

## CURRICULUM VITAE

**Name:** Paola Malanotte Rizzoli

**Place of Birth:** Lonigo (Vicenza), Italy

**Home Address:** 75 Cambridge Parkway, #W502  
Cambridge, MA 02142

**Work Address:** Department of Earth, Atmospheric & Planetary Sciences  
Massachusetts Institute of Technology  
Room 54-1416  
  
Cambridge, MA 02139

## EDUCATION

- 1978 Ph.D., Physical Oceanography, Scripps Institution of Oceanography, University of California, Dissertation: "Solitary Rossby Waves Over Variable Relief and Their Stability Properties"
- 1968 Ph.D., Physics, University of Padua, Italy, "summa cum laude"  
Dissertation: "Quantum-mechanical structure of biologically important molecules. Investigation of the complex molecules of nucleic acids"
- 1963 B.S., Physics and Mathematics, Lyceum "Benedetti," Venice, Italy; with highest honors

## EMPLOYMENT

- 1997 - 2009 MIT Director of the Joint Program in Oceanography and Ocean Engineering between M.I.T. and the Woods Hole Oceanographic Institution (WHOI)
- 1992- Professor of Physical Oceanography, M.I.T., Cambridge, Massachusetts
- 1987-1992 Associate Professor of Physical Oceanography with tenure, M.I.T., Cambridge, Massachusetts
- 1985-1987 Associate Professor of Oceanography, M.I.T., Cambridge, Massachusetts
- 1981-1985 Assistant Professor of Oceanography, M.I.T., Cambridge, Massachusetts
- 1978-1980 Cecil and Ida Green Scholar at the Institute of Geophysics and Planetary Physics, University of California at San Diego (when on leave of absence from Italy)

- 1976-1981 Senior Scientist (tenured) at the “Istituto Dinamica Grande Masse,” CNR, Venice, Italy
- 1972-1976 Research Associate at the “Istituto Studio Dinamica Grande Masse,” CNR, Venice, Italy
- 1971-1972 Post-doctoral Research Associate at the “Istituto Studio Dinamica Grande Masse,” CNR, Venice, Italy
- 1970-1971 Post-doctoral fellowship at the “Istituto Studio Dinamica Grande Masse,” Italian National Research Council (CNR), Venice, Italy
- 1969 Post-doctoral fellowship of the Italian National Council at the University

## **HONORS**

**Member of the Accademia dei Lincei, 2023**

**Enrico Marchi Invited lecture, University of Catania , June 2018**

**Rachel Carson invited lecture, American Geophysical Union, New Orleans Dec. 2017**

**Singapore-MIT SMART Program Chair 2013-2014- Nomination from the Provost**

**Recipient of the Recognition Award from the Prime Minister of the Italian Government for the contribution to the IPCC report winner of the 2007 Nobel Prize for Peace 2007**

**Fellow of the American Geophysical Union, 2006**

**Fellow of the American Meteorological Society, 2002**

**Fellow of the International Union Geodesy & Geophysics, 2004**

Winner of the 1998 Masi Prize of the Italian government for excellence in environmental sciences

Editor’s Award from the American Meteorological Society as best reviewer of the *Journal of Physical Oceanography*, 1992

Cecil and Ida Green Scholar, Institute of Geophysics and Planetary Physics, Scripps Institution of Oceanography, 1978-1980

## **M.I.T. ACTIVITIES**

**Member of the Faculty Policy Committee (FPC), 2010-2013**

**Member of the Committee of Undergraduate Performance (CAP),2011-12**

**Member of the MIT Committee for the search of the Dean of the School of Science, 2006-**

**2007**

**Member of the Faculty Advisory Committee for the search of the MIT President, 2003-2004**

**Associate Chair of the MIT Faculty, 2003 – 2005**

**Chair of the Committee of Undergraduate Performance (CAP), 1997-2000**

**MIT Director of the Joint MIT/WHOI Program, 1997- 2009**

**Member of the Committee on Women Faculty of the School of Science, Dean's Appointment, 1995-2000**

Member of the Committee on the MIT Sea Grant College Program, 1998-2001.

Chair of JCPO 1995-1997.

Member of the Joint Committee for Physical Oceanography, (JCPO), 1985-1997.

Undergraduate Committee of Dept. of Earth, Atmospheric & Planetary Sciences, Chair, 1989-1992

Affirmative Action Committee - Dept. of Earth, Atmospheric & Planetary Sciences

Student Research Fund Committee - Dept. of Earth, Atmospheric & Planetary Sciences, 1983-1986

Member of the Foreign Scholarship Committee, MIT (Presidential appointment) 1984-1988

## **PROFESSIONAL OUTSIDE ACTIVITIES**

- 2017-2018- Director of the Venice Summer School in Environmental Sciences
- 2019-2020- Collaboration between MIT and Italian Universities ( IUAV, Ca' Foscari,
- 2023 Padua University ) May-June
- 2018 Keynote address at the 1<sup>st</sup> Congresso Nazionale sul Clima- ENEA- Rome, July5-6
- 2017-2023 Keynote address at the International Conference THEMES, Ca'Foscari Venice
- 2019-2022 Editor of *AGU Advances*, appointment by the Vice-President of *Science*
- 2008-2017 Principal Investigator of the CENSAM ( Center for Environmental Sensing And Modeling ) Project of SMART ( Singapore-MIT Alliance for Research And Technology ), Singapore
- 2013-2017 Keynote Address at the IAPSO-IAMAS-IAG General Assemblies
- 2011 Keynote Address at the Symposium for the 25<sup>th</sup> anniversary of the POEM

- Programme, November 2011, Accademia dei Lincei, Rome
- 2009-2012 Member of the AGU Committee for the nomination of AGU Fellows
- 2008 - 2009 Member of the Awards Nomination Committee of the American Meteorological Society
- 2006-2009 Member of the Committee on Strategic Advice to the US “Climate Science Program Committee” of the National Research Council - National Academies
- 2006-2007 Chair of the Scientific Program Committee of the XXIV General Assembly of the International Union of Geodesy and Geophysics
- 2005-2008 Member of the Advisory Board (CAB) of the Community Climate System Model (CCSM) of the National Center for Atmospheric Research
- 2005-2007 Member of the Panel on “Climate Variability and Change” of the National Academies
- Sept. 2022 Invited speaker at the 75<sup>th</sup> Anniversary of Woods Hole Oceanographic Institution
- 2005-2008 Affiliate Scientist at the National Center for Atmospheric Research
- 2002-2004 Member of the Advisory Committee for Geosciences (AC/GEO) of the National Science Foundation
- 2000-2004 Editor of the Journal of Geophysical Research-Oceans
- 2000-2001 Chair of the UCAR Member’s Nominating Committee
- 2000 Member of the Nominating Committee for the 2001 positions of the President and Counselors of the American Meteorological Society
- 1999-2003 President of the International Association for the Physical Sciences of the Oceans ( IAPSO)
- 1999-2005 Institutional Trustee of the University Corporation for Atmospheric Research (UCAR)
- 1999-2000 Member of the UCAR Committee for the search for new Director of NCAR ( National Center for Atmospheric Research)
- 1998-2000 Chair of the UCAR Review Team of the Center for Climate Prediction of The National Centers for the Environmental Prediction (NCEP)
- 1998- 1999 Member of the Advisory Panel of the Scientific Computing Division of The National Center for Atmospheric Research (NCAR)
- 1997-1998 Chair of the External Review Committee of the Laboratory for Hydrospheric Sciences, Goddard Space Flight Research Center
- 1997 Member of the Nominating Committee for the 1999 positions of President and Counselors of the American Meteorological Society
- 1996- 2014 Member of the Advisory Panel to the Consorzio Venezia Nuova, Venice, Italy for the construction of the mobile gates in the Venice Lagoon
- 1996-1997 Member of the Panel of Experts nominated by the Department of the Environment, Italian Government, Rome, to advise on the Flood Problem of Venice and the Construction of the Gates to the Venice Lagoon
- 1995-1999 Deputy Secretary General of the International Association for the Physical Sciences of the Ocean (IAPSO)
- 1995-1998 Member of the Advisory Panel for the National Centers for Environmental Prediction (NCEP) of UCAR
- 1993-1998 Member of the Earth Science Council of the Universities Space Research Association (USRA)
- 1989-1998 Member of the Scientific Advisory Committee (SAC) of the Climate Systems Modeling Project (CSMP) of the University Corporation for Atmospheric

- Research (UCAR)
- 1983-2003 Co-chairperson of the International Program P.O.E.M.(Physical Oceanography of the Eastern Mediterranean)sponsored by UNESCO/IOC
- 1992-1994 Member of the Outfall Monitoring Task Force for the Boston Harbor-Commonwealth of Massachusetts
- 1991-1992 Member of the Search Committee for the Director of INO (Institute of Naval Oceanography) and the Navier-Stokes Chair at INO.
- 1991-1992 Member of the Standing Advisory Committee of INO (Institute of Naval Oceanography)
- 1989-1993 Member of the Steering and Advisory Committee for UCAR (University Corporation for Atmospheric Research) post-doctoral program in oceanographic modelling
- 1989-1992 Member of the Advisory Panel for the Marine Center Project on coastal water quality of the Sea Grant Program of MIT
- 1990-1992 President of the Italian Commission for Competition and Assignment of University Chairs in Physics of the Earth - Italy
- 1987-1990 Member of the Advisory Panel for Ocean Sciences Research of the National Science Foundation
- 1987-1990 Member of the American Meteorological Society Committee on Atmospheric and Oceanic Waves and Stability
- 1987-1990 Member of the Steering and Advisory Committee for the UCAR (University Corporation for Atmospheric Research) Visiting Scientific Program in Meteorology
- 1985-1989 Member of the “Working Group on Numerical Modelling” of WOCE
- 1984-1988 President of the Committee of Physical Oceanography, Commission Internationale Exploration Scientifique de la Mer Mediterranee (CIESM), Monte Carlo, Monaco.
- 1980 Scientific Secretary of the 1st International Summer School “E. Fermi” in “Topics in Ocean Physics,” Varenna, Italy, of the Italian Physical Society.
- 1980 Organizer and Scientific Coordinator of the COSPAR/SCOR/IUCRM Symposium “Oceanography from Space,” sponsored by CNR of Italy, in Venice, 26-30 May.
- 1979-1982 Principal Investigator of YINAMG (Yugoslavian-Italian Northern Adriatic Modeling Group) in the International Program of Scientific Cooperation between Italy and Yugoslavia.
- 1977 Scientific Coordinator and Principal Investigator of 1978 Northern Adriatic test-site in the EURASEP program for the calibration of NIMBUS-7 satellite (CZCS sensor).
- 1972-1974 Chief Scientist during oceanographic campaigns in the Adriatic Sea on oceanographic ships of the Italian National Research Council: ADRIATIC I – January-February, 1972, ADRIATIC II - July-August 1973, ADRIATIC III – November 1974

## PROFESSIONAL SOCIETY MEMBERSHIPS

Accademia dei Lincei, Rome  
 American Physical Society  
 American Geophysical Union  
 American Meteorological Society  
 International Union Geodesy Geophysics  
 Oceanography Society  
 European Geophysical Society  
 Commission Internationale Exploration Scientifique Mer Mediterranee  
 (President of the Committee of Physical Oceanography, 1984-1988)

## BOOKS

15. *The Mediterranean Sea: Temporal Variability and Spatial Patterns*, G.L.Eusebi-Borzelli, M.Gacic, P.Lionello and **P.Malanotte-Rizzoli** eds., AGU and J.Wiley & Sons pub. pp.167, 2014
14. *Watersheds, Bays and Bounded Seas : The Science and Management of Semi-Enclosed Marine Systems*, Island Press vol. 70, E.R.Urban, B.Sundby, **P.Malanotte-Rizzoli** and J.M.Melillo eds., pp 288, 2008
13. *Benguela: Predicting a Large Marine Ecosystem*, Elsevier vol. 14, V. Shannon, G. Hempel, **P. Malanotte-Rizzoli**, C. Moloney and J. Woods eds, pp 410, 2006.
12. *Mediterranean Climate Variability*, Elsevier, Development in Earth and Environmental Sciences, P. Lionello, **P. Malanotte-Rizzoli**, and R. Boscolo eds, pp 421, 2006.
11. *Interhemispheric Water Exchange in the Atlantic Ocean*, Elsevier Oceanographic Series, G. Goni and **P. Malanotte-Rizzoli**, eds., Elsevier Oceanographic Series, no. 68, pp. 506, 2003.
10. *Dynamics of Atmospheres and Oceans – Special Issue, Ocean Circulation Model Evaluation Experiments for the North Atlantic Basin*, E,P.Chassignet and **P.Malanotte-Rizzoli** eds, *Dyn. Atmos. Oceans* vol.32, nos-3-4, 2000
9. *Dynamics of Atmospheres and Oceans - Special Issue, A tribute to Prof. Allan R. Robinson*, D.B. Haidvogel, **P. Malanotte-Rizzoli**, and D.J. McGillicuddy, eds., *Dyn. Atmos. Oceans*, vol. 29, nos. 2-4, 1999.
8. *The Eastern Mediterranean as a Laboratory Basin for the Assessment of Contrasting Ecosystems*, **P. Malanotte-Rizzoli** and V.E. Eremeev, eds., Kluwer Academic Publishers, NATO Science Series, vol. 51, 521 pp., 1999.
7. *Modern Approaches to Data Assimilation in Ocean Modeling*, **P. Malanotte-Rizzoli**, ed., Elsevier Publishing Co., Elsevier Oceanography Series, Vol. 61, 455 pp., 1996.

6. *The General Circulation of the Oceans*, **P. Malanotte-Rizzoli**, ed., Istituto Veneto di Scienze, Lettere ed Arti, Venice, Italy, Environmental Dynamics Series, III, 366 pp., 1994.
5. *Ocean Processes in Climate Dynamics: Global and Mediterranean Examples*, **P. Malanotte-Rizzoli** and A.R. Robinson, eds., NATO/Advanced Study Institute, Kluwer Academic Publishers, *Series C: Mathematical and Physical Sciences*, vol. 419, 437 pp., 1994.
4. *Deep Sea Research - Special Issue, Topical Studies in Oceanography, Physical Oceanography of the Eastern Mediterranean (P.O.E.M.)*, A.R. Robinson and **P. Malanotte-Rizzoli**, eds., vol. 40, no. 6, 1993.
3. *The North Atlantic Current System: A Scientific Report*, **P. Malanotte-Rizzoli** and T. Rossby, eds., Proc. WHOI Workshop, 19-20 April, 132 pp., 1993.
2. *Dynamics of Atmospheres and Oceans - Special Issue, The Mediterranean Sea*, **P. Malanotte-Rizzoli** and A.R. Robinson, eds., *Dyn. Atmos. Oceans*, vol. 15, 3-5, 1991.
1. *Topics in Ocean Physics*, A.R. Osborne and **P. Malanotte-Rizzoli**, eds., North-Holland Publishing Co., 550 pp., 1982

#### REFEREE FOR:

*Dynamics of Atmospheres and Oceans*  
*Deep-Sea Research*  
*Journal of Marine Research*  
*Journal of Physical Oceanography*  
*Journal of Geophysical Research*  
*Journal of the Atmospheric Sciences*  
*Tellus*  
*National Science Foundation*  
*National Oceanic Atmospheric Administration*  
*National Aeronautics Space Administration*

#### Courses Taught

Italy:

Physical Oceanography, Istituto Studio Dinamica Grandi Masse, Venice, Italy, and University of Padua, Padua, Italy, 1978, 1979, 1980.  
 Waves in the Ocean, Fall Semester courses at the Istituto di Fisica Teorica, University of Trieste, Trieste, Italy, 1976-1980.

M.I.T.

19.76 Dynamical Oceanography, 1981-1983 (G)  
 19.71 Waves in the Ocean and Atmosphere, 1983-1985 (G)  
 12.24 Topics in the Physics of Atmospheres and Oceans, 1984-1986 (G)  
 12.21 Physics of the Oceans, 1985-1989 (U)  
 12.93 Numerical Methods in Meteorology & Physical Oceanography, 1986-1988 (G)  
 12.790 Introduction to Observational Physical Oceanography, 1987-1989 (G)  
 12.003 Introduction to Meteorology and Physical Oceanography, 1990- (U)  
 12.S11 Freshman Seminar, Physics of the Oceans, 1990-1992 (U)  
 12.801 Steady Circulation of the Oceans, 1991-1993 (G)

- 12.803 Quasi-balanced Circulation in Oceans and Atmospheres, 1995-1998
- 12.802 Waves in the Ocean and Atmosphere, 1997-2001
- 12.S.54 Freshman Seminar, The role of the ocean in Global Change, 1993-to present (U)
- 12.801 Steady Circulation of the Oceans, 2003-2005 (G)
- 12.950 Equatorial Oceanography, 2003 (G)
- 12.802 Waves in the Ocean and Atmosphere, 2006-2008 (G)
- 12.801 General circulation of the oceans, Spring 2014
- 12.800 Fluid Dynamics of the Atmosphere and Oceans, Fall 2014

### **Student Theses Supervised as Principal Advisor**

#### Italy - Ph.D. in Physics with Thesis in Physical Oceanography:

- F. Dell'Orto, 1977
- A. Bergamasco, 1978
- V. Barale, 1978
- M. Zicarelli, 1979

#### MIT Undergraduate Students

- Jarelyn Watanabe, Major in Physics/Oceanography, Spring 1990
- Stephen Jayne, Major in Earth Sciences/Mathematics, Spring 1994
- Elise Olson, UROP, Summer 2004
- Chris Follet, UROP, Spring 2005
- Christie Wood, Major in Mathematics/Oceanography, Spring 2005
- Nicholas Loyd, 2004 - 2005

#### MIT Graduate Students:

- Piero Malguzzi Ph.D. in Meteorology, finished Fall 1984  
*Coherent structures in a baroclinic atmosphere*
- Kevin Speer, MS in Oceanography, finished December 1985  
*The influence of geothermal sources on deep ocean temperature, salinity, and flow fields*
- Paul Hancock, MS in Meteorology, finished May 1986  
*An observational study of blocking with regard to the theory of coherent structures in a baroclinic atmosphere*
- Elizabeth Welsh, MS in Oceanography, finished May 1986  
*The relationship of topographic waves on the continental rise to Gulf Stream fluctuations*
- M. Ross Vennell, Ph.D. in Oceanography, finished July 1989  
*The influence of a steady baroclinic deep ocean on the shelf*



- David Chester, MS in Oceanography, finished May 1988  
*Acoustic tomography in the straits of Florida*
- Xiaoming Wang, Ph.D. in Oceanography, finished August 1992  
*Interaction of an eddy with a continental slope*
- David Chester, Ph.D. in Oceanography, finished January 1993  
*A tomographic view of the Gulf Stream southern recirculation gyre at 38°N, 55 W*
- James R. Gunson, MS in Oceanography, finished April 1993  
*Time-dependent assimilation of CTD data into an open ocean Rossby wave model*
- Antonietta Capotondi, finished February 1993  
*Assimilation of altimeter data in a quasi-geostrophic model of the Gulf Stream System: a dynamical perspective*
- Kirill Pankratov, Ph.D. in Oceanography, finished January 1994  
*Influence of topography on the dynamics of baroclinic oceanic eddies*
- Eric Won, MS in Oceanography, finished June 1994  
*Sensitivity of a general circulation inverse model to sub-grid scale parameterization coefficients*
- James Gunson, Ph.D. in Oceanography, finished July 1995  
*Estimating open-ocean boundary conditions: sensitivity studies*
- François Primeau, Ph.D. in Oceanography, finished June 1998  
*Multiple equilibria and low-frequency variability of wind-driven ocean models*
- Caixia Wang, MS in Oceanography, finished June 1999  
*Diagnosis of physical and biological controls on phytoplankton distribution in the Gulf of Maine-Georges Bank region*
- Mikhail Soloviev, Ph.D. in Oceanography, finished July 1999  
*Assessment of mesoscale eddy parameterizations for coarse resolution ocean models*
- Ashwini Deshpande, MS in Oceanography, finished June 2000  
*Edge analysis of seasonal variability in chlorophyll maps of the Black Sea.*
- Markus Jochum, Ph.D. in Oceanography, finished March 2002.  
*On the pathways of the return flow of the Meridional Overturning Circulation in the tropical Atlantic.*
- Sarah L. Russell, Ph.D. in Oceanography, Finished February 2003  
*Shelf Currents, Ice and Wind: a Numerical Modeling Study.*
- Baylor Fox-Kemper, Ph.D. in Oceanography, Finished June 2003  
*Eddies and Friction: Removal of Vorticity from the Wind-Driven gyre.*
- Jinbo Wang, MS in Oceanography, Finished September 2008  
*On the warm bias along the South-West African coast in coupled models: an oceanic perspective*
- Jinbo Wang, PhD in Oceanography, Finished June 2011  
*Instabilities of an eastern boundary current with and without large-scale flow Influence*

**Member of the Ph.D. Thesis Committees for:**Oceanography

Bruce Cornuelle, finished 1983  
Rui Xin Huang, finished 1984  
Stephen Meacham, finished 1984  
Melinda Hall, finished 1985  
Leslie Rosenfield, finished 1985  
Paola Cessi, finished 1987  
Eli Tziperman, finished 1987  
Sophie Wacogne, finished 1988e  
Kevin Speer, finished 1988  
Jack Barth, finished 1988  
Wendy Smith, finished 1988  
Stephen Rintoul, finished 1988  
Lorenzo Polvani, finished 1988  
Joyce Fredrerik, finished 1988  
Tamara Wood, finished 1988 (MS)  
Richard Signell, finished 1989  
Elise Ralph, finished 1991 (MS)  
Alison Macdonald, finished 1991 (MS)  
Rebecca Schudlich, finished 1991  
Changsheng Shen, finished 1992  
Susan Wijffels, finished 1993  
Cecilia Mauritzen, finished 1993  
Martha O'Neil, finished 1993  
Anand Gnanadesikan, finished 1994  
Elise Ralph, finished 1994  
Edward Dever, finished 1994  
Ari Epstein, finished 1995  
Alison Macdonald, finished 1995  
Bingjian Ni, finished 1996  
James Pringle, finished 1998  
Steven Jayne, finished 1999  
David Sutherland, finished 2007  
Natalia Beliakova, finished 1999  
Sandra Werner, finished 1999  
Michael Chechelnitzsky, finished 1999  
Albert Fisher, finished 2000  
Linda Rasmussen, finished 2003  
Rachel Stanley, finished 2007  
Vikram Khade, finished 2008  
Adel Ahanin, finished 2008  
Jonathan Moskaitis, finished 2009  
Martha Buckley, finished 2011  
Wilken-Jon von Happen, finished 2013  
Ping Zhai, finished June 2014

Meteorology

Richard Deininger, finished 1983  
 V. Krishnamurthy, finished 1985  
 Peter Neilley, finished 1990  
 Robert Black, finished 1990  
 Nilton Renno, finished 1992  
 Michael Morgan, finished 1993

Geophysics

V. Zlotnicky, finished 1983

Ocean Engineering

Richard Pawlowicz, finished August 1993

**Postdoctoral Fellows**

Stephen Meacham, 1984-1985  
 Roberta Young, 1985-1986  
 Dong Shan Ko, 1987-1989  
 Keith Haines, 1988-1990  
 Louise Perkins, 1988-1990  
 Philip Bogden, 1992-1994  
 Lisan Yu, 1993-1996  
 Julia Levin, 1995-1997  
 Shi Jiang, 1994-1998  
 Tomoko Inui, 1998-2001  
 Jingxi Lu, 1999-2000  
 Mark Buehner, 2000-2002  
 Xiaoyun Zang, 2001-2003  
 Markus Jochum, 2002-2004  
 Sang Jin Lyu, 2003-2005  
 Jun Wei, 2006 –2009

**Research Scientists**

Roberta Young, 1986-1998  
 Jun Wei, 2009-2013  
 Danya Xu 2008-  
 Pengfei Xue 2012-  
 Yunfang Sun 2014-

**Visiting Scientists**

Andrea Bergamasco, 1987, 1988, 1990, 1991, 1992, 1993, 1994, 1997  
 Piero Lionello, 1988-1989  
 Salvatore Mazzola, 1993-1994  
 Temel Oguz, 1993-1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002  
 Maurizio Ribera, 1996-1997  
 Ernesto Napolitano, 1996, 1997, 1998, 2000  
 Gianmaria Sannino, 2004, 2005