

# BERNARD AMADEI

## Academic CV

### Personal Data

Born: 1954, Roubaix (France)  
Nationality: USA  
Contact: Cell: (303) 929-8167.  
E-mail: [amadei@colorado.edu](mailto:amadei@colorado.edu)  
Web Site: <https://www.colorado.edu/faculty/amadei/>  
<https://www.linkedin.com/in/bernard-amadei>



### Short Bio

Dr. Amadei is a Distinguished Emeritus Professor and Professor of Civil Engineering at the University of Colorado, Boulder. He received his Ph.D. in 1982 from the University of California, Berkeley. Dr. Amadei is the Founding Director of the Mortenson Center in Engineering for Developing Communities (now Global Engineering). He is also the founding president of Engineers Without Borders-USA and a co-founder of the Engineers Without Borders International Network. Among other distinctions, Dr. Amadei is an elected member of the US National Academy of Engineering and the National Academy of Construction. He is also an elected Senior Ashoka Fellow and has been inducted into the ASEE Hall of Fame. Dr. Amadei holds seven honorary doctoral degrees (UMass Lowell, Carroll College, Clarkson, Drexel, Worcester Polytechnic Institute, Technion, and SUNY-ESF). In 2013 and 2014, Dr. Amadei served as a Science Envoy to Pakistan and Nepal for the US Department of State. In 2023, Dr. Amadei completed his seventh book, *Navigating Complexity Across the Peace-Sustainability-Climate Security Nexus*. His new book, *Engineering for Peace and Diplomacy*, is scheduled for publication in August 2025. Dr. Amadei holds a commercial pilot license (multi-engine land, instrument).

### Education

- Ph.D. (Civil Eng.), University of California, Berkeley, U.S.A., 1982
- MaSc (Civil Eng.), University of Toronto, Canada, 1979
- DEA/MS (Geological Eng.), National Polytechnic Institute of Lorraine, Nancy, France, 1977
- Dipl. Eng./BS (Geological Eng.), School of Applied Geology & Mining Eng., Nancy, France, 1977

### Honorary Degrees

- Doctor of Humane Letter Degree (Honoris Causa), University of Massachusetts, Lowell, 2009
- Doctor of Humane Letter Degree (Honoris Causa), Carroll College, MT, 2010
- Doctor of Science (Honoris Causa), Clarkson University, NY, 2011
- Doctor of Engineering (Honoris Causa), Drexel University, 2013
- Doctor of Engineering (Honoris Causa), Worcester Polytechnic Institute, 2014
- Doctor of Science (Honoris Causa), (Technion), 2017
- Doctor of Science (Honoris Causa), SUNY-ESF, 2019

### Experience

2024-Present    Emeritus Professor, Dept. of Civil Engineering, University of Colorado, Boulder  
1994 - 2024    Professor, the University of Colorado at Boulder, Department of Civil, Environmental, and Architectural Engineering

2015 - 2018	Co-Director, Mortenson Center in Engineering for Developing Communities, University of Colorado, Boulder
2013 - 2014	US Science Envoy to Pakistan and Nepal, US Department of State
2009 - 2012	Director, Mortenson Center in Engineering for Developing Communities, University of Colorado, Boulder
2002 - Present	Founding President, Engineers Without Borders – USA, and co-founder of Engineers Without Borders – International
1982 - Present	Independent Consultant in International Development and Geological Engineering
1989 - 1994	Associate Professor, the University of Colorado at Boulder, Department of Civil, Environmental, and Architectural Engineering
1982 - 1989	Assistant Professor, the University of Colorado at Boulder, Dept. of Civil, Environmental, and Architectural Engineering
1982 (01-08)	Senior Engineer, J. F. T. Agapito and Associates, Inc., Grand Junction, Colorado (Jan-June)
1979 - 1982	Research Assistant, Ph.D. Thesis: <i>Influence of Rock Anisotropy on Measurement of Stresses In-Situ</i> , University of California, Berkeley
1978 - 1979	Research Assistant, MaSc Thesis: <i>Creep Behavior of Rock Joints</i> , University of Toronto, Canada
1979 (03-06)	Research Assistant, Diploma of Engineer Thesis: <i>Flow through Fractured Rock Masses – A Finite Element Approach</i> , University of Toronto, Canada

### Professional Affiliations and Services

- Chair, Advisory Committee on Scientists and Engineers in Exile for Development (SEED), US National Academies (2024-2026)
- Member of the NASEM Planning Committee for the Workshop on Addressing Environmental Damage in Ukraine (2023-2024).
- Member, US National Academy of Engineering, New Voices Advisory Committee (2018-2026)
- Founding President, Engineers Without Borders - USA (2001-)
- Co-Founding President of Engineers Without Borders –International Network (2002-)
- Founding Director, Mortenson Center in Engineering for Developing Communities (2009-)
- Member PeaceTech Laboratory Board (2014-2023)
- Member of NASEM Planning Committee for the Workshop on Preserving and Developing Ukraine's Human Capital in Research, Education, and Innovation (2023).
- Member, US National Academies Roundtable on Science & Technology for Sustainability (2019-2023)
- Member, NAE/USIP Roundtable on Technology, Science, and Peacebuilding (2011-2016)
- Member, US National Academy of Eng. Bueche & Ramos Founders Award Committee (2016-2020)
- Executive Director of Engineers Without Borders –International (2007-2011)
- Member, NRC Committee on Grand Challenges in International Development (2011-2013)
- Member, NRC Committee on Increasing National Resilience to Hazards and Disasters (2010-2012)
- Member, Capacity Building Committee, World Federation of Engineering. Organizations (2005-2011)
- Member, NRC Committee on Creation of Science-Based Industries in Africa (2005-2007)
- Member, ASCE International Activities Committee (2003-2006)
- Member, Advisory Committee, Office of International Science and Engineering, NSF (2004-2006)
- Member, NRC Committee on Geological and Geotechnical Engineering in the New Millennium, Board Earth Sciences and Resources (2004-2006)
- President and co-founder, American Rock Mechanics Association (2000-2002)
- Past-Chairman, ASCE Committee on Rock Mechanics, Geotechnical Division (1990-1994)
- Member, US Natl. Committee for Rock Mechanics, National Research Council (1990-1994)

## **Professional Associations/Society Membership**

- Member, US National Academy of Engineering (2008-present)
- Member, National Academy of Construction (2013-present)
- Dist. Member, American Society of Civil Engineers (1982-present)
- Member, American Society of Engineering Education (2010-present)
- Member, Professionals in Human Assistance and Protection (2020-present)
- Member, System Dynamics Society (2020-present)
- Member, Institute of Electrical and Electronics Engineers (2011-2024)
- Member, International Society for Rock Mechanics (1984-2020)
- Member, American Rock Mechanics Association (2000-2020)
- Member, American Society of Mechanical Engineers (2006-2024)

## **Honors and Awards**

- 1984 Manuel Rocha Award, International Society for Rock Mechanics
- 1992 Schlumberger Lecture Award, International Society for Rock Mechanics
- 1993 Research Development Award, Dept. of Civil Engineering, Univ. of Colorado, Boulder
- 1994 Teaching Award, Dept. of Civil Engineering, Univ. of Colorado, Boulder
- 2002 CU Boulder Environmental Center Award
- 2002 Bank One Colorado Faculty Community Service Award
- 2003 E-Town Achievement Award
- 2005 Nayudamma Award, Center for Development Alternatives, Nellore, India
- 2005 American Association of Engineering Societies Norm Augustine Award
- 2005 Service Award for Professional Excellence from Rotary International
- 2006 General Palmer Award from American Council of Engineering Companies, Colorado
- 2006 Ralph Coats Roe Medal from the American Society of Mechanical Engineers
- 2006 Award for Applied Rock Mechanics, American Rock Mechanics Association
- 2007 Distinguished Achievement Award, Dept. of Civil Engineering, Univ. of Colorado, Boulder
- 2007 Hoover Medal from ASCE, ASME, IEEE, AIME, and AIChE
- 2007 Heinz Foundation Award for the Environment (co-recipient)
- 2008 Drexel University College of Engineering's Engineer of the Year
- 2008 Maurice L. Albertson Medal in Sustainable Development from Village Earth, Colorado
- 2008 Int. Human Rights Award, United Nations Association, Boulder County Chapter
- 2008 Golden Vector Award of the Pan American Federation of Engineers Associations (UPADI)
- 2008 Engineering News-Record Award of Excellence
- 2009 Jean Mayer Global Citizenship Award, Center for Global Leadership, Tufts University
- 2009 Jerry Leonard's Lecture Award, Purdue University
- 2009 Distinguished Member of the American Society of Civil Engineers
- 2009 National Ground Water Association Honorary Member Award
- 2011 Robert L. Stearns Award, the University of Colorado Boulder Alumni Association
- 2012 Achievement Rewards for College Scientists (ARCS-CO) Honoree of the Year
- 2013 Member of the National Academy of Construction
- 2015 Washington Award, The Western Society of Engineers
- 2015 American Society of Civil Engineers, Outstanding Projects and Leaders (OPAL) (education)
- 2016 C. H. Dunn Award of the Construction Industry Institute
- 2016 Distinguished Professor, University of Colorado
- 2021 Maverick Influencer Award, Built Worlds
- 2023 ASEE Hall of Fame Inductee
- 2024 Honorary Member, American Academy of Environmental Engineers and Scientists.
- 2025 Jim Swaaby Peace award, Boulder Rotary Club

## Major Interests

- Engineering for Developing Communities and International Development
- Complexity and System Dynamics
- Geological Engineering

## Books

- *Engineering for Peace and Diplomacy*. Amadei, B. *Jenny Stanford Publ.* August 2025
- *Navigating Complexity across the Peace-Sustainability-Climate Security Nexus*. Amadei, B. ISBN 9781032563381, Routledge. Nov. 2023.
- *A Systems Approach to Modeling the Water-Energy-Land-Food Nexus, Vols. I and II*, Amadei, B., ISBN 9781947083523 and 9781947083547, Momentum Press, Feb. 2019
- *A Systems Approach to Modeling Community Development Projects*. Amadei, B., ISBN-13: 978-1-60650-518-2, Momentum Press, 2015.
- *Engineering for Sustainable Human Development*, Amadei, B., ISBN 978-0-7844-1353-1, ASCE Press, Reston, VA, 2014.
- *Rock Stress and Its Measurement*, Amadei, B. and Stephansson, O., ISBN 412447002, Chapman & Hall, London, U.K., 1997.
- *Rock Anisotropy and the Theory of Stress Measurements*, Amadei, B., Lecture Notes in Engineering, Vol. 2, ISBN 12388, Springer Verlag, Berlin, Germany, 1983.

## Books Edited

- *Rock Mechanics for Industry*, Proc. 37<sup>th</sup> US Rock Mechanics Symposium, Balkema, Rotterdam, Amadei, B., Scott, G., Kranz, R. and Smeallie, P., Editors, ISBN 90 5809 052 3, 1999.
- *Proc. 3<sup>rd</sup> International Conference on Analysis of Discontinuous Deformation - from Theory to Practice*, ARMA, Amadei, B., Editor, 1999.
- *Detection of and Construction at the Soil/Rock Interface*, ASCE, New York, Kane, W.F. and Amadei, B., Editors, 1991.
- *Dam Foundation Engineering*, 10th USCOLD Lecture Series, USCOLD, Denver, Scott, G. and Amadei, B., Editors, 1990.

## Peer-Reviewed Publications - Journals

1. "The Influence of Rock Anisotropy on Stress Measurements by Overcoring Techniques," Amadei, B. and Goodman, R.E., *Rock Mechanics*, Vol. 15, pp. 167-180, 1982.
2. "Uplift Pressure in a Crack Below a Dam," Goodman, R.E., Amadei, B., Sitar, N., *J. of the Energy Division, ASCE*, Vol.109, No. 4, pp. 207-221, 1983.
3. "In-situ Stress Measurements in Anisotropic Rocks," Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 21, No.6, pp. 327-338, 1984.
4. "The NX-Borehole Jack: A Lesson in Trial and Errors," Heuze, F.E. and Amadei, B., Lawrence Livermore National Laboratory, UCRL-90282, and *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 22, No. 2, pp. 105-112, 1985.
5. "Applicability of the Theory of Hollow Inclusions for Overcoring Stress Measurements in Rock," Amadei, B., *Rock Mechanics*, Vol. 18, No. 2, pp. 107-130, 1985.

6. "Measurement of Stress Change in Rock," Amadei, B., Technical Note, *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 22, No. 3, pp. 177-182, 1985.
7. "Gravitational Stresses in Anisotropic Rock Masses," Amadei, B., Savage, W.Z. Swolfs, H.S., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 24, No. 1, pp. 5-14, 1987.
8. "Gravity-Induced Stresses in Stratified Rock Masses," Amadei, B., Swolfs, H.S., Savage, W.Z. *Rock Mechanics*, Vol. 21, pp. 1-20, 1988.
9. "Strength of a Regularly Jointed Rock Mass Under Biaxial and Axisymmetric Loading Conditions," Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 25, No. 1, pp. 3-13, 1988.
10. "Anisotropic Nature of Jointed Rock Mass Strength," Amadei, B., Savage, W.Z., *J. of Eng. Mechanics Division, ASCE*, Vol. 115, No. 3, pp. 525-542, 1989.
11. "Estimation of Virgin Rock Stresses from Horizontal Hydrofractures," Ljunggren, C. and Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 26, No. 1, pp. 69-78, 1989.
12. "Monte Carlo Simulation of Rock Slope Reliability," Tamini, S., Amadei, B., Frangopol, D.M., *Int. J. Computers and Structures*, Vol. 33, No. 6, pp. 1495-1505, 1989.
13. "Estimation of Uplift in Cracks in Older Concrete Gravity Dams, Part 1: Analytical Solution and Parametric Study", Amadei, B., Illangasekare, T., Morris, D.I., Boggs, H., *J. of Energy Division, ASCE*, Vol. 115, No. 1, pp. 19-38, 1989.
14. "Estimation of Uplift in Cracks in Older Concrete Gravity Dams, Part 2: Effect of Head Losses in Drain Pipes on Uplift", Amadei, B., Illangasekare, T., Morris, D.I. Boggs, H., *J. of Energy Division, ASCE*, Vol. 115, No. 1, pp. 39-46, 1989.
15. "Response of Masonry Bed Joints in Direct Shear," Atkinson, R.H., Amadei, B., Saeb, S., Sture, S., *J. of Structural Eng. Division, ASCE*, Vol. 115, No. 9, pp. 2276-2296, 1989.
16. "Modeling Joint Response Under Constant or Variable Normal Stiffness Boundary Conditions," Saeb, S. and Amadei, B., Technical Note, *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 27, No. 3, pp. 213-217, 1990.
17. "Reducing Uplift Pressures in Concrete Gravity Dams," Amadei, B., Illangasekare, T., Chinnaswamy, C. and Morris, D.I., *Int. J. of Water Power and Dam Construction*, Vol. 42, No. 2, pp.13-17, 1990.
18. "Calibration of a Numerical Model of Uplift Pressure in Cracks in Concrete Dams," Grenoble, B.A., Amadei, B., Illangasekare, T. and Morris, D.I., *Hydro Review*, Vol. IX, No. 5, October, pp. 62-70, 1990.
19. "A New Method for Finite Element Transitional Mesh Generation," Chinnaswamy, C., Amadei, B. and Illangasekare, T., *Int. J. for Num. Methods in Eng.*, Vol. 31, pp. 1253-1270, 1991.
20. "Surface Loading of Anisotropic Rock Masses," Liao, J.J. and Amadei, B., *J. of Geotechnical Eng. Division, ASCE*, Vol. 117, No. 11, pp. 1779-1800, 1991.
21. "Analysis of Borehole Expansion and Gallery Tests in Anisotropic Rock Masses," Amadei, B. and Savage, W.Z., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 28, No. 5, pp.383-396, 1991.
22. "Gravitational Stresses in Anisotropic Ridges and Valleys with Small Slopes," Liao, J.J., Savage, W.Z.

and Amadei, B., *J. Geophys. Res.*, Vol. 97, No. B3, pp. 3325-3336, 1992.

23. "Modeling Rock Joints Under Shear and Normal Loading," Saeb, S. and Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 29, No. 3, pp. 267-278, 1992.

24. "Gravitational Stresses in Anisotropic Rock Masses with Inclined Strata," Amadei, B. and Pan, E., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 29, No. 3, pp. 225-236, 1992.

25. "Stability of Concrete Gravity Dams with Drained and Finite Cracks," Amadei, B. and Illangasekare, T., *J. of Energy Division, ASCE*, Vol. 118, No.3, pp.149-163, 1992.

26. "On the State of Stress in the Near Surface of the Earth's Crust," Savage, W.Z., Swolfs, H.S. and Amadei, B., *J. of Pure and Applied Geophysics*, Vol. 138, No. 2, pp. 207-228, 1992.

27. "Analytical Solutions for Steady and Transient Flow in Non-Homogeneous and Anisotropic Rock Joints," Amadei, B. and Illangasekare, T., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 29, No.6, pp. 561-572, 1992.

28. "Physical Modeling of Piers Socketed into Soft Rocks," Khan, A. and Amadei, B., Technical Note, *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 30, No.7, pp. 747-750, 1993.

29. "Gravitational Stresses in Long Asymmetric Ridges and Valleys in Anisotropic Rock," Pan, E. and Amadei, B., Technical Note, *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 30, No.7, pp. 1005-1008, 1993.

30. "A Statistical Index for the Mechanical Quality of a Rock Mass," Squassabia, A., Amadei, B. and VanZyl, D., *Ann. Trans. Soc. of Min. Met. and Expl.*, Vol. 294, pp. 1828-1833, 1993.

30. "Effect of Joints on Rock Mass Strength and Deformability," Amadei, B. and Savage, W.Z., Chapter 17 in *Comprehensive Rock Engineering*, Vol. 1, pp. 331-365, Pergamon Press, John A. Hudson (Editor), 1993.

31. "Stresses in Anisotropic Rock Mass with Irregular Topography Under Gravity and Surface Traction," Pan, E. and Amadei, B., *J. of Eng. Mechanics Division, ASCE*, Vol. 120, No.1, pp. 97-119, 1994.

32. "Gravitational Stresses in Long Symmetric Ridges and Valleys in Anisotropic Rock," Pan, E., Amadei, B. and Savage, W.Z., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 31, No.4, pp. 293-312, 1994.

33. "A Mathematical Model for Flow and Solute Transport in Non-Homogeneous Rock Fractures," Amadei, B. and Illangasekare, T., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 31, pp. 719-731, 1994.

34. "Three Dimensional Aquifer Flow and Transport by Integral Transforms," Illangasekare, T., Brannon, J.H. and Amadei, B., *J. of Hydrology*, Vol. 161, No.1-4, pp. 109-131, 1994.

35. "The Edge Function Method and Singular Problems in Rock Mechanics," Dwyer, J. and Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 32, No.2, pp. 121-133, 1995.

36. "An Extension of the Saeb and Amadei Constitutive Model for Rock Joints to Include Cyclic Loading Paths," Souley, M., Homand, F. and Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 32, No.2, pp. 101-109, 1995.

37. "Gravitational and Tectonic Stresses in Anisotropic Rock with Irregular Topography," Pan, E., Amadei, B. and Savage, W.Z., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 32, No.3, pp. 201-214, 1995.
38. "Effect of Turbulence on Fracture Flow and Advective Transport of Solute," Amadei, B., Carlier, J.F. and Illangasekare, T., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 32, No. 4, pp. 343-356, 1995.
39. "Application of the Edge Function Method to Rock Mechanics Problems," Dwyer, J. and Amadei, B., *Rock Mechanics, and Rock Engineering*, Vol. 28, No. 4, pp. 185-209, 1995.
40. "Role of Topography and Anisotropy when Selecting Unlined Pressure Tunnel Alignment," Amadei, B. and Pan, E., *J. of Geotechnical Eng. Division, ASCE*, Vol. 121, No. 12, pp. 879-885, 1995.
41. "Stress Concentration at Irregular Surfaces of Anisotropic Half-Spaces," Pan E. and Amadei, B., *Acta Mechanica*, Vol. 113, pp. 119-135, 1995.
42. "Importance of Anisotropy when Estimating and Measuring In-Situ Stresses in Rock," Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 33, No. 3, pp. 293-325, 1996.
43. "A 3-D Boundary Element Formulation of Anisotropic Elasticity with Gravity", Pan, E. and Amadei, B., *Applied Mathematical Modelling*, Vol. 20, pp. 114-120, 1996.
44. "Stress Interaction Between Multiple Crevasses in Glacier Ice," Sassolas, C., Pfeffer, T. and Amadei, B., *Cold Region Research and Engineering*, Vol. 24, No. 2, pp. 107-116, 1996.
45. "Fracture Mechanics Analysis of 2-D Anisotropic Media with a New Boundary Element Method", Pan, E. and Amadei, B., *Int. J. of Fracture*, Vol. 77, pp. 161-174, 1996.
46. "Extensions of the Discontinuous Deformation Analysis for Jointed Rock Masses," Lin, C.T., Amadei, B., Jung, J. and Dwyer, J., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 33, pp. 671-694, 1996.
47. "Repair and Retrofit of Unreinforced Masonry Structures," Manzouri, T., Schuller, M.P., Shing, P.B. and Amadei, B., *Earthquake Spectra*, Vol. 12, No.4, pp. 903-922, 1996
48. "Water Reservoir Loading of Long Anisotropic Valleys with Irregular Topographies," Pan, E. and Amadei, B., *Applied Mathematical Modelling*, Vol. 20, pp. 909-924, 1996.
49. "Edge Function Analysis of Glacier Mechanics Problems," Dwyer, J., Amadei, B., Lin, C.T. and Pfeffer, W.T., *Int. J. Solids and Structures*, Vol. 34, No.8, pp. 991-1005, 1997.
50. "A 3-D Boundary Element Formulation of Viscoelastic Media with Gravity", Pan, E., Sassolas, C., Amadei, B. and Pfeffer, W.T., *Computational Mechanics*, Vol. 19, pp. 308-316, 1997.
51. "Determination of Deformability and Tensile Strength of Anisotropic Rock Using Brazilian Tests," Chen, C-S, Pan, E. and Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr*, Vol. 35, No.1, pp. 43-61, 1998.
52. "Fracture Mechanics Analysis of Cracked Discs of Anisotropic Rock Using the Boundary Element Method," Chen, C-S, Pan, E. and Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 35, No.2, pp.195-218, 1998.
53. "A BEM Formulation for Anisotropic Half-Plane Problems," Pan, E., Chen, C-S, and Amadei, B., *Engineering Analysis with Boundary Elements*, Vol. 20, pp. 185-195, 1998.

54. "Two-Dimensional BEM Analysis of Anisotropic Half-Plane Problems - Application to Rock Mechanics Problems," Pan, E., Amadei, B. and Kim, Y.I., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 35, No.1, pp. 69-74, 1998.
55. "Applicability of Existing Models to Predict the Behavior of Replicas of Natural Fractures of Welded Tuff under Different Boundary Conditions," B. Amadei, J. Wibowo, S. Sture, RH Price, *Geotechnical and Geological Engineering*, Vol. 16, No. 2, pp. 79-128, 1998.
56. "Modeling the Effect of Water, Excavation Sequence and Rock Reinforcement with the Discontinuous Deformation Analysis," Kim, Y.I., Amadei, B. and Pan, E., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 36, No. 7, pp. 949-970, 1999.
57. "Boundary Element Analysis of Fracture Mechanics in Anisotropic Biomaterials," Pan, E. and Amadei, B., *Engineering Analysis with Boundary Elements*, Vol. 23, pp. 683-691, 1999.
58. "Green's Functions and BEM Formulation for 3D Anisotropic Media", Tonon F., Pan, E. and Amadei, B., *Computers and Structures*, Vol. 79, No.5, pp. 469-482, 2000.
59. "In-situ stress tensor measured in an Alaska Glacier," Pfeffer, W.T., NF. Humphrey, B. Amadei, J. Harper, J. Wegmann, *Annals of Glaciology*, Vol. 31, pp. 229 – 235, 2000
60. "An Analytical Solution for Transient Flow of Bingham Materials in Rock Fractures," Amadei, B. and Savage, W.Z., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 38, pp. 285-296, 2001.
61. "Bayesian Estimation of Rock Mass Boundary Conditions with Application to Deep Tunneling, Tonon, F., Amadei, B. and Pan, E., *Int. J. Geotech. & Geological. Eng.*, Vol. 19, pp. 43-67, 2001.
62. "Bayesian Estimation of Rock Mass Boundary Conditions with Application to the AECL Underground Research Laboratory," Tonon, F., Amadei, B. Pan, E., and Frangopol, D.M., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 38, No. 7, pp. 995-1027, 2001.
63. "Effect of Elastic Anisotropy on Tunnel Wall Displacements behind a Tunnel Face," "Tonon, F. and Amadei, B., *Rock Mechanics and Rock Engineering*, Vol. 35, No. 3, pp. 141-160, 2002.
64. "Stresses in Anisotropic Rock Masses: An Engineering Perspective Building on Geological Knowledge," Tonon, F. and Amadei, B., *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 40, pp. 1099-1120, 2003.
64. "Engineering for the Developing World," Amadei, B., *The Bridge*, pp. 24-31, 2004.
65. "Accounting for Human Behavior, Local Conditions and Organizational Constraints in Humanitarian Development Models," E. Thomas and B. Amadei, *Journal of Environment, Development, and Sustainability*. Published online, DOI 10.1007/s10668-009-9196-1, June 18, 2009.  
<http://www.springerlink.com/content/74130877p630j011/fulltext.html>.
66. "Engineering for Humanitarian Development: A Socio-Technical Approach," B. Amadei and W. A. Wallace, *IEEE Technology and Society Magazine*, Vol. 28 (4), pp. 6-15, 2009
67. "A Model for Sustainable Humanitarian Engineering Projects," B. Amadei, R. Sandekian, and E. Thomas, *Sustainability Journal*, 1(4), pp. 1087-1105, <http://www.mdpi.com/2071-1050/1/4/1087>, 2009.



68. "A Model of Integrating Humanitarian Development into Engineering Education," B. Amadei and R. Sandekian, *ASCE Journal of Professional Issues in Engineering Education and Practice*, Vol. 136 (2), pp. 84-92, 2010.
69. "Disaster Resilience: A National Imperative," contributing committee member, The National Academies Press, 2012, [http://www.nap.edu/catalog.php?record\\_id=13457](http://www.nap.edu/catalog.php?record_id=13457)
70. "A Retrospective Approach to Assessing the Sustainability of the Grand Canal of China," N. Tsung, R. Corotis, P. Chinowsky, and B. Amadei, *ASCE Journal of Structure and Infrastructure Engineering*, <http://www.tandfonline.com/toc/nsie20/9/4>, 9 (4), pp. 297-316, 2013.
71. "Disaster Resilience; A National Imperative," Cutter et al., in *Environment: Science and Policy for Sustainable Development*, 55:2, 25-29, 2013.
72. "Integrating sustainable development into a service-learning engineering course," Mintz et al., *ASCE Journal of Professional Issues in Engineering Education and Practice*, doi: 10.1061/ (ASCE) EI. 1943-5541.0000169, 2013.
73. "Engineering for developing communities at the University of Colorado Boulder: A ten-year retrospective," R. Sandekian, P. Chinowsky, B. Amadei, *Int. J. Service Learning in Eng.*, pp. 62-77, 2015.
74. "Post-disaster reconstruction: Lessons from Nagapattinam district," Jordan, E., Javernick-Will, A. and Amadei, B., *Development in Practice*, 25:4, pp. 518-534, doi: 10.1080/096114524.2015.1028334, 2015.
75. Amadei, B. (2016). Science diplomacy: From theory to practice, *ICTP Multiverse*, April 5, <http://blog.ictp.it/wp/?p=169>
76. Walters, J. P., Greiner, B., O'Morrow, E., and Amadei, B. (2017). Fostering systems thinking within Engineers Without Borders student teams using Group Model Building, *Int. J. of Engineering Education* Vol. 33, No. 1(A), pp. 1–14.
77. Zelinka, D. and Amadei, B. (2018). Systems approach for modeling the interactions among the Sustainable Development Goals Part 1: Cross-impact network analysis. *Int. J. of System Dynamics Applications*, 8(1), pp. 23-40. DOI: [10.4018/IJSDA.2019010102](https://doi.org/10.4018/IJSDA.2019010102)
78. Zelinka, D. and Amadei, B. (2018). A systems approach for modeling the interactions among the Sustainable Development Goals Part 2: System Dynamics, *Int. J. of System Dynamics Applications*, 8(1), pp. 41-59. DOI: [10.4018/IJSDA.2019010103](https://doi.org/10.4018/IJSDA.2019010103)
79. Amadei, B. (2019). Engineering for peace and diplomacy, *Sustainability*, 11(20), <https://www.mdpi.com/2071-1050/11/20/5646>.
80. Amadei, B. (2020). Revisiting positive peace using systems tools. *J. of Technology Forecasting and Social Change*, 158, <https://doi.org/10.1016/j.techfore.2020.120149>
81. Amadei, B. (2020). Agent-based and system dynamics modeling of water field services. *Challenges*, 11(2), 28; <https://doi.org/10.3390/challe11020013>
85. Amadei, B. (2020). A systems approach to community capacity and resilience. *Challenges*, 11(2), 28; <https://doi.org/10.3390/challe11020028>

86. Jordan, R., Amadei, B. et al. (2020) Peace engineering consortium: Outcome of the first global peace engineering conference. *Procedia Computer Science*, pp. 139-144, <https://doi.org/10.1016/j.procs.2020.05.021>
87. Amadei, B. (2021). A systems approach to the sustainability-peace nexus. *Sustainability Science*. (16)4, pp. 1111-1124. <https://doi.org/10.1007/s11625-020-00902-x>
88. Amadei, B. (2021). Systemic Modeling of the Peace–Development Nexus. *Sustainability*, 13(5), 2522. <https://doi.org/10.3390/su13052522>
89. Amadei, B. (2022). An integrated approach to peace and resource security. *Int. J. of System Dynamics Applications*, IJSDA: 10(4). <https://doi.org/10.4018/IJSDA.20211001.0a7>
90. Chintalapati, P., Libey, A., Kathuni, S., Amadei, B., Thomas, E. (2022). Turn up the dial: System dynamics modeling of resource allocations toward rural water supply maintenance in East Africa. *ASCE J. of Environmental Eng.*, vol. 148 (4).
91. Huete-Perez, J. et al. (including B. Amadei) (2024). Catalyzing Sustainable Development: Insights from the International Workshop on STI Policies and Innovation Systems in Central America. *Frontiers in Research Metrics and Analytics, section Research Policy and Strategic Management. Volume 9* <https://doi.org/10.3389/frma.2024.1511393>

## **Publications - Proceedings**

1. "Creep Behavior of Rock Joints," Amadei, B. and Curran, J.H., *Proc. 13th Canadian Symp. on Rock Mech.*, Toronto (Canada), CIM Special Volume 22, pp. 146-150, 1980.
2. "A 3D Constitutive Relation for Fractured Rock Masses", Amadei, B. and Goodman, R.E., *Proc. Int. Symp. on the Mechanical Behavior of Structured Media*, Ottawa (Canada), pp. 249-268, 1981.
3. "Formulation of Complete Plane Strain Problems for Regularly Jointed Rocks," Amadei, B. and Goodman, R.E., *Proc. 22nd US Symp. on Rock Mech.*, MIT, pp. 265-271, 1981.
4. "The Influence of Rock Anisotropy on Stress Measurements by Overcoring Techniques," Amadei, B. and Goodman, R.E., *Proc. 23rd US Symp. on Rock Mech.*, Berkeley, pp. 157-167, 1982.
5. "Elastic Constitutive Relations for Anisotropic Geologic Materials in Plane Strain and Plane Stress Conditions," Amadei, B., *Proc. Int. Conf. on Constitutive Laws for Engineering Materials: Theory and Application*, Tucson, pp. 245-252, 1983.
6. "Number of Boreholes to Measure the State of Stress In-situ by Overcoring," Amadei, B., *Proc. 24th US Symp. on Rock Mech.*, Texas A&M University, pp. 87-98, 1983.
7. "Potential Applications of the Corejacking Test to Characterize the Mechanical Behavior of Rock Masses," Blankenship, D.A., Amadei, B., Stickney, G., *Proc. 24th US Symp. on Rock Mech.*, Texas A&M University, pp. 335-342, 1983.
8. "Elastic Constants and Tensile Strength of Anisotropic Rocks," Amadei, B., Rogers, J.D., and Goodman, R.E., *Proc. 5th Int. Cong. on Rock Mech.*, Melbourne (Australia), Vol. A, pp.189-196, 1983.

9. "Probability-Based Decision on the Intervention of Surface Structures Located in Areas of Abandoned Mineworking," Frangopol, D.M. and Amadei, B., *Proc. Conf. on Construction in Areas of Abandoned Mineworking*, Edinburgh (UK), pp. 96-103, 1984.
10. "Underground Excavations in Anisotropic Rock Masses," Amadei, B., *Proc. ISRM Symp. on Design and Performance of Underground Excavations*, Cambridge (UK), pp. 27-36, 1984.
11. "Tensile Strength of Anisotropic Rocks Measured with the Splitting Tension Test," Amadei, B., and Jonsson, T., *Proc. 12th Southeastern Conf. on Theoretical and Applied Mech. (Sectam XII)*, Vol. I, pp. 152-159, 1984.
12. "Strength of Indiana Limestone in True Biaxial Loading Conditions," Amadei, B., Janoo, V., Robison, M., *Proc. 25th US Symp. on Rock Mech.*, Northwestern University, pp. 338-348, 1984.
13. "Static and Time-Dependent Behavior of Rock Joints," Amadei, B. and Israel, D., *Proc. 5th ASCE Engineering Mech. Division, Conf.*, Univ. of Wyoming, Vol. 2, pp. 1336-1340, 1984.
14. "The Influence of Rock Mass Fracturing on the Measurement of Deformability by Borehole Expansion Tests," Amadei, B., *Proc. 26th US Symp. on Rock Mech.*, South Dakota School of Mines, pp. 859-867, 1985.
15. "Gravitational Stresses in Regularly Jointed Rock Masses - A Keynote Lecture," Amadei, B. and Savage, W.Z., *Proc. Int. Symp. on Fundamentals of Rock Joints*, Bjorkliden (Sweden), pp. 463-473, 1985.
16. "Strength of Rock in Multiaxial Loading Conditions," Amadei, B., Robison, M.J., *Proc. 27th US Symp. on Rock Mech.*, University of Alabama, pp. 47-55, 1986.
17. "Rock Strength and the Design of Underground Excavations," Amadei, B., Robison, M.J. and Yassin, Y.Y., *Proc. Int. Symp. on Large Rock Caverns*, Helsinki (Finland), pp. 1135-1146, 1986.
18. "Influence of Rock Fabric on Gravity-Induced Stresses," Savage, W.Z., Amadei, B., Swolfs, H.S., *Proc. Int. Symp. on Rock Stress and Their Measurement*, Stockholm (Sweden), pp. 99-110, 1986.
19. "Strength of Jointed Rock Under Multiaxial Loading Conditions," Amadei, B. and Saeb, S., *Proc. 28th US Symp. on Rock Mech.*, University of Arizona, pp. 681-690, 1987.
20. "Deformation and Failure Characteristics of Masonry Bed Joints Under Shear Loading," Atkinson, R.H., Amadei, B., Sture, S., Saeb, S., *Proc. 4th North American Masonry Conf.*, UCLA, 61-1, 61-14, Vol. 2, 1987.
21. "Stability Analysis of Concrete Gravity Dams on Blocky Rock Foundations," Grenoble, A., Amadei, B., Illangasekare, T.H., *Proc. Conf. on Applied Rock Engineering, Care 88*, Univ. of Newcastle-Upon-Tyne (UK), pp. 71-81, 1988.
22. "Using the Hoek and Brown Failure Criterion to Determine In-situ Stresses from Hydraulic Fracturing Measurements," Ljunggren, C., Amadei, B., Stephansson, O., *Proc. Conf. on Applied Rock Engineering, Care 88*, Univ. of Newcastle-Upon-Tyne (UK), pp. 133-142, 1988.
23. "A Coupled Octahedral Formulation of Intact Rock Behavior," Yassin, Y.Y., Amadei, B., *Proc. 29th US Symp. on Rock Mech.*, University of Minnesota, pp. 85-94, 1988.

24. "A Laboratory and In-situ Study of the Shear Strength of Masonry Bed Joints," Atkinson, R.H., Kingsley, G.R., Saeb, S., Amadei, B., Sture, S., *Proc. 8th International Brick/Block Masonry Conf.*, Dublin (Ireland), Vol. 1, pp. 261-271, 1988.
25. "Estimation of Uplift Pressure in Cracks in Concrete Gravity Dams," Amadei, B. and Illangasekare, T., *Proc. ASCE National Conf. on Hydraulic Engineering*, Colorado Springs, 1988.
26. "Influence of Variable Aperture and Roughness on Flow in Rock Joints," Illangasekare, T., Amadei, B., Brannon, J., Grenoble, A., *Proc. Int. Conf. on Fluid Flow in Fractured Rocks*, Atlanta, pp. 593-602, 1988.
27. "Modeling Masonry Joint Response Under Constant or Variable Normal Stiffness Boundary Conditions," Saeb, S., Amadei, B., Atkinson, R.H., *Proc. of the 2nd Joint U.S.-Italy Workshop, on Evaluation and Retrofit of Masonry Structures*, Washington, DC, pp.287-306, 1987.
28. "Predicting Uplift Pressure in a Cracked Gravity Dam," Grenoble, B.A., Amadei, B.P., Illangasekare, T., Chinnaswamy, C. and Menon, K.K.M., *Proc. Int. Workshop on Research Needs in Dam Safety*, New Delhi (India), 1988.
29. "Effect of Boundary Conditions on the Shear Behavior of a Dilatant Rock Joint," Saeb, S. and Amadei, B., *Proc. 30th US Symp. on Rock Mech.*, West Virginia University, pp. 107-114, 1989.
30. "Uplift Pressure Below Gravity Dams on Rock," Grenoble, B.A., Amadei, B., Illangasekare, T.H., *Proc. Int. Conf. on Hydropower*, ASCE, Niagara Falls, Vol. 1, pp. 342-252, 1989.
31. "Effect of Seepage in Cracks in Older Gravity Dams," Amadei, B., Grenoble, B.A., Illangasekare, T.H., *Proc. Int. Conf. on Hydropower*, ASCE, Niagara Falls, Vol. 1, pp. 353-363, 1989.
32. "A New Algorithm for Finite Element Mesh Generation," by Chinnaswamy, C., Amadei, B. and Illangasekare, T., *Proc. Int. Conf. on Engineering Software*, New Delhi (India), pp. 687-694, 1989.
33. "Evaluation of Uplift Pressure for Concrete Gravity Dams Founded on Jointed Rock: Analytical Results," Grenoble, BA and Amadei, B., *Proc. 10th USCOLD Meeting and Lecture Series*, New Orleans, pp. 1-20, 1990.
34. "A Mathematical Model for the Shear Behavior of a Dilatant Rock Joint," Saeb, S. and Amadei, B., *Proc. 31st US Rock Mech. Symp.*, CSM, pp. 237-244, 1990.
35. "Flow Pump Measurements of Fracture Transmissivity as a Function of Normal Stress," Wilbur, C. and Amadei, B., *Proc. 31st US Rock Mech. Symp.*, CSM, pp. 621-627, 1990.
36. "Finite Element Implementation of a New Model for Rock Joints," Saeb, S. and Amadei, B., *Proc. Int. Conf. on Rock Joints*, Loen (Norway), pp. 707-712, 1990.
37. "Constitutive Models of Rock Joints," Key Note Lecture, Amadei, B. and Saeb, S., *Proc. Int. Conf. on Rock Joints*, Loen (Norway), pp. 581-594, 1990.
38. "Unsteady Flow of Bingham Viscoplastic Material in an Open Channel," Savage, W.Z., Amadei, B., Cannon, S.H., *Proc. Int. Symp. on Hydraulics/Hydrology of Arid Lands*, ASCE Conf. on Hydraulic Engineering, San Diego, pp. 397-402, 1990.
39. "Uplift Reduction Using Drains," Illangasekare, T., Amadei, B. and Chinnaswamy, C., *Proc. Int. Conf.*

*on Hydropower, Waterpower 91*, Denver, pp. 1388-1397, 1991.

40. "Three-Dimensional Modeling of Concrete Dams with Cracks Using Boundary Element Methods," Amadei, B., Illangasekare, T., Chinnaswamy, C., *Proc. Int. Conf. on Hydropower, Waterpower 91*, Denver, pp. 1548-1558, 1991.

41. "Estimating Uplift in Cracks in Concrete Dams," Amadei, B., Illangasekare, T., Chinnaswamy, C., and Morris, D.I., *Proc. Int. Conf. on Hydropower, Waterpower 91*, Denver, pp. 1328-1337, 1991.

42. "Determination of the Elastic Properties of Anisotropic Rock Masses from In-situ Expansion Tests," Amadei, B. and Savage, W.Z., *Proc. 32nd. US Symp. Rock Mech.*, Oklahoma University, pp. 303-312, 1991.

43. "Stability Analysis of Gravity Dam Foundations with Horizontal Seams," Chinnaswamy, C. and Amadei, B., *Proc. Int. Conf. on Hydropower, Waterpower 91*, Denver, pp. 1288-1297, 1991.

44. "Uplift Pressures in Cracks in Dams and Drain Effectiveness," Amadei, B., Illangasekare, T., Chinnaswamy, C., *Proc. Int. Conf. on Dam Fractures*, EPRI, Boulder, pp. 531-549, 1991.

45. "Effect of Crack Uplift on Concrete Dam Stability," Amadei, B., Illangasekare, T., Chinnaswamy, C., *Proc. Int. Conf. on Research Needs in Dam Safety*, New Delhi (India), 1991.

46. "Effectiveness of Drains in Reducing Uplift in Cracks in Concrete Dams," Amadei, B., Illangasekare, T., Chinnaswamy, C., *Proc. Annual Conf. Association of Dam Safety Officials (ASDSO)*, San Diego, pp. 139-145, 1991.

47. "Effect of Geology on Uplift and Dam Stability," Amadei, B., Dialer, C., Chinnaswamy, C., Illangasekare, T., *Proc. Annual Conf. Association of Dam Safety Officials (ASDSO)*, San Diego, pp. 347-354, 1991.

48. "Modeling Flow in Non-Homogeneous Rock Joints Using the Integral Transform Method," Amadei, B. and Illangasekare, T., *Proc. 33rd. US Rock Mech. Symp.*, Santa Fe, pp. 599-608, 1992.

49. "Shear Response of a Rock Joint Under Different Boundary Conditions; An Experimental Study," Wibowo, J., Amadei, B., Sture, S., Robertson, A. and Price, R., *Proc. Int. Conf. on Fractured and Jointed Rock Masses*, Lake Tahoe, 1992, 425-430, 1995.

50. "Centrifuge Modeling of Dams Founded on Fractured and Jointed Rock Masses," Lin, C.T., Amadei, B., Illangasekare, T., and Ko, H.-Y., *Proc. Int. Conf. on Fractured and Jointed Rock Masses*, Lake Tahoe, 1992, 289-293, 1995.

51. "Flow in Rock Joints with Fractal Surfaces," Amadei, B. and Wibowo, J., *Proc. Int. Conf. on Structure and Mechanical Behavior of Geomaterials*, Nancy (France), pp. 97-107, 1992.

52. "Importance of Rock Mass Fabric on the Performance of Dams and Underground Excavations," Amadei, B. and Lin, C.T., *Proc. of MIR'92*, Paper # 5, Torino (Italy), 1992.

53. "Numerical and Centrifuge Modeling of an Arch Dam on Jointed Rock," Amadei, B., Illangasekare, T., Chinnaswamy, C. and Lin, C.T., *Proc. ASCE Conf. Geotechnical Practice in Dam Rehabilitation*, ASCE Tech. Publication # 35, pp. 69-85, 1993.

54. "Computer-Aided Design of Drainage Systems for Dams," Illangasekare, T., Amadei, B., Lyons, R.

and Morris, D., *Proc. Int. Conf. on Hydropower, Waterpower 93*, ASCE, Nashville, 1993.

55. "Design of a Drainage System for the Left Thrust Block of an Arch Dam on Jointed Rock," Amadei, B., Illangasekare, T., Lin, C. and Gibson, J. *Proc. Ist. USCOLD Technical Conf.*, Denver, pp. 1-20, 1993.

56. "Solute Transport in Rock Fractures with Fractal Surfaces," Amadei, B. and Illangasekare, T., *Proc. Int. Conf. of the Association for Computer Methods and Advances in Geomechanics*, Morgantown, Vol. 02, pp. 1185-1190, 1994.

57. "Using an Augmented Lagrangian Method and Block Fracturing in the DDA Method," Lin, C.T., Amadei, B., Sture, S. and Jung, J., *Proc. Int. Conf. of the Association for Computer Methods and Advances in Geomechanics*, Morgantown, Vol. 01, pp. 837-842, 1994.

58. "Evaluation of Grout Injection Techniques for Unreinforced Masonry Structures," Shing, P.B., Manzouri, T., Atkinson, R.H., Schuller, M.P. and Amadei, B., *Proc. Fifth US Nat. Conf. on Earthquake Eng.*, Chicago, Vol. 03, pp. 851-860, 1994.

59. "The Edge Function Method: An Efficient New Numerical Technique in Rock Mechanics," Dwyer, J. and Amadei, B., *Proc. Ist. North American Rock Mech. Symp. (NARMS)*, Austin, pp. 689-696, 1994.

60. "Modeling Fracturing of Rock Masses with the DDA Method," Amadei, B., Lin, C.T., Sture, S. and Jung, J., *Proc. Ist. North American Rock Mech. Symp. (NARMS)*, Austin, pp. 583-590, 1994.

61. "A New Dilatometer to Determine Rock Mass Deformability," Amadei, B., Valverde, M., Touseull, J., and L.S. Cheung. *Proc. ISRM Symp. on Integral Approach to Applied Rock Mechanics*, Santiago (Chile), Vol. I, pp. 155-167, 1994.

62. "The Directional Dilatometer: A New Option to Determine Rock Mass Deformability," Amadei, B., Valverde, M., Jernigan, R., Touseull, J. and Cappelle, J.F., *Proc. 4th Int. Symp. on Pressumeters*, Sherbrooke (Canada), pp. 257-264, 1995.

63. "Estimating In-Situ Stresses for the Selection of the Alignment of Unlined Pressure Tunnels," Amadei, B. and Pan, E., *Proc. 35th. US Rock Mech. Symp.*, Reno, pp. 267-272, 1995.

64. "A Variational Formulation of the Boundary Element Method in Transient Poroelasticity," Pan, E., Maier, G. and Amadei, B., in *Computational Mechanics '95: Theory and Applications*, *Proc. IABEM'95*, Mauna Lani, Hawaii, Vol.II, pp. 3110-3115, 1995.

65. "Analysis of Stress Intensity Factors and Stress Distribution for Cracked Discs of Anisotropic Rock under Brazilian Loading," Chen, C-S, Pan, E. and Amadei, B., *Proc. 19th Nat. Conf. on Theoretical and Applied Mechanics*, Taoyuan, Taiwan, Vol. 3, pp. 297-303, 1995.

66. "Modeling the Stability of Masonry Structures with the Discontinuous Deformation Analysis," Mirabella Roberti G., Binda, L. and Amadei, B., *Proc. Int. Symp. on Computer Methods in Structural Masonry*, Lisbon, 1995.

67. "Analysis of Masonry Structures with Elastic/Viscoplastic Models," Manzouri, T., Shing, B. and Amadei, B., *Proc. ASCE Structural Eng. Cong.*, Chicago, pp. 61-71, 1996.

68. "Evaluation of Properties of Anisotropic Rocks using Brazilian Tests," Chen, C-S, Pan, E. and Amadei, B., *Proc. 2nd. North American Rock Mech. Symp. (NARMS)*, Montreal, 1996.

69. "Recent Extensions to the DDA Method," Amadei, B., Lin, C.T. and Dwyer, J., Key Note Paper, *Proc. 1st. Int. Forum on DDA*, Berkeley, pp. 1-30, 1996.
70. "Applicability of Existing Models to Predict the Behavior of Rock Joints under Different Boundary Conditions," Amadei, B. and Wibowo, J., *Proc. 2nd ICADD Special Workshop and Intl. Symp.*, Kyoto, pp. 36-106, 1997.
71. "Modeling the effect of water, excavation sequence and reinforcement on tunnel stability," Kim, Y-I, Amadei, B. and Pan, E., *Proc. NARMS'98, Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 35, No.4-5, Paper No.105, 1998.
72. "The REX expert system: a new alternative for rock engineering design," Tapia, M.A., Valverde, M.A., Amadei, B., and Madrigal, H., *Proc. NARMS'98, Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 35, No.4-5, Paper No.23, 1998.
73. "Modeling the effect of geology on the uplift in concrete gravity dam foundations with the DDA," Kim, Y.I., Amadei, B. and Pan, E., *Proc. 37th US Rock Mech. Symp.*, Vail, pp. 527-534, 1999.
74. "In situ stress tensor measured in an Alaskan glacier," Pfeffer, W.F., Humphrey, N.F., Amadei, B., Harper, J. and Wegman, J., *Proc. IGS Int. Symp. on the Verification of Cryospheric Models*, Zurich, 1999.
75. "Estimation of rock mass boundary conditions using a Bayesian approach - application to the URL, Canada, Tonon, F., Amadei, B. and Frangopol, D.M., *Proc. 3<sup>rd</sup> Int. Conf. on Advances of Computer Methods in Geotechnical and Geo-environmental Eng.*, Moscow, pp. 67-72, 2000.
76. "Far-field stress estimation in tunneling using a Bayesian approach, Tonon, F., Amadei, B. and Frangopol, D.M., *Proc. 8<sup>th</sup> ASCE Specialty Conf. On Probabilistic Mechanics and Structural Reliability*, Notre Dame, 2000.
77. "Detection of rock mass weakness ahead of a tunnel – a numerical study," Tonon, F. and Amadei, B., *Proc. 4<sup>th</sup> North American Rock Mech. Symp. (NARMS)*, Seattle, pp. 105-111, 2000.
78. "A mathematical model for the flow of Bingham materials in fractures," Amadei, B., *Proc. 4<sup>th</sup> North American Rock Mech. Symp. (NARMS)*, Seattle, pp. 785-792, 2000.
79. "Estimating rock mass boundary conditions for the AECL's underground research laboratory, Canada," Tonon, F. and Amadei, B., *Proc. 38th US Rock Mech. Symp.*, Washington, DC, pp. 1389-1396, 2001.
80. "Engineers Without Borders: Building a Better Sustainable World One Project at a Time," Amadei, B., *ASCE's First Virtual World Congress for Civil Engineering*, 2002.  
<http://www.ceworld.org/ceworld/Presentations/Education/Amadei.cfm>
81. "Program in Engineering for Developing Communities: The Developing World as the Classroom of the 21st Century", Amadei, B., *Proc. ASEE Mid-Atlantic Section Conference*, Riverdale, NY, P2S1-Paper 2 (CD), 2002.
82. "What Boundary Conditions Should We Apply? A Bayesian Approach with application to the AECL Underground Research Laboratory", Tonon, F. and Amadei, B., *Proc. 10th ISRM Congress on Rock Mechanics (M. Handley and D. Stacey, eds.)*, Gauteng, South Africa, pp.1241-1245, 2003
83. "Engineering for Developing Communities," Amadei, B., in *Idea for Better Education & Training for Engineers*, World Federation of Engineering Organizations, No. 10, pp. 45-53, 2003.

84. "A Summary of the Workshop on Integrating Appropriate-Sustainable Technology and Service-Learning in Engineering Education," Sandekian, R., Amadei, B. and Pinnell, M., Proc. ASEE Conference, Portland, Paper 1112, 2005.
85. "Creating an Engineering for Developing Communities (EDC) Emphasis in Environmental Engineering," Bielefeldt, A. et al., Proc. ASEE Conference, Portland, Paper 893, 2005.
86. "Incorporating Earth Systems Engineering Concepts throughout the Civil Engineering Degree to Create the Engineer of the 21<sup>st</sup> Century", Bielefeldt, A., Amadei, B. and R.S. Summers, Proc. ASEE Conference, Portland, Paper 892, 2005.
87. "Integrating Sustainable Development in Rock Engineering: Challenges and Opportunities," Kidd, K, Amadei, B., and Sanchez, L. *Proc. 40th US Rock Mech. Symp.*, Anchorage, AK, 2005.
88. "Engineering for Developing Communities (EDC) Theme Attracts Diverse Student Interest," Bielefeldt, A., Summers, S., Amadei, B., and Sandekian, R. *Proc. AEESP conference*, 2005.
89. "Engineering for Developing Communities: Integrating Education, Research and Development, and Service/Outreach in Engineering Education" B. Amadei, R. Sandekian, R. S. Summers, and A. Bielefeldt, *Proc. ASEE Conference*, Chicago, Paper 220, 2006.
90. "Engineering Education through Service Learning: Two Case Studies," E. Thomas, A. Azman, R. Sandekian, and B. Amadei, *Proc. ASEE Conference*, Chicago, Paper 606, 2006.
91. "An Educational Initiative to Address Earth Systems Engineering for Developing Communities," Bielefeldt, A.R., Amadei, B., Summers, R.S., Strzepek, K.M., Chinowsky, P.S., and Molenaar, K.R. *W107 Construction in Developing Economies International Symposium Construction in Developing Economies: New Issues and Challenges*, Santiago, Chile, 2006.
92. Engineering for Poverty Reduction: Challenges and Opportunities, Sandekian R., Amadei, B., Summers R.S., Bielefeldt A., *Proc. Fifth Latin American and Caribbean Conference for Engineering and Technology*, Tampico, Mexico, 2007.
93. Engineering for the Developing World Class Gives Students International Experience, A. Bielefeldt, B. Amadei, and R. Sandekian. *Proc. American Society of Engineering Education Annual Conference & Exposition*, Paper 2007-799, Honolulu, Hawaii, 2007.
94. Program to Education Environmental Engineers to Work toward Sustainable Development. Silver, D., B. Amadei, R. Scott Summers, R. Klees, R. Sandekian, B. Bialek, and A. Bielefeldt. Poster at the *2008 Institute for the Environment Environmental Symposium: Sustainable and Safe Drinking Water in Developing and Developed Countries: Where Science Meets Policy*. Nov. 5 - 6. University of North Carolina – Chapel Hill, NC, 2008.
95. Telemedicine and educational services for developing communities with wireless technology, Chavero et al., *Human-Centered Computing in International Development Conference*, Boston, MA, April 1-5, 2009.
96. Integrating Sustainable Community Development in Engineering Education, Amadei, B. and Sandekian, R., in *Proc. 14<sup>th</sup> Annual NCIIA Conference*, San Francisco, 2010.



97. Guiding Principles for Sustainable Humanitarian Engineering Projects, Amadei, B. and Sandekian, R., in *Proc. 14<sup>th</sup> Annual NCIIA Conference*, San Francisco, 2010.
98. Pathways to Community Recovery and Resiliency, Jordan, E., Javernick-Will, A., and Amadei, B. Working Paper Series, *Proc. Engineering Project Organization Conference*, Estes Park, CO, August 9-12, 2011.
99. Modeling uplift and fluid flow in fractures to determine the failure probability of concrete gravity dams, Jensen, E., Regueiro R., Amadei, B. and Pak, R., *Proc. 2012 Joint Conference of the Engineering Mechanics Institute and the 11th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Notre Dame, IN, June 17-20, 2012.
100. A Qualitative Comparative Analysis of Neighborhood Recovery Following Hurricane Katrina. Jordan, E., Javernick-Will A., and Amadei, B., *2012 EPOC Conference*. Rheden, The Netherlands, July 2012.
101. Engineering in developing communities: Curriculum development around graduate certificate and professional MS programs. Linden, K. G., Javernick-Will, A., Amadei, B., Klees, R., and Sandekian, R., *Proc. 8<sup>th</sup> Conference on Engineering Education for Sustainable Development*, Bruges, Belgium, 2016.
102. A Methodology to Model the Integrated Nature of the Sustainable Development Goals: Importance for Engineering Education. Zelinka, D. and Amadei, B. *Proc. ASEE Conference*, Columbus, OH, 2017.
103. A new insecure-secure diffusion archetype to model complex anthropocentric systems. Zelinka, D. and Amadei, B., *Proc. 36<sup>th</sup> International Conference of the System Dynamics Society*, Reykjavík, Iceland, 2018.
104. Integrated Modeling of the Water-Energy-Land-Food Nexus. Amadei, B. and Zelinka, D. *Proc. 24<sup>th</sup> International Sustainable Development Research Society Conference*, Messina, Italy (June 13-15), 2018
105. A Systems Approach to Modeling Corruption: Bridging the Disciplinary Divide Between the Social and Technical Sciences. Zelinka, D. and Amadei, B. *Proc. 24<sup>th</sup> International Sustainable Development Research Society Conference*, Messina, Italy (June 13-15), 2018
106. Analyzing Sustainable Development: Systems-Based Methods and Modeling Tools for the Sustainable Development Goals. Zelinka, D. and Amadei, B. *Proc. 24<sup>th</sup> International Sustainable Development Research Society Conference*, Messina, Italy (June 13-15), 2018
107. Global Engineering Education for a Small Planet. Amadei, B. *2018 World Engineering Education Forum - Global Engineering Deans Council (WEEF-GEDC)*, Albuquerque, NM, USA, 2018, pp. 1-6, doi: [10.1109/WEEF-GEDC.2018.8629617](https://doi.org/10.1109/WEEF-GEDC.2018.8629617).
108. Engineering for Peace: Challenges and Opportunities. Amadei, B. *Proc. Peace Engineering Conference*, Albuquerque, NM, 2018.

## Teaching and Advising

### 1. Teaching

#### 1.1 Undergraduate Courses

- CVEN 2121: Statics
- CVEN 3708: Introduction to Geotechnical Engineering
- CVEN 3698: Engineering Geology
- CVEN 3121: Mechanics of Materials
- CVEN 3111: Dynamics
- CVEN 4700: Sustainability and the Built Environment
- CVEN 4838: Engineering for the Developing World
- GEEN 1400: Engineering Projects
- SUST 2800: Introduction to Engineering for Developing Communities

#### 1.2 Graduate Courses

- CVEN 5768: Introduction to Rock Mechanics
- CVEN 5778: Advanced Topics in Rock Mechanics
- CVEN 5896: Engineering of Underground Construction
- CVEN 5700: Sustainability and the Built Environment
- CVEN 5838: Engineering for the Developing World
- CVEN 5919/5929: Sustainable Community Development I and II
- CVEN 4837/5837: A Systems Approach to Global Engineering

### 2. Advising

#### 2.1 Main thesis/report graduate student advisor

- |                    |              |
|--------------------|--------------|
| • Yassin, Y. Y.    | Ph.D. (1989) |
| • Grenoble, BA     | Ph.D. (1989) |
| • Saeb, S.         | Ph.D. (1989) |
| • Liao, J. J.      | Ph.D. (1990) |
| • Khan, A.         | Ph.D. (1993) |
| • Pan, E.          | Ph.D. (1993) |
| • Wibowo, T.       | Ph.D. (1994) |
| • Lin, C.          | Ph.D. (1995) |
| • Chen, C.S.       | Ph.D. (1996) |
| • Kim, Y-I         | Ph.D. (1998) |
| • Tonon, Fulvio    | Ph.D. (2000) |
| • Lee, Seung Cheol | Ph.D. (2002) |
| • Lee, Wanjae      | Ph.D. (2003) |
| • Leonardo Sanchez | Ph.D. (2008) |
| • Kamaleldin Ouda  | Ph.D. (2010) |
| • Elisa Teipel     | Ph.D. (2014) |
| • Jeff Walters     | Ph.D. (2015) |
| • Aaron Brown      | Ph.D. (2015) |
| • David Zelinka    | Ph.D. (2019) |
|                    |              |
| • Robison, M.      | MS (1985)    |
| • Adkins, N.       | MS (1986)    |

- Tsung, N. L. MS (1986)
- Squassabia, A. MS (1989)
- Wenlin, J. MS (1989)
- Wilbur, C. MS (1990)
- Fryberger, R. MS (1990)
- Larsen, J. O. MS (1993)
- Fotiadis, D. MS (1994)
- Valverde, M. MS (1994)
- Jernigan, R. MS (1995)
- Cannon, S. MS (1995)
- Taylor, J. MS (2002)
- Gibson, W. MS (2003)
- Kidd, K. MS (2005)
- Grunert, B. MS (2008)
- Bang, A. MS (2009)
- Krosnowski, A. MS (2011)
- Zweig, W. MS (2011)
- Van Voast, C. MS (2012)
- Bauer, A. M. MS (2013)
- Stone, T. MS (2013)
- Maillard, F. MS (2016)
- Diego Sanchez MS (2016)
- Robin Walz MS (2019)

## *2.2 Co-advisor*

- Manzouri, T. Ph.D. (1995)
- Chipley, M. Ph.D. (1996)
- Thomas, E. Ph.D. (2009)
- Tsung, N. Ph.D. (2010)
- Allen, G. MS (2012)
- Hassan, M. MS (2012)
- Jordan, E. Ph.D. (2013)