An Audacious Proposal
for Transforming and Democratizing Healthcare

Dr. Lee Hood, President and Co-Founder of ISB

At ISB, we remain committed to inventing the future of human health, with the ultimate objective of democratizing healthcare to develop and develop countries worldwide. In our 2013 annual report, we described the longitudinal study of 40 years for the 50000-Person Health Study. Phase 1 of the 100K Wellness Project launched in March 2013 with a sign-up of “50 Pioneers” whose early results have been spectacular. Project 2 and 3 will bring the study to 100,000, 10,000 and eventually 100,000.

This year, we want to make another audacious proposal that will leverage the lessons learned from the 100K project on the ISB’s campus. It focuses on population health and preventive medicine, and it builds upon ISB’s expertise in systems biology and its previous projects on human health including the 50000-Person Health Study and others. The 100K Wellness Project has potential to improve wellness, and it could be a model for bringing P4 medicine to the U.S. and eventually the world.

The 100K Wellness Project harnesses ISB’s leadership to support research leaders around the world. Internationally, we envision strategic partnership discussions with medical centers and innovative companies that develop and support new approaches to wellness. Within the U.S., we see the potential to scale the study to 1,000 participants per year. The 100K project will build an evidence-based thesis on the importance and strategies for improving wellness. In this annual report, we provide progress on the first year of the project, and we envision that the 100K Wellness Project will be the foundation for medicine of the future.

The Potential for U.S. Leadership

The U.S. can be at the forefront of this transformation, positioning itself as a global innovator through the introduction of the concept of wellness, technology, and policy. The 100K Wellness Project will provide a blueprint for how the U.S. can harness P4 medicine to improve population health. This endeavor will enable the U.S. to lead the world in advancing systems biology and medicine, and it will become a catalyst for transforming the U.S. healthcare system and, perhaps, to influence other nations.

The U.S. can leverage its leadership in biotechnology, genomics, and basic science to improve population health. The 100K Wellness Project will scale the study to 1,000 participants per year, requiring broad scientific collaborations and an agreement to aggregate and share data. This will enable mass coordination across the countries that become early adopters.

The ISB study explores the 50000-Person Health Study’s approach to health and disease and looks at how the study’s approach to analyses of biological data. We first gather the genome sequences of participants and then collect blood, saliva, stool, and urine samples every year. We derive genetic diversity in the genetic code that is associated with disease and that is influenced by nutrition, diet, behavior, and lifestyle. We then develop a systems biology database that is focused on nutrition, diet, blood metabolites, gut microbiome, and other factors that influence disease.

The 100K Wellness Project will further explore the concept of “systems medicine” and how it can be used to improve wellness and quality of life. The project will focus on developing computational approaches to identifying drug targets and disease mechanisms. The project will also explore the potential for big data and patient-activated social networks to improve public health and disease prevention. The project will also explore the potential for big data and patient-activated social networks to improve public health and disease prevention.

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At the Institute for Systems Biology, we have a responsibility to share what we learn. At ISB, supporting science education is not just a box that we check. ISB is home to one of the largest mass spectrometry labs on the West Coast and our researchers have had a long and ongoing relationship with the scientific community. This open-access philosophy enables the global community of researchers to explore data resources more efficiently. A hallmark of ISB’s systems approach is the cross-disciplinary and collaborative culture necessary to make sense of the complexity. Our researchers engineer tools that make it easier and faster to integrate and analyze disparate forms of data and, because of our open-source philosophy, enable the global community of scientists to explore data resources more efficiently.

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