

NEWS RELEASE

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Work by Rebecca Rutstein and Ocean Memory Project on View at NAS

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 Sept. 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.

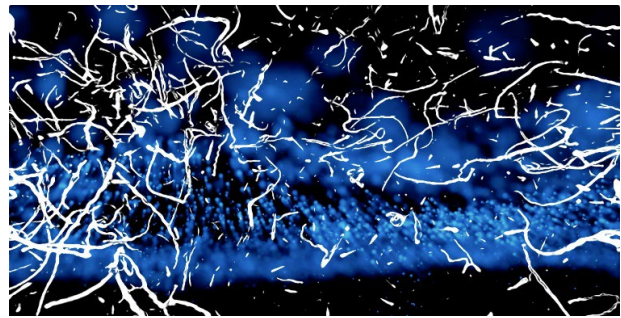
Blue Dreams evolved over a yearlong cross-disciplinary collaboration between its five contributors: Rika Anderson, Samantha (Mandy) Joye, Rutstein, Shayn Peirce-Cottler, and Tom Skalak through a grant from the National Academies Keck Futures Initiative (NAKFI) Ocean Memory Project. Anderson, an environmental 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. **(Continues on page 2)**

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>. For more information about our exhibitions, visit www.cpnas.org.

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.

Video Stills of *Blue Dreams* Available for Press



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