

Barbara D. Boyan, Ph.D.

**Executive Director, Institute for Engineering and Medicine | B.A., M.A., Ph.D., Rice University
at VCU College of Engineering**

Richmond, VA, US

Dr. Boyan specializes in cell and tissue engineering

Biography

Barbara D. Boyan, Ph.D., Executive Director, Institute for Engineering and Medicine, is a nationally acclaimed researcher and entrepreneur. Her laboratory is focused on research in all aspects of bone and cartilage biology, from basic science studies on steroid hormone signaling to the use of cells for regenerative medicine strategies, focusing on how cells interact with biomaterial surfaces. Her work in the bone and cartilage field began with studies to understand the underlying mechanisms of mineralized tissue formation. Her recent research developments include novel technologies for controlling nanotexture on metal and polymer surfaces in order to study cell responses for regenerative medicine applications as well as elucidating the mechanisms used by steroid hormones like vitamin D and estrogen and microRNAs in the regulation of bone and cartilage cells. An industry leader and proponent of improving quality of life around the world, Boyan is the co-founder of four companies: SpherIngenics, Inc., (cell-based therapies) as Director and Chief Scientific Officer Orthonics, Inc., (medical devices) as Chief Scientific Officer OsteoBiologics, Inc., (tissue engineered medical products) as Chairman and CEO, Board of Directors Biomedical Development Corporation, (innovative medical technologies) Chief Scientific Officer Also serving on the Board of Directors for six other companies, Boyan's influence has helped shape many scientific advancements. These companies are: Carticept Medical, Inc., (innovative injection devices) Independent Director, Board of Directors, and Chief Scientific Officer Cartiva, Inc. (Cartilage repair technologies) Independent Director, Board of Directors, and Chief Scientific Officer Commonwealth Center for Advanced Logistics Systems (CCALS), Chair of the Board IsoTis, Inc., (Bone graft material) Independent Director, Board of Directors, and Chief Scientific Officer IsoTis SA, (Bone graft material) Independent Director, Board of Directors ArthroCare, Inc., (Medical devices) Independent Director, Board of Directors She was previously associate dean for research and innovation at the Georgia Institute of Technology's College of Engineering. Boyan received her B.A., M.A. and Ph.D. while studying biology at Rice University, and holds many scholarly and national awards.

Industry Expertise

Education/Learning, Research, Medical Devices

Areas of Expertise

Cell and Tissue Engineering, Response of Cells to Biomaterials, Mechanisms of Action of Hormones and Growth Factors in Cartilage and Bone, Normal and Pathological Calcification, Stem Cell Delivery Technologies

Affiliations

National Academy of Engineering (Member), National Academy of Inventors (Fellow), American Association for the Advancement of Science (Fellow), European Academy of Sciences and Arts (Fellow), American Institute for Mechanical and Biological Engineering (Fellow), American Society for Bone and Mineral Research (Fellow), Biomaterials Science and Engineering (Fellow), International Team for Implantology (Fellow), American Academy of Orthopaedic Surgeons (Member)

Education

Rice University

Ph.D. Comparative Biochemistry and Physiology

Rice University

M.A. Comparative Biochemistry and Physiology

Rice University

B.A. Biology

Accomplishments

Rice University's Distinguished Bioengineering Alumna Award for 2017

The award recognizes Rice alumni whose scholarship, mentorship and innovations have made significant contributions to their professions and communities.

Fellow, National Academy of Inventors

2016

Fellow, American Institute of Mechanical and Biological Engineering

2006

Atlanta Woman of the Year (Science)

2005

The Birnberg Research Award, Columbia University School of Dental and Oral Surgery

2003

Fellow, American Association for the Advancement of Science

2002

Society for Biomaterials Clemson Award for Contributions to the Literature

2001

Albert-Hoffa-Prize (with Drs CH Lohmann, Z Schwartz, Y Liu, H Guerkov, B Simon, BD Boyan), Die Norddeutsche Orthop denvereinigung e.V (North German Orthopaedic Society) Research Prize

2001

American Academy of Periodontology, R. Earl Robinson Regeneration Award (with Drs Z Schwartz, DD Dean, CH Lohmann, D Andreacchio, TC Weesner, DL Carnes, DL Cochran)
October 2001

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