





# Grand Challenges Scholars Program Workshop-Brasil

# PROFILE OF THE PARTICIPANTS

#### Adelson Dias de Souza (Nexa Resources)

Adelson Dias de Souza holds a B.S in Chemical Engineering and Master and Doctorate degrees in Industrial Processes, MBA in Business Management, post-graduation in Engineering Projects Management, author of 20 patents in non-ferrous metals. Technologies General Manager in Mining and Metallurgy at Nexa Resources (former Votorantim Metais).

# Al Bunshaft (Dassault Systèmes)

Al Bunshaft is the Senior Vice President of Global Affairs, Americas, for Dassault Systèmes. He is also the President of the Dassault Systèmes US Foundation. Bunshaft's expertise in 3D visualization, computer graphics and engineering-related software tools has been a special focus of his career. He is Dassault Systèmes' leading voice for science, technology, engineering and mathematics (STEM) education in the United States. From 2014-2017, Bunshaft was cochair of the STEM Innovation Task Force of STEMconnector, a consortium of organizations concerned with STEM education and the workforce of the future. He represents the company on the US Council on Competitiveness, which advances a pro-growth policy agenda to US government representatives, and is a member of a National Academy of Engineering committee on the integration of STEM, humanities and arts. He received his bachelor of science degree in computer science and mathematics from the University at Albany, SUNY. He has a master of science degree in computer engineering from Rensselaer Polytechnic Institute.

# Alessandro Moreira (Federal University of Minas Gerais - UFMG)

Alessandro F. Moreira received the Electrical Engineering Bachelor and Master degrees from the Federal University of Minas Gerais (UFMG) in 1991 and 1993, respectively. He received the Electrical Engineering PhD degree from the University of Wisconsin-Madison in 2002. Since 1993, he has been with the Department of Electrical Engineering, Federal University of Minas Gerais, as an Associate Professor. He held the position of Coordinator of the Electrical Engineering Undergraduate Major from 2002 to 2010. He held the Vice-Dean position of the School of Engineering from 2010 to 2014 and the Dean position at the same institution from 2014 to 2018. Since March 21st, 2018 he has been the Vice-Rector of UFMG. His areas of interest include engineering education, electric drive systems, power electronic devices and electromagnetic compatibility.

# Alvaro T. Prata (Federal University of Santa Catarina - UFSC)

Alvaro T. Prata is Professor in the Department of Mechanical Engineering at Federal University of Santa Catarina (UFSC). Graduated in Mechanical and Electrical Engineering from University of Brasilia, with a Master in Mechanical Engineering from Federal University of Santa Catarina and Ph.D. in Mechanical Engineering from University of Minnesota. For the last 40 years, he has been at UFSC teaching at undergraduate and graduate levels, coordinating projects and conducting research. From 2000 to 2004, he was Vice-President for research and graduate education and, from May 2008 to May 2012, President of Federal University of Santa Catarina. From May 2012 to December 2018, he was in the Ministry of Science, Technology, Innovations and Communications of the Federal Government, serving as the National Secretary for Technological Development an Innovation, National Secretary for Policies and Programs of Research and Development, and Vice-Minister. Presently, he coordinates the Research Laboratories for Emerging Technologies in Cooling and Thermo Physics at UFSC.

# André Gasparotti (Embraer/Boeing Brasil Commercial)

André Gasparotti is the Senior Director of Technology Development at EMBRAER, responsible for defining strategic investments, developing new technologies for future businesses, managing multiple partners relationships,

cooperation agreements and corporate intellectual propriety. Gasparotti is civil engineer graduated at UNICAMP, with MBA in Business Management at FAAP. He has a 18-year career at EMBRAER, with experience in product development, such as commercial and executive jets, holding some executive roles in R&T for more than ten years.

# B.L. Ramakrishna (NAE Grand Challenges Scholar Program Network Office - NAE GCSP)

Ramakrishna joined the faculty at Arizona State University (ASU, 1985) after a postdoctoral fellowship at ETH, Zurich. He was the Diane and Gary Tooker Professor of Materials Science and Engineering at ASU's Fulton Schools of Engineering (2011-2016) and a member of the humanitarian engineering faculty until his transition to emeritus professor (2016). He launched ASU's Grand Challenges Scholars Program (2009), being its director until 2013. He is dedicated to preparing engineers that have not only the necessary engineering skills but also the cross-disciplinary knowledge, entrepreneurial spirit, global perspective, and sense of mission needed in the 21st century. The research questions that he investigated lie at the crossroads of biology and materials science and engineering. He was selected to be a Jefferson Science Fellow (2013) and served as a senior science and technology advisor to the Office of the Secretary of State. Ramakrishna received his PhD from the Indian Institute of Technology, Madras (1982).

#### Barbara Rosado (State University of Campinas - UNICAMP)

Barbara Rosado obtained her bachelor's degree in Electrical Engineering in 2017 from the State University of Campinas (UNICAMP), Campinas, Brazil, where she is currently pursuing her master's degree founded by São Paulo Research Foundation (FAPESP). During the undergraduate and the graduate courses, she did an internship at Ryerson University, Toronto, Canada, under the supervision of Dr. Bala Venkatesh. She is an IEEE Student Member, she works as a teaching assistant for electrotechnology and performs research at the Department of Systems and Energy. Her research interests are control, optimization, and analysis of power distribution systems.

# Bruno Gomes Angelo (Federal University of Minas Gerais - UFMG)

Bruno Gomes Angelo is a Mechanical Engineering bachelor student at Federal University of Minas Gerais (UFMG). From 2015 to 2017 was a part of Baja UFMG Team, which is a competition team made of students that design and build off-road vehicles to participate in competitions organized by the Society of Automotive Engineers (SAE), in Brazil and in the United States of America. There, worked with the powertrain system, and was the Team Captain in the 2016-2017 season. The main research area was CVT transmission design and tuning. In 2018, did a semester abroad at Linkoping University, Sweden, and took some of the courses from the Mechanical Engineering degree there. Currently an intern at Fiat-Chrysler Automobiles (FCA), in the Chassis Engineering team, working with Steering Systems and Automatic Shifters.

# Carlos Eduardo Pereira (Brazilian Company of Research and Industrial Innovation - EMBRAPII)

Carlos Eduardo Pereira is Director of Operations at EMBRAPII and a Full Professor at Federal - UFRGS, where he chairs the Control, Automatic, and Robotics Group. From 2000 to 2001 he was a visiting researcher at the United Technologies Research Center (UTRC) in Hartford/CT, USA. From 2005 to 2009 he acted as Technical Director for CETA. He is a researcher level 1 of the Brazilian Research Agency (CNPq) and is a member of the Steering Committee for the International Affairs Directorate at CAPES. He has supervised more than 50 Ph.D. and Master thesis. He is Editor in Chief of the IFAC Journal on Systems and Control and Associate Editor of the Journal "Control Engineering Practice" and "Annual Reviews in Control" from Elsevier. He is the Brazilian academic coordinator of the BRAGECRIM - Brazil/Germany Cooperative Research in Manufacturing Technology. Received in 2012 the Friedrich Wilhelm Bessel research award from the Alexander von Humboldt Foundation.

#### Cathy Leslie (Engineers Without Borders - EWB)

Cathy Leslie serves as Engineers Without Borders USA's (EWB-USA) Executive Director and has since 2004. She has seen the growth of the organization from one university chapter to more than 275 student and professional chapters. The 16,800+ passionate, highly skilled volunteers that comprise these chapters work in more than 40 countries around the world. Since 2019, she is serving as the president of EWB-International. She uses her engineering and management skills to keep the passion alive and moving forward to building a better world one community at a time!

# Edson H. Watanabe (Federal University of Rio de Janeiro - UFRJ)

Edson H. Watanabe got the Electronic Engineering degree (1975), master's degrees in Electrical Engineering (1976) from Federal University of Rio de Janeiro (UFRJ) and the doctor's degree (D. Eng.) from Tokyo Institute of Technology (1981). Since 1981, he works at Electrical Engineering Department, COPPE/UFRJ. His main field of interest is Power Electronics and specifically Power Electronics Applications to Power Systems, including renewable generations (wind, solar and wave), its connections to the grid as well as active filters, FACTS and HVDC technologies. Has more than 200 papers in conference and journals, being co-author of the book "Instantaneous Power Theory and Applications to Power Conditioning" (IEEE Press/Wiley). Watanabe was the Director of COPPE/UFRJ. He is a member of: Brazilian Academy of Sciences, Brazilian National Academy of Engineering, IEEE-Japan, Brazilian Society for Automatic Control, Brazilian Power Electronics Society, CIGRE and PES, IAS and PELS of IEEE. He is an IEEE Fellow and was admitted to the National Order of Scientific Merit as "Comendador".

#### Evaldo Ferreira Vilela (Minas Gerais State Research Foundation - FAPEMIG)

Evaldo Ferreira Vilela graduated in Agronomy at Federal University of Viçosa (UFV). Holds a Master's Degree in Entomology from the University of São Paulo (USP) and a Ph.D. in Ecology from the University of Southampton (UK). He has concluded postdoctoral studies at the Universities of Berkeley, Nuremberg-Erlangen and Tsukuba. He is a CNPq - 1A Researcher, with over 100 cited papers. President of FAPEMIG and of the Brazilian National Council for the State Funding Agencies (CONFAP). He was the President of the Brazilian Societies of Entomology and for Agricultural and Livestock Defense. Full Member of the ABC. He has been the Assistant Secretary at SECTES (2007-2014) and member of CTNBio and CT-Agro. He has participated in Advisory Boards for CNPq, CAPES, FAPEMIG and FINEP. He is a member of the SBPC, the SEED Program and the Administrative Boards of BH-TEC and SEBRAE Minas. He has been the Director of UFV FUNARBE (1994-1999) and Rector of this University (2000-2004).

# Flávio Paulino de Andrade e Silva (MRV)

Flávio Paulino de Andrade e Silva holds a Degree in Civil Engineering from UFMG (2002) and a Master's Degree in Civil Construction from UFMG (2017) - Research Line in Management of Construction Projects - BIM. He has been working at MRV Engenharia for 18 years with experience in several areas: construction sites, planning and project. As Executive Project Manager, he is currently responsible for MRV's project and budget sectors. He is also responsible for the implementation, management and maintenance of NBR 15575 (Performance Standard) since 2013 in the company and recently from 2015 for the implementation of BIM technology in MRV.

# Francis Bogossian (National Academy of Engineering - ANE)

Francis Bogossian is the President of the Brazilian National Academy of Engineering (ANE - 2017-2020) and the Vice-President of the Rio de Janeiro Council for Engineering (CREA/RJ - 2019-2020). He graduated in Civil Engineering (1965) at the former National Engineering School at University of Brazil. In 1969, he worked as a trainee in Soil, Rock and Dam Mechanics in France and at the National Civil Engineering Laboratory, in Portugal. He has worked for 50 years in the industry, as an engineer, consultant and as a professor of Soil Mechanics, Foundations and Earth Works. He founded the engineering company GEOMECÂNICA S/A (1972), and was his president until 2007, being now the Board of Administration Chair. He is full member of 3 academies: ANE, Brazilian Education Academy (ABE) and Pan American Engineering Academy. He is a life member of the Board of Directors of the Brazilian Association of Geotechnical Engineering. He received several awards and occupied leading roles in many different organizations.

#### Helio Waldman (State University of Campinas - UNICAMP)

Helio Waldman received a BSEE from Instituto Tecnológico de Aeronáutica (1966), and M.S. and Ph.D. degrees from Stanford University in 1968 and 1972, respectively. In 1973, he joined the State University of Campinas (UNICAMP), where he was Director of the School of Engineering (1982-1986) and Research Provost (1986-1990). In 2006, he joined the newly created Federal University of ABC (UFABC) as Research Provost, being appointed President (2010-2014). He is a Life Senior Member of IEEE, a Senior Member of SBrT, a Full Member of the Brazilian National Academy of Engineering (ANE), and a commend holder ("Comendador") of the Brazilian National Order of Scientific Merit in the area of Engineering Sciences. He has authored three books, 41 papers in international journals, and 115 papers in proceedings of scientific meetings. He has supervised 37 Master's Theses and eleven doctoral Theses. His current research interests are in the areas of Optical Networking, emerging communication technologies and their impact on labor, education and society.

# Ivan Marques de Toledo Camargo (University of Brasília - UnB)

Ivan Marques de Toledo Camargo graduated in Electrical Engineering from the University of Brasília (UnB), Brazil, in 1982. He received his master and doctoral degree in Electrical Engineering from the Institut National Politechnique de Grenoble, France, in 1985and 1988, respectively. He was dean of the undergraduate studies of the University of Brasília, president of the Brazilian Society for Energy Planning and editor of Brazilian Energy Magazine. His main technical interests include electricity distribution, electrical machines, power systems stability and generation. He was the president of University of Brasília from 2102 to 2016. From 2016 to 2018, he was representing the academy on CNPE (National Board of Energy Planning). Today he is professor at UnB and president of the Administration Board of Brasilia Distribution Company.

# João Irineu Medeiros (Fiat Chrysler Automobiles - FCA)

João Irineu Medeiros graduated in Mechanical Engineering from the Federal University of Minas Gerais. Postgraduate in Structural Engineering from UFMG and in Economic Engineering from Dom Cabral Foundation. MBA in Business Management at Dom Cabral Foundation. Post-MBA from Kellogg School of Management Chicago, Northwerstern University, USA. From 1987 to 2012, he worked in the Powertrain and Chassis Product Development area at FIAT Latin America. From 2013 to 2016, he worked at Fiat Chrysler United States Tech Center in the areas of V8 engine development, strategic planning and vehicle regulation, approval and compliance. He is currently head of Product Compliance department by FCA - Fiat Chrysler Automobiles in the Latin America market.

# Jose Oniram de A. Limaverde Filho (University of Brasília - UnB & IEEE Brazil)

Jose Oniram de A. Limaverde Filho received the B.S. degree in Mechatronics Engineering (2012) and the M.S. degree in Mechatronic Systems (2014), both from University of Brasília (UnB), Brazil, and he is currently a Ph.D. candidate in Mechatronic Systems and researcher at the same university. Between 2010 and 2011, he also held an exchange at Télécom Physique Strasbourg (former ENSPS) through the CAPES-BRAFITEC program. Recently, he held the position of Substitute Professor at Federal Institute of Education, Science and Technology of Brasília (IFB). His current research interests include nonlinear control theory and applications, adaptive control, and state-estimation techniques. As an IEEE volunteer, he has held the position of IEEE YP Centro-Norte Brasil Chair (2012-2015), whose work was awarded the IEEE Brazil Council Outstanding Volunteer Award in 2013 and the IEEE R9 Theodore W. Hissey Award in 2014. After 6 years serving as Section Treasurer (2012-2018), he currently holds the position of Chair at IEEE Centro-Norte Brasil Section.

# José Roberto Boisson de Marca (GCSP Brazil & Pontifical Catholic University of Rio de Janeiro - PUC-Rio)

José Roberto Boisson de Marca received his Engineering degree from the Pontifical Catholic University of Rio de Janeiro (PUC-Rio) and his PhD degree, in electrical engineering, from the University of Southern California. 2014 President and CEO of the Institute of Electrical and Electronics Engineers (IEEE). Global President of the IEEE Communications Society (2000-2001) and Founding President of the Brazilian Telecommunications Society. IEEE Life Fellow and Member of the Brazilian National Academies of Sciences (ABC) and Engineering (ANE). Inducted as a Commander in the Brazil's National Order of Scientific Merit (2018). Served as Scientific Director of CNPq. Member of FINEP's President Advisory Council and CPqD Foundation's Board. Scientific Consultant with AT&T Bell Laboratories (USA) and Guest Scientist with the NEC Research Laboratory (Germany). Visiting Professor with the Politecnico di Torino (Italy) and at the Hong Kong Univ. of Science and Technology. At PUC-Rio, he was the P.I, of many grants in partnership with industry in topics such as wireless comm. and Digital TV. Received several awards and recognitions.

# Jose Roberto Cardoso (University of São Paulo - USP)

Jose Roberto Cardoso was born in Marilia, SP Brazil, in 1949. He received his B.S., M.S. and Ph.D degree in electrical engineering from Escola Politécnica da USP, SP, Brazil, in 1974, 1979 and 1986, respectively. Since 1999, he has been a Professor with the Energy and Electrical Automation Department, Escola Politécnica da USP. He is the author of three books, more than 70 articles, and advised more than 40 theses/dissertations. His research interests include numerical methods for electromagnetics, theoretical electromagnetics, electrical machines, electromechanical biomedical application, electrical railway research and engineering education. He is president of SBMAG - Brazilian Electromagnetics Society and former Dean of Escola Politécnica da USP. He is the founder of the LMAG - Electromagnetic Applied Laboratory. Cardoso was a recipient of the 2013 Emeritus Engineer of the Year in São Paulo.

# Lueny Morell (Beihang University)

Lueny Morell, MS, PE, Ing.Paed.IGIP is Founder & Director of InnovaHiEd, and Vice Dean of the School of General Engineering at Beihang University. BS and MS in Chemical Engineering from the University of Puerto Rico and Stanford University. Lueny is passionate about STEAM education and innovation as pillars to develop talent to better serve society. She has catalyzed the creation of new schools of engineering in the Silicon Valley (USA) and Beijing (China). She was a member of various HP Labs teams and previously full professor of Chemical Engineering at University of Puerto Rico - Mayagüez. IEEE Senior Member, ZSEE Fellow, member of the Pan-American Academy of Engineering, ABET Program Evaluator, member of the Advisory Board of the ICEE of the UNESCO-Chinese Academy of Engineering. She received various awards, including the prestigious US National Academy of Engineering Gordon Prize (2006). Recognized as one of the Engineering Education Pioneers in the US (2014), Lueny is author of dozens of papers.

# Luiz Machado (GCSP Brazil & Federal University of Minas Gerais - UFMG)

Luiz Machado is Vice Dean of the Engineering School, Federal University of Minas Gerais (UFMG). He works at Mechanical Engineering Department of UFMG since 1990. He is thesis's advisor at UFMG Graduate Program in Mechanical Engineering (GPME) since 1997. Obtained the Bachelor's Degrees in Mechanical Engineering and in Physics at UFMG (both in 1983), Master's Degree in Mechanical Engineering at UFMG (1989) and Doctor's Degree in Thermal Science and Energy at Institut National de Sciences Appliquées of Lyon, France, (1996). He has expertise in teaching and research, focusing on thermodynamics, heat transfer, fluid mechanics, boiling and condensation phenomena, numerical methods, refrigeration systems, air conditioning, heat pumps and ecological refrigerants. Coordinated several projects of research funded by government agencies and private companies. He has translated, in partnerships with UFMG colleagues, technical and didactic books, some of them adopted in Mechanical Engineering courses in Brazil. He was advisor of more than fifty graduate students, as well as of many undergraduate students.

#### Mario Neto Borges (Federal University of São João Del Rei - UFSJ)

Mario Neto Borges, Ph.D. in Artificial Intelligence Applied to Engineering Education, is a retired Associate Professor at the Federal University of São João Del Rei - UFSJ, where he lectured, became Head of Department and later Dean. In 1998, he was elected Rector, position that he held for six years. He was the Scientific Director of the Minas Gerais State Agency for Research Development - FAPEMIG (2004/2008) and its President (2008/2014). At national level, he was the President of the National Council of State Funding Agencies - CONFAP (2009/2013). He was also the Academic

Director of the Brazilian Society for Engineering Education - ABENGE, (2005/2010). He was the head of International Affairs - CONFAP for two years (2015/2016). From 10/2016 to 01/2019 he was the President of the National Council of Science and Technology - CNPq, the Brazilian Federal Agency for funding research at national level.

# Mauricio Guedes (Carlos Chagas Filho Research Support Foundation of Rio de Janeiro State - FAPERJ)

Mauricio Guedes graduated in Production Engineering at the Federal University of Rio de Janeiro (UFRJ) and got the Master Degree at COPPE/UFRJ. He has also an MBA degree in Marketing. Director of Technology at Carlos Chagas Filho Research Support Foundation of Rio de Janeiro State (FAPERJ - since 2018), where he also served as member of the board (2006-2015). President of the Strategic Committee of The Innovation Summit Brazil 2019, an unprecedented collaborative initiative of the Brazilian Science, Technology & Innovation community. Former President of the International Association of Science Parks and Areas of Innovation (IASP - 2008-2012) and of the Brazilian Association of Business Incubators and Science Parks (ANPROTEC - 1995-1999). Founder and Director of the UFRJ Science Park (2001-2015) and of the Technology Business Incubator at COPPE/UFRJ (1994-2013). Member of the Competitiveness Council of the FIRJAN and of the State Council of Science and Technology of Rio de Janeiro. Member of the national governing board of SEBRAE (1993-1999).

#### Nelson Martins (GCSP Brazil & Brazilian Electrical Energy Research Center - CEPEL)

Nelson Martins has a BSc (UnB-1972) and PhD (UMIST-1978), in Electrical Engineering. Member of IEEE/PES Power System Dynamic Performance Committee (PSDPC); past-chair Power System Stability Controls Subcommittee (2003-2007), PSDPC Small Signal Stability and Restoration Dynamics taskforces. Past-chair CIGRE-TF38.02.16 and CIGRE-TF C4.316. IEEE Fellow (1998) and Life Fellow (2017). Member of the national academies of Engineering of USA (NAE -2015) and Brazil (ANE - 2015). IEEE/PSDPC Prize Paper (2013) and IEEE/PES Prabha Kundur Dynamics and Control (2015), among other awards. Member of Editorial Board Proceedings of IEEE (2018-2019) and of the Editorial Board of the IET-GTD (2007-2011). Works at Brazilian Electrical Energy Research Center (CEPEL) since 1978; leading expert in small signal stability methods, and power system analysis tools. Delivered brief courses in 20 countries and, in association with professors in Brazil and abroad, supervised 30 students to the completion of their MSc and PhD degrees. Visiting Professor at the Catholic University of Chile (1982-83). He published over 200 papers.

#### Paulo Eduardo Artaxo Netto (University of São Paulo - USP)

Paulo Eduardo Artaxo Netto made his undergraduate studies in Physics at the University of São Paulo (USP), and got his BSc in 1977, receiving his PhD in Environmental Physics at the same institute (1985). At his Pos Doc, he worked at the University of Antwerp (Belgium), University of Lund (Sweden), NASA Goddard Space Flight Center and at the University of Harvard. In the 1980s, Artaxo initiated the study of tropical aerosols, emphasizing the importance of biomass burning in Amazonia as a source of climatically important aerosol particles. Since 2018, he is a Senior Professor at the Institute of Physics, USP. He was a lead author of the IPCC Working Group 1 (2005-2007), and a lead author of the IPCC AR4, AR5 and AR6 teams. He is one of the most cited Brazilian scientists (more than 20,900 scientific citations). Artaxo is member of the Brazilian Academy of Sciences and of TWAS.

# Paulo José Curado (Telecommunications Research and Development Center - CPqD)

Paulo José Curado holds a bachelor's degree in Mechanical Engineering from the State University of Campinas (UNICAMP - 1985). He has also an MBA degree from Getúlio Vargas Foundation (FGV - 2002). Curado has an extensive experience in R&D in the areas of Telecommunications, Information Technology and Communication. His career was built at the Telecommunications Research and Development Center (CPqD), in Brazil, where he leads R&D and Innovation units and teams responsible for proposing, approving and executing projects funded by various R&D funds. Since January 2019, he is Director of Innovation at CPqD.

# Ricardo Valadares Gontijo (Direcional Engenharia)

Ricardo Valadares Gontijo is currently the chairman of Direcional's board of directors and has been its chief executive officer since having founded the Company in 1981. He served as construction officer of Construtora Andrade Valladares from 1974 to 1984, where he coordinated a group of approximately 35 engineers and was responsible for the construction of approximately 32,700 units. Ricardo Valadares Gontijo holds a bachelor's degree (and graduated with honors) in civil engineering at Federal University of Minas Gerais (UFMG).

# Richard Magdalena Stephan (Federal University of Rio de Janeiro - UFRJ)

Richard M. Stephan received the B.Sc. degree from Instituto Militar de Engenharia (IME), Rio de Janeiro, in 1976; the M.Sc. degree from Federal University of Rio de Janeiro (COPPE/UFRJ) in 1980; and the Dr.-Ing. degree from Ruhr Universität Bochum, Germany, in 1985; all in Electrical Engineering. He has an MBA degree (2005) from the Center for Scientific Enterprise, London (CSEL), on Technology Enterprise Development. During 1977, he worked as an engineer at Furnas Centrais Elétricas, Rio de Janeiro. Since 1978, he has been with the Department of Electrical Engineering, UFRJ. He spent a sabbatical leave at CEPEL, the Research Center of ELETROBRAS, in 1993. His main interests are in the fields of applications of superconductivity, MagLev technology, control of electrical drives and power electronics. Dr. Stephan is a former president of SOBRAEP, Senior Researcher of CNPq and Senior Member of IEEE.

# Richard K. Miller (Franklin W. Olin College of Engineering)

Richard K. Miller was appointed President and first employee of Olin College of Engineering (1999). Previously, he served as Dean of Engineering at the University of Iowa, Associate Dean of Engineering at USC in Los Angeles, and assistant professor of engineering at UCSB in Santa Barbara. With a background in applied mechanics and current interests in innovation in higher education, Miller is the author of more than 100 reviewed journal articles and other technical publications. He received the 2017 Brock International Prize in Education. Together with two Olin colleagues, he received the 2013 Bernard M. Gordon Prize from the U.S. National Academy of Engineering (NAE) for Innovation in Engineering and Technology Education. Recently elected to the American Academy of Arts and Sciences, he is a member of both the NAE and the National Academy of Inventors. He received other several awards and served as a consultant to the World Bank in the establishment of new universities in developing countries.

# Ronaldo Tadeu Pena (Federal University of Minas Gerais - UFMG)

Ronaldo Tadeu Pena - EE (UFMG, 1970), Biomedical Engineering MSc. (UFRJ, 1973), EE Ph.D. (University of Texas at Austin, 1983). Professor at the UFMG Electronic Engineering Department (1973-2010). In 1991 he became the Department Titular Professor on Automation and Control. He did a lot of consulting work for many industries in the area of Process Control Engineering. He advised about 100 undergraduate students, 23 master thesis and 1 doctoral dissertation. He served as the President of the Brazilian Society of Automation (1989-91) and was the Chairman of the 6th and the 20th Brazilian Congress on Automation, in 1986 and 2014. He served the Federal University of Minas Gerais as: Dean of Engineering (1990-94), Pro Rector for Planning and Development (2000-06) and President (2006-2010). Upon his retirement from the University, he implanted the Belo Horizonte Technology Park, where he served as the CEO from Sept/2010 to Mar/2018. He is now retired.

# Siena Applebaum (University of Southern California)

Siena Applebaum is a rising senior studying Mechanical Engineering at the University of Southern California. She is a USC Trustee Scholar and Viterbi Fellow. At USC, she is a TA for a freshman engineering course, an officer of the Society of Women Engineers, and an undergraduate research assistant in the USC Robotic Embedded Systems Laboratory. She will be participating in the Global Grand Challenges Summit with her team, Marlink, this Fall. This summer, she interned for Microsoft in Seattle, and she will be interning for Apple in Mac Product Design this upcoming Spring.

#### Tatiana Dumêt (Federal University of Bahia - UFBA)

Tatiana Dumêt is a Civil Engineer from the Catholic University of Salvador, Master in Civil Engineering, with emphasis on concrete structures, from the University of São Paulo, PhD in Civil Engineering (Structural Engineering) from the University of São Paulo at São Carlos, and holds specializations in Structural Engineering from the University of Texas, at Austin, and Jungian Psychopedagogy. She is an Associate Professor at the Department of Construction and Structures at the Polytechnic School of UFBA and a PhD professor and researcher in the area of structural concrete. She has developed administrative activities as head of the Department of Construction and Structures, the Coordinator of the Collegiate of the Civil Engineering Course, the General Director and Technical Scientific Director of the Bahia Polytechnic School Foundation, the Coordinator of the Structural Laboratory SP Timoshenko, and the Coordinator of INOVAPoli-Technology-Based Incubator of UFBA. She is currently Director of the Polytechnic School of UFBA.

#### Valder Steffen Jr. (Federal University of Uberlândia - UFU)

Valder Steffen Jr. is Mechanical Engineer (UNICAMP, Brazil, 1976) and PhD in Mechanical Engineering (University of Franche-Comté, France, 1979). He did his Habilitation at the University of Franche-Comté in 1991. He worked as a visiting scientist at the INSA de Lyon - France, in 1986-87 and was a Fulbright Scholar at Virginia Tech - USA, in 1999-2000. He is now Professor of Mechanical Engineering at the School of Mechanical Engineering, Federal University of Uberlândia (UFU), in Brazil. His research interest is focused on dynamics of mechanical systems, optimization and inverse problems, rotordynamics, and smart structures. He is member of the Brazilian Academy of Sciences (ABC) and member of the National Academy of Engineering (ANE). Presently, Prof. Steffen is serving as President of the Federal University of Uberlândia.

Valquíria Villas-Boas (Brazilian Association of Engineering Education- ABENGE & Univ. of Caxias do Sul - UCS) Valquíria Villas-Boas is a full professor at the University of Caxias do Sul (UCS) in Brazil. She has a B.S., M.S. and PhD in Physics from the University of São Paulo (USP). Before working at UCS, she was an assistant professor at University of São Paulo and University of San Diego. She is part of the faculty of the Master's Program in Science and Mathematics Teaching at UCS. She is the Chair of the Steering Committee of the Active Learning in Engineering Education (ALE). She is a member of the Consultative Committee for the Aalborg Centre for PBL in Engineering Science and Sustainability, of the Editorial Board of the European Journal of Engineering Education, and of the Governing Board of the Research in Engineering Education Network. She is the academic director of the Brazilian Association of Engineering Education and coordinator of its Active Learning in Engineering Education work group.

Vilma Alves de Oliveira (Brazilian Society of Automatic - SBA & University of São Paulo - São Carlos - USP) Vilma A. Oliveira received her B.Eng. degree in Electronics from the State University of Rio de Janeiro, Brazil, in 1976, MSc degree in Electrical Engineering in the Federal University of Rio de Janeiro, Brazil, in 1980 and PhD degree in Electrical Engineering from the University of Southampton, England, in 1989. In 1990, she joined the Electrical and Computing Engineering Department at the São Carlos Engineering School of University of São Paulo, Brazil, where she is a Full Professor since 2005. Her research interests include fuzzy control, control design and its applications in precision agriculture and microgrids. She is the actual President of the Brazilian Society of Automatic and a member of the CNPq Advisory Committee for electrical engineering.

#### Virginia S. T. Ciminelli (GCSP Brazil & Federal University of Minas Gerais - UFMG)

Virginia S. T. Ciminelli is a Professor of the Department of Metallurgical and Materials Engineering, Federal University of Minas Gerais (UFMG), and director of the National Institute of Science and Technology on Mineral Resources, Water and Biodiversity (INCT-Acqua). Member of the Brazilian Academies of Sciences (ABC) and Engineering (ANE), and of the World Academy of Sciences. Foreign Member of the National Academy of Engineering (USA). Ciminelli has led partnerships in Brazil and abroad, working in collaboration with the industry, state agencies and programs of territorial development. Served as a member of several organizations' boards and committees. Her research focuses on the mechanistic understanding of solid-liquid reactions of relevance to hydrometallurgy, and to environmental remediation and protection. She co-authored over 200 reviewed journal articles and other publications. Recipient of the GEMS Earth and Mineral Science Alumni Achievement Award from the Pennsylvania State University-Penn State, National Order of Scientific Merit, Mercosul Award of Science and Technology 2011, among other recognitions. Ciminelli earned her B.S. and M.Sc. from UFMG and Ph.D. from Penn State (US).

## Zil Miranda (Brazilian National Confederation of Industry - CNI)

Zil Miranda earned her PhD degree in Sociology from University of São Paulo (USP). She worked at USP's Observatory of Innovation, at the Center for Strategic Studies and Management in Science, Technology and Innovation (CGEE), and at the Brazilian Agency for Industrial Development (ABDI). Since 2016, she is part of the team of the Department of Innovation at the Brazilian National Confederation of Industry (CNI).

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