2008 Fellows

Bernard Amadei is Distinguished Professor and Professor of Civil Engineering at the University of Colorado at Boulder. He is the Founding Director of the Mortenson Center in Engineering for Developing Communities. He is also the Founding President of Engineers Without Borders - USA and the co-founder of the Engineers Without Borders-International network. Among other distinctions, Dr. Amadei is the 2007 co-recipient of the Heinz Award for the Environment; the recipient of the 2008 ENR Award of Excellence, the 2015 Washington and ASCE OPAL awards, and the 2016 C. H. Dunn Award of the Construction Industry Institute; an elected member of the U.S. National Academy of Engineering and the National Academy of Construction; and an elected Senior Ashoka Fellow. He received his Dipl. Eng. in 1977 from the School of Applied Geology and Mining Engineering, Nancy, France; his MaSc in 1979 from the University of Toronto, Canada; and his Ph.D. in 1982 from the University of California at Berkeley. He also holds seven honorary doctoral degrees (UMass Lowell; Carroll College; Clarkson; Drexel; SUNY-ESF; Worcester Polytechnic Institute; and Technion in Israel). In 2013 and 2014, Dr. Amadei served as a Science Envoy to Pakistan and Nepal for the U.S. Department of State.

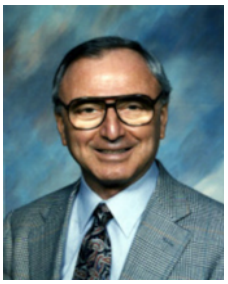
Charles H. Dowding is Professor of Civil and Environmental Engineering at Northwestern University at Evanston, Illinois. He holds a B.S. in Civil Engineering from the University of Colorado at Boulder, CO, and M.S. and Ph.D. degrees from the University of Illinois at Urbana- Champaign, IL. He conducted his postdoctoral research at the Norwegian Geotechnical Institute and also held an assistant professorship at MIT. Dr. Dowding founded Digital Vibration Inc., formerly of Northbrook, the first company to perfect remote digital blast vibration monitoring in the early 1980's. Along with co-authors, he received the Applied Research Award from the U.S. National Committee for Rock Mechanics for work on blast induced cracking of structures that serves as the basis of federal regulations (U.S. Bureau of Mines, RI 8507). Dr. Dowding is a former chairman of the ASCE Rock Mechanics Committee, a former member of the Board of Directors of the American Rock Mechanics Association, and a former member of the board of directors of the International Society of Explosive Engineers. His consulting engagements have involved projects in Canada, Panama, Hong Kong, Italy and over thirty of the United States. He has consulted for governmental agencies, including the U.S. National Park Service, U.S. Department of Transportation, U.S. Department of Energy, as well as for companies, including IBM, MWH, Stone & Webster, Sargent & Lundy, CH2MHill, Shell, and Fina Oil. Dr. Dowding is the author of four books: Construction Vibrations; Blast Vibration Monitoring and Control; Micro-Meter Crack Response to Vibration and Weather; and GeoMeasurements by Pulsing TDR Cables and Probes. He is also author or co-author of many a peer-reviewed article and holds two patents.

Herbert H. Einstein is Professor of Civil and Environmental Engineering at the Massachusetts Institute of Technology (MIT). He received his Dipl. Ing. and Sc.D. in Civil Engineering from ETH-Zürich. Prof. Einstein is involved as a teacher, advisor, consultant, and researcher in issues related to underground construction, rock mechanics and rock engineering, and natural hazards, notably landslides, as well as in waste repository problems. His activities range from experimentation to analytical and numerical modeling. Prof. Einstein has served on a number of national and international technical / scientific committees and advisory boards, and is also a co-editor of the journal Rock Mechanics and Rock Engineering and a member of the editorial board of Tunneling and Underground Space Technology. Prof. Einstein is author or co-author of over 250 publications in his area of expertise. He was the recipient of the prestigious Müller Lecture Award of the International Society for Rock Mechanics and the Outstanding Contributions to Rock Mechanics award of ARMA. He has also received several teaching awards from his Department and from the School of Engineering at MIT. His website is https://herbert-einstein.org.

Charles Fairhurst is Professor Emeritus at the University of Minnesota and Associate at Itasca Consulting Group in Minneapolis, MN. He obtained his Ph.D. in Mining Engineering from the University of Sheffield, UK in 1955. He joined the University of Minnesota faculty, School of Mines and Metallurgy in 1956, serving as Head for several years until 1970, when the Mining program was joined with Civil Engineering to form the Department of Civil and Mineral Engineering. He was Head of the joint Department from 1973-87, and retired in 1997. He supervised 25 Ph.D. students on a variety of topics in basic and applied rock mechanics. As a private consultant (and Senior Consultant with Itasca since 1981), Dr. Fairhurst has more than 70 years of experience in mining rock mechanics and has consulted on rock stability problems for tunnels, dams, mines, and excavations throughout the world. He has also been actively engaged for almost 50 years in the problems of geological isolation of high and intermediate-level nuclear waste in the U.S. and internationally. His current emphasis is on the mechanics of fracture propagation in naturally fractured rock under explosive loading and the effective stimulation of geothermal reservoirs. Dr. Fairhurst served as President of the International Society for Rock Mechanics (ISRM) from 1991-1995 and has been elected to the Royal Swedish Academy of Engineering Sciences (1979) and the U.S. National Academy of Engineering (1991). He is a Fellow of the ISRM. Dr. Fairhurst holds honorary doctorate degrees from the University of Nancy, France; St. Petersburg Mining Academy, Russia; University of Sheffield, England; and University of Minnesota, USA; and is Advisory Professor to Tongji University, Shanghai, China. In December 2013, he was inducted as Officier, Légion d'Honneur, France.

Sidney J. Green is Founder-President of Enhanced Production, Inc., and Research Professor at the University of Utah. He was also a founder-president of TerraTek in Salt Lake City, Utah. In 2006 TerraTek was acquired by Schlumberger, from which he retired in 2015. Mr. Green has published numerous technical papers, holds a number of patents, and has given invited presentations worldwide. He has served as Director for several companies, as well as on University advisory boards and government committees, including committees of the National Research Council and the National Academies, and has testified at Congressional hearings. Mr. Green received a B.Sc. from Missouri University of Science & Technology, an MS from University of Pittsburgh, and a Degree of Engineer from Stanford University. He is a lifetime member and a Fellow of ARMA, an SPE member, a former chair of the NAS U.S. National Committee for Rock Mechanics and the 1976 and 2010 Rock Mechanics Symposia, Chair of the Utah Academy of Engineering and Science, and a member of the U.S. National Academy of Engineering.

Richard Goodman is the Cahill Professor of Geotechnical Engineering Emeritus at the University of California, Berkeley. He received his B.A. in Geology from Cornell University in 1955, his M.S. in Civil Engineering and Economic Geology from Cornell University in 1958, and his Ph.D. in Geological Engineering from the University of California, Berkeley, in 1963. Dr. Goodman is the author of five books on geological engineering, rock mechanics, and engineering geology, and a biography of Karl Terzaghi. In 2016, he was the first recipient of ARMA's Distinguished Lecture Award. His research interests include keyblock theory, characterization and analysis of discontinuous rocks, and rock mechanics. His research in applied rock mechanics led to development of the joint element for finite element analysis (with Robert Taylor), introduction of the base friction model test, and the development of block theory. Dr. Goodman was elected to the U.S. National Academy of Engineering in 1991.



Belazel C. Haimson is Professor Emeritus of Geological Engineering at the University of Wisconsin, Madison. He received his B.S. in Mining Engineering in 1962 from the University of Witwatersrand, Johhanesburg, South Africa, and his M.S. and Ph.D. degrees in 1966 and 1968, respectively, in Mining Engineering / Rock Mechanics from the University of Minnesota. After establishing the rock mechanics / hydraulic fracturing laboratory at Halliburton Services in Duncan, Oklahoma, he joined the University of Wisconsin in 1969, where he has been ever since. In his Ph.D. thesis (1968), he had developed the poroelastic relationships between hydraulic fracturing (HF) pressures and in-situ principal stresses. In 1971 he conducted the first field HF measurements of in-situ stress, in a wellbore at Rangely, Colorado (induced seismicity research). This was followed by the first underground HF measurements in the Sierra Nevada Mountains (underground pumped storage), and the deepest HF tests (the Michigan 5000 m ultra-deep well), among others. The success of these initial tests paved the way for the worldwide acceptance and adaptation of HF as an in-situ stress measuring technique at any depth below the surface. Dr. Haimson is also credited with promoting the laboratory method of “true triaxial testing” of rock as superior to the more established conventional triaxial testing.
Dr. Haimson received the 2006 American Rock Mechanics Association Award for Research in Rock Mechanics; the 2000 U.S. National Committee for Rock Mechanics Applied Research Award; the 1997 Society of Mining, Metallurgy and Exploration (SME) Rock Mechanics Award for the development of hydraulic fracturing as an engineering method of in-situ stress measurement; the 1975 American Society for Testing and Materials (ASTM) Award for contributions to rocks and soils mechanics; and the 1970 U.S. National Committee on Rock Mechanics Research Award in recognition for research achievements in rock mechanics (development of the hydraulic fracturing stress measurement method). Dr. Haimson is the editor of three books on rock mechanics and the author of over 200 professional papers.
He served as Editor-in-Chief of the ARMA Letters (formerly ARMA e-Newsletter) since its inception in 2010.

Priscilla P. Nelson came to the Colorado School of Mines in 2014 as Professor and Department Head of Mining Engineering. Dr. Nelson has previously served as Professor at The University of Texas at Austin, Division Director and Senior Advisor at the U.S. National Science Foundation, and Provost at the New Jersey Institute of Technology. She has an international reputation in geological, geotechnical, civil and tailings engineering. Dr. Nelson has published more than 180 technical and scientific publications, and she is a Distinguished Member of the American Society of Civil Engineers (ASCE), former president of the Geo-Institute of ASCE, a lifetime member and first president and Fellow of the American Rock Mechanics Association, and Fellow of the American Association for the Advancement of Science (AAAS). Dr. Nelson is an elected Mole, Tau Beta Pi Eminent Engineer, and she received the Kenneth Andrew Roe Award from the AAES and the Henry L. Michel Award from ASCE. She received the Case Studies Award from the ARMA-precursor U.S. National Committee for Rock Mechanics in 1988 and the Basic Research Award in 1993. In 2016 she was appointed Chair of the Mine Safety and Health Research Advisory Committee of NIOSH/CDC and was identified as a Global Inspirational Woman in Mining (by WIM/UK). In 2018 she received the Outstanding Educator award from UCA of SME. She worked for the U.S. DOE and the State of Texas on the Superconducting Super Collider project between 1985 and 1992, and she served two terms from 1997 to 2005 on the U. S. Nuclear Waste Technical Review Board, appointed by Presidents Clinton and Bush. In 2020, she founded the Tailings Center as a collaboration with Colorado School of Mines, Colorado State University, and the University of Arizona. Dr. Nelson was selected as a "Geo-Legend" of the ASCE Geo-Institute in 2022 (see the 2023 associated personal interview). In 2024, she will deliver the invited Muir Wood lecture at the World Tunnel Congress in China, awarded by the International Tunneling and Underground Space Association (ITA). She received her B.S. degree in geology from the University of Rochester (1970) and two master's degrees in geology (Indiana University, 1976) and structural engineering (University of Oklahoma, 1979). In 1983, she received her Ph.D. degree from Cornell University.

2009 Fellows

Ahmed Abou-Sayed is a world renowned expert in hydraulic fracturing and its application for the recovery of unconventional resources (e.g., shale gas, tight formations, viscous oil and deepwater reservoir exploitation), as well as for the disposal by injection of associated oil field streams such as produced water, drill cuttings, CO_2, and H_2S. He holds a Bachelors of Science with Honors in Mechanical Engineering and Design from Cairo University, and a Masters of Science in Solid Mechanics and Ph.D. in Engineering Mechanics from Brown University. Dr. Abou-Sayed is the holder of five US patents and has authored over 100 technical papers and publications. He received Outstanding Achievement Awards from ARCO and BP in 1986 and 1993, respectively. In 1999, Dr. Abou-Sayed founded Advantek International and served as its CEO for over 20 years until his retirement. He received the Society of Petroleum Engineers (SPE) International Production and Operations Award in 2005 and the SPE Distinguished Member award in 2000. Dr. Abou-Sayed is a past member of the SPE Board of Directors, serving as the Technical Director for Production and Operations from 2009-2012. He also served on ARMA's Board of Directors (2005- 2011). He was SPE Distinguished Lecturer from 1992-1993 ("Advances in Hydraulic Fracturing Applications"), a United Nations Advisor from 1979-1983 (Technical Assistance Program for Unconventional Energy Recovery), and a member of the U.S.-Japan NSF Exchange Protocol from 1982-1984 (Member of the Panel on Geothermal Energy).

Derek Elsworth is a Professor in the Department of Energy and Mineral Engineering, Department of Geosciences, and the Center for Geomechanics, Geofluids, and Geohazards at Pennsylvania State University. His research interests are in computational mechanics and mechanical and transport characteristics of fractured rocks, with applications to geothermal energy, deep geological sequestration of radioactive wastes and CO_2, unconventional hydrocarbons, including coal-gas, tight-gas-shales, and hydrates, and instability and eruption dynamics of volcanoes.

2009 Fellows (cont.)

Wolfgang Wawersik received his Dipl.-Ing. degree in mining engineering from the Technische Hochschule, Aachen, Germany, and gained early professional experience in the German and British mining industries. After attaining his M.S. and Ph.D. degrees in mineral engineering / rock mechanics from the University of Minnesota, Dr. Wawersik held positions at the Massachusetts Institute of Technology, University of Utah, Sandia National Laboratories, and the U.S. Department of Energy / Office of Basic Energy Sciences. His research has focused on experimental geomechanics to characterize pre- and post-failure rock response, measure rock properties, and validate design procedures for underground structures. His work included the characterization of rock salt and stress measurements for geologic storage projects.

2011 Fellows

Michael Hardy has over 49 years' experience in application of rock mechanics principles in mine design and consulting. He was a founding partner of Agapito Associates, Inc., in 1979 and President of the firm for 28 years, and now serves as Chairman of its Board of Directors. Dr. Hardy has managed projects for mine design in coal, potash, trona, nahcolite, gold, oil shale, and nuclear waste disposal. He has managed projects involving resource and reserve estimates, field geotechnical data gathering, numerical modeling, design of underground mines, solution mining, backfill, geo-hydrology, and has authored many Preliminary Feasibility Studies and Feasibility Studies for solution mining projects. Since the mid-1980s, he has focused on solution mining and pilot testing of potash, trona, and nahcolite deposits. Dr. Hardy has served as Chairman of the Underground Technical Research Council of the ASCE and SME, and was a committee member for the National Academy of Science, National Research Council on the Waste Isolation Project (WIPP). He is also a past member of ARMA's Board of Directors. Dr. Hardy is a registered professional engineer in Colorado and Texas.

2011 Fellows (cont.)

Mark Zoback is the Benjamin M. Page Professor of Geophysics and the Director of the Stanford Natural Gas Initiative at Stanford University. He co-directs the Stanford Center for Induced and Triggered Seismicity (SCITS). Conducting research on in situ stress, fault mechanics, and reservoir geomechanics, he is the author of the textbook titled Reservoir Geomechanics (2007, Cambridge University Press), author or co-author of 400 technical papers, and holder of five patents. Over 8000 students around the world have completed his online course Reservoir Geomechanics. Prof. Zoback has received a number of awards and honors, including the Robert R. Berg Outstanding Research Award of the AAPG in 2015 and the Outstanding Contribution to the Public Understanding of the Geosciences Award from AGI in 2016. A member of the U.S. National Academy of Engineering, he served on the National Academy of Energy committee investigating the Deepwater Horizon accident and on the Secretary of Energy's committee on shale gas development and environmental protection.

2013 Fellows

John D. McLennan has been a faculty member in the Department of Chemical Engineering at the University of Utah since 2009, and a Senior Research Scientist at the Energy & Geoscience Institute and an Adjunct Professor in the Department of Civil Engineering at the University of Utah since 2008. Before joining the university, he had over 35 years of experience with petroleum service and technology companies, including Dowell Schlumberger (nine years) at their Denver, Tulsa, and Houston facilities; TerraTek in Salt Lake City; Advantek International in Houston; and ASRC Energy Services in Anchorage. He holds a Ph.D. in Civil Engineering (1980) from the University of Toronto. Dr. McLennan has worked on projects concerned with subsurface energy recovery (hydrocarbon, geothermal) in a variety of reservoir environments throughout the world. He is an ARMA Fellow and has served as ARMA president. Currently, he is a Co-Principal Investigator on the FORGE project.

Edward Cording is Professor Emeritus at the University of Illinois Urbana-Champaign, from which he retired in 2002. He received his B.S. degree in geology from Wheaton College, Illinois, in 1960 and his M.S. and Ph.D. degrees in civil engineering from the University of Illinois at Urbana-Champaign in 1963 and 1967, respectively.
Dr. Cording is recognized for improvements in theories for rock stability, as well as efficient means of calculating, measuring and monitoring earth and rock movements during and after excavation, with attention to safety in unfavorable environments. He has provided advice on some of the largest projects of the world, including the Nevada Test Site (1965); the Drakensburg Pumped Storage South Africa; the Gregory County Pumped Storage in Missouri; the Superconducting Super Collider project (1986-90) in Texas; and the Washington, D.C., Metro (1970-82). He was a member and committee chairman of numerous technical organizations, including the American Society of Civil Engineers, the Geological Society of America, and the American Rock Mechanics Association, for which he was a founding member. He also served on many high-level boards, e.g., the U. S. Nuclear Waste Technical Review Board (1992-97), responsible for technical review of the Department of Energy's investigation of the suitability of the Yucca Mountain Site for storage of high-level nuclear waste. Dr. Cording has received many honors, including membership in the National Academy of Engineering (1987); election to the MOLES organization (2003); Bronze Medal, U. S. Army Corps of Engineers (1967); the ASCE Martin S. Kapp Award (1983); and the ASCE Thomas A. Middlebrooks Award (1985). Dr. Cording is the author or coauthor of more than 90 major articles, reports of public record and contributions to books.

Laura Pyrak-Nolte is a Distinguished Professor of Physics and Astronomy in the Department of Physics and Astronomy, College of Science, at Purdue University, where she also holds courtesy appointments in the Lyle School of Civil Engineering and in the Department of Earth, Atmospheric and Planetary Sciences in the College of Science. Prior to arriving at Purdue in 1997, Dr. Pyrak-Nolte was an Assistant Professor at the University of Notre Dame in the Department of Civil Engineering and Geological Sciences. She holds a B.S. in Engineering Science from the State University of New York at Buffalo, an M.S. in Geophysics from Virginia Polytechnic Institute and State University, and a Ph.D. in Materials Science and Mineral Engineering from the University of California, Berkeley. Her interests include applied geophysics, experimental and theoretical seismic wave propagation, rock mechanics, micro-fluidics, particle swarms, machine learning applied to geophysical signals, and fluid flow through earth materials. In 1995, Dr. Pyrak- Nolte received the Schlumberger Lecture Award from the International Society of Rock Mechanics. She received Young Investigator Awards from the National Science Foundation and the Office of Naval Research, and in 2001, Purdue University recognized her accomplishments with a University Scholar Award. Dr. Pyrak-Nolte was appointed to the Department of Energy's Earth Sciences Council and to the Council for the International Society of Porous Media in 2012, and to the Department of Energy, Office of Basic Energy Sciences, Council on Chemical Sciences, Geosciences and Biosciences in 2015. She served as President of ARMA from 2017-2019. Dr. Pyrak-Nolte is a Member of the American Academy of Arts and Sciences (2022); a Member of the National Academy of Engineering (2021); a Fellow of the American Geophysical Union (2020); and a Fellow of the American Association for the Advancement of Science (2020). In 2020, she was also inducted to the Innovator Hall of Fame, Purdue University. Dr. Pyrak-Nolte was President of InterPore from 2019-2021 and Vice President for North America, International Society of Rock Mechanics and Rock Engineering, 2019-2023.

2014 Fellow

Kate H. Baker is retired after a long career that spanned many an area in the geoscience and geoengineering disciplines, including geotechnical engineering, drilling, reservoir engineering, geology, geophysics, and formation evaluation. She started as a research geologist at Exxon Production Research Company (EPR), where she later became supervisory geologist in the Reservoir Description Section. She then moved from senior to district geologist positions in Exxon's Offshore Division, ultimately heading formation evaluation and well testing at Exxon Company USA, before returning to EPR. She was recruited away and held various managerial roles at British Petroleum (BP) and its related companies, including Manager of Amoco's tight gas resources in Wyoming and CIO of ARCO during the Y2K transition. Dr. Baker retired from BP as a distinguished advisor and director of new well delivery in BP's Upstream Technology Function, serving also during 2009-10 as Vann Fellow to Princeton University. She was the 2004 President of the Society of Petroleum Engineers (SPE) and is also past president of the SPE Foundation. During her association with SPE, she helped nurture SPE as an international organization, a participant in the digital age, and a custodian of international reserves and resources definitions. Among many professional volunteer positions, she chaired the U.S. National Committee for Rock Mechanics, the Interagency Continental Scientific Drilling Committee, and the annual peer reviews for the Geothermal Technologies Program Office of the U.S. Department of Energy. Dr. Baker served as Secretary on ARMA's Board of Directors from 2013-2019. She holds a B.S. degree in geology and a Ph.D. in geophysics from the Massachusetts Institute of Technology.

2015 Fellows

Emmanuel Detournay is the Theodore W Bennett Chair Professor in Mining Engineering and Rock Mechanics in the Department of Civil, Environmental, and Geo- Engineering at the University of Minnesota. He holds a mining engineering degree from the University of Liège, Belgium, and M.Sc. and PhD degrees in Geoengineering from the University of Minnesota (UMN). Prior to joining the faculty at UMN in 1993, he held various positions in consulting companies (Itasca, Minneapolis, MN; Agbabian Associates, El Segundo, CA) and in R&D (Dowell- Schlumberger, Tulsa, OK; Schlumberger, Cambridge, England). His expertise is in petroleum geomechanics, with research focus drilling mechanics (bit / rock interaction, self-excited drilling vibrations, drillstring / borehole interaction, and directional drilling) and mechanics of fluid-driven fractures (asymptotic analysis, scaling, numerical modeling). Dr. Detournay has co-authored about 100 papers in refereed journal publications and about 100 conference papers. He holds six US patents and has received several scientific awards for his work. In 2016 he was elected into the U.S. National Academy of Engineering as a Foreign Member.

Maurice B. Dusseault is Professor of Engineering Geology in the Earth and Environmental Sciences Department at the University of Waterloo, Canada. He holds B.Sc. (1971) and Ph.D. (1977) degrees in Geological Engineering from the University of Alberta, Canada, and is a registered Professional Engineer in Alberta and Ontario. He carries out research in coupled problems in geomechanics, oil production, and novel deep waste disposal technologies. He also studies geomechanics issues in hydraulic fracturing, CO_2 sequestration, well leakage mechanisms, steam injection, biosolids injection, and THM coupling issues. Dr. Dusseault frequently works with governments and industry as an advisor and instructor, while also actively teaching and developing new academic courses in geothermal energy and THM geomechanics at the University of Waterloo. Dr. Dusseault holds over 90 international patents, has about 570 full-text papers published in journals and conferences, and has taught industry-oriented geomechanics short courses in 28 countries. He was the 2002-2003 Society of Petroleum Engineers Distinguished Lecturer, visiting 19 countries and 28 separate SPE sections.

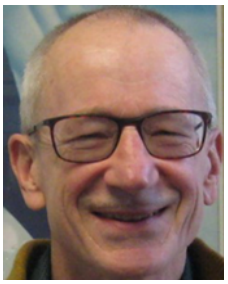
William G. Pariseau is Professor Emeritus and former holder of the Malcolm McKinnon Endowed Chair in Mining Engineering at the University of Utah. Dr. Pariseau joined the Department in 1971 following academic appointments at the Montana College of Science and Technology and the Pennsylvania State University. He has also worked as a visiting academic at Brown University, Imperial College in London, UK, and at the Commonwealth Science and Industrial Research Organization (CSIRO), Australia. He holds a B.Sc. in Mining Engineering from the University of Washington and a Ph.D. in Mining Engineering from the University of Minnesota with emphasis on rock mechanics and with a minor in applied mathematics. He is also a registered professional engineer and has consulted for many commercial and government entities. Dr. Pariseau and colleagues have received a number of rock mechanics awards. In 1991, he was recognized as a distinguished university research professor at the University of Utah. In 2010, he was recognized for teaching in the College of Mines and Earth Sciences with the Outstanding Faculty Teaching Award. The same year, he was honored by the Old Timers Club with their prestigious Educator Award. In 2007, he published Design Analysis in Rock Mechanics, a textbook for undergraduate; the book was a commercial success and is now in a second edition.

2016 Fellow

Antonio Bobet is the Edgar B. and Hedwig M. Olson Professor in Civil Engineering at Purdue University. He holds a Bachelor's and Master's degrees in Civil Engineering from the Technical University of Madrid in Spain and a Doctor of Science degree from Massachusetts Institute of Technology. Dr. Bobet also has extensive experience in practice. He was senior geotechnical engineer at Euroestudios, consulting engineers, in Spain, for four years, and construction manager at Ferrovial, Spain, also for four years. Dr. Bobet's areas of interest include rock fracture mechanics, wave propagation through fractured media, underground structures, and extreme events. He serves or has served on the Editorial Board of a number of Journals. He is the Co-Editor in Chief of Underground Space. He was elected member of the Board of Directors of the American Rock Mechanics Association in 2009 and served as its President from 2013 to 2015. He was the Chair of the 2012 U.S. Rock Mechanics / Geomechanics Symposium and is a member of the Geotechnical Advisory Board (GAB) of the Panama Canal. He was appointed a High-end Foreign Expert by the Government of China in 2016. Dr. Bobet has received a number of awards, including the ASCE 2011 Ralph B. Peck Award, the 2012 National Award for Significant Contributions in Science and Technology - SENACYT Panama, and the 2012 ARMA Research Award, and is the recipient of the 2022 George F. Sowers Lecture. Dr. Bobet served as Chair of the ARMA Fellows from 2018 to 2022.

2017 Fellows

William F. Bawden is Professor Emeritus at the University of Toronto, Canada, where he taught mining geomechanics and conducted research in rock engineering for 15 years and held the Pierre Lassonde Chair in Mining Engineering. Prior to that, he was Professor of mining engineering at Queen's University in Kingston, ON, where he held the Chair in Mine Design. Prior to his academic career, he worked for Noranda Mining in Montreal, Geotechnical Resources Ltd. in Calgary, and Acres Consulting Services in Niagara Falls, Canada. Dr. Bawden has been an active consultant to the international mining industry, providing services in rock engineering, geotechnical engineering and mine backfill since 1985, and continues this practice since retiring from academia. He is co-owner and CEO of Mine Design Technologies in Kingston, ON, and President of Bawden Engineering Limited in Toronto, ON, Canada. He holds a B.Sc. from Queen's University, an M.Sc. from University of Illinois at Urbana-Champaign, and a Ph.D. from the University of Toronto.

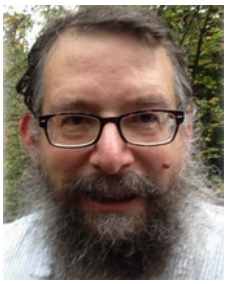


John Rudnicki is Professor of Civil and Environmental Engineering and Mechanical Engineering at Northwestern University. He holds Bachelor's (1973), Master's (1974), and Ph.D. (1977) degrees from Brown University. After a postdoctoral fellowship in Geophysics at Caltech, in 1978 he became Assistant Professor in the Department of Theoretical and Applied Mechanics at the University of Illinois. In 1981, he moved to Northwestern University. His research is in the area of inelastic behavior and failure of geomaterials, with special interest in deformation instabilities and the effects of coupling between deformation and fluid diffusion with applications to fault instability, quantification of energy radiation from earthquakes and environment- and resource-related geomechanics. Dr. Rudnicki is a Fellow of the American Society of Mechanical Engineers (ASME) and the Engineering Mechanics Institute, ASCE. He received the Maurice A. Biot Medal (ASCE), the Daniel C. Drucker Medal (ASME), the Brown Alumni Engineering Medal, and the Society of Engineering Science Medal. He has held a variety of editorial and committee assignments, including Chairman of the Geosciences Council for the Department of Energy Basic Energy Sciences and a Member of the Advisory Council of the Southern California Earthquake Center.

2018 Fellow

Steven D. Glaser is Emeritus Professor of Civil and Environmental Engineering at the University of California, Berkeley, a Distinguished Affiliated Professor at the Technical University of Munich, and a research scientist at the Lawrence Berkeley National Laboratory. His engineering training was at The University of Texas at Austin, where he attained his Ph.D. (1990) and M.S. (1986) degrees in Geotechnical Engineering and his B.S.C.E. (1984). He also has a B.A. (1975) in philosophy from Clark University. Prior to his engineering education, he had completed the apprentice program of Local 77 of the International Union of Operating Engineers, following which he worked eight years as a driller, including one in Iraq. Dr. Glaser was awarded the Basic Research Award by the U.S. National Committee for Rock Mechanics in 1993 and a Fulbright Fellowship in 2003. He has worked on many aspects of rock mechanics and rock physics, most often by applying principles from geophysics. Dr. Glaser has pioneered nano-seismology, a quantitative alternative to acoustic emission, throughout his career. His work in this field has been published in Nature, Journal of Geophysical Research, and other significant journals. His rock mechanics work has encompassed the nature of friction, fracture propagation, and practical aspects of geothermal energy mining. In addition, Dr. Glaser operates the largest ecological wireless network in the world, monitoring forest hydrology of snow melt and water balance in the Sierra Nevada.

2019 Fellow



Bill Dershowitz is best known as the author of FracMan®, a leading commercial discrete fracture network (DFN) model. He worked for Golder Associates for almost 40 years, and has also taught Rock Mechanics, Engineering Geology, and Hydrogeology at the University of Washington since 1993. He has also served as visiting faculty at Weizmann Institute of Science, Ben Gurion University of the Negev, and Hebrew University in Israel. Dr. Dershowitz pioneers applications of the DFN approach for slope, mine, and tunnel stability, dam foundations, geothermal, oil and gas, mining, hydrogeology, and environmental applications, including radioactive waste repository development. His work integrates principles of geology, structural geology, geophysics, hydrodynamics, and geomechanics to provide practical solutions for those engineering problems that require an understanding of the effects of discrete fractures. He is also active in development of approaches for hydrogeological optimization and uncertainty analysis for fractured and heterogeneous aquifers, and is the author of over 100 professional papers and reports. He holds a B.S. in Geotechnical Engineering and an M.S. and a Ph.D. in Civil Engineering (rock mechanics) from the Massachusetts Institute of Technology, under Professors Einstein and Baecher. Dr. Dershowitz has been active in ARMA his entire professional career, and has served on the board of directors of ARMA and ARMA Foundation.

2020 Fellow

Joseph Labuz is Professor in the Department of Civil, Environmental, and Geo-Engineering at the University of Minnesota. He received his degrees in civil engineering, with B.S. from Illinois Tech, M.S. and Ph.D. from Northwestern University. In 1987, he joined the faculty at the University of Minnesota. His research area is experimental geomechanics, dealing with fluid-rock interactions related to mineral carbon storage, fracture and damage of rock associated with size effects, and development of novel experimental apparatus including acoustic emission monitoring and two U.S. patents. Dr. Labuz has advised 50 graduate students, published over 100 papers in refereed journals, and presented some 40 invited lectures. His awards include best papers (48th US Rock Mechanics Symposium, 2014; Giovanni Barla Best Paper, Rock Mechanics and Rock Engineering, 2022) and honorary chair (Department of Civil and Construction Engineering, National Taiwan University of Science and Technology, 2016). He served as an ARMA board member (2015-2021) and serves on the editorial boards of International Journal of Rock Mechanics and Mining Sciences, Geomechanics for Energy and the Environment, and Journal of Rock Mechanics and Geotechnical Engineering. Dr. Labuz is also a Fellow of the American Society of Civil Engineers (ASCE).

2021 Fellow

Mark Diederichs is a Professor of Geological Engineering at Queen's University in Canada. After attaining a BASc in Geological Engineering and a Master's degree in Rock Engineering from the University of Toronto, his early work involved the development of geological engineering software to aid in underground mining and tunneling as well as slope stability. He moved on to a position as a field microseismic engineer at Creighton Mine, in support of a Queen's University R&D initiative, before taking a rock mechanics research position with the Geomechanics Research Centre in Laurentian University, where he worked on establishing guidelines for ground support design and pursued research related to rockbursts in deep mining. He has also worked as a mining and tunneling consultant for many years. After completing his Ph.D. in Civil Engineering from the University of Waterloo in 2000, he joined Queen's University's Geological Science and Geological Engineering department in 2001. Dr. Diederichs specializes in underground rock mechanics issues, including damage zone development around tunnels, engineering rock characterization in heterogeneous conditions, support design issues, tunnel excavation challenges in hard brittle rock, soft squeezing ground, brittle fracture and rockbursting, and long term stability of caverns and shafts related to nuclear waste repositories. He holds two patents and is the author of co-author of hundreds of refereed publications, including twelve book chapters and over 100 papers in international journals. Dr. Diederichs has received many research and teaching awards during his career and in 2020 was inducted as a Fellow of the Canadian Academy of Engineering.

2022 Fellows

Mark Board is a consultant with over 45 years' experience in application of rock mechanics to the underground mining industry. His area of specialty is stability assessment of deep and bulk mining methods with particular emphasis on mining-induced seismicity. Prior to retirement from full time work in 2020, Dr. Board was Vice President – Technical Services for Hecla Mining Company, a precious metals miner in Coeur d'Alene, Idaho. Previously, Dr. Board had worked as a consulting engineer for Itasca Consulting Group for approximately 25 years. He holds a Ph.D. in Geological Engineering from the University of Minnesota and is a member of the U.S. National Academy of Engineering.

John Curran is Founder and Executive Chair of Rocscience, Inc., in Toronto, Canada, and Professor Emeritus in Civil Engineering at the University of Toronto. He holds a B.A.Sc. (1970) in Civil Engineering and an M.Eng. (1973) in Structural Engineering from the University of Toronto and a Ph.D. (1976) in Mechanical Engineering from the University of California at Berkeley. Dr. Board is also a registered Professional Engineer in Ontario, Canada. His areas of interest include computational geomechanics, rock mechanics, boundary / finite / discrete element methods, and rockfalls.