Thank you for joining us for year two of the Technology in Psychiatry Summit. If you attended last year’s inaugural summit, you know to expect two days of engaging speakers and panels on the emerging role of technology in psychiatry. This year’s theme is “Closing Gaps in Translation,” both in the sense of using technology and pervasive sensing approaches to advance the detailed cross-species study of behavior in order to help bridge the human-nonhuman translational gap, and applying these approaches to improve mental health in under-resourced areas both globally and in the U.S. (i.e., developing robust cross-cultural models of mental illness and therapeutics).

On day one, attendees will examine the evolving state of global mental health efforts (Panel 1, p. 4-5), innovations in substance use disorder treatment (Panel 2, p. 8-9), and cutting-edge trends in neuroscience (Panel 3, p. 10-11). On day two, we have panels on natural language processing (Panel 4, p. 16-17), as well as use of social media and electronic communication in treatment (Panel 5, p. 20-21), ending with a panel exploring the future of prediction in mental health (Panel 6, p. 22-23).

While feedback from last year’s conference was positive, we heard that you would have liked even more time to interact with one another to discuss ideas and explore potential collaborations. This year, we’ve shortened the Audience Q&A and added more time in between the sessions to increase the networking opportunities. Also, to foster the involvement of students and trainees working at the intersection of technology and mental health, we encourage everyone to stick around and hear about the exciting efforts at McLean Hospital, as well as many other institutions represented in over 30 poster presentations (Poster Session, p. 12-13).
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This year we are thrilled to feature keynote presentations from three leaders representing the fields of public health, computer science, and neuroscience, which this summit and our community seeks to bridge through ongoing collaboration. Michelle Williams (Keynote 1, p. 6), dean of the Harvard T.H. Chan School of Public Health will speak just before lunch on day one, followed after lunch by Alex Pentland (Keynote 2, p. 7), director of the Connection Science and Human Dynamics labs at MIT. Bruce Cuthbert (Keynote 3, p. 18), director of the NIMH Research Domain Criteria (RDoC) unit, will speak just before lunch on day two.

This year’s program booklet is organized chronologically. You will find the detailed schedule with session times in the middle of the program (p. 14-15), and also on the back of your attendee badge.

We hope you leave the summit energized and inspired to continue the innovative work that is urgently needed to address some of the world’s most challenging problems.

Sincerely,

Scott Rauch, MD, is president, psychiatrist in chief, and Rose-Marie and Eijk van Otterloo Chair of Psychiatry at McLean Hospital. He is also professor of psychiatry at Harvard Medical School as well as chair of Psychiatry and Mental Health for Partners HealthCare. Dr. Rauch is past president and current secretary of the Society of Biological Psychiatry.

2018 Technology in Psychiatry Summit Program Committee

Justin Baker (chair)
William Carlezon
Kimberlyn Leary
Kerry Ressler
Dawn Sugarman
Ipsit Vahia

ITP Program Coordinator
Nicholas Mirin

ITP Summer Intern
Sara Kimble
Open Access: Expanding Mental Healthcare in Diverse Communities Globally and in the U.S.

Technology is beginning to narrow gaps in our ability to translate mental health care strategies across global and local contexts, sometimes taking successes from the developing world and applying them in under-resourced areas in first and second world regions. And yet, while access has expanded, equity of those services remains a daunting challenge across high and low resource countries and communities, both here in the U.S. and abroad. Leaders from McLean, Harvard, Northwestern, and Partners Connected Health will come together to discuss how technology-based models can adequately address mental health care strategies across global and local contexts.

**Kimberlyn Leary, PhD, MPA**, is an associate professor of psychology at Harvard Medical School and an associate professor in the department of health policy and management at the Harvard T.H. Chan School of Public Health, where she is the “Enabling Change” program director. Leary is also the executive director of policy outreach at McLean/Harvard Medical School, and a fellow at the Women and Public Policy Program at the Harvard Kennedy School and with New America’s International Security Program.

**David Mohr, PhD**, trained as a psychologist, is Professor of Preventive Medicine in the Northwestern University Feinberg School of Medicine, with appointments in Departments of Psychiatry and Medical Social Sciences. He is also the Director of Northwestern University’s Center for Behavioral Intervention Technologies (CBITs). Dr. Mohr’s work lies at the intersection of behavioral science, technology, and clinical research, focusing on the design and implementation of interventions that harness wireless and web-based technologies to promote mental health and wellness.
Kamal Jethwani, MD, MPH, is the Senior Director of Connected Health Innovation, where he leads a multidisciplinary team in creating and validating innovative, technology-enabled solutions to re-imagine the health care experience. Dr. Jethwani focuses on enabling better care by improving patient engagement, patient-provider communication, and patient satisfaction. His work so far has shown that programs that are personalized to each patient’s unique psychology and needs forge higher engagement, and, in turn, better outcomes. He has worked extensively with sensor technology, wearables, and mobile devices to personalize care and understand behavioral motivations that dictate health choices.

Vikram Patel, MBBS, PhD, is The Pershing Square Professor of Global Health and Wellcome Trust Principal Research Fellow at Harvard Medical School. His work spans the areas of mental health problems, child development, and adolescent health in the global health context, in particular the use of community resources for assessment, prevention and recovery. He co-founded Sangath, an Indian NGO that has won the MacArthur Foundation’s International Prize for Creative and Effective Institutions and the WHO Public Health Champion of India award. He co-founded the Movement for Global Mental Health and is a Fellow of the UK Academy of Medical Sciences. He was named in the TIME 100 most influential persons of the year in 2015.

Shelly F. Greenfield, MD, MPH, is an addiction psychiatrist, clinician, and researcher, focusing on substance use disorders treatment, gender differences, and substance health services. Her team has investigated implementation of screening, brief counseling, and pharmacotherapy for individuals with alcohol problems and tuberculosis in Russia, and developed and tested an approach to behavioral counseling and naltrexone treatment of alcohol use disorders integrated into routine care for tuberculosis in the Tomsk Oblast, Siberia, in collaboration with colleagues at Brigham and Women’s Hospital and Partners in Health.
Mental health is among the most pressing public health issues of our time. More than 450 million people around the world suffer from mental health disorders, placing such conditions among the leading causes of disability and the global burden of disease. Serious, unrelenting stress can cause both mental and physical “wear and tear,” contributing to a cascade of adverse health outcomes like heart disease, stroke, and diabetes. We know that improving brain health is key to improving our overall health — and yet, mental health is not treated with the same urgency or gravity as physical health. Stigma and shame result in inadequate mental health care funding and unequal access to treatment. In the United States alone, more than half of those suffering from mental health conditions remain untreated. There is no question that we’ve reached a tipping point in this crisis—but also in our ability to address it. Emerging digital technologies have the potential to revolutionize the way we diagnose and treat mental health care, especially for groups of people who have traditionally been hard to reach. At the Harvard T.H. Chan School, we are seeing that potential up close—from deploying telemedicine to connect mental health experts to remote and underserved populations, to harnessing smartphone based digital phenotyping to better understand mental and behavioral health. Such innovations hold great promise—it is our responsibility to turn that promise into reality.
I will propose a model of mood dynamics, allowing prediction of mood rather than just measurement of mood, that is supported by large-scale experimental evidence. This model of mood dynamics may be viewed as a homeostatic system grounded in need to maintain social competence and is supported by ancillary experimental data. This suggests new types of intervention that may be more effective than current practice.
Despite the potential for “digital therapeutics” to transform the treatment landscape in behavioral health, the path through the digital development process is complex and evolving. From identifying a problem or need, to innovating a potential set of solutions, to finding the one that will scale effectively, to gaining regulatory approval, to creating a product or service, each of which is fraught with potential risk for those performing the work, but also for their funders and the pipeline for future treatments. In this session, our speakers will unpack each of these stages, focusing on the area of substance use.

**Dawn Sugarman, PhD,** is a clinical psychologist in the Division of Alcohol and Drug Abuse at McLean Hospital. Dr. Sugarman’s research and clinical work focuses on gender-specific treatments for addictive behaviors, and the use of technology in effective treatment dissemination. As a member of the team that won the Partners’ Connected Health Innovation Challenge in 2017, she is working on developing a digital adaptation of an evidence-based treatment for individuals with co-occurring substance use and mood disorders. Dr. Sugarman also serves as the communications editor for the Harvard Review of Psychiatry.

**David Epstein, PhD,** is the Chief of the Real-world Assessment, Prediction, and Treatment Unit at the National Institute on Drug Abuse. He established this unit in 2017 to bring NIDA’s treatment research into the age of predictive analytics and predictive medicine. His intent is to show that when addiction research moves forward, so do prevention and treatment. Dr. Epstein’s aim is to maintain a portfolio of studies that, taken together, address the whole continuum of causes of addiction, from the psychosocial to the neurobiological, and to use our wide in-house expertise to match the tool to the task for different kinds of patients.
Lisa Marsch, PhD, is the Director of the Center for Technology and Behavioral Health (CTBH) and the Andrew G. Wallace Professor within the Geisel School of Medicine at Dartmouth College. CTBH is an interdisciplinary “Center of Excellence” supported by the U.S. National Institutes of Health, that uses science to inform the development, evaluation, and sustainable implementation of technology-based tools for behavior change targeting a wide array of populations and health behaviors. These tools are designed to deliver engaging and effective health monitoring and health behavior interventions to collectively lead to transformations in the delivery of science-based behavioral health care.

Bethany Hills, JD, MPH, is Chair of the FDA Practice at Mintz Levin, where she oversees the attorney and regulatory affairs professionals focusing their efforts on helping regulated life science and medical device companies navigate the FDA regulatory requirements to commercialize and maintain compliance throughout a product’s life cycle. Bethany’s personal practice focuses on complex medical device technologies in the diagnostic, digital therapeutic, and innovation space. Bethany pairs her FDA expertise with a deep understanding of the health care delivery system and drug and device reimbursement issue.

Daniel Smith, PhD, is a translational neuroscientist with over 15 years of research and development experience in biopharmaceutical and non-profit organizations. He is the Senior Director of Translational Medicine in the Clinical Research and Development department at Alkermes. His focus is on applying quantitative neuroscience and behavioral methods, including brain imaging, innovative digital health care technologies and data sciences, to transform the clinical development process and deliver new therapies. Dan’s professional objective is to identify and apply scientific and technological advances in biomarkers and therapeutics toward the treatment of CNS disorders.

David Barash, MD, is the Chief Medical Officer for the GE Foundation and Executive Director of its Global Health Portfolio. The Foundation’s Developing Health initiatives are approached with the belief that simple interventions, along with strong partnerships and leaders, are often the answer to some of health care’s most complex problems. Dr. Barash is also a practicing emergency medicine physician with more than 30 years’ experience and has focused a great deal on understanding how new technologies can be commercialized and delivered to effectively close the gap between brainstorm and bedside.
While many innovative discoveries are being made in laboratories using animal models, these findings do not always translate well into humans. Naturalistic recordings of behavioral and neural activity from animals facilitated by technical innovations are paving the way for a new form of behavior-driven translation in CNS disorders. Leading neuroscientists will discuss how objective, continuous measurements, acquired over extended periods in ethological environments, could transform the therapeutic pipeline and deepen our understanding of functionally relevant circuit neuroscience.

**William Carlezon, PhD,** is the Chief of the Division of Basic Neuroscience and Director of the Behavioral Genetics Laboratory at McLean Hospital. Dr. Carlezon is primarily interested in the biological basis and treatment of psychiatric illness, specifically nature/nurture issues as they relate to the brain and the basic processes by which the brain develops and is modified in response to experience. He has won numerous awards for his research, including the Presidential Early Career Award for Scientists and Engineers (George W. Bush) and the Waletzky Award for Innovative Research in Drug Addiction and Alcoholism (Society for Neuroscience), and serves as editor-in-chief of the journal Neuropsychopharmacology.

**Sandeep Robert Datta, MD, PhD,** is an Associate Professor of Neurobiology at Harvard Medical School. His lab focuses on understanding how sensory cues — particularly odors — are detected by the nervous system and how the brain transforms information about the presence of salient sensory cues into patterns of motivated action. Dr. Datta has received the prestigious NIH New Innovator Award, the Burroughs Welcome Career Award in the Medical Sciences, the Alfred P. Sloan Research Fellowship, the Searle Scholars Award, the Vallee Young Investigator Award, and the McKnight Endowment Fund Scholar Award and has been named a fellow of the National Academy of Science/Kavli Scholars program.
Elizabeth Phelps, PhD, is the Pershing Square Professor of Human Neuroscience in the Department of Psychology at Harvard University. Her laboratory has earned widespread acclaim for its groundbreaking research on how the human brain processes emotion, particularly as it relates to learning, memory and decision-making. Dr. Phelps is the recipient of the 21st Century Scientist Award from the James S. McDonnell Foundation, the Distinguished Scholar Award from the Social and Affective Neuroscience Society, and the William James Award from the Association for Psychological Science. She is a fellow of the American Association for the Advancement of Science, the Society for Experimental Psychology, and the American Academy of Arts and Sciences.

Cameron Good, PhD, is a Physical Scientist at the U.S. Army Research Laboratory, where his lab performs behavioral physiology experiments utilizing optogenetic techniques to study REM sleep mechanisms. He was awarded a LUCI Fellowship from the Office of the Under Secretary of Defense for Research & Engineering to develop fully implantable, biocompatible neural devices to study brain disorders. Previously, he was at NIH/NIDA, where he built a successful optogenetic neuroscience research program to dissect the role of brainstem reward circuitry that plays a role in the aversive components of abstinence or withdrawal from addictive substances.

Rogier Landman, PhD, is a research scientist in the Desimone Laboratory at the McGovern Institute. In collaboration with Jitendra Sharma, he is studying the role of social cues in guiding visual attention, and the brain circuits involved in it. Dr. Landman’s previous work has shown interactions between the visual cortex and prefrontal cortex during attention, but social attention may involve other areas, such as the superior temporal sulcus, orbitofrontal cortex, and amygdala. He currently investigates the extent to which sudden appearance of faces interferes with an attention task.

Elisabeth Phelps, PhD, is the Pershing Square Professor of Human Neuroscience in the Department of Psychology at Harvard University. Her laboratory has earned widespread acclaim for its groundbreaking research on how the human brain processes emotion, particularly as it relates to learning, memory and decision-making. Dr. Phelps is the recipient of the 21st Century Scientist Award from the James S. McDonnell Foundation, the Distinguished Scholar Award from the Social and Affective Neuroscience Society, and the William James Award from the Association for Psychological Science. She is a fellow of the American Association for the Advancement of Science, the Society for Experimental Psychology, and the American Academy of Arts and Sciences.
Thursday, November 1st, 5:30 – 7:00pm

Poster Session

List of titles, presenting authors, and institutions.

1 - Sleep-Olfactory Wearables – Judith Amores Fernandez (MIT Medialab)
2 - Sensing Technology for Stereotypical Behaviors in Autism – Morgan Foreman (IBM Research)
3 - Serosa: An Enteric Nervous System Interface for Gut-Brain Computer Interfacing (GBCI) – Angela Vujic (MIT Media Lab)
4 - AttentivU: a Biofeedback System for Real-time Monitoring and Improvement of Engagement – Nataliya Kosmyna (MIT Media Lab)
5 - MultiSense: A Clinical Decision Support Tool for Psychotic Mental Illness – Alexandria Vail (Carnegie Mellon University)
6 - Toward Objective, Multifaceted Characterization of Psychotic Disorders: Lexical, Structural, and Disfluency Markers of Spoken Language – Alexandria Vail (Carnegie Mellon University)
7 - A Machine Learning Approach to Detect Suicide Ideation in Veterans Based on Acoustic and Semantic Analysis of Speech – Anas Belouali (ICBI, Georgetown University)
8 - An online clinic platform for delivery of mental health – Mohsen Omrani (Brain Health Institute, Rutgers University)
9 - Peer counseling reduces attrition in an online intervention in China – Marcus Rodriguez (Pitzer College)
10 - Smartphone, Social Media, and Mental Health App Use in Individuals with Serious Mental Illness – Mark Tenore (McLean Hospital)
11 - Detecting Activity During Mental Health Hospitalization Using Wearable Devices – Crystal Blankenbaker (McLean Hospital)
12 - Capturing longitudinal fluctuations in behaviour, mood, and cognition in patients with obsessive-compulsive disorder – Michaela Ennis (Harvard Medical School)
13 - Mapping Behavioral Symptoms in Dementia Using Passive Radio Sensing And Machine Learning – Rose May (McLean Hospital)
14 - Web search data reveals individualized & contextual risk factors that could aid in the early detection of suicidal behaviors – Abhishek Pratap (Sage Bionetworks / University of Washington)
15 - Digital phenotyping for early relapse detection in youth depression – John Strauss (Centre for Addiction and Mental Health, University of Toronto)
16 - Personalized Models of Day-to-Day Emotional State Using Passive Smartphone Data – Sandya Subramanian (Massachusetts Institute of Technology)
17 - Development of an RDoC Field Test Battery for Capturing Neurocognition and Digital Phenotypes – Nicholas Mirin (McLean Hospital)
18 - Barriers to the Quantification of Behavior from Response Time Latencies on Mobile Devices – Eliza Passell (McLean Hospital)
19 - Leveraging Digital Technology and Social Media to Enhance a Peer Group Lifestyle Intervention for Young Adults with Serious Mental Illness – Kelly Aschbrenner (Geisel School of Medicine at Dartmouth)
20 - Enhancing executive function and self-regulation success through the promotion of brain health behaviors: A telehealth pilot study for Veterans with chronic multi-symptom illness – Lucas Crock (Georgetown University)

21 - Accessing Social and Electronic Media Data During Psychotherapy: A Clinician Perspective – Hannah Heintz (McLean Hospital)

22 - Patient, Family and Peer Support Worker Perspectives on the Use and Evaluation of Mental Health Patient Portals: A Qualitative Descriptive Study – Kevin Leung (Centre for Addiction and Mental Health, University of Toronto)

23 - H-LINC: Reducing local mental health disparities in minority youth with technology – Kieran Paddock (The Menninger Clinic)

24 - Embedding Life Alert Technology into Primary Care to Combat Self-Injury Mortality – Arthur Siegel (McLean Hospital)

25 - The Micro-Randomized Trial for Developing Mobile Health Interventions – Ashley Walton (Harvard University)

26 - Measuring the Character Strength of Open-Mindedness Using a Computerized Implicit Association Test (IAT) – Sara Atlas (McLean Hospital)

27 - Transdiagnostic prediction of memory and executive function from whole-brain functional connectivity – Daniel Barron (Yale University)

28 - Sensory and cognitive intrusions with video game content: Challenges and applications – Angelica Ortiz de Gortari (University of Liège, Psychology and Neuroscience of Cognition Research Unit)

29 - A mobile assessment of perceptual, affective and appearance-based body concerns in female fashion models – Christina Ralph-Nearman (Laureate Institute for Brain Research)

30 - Feasibility and Acceptability of using two Behavioral Activation Smartphone apps post-discharge from acute care – Ramya Ramadurai (Mclean Hospital)

31 - Acceptability and Feasibility of a Computer-Based Cognitive Control Training for Impulsivity in an Acute Psychiatric Setting – Kaylee Stewart (McLean Hospital)


33 - Cognitive Behavioral Immersion: Treating Addiction with Virtual Reality – Noah Robinson (Vanderbilt University)

34 - Exercise mediated neuro-cardiologic dynamics in the context of mental disorders: A review and original clinical intervention protocol – Roland Carlstedt (McLean Hospital)

Posters should be mounted (using the assigned # above) no later than 9am on Thursday, November 1st.

Posters should be removed no later than 9am on Friday, November 2nd.
Thursday, November 1, 2018

PROGRAM-at-a-glance

8:30 – 9:00  | Welcome, Scott Rauch and Justin Baker, McLean Hospital

9:00 – 10:45  | Panel 1: Open Access: Expanding Mental Healthcare in Diverse Communities Globally and in the U.S.
Kimberlyn Leary, McLean Hospital
David Mohr, Northwestern University
Kamal Jethwani, Partners Connected Health
Vikram Patel, Harvard T.H. Chan School of Public Health
Discussant: Shelly Greenfield, McLean Hospital

11:00 – 11:30  | From Promise to Reality: Harnessing Technology to Address the Global Mental Health Crisis
Michelle Williams, Harvard T.H. Chan School of Public Health

11:30 – 12:30  | Lunch (provided)

12:30 – 1:30  | Mood Dynamics: Tracking and Treating Stress and Depression
Alex Pentland, MIT Media Lab

1:30 - 2:00  | Coffee Break - Discussion in Lobby

2:00 – 3:30  | Panel 2: De-Risking Digital Development: Unpacking the Innovation Pipeline in Substance Use Disorder Treatment
Dawn Sugarman, McLean Hospital
David Epstein, National Institute of Drug Abuse
Lisa Marsch, Dartmouth University
Bethany Hills, Mintz Levin
Daniel Smith, Alkermes Inc.
Discussant: David Barash, GE Foundation

3:45 – 5:15  | Panel 3: Advancing Animal-Human Translational Science
William Carlezon, McLean Hospital
Sandeep Robert Datta, Harvard Medical School
Rogier Landman, MIT McGovern Institute
Cameron Good, U.S. Army Research Laboratory
Discussant: Elizabeth Phelps, Harvard University

5:30 – 7:00  | Networking Reception & Poster Session
Lobby (Posters on Level 2)
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>8:00 – 9:00</td>
<td>Breakfast and Registration <em>(Lobby)</em></td>
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| 9:00 - 10:30 | **Panel 4: Harnessing Natural Language for Prediction and Prevention**  
Guillermo Cecchi, IBM Watson Research  
Cheryl Corcoran, Icahn School of Medicine at Mt. Sinai  
Thomas McCoy, Massachusetts General Hospital  
Shairi Turner, Crisis Text Line  
Discussant: Jeffrey Girard, Carnegie Mellon University |
| 10:30 – 11:30| **Enabling Technologies: Toward Bridges Across Translational Gaps in Psychiatry**  
Bruce Cuthbert, National Institute of Mental Health |
| 11:30 – 12:30| **Lunch (provided)**                                                  |
| 12:30 – 2:00 | **Panel 5: Leveraging Social and Electronic Communications for Evaluation and Treatment**  
Ipsit Vahia, McLean Hospital  
Sharath Guntuku, University of Pennsylvania  
Munmun De Choudhury, Georgia Institute of Technology  
Benjamin Silverman, Harvard Medical School  
Discussant: Mona Potter, McLean Hospital |
| 2:00 – 2:30  | **Coffee Break - Discussion in Lobby**                               |
| 2:30 – 4:00  | **Panel 6: The Future of Behavioral Forecasting**                    
Justin Baker, McLean Hospital  
Kafui Dzirasa, Duke Institute for Brain Sciences  
Srijan Sen, University of Michigan  
Adam Chekroud, Spring Health  
Discussant: Laura Germine, McLean Hospital |
| 4:00 – 4:15  | **Closing Remarks**                                                  
Kerry Ressler, McLean Hospital |
| 4:15 – 5:00  | **Reception and Discussion *(Lobby)***                                |
Cheryl Corcoran, MD, is a graduate of Harvard College and Harvard Medical School. She is Associate Professor of Psychiatry and Program Leader in Psychosis Risk at the Icahn School of Medicine at Mount Sinai. Together with Dr. Guillermo Cecchi of IBM, Dr. Corcoran has identified linguistic predictors of later psychosis onset in youths at clinical risk for psychosis using natural language processing algorithms and machine learning. She now has NIMH funding to study the underlying neural mechanisms of language disturbance across the psychosis spectrum, and to characterize demographic and cognitive correlates of language production.

Harnessing Natural Language for Prediction and Prevention

Human communication is at the core of all clinical interactions, especially in psychiatry and psychology, since changes in social function and use of language are often among the first noticeable clues of an emerging psychiatric illness or impending episode. Systems that capture and analyze naturally occurring speech or written language could therefore have transformative potential to aid in low-burden mental health surveillance strategies to support individuals most at risk with both prediction and optimal prevention strategies. This session brings together experts in both computational aspects of natural language processing (NLP), and their deployment in a range of psychiatric illnesses and treatment contexts, including mining of electronic medical records for risk stratification, analyzing text-based encounters with a crisis coach to optimize online therapeutic encounters, or predicting individual-level prognosis from open and directed samples of speech and writing.
Guillermo Cecchi, MSc, PhD, is the Director of the Computational Psychiatry and Neuroimaging group in the Life Sciences and Health Care Department at IBM. He is also a collaborating member in the Brain-inspired Computation group in the Artificial Intelligence Foundations Department. Dr. Cecchi has been working on computational approaches to brain function, with an emphasis on mathematical models to describe high dimensional data and to identify markers of complex mental disorders. Recently, he has developed novel approaches to characterize perception and cognition analytically, utilizing the increasing availability of big data on human behavior.

Thomas McCoy, MD, is the Director of Research at the MGH Center for Quantitative Health and Harvard Medical School Assistant Professor of Medicine and Psychiatry. He attended Dartmouth College and Cornell Medical School before completing the MGH/McLean Psychiatry residency, and an informatics fellowship in the Center for Experimental Drugs and Diagnostics and serving as Chief Resident. His research focuses on development of computed phenotypes in, and applicable to, secondary use of health care data generated as part of routing care. He has applied computed phenotypes to both prediction and risk stratification, and to genomics research.

Shairi Turner, MD, MPH, completed the Harvard Medicine-Pediatrics Residency Program and received her Master of Public Health from the Harvard T.H. Chan School of Public Health. Currently, she is the Chief Medical Officer for Crisis Text Line, a not-for-profit volunteer-supported organization delivering crisis interventions using a text platform. Before assuming her CMO role, Dr. Turner served as the Deputy Secretary for Health and the Director of the Office of Minority Health for the Florida Department of Health (DOH), prioritizing work around the intersection between trauma and chronic health conditions. She also served as the first Chief Medical Director in the eleven-year history of the Florida Department of Juvenile Justice (DJJ), in which capacity she established the Office of Health Services that provided oversight of the provision of Health, Mental Health, Disability and Substance Abuse services to nearly 100,000 justice-involved youth.

Jeffrey Girard, PhD, is an interdisciplinary researcher working to advance the behavioral sciences. His research into emotion, personality, and psychopathology draws insights and tools from social science, computer science, and data science. He received his PhD in clinical psychology from the University of Pittsburgh and is currently a postdoctoral research associate at Carnegie Mellon University.
**Keynote 3**

**Enabling Technologies: Toward Bridges Across Translational Gaps in Psychiatry**

Bruce Cuthbert, PhD, is the director of the NIMH Research Domain Criteria (RDoC) project to develop neuroscience-based criteria for studying mental disorders. He previously served as the director of the Division of Adult Translational Research and Treatment Development and as the chief of the Adult Psychopathology Research Branch at NIMH. He is known for his research on the psychophysiology of emotion and translational research on the psychopathology of anxiety disorders. He was elected president of the Society for Psychophysiological Research in 2004, and is a fellow of the Association for Psychological Science.

While psychiatry has lagged behind other areas of medicine in precision medicine approaches to diagnosis and treatment, recent developments augur accelerating progress. Digital technologies represent one such area, enabling measurement of myriad aspects of behavior and providing thousands of innovative new apps for treatment. New frameworks for research, as exemplified by the NIMH Research Domain Criteria (RDoC) project, have contributed to new ideas about conceptualizing, diagnosing, and treating mental disorders. This presentation will review ways in which these and other new trends intersect, and outline the potential for novel ways of addressing longstanding issues in mental health research, such as mind-body and categorical-dimensional distinctions, translation of animal research to psychopathology, and new opportunities for prevention research.
Panel 5

Leveraging Social and Electronic Communications in Psychiatric Evaluation and Treatment

This panel will discuss the hypothesis that, at least under some instances, the diagnosis and treatment of a patient with a mental illness might be aided if the treating mental health professional has access to what the patient is communicating to others via social media, emails, and texts. Speakers from McLean Hospital, Georgia Institute of Technology, Partners Healthcare, and University of Pennsylvania will discuss the potential benefits social data may have on psychiatric care.

Ipsit Vahia, MD, is a geriatric psychiatrist, clinician, and researcher. He is the medical director of the Geriatric Psychiatry Outpatient Services at McLean Hospital. His research focuses on the use of technology and informatics in the assessment and management of older adults. He is currently engaged in implementing a program on aging, behavior, and technology at McLean. Dr. Vahia serves on the Board of Directors of the American Association for Geriatric Psychiatry and the American Psychiatric Association Council on Geriatric Psychiatry. He is a recipient of several prestigious awards including the 2016 AAGP Barry Lebowitz Award and the 2014 APA Hartford Jeste Award.

Munmun De Choudhury, PhD, is an assistant professor in the School of Interactive Computing at Georgia Tech where she directs the Social Dynamics and Wellbeing Lab. Dr. De Choudhury’s research interests lie at the intersection of machine learning, social media, and health, with a focus on assessing, understanding, and improving personal and societal mental health from online social interactions. Her work has been the recipient of ten awards at premier computer science conferences, and has been generously supported by funding from the NIH, NSF, IARPA, United Nations, and industry like Facebook, Yahoo!, Samsung, and Mozilla.
Sharath Guntuku, PhD, is a research scientist at the Centre for Digital Health in the University of Pennsylvania. His research aims to leverage large-scale social media image and text data to model social health outcomes and psychological traits. He uses machine learning, statistical analysis, natural language processing, and computer vision to answer questions pertaining to health and psychology in individuals and communities. He also works closely with the World Well Being Project at the Positive Psychology Center and is affiliated with Penn Research in Machine Learning.

Benjamin Silverman, MD, is an IRB Chair for the Partners Human Research Committee and an Instructor in Psychiatry at Harvard Medical School. Dr. Silverman completed fellowship training in addiction psychiatry through the Partners HealthCare System, followed by fellowship training with the Center for Bioethics at Harvard Medical School, where he remains on the faculty and teaches medical ethics and professionalism to first-year medical students. Dr. Silverman’s interests in ethics center on research ethics, in particular pertaining to research conducted with vulnerable populations, and on the ethical dilemmas related to privacy and boundaries that emerging information technologies present to clinicians.

Mona Potter, MD, is medical director of McLean’s Child and Adolescent Outpatient Services, including the McLean Anxiety Mastery Program, School Consultation Service, and Adolescent DBT Outpatient Service. Dr. Potter has particular interest in the treatment of pediatric anxiety disorders, OCD, mood disorders, and borderline personality disorder, with a focus on collaboration with schools. Prior to her current role, she served as the medical director for the 3East Cambridge Residence and The Landing at McLean Hospital.
Justin Baker, MD, PhD, is the scientific director of the McLean Institute for Technology in Psychiatry. He has a background in neuroscience and clinical psychiatry and is currently the director of functional neuroimaging and bioinformatics for the Schizophrenia and Bipolar Disorder Research Program at McLean Hospital. His research uses both large-scale studies and “deep-phenotyping” approaches to understand the nature and underlying biology of mental illnesses, particularly lifelong conditions like schizophrenia and bipolar disorder. The goal of this work is to develop more effective strategies to both monitor the course of illness and intervene in creative ways to improve the lives of individuals suffering from these conditions.
Kafui Dzirasa, MD, PhD, is the K. Ranga Rama Krishnan Associate Professor of Psychiatry and Behavioral Sciences at Duke University. His research interests focus on using neural technology to understand how changes in the brain produce neurological and mental illness. Dr Dzirasa is the recipient of numerous awards, including the International Mental Health Research Organization Rising Star Award and the 2016 Presidential Early Career Award for Scientists and Engineers. He is the first African American to complete a PhD in Neurobiology at Duke, and he completed his medical residency in psychiatry in 2016.

Srijan Sen, MD, PhD, is the Frances and Kenneth Eisenberg Professor of Depression and Neurosciences in the Department of Psychiatry at the University of Michigan. His research focuses on the interactions between genes and the environment and their effect on stress, anxiety, and depression. He also has a particular interest in medical education and leads a large multi-institution study that uses medical internship as a model of stress to determine genetic factors involved in moderating the relationship between stress and depression. He has also studied the relationship between duty hour requirements in medical training and medical errors.

Adam Chekroud, PhD, is an Adjunct Assistant Professor of Psychiatry at Yale University. His research seeks to improve treatment outcomes in mental health, particularly depression, by using large existing datasets to anticipate barriers to treatment and likely illness course. His research has been featured in JAMA Psychiatry, Lancet Psychiatry, Molecular Psychiatry, and PNAS. He is also co-founder of a mental health startup called Spring Health, based in New York City. Spring works with large employers like GAP and Whole Foods to provide their employees with free and immediate access to high-quality mental health care.

Laura Germine, PhD, is the technical director of the McLean Institute for Technology in Psychiatry, the director of the Laboratory for Brain and Cognitive Health Technology at McLean Hospital, and an instructor in psychiatry at Harvard Medical School. Dr. Germine’s research is oriented around understanding cognitive functioning in health and disease, as well as building technology for studying cognition and behavior using the web and mobile devices. She created one of the first online neuropsychological laboratories in 2005, which later became TestMyBrain.org, a platform that has attracted over 1.7 million research participants.
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Closing Remarks

Kerry Ressler, MD, PhD, is the chief scientific officer of McLean Hospital. He is also the chief of the Division of Depression and Anxiety Disorders and the director of the Neurobiology of Fear laboratory at McLean. Dr. Ressler is a professor of psychiatry at Harvard Medical School.

The Institute for Technology in Psychiatry at McLean Hospital was founded in 2016 to bring more effective and accessible mental health care to individuals globally, while advancing psychiatric research through innovations in digital health technology and informatics. Our mission is to develop, validate, and apply mental health solutions in both remote and intensive health care settings by engaging clients & their families, the technology & data science communities, as well as forward-looking partners in industry and beyond, to ensure that solutions meet the needs of all stakeholders. Learn how to get involved at mcleanhospital.org/itp

[tech+psych] is our electronic newsletter to keep our growing and eclectic community – of data scientists, psychiatrists, technologists, health care leaders, policymakers, entrepreneurs, payers, investors, and people with lived experience of mental illness – connected on the issues or developments we are most excited about. Send us your news and updates at itp@mclean.harvard.edu
AREA MAP

Joseph B. Martin Conference Center
77 Avenue Louis Pasteur

Sami’s Middle Eastern Restaurant
107 Avenue Louis Pasteur
300 Longwood Avenue

CVS Pharmacy
300 Longwood Avenue

Starbucks Coffee
283 Longwood Avenue

Green Line stop
Huntington Ave

Children’s Hospital Parking Garage
Blackfan Street

JB Martin Parking Garage (VIP only)
77 Avenue Louis Pasteur

Harvard Medical School Campus