# BERNARD AMADEI

## Personal Data


Born: 1954, Roubaix (France)
Nationality: U.S.A.
Contact: Cell: (303) 929-8167.
E-mail: amadei@colorado.edu
Web Site: http://www.colorado.edu/center/mortenson/bernard-amadei-phd-nae


## Short Bio

Dr. Amadei is a Distinguished Professor and Professor of Civil Engineering at the University of Colorado at Boulder. He received his Ph.D. in 1982 from the University of California at Berkeley. Dr. Amadei 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 an elected member of the US National Academy of Engineering and the National Academy of Construction. He is also an elected Senior Ashoka Fellow. Dr. Amadei holds seven honorary doctoral degrees (UMass Lowell; Carroll College; Clarkson; Drexel; Worcester Polytechnic Institute; the Technion in Israel; and SUNY-ESF). In 2013 and 2014, Dr. Amadei served as a Science Envoy to Pakistan and Nepal for the US Department of State. 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 Institute of Technology, 2017
- Doctor of Science (Honoris Causa), SUNY-ESF, 2019

## Experience

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| 1994 - 2022 | 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 |

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| | 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 | Senior Engineer, J. F. T. Agapito and Associates, Inc., Grand Junction, Colorado (Jan-June) |
| 1979 - 1982 | Research Assistant, Ph.D. Thesis: *Influence of Rock Anisotropy on Measurement of Stresses In-Situ*, University of California, Berkeley |
| 1978 - 1979 | Research Assistant, MaSc Thesis: *Creep Behavior of Rock Joints*, University of Toronto, Canada |
| 1979 (03-06) | Research Assistant, Diploma of Engineer Thesis: *Flow through Fractured Rock Masses – A Finite Element Approach*, University of Toronto, Canada |

**Professional Affiliations and Services**

- Chair, Advisory Committee on Scientists and Engineers in Exile for Development, US National Academies (2022-2023)
- Member, US National Academies Roundtable on Science & Technology for Sustainability (2019-)
- Member, US National Academy of Engineering, New Voices Advisory Committee (2018-)
- Member (and co-chair), PeaceTech Laboratory Board (2014-)
- Founding President and board member, Engineers Without Borders - USA (2001-)
- Co-Founder of Engineers Without Borders –International Network (2002-)
- Founding Director, Mortenson Center in Engineering for Developing Communities (2009-)

- 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 Eng. 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, International Society for Rock Mechanics (1984-present)
- Member, American Society of Mechanical Engineers (2006-present)
- Member, American Rock Mechanics Association (2000-2020)

- Member, Institute of Electrical and Electronics Engineers (2011-present)
- Member, American Society of Engineering Education (2010-present)
- Member, Professionals in Human Assistance and Protection (2020-present)

**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 Leonards 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, 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, BuiltWorlds

**Major Interests**

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

**Books**

- *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. 37th US Rock Mechanics Symposium, Balkema, Rotterdam, Amadei, B., Scott, G., Kranz, R. and Smeallie, P., Editors, ISBN 90 5809 052 3, 1999.
- *Proc. 3rd 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 Tractions," 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 Bimaterials," 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 on-line, 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

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

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79. Amadei, B. (2019). Engineering for peace and diplomacy, *Sustainability,* 11(20), https://www.mdpi.com/2071-1050/11/20/5646.

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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 21st Century", Bielefeldt, A., Amadei, B. and R.S. Summers, Proc. ASEE Conference, Portland, Paper 892, 2005.

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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.

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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.

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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. 36th 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. 24th 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. 24th 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. 24th International Sustainable Development Research Society Conference*, Messina, Italy (June 13-15), 2018

107. Global Engineering Education for a Small Planet. Amadei, B. *Proc. Peace Engineering Conference*, Albuquerque, NM, 2018.

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. PhD. (1989)
- Liao, J. J. Ph.D. (1990)
- Khan, A. Ph.D. (1993)
- Pan, E. PhD. (1993)
- Wibowo, T. Ph.D. (1994)
- Lin, C. PhD. (1995)
- Chen, C.S. PhD. (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 PhD. (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)