wellbeing

BEHIND THE SCIENCE

IN THIS ISSUE

A SPECIAL MESSAGE FROM RICHIE AND CHRISTINA

Dear Friends,

At Healthy Minds Innovations (HMI), in partnership with the Center for Healthy Minds (CHM), we've witnessed many pivotal moments in our shared mission to investigate, cultivate, and scale wellbeing. Yet today feels especially significant—not only in the context of our 15 years of organizational history and decades of scientific research, but also in the face of the immense technological, social, and psychological change shaping our world.

Communities and organizations are navigating one of the most divisive and uncertain times in history. Leaders are being asked to do more than drive performance; they are being asked to support the whole human experience—often without a clear compass. At HMI, in partnership with CHM, we believe wellbeing science can—and must—be that compass.

This newsletter, *Wellbeing: Behind the Science*, is our way of offering you an "insider look" at the latest discoveries and applications of wellbeing research.

While some of you may have read our first edition, for many this is a new introduction to our work. We are pleased to share this second edition, which highlights what we're learning, what's emerging, and where we're headed—from the science of attention and emotional resilience to practical tools that measure and improve workplace wellbeing.

Our hope is that these insights not only inform and inspire, but also empower you—whether as a CEO, HR leader, educator, or impact-driven founder—to think differently about what's possible for your teams, your communities, and humanity as a whole.

Thank you for joining us on this journey toward a kinder, wiser, more resilient, and flourishing world.
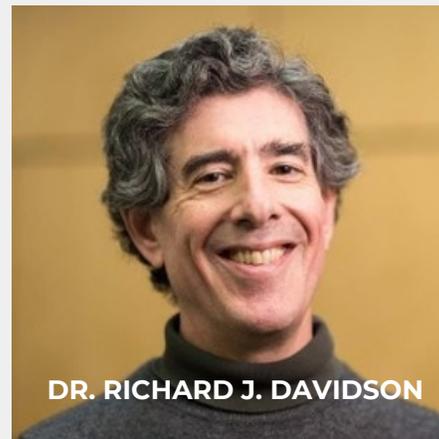
With gratitude,

Dr. Richard J. Davidson
Founder, HMI
Founder & Director, CHM

Christina Glavas
Chief Executive Officer, HMI

DR. RICHARD J. DAVIDSON

CHRISTINA GLAVAS

WHO WE ARE: BRIDGING SCIENCE WITH REAL WORLD IMPACT

For the past 15 years, the Center for Healthy Minds (CHM) has been dedicated to investigating the science of human flourishing. Healthy Minds Innovations (HMI) was established 10 years ago to transform these valuable discoveries into tools for people across the world to cultivate and measure the skills for wellbeing. Today, this one of a kind strategic alliance for wellbeing science allows us to have an even greater impact on human flourishing.

We are:

Center for **healthyminds**
UNIVERSITY OF WISCONSIN–MADISON

healthyminds innovations®

Our work has earned distinguished awards from the following strategic partners:

BILL & MELINDA GATES foundation

BRAIN & BEHAVIOR RESEARCH FOUNDATION

Chan Zuckerberg Initiative ⊕

DARPA

Fetzer Institute

HOPE FOR DEPRESSION RESEARCH FOUNDATION

JOHN TEMPLETON FOUNDATION

MIND & LIFE INSTITUTE

NIH National Institutes of Health

NIJ | NATIONAL INSTITUTE OF JUSTICE ADVANCING JUSTICE THROUGH SCIENCE

OMIDYAR NETWORK

TEMPLETON WORLD CHARITY FOUNDATION

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FROM LAB TO LIFE:
THE LATEST PUBLISHED PROGRESS

THE FUTURE IS AI, BUT RESPONSIBILITY IS REAL: ENSURING SAFE EFFICACY IN DIGITAL MENTAL HEALTH TOOLS

Researchers at the Center for Healthy Minds in collaboration with colleagues at Deakin University in Australia, Brown University, and Harvard Medical School, are continuing to explore how technology can support mental health and wellbeing. In **one comprehensive review**, scientists examined the quality of randomized clinical trials for mental health apps. The study revealed that while there is continued growing interest in digital mental health tools, many trials still lack strong methodological rigor. This underscores the need for higher-quality research to ensure these apps deliver safe and effective support.

Other work focused on understanding how individuals with high psychological distress engage with meditation apps. Researchers found that while digital meditation can help, people often face barriers like motivation and finding time to practice. Identifying these challenges can inform more engaging and effective app design that truly meets users where their needs lie.

Finally, **a broader analysis** of the digital mental health field looked at the promise and limitations of smartphone apps, generative AI, and virtual reality. While these tools offer exciting new possibilities, the findings emphasize the importance of careful implementation and evidence-based approaches. Together, this research highlights momentous possibilities and the growing responsibility of using technology to support wellbeing.

Read the full publications: Methodological quality in randomized clinical trials of mental health apps, Developing meditation practice in individuals with elevated psychological distress, The evolving field of digital mental health. Featured CHM authors: Qiang Xie, Simon B. Goldberg, Cortland J. Dahl.

FROM LAB TO LIFE:
THE LATEST PUBLISHED PROGRESS

THE FAMILY SHIFT:
FROM SURVIVING TO THRIVING TOGETHER

Researchers at the University of Wisconsin-Madison, along with a large team from other US and global entities, are exploring new ways to help families thrive. **In one study**, a school-based program called CEDARS taught teens positive coping skills to reduce stress and build emotional resilience. Early results showed teens developed healthier ways to manage challenges and reported feeling better overall.

In the last few years, other related studies explored how parents can create more supportive and connected family environments. **One program** helped white parents talk more openly about race and racism at home, building confidence and encouraging antiracist values from an early age. **Another study** on mindfulness-based childbirth and parenting showed that practicing mindfulness during pregnancy and early parenting can strengthen bonds and reduce stress. Together, these findings highlight simple yet powerful tools for evolving generational patterns to foster emotional connection and wellbeing in families.

Read the full publications: **Coping and Emotional Development for Adolescents to Reduce Stress (CEDARS)**, **Critical socialization in white families**, **The relational dimension in mindfulness intervention effects**. Featured CHM Affiliated Faculty author: Larissa Duncan.
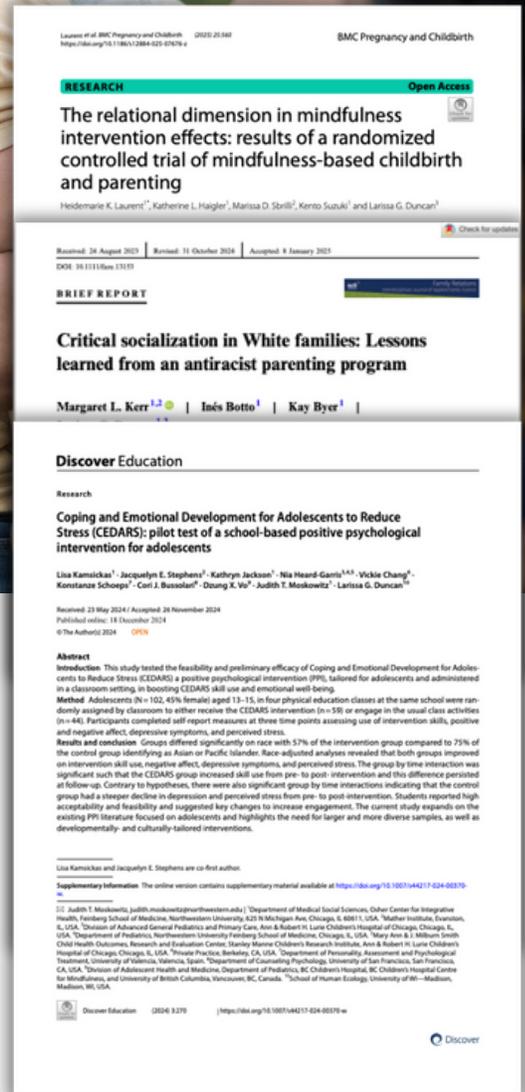
LOOKING BACK TO LEAN FORWARD: MOMENTS OF RELEVANCE, COVERED BY SCIENCE

NATURE IS NOT SEPARATE: A CALL TO RECENTER INDIGENOUS KNOWLEDGE IN CLIMATE RESPONSE

In response to the urgent environmental and cultural crises of the Anthropocene, Dr. Pilar Gauthier and colleagues from the Center for Healthy Minds, published a new paper in **ScienceDirect: Current Opinion in Psychology** advocating for Indigenous worldviews as a guiding framework for climate resilience and relational ethics. Their article challenges dominant Western paradigms that treat nature as separate or subordinate to humans—offering instead a kinship-based ethic rooted in Indigenous traditions.

Drawing on Indigenous teachings, the paper uplifts values like reciprocity, relational accountability, and respect for the agency of all living beings. This perspective calls on the field of psychology to reframe its understanding of wellbeing—not as an isolated, individual experience, but as something fundamentally tied to the health of our shared ecosystems and communities. The authors propose that centering Indigenous knowledge systems can inspire more just, sustainable, and meaningful responses to climate change and ecological loss.

Read the full article: <u>Mother Earth kinship: Centering Indigenous worldviews to address the Anthropocene and rethink the ethics of human-to-nature connectedness.</u> Featured CHM/HMI authors: Pilar Gauthier, Dekila Chungyalpa, Robin I. Goldman, Richard J. Davidson, Christine D. Wilson-Mendenhall.

LOOKING BACK TO LEAN FORWARD:
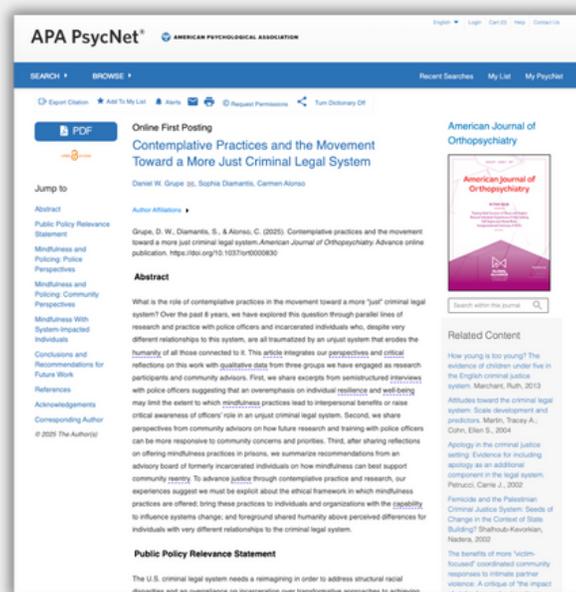# MOMENTS OF RELEVANCE, COVERED BY SCIENCE

RESTORING HUMANITY: MEDITATION AND MENTAL HEALTH IN THE WAKE OF INCARCERATION

In Recognition of Mental Health Month (May) and World Meditation Day (May 21)

Dr. Dan Grupe and colleagues recently published a new paper in *American Journal of Orthopsychiatry* exploring community-centered approaches to support people impacted by incarceration. The article highlights how traditional mental health strategies often focus on individual change, overlooking the broader social and structural contexts that shape wellbeing.

Their work reflects on nearly a decade of engagement with both police officers and incarcerated individuals—highlighting the impact of trauma and an unjust system that erodes shared humanity. The authors call for reimagining the criminal legal system to address racial disparities and shift away from punitive models toward transformative justice. They propose that contemplative practices, if thoughtfully designed and intentionally implemented, can help foster more equitable outcomes and build resilience for entire communities harmed by systemic injustice.

Read the full article: <u>Contemplative Practices and the Movement Toward a More Just Criminal Legal System</u>. Featured CHM author: Daniel W. Grupe.

LOOKING BACK TO LEAN FORWARD:
MOMENTS OF RELEVANCE, COVERED BY SCIENCE

FIGHTING FIRES & STRESS:
HOW A DIGITAL WELLBEING TOOL
IS HELPING FIRST RESPONDERS TO HEAL

In Observance of PTSD Awareness Month (June)

A 2022 study published in **JMIR Formative Research** explored how mindfulness-based interventions can support the mental health of firefighters, a group at high risk for chronic stress and PTSD. Firefighters routinely face traumatic events, and many experience lasting psychological impacts, including anxiety, depression, and post-traumatic stress symptoms.

In this pilot study, participants used the Healthy Minds Program app to focus on mindfulness training along with practices designed to cultivate positive relationships, insight into the nature of the self, and a sense of purpose in the context of challenge over a 10-day period. The results showed significant reductions in anxiety, burnout, and negative affect, along with changes in biological markers of stress, such as waking cortisol levels, from before to after the intervention.

While larger trials are needed, these promising findings suggest that the Healthy Minds Program app can help firefighters reduce stress, strengthen resilience, and potentially lower the burden of PTSD, offering vital support to those who protect and serve on the front lines.

Read the full article: Feasibility, Acceptability, and Preliminary Efficacy of an App-Based Meditation Intervention to Decrease Firefighter Psychological Distress and Burnout: A One-Group Pilot Study. Featured CHM/HMI authors: Raquel G. Tatar, Richard J. Davidson.

IN MY ELEMENT: HOW A SCIENTIST SEES THE WORLD

WHEN MACHINES FEEL TOO MUCH: RETHINKING EMOTIONAL INTELLIGENCE IN AI

BY DR. JOANNA HONG

As AI chatbots increasingly enter emotionally intimate spaces—offering mental health support or serving as daily companions—the line between utility and vulnerability is blurring. Two recent studies, one from Yale and another from MIT and OpenAI, reveal not only how humans are affected by emotionally resonant AI, but also how the AI itself shifts when exposed to emotionally charged input. The question is no longer whether these interactions have consequences, but how we navigate them.

The Yale study shows large language models like ChatGPT-4 can display anxiety-like responses when presented with traumatic narratives, amplifying biased outputs. This sensitivity suggests emotional content shapes not just what AI says but how it behaves, with implications for high-stakes uses like mental health support. Meanwhile, the MIT-OpenAI longitudinal study reveals the reverse: Humans engaging with emotionally engaging AI report greater loneliness and dependence over time. While soothing at first, these tools can displace real-world social ties and deepen reliance on machines that cannot truly reciprocate.

Together, the findings suggest a recursive loop: Human vulnerability shapes AI responses, and those responses, in turn, deepen human vulnerability. This demands a shift in how we design and evaluate emotionally intelligent systems beyond user satisfaction or accuracy toward relational and psychological impacts. Ethical AI design must ask: *How much emotional resonance is too much? Can AI support without simulating connection? What boundaries should govern emotionally charged exchanges?*

Future research should build systems that respond sensitively without reinforcing dependency. This may mean safeguards that flag prolonged reliance or redirect users to human connection, and moving beyond anthropomorphism toward treating emotional simulation as a high-stakes ethical choice.

We are entering a new era in human-machine interaction. The stakes are not only technical but emotional, psychological, and deeply human.

As AI continues to redefine industries and the organizational needs of our clients and partners, we will continue covering its impact on human wellbeing. Subscribe to our email list at hminnovations.org to receive publication notifications on this topic and more.

References: Ben-Zion, Z., Witte, K., Jagadish, A. K., Duek, O., Harpaz-Rotem, I., Khorsandian, M.-C., Burrer, A., Seifritz, E., Homan, P., Schulz, E., & Spiller, T. R. (2025). Assessing and alleviating state anxiety in large language models. *NPJ Digital Medicine, 8*(132). Fang, C. M., Liu, A. R., Danry, V., Lee, E., Chan, S. W. T., Pataranutaporn, P., Maes, P., Phang, J., Lampe, M., Ahmad, L., & Agarwal, S. (2025). How AI and human behaviors shape psychosocial effects of chatbot use: A longitudinal randomized controlled study [Preprint]. *MIT Media Lab & OpenAI.*

**A LEAP FORWARD WITH THE HEALTHY MINDS PROGRAM
ADVANCING DYNAMIC AND PERSONALIZED TRAINING (ADAPT):
AN INITIATIVE FUNDED BY THE TEMPLETON WORLD CHARITY FOUNDATION**

*In Recognition of World Brain Day (July 22)
and International Self-Care Day (July 24)*

CHM and HMI were recently awarded a grant by the Templeton World Charity Foundation to develop and test personalized interventions to scale human flourishing through adaptation of the Healthy Minds Program (HMP) app. We are currently in the first phase of this multi-year project, in which we are developing multiple new versions of the HMP app that will be combined with survey measures to personalize the program in the next phase of the project—the first, large-scale research study of personalized HMP.

In this first study, we will determine how to optimize program impact and engagement, based on deep phenotyping to personalize HMP to an individual's needs. Based on the results from the first study, we plan to finalize modifications to the HMP app and conduct user testing to ensure an optimal experience with new app features. In the final phase, we will conduct a randomized controlled trial to rigorously test the efficacy of personalized HMP on wellbeing. Through this work, we aim to develop and validate a personalized HMP that can be delivered at scale to promote human flourishing.

Featured CHM/HMI researchers: Richard J. Davidson, Simon B. Goldberg, Tammi R. A. Kral, Raquel G. Tatar.

LAB CONFIDENTIAL: WHAT OUR SCIENTISTS ARE WHISPERING ABOUT

PIONEERING SLEEP-BASED INTERVENTIONS TO PREVENT SUICIDE

In Acknowledgment of World Suicide Prevention Day (September 10)

CHM is collaborating with the Wisconsin Institute for Sleep and Consciousness on a highly-novel study that seeks to identify hybrid interventions to increase wellbeing and to ultimately prevent suicide. This study combines painless electrical brain stimulation delivered during sleep with brief, daily wellbeing practices to see whether these activities can synergistically boost positive impact on the brain and behavior, with an intended outcome to increase the ability to think flexibly and regulate emotions. HMI will develop and deploy algorithmic microsupports, triggered by data collected multiple times per day. This will test the efficacy of personalized wellbeing learning. This is part of a multi-year research project funded by the Defense Advanced Research Projects Agency of the US Department of Defense (DARPA), led by Dr. Richard J. Davidson and Dr. Giulio Tononi.

Featured CHM/HMI researchers: Richard J. Davidson, Tammi R. A. Kral, Simon B. Goldberg, Robin I. Goldman, Raquel G. Tatar, Ross C. Jacobucci, Melissa Rosenkranz, Virginia Medinilla.
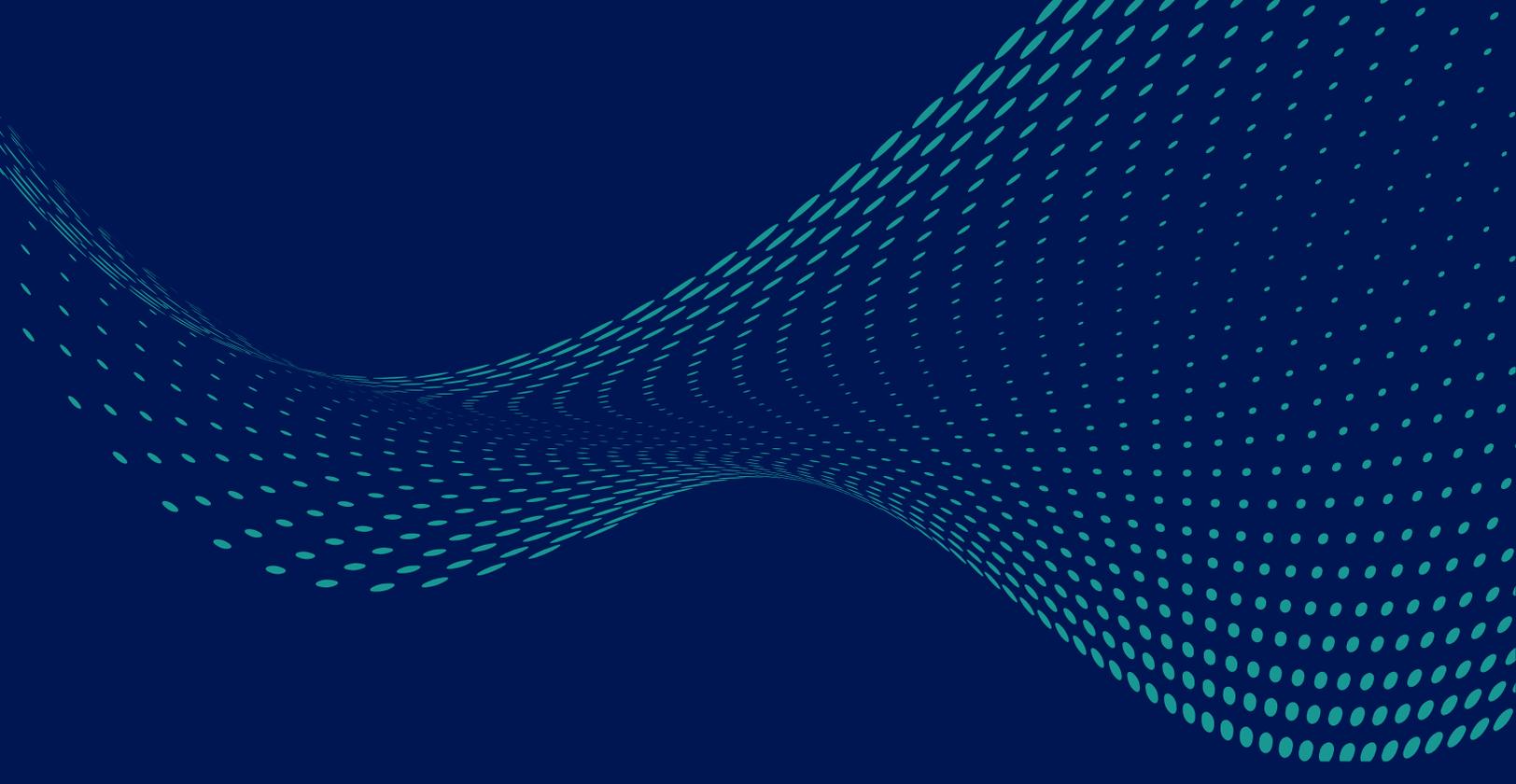
THANK YOU FOR REVIEWING OUR REPORT

At HMI, we're proud to share **Wellbeing: Behind the Science** as your go-to, exclusive guide for developments in the science of wellbeing. By providing you with this comprehensive, periodic summary of our progress, we hope you'll find inspiration to prioritize the holistic wellbeing of your organization—from that of your employees and customers to your company's overall performance.

HMI IS BUILT TO TRANSFORM ORGANIZATIONS THROUGH REAL SCIENCE

HMI is a global pioneer in applying the science of wellbeing, made possible through our strategic alliance with the Center for Healthy Minds (CHM) and the legacy research of renowned neuroscientist Dr. Richard J. Davidson.

Backed by 50 years of groundbreaking research and community trust, our alliance has delivered over 200 peer-reviewed outcomes, earned 100+ distinguished awards and partnerships, and helped more than 1 million people across 140 countries to learn the skills for wellbeing. Recognized by the World Economic Forum, *TIME*, *The New York Times*, and CNN, our nonprofit builds products and provides services that drive lasting impact worldwide.

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