

# Christopher L. Barrett

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## Biography

Christopher L. Barrett is Professor and Executive Director of the Biocomplexity Institute and Initiative at the University of Virginia. He is an interdisciplinary computational scientist who has published more than 100 research articles exploring all aspects of large multi-scale interaction systems. During the past 35 years, Barrett has conceived, founded and led large interdisciplinary complex systems research projects and organizations, established national and international technology programs, and co-founded organizations for federal agencies such as the Department of Defense, the Department of Energy, and the Department of Homeland Security. He has served in various advisory and collaborative scientific roles internationally.

Barrett is the recipient of the 2012–2013 Jubilee Professorship in Computer Science and Engineering at Chalmers University in Göteborg, Sweden and is a member of the 2010 Royal Colloquium for the King of Sweden. He was a distinguished international professor at the Royal Institute of Technology in Stockholm (1997–1998). He has received distinguished research, service, advisory and security awards from the U.S. Navy, Los Alamos National Laboratory, and the Alliance for Transportation Research. He has served as advisor to many organizations, including U.S. Government Agencies, the Commonwealth of Virginia, and the European Commission. He holds seven patents and has nine pending.

Barrett's achievements include the successful development of some of the earliest detailed, large-scale, high-performance simulation systems for biological, social and decision sciences—in particular, development of distributed computing approaches for detailed agent-based simulation study of human mobility and transportation systems, interdependent infrastructure analysis, population-scale demand side micromodels, intelligent data fusion and control systems, and social epidemiology. Early work in engineered intelligence applied to U.S. Naval aircraft led to innovations in human-machine cognitive integration and simulation.

Prior to joining UVA, Barrett was the Executive and Scientific Director (2014–2018) of the Biocomplexity Institute of Virginia Tech and its predecessor, Virginia Bioinformatics Institute (2012–2014), where he spearheaded its extensive transformation resulting in the Biocomplexity Institute. He served as the Virginia Bioinformatics Institute's Director (2008–2015) in the National Capital Region and Scientific Director. Barrett joined Virginia Bioinformatics Institute at Virginia Tech in 2004 to establish the Network Dynamics and Simulation Science Laboratory and served as Director until 2015. He was Professor of Computer Science at the Biocomplexity and Bioinformatics Institutes at Virginia Tech from (2004–2018).

Early in his career, Barrett served in the U.S. Navy Submarine Force and later as an officer/research scientist in Naval Air Systems. As a U.S. Navy Officer, he founded and led the Decision Analysis Research Team at the Naval Air Development Center. Subsequently, he was a Member of the Scientific Staff and Technical Group Leader at Los Alamos National Laboratory where he founded the Basic and Applied Simulation Science Group in the Computing and Computational Science Division. His career has focused on intelligent system integration, networks of distributed systems, scalable HPC simulation of cognitive, biological and social systems, and complexity.

Throughout his career, Barrett has been committed to creating transdisciplinary research organizations grounded in computational and information sciences spanning mathematical, biological, psychological and social sciences; his efforts have led to successes in a range of environments, from the military and R&D and national laboratories to universities.