DETAILED BIOGRAPHICAL RESUME OF ZDENĚK P. BAŽANT

May 10, 2015

PERSONAL: Born Dec. l937, Prague; U.S. citizen, naturalized l976; married 1967; two children. Office tel.: (847)491-4025 (secretary 491-3351, dept. 491-3257, 491-3258). Fax: 491-4011.
E-mail: z-bazant@northwestern.edu.
www.civil.northwestern.edu/people/bazant.html

EDUCATION

C.E. (Civil Engineer), Czech Technical University in Prague (ČVUT) (with the highest distinction, straight A's all $5\frac{1}{2}$ years, first in class), 1960.

Ph.D. in Engineering Mechanics, Czechoslovak Academy of Sciences (ČSAV), Prague, l963.

Postgraduate Diploma in Theoretical Physics, Charles University, Prague, l966.

Docent (habilitatis) in Concrete Structures, Czech Technical University in Prague (ČVUT), 1967.

REGISTRATION

Registered Structural Engineer, Illinois, 1971–.

PROFESSIONAL POSITIONS

Bridge Engineer, Dopravoprojekt (State Consulting Firm), Prague, Jan. 1961–Dec. 1963.

Scientific Worker and *Adjunct Assistant Professor*, Czech Technical University (ČVUT), Building Research Institute (now Klokner Institute), Prague, l964–67.

Post-Doctoral Visiting Researcher, CEBTP Paris, 1966–67.

Research Fellow, University of Toronto, 1967–68.

Associate Research Engineer, University of California, Berkeley, 1968-69.

Associate Professor of Civil Engineering, Northwestern University, 1969–1973.

Professor of Civil Engineering, Northw. Univ., 1973–.

Staff Consultant (part-time), Argonne National Laboratory, 1974–94.

Walter P. Murphy Professor of Civil Engineering and Materials Science (a distinguished chair endowed in 1942 by W.P. Murphy), Northw. University, 1990–.

McCormick Institute Professor, Northwestern University, 2002– (held simultaneously with Murphy Chair).

MAIN ADMINISTRATIVE POSITIONS

Director, Center for Concrete and Geomaterials, Northwestern University, 1981–1987.

Program Coordinator, Structural Engrg. and Materials, Northwestern University, 1974–1978, 1992–96.

Secretary (elected), Class III of National Academy of Sciences (comprising sections Engrg. Science, Appl. Math., Appl. Phys. & Computer Sci.), 2009–2012.

HONORS

2002 elected **Member, National Academy of Sciences, Washington, D.C.**[1]

1996 elected **Member, National Academy of Engineering, Washington, D.C.**[2]

2008 elected **Fellow, American Academy of Sciences and Arts**, Boston.

2015 elected *Foreign Member of Royal Society of London.*

2000 elected *Corresponding Foreign Member, Austrian Academy of Sciences*, Vienna.

2006 elected *Foreign Member*, Italian National Academy (Accademia Nazionale dei Lincei), Rome.

2008 elected foreign *Corresponding Member*, Spanish Royal Academy of Engineering (Real Academia de Ingenieria).

2002 elected *Foreign Member, Lombard Academy (Istituto Lombardo—Accademia di Scienze e Lettere*, Milan, Italy.

1998 elected *Foreign Member, Academy of Engineering of Czech Republic*, Prague.

2014 elected *Foreign Member, Academia Europaea*, London.

2008 elected *Member* European Academy of Sciences and Arts, Salzburg.

1991 **Honorary Doctorate (Dr. h.c.)**, Czech Technical University in Prague (ČVUT), Nov. 14[3].

1997 **Honorary Doctorate (Dr.-Ing.E.h., Doktor-Ingenieurs Ehrenhalber))**, Universität Fridericiana (Technische Hochshule) Karlsruhe, Germany (conferred May 28, 1997, ceremony March 23, 1998)[4].

2000 **Honorary Doctorate** (Doctor of Science h.c.), University of Colorado, Boulder.

2001 **Honorary Doctorate ('Laurea')**, Politecnico di Milano, Italy (conferred Oct. 25, 2001)[5]

2004 **Honorary Doctorate** (Docteur honoris causa), I.N.S.A. (Institut national des sciences appliqueés de Lyon), Oct. 15, Villeurbane, France.

2005 **Honorary Doctorate** (Dr.techn.h.c., Ehrendoktor der technischen Wissenschaften), Technical University Vienna (T.U. Wien), Oct. 28, Austria[6].

[1] Citation: "Bazant discovered the scaling law for the energetic size effect in quasibrittle structural failure bridging ductile and brittle behaviors, verified it experimentally for many important materials, showed its use for measuring fracture characteristics, and conceived nonlocal and crack-band models now widely used in numerical simulations of quasibrittle failure of structures."

[2] For "contributions to solid mechanics, particularly structural stability and size effects in fracture."

[3] cited for "important scientific contributions to mechanics"

[4] "In recognition of outstanding accomplishments in the field of building materials and structural engineering"

[5] Cited for "...novel approaches to inelastic and time-dependent behavior of concrete, lasting contributions to quasibrittle fracture, ... innovative techniques for material instability. Bažant's law for scale effects in fracture and microplane constitutive model represent fundamental contributions..."

[6] "For accomplishments in the field of stability of structures and size effects in fracture mechanics"

2011 **Honorary Degree – Doctor of Engineering**, Ohio State University, Columbus (Dec. 11) [7]

2007 **Honorary Member, ASCE** (Am. Soc. of Civil Engrs.)

2012 **Honorary Member, ASME** (Am. Soc. of Mechanical Engrs.)

2011 **Honorary Member, ACI** (Am. Concrete Institute).

2015 **Honorary Member, RILEM**.

2009 *Timoshenko Medal*, ASME (Am. Soc. of Mechanical Engrs.).[8]

2005 *Theodore von Karman Medal*, ASCE (Am. Soc. of Civil Engrs.).[9]

1996 *W. Prager Medal*, Soc. of Engng. Science (SES).[10]

1996 *Newmark Medal*, ASCE.[11]

1997 *W.R. Warner Medal*, ASME (Am. Soc. of Mechanical Engrs.).[12]

2008 *Nadai Medal*, ASME (Am. Soc. of Mech. Eng.) [13]

2011 *Maurice Biot Medal*, ASCE.[14]

2015 *Raymond Mindlin Medal*, ASCE.

2008 *Wilhelm Exner Medal*, Austrian Trade Association (Gewerbeverein), Vienna.

1997 *J.J.R. Croes Medal*, ASCE.[15]

2003 *Lifetime Achievement Award*, from ASCE Illinois Structural Engineering Section.

1993 *Medal of Czech Society for Mechanics*[16] (čestná medajle České společnosti pro mechaniku), Prague.

2009 *Honorary Member*, Czech Society for Mechanics (Čestný člen České společnosti pro mechaniku), Prague.

1990 *Torroja Gold Medal* from Building Research Institute of Spain.[17].

1975 *L'Hermite Medal* from RILEM[18] (in 1975 called RILEM Medal).

2007 *Zdeněk Bažant Medal* (1st recipient of), Czech Techn. University, Prague (ČVUT) (medal named after late grandfather, professor of structural mechanics and rector (i.e. president) of ČVUT)[19].

1998 *Šolín Medal*, Czech Technical University, Prague (ČVUT)[20]

1999 *Stodola Gold Medal*, Slovak Academy of Sciences, Bratislava.

2008 *Outstanding Contributions Award*, IACMAG (International Association for Computer Methods and Advances in Geomechanics).

2001 *ICOSSAR Lecture Award*, Int. Assoc. for Structural Safety and Reliability (Int. Conf., Newport Beach, CA, June 20, 2001).

2001 *D.M. Roy Lecture Award*, Am. Ceramic Society (2nd Roy Lecture, Annual Meeting, Indianapolis, April 24, 2001).

1977 *T.Y. Lin Prestressed Concrete Award* from ASCE (for the paper "Creep and Shrinkage in Reactor Containment Shells", with D. Carreira and A. Walser, J. Struct. Div. 101, 1975, 2117–2131).

1976 *Walter L. Huber Civil Engineering Research Prize* from ASCE [21]

2001– *ISI Award of "Highly Cited Scientist in Engineering"* [22]

1992 *Best Engineering Book of the Year*—Award for Excellence from Assoc. of Am. Publishers (Professional & Scholarly Publ. Div.), for "Stability of Structures" (with L. Cedolin).

1992 *Meritorious Publication Award*—Structural Engineers Assoc. of Ill.; for the paper "Size effect on diagonal shear failure", with M.T. Kazemi, ACI Struct. J.

2008 *Publication Merit Award*—Structural Engineers Assoc. of Ill.; for the paper "Justification of ACI-446 code provisions for shear design of reinforced concrete beams", with Q. Yu et al., ACI Struct. J.

1990 *Alexander von Humboldt Award of Senior U.S. Scientist*, from Federal Republic of Germany.

The 2006 *Mindlin Lecture*, US National Congress of Theoretical and Applied Mechanics, Boulder, CO, June 26, 2006.

1984 *Scientific and Technical Prize*, shared with Tong-Sheng Wang, from Ministery of Water Resources and Electric Power, Beijing, for paper "Random Temperature and Shrinkage Stresses in Aging Concrete".

2004 elected *Honorary President*, IA-FRAMCOS (Int. Assoc. of Fracture Mech. of Concr. Str.)

1982 *IR-100 Award* (with S. Meiri), from Industrial Research and Development, for developing a new triaxial-torsional high-temperature testing machine.

1997 Professor Emeritus (by courtesy), Czech Technical University, Prague.

1998 *Special Issue in Honor of Prof. Z.P. Bažant*, Int. J. of Solids & Structures, "Special Topics in Struc-

[7] Cited for "distinguished career as a foremost civil and mechanical engineer" and for "significant contributions to the advancement of engineering research and education".

[8] "For fundamental contributions to scaling research in solid mechanics, particularly to the effect of the size of a structure on its strength and failure behavior; and for outstanding advances in structural stability, fracture mechanics, the micromechanics of damage, concrete creep and probabilistic mechanics"

[9] The Medal is given "in recognition of distinguished achievement in engineering mechanics"; cited "for extensive and substantive contributions to the understanding and solution of multitude of problems in engineering mechanics involving structural stability, behavior of concrete, and uncertainty and scale effects in materials and structures"

[10] Given once every two years "for contributions to solid mechanics".

[11] The Medal is given to "a member who, through contributions to structural mechanics, has helped substantially to strengthen the scientific base of structural engineering"; cited for "fundamental contributions to the understanding of constitutive behavior of structural materials, nonlinear fracture mechanics and stability of structures."

[12] The Medal "honors outstanding contributions to the permanent literature of engineering"; cited for "important contributions to solid mechanics, focusing on the size-effect law for failure of brittle structures, modeling of material damage from softening, local and nonlocal concepts, stability and propagation of fracture and damage in material and thermodynamic concepts associated with stability of nonelastic structures."

[13] Cited "for demonstrating spurious localization instability in strain-softening models of quasibrittle materials, devising a remedy by crack-band and nonlocal damage formulations, discovering and experimentally validating the energetic size effect law for such materials, and showing applications to particulate and fiber composites.

[14] Cited "for groundbreaking contributions to the mechanics of concrete as a nano-porous material, particularly the creep and diffusion processes, thermodynamics of nano-pore water and high temperature effects, with numerical algorithms and consequences for structural design".

[15] For paper "Is No-Tension Design of Concrete and Rock Structures Always Safe?—Fracture Analysis," by Bažant, J. Struct. Eng. 122, Jan. 1996, 2–10.

[16] "For advances in mechanics."

[17] Cited for "outstanding achievements in the fields of structural engineering and mechanics of concrete"

[18] Cited for "brilliant developments in mechanics of materials, thermodynamics of creep and stability theory, bridging experimental and theoretical research".

[19] "In recognition of lifelong successful scientific research"

[20] Cited for "fundamental research contributions".

[21] Cited for "research on creep, inelasticity and moisture effects in concrete, nonlinear and time-dependent structural behavior, stability and fracture".

[22] One of the original top 100 in engrg.; www.ISIhighlycited.com.

tural Mechanics and Materials", Vol. 35, Numbers 31–32, pp. 4019–4350, John P. Dempsey and Gilles Pijaudier-Cabot, guest editors (20 papers).

2006 *Special Issue in Honor of Professor Zdeněk P. Bažant*, *Int. J. of Fracture*, Vol. 137, Numbers 1–4, pp. 1–294, G.J. Dvorak, guest editor(13 papers).

1998 *honored by a Workshop* (dedicated to Bažant's *60th birthday*) on Mechanics of Quasibrittle Materials sponsored by Electricité de France at Czech Techn. University, Prague, chaired by Z. Bittnar, G. Pijaudier-Cabot and B. Gérard (with dedicated Proc. volume).

2007 *honored by a Symposium* on Microplane and Multiscale Models at ECCOMAS Thematic Conference on Mechanics of Brittle Heterogeneous Materials in Prague, and pre-conference *ZPB70 Workshop* (at 70th birthday).

2007 *Asian Workshop in Honor of Bažant's 70th Birthday*, 1st Annual Meeting of Taiwan Concrete Institute, National Taiwan University, Taipei.

2012 *Symposium in Honor of Bažant's 75th Birthday*, at ASCE Annual Engineering Mechanics Institute Conference, University of Notre Dame, South Bend, IN

2012 *Symposium in Honor of Bažant's 75th Birthday*, "From Nanopores to Large Structures: A Life Journey across Length Scales", Society of Engineering Science Annual Meeting, Georgia Institute of Technology, Atlanta, Oct. 10, 2012.

2013 *Symposium in Honor of Bažant's 75th Birthday*, 3rd Int. Conf. on Computational Fracture Mechanics (CFRAC-3), Prague, June 6–7.

2013 ConCreep-9 (Int. Conf. on Creep, Shrinkage and Durability of Concrete Structures), named "Tribute to Prof. Bažant"

1991 *Government Lectureship Award*, National Science Council, Republic of China (Taiwan).

1978–79 *Guggenheim Fellowship.*

1996 *JSPS Fellowship*, Japan Soc. for Promotion of Science.

1988 *NATO Senior Guest Scientist Fellowship*, France.

1987 *Kajima Foundation Fellowship*, University of Tokyo.

2014 em Elected Council Member, Czech Society of sciences and arts (Českś společnost pro vědu and umění, SVU). Washington, D.C.

Honorary Member: • 1991 Building Research Institute of Spain. • 1991 Czech Society of Civil Engineers. • • 2005 Czech Concrete Society (Česká betonářská společnost).

Endowed, Distinguished and Named Lectures:

1982 *11th Arthur J. Boase Lecture*, Univ. of Colorado, Boulder

1982 *Special University Lecture* of University of London in Civil and Mechanical Engineering, Imperial College, London.

1987 *Kajima Foundation Lecture*, University of Tokyo.

1990 *Inaugural Lecture* of Walter P. Murphy Professorship, Northwestern University.

1991 *2nd International Torroja Lecture*, National Council for Scientific Research, Madrid.

1994 *Lecturer, Southwest Mechanics Lecture Series.*

2001 *D.M. Roy Lecture*, Am. Ceramic Society Annual Meeting, Indianapolis.

2002 *Gurley Lecture*, Rensselaer Polytechnic Institute, Troy, N.Y.

2005 *Beyer Distinguished Lecture*, University of Houston.

2005 *Carroll Memorial Lecture*, Engineering Society of Baltimore.

2005 *Professor C.S. Krishnamoorthy Memorial Lecture*, Indian Institute of Technology Madras, Chenai.

2006 *Mindlin Centennial Lecture*, US National Congr. of Theor. & Appl. Mech., Boulder, CO.

2008 Nadai Lecture, ASME Annual Meeting, Boston.

2009 *Biot Lecture*, 4th Biot Conf. on Poromechanics, Columbia University, New York.

2009 Distinguished Lecture, Civil Eng. Dept., UCLA.

2009 Inaugural Lecture, Spanish Royal Academy of Engrg., Madrid.

2009 *Patterson Lecture*, Civil Eng. Dept., University of Colorado, Boulder.

2009 *Richardson Lecture*, Univ. of Colorado, Boulder

2009 *Annual Distinguished Lecture*, University of California, Los Angeles.

2009 *Elisabeth Rockwell Lecture*, Dept. of Mechanical Engrg., University of Houston, Oct. 13.

2009 *William Gurley Lecture*, Dept. of Mechanical, Aerospace & Nuclear Engrg., Rensselaer Polytechnic Institute (RPI), Troy, NY, Dec. 2.

2010 *Frank L. Parker Lecture*, Dept. of Civil & Env. Engrg., Vanderbilt University, Nashville, Kentucky, Feb. 1.

2010 *Fazlur Rahman Khan Lecture*, Rossin College of Engrg. & Appl. Sci., Lehigh University, Bethlehem, PA, Feb. 26.

2010 *Samuel J. Mathis Memorial Lecture*, Dept. of Civil & Environmental Engineering, M.I.T., Cambridge, MA, Dec. 13.

2011 *CEAS Distinguished Lectures*, College of Engrg. and Appl. Sci., University of Wisconsin, Milwaukee, Oct. 28.

2011 *College of Engrg. Distinguished Lecture*, University of Miami, Corral Gables, FL, Nov. 7.

2012 *Fowler Distinguished Lecture*, Texas A & M University, College Station, TX, Oct. 24, 2012.

2012 *Distinguished Lecture in Mechanical Engrg.*, Carnegie-Mellon University, Pittsburgh, PA, Nov. 16, 2012.

2013 *Distinguished Lecture in Mechanical Engrg.* Arizona State University, Tempe, AZ, Oct. 18, 2013.

2014 *Distinguished Lecture in Mechanical Engrg.*, Northeastern University, Boston, Nov. 14, 2014.

Honorary Professor: 2007 National Taiwan University of Science & Technology, 2012 Southeast University, Nanjing, China, 2012 Xi'Yan Jiaotong University, Xi'Yan, China.

Elected Fellow:
American Academy of Mechanics (1978), Society of Engineering Science[23] (1979), RILEM (Paris, 1977), ASME (1989), ASCE (1983), ACI (1979); U.S. Assoc. for Computational Mechanics (USACM, 2009), Czecho-Slovak Society of Arts and Sciences (Washington, D.C., 2003), Engineering Mechanics Institute of ASCE (2013).

Other:

1976 *Outstanding New Citizen*, from Metropolitan Chicago Citizenship Council.

1967-68 *Ford Science Foundation Fellowship.*

1966-67 *French Government ASTEF Fellowship.*

1964 *Second Prize* in Public Anonymous Competition on Danube Bridge Design, Czechoslovakia.

1958 & 1960 *National Winner* (twice), Student Research Competition in Civil Engineering, Czechoslovakia.

1955 *National Winner, Mathematical Olympics* (for high school students), Czechoslovakia.

Listed: Who's Who in America (since 1977), etc.

MEDAL NAMED AFTER BAŽANT

Z. P. Bažant's Prize in Engineering Mechanics, given annually since 2012 by the Czech Society of Mechanics, Prague; selection comm. joint with Czech Techn. Univ. Prague and Czech Academy of Sciences (see http://www.csm.cz/en/z-p-bazant-prize-for-engineering-mechanics/)

[23] cited for 'many important and lasting contributions in the mechanics of solids and structures, including the theory of scaling of quasibrittle materials, constitutive equations, and stability problems of fracture, damage and inelastic behavior'

EDITORIAL BOARDS

Editor (in-Chief):

1. *Journal of Engineering Mechanics, ASCE*, 1988–94.

Board Member Handling and Accepting Papers:

2. *Regional Editor (U.S.)*, Intern. Jour. of Fracture (Kluwer Academic Publ.), 1991–.
3. *Editor*, Cement and Concrete Research (Pergamon Press, later Elsevier), 1970–2006.
4. *Editor*, Materials and Structures (RILEM, Paris), 1981–93; *Board Member*, 1993–2003.
5. *Associate Editor*, Jour. of the Engrg. Mechanics Div., ASCE, 1973–77 and 198l–83.
6. *Associate Editor*, Applied Mechanics Reviews (ASME), 1987–95, 2007–.

Editorial Board Member:

7. Intern. J. of Numerical Methods in Engineering (J. Wiley), 1990–.
8. Archive of Appl. Mech. (Ingenieur-Archiv) (Springer, Berlin), 1990–.
9. Intern. J. of Numerical and Analytical Methods in Geomechanics (J. Wiley), 1979–.
10. Probabilistic Engineering Mechanics (Elsevier), 1986–.
11. Engineering Computations (Pineyard Press), 1987–.
12. Intern. J. of Damage Mechanics (Technomic Publ. Co.), 1992–.
13. Acta Mechanica (Springer), 1995–.
14. ASCE J. of Aerospace Engrg., 2002–.
15. Journal of Geomechanics ASCE, 2003– (formerly Intern. J. of Geomechanics, CRC Press, 2001–2003).
16. Acta Mechanica Sinica, 2001–.

Other: 17. Advances in Structural Engineering—An Intern. J. (Multi-Science Publishing, Ltd., U.K.), 1996–2000. • 18. Int. J. of Computational Civil and Structural Engineering (Begell House. N.Y.), 1999–. • 19. Computer Modeling in Engineering Sciences (Sage Science Press), 1999–. • 20. International Journal of Structural Stability and Dynamics (Elsevier), 2001–. • 21. Dam Engineering (Wilmington Publishing, UK), 1992–. • 22. Mechanics of Advanced Materials and Structures (Taylor & Francis), 2002–. •23. Interaction and Multiscale Mechanics: An International Journal (IMMIJ). 2008–. • 24. Multiscale Computational Modeling (Begell House, New York), 2003–. • 25. International Journal of Materials and Structural Reliability (Rangsit University, Thailand, publ.), 2003–. • 26. Computers, Materials & Continua (Tech Science Press, Encino, CA), 2004–. • 27. J. of Zhejiang Univ. SCIENCE, 2004–. • 28. Journal of Nuclear energy & Power Generation Technologies, OMICS Publishing Group, 2010–. • 29. J. of Structural Fire Engrg., Multi-Science Publishinng, 2010–.

Formerly: 30. Nuclear Engrg. and Design (North Holland), 1990–2001. • 31. Int. J. of Cohesive-Frictional Materials and Structures (J. Wiley) 1995–2000. • 32. J. of Advanced Cement-Based Materials, 1993–98 • 33. Archives of Mechanics (Sijthoff & Noordhoff), 1980–1990. • 34. FRAGBLAST—The Intern. Quarterly J. for Blasting and Fragmentation (Balkema), 1996–2004.

COMMITTEES AND SOCIETIES

- *President*, Society of Engineering Science, 1993 (*Board of Directors*, 1988–94).
- *President and Founder*, Intern. Assoc. for Fracture Mechanics of Concrete Structures (IA-FraMCoS, headquarters in Evanston, IL), 1991–93 (Board of Directors, 1991–2004).
- *President and Founder*, Intern. Assoc. for Concrete Creep and Durability (IA-ConCreep), 2001 (Board of Directors, 2001-08).
- *Chairman and Founder*, ACI Comm. 446, Fracture Mechanics, 1985–92.
- *Member*, U.S. National Committee on Theoretical and Applied Mechanics, 2000–2003.
- *Chairman*, Division H, Concrete Structures, Intern. Assoc. for Structural Mechanics in Reactor Technology (SMiRT), 1981–87, 1989–94 (and *Division Advisor*, 1994–96).
- *Chairman*, Division Q, Concrete and Nonmetallic Materials, ibid., 1987–89.
- *Chairman*, ASCE Engrg. Mech. Div. Programs Committee, 1989–91.
- *Chairman*, ASCE Committee on Properties of Materials (Eng. Mech. Div.), 1975–77, 1981–83.
- *Chairman*, RILEM Comm. TC107, Prediction of Creep & Shrinkage of Concrete, 1988–2000.
- *Chairman*, RILEM Comm. TC69, Math. Models for Creep & Shrinkage of Concrete, 1981–88.
- *Chairman*, RILEM Comm. TC-QFS, Size effect and scaling of quasibrittle fracture, 1994–2000.
- *Chairman*, RILEM Comm. TC-MDC, Multi-Decade Creep; 2010–
- *Member of Council*, Czechoslovak Society for Arts and Sciences (SVU, Společnost pro vědy a umění), Inc., Maryland, 2002–05.
- *Member*, Dept. of Homeland Security (DHS) Committee on Aircraft Impact Effects on Dams, 2007–09.
- *ACI Representative* at European Concrete Institute (CEB) Comm. on "Time-Dependent Deformations of Concrete", 1971–80.
- *Member*, Task Committee of National Academy of Engineering on Status of Cement & Concrete R & D in the U.S., 1977–80.
- *Member*, Advisory Committee of National Academy of Engineering on Reinforced Concrete Floating Marine Structures, 1979-83.
- *Member* ACI Committee 209, Creep and Shrinkage in Concrete, 1970–. *Chairman*, Subcommittee 1 on Creep Mechanisms, 1970–75; *Chairman*, Subcommittee 2 on Creep Prediction, 1988–.
- *Member* Joint ASCE-ACI Comm. on Finite Element Analysis of R.C. Structures, 1979–84 (*Chairman*, Subcom. 5 on Time-Dependent Effects, 1979–85; *Chairman*, Subcom. on Fracture Mechanics, 1989–).
- *Member* of the NAS Committee on Human Rights, 1996–.
- *Member* of the Science Council, Czech Techn. Univ. Prague, 2005–. National Taiwan University of Science and Technology, 2007–.
- *Member* International Code Council (ICC), 2007–2012.
- *MTS Visiting Professor in Geomechanics* (chair endowed by Materials Service Corporation), Nov.-Dec. 2104.
- *OTHER*: *NSF Charter Panelist*, 1990–. ASCE-EMD Committee on Probabilistic Methods, 1984–88; ASCE-EMD Comm. on Structural Stability, 1989–; Joint ASCE-ACI Comm. 334 on Shell Design, 1977–1986; ACI Comm. 348 on Struct. Safety, 1985–93; ACI Comm. 231 on Concrete at Early Ages, 1994–; ACI Comm. 445 on Shear & Torsion, 1994–; ASME-AMD (Applied Mechanics Div.), Comm. on Fundamental Research, 1975–78; ASME-AMD Comm. on Constitutive Relations 1984–; ASME Materials Div. Ceramics Comm., 1994–; Composites Comm., 1998–; Probabilistic Metods Comm. 2002–. SEM (Society for Experimental Mechanics) Committee on Fracture Mechanics, 1986–; RILEM Committee TC50 on Fracture Mechanics of Concrete, 1979–85; RILEM Committee on Rheology of Young Concrete, 1976–82; RILEM Comm. TC89 on Applications of Fracture Mechanics, 1987–91; RILEM Comm. TC90 on Fracture of Concr. 1987–93; RILEM Comm. TC148-SSC on Strain-Softening 1992–; RILEM Comm. TC114 on Computer Models for Creep & Shr., 1988–; RILEM Comm. TC123 MMC, 1993–; RILEM Comm. on Creep Data Bank, 1994–; RILEM Comm. TC-SOC 2001–; SES (Soc. of Engrg. Science) Awards Committee, 1989–83; SEAOI (Struct. Engrs. Assoc. of Illinois) Awards Committee, 1988–90, & judge on Best Design Award Panel, 1992; ASTM Subcomm. on Fracture Testing of Rock, 1979–82; ASTM Committee C-09 on Concrete, 1981–89, 1994–; Am. Soc. of Composites 2002–; US Nat. Assoc. of Computational Mech., 1993–; SSRC (Struct. Stability Res. Council) Comm. on Nonl. Frame Analysis; Council for High Rise Buildings and Urban Habitat: *Chairman* of Creep Committee, 1992–94. Czech Techn. Univ. Prague, member of Scientific Council, 2006–. ASTM Committee F-17 on Skiing, 1984–. Nat. Acad. of Sci. Committee on Human Rights, 1997–. ASCE-SEI Comm. on Progressive Collapse, 2006–.

PUBLICATIONS

> 550 research papers in refereed journals (since 1958), plus

52 state-of-art review papers, 230 proceedings papers, 2 published course texts, 6 authored books, 20 edited books

1. Bažant: *Creep of Concrete in Structural Analysis* (in Czech). SNTL, Prague 1966 (186 pp.).
2. Bažant and L. Cedolin: *Stability of Structures: Elastic, Inelastic, Fracture and Damage Theories*, Oxford Univ. Press, New York 1991, 2nd ed. Dover Publ., N.Y. 2002; 3rd ed. World Scientific Publ. 2010 (1009 pp.).
3. Bažant and M.F. Kaplan: *Concrete at High Temperatures*, Longman (Addison-Wesley), London 1996 (424 pp.).
4. Bažant and J. Planas: *Fracture and Size Effect in Concrete and Other Quasibrittle Materials*, CRC Press, Boca Raton and London 1998 (638 pp.).
5. M. Jirásek and Bažant: *Inelastic Analysis of Structures*, J. Wiley & Sons, London and New York 2002 (753 pp.).
6. Bažant: *Scaling of Structural Strength.* Hermes Penton Science, London 2002 (293 pp.) (French transl. 2004); 2nd updated ed. Elsevier 2005.

PATENTS: 4 (in 1959: one of the earliest release ski bindings, mass-produced in Czechoslovakia, exhibited in New England Ski Museum, Franconia, NH).

CITATIONS

H-index: 100, citations: 42,000, i10 index: 466 (on Google, Feb. 2015, incl. self-citations) Top cited paper: > 2200 citations. Bazant is one of the original top 100 ISI Highly Cited Scientists in Engineering (www.ISIhighlycited.com).

SOCIETY MEMBERSHIPS

– American Society of Civil Engineers, Hon. Member and Fellow
– American Concrete Institute, Hon. Member and Fellow
– American Society of Mechanical Engineers, Hon. Member and Fellow
– Society of Engrg. Science, Fellow
– American Academy of Mechanics, Fellow
– International Association of Computational Mechanics, Fellow
– RILEM (International Union of Research Laboratories in Materials and Structures, Paris), Fellow
– IA-FraMCoS (Int. Assoc. of Fracture Mech. of Concr. Str.), Fellow, Honorary President and Founder
– American Institute of Aeronautics and Astronautics

Also *Member:* NAS, NAE, Austrian, Italian, Spanish, Czech, Lombard, and European Academies, American Ceramic Society, American Society for Testing Materials, IABSE (International Association for Bridge & Structural Engineering), Society for Experimental Mechanics, Amer. Soc. of Composites, International Association for Structural Mechanics in Reactor Technology, Int. Soc. for Computational Mechanics, International Society of Soil Mechanics & Foundation Engineering, Structural Engineers Association of Illinois, Earthquake Engineering Research Institute, Materials Research Society, U.S. Committee on Large Dams, Structural Stability Research Council, Prestressed Concrete Institute, Intern. Soc. for Computational Engineering Science (founding member), Int. Assoc. for Bridge Maintenance and Safety, IALCEE. (Previously also: National Ski Association, Centennial Tennis Club, Kenilworth Sailing Club, Evanston Running Club, U.S. Olympic Society.)

GRADUATE STUDENT ADVISING

– At Northwestern: advisor of 51 Ph.D.'s, 15 M.S. theses; also advised 11 Ph.D. theses defended at other universities.

LECTURES AND SEMINARS

– 80 plenary, endowed and named (distinguished) conference lectures
– 115 invited and sectional 'keynote' conference lectures
– 423 guest seminars at universities and institutes
– 339 other conference papers presented
– 18 intensive short courses at other universities & abroad

CONFERENCE CHAIRMAN/ORGANIZER

1. NSF Symposium on "Creep and Shrinkage in Concrete", Lausanne, 1980 (co-chairman with F.H. Wittmann).
2. NSF Workshop on "High Strength Concrete", Chicago, 1979 (co-chairman with S.P. Shah).
3. IUTAM Prager Symposium on "Mechanics of Geomaterials: Rocks, Concrete, Soils", Northwestern University, 1983 (chairman).
4. 4th RILEM International Conference on "Creep and Shrinkage of Concrete: Mathematical Modeling (CONCREEP-4)", Northwestern University, 1986 (chairman).
5. AFOSR Workshop on "Constitutive Relations and Modeling of Distribution Cracking, Strain-Softening and Localization", Institute for Mathematics, University of Minnesota, Minneapolis, 1987 (co-chairman with T. Belytschko).
6. France-U.S. Workshop on "Strain Localization and Size Effect Due to Cracking Damage", sponsored by NATO, Paris-Cachan, 1988 (co-chairman).
7. First International Symposium on "Fracture Mechanics of Concrete Structures" (FraMCoS1), Breckenridge, Colorado, 1992 (chairman).
8. CONCREEP-5—5-th RILEM Int. Conf. on Creep & Shrinkage of Concrete, Barcelona, 1993 (co-chairman with I. Carol).
9. Co-chairman (as ASCE-EMD Representative) of Joint ASME-ASCE-SES Mechanics Conference, Charlottesville, VA 1993 (chair: C.T. Herakovitch).
10. Europe–U.S. Workshop on Damage and Fracture in Quasibrittle Structures: Experiment, Modeling and Computer Analysis, sponsored by U.S. National Science Foundation and European Union, Prague, Sept. 1994 (co-chairman).
11. Co-Organizer and SES Representative, McNU'97—Joint ASCE–ASME–SES Mechanics Conference, Northwestern University, 1997.
12. Chairman, ONR Workshop on Fracture Scaling (sponsor: Office of Naval Research), University of Maryland, College Park, 1999.
13. CONCREEP-6 (co-chairman with F.J. Ulm and F.H. Wittmann)—6th Int. Conf. on Concrete Creep and Durability, M.I.T., 2001.
14. NSF Workshop on Model-Based Simulation of Material Durability (co-chairman with Z. Bittnar, G. Pijaudier-Cabot and Y. Xi), Czech Techn. Univ. Prague, 2002.

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49 PhDs, 17 MS graduated. Courses taught: **1**. Stability of Structures **2**. Inelastic Analysis of Structures **3**. Fracture of Concrete **4**. Cohesive Fracture and Scaling **5**. Continuum mechanics **6**. Structural Analysis **7**. Advanced Structural Analysis **8**. Design of Reinforced Concrete **9**. Design of Prestressed Concrete **10**. Concrete Inelasticity **11**. Behavior of Reinforced Concrete **12**. Concrete Shells **13**. Inelastic Structural Stability **14**. Material Modeling Principles **15**. Mechanics (Statics and Dynamics) **16**. Mechanics of Materials I and II **17**. Selected Topics in Materials Science

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