BRIDGETTE MAYER GALLERY

Work by Rebecca Rutstein and Ocean Memory Project on view at NAS.

March 15, 2023 - Washington. Cultural Programs of the National Academy of Sciences announces *Blue Dreams*, an immersive video installation created by multidisciplinary artist Rebecca Rutstein in collaboration with a team of scientists. On view March 15 through September 15, 2023, at the National Academy of Sciences, the exhibition is a testament to the profound global impact of microbial networks. Supported by the Schmidt Ocean Institute, it offers a unique and thought-provoking perspective on the interconnectedness and sublimeness of the natural world.

The video is inspired by the intricate workings of microbial networks in the deep sea and beyond. From abstract imagery to stunning undersea video footage and computer modeling, it offers a glimpse into the interconnections and resilience of our planet's smallest yet most vital living systems. Blue Dreams flows between micro and macro worlds to portray geologic processes at play with microbial and planetary webs of interactivity. Microbes are essential to the functioning of the planet: they produce the air we breathe, regulate biogeochemical cycles, and are the origins of life on Earth.

Blue Dreams evolved over a yearlong cross-disciplinary collaboration between its five contributors: Rika Anderson, Samantha (Mandy) Joye, Rutstein, Shayn Peirce-Cottler, and Tom Skalak through a grant from the National Academies Keck *Futures* Initiative (NAKFI) Ocean Memory Project. Anderson, an environmental microbiologist at Carleton College, advised on marine microbial adaptation and resilience, microbial gene sharing networks, and the implications for exoplanet science and astrobiology. Joye, a marine biogeochemist at the University of Georgia and explorer of diverse deep-sea environments, provided insight into the biogeochemistry of vent and seep systems, and the interplay of microbial networks with large-scale ecological processes. Skalak, a bioengineer, provided overall conceptual vision and insight into methods for abstracting the data into system models, including agent-based simulations that could provoke visualization of swarm and collective behaviors. Peirce-Cottler, professor of biomedical engineering at the University of Virginia, created agent-based computer models of deep-sea microbial growth patterns generated from patterns of original Rutstein paintings. Artist Rutstein researched, synthesized, abstracted, and layered imagery, animation, video, and sound to create *Blue Dreams.* Portions of underwater video footage used were captured in Guaymas Basin, Mexico, on the R/V Falkor (FK190211) expedition from February-March 2019 led by collaborator Joye. This footage was generously provided by the Schmidt Ocean Institute.

By investigating the interconnectivity of the ocean and its inhabitants at different time scales, the Ocean Memory Project, a transdisciplinary group spanning the sciences, arts, and humanities, aims to understand how this system possesses both agency and memory. It seeks to record environmental changes through genetic and epigenetic processes in organisms, and through dynamic processes in the ocean structure itself. The Ocean Memory Project was born out of the NAKFI interdisciplinary conference, Deep Blue Sea, held in 2016.

Blue Dreams is on exhibit at the National Academy of Sciences, Upstairs Gallery, 2101 Constitution Ave., N.W., Washington, D.C. The building is open from 9 a.m. to 5 p.m. on weekdays. A photo ID and proof of up-to-date vaccination against COVID-19 is required. For details about our operating status and COVID-19 vaccination policy, visit https://www.nationalacademies.org/about/operating-status.

Cultural Programs of the National Academy of Sciences sponsors exhibitions, the D.C. Art Science Evening Rendezvous salon, theatrical readings, and other events that explore relationships among the arts and sciences. The National Academy of Sciences is a private, nonprofit institution that recognizes achievement in science by election to membership, and — with the National Academy of Engineering and the National Academy of Medicine — provides science, technology, and health policy advice to the federal government and other organizations.

About the Artist
Multidisciplinary artist and part ocean explorer, Rebecca Rutstein works at the intersection of art, science and technology. For over twenty years she has created painting, sculpture, interactive installation and public art inspired by the natural world. Rutstein has been an artist-in-residence at locations around the world including seven expeditions at sea and two dives to the ocean floor in the Alvin submersible. Her collaborations with oceanographers, ecologists, microbiologists, molecular scientists and geologists gives her a unique perspective and broad view of the interconnectedness of systems in the natural world. Through visual and immersive experiences, her work sheds light on the places and processes that are often hidden from view, to foster a deeper connection with nature, and inspire wonder, empathy and stewardship in the face of our climate crisis.

Rutstein's collaborations have been funded by the National Science Foundation, National Academy of Sciences/Keck Futures Initiative, Delta Airlines Foundation, Schmidt Ocean Institute, Ocean Exploration Trust, and the Philadelphia Foundation along with several universities. She is the recipient of the Pew Fellowship in the Arts, an Independence Foundation Fellowship, a Pennsylvania Council on the Arts grant, an Alabama Council on the Arts grant, is an MIT Ocean Discovery Fellow, and was recently named the Delta Visiting Chair for Global Understanding for her groundbreaking work at the University of Georgia. Rutstein has been featured on NPR, ABC, CBS, and in the Wall Street Journal, Huffington Post, Vice & Vogue UK magazines. With over 30 solo exhibitions, Rutstein has exhibited widely in museums and institutions both in the U.S. and internationally, and has spoken at over 40 institutions including Stanford, Cornell and Georgetown Universities about her practice and interdisciplinary collaboration. Her work can be found in over 40 public collections including the Philadelphia Museum of Art, Georgia Museum of Art, National Academy of Sciences, Pennsylvania Academy of the Fine Arts Museum, U.S. Department of State, Yale University, University of Washington, University of Alabama, University of New Mexico, Albert Einstein College of Medicine, Johns Hopkins Hospital, Microsoft and AT&T. Rutstein holds a BFA (magna cum laude) from Cornell University and an MFA from University of Pennsylvania. She has been represented by the Bridgette Mayer Gallery in Philadelphia since 2001, and also works with Sherry Leedy Contemporary in Kansas City, Space Gallery in Denver, and Galeri Urbane in Dallas.

Full press release: http://www.cpnas.org/press/bluedreamspressreleasefinal.pdf