Laboratories of Analytical Biology (L.A.B.)

June 13, 2013

The Laboratories of Analytical Biology, or L.A.B., at the National Museum of Natural History is a new 12,000 square foot state-of-the-art genomics facility piloting cutting-edge biodiversity genomics on the National Mall. Located behind the scenes in the museum’s research wing, the facility will propel the Smithsonian to the forefront of the life sciences, enabling scientists to deeply understand life on earth using the emerging field of genomics. L.A.B. is managed by Lee Weigt, director of the Laboratories of Analytical Biology at the Museum Support Center and on the National Mall.

When fully operational, L.A.B. will address urgent questions about the health of the Earth’s environment and ecosystems, educate the next generation of STEM researchers in genomic techniques and expand the scope at which scientists can rapidly explore and discover nature’s vast biodiversity. L.A.B. facilities will also play a key role in the museum’s on-going biodiversity projects, including the Global Genome Initiative, a project which aims to ensure the viability of Earth’s genomic diversity by preserving and barcoding numerous genomes of life on Earth.

Employing cutting-edge technology, biodiversity researchers at L.A.B. will produce many benefits for society and the planet, including improvements to conservation efforts, increased efficiency in the identification of invasive species, stronger ways to measure the impact of pollution on wildlife and enhancements in our understanding of climate change in treasured diversity hotspots, like coral reefs and rainforests.

L.A.B. integrates a host of genomic technologies in one space that will enable scores of researchers to extract and analyze information from genomic samples in a fraction of the time required in precursor research facilities. Innovatively designed to adapt to new needs and rapidly emerging technologies, the space will accommodate approximately 65 researchers at a time at the Natural History Building on the National Mall and an additional 40 at the Smithsonian’s Museum Support Center in Suitland, MD. Through its vast size and flexible capabilities, L.A.B. will provide a space to inspire curiosity in the next generation of biodiversity scientists while providing them with the latest tools and skills necessary to employ genomics to discover and understand the diversity of life on Earth.

Made possible in part through a generous donation of equipment and supplies from the Life Technologies Corporation, L.A.B. researchers can sequence genetic materials using both capillary and next-generation DNA sequencers at the enormous scale critical to modern biodiversity research. Smithsonian scientists will be able to extract and amplify DNA from biological samples using robotic technologies. Through a complex of on-site computing technologies and a partnership with the University of Maryland’s Lattice Project, L.A.B. will also provide researchers with access to high-speed computing clusters that can facilitate vast and intensive DNA-based data analysis. For more information about research opportunities at L.A.B. and other details about the facility’s specifications, please visit http://www.mnh.si.edu/rc/lab/.

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