

# Curriculum Vitae

Alberto Bressan

## PRESENT POSITION

Eberly Family Chair Professor of Mathematics, Penn State University,  
Department of Mathematics, Eberly College of Science, University Park, Pa. 16802, USA.  
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## EDUCATION

- Laurea in Matematica, University of Padova, Italy, 1978.  
Thesis: Processi di controllo lineari. Proprietà della funzione tempo minimo.  
Advisor: Roberto Conti
- Ph.D. in Mathematics, University of Colorado, Boulder, 1982.  
Thesis: Two mathematical problems related to the theory of combustion.  
Advisor: Jerrold Bebernes

## APPOINTMENTS

### Long term positions:

Feb. 1979–Jan. 1980	C.N.R. research fellowship	University of Florence
Jan. 1982–	Ricercatore	Università di Padova, Italy
Sept. 1983–July 1984	Research Associate	Mathematics Research Center Madison, Wisconsin
Sept. 1986–	Associate Professor	University of Colorado, Boulder
June 1991–	Professor	S.I.S.S.A., Trieste
Nov. 2003–	Professor	Penn State University

### Short term and visiting positions:

April–May 1980	Visiting Scientist	M.I.T., Boston
Spring 1983	Instructor	S.I.S.S.A., Trieste
Summer 1983	Research Assistant	University of Colorado, Boulder
June 1987–88–89–90	Visiting Professor	S.I.S.S.A., Trieste
Sept. 1997	Visiting Scholar	Mittag-Leoffler Institute, Stockholm
June 1998	Visiting Professor	City University, Hong Kong
Sept. 2000–May 2001	Visiting Scholar	N.T.N.U., Trondheim
Sept.–Oct. 2002	Visiting Professor	Chinese U. and City U., Hong Kong
Aug.–Sept. 2008	Visiting Professor	Center for Advanced Studies, Oslo

Sept.-Oct. 2010	Visiting Professor	University of Padova
March-April 2011	Visiting Professor	Shanghai Jiao Tong University
May-June 2012 to 2015	Visiting Professor	Shanghai Jiao Tong University.

## HONORS

- Plenary speaker at the International Congress of Mathematicians, Beijing, 2002.
- “A. Feltrinelli” prize for Mathematics, Mechanics and Applications, *Accademia Nazionale dei Lincei*, Rome, 2006.
- “Analysis of Partial Differential Equations” prize, *Society for Industrial and Applied Mathematics*, Phoenix, 2007 (with Stefano Bianchini).
- “M. Bôcher” prize, *American Mathematical Society*, San Diego, 2008.
- “L. Amerio” prize, *Accademia di Scienze e Lettere, Istituto Lombardo*. Milan, 2010.
- Elected member of the *Royal Norwegian Society of Sciences and Letters*, Trondheim, 2011.
- Elected member of the *Accademia di Scienze e Lettere, Istituto Lombardo*. Milan, 2011.
- “G. Fichera” prize for mathematical analysis, *Unione Matematica Italiana*, Bologna, 2011.
- Elected Fellow of the *American Mathematical Society*, 2012.
- Meeting on *Nonlinear Hyperbolic PDEs and Applications*, celebrating the 60-th birthday of A. Bressan. S.I.S.S.A., Trieste, Italy, June 13–17, 2016.
- Conference on *Recent trends in Differential Equations*, celebrating the 75-th birthday of A. Cellina and the 60-th birthday of A. Bressan. University of Aveiro, Portugal, June 27–29, 2016.

## MEMBER OF

- Unione Matematica Italiana
- American Mathematical Society
- Society for Industrial and Applied Mathematics

## PH.D. STUDENTS SUPERVISED

Franco Rampazzo,	S.I.S.S.A. 1989
Chang Eon Shin,	U. of Colorado Boulder, 1992
Benedetto Piccoli,	S.I.S.S.A. 1994

Graziano Crasta,	S.I.S.S.A. 1994
Rinaldo Colombo,	S.I.S.S.A. 1995
Debora Amadori,	S.I.S.S.A. 1995
Paolo Baiti,	S.I.S.S.A. 1997
Andrea Marson,	S.I.S.S.A. 1999
Graziano Guerra,	S.I.S.S.A. 2000
Marta Lewicka,	S.I.S.S.A. 2000
Paola Goatin,	S.I.S.S.A. 2000
Stefano Bianchini,	S.I.S.S.A. 2000
Giuseppe Coclite,	S.I.S.S.A. 2003
Massimo Fonte,	S.I.S.S.A. 2005
Fabio Priuli,	S.I.S.S.A. 2006
Yunho Hong,	Penn State, 2007
Carlotta Donadello,	S.I.S.S.A. 2008
Tao Wang,	Penn State, 2011
Giancarlo Facchi,	Penn State, 2013
Ke Han,	Penn State, 2013
Deling Wei,	Penn State, 2013
Dongmei Zhang,	Penn State, 2014
Qingtian Zhang,	Penn State, 2016

#### PRESENT GRADUATE STUDENTS

Yilun Jiang, Hongxu Wei, Qing Sun.

#### MEMBER OF THE EDITORIAL BOARD OF

- Advances in Differential Equations
- Analysis and Applications
- Archive for Rational Mechanics and Analysis
- Communications in Mathematical Sciences
- Control, Optimization and Calculus of Variations (2006–2012)
- Differential and Integral Equations
- Discrete and Continuous Dynamical Systems
- Dynamic Games and Applications
- International Journal of Dynamical Systems and Differential Equations (2007-2014)
- Kinetic and Related Models
- Journal of Dynamics and Differential Equations
- Libertas Mathematica
- Journal of Differential Equations (co-editor in chief since 2011)
- Networks and Heterogeneous Media
- Nonlinear Differential Equations and Applications
- Rendiconti del Seminario Matematico, Università di Padova (1998–2012)
- Set Valued and Variational Analysis
- S.I.A.M. Journal of Mathematical Analysis (2001–2013)

## OTHER EDITORIAL WORK

- Co-editor of the special volume of *J. Differential Equations* in honor of A. Cellina and J. Yorke, 2007.
- Co-editor of the Proceedings of the Conference: “Geometric Control and Nonsmooth Analysis” (June 2006), World Scientific.
- Co-editor of the special volume of *Discr. Cont. Dyn. Syst.* on “Boltzmann Equations and Applications”, 2009.

## SELECTED PLENARY LECTURES

- VI International Conference on Hyperbolic Problems, Hong Kong, June 1996.
- International Conference in memory of S. N. Kruzhkov, Besancon, June 1999.
- XVI Congress of the Unione Matematica Italiana, Naples, September 1999.
- Conference in honor of C. Dafermos, Providence, April 2001.
- Nonlinear Evolutionary P.D.E., Yellow Mountain, China, June 2001.
- Progress in P.D.E., Edinburgh, July 2001.
- IX International Conference on Hyperbolic Problems, Pasadena, March 2002.
- SIAM 50-th Anniversary Meeting, Philadelphia, July 2002 (topical lecture).
- International Congress of Mathematicians, Beijing, August 2002.
- International Conference on Nonlinear P.D.E. - Theory and Applications, Hong Kong, Sept. 2002.
- Nonlinear Evolution Problems, Roma, January 2003.
- Joint Conference of the Austrian Mathematical Society and the Unione Matematica Italiana, Bolzano, Sept. 2003.
- Workshop on non-linear PDE's, Princeton, March 2004.
- International Conference on Mathematics and its Applications, Hong Kong, May 2004.
- Conference on Analysis, Modeling and Computation of PDE and Multiphase Flow, Stony Brook, Aug. 2004.
- Australian Mathematical Society Annual Conference, Melbourne, Sept. 2004.
- S.I.A.M. Meeting on Mathematical Aspects of Nonlinear PDE's, Houston, Dec. 2004.
- AMS-IMS-SIAM Summer Research Conference in the Mathematical Sciences on "Control

- Methods in PDE-Dynamical Systems”, July 2005.
- A.M.S. 1010-th Sectional Meeting, Johnson City, Oct. 2005.
  - Conference on General Relativity and Shock Wave Theory, Stanford, April 2006.
  - Conference on Geometric Control and Nonsmooth Analysis, Rome, June 2006.
  - A.I.M.S. 6-th International Conference on Dynamical Systems, Differential Equations and Applications, Poitiers, June 2006.
  - “Control of Physical Systems and Partial Differential Equations”, Institut Henri Poincaré, Paris, June 2008.
  - “50 Years of Optimal Control”, Banach Center, Bedlewo, Poland, September 2008.
  - Conference on “Nonsmooth Analysis, Control Theory and Differential Equations”, Rome, June 2009.
  - SIAM Meeting, Denver, July 2009 (topical lecture).
  - SING6 meeting on Game Theory, Palermo, July 2010.
  - Abel Symposium, Oslo, September 2010.
  - “Hyperbolic Systems and Control of Networks”, Institut Henri Poincaré, Paris, Oct. 2010.
  - New Perspectives in Nonlinear PDE’s, U. of Michigan, Ann Arbor, May 2011.
  - Conference on Hyperbolic Conservation Laws and Continuum Mechanics, in honor of C. Dafermos, Brown University, May 2011.
  - New Trends in Analysis and Control of Nonlinear PDEs. INDAM, Rome, June 2011.
  - Nonlinear differential equations and control, celebrating Arrigo Cellina’s 70th birthday, Milan, Sept. 2011.
  - International Conference on Nonlinear Evolutionary PDEs, Shanghai Jiao Tong University, June 2012.
  - International Conference on Partial Differential Equations and Variational Methods, Central China Normal University, Wuhan, May 2014.
  - Nonlinear Evolutionary Partial Differential Equations, Shanghai Jiao Tong University, June 2014.
  - Mathematical aspects of game theory and applications, Roscoff, France, July 2014.
  - First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI (Italian and Spanish Mathematical Societies), Bilbao, July 2014.
  - 13-th Viennese Workshop on Optimal Control and Dynamic Games, Vienna University of

Technology, May 2015.

- International Conference on Nonlinear Partial Differential Equations and Their Numerical Analysis, Hangzhou Normal University, May 2015.
- International Conference on Evolutionary Partial Differential Equations, Shanghai Jiao Tong University, June 2015.
- Conference on Shock Waves and Beyond, Institut Henri Poincaré, Paris, June 2015.
- Conference on Mathematical Foundations of Traffic, IPAM, UCLA, Sept. 2015.
- Conference on Nonlinear Partial Differential Equations and Applications, Institut Henri Poincaré, Paris, June 2016.
- Conference on Recent Trends in Differential Equations, U. of Aveiro, Portugal, June 2016.
- Conference on “Non-linear PDEs, mathematical physics, and stochastic analysis”, NTNU, Trondheim, July 2016.

#### SELECTED LECTURES AT ACADEMIC INSTITUTIONS

- Current Developments in Mathematics Conference, Harvard University, 2002.
- DiPerna Lecture, University of California, Berkeley, 2006.
- Riviere-Fabes Symposium on Analysis and PDE, University of Minnesota, 2008.
- University of Iowa, Dept. of Mathematics Distinguished Visitor’s Lecture Series, 2011.
- SISSA colloquium, Trieste 2016.
- K. Aziz Lecture, University of Maryland, College Park, 2016.

#### SHORT (SUMMER) COURSES

- Introduction to hyperbolic conservation laws, Ravello, Italy, Sept. 1998.
- Hyperbolic systems of conservation laws, Anogia, Crete, July 2000.
- Viscosity solutions for systems of conservation laws, Newton Institute, Cambridge, UK, April 2003.
- BV solutions to hyperbolic systems via vanishing viscosity, C.I.M.E. course, Cetraro, Italy, July 2003.
- Viscosity solutions to hyperbolic systems of conservation laws, Wuhan, Oct. 2008
- Introduction to hyperbolic conservation laws in one space dimension, C.I.M.E. course, Cetraro, Italy, June 2009.

- A tutorial on hyperbolic conservation laws, I.M.A., Minneapolis, July 2009.
- Dynamic blocking problems, Irkutsk, July 2010.
- Differential games, Padova, Fall 2010.
- An introduction to control theory and differential games, Shanghai Jiao Tong University, Spring 2011.
- Flows generated by weakly differentiable vector fields, Shanghai Jiao Tong University, Spring 2012.
- Modeling and optimization for traffic flow, Summer school “BIOMAT-2012”, Granada, Spain, July 2012.
- Nonlinear variational wave equations, Shanghai Jiao Tong University, June 2013.
- Mathematical modeling of traffic flow, Shanghai Jiao Tong University, June 2014.
- Traffic flow on networks: modeling, optimization, and Nash equilibria. NetCo 2014 conference “New Trends in Optimal Control”, Tours, France, June 2014.
- Uniqueness and generic singularities for nonlinear wave equations, Shanghai Jiao Tong University, May-June 2015.