Project led by trio of DPBS researchers receives Healthy Longevity Catalyst Award

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(From left to right) UCSF Department of Psychiatry and Behavioral Sciences faculty members Elissa Epel, PhD [1]; Wendy Berry Mendes, PhD [2]; and Aric Prather, PhD [3]

The National Academy of Medicine (NAM), together with seven global collaborators representing nearly 50 countries and territories, today announced the winners of the inaugural round of Healthy Longevity Catalyst Awards. The awards are part of the Healthy Longevity Global Competition, a multiyear, multimillion-dollar international competition seeking breakthrough innovations to extend human health and function later in life.

In the inaugural round of the Catalyst Awards, innovators from around the world submitted over 1,330 applications. The Catalyst Phase calls on teams and individuals from any background — from science, medicine, and health to technology, finance, social sciences, and beyond — to submit innovative ideas with the goal of extending the human healthspan. Applications are judged primarily on novelty and innovation.

The NAM founded the competition and coordinates among the seven global collaborators, each administering a competition in their respective country or region. In parallel, the NAM also administers a U.S.-based Catalyst Award competition, for which nearly 600 innovators submitted applications in Round 1. Among the 21 submissions receiving Catalyst Awards from the NAM is a project led by Department of Psychiatry and Behavioral Sciences faculty members Elissa Epel, PhD [1]; Wendy Berry Mendes, PhD [2]; and Aric Prather, PhD [3].
focused on testing the potency of hormetic stress to reduce depression and slow biological aging. The group will receive $50,000 as seed funding to advance their research.

Their project [4] is one of two at UCSF to receive funding this year, along with another research project [5] focused on halting inflammation through the use of skin barriers.

### Studying the role of stress in aging

Hormetic stress — short-term, manageable acute stress — has been shown to trigger natural endogenous mechanisms of healing and repair in worms and other model species. The trio's novel translational research aims to find out if this effect can be also be replicated in humans through the incorporation of high-arousal acute stress activities, such as exercise and Wim Hof breathing, and low-arousal relaxation techniques like mindful breathing. An in-depth review of hormetic stress and the need for further research on the subject was published by Epel on September 27 in the journal *Ageing Research Reviews* [6].

To find out more about the impact of hormetic stress on the human autonomic nervous system, the group's UCSF Stress and Resiliency Study [7] will examine reactivity and recovery from acute stress, effects on the immune system, markers of change and immune enhancement, effects of cellular aging mechanisms, and effects on sleep and daily emotion regulation. Collaborators on the project include UCSF's Jue Lin, PhD [8], and Saul Villeda, PhD [9], as well as Columbia University's Martin Picard, PhD [10].

The study is currently enrolling volunteers in the Bay Area. For more information, visit stressreslience.net [7].

### An international commitment to improving and extending the human healthspan

I am delighted to honor this diverse group of scientists, innovators, and entrepreneurs for their bold ideas to extend the human healthspan and improve the physical, mental, and social well-being of people as they age,? said National Academy of Medicine President Victor J. Dzau. ?As this global competition advances, we hope this wellspring of activity will continue to attract new researchers to the field, activate innovation, and stimulate breakthroughs that will impact the lives of generations.?

Other organizations that issued Catalyst Awards today include Academia Sinica of Taiwan; Chinese Academy of Medical Sciences; EIT Health; Japan Agency for Medical Research and Development; Ministry of Health and National Research Foundation of Singapore; UK Research & Innovation; and the National Institute on Aging, U.S. National Institutes of Health. As part of the competition's commitment to share knowledge and stimulate an entire field by not only rewarding innovative ideas but also sharing those ideas with the world, summaries of all winning ideas are available at healthylongevitychallenge.org [11].

As part of the award, Epel, Mendes, and Prather will be invited to attend the first annual Innovator Summit in Washington, D.C., in September 2021 to share their work with policymakers, researchers, potential investors, and fellow innovators from around the world. The second cycle of the Catalyst Phase opens in early 2021, and applications will be accepted for approximately six weeks. After a multistep review process, winners will be announced in summer 2021.
The competition consists of two additional phases internationally:

- **Accelerator Phase**: Awards worth $300,000 to $1 million USD or more will be issued to meritorious Catalyst awardees or finalists who have demonstrated significant progress, in order to support the further advancement of their bold ideas (starting in 2021)
- **Grand Prize**: One or more grand prizes of up to $5 million USD will be awarded for achievement of a breakthrough innovation that extends the human healthspan (starting in 2023)

The Health Longevity Global Competition receives support from Johnson & Johnson Innovation LLC; John and Valerie Rowe; United Therapeutics Corporation; Anthony J. Yun and Kimberly A. Bazar; and The John A. Hartford Foundation, in addition to commitments from the global collaborator organizations. The American Federation for Aging Research provided support and administration during Round 1 of the NAM Catalyst Awards.

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**About the National Academy of Medicine**

The National Academy of Medicine [12], established in 1970 as the Institute of Medicine, is an independent organization of eminent professionals from diverse fields including health and medicine; the natural, social, and behavioral sciences; and beyond. It serves alongside the National Academy of Sciences and the National Academy of Engineering as an adviser to the nation and the international community. Through its domestic and global initiatives, the NAM works to address critical issues in health, medicine, and related policy and inspire positive action across sectors. The NAM collaborates closely with its peer academies and other divisions within the National Academies of Sciences, Engineering, and Medicine.

**About UCSF Psychiatry and Behavioral Sciences**

The UCSF Department of Psychiatry and Behavioral Sciences [13] and the Langley Porter Psychiatric Institute are among the nation's foremost resources in the fields of child, adolescent, adult, and geriatric mental health. Together they constitute one of the largest departments in the UCSF School of Medicine and the UCSF Weill Institute for Neurosciences, with a mission focused on research (basic, translational, clinical), teaching, patient care, and public service.

UCSF Psychiatry and Behavioral Sciences conducts its clinical, educational, and research efforts at a variety of locations in Northern California, including Langley Porter Psychiatric Hospital and Clinics [14]; UCSF Medical Centers at Parnassus Heights, Mission Bay, and Mount Zion; UCSF Benioff Children's Hospitals in San Francisco [15] and Oakland [16]; Zuckerberg San Francisco General Hospital and Trauma Center; the San Francisco VA Health Care System; UCSF Fresno; and numerous community-based sites around the San Francisco Bay Area.

**About the UCSF Weill Institute for Neurosciences**

The UCSF Weill Institute for Neurosciences [17], established by the extraordinary generosity of Joan and Sanford I. "Sandy" Weill, brings together world-class researchers with top-ranked
physicians to solve some of the most complex challenges in the human brain.

The UCSF Weill Institute leverages UCSF’s unrivaled bench-to-bedside excellence in the neurosciences. It unites three UCSF departments—Neurology, Psychiatry, and Neurological Surgery—that are highly esteemed for both patient care and research, as well as the Neuroscience Graduate Program, a cross-disciplinary alliance of nearly 100 UCSF faculty members from 15 basic-science departments, as well as the UCSF Institute for Neurodegenerative Diseases, a multidisciplinary research center focused on finding effective treatments for Alzheimer’s disease, frontotemporal dementia, Parkinson’s disease, and other neurodegenerative disorders.

**About UCSF**

The University of California, San Francisco (UCSF) is exclusively focused on the health sciences and is dedicated to promoting health worldwide through advanced biomedical research, graduate-level education in the life sciences and health professions, and excellence in patient care. UCSF Health, which serves as UCSF’s primary academic medical center, includes top-ranked specialty hospitals and other clinical programs, and has affiliations throughout the Bay Area.