

PANOS ANTSAKLIS Biography

Panos J. Antsaklis is the *H.Clifford and Evelyn A. Brosey Professor* of Electrical Engineering at the *University of Notre Dame*. He is also Concurrent Professor of the Department of Computer Science and Engineering and of the Department of Applied and Computational Mathematics and Statistics.

He is a graduate of the *National Technical University of Athens* (NTUA), Greece, and holds MS and PhD (1977) degrees from *Brown University*. He also holds an Honorary Doctorate (*Docteur Honoris Causa*) from the *University of Lorraine*, France (2012).

He joined Notre Dame in 1980 after holding teaching and research positions at *Brown University* (Teaching and Research Fellow, 1976-77; Assistant Professor (Research), 1977-78), *Rice University* (Visiting Assistant Professor; 1977-78), and *Imperial College of the University of London*, England (Lecturer; 1978-80). During sabbatical leaves he has lectured and conducted research at MIT, *Imperial College*, NTUA and the *Technical University of Crete*, Greece.

He is a native of Greece, born in Kalamata, a city in southern Peloponnese, where he completed his primary and secondary education. He is married to Melinda Reese-Antsaklis a Pennsylvania native and a holder of an AB in Biology from Smith College and a PhD degree in Russian Literature from Brown University. They have one daughter.

Research: His research focuses on Cyber Physical Networked Embedded Systems and addresses systems, control and automation problems in the interdisciplinary research area of Control, Computing and Communication Networks. This research examines ways to design engineering systems that will exhibit high degrees of autonomy in performing useful tasks. High autonomy and ways to achieve it has been the driving force and the central theme of his research on the control of complex systems. Application areas include transportation, power, manufacturing, and chemical process systems, as well as computer and communication networks. His work includes analysis of behavior and control strategies for complex autonomous, intelligent, learning and reconfigurable systems. It is based on mathematical and data models of continuous, hybrid and discrete event dynamical systems. His recent work on a general theory for the analysis and robust design of Cyber-Physical Systems uses the energy like concepts of passivity (passivity indices) and dissipativity (See *Research* on this website)

Publications: He has published extensively in the area of Systems and Control, in linear feedback systems, autonomous intelligent control systems, discrete event and hybrid systems, in networked control systems and in cyber-physical systems (600 publications, 30,000 citations, h-index 78; see *Publications* on this website).

He has authored three graduate textbooks:

- *Linear Systems*
(Springer 2006; with A.N. Michel)
<https://www.springer.com/us/book/9780817644345>
- *A Linear Systems Primer*
(Springer 2007; with A.N. Michel).
<https://www.springer.com/us/book/9780817644604>
- *Hybrid Dynamical Systems: Fundamentals and Methods*
(Springer 2021; with Hai Lin)
<https://www.springer.com/us/book/9783030787295>

He has authored three research monographs:

- *Model-Based Control of Networked Systems*
(Springer 2014; with E. Garcia and L. Montestruque)
<https://www.springer.com/us/book/9783319078021>
- *Supervisory Control of Concurrent Systems: A Petri Net Structural Approach*
(Springer 2006; with M.V. Lordache)
<https://www.springer.com/us/book/9780817643577>
- *Supervisory Control of Discrete Event Systems using Petri Nets*
(Springer 1998; with J.O. Moody)
<https://www.springer.com/us/book/9780792381990>

He has edited six books:

- *An Introduction to Intelligent and Autonomous Control*
(Kluwer Academic 1993 with K.M.Passino)
- *Hybrid Systems II*
(Springer-Verlag 1995; with W. Kohn, A. Nerode and S. Sastry)
- *Hybrid Systems IV*
(Springer-Verlag 1997; with W. Kohn, A. Nerode and S. Sastry)
- *Hybrid Systems V*
(Springer-Verlag 1999; with W. Kohn, M. Lemmon, A. Nerode and S. Sastry)
- *Stability and Control of Dynamical Systems with Applications: A Tribute to Anthony N. Michel* (Springer 2003; with D. Liu)
<https://www.springer.com/us/book/9780817632335>
- *Networked Embedded Sensing and Control* (Springer 2006; with P. Tabuada)
<https://www.springer.com/us/book/9783540327943>

Editorships: He served as the Editor-in-Chief of the IEEE Transactions on Automatic Control (TAC), a highly prestigious leading journal in Systems and Control for 8 years, 2010-17. He is the Editor-in-Chief (with A. Astolfi) of *Foundations and Trends in Systems and Control*, (Now Publishers, 2012 to present). He previously served as Associate Editor at Large (2000-08) and as Associate Editor (1985-86) of the IEEE Transactions on Automatic Control; as Founding Associate Editor for Letters (1989-1990) and Associate Editor (1989-93) of the IEEE Transactions on Neural Networks, Associate Editor of Discrete Event Dynamic Systems (JDEDS; 1996-2009) and of several other journals; and as an Editor of the IEE Control Engineering Book Series (1989-95).

He was Guest Editor of the Special *Issue on Networked Control Systems* of the IEEE Transactions on Automatic Control (with John Baillieul, September 2004) and of the *Special Issue on Networked Control Systems Technology* of the Proceedings of the IEEE (with John Baillieul, January 2007). He was Guest Editor of special issues on *Hybrid Control Systems* in the IEEE Transactions on Automatic Control (with A. Nerode; 1998), in the Journal of Discrete Event Dynamic Systems (with M. Lemmon; 1998), and was the Guest Editor of the *Special Issue on Hybrid Systems* in the Proceedings of the IEEE in July 2000. He was the Guest Editor of the 1990 and 1992 *Special Issues on Neural Networks in Control Systems* of the IEEE Control Systems magazine (CSM) and the Guest Editor of the 1995 *Special Issue on Intelligence and Learning* in the IEEE CSM.

Professional Activities: He is the Founding President of the Mediterranean Control Association (MCA; President 1998 to present). MCA is the parent organization of the annual Mediterranean Conference on Control and Automation (MED attracts over 250 participants; now, in 2021, in its 29th year). He was a founder of MED.

He served as the 1997 President of the IEEE Control Systems Society (CSS), the 1996 CSS President-Elect, Vice President-Conferences in 1994 and 1995, an elected member of the CSS Board of Governors 1991-1996. He was Chair of the Awards Committee of CSS (2002-08). He served as Chair of the IEEE CSS Task Force on Defining Intelligent Control (1993-94), Chair of the IEEE CSS Society Brochure committee (1993-94), Chair of the CSS Technical Committee on Theory (1988-90), Group Leader, of the CSS Technical Committee on Intelligent Control (1989-93), Member-at-Large, of the CSS Technical Activities Board (1987-90), Chair of the CSS Student Activities (1984), Member of the CSS Financial Activities Board (1980-83).

He served as the IEEE Director and Alternate Director of the American Automatic Control Council, the U.S. National Member Organization of the International Federation of Automatic Control from 1994 to 1997. He was the Chair of the Technical Committee on Fuzzy and Neural Systems of the International Federation of Automatic Control (IFAC) 1999-2002.

He served as the General Chair of the 1995 34th IEEE Conference on Decision and Control (CDC) in New Orleans. He was the Program Chair of the 30th IEEE CDC in England in 1991, and he served as the General Chair of the 1993 8th IEEE International Symposium on Intelligent Control in Chicago.

He served as General co-Chair of the 8th, 15th, 21st and 24th MED in 2000, 2007, 2013 and 2016. He was the International Program Committee Chair for the 2007 European Control Conference (of EUCA, the European Union Control Association).

At Notre Dame he has served in several Department, college and University committees including six 3-year consecutive terms, since 2000, in the Academic Council of the University. He has also served as the Director of the Center for Applied Mathematics of the University of Notre Dame from 1999 to 2005. He was organizer of the Control of Cyber-Physical Systems Workshop at the University of Notre Dame London Centre October 20-21, 2012.

Recognitions: He was Honorary Chair of the 1996 4th IEEE Mediterranean Conference on Control and Automation in Crete, Greece (MED'96), of the 2008 16th MED in Corsica, France (MED'08), the 2010 18th MED in Marrakesh, Morocco (MED'10), the 2018 26th MED in Zadar, Croatia (MED'18) and the 2022 30th MED in Athens, Greece (MED'22). He was Honorary co-Chair of the 2013 International Conference on Control, Decision and Information Technologies (CoDIT'13) in Hammamet, Tunisia, and of the 2013 International Conference on Systems and Control (ICSC 2013) in Algiers, Algeria.

He has been plenary and keynote speaker in many conferences and research workshops including the 2009 American Control Conference. He was Science Keynote Speaker at the 2012 NSF Cyber-Physical Systems (CPS) PI Meeting in Washington D.C., October 2012.

He served as Chair of the Scientific Advisory Board (SAB) of the Max-Planck-Institut für Dynamik Komplexer Technischer Systeme, Magdeburg, Germany (2008-10, 2010-12) where he has been a SAB member since 2002. In 2006-2007 he was member of the subcommittee on Networking and Information Technology of the President's Council of Advisors for Science and Technology (PCAST), that advises the President of the United States on Science and Technology federal policy issues regarding technology, scientific research priorities, and math and science education.

At the University of Notre Dame he has been the recipient of several teaching awards. He was recognized for his accomplishments in teaching and research on the field (20-yard line) at the Notre Dame vs. Boston College game on November 19, 2011, in front of 80,000 football fans and was presented with a signed football by Provost Tom Burish.

He was the recipient of the 2013 Faculty Award of the University of Notre Dame. The *Faculty Award* was established in the 1927–28 academic year by the Notre Dame Alumni Association. It singles out that faculty member who, in the opinion of his or her colleagues, has contributed outstanding services to the University.

He was the recipient of the 2020 Research Achievement Award of the University of Notre Dame. The Research Achievement Award was established in 2001. It honors a distinguished faculty member who has made significant contributions to scholarship in his or her discipline and to the research and graduate education goals of the University.

He is a *Distinguished Lecturer* of the IEEE Control Systems Society, a recipient of the *IEEE Distinguished Member Award* of the Control Systems Society, and an *IEEE Third Millennium Medal* recipient.

He is *Fellow of the Institute of Electrical and Electronics Engineers*, IEEE (1991) for contributions to the theory of feedback stabilization and control of linear multivariable systems.

He is *Fellow of the International Federation of Automatic Control*, IFAC (2010) for fundamental contributions to hybrid control systems, supervisory control of discrete event systems, control of systems over networks and for leadership in the profession.

He is *Fellow of the American Association for the Advancement of Science*, AAAS (2011) for distinguished contributions to the field of Systems and Control, particularly for feedback control of multi-variable systems, intelligent, hybrid and discrete event systems.

He is the recipient of the 2006 *Engineering Alumni Medal of Brown University*, Providence, Rhode Island.

He was awarded an Honorary Doctorate (*Docteur Honoris Causa*) by the University of Lorraine, France in 2012.

URL: www.nd.edu/~pantsaki