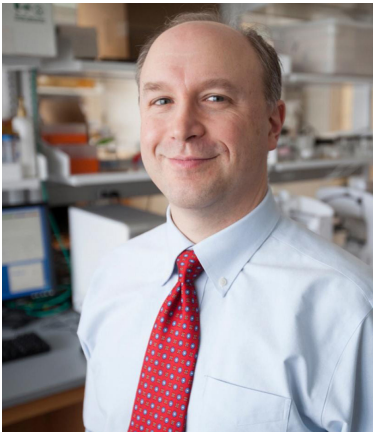


Two Decades of Cartilage Bioprinting: How Far Have We Come and Where Can We Go?



PRESENTED BY

Larry Bonassar, Ph.D.

Professor

Meinig School of Biomedical Engineering

Sibley School of Mechanical and

Aerospace Engineering

Cornell University

SCHEDULE

Doherty Hall (DH) 2315

Thursday

April 23rd, 2026

(11:00 AM - 12:00 PM)

The past 20 years has seen the invention and progression of the field of bioprinting from ideation and proof of concept experiments to testing of living printed implants in human clinical trials. This talk will chronicle the history of the development of this exciting technology, including enabling advances in printer hardware, biomaterials development, and cell biology, as well as discuss the applications of this technology for tissue and organ regeneration. The talk will present key innovations in biomaterials technology that enabled high fidelity fabrication of anatomically shaped and patterned tissue implants. Further, cutting edge innovations in printer design will be presented, focusing on real-time sensing and feedback control of biological activity in printed tissues. These developments will be discussed in the context of addressing challenges in the current regulatory framework for developing engineered tissues and organs as medical therapies. Lastly, the talk will conclude with a discussion of a long-term vision of what this technology may enable in the next 20 years.

Dr. Bonassar is the Daljit S. and Elaine Sarkaria Professor in the Meinig School of Biomedical Engineering and Sibley School of Mechanical and Aerospace Engineering at Cornell University. He received his BS from the Johns Hopkins University and SM and PhD degrees from MIT, followed by a postdoctoral fellowship at Massachusetts General Hospital and Harvard Medical School. He joined the faculty at Cornell in 2003 and was one of the founding members of the Department of Biomedical Engineering, serving as Associate Chair from 2005-2014. Dr. Bonassar's research focuses on cartilage biomechanics and tissue engineering, with an emphasis on developing treatments for diseases such as osteoarthritis and degenerative disc disease. He is an inventor on more than 25 US patents and has published more than 300 peer-reviewed manuscripts that have been cited more than 25,000 times. He is a fellow of the American Institute of Medical and Biological Engineers, the Biomedical Engineering Society, and the Orthopaedic Research Society. He has received numerous awards including the Kappa Delta Award from the American Academy of Orthopaedic Surgeons, the Marshall Urist Award in Regenerative Medicine from the Orthopaedic Research Society, and the World Technology Award in Health and Medicine. His work has been featured in the Washington Post, the New York Times, National Geographic's Explorers, BBC's Horizons, CBS's Sunday Morning, and CNN's Fared Zakaria GPS.