitment is what led Dr. Kelly to establish the Recovery Research Institute, or RRI, at Mass General in 2012.

"Dr. Kelly has dedicated his life's work to helping individuals in need achieve long-term recovery locally, in Boston, as well as nationally and internationally," said the National Council for Mental Wellbeing when it awarded its Lifetime Achievement Award earlier this year. "He has had — and continues to have — a profound impact in and beyond health care."

Celebrating its 10th anniversary this year, RRI (recoveryanswers.org) is one of the country's most respected and trusted resources on addiction issues. Its mission is to conduct research but also to educate and disseminate accurate, up-to-date information to individuals, families, health care professionals and policymakers. U.S. President Joe Biden, for example, recently cited in a State of the Union speech that 23 million Americans are in recovery from addiction. "That is an RRI statistic that comes from our own National Recovery Study, a product of our scientific inquiry," Dr. Kelly notes.

"RRI has been at the forefront of conducting dozens of studies of recovery to discover what kind of services and supports are needed in the long-term."

— JOHN F. KELLY, PHD

Reflecting on the ten years of RRI, and the half century since the federal government launched the "War on Drugs," Dr. Kelly says that the field has achieved considerable success with acute treatment strategies. Today, the emphasis has shifted to how to achieve sustained remission and recovery. "What do we do after the initial 12-weeks of treatment? Where do we go then?" Dr. Kelly asks. RRI, he adds, has been at the forefront of conducting dozens of studies of recovery to discover what kind of services and supports are needed in the long-term.



John Kelly, PhD, psychologist at Mass General and the Elizabeth R. Spallin Professor of Psychiatry in Addiction Medicine at Harvard Medical School, says there is a need to focus on pathways out of addiction among young people.

As it enters its second decade, RRI has an additional focus — addressing addiction in young people. Approximately 90% of addicted adults begin using alcohol or other drugs before age 18, and 50% before age 15. Dr. Kelly and his colleagues believe that early detection and intervention among youth are key to reducing the overall clinical, public health and economic burden of addiction.

"We need to find out why kids are turning to mind-altering substances," Dr. Kelly says. "How can we build resiliency and prevent them from becoming addicted in the first place? How can we engage them and help them sooner when they get into trouble with alcohol or other drugs?"

Thanks to the generous support of the Peter and Elizabeth C. Tower Foundation, Dr. Kelly, under the auspices of RRI, is launching the National Center of Excellence for Youth Treatment and Recovery this fall. His ambitious plans for the Center include a web-based, state-by-state Youth Recovery Resource Map of local recovery services and organizations; a monthly email bulletin that translates the latest research for clinicians, researchers and policy makers; a website on youth treatment and recovery with resources for families; and an annual national conference.

A major focus of the Center will be "reinvigorating" youth recovery science. "Despite significant gains in our knowledge of empirically based treatments for addressing youth substance use disorder, very few young people are interested in engaging or staying in treatment, Dr. Kelly notes. "We need to think outside of the box. We need to be more innovative and more radical."

The Ripple Effects of Mental Illness

Christina and Richard Ronder seek to ease the burden of individuals who need care — and their families

Christina and Richard Ronder, members of the MGH Leadership Council for Psychiatry, are believers in the council's motto, "No Family Goes Untouched."

The struggles of individuals with serious mental illness are shared, and, indeed, shouldered by family members and loved ones, Christina notes. "It's hard to meet anybody who has not been affected at some level." And those affected need relief, the Ronders recognize. That is why they are supporters of the Department of Psychiatry at Mass General.

This same passion is why they started a company, ForeverParent (*foreverparent.com*), which works with families to ensure long-term care for individuals with mental illness, intellectual disabilities and other special needs. "Unsung, heroic efforts are expended 24/7 to ensure the health and happiness of family members who have these issues," Richard says. "The needs are never-ending." There are parents, he notes, of adult children 40 and 50 years old who have never taken a vacation without them. Adding to the responsibility is their worry over an uncertain future. Who will take care of their child when they are no longer able?

"Forever starts today," Richard says. "The challenge is getting families to act. Putting a plan in place before there is a crisis offers peace of mind and, most importantly, allows the parent to be part of the plan, rather than leave the future to chance."

As Christina explains, "it's hard to let go, but it's not letting go. It's getting help to ensure that the quality of life they have worked so hard to put in place in their lifetime will continue beyond them."

In keeping with their commitment to expand access to state-of-the-art care, the Ronders are funding a comprehensive outreach, education and training initiative of the Psychosis Clinical and Research Program. This project, led by Oliver Freudenreich, MD, (co-director of the program) and psychiatric nurse practitioner Sarah MacLaurin, RN, features the creation of a Treatment-Resistant Schizophrenia (TRS) Service to improve care for patients with difficult-to-treat schizophrenia. The program has two main clinical components: a psychosis consultation service for second opinions and education; and a clozapine clinic.

Clozapine is one of the most effective medicines for patients who have not responded to other therapeutics, but it is too often inaccessible because of insufficient training or experience. "The clozapine clinic provides an essential service to the community, with a virtual component to increase access and an emphasis on med-psych integration to make psychiatric treatment as safe as possible," Dr. Freudenreich explains. "A healthy mind in a healthy body is one of our guiding principles. Put differently: without medical health, there is no psychological well-being — and vice versa."



Christina and Richard Ronder

Clozapine has many potential side effects that need to be well managed, Dr. Freudenreich notes. The team works with primary care doctors to make sure patients who need clozapine for their psychiatric illness can get it and can take it safely.

"I am very grateful to the Ronders for recognizing how important it is to bring everything under one roof, in the form of this Service.," says Dr. Freudenreich.

"The clozapine clinic keeps people out of the hospital and the Emergency Department, which means a great improvement in their lives," Richard says. "And a huge savings," he adds, sounding like the business leader that he is.

"We feel fortunate that we can support Mass General," Christina adds. "If we can help them with resources, they can concentrate more on their work and less on finding funding."

The Ronders say they are impressed by the sheer persistence and dedication of the Psychiatry faculty. "They continually seek creative solutions and don't give up."

The Ronders say they share the mission of Mass General Psychiatry and the Leadership Council to increase knowledge and understanding of mental illness and reduce the stigma. It is why they feel compelled to speak out.

"It is important to us that people have a better understanding of mental health issues," Christina says. Stigma robs individuals and families of dignity and respect, she says, and diminishes their ability to enjoy the simple pleasures of life.

"The stigma is hard — just unbelievable," she says. "Families are afraid they won't be invited to weddings. Or they are afraid to go because their child may make a scene. We've got to destigmatize mental illness. It touches everybody. The more we talk about it, the more people understand, we can start to turn the tide on this."

“Children Can’t Lobby for Themselves. It is Up to Us”

Dr. Janet Wozniak delivers a powerful keynote address at the MGH Leadership Council for Psychiatry Visiting Day

Child psychiatrist Janet Wozniak, MD, director of the Pediatric Bipolar Clinical and Research Program at Mass General, opened the 11th Annual MGH Leadership Council for Psychiatry Visiting Day on June 6 with a deeply personal and forthright keynote address, entitled *Hiding in Plain Sight: Understanding Mental Illness Through Research*.

Dr. Wozniak shared that her first experience with mental illness, indeed her first patient, was her mother. Dr. Wozniak was only four years old when her mother suffered a psychotic episode and was diagnosed with paranoid schizophrenia. Her mother’s illness was treated as a shameful secret, but it compelled Dr. Wozniak to pursue a career in psychiatry.



Dr. Janet Wozniak at the Harvard Club of Boston on June 6.

never know if I’ll get tomatoes thrown or a medal,” she said.

Dr. Wozniak spoke of her young patient, Ariel, who would have turned 37 on June 6. Ariel’s doctors attributed the symptoms of her early mood disorder to her adoption and “too lenient” parenting. She contrasted the experience of Ariel, who took her own life at age 20, to another

child with a serious mental illness, who Dr. Wozniak was able to successfully treat 20 years later, to emphasize the progress being made in child psychiatry.

Dr. Wozniak is also associate chief of psychiatry for quality and safety at Mass General and associate professor of psychiatry at Harvard Medical School. Her current research is focused on the use of organoids or “mini-brains” (brain tissue grown in the laboratory from a blood sample) to discover predictors of treatment response. “An achievable early goal,” she said. “A simple blood test could take the frustrating trial and error process out of psychiatric treatment.”

“Could scientific advances in the field of psychiatry have helped my mother?” she asked, in conclusion. “Yes, of course. It would have helped me a lot as a child to have heard, ‘don’t be alarmed by your mother’s symptoms. Something has gone wrong with her brain. But thanks to scientific research, we can fix it.’”

Please scan the QR code for a recording of Dr. Wozniak’s keynote address and a transcript of her remarks.



“We feared we’d run out of respirators during the height of the pandemic, but what we have run out of are psychiatric hospital beds.”

— JANET WOZNIAK, MD

“I tell the story of my own lived experience of severe mental illness with unease,” Dr. Wozniak told the audience at the Harvard Club of Boston. “I am aware of the conscious and unconscious aversion to the mentally ill that we encapsulate and ingrain as stigma.”

Dr. Wozniak connected this sentiment to the challenges faced in diagnosing and treating mental illness in children. Her revolutionary findings nearly three decades ago that pediatric bipolar disorder exists and is a valid diagnosis provoked debate within the medical profession. “When I talk about the first study I published in 1995, I

Dr. Wozniak was only four years old when her mother suffered a psychotic episode and was diagnosed with paranoid schizophrenia. Her mother’s illness was treated as a shameful secret, but it compelled Dr. Wozniak to pursue a career in psychiatry.



Who's Your Avatar? continued from p. 1

including certain phobias such as fear of heights and public speaking, as well as chronic pain and addiction. Several years ago, Dr. Holt and her colleagues began to develop a VR-based resiliency training program, Reconnecting with Ourselves and Others in virtual Meetings, or ROOM.

The team, which includes psychologists and researchers Nicole DeTore, PhD, Anne Burke, PhD, Lauren Utter, PsyD, and Babatunde Aideyan, MA, first created a virtual reality resilience-enhancing program for frontline health care workers during the pandemic and then another focused on college students. ROOM includes a series of group sessions focused on mindfulness, emotional regulation, self-compassion and other topics. Expected outcomes include greater comfort being with others and improved social functioning, school attendance and academic performance.

An early and unexpected advantage of the program was the anonymity — the only recognizable feature of the participants is their voice, since everyone attends the program as an avatar. The health care workers and college students who have enrolled in the program took advantage of this feature and many said that it was important to them — most of them didn't use their real names or avatars that looked like them.

"I loved the anonymity and convenience; being able to do the workshop in my own room and knowing that other people don't really know who I am made it easier for me to share certain things," said one college student.

Research data from the ROOM project found increased resilience among participants and significant reductions in symptoms of depression and anxiety. It also helped young people navigate socially after pandemic isolation.

College students who participated said:

"Learning how to practice self-compassion got me through finals."



Dr. Holt at work creating avatars for virtual reality resilience training.

"It helped me change my perspective and better understand what my needs are."

Dr. Holt's research has also revealed that the need for personal space increased during the pandemic, even in virtual reality. "This finding just tells us that our bodies have learned to socially distance and this is an unconscious behavior that will take time to unlearn, like many other feelings and beliefs we have developed about our safety in the world," she observes.

Personal space is defined as the "area that people maintain around themselves into which others cannot intrude without causing discomfort." Brain imaging studies show specific patterns of neural responses when avatars get too close. "We are trying to understand this better, so that we can identify signatures of personal space regulation in the brain," Dr. Holt says. "We can then use this information to monitor people's responses to interventions like ROOM that can improve social functioning."

This is one way that Dr. Holt, who is co-director of the Psychosis Clinical and Research Program and director of the Emotion and Social Neuroscience Lab, investigates the neurobiological mechanisms driving personal space. She is also using virtual reality technology to learn more about how individuals with schizophrenia experience and regulate personal space.

Schizophrenia is a serious mental

health condition with no effective treatments for some of its most persistent and disabling symptoms, such as difficulties perceiving social cues and understanding people's intentions. People with a diagnosis of schizophrenia often have an enlarged personal space, and this enlargement has been linked to some of these disabling symptoms. Studying abnormalities in personal space in schizophrenia may provide important clues to understanding these symptoms and lead to the development of better, more targeted treatments for them.

Currently, ROOM is focused on teaching resilience-boosting skills in a comfortable, engaging virtual environment to those who may be at risk for a mental health condition. Dr. Holt and her team also plan to expand and adapt it for a wide range of people who would benefit from this type of training.

"The pandemic has led to a huge increase in the use of VR and related extended reality applications, so I think we will be seeing a lot more of this technology in our lives," Dr. Holt notes.

If you would like to learn more or make a gift to support Dr. Holt's VR work, please contact Lorraine Fanton at lfanton@mgh.harvard.edu or 617-724-6439. To watch a recording of Dr. Holt's talk at Visiting Day 2022, please scan the QR code on the previous page.

If you do not wish to receive certain or all fundraising communications from Mass General, please call 877-644-7733, or visit giving.massgeneral.org/com-pref.

THE RECOVERY RESEARCH INSTITUTE AT MASS GENERAL: A DECADE OF SERVICE



The Recovery Research Institute celebrates its ten-year anniversary in 2022. This donor-funded initiative helps individuals recover from addiction through research, education and advocacy. Among RRI's notable accomplishments:

- » Maintains recoveryanswers.org as a trusted source for addiction science with thousands of consumable articles and useful resources.
 - » Produces the Recovery Bulletin, a free monthly e-publication summarizing the latest and best research in addiction treatment and recovery with more than 50,000 subscribers.
 - » Manages the Addictionary®, a glossary of more than 200 terms that define the language of addiction while also fighting stigma.
 - » Trains the next generation of scientists in addiction research — 10 post-doctoral researchers to date.
 - » Published more than 300 peer-reviewed articles in top scientific journals.
 - » Consults to national organizations, federal agencies in the U.S. and foreign governments, the United Nations and the World Health Organization; contributes to the first ever *U.S. Surgeon General's Report on Alcohol, Drugs, and Health*.
- RRI is holding a gala anniversary celebration at the Wyndham Boston Beacon Hill Hotel on Oct. 13, 2022. For more information, contact Chris Rattan at crattan@mgh.harvard.edu.
- Please see the story on page four for more information about RRI.*

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Chief of Psychiatry
Maurizio Fava, MD

Senior Director of Development
Alex Dippold

Senior Director of Communications
Katie Spiegel

Senior Editor
Mary Hurley

Production Manager
Emma Hobart

Photography
MGH Photography
Jeffrey Thiebauth

Writing
Mary Hurley
Marie Walton

Design
Catalano Design

giving.massgeneral.org

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For information on how to support the clinical care, research, teaching and community health activities of Mass General Psychiatry, please contact Senior Director of Development Alex Dippold at 617-726-7504 or adippold@mgh.harvard.edu.