

Biondo Biondi

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Barney and Estelle Morris Professor



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Internet Links:

- [Stanford Exploration Project](#)
- [Biondo Biondi](#)

Document Links:

- [Curriculum Vitae PDF](#)

Bio	Research & Scholarship	Teaching	Publications
<ul style="list-style-type: none"> ■ Professor, Geophysics <p>My students and I devise new algorithms to improve the imaging of reflection seismic data. Images obtained from seismic data are the main source of information on the structural and stratigraphic complexities in Earth's subsurface. These images are constructed by processing seismic wavefields recorded at the surface of Earth and generated by either active-source experiments (reflection data), or by far-away earthquakes (teleseismic data). The high-resolution and fidelity of 3-D reflection-seismic images enables oil companies to drill with high accuracy for hydrocarbon reservoirs that are buried under two kilometers of water and up to 15 kilometers of sediments and hard rock. To achieve this technological feat, the recorded data must be processed employing advanced mathematical algorithms that harness the power of huge computational resources. To demonstrate the advantages of our new methods, we process 3D field data on our parallel cluster running several hundreds of processors.</p> <h3>Administrative Appointments</h3> <ul style="list-style-type: none"> ■ Co-Director, Stanford Exploration Project, Stanford University (1998 - Present) ■ Organizing Committee, Stanford Mathematical Geophysics (Summer) School, Stanford University (1998 - 2003) ■ Instructor at the Mathematical Geophysics (Summer) School, Stanford University (1998 - 1998) ■ Member of Teaching and Information Technology Geophysics Department Committee, Stanford University (2000 - 2003) ■ Instructor at the Mathematical Geophysics (Summer) School, Stanford University (2002 - 2002) ■ Member of the School of Earth Sciences Academic Program (Graduate) Committee, Stanford University (2004 - 2005) ■ Member of the School of Earth Sciences Computational Initiative Committee, Stanford University (2004 - 2005) ■ Member of the Academic Oversight Committee of the Graduate Program in EEES, Stanford University (2005 - 2009) ■ Member of the Faculty Advisory Panel of the Stanford CEES, Stanford University (2005 - Present) ■ Member, School of Earth Sciences Web Advisory Committee, Stanford University (2006 - 2007) ■ Member, Stanford Senate Committee on Research, Stanford University (2007 - 2008) ■ Member, Earth Sciences Council, Stanford University (2007 - 2010) ■ Member, Stanford Senate Committee on Research (2009 - 2010) ■ Co-Director, Center for Computational Earth and Environmental Sciences, Stanford University (2010 - Present) ■ Co-Director, Stanford Earth Sciences Algorithms and Architectures Initiative, Stanford University (2010 - Present) ■ Member, Ad-hoc Faculty Committee on the Stanford Research Computing Facility, Stanford University (2011 - 2012) 			

- Program Director, Computational Geoscience Degree Program, Stanford University (2011 - Present)

Honors and Awards

- Honorable mention for Best Paper in Geophysics from SEG (co-author), Society of Exploration Geophysicists (2016)
- Honorable mention for Best Paper in Geophysics from SEG (co-author), Society of Exploration Geophysicists (2009)
- Distinguished Instructor Short Course, Society of Exploration Geophysicists and the European Association of Geoscientists and Engineers (2007)
- Louis Cagniard Award for the best poster presentation (co-author), European Association of Geoscientists and Engineers (2005)
- Reginald Fessenden Award, Society of Exploration Geophysicists (2004)
- Outstanding Contribution SEG 65th Annual Meeting, Society of Exploration Geophysicists (1996)

University Service and Professional Activities

- Invited speaker, Executive Exploration Forum, Schlumberger, Montecarlo, Monaco (2012 - 2012)
- Invited speaker, Workshop, Inversion-based High Resolution Imaging of Reservoirs, Meeting of Society of Exploration Geophysicists (2012 - 2012)
- Short Course Instructor, Pemex, Villahermosa, Mexico (2012 - 2012)
- Short Course Instructor, Ion Geophysical, Houston, Texas (2012 - 2012)
- Short Course Instructor, TGS; Houston, Texas (2012 - 2012)
- Short Course Instructor, Pemex, Villahermosa, Mexico (2011 - 2011)
- Short Course Instructor, Saudi Aramco, Dhaharain, Saudi Arabia (2011 - 2011)
- Short Course Instructor, Society of Exploration Geophysicists - Continuing Education, New Orleans, Louisiana (2011 - 2011)
- Short Course Instructor, WesternGeco-Schlumberger - Area Geophysicist University, Houston, Texas (2011 - 2011)
- Convenor, SEG (Summer) Research Workshop: Subsalt Exploration and Development: Four years later, what's new in acquisition, imaging and interpretation? (2010 - 2010)
- Invited speaker, Workshop: Full wave-equation methods for complex imaging challenges, Meeting of Society of Exploration Geophysicists (2009 - 2009)
- Invited speaker, Workshop: Reverse-Time Migration- Problems and Promises, Meeting of Society of Exploration Geophysicists (2009 - 2009)
- Keynote speaker, Research Workshop: SubSalt Imaging - focus on azimuth, European Association of Geoscientists and Engineers (2009 - 2009)
- Invited speaker, Workshop: Computing trends in O&G and Earth Sciences, Meeting of European Association of Geoscientists and Engineers (2008 - 2008)
- Invited speaker, Workshop: Reducing Cycle Time from seismic acquisition to interpretation, Meeting of European Association of Geoscientists and Engineers (2008 - 2008)
- Keynote speaker, Workshop: Interpreting Depth-Imaged Data - Case studies, examples, and pitfalls from the interpreters, Meeting of Society of Exploration Geophysicists (2008 - 2008)
- Member, Editorial Board of the Journal on Imaging Sciences published by the Society for Industrial and Applied Mathematics (2007 - Present)
- Short Course Instructor, Saudi Aramco, Dhaharain, Saudi Arabia (2007 - 2007)
- Short Course Instructor, Saudi Aramco, Dhaharain, Saudi Arabia (2006 - 2006)
- Keynote speaker, Seismic Imaging Symposium, Veritas-DGC, Calgary, Canada (2006 - 2006)
- Chairman, SEG/EAGE (Summer) Research Workshop: Subsalt Exploration & Development: Imaging, interpretation & drilling- What have we learned (2006 - 2006)
- Distinguished Scientist Lecture, BP Technology Center, Houston, Texas (2005 - 2005)
- Invited speaker, Workshop on Computational Geosciences, Colorado School of Mines (2005 - 2005)
- Invited speaker, Department seminar at Rice University (2005 - 2005)
- Short Course Instructor, PDVSA, Puerto La Cruz, Venezuela (2005 - 2005)
- Invited speaker Workshop, Geophysical Imaging, Rensselaer Polytechnic Institute (2005 - 2005)
- Invited speaker Workshop, Estimation of accurate velocity macro-models in complex structures, Meeting of European Association of Geoscientists and Engineers (2004 - 2004)
- Invited speaker, International Conference Scientific Computing In Petroleum Industry, Beijing, China (2004 - 2004)
- Invited speaker, Workshop, Estimation of accurate velocity macro-models in complex structures, Meeting of European Association of Geoscientists and Engineers (2004 - 2004)
- Keynote speaker, Salt Tectonics Symposium at ExxonMobil Exploration Company, Houston, Texas (2004 - 2004)
- Convenor, EAGE-SEG (Summer) Research Workshop: Processing and imaging of seismic data using explicit or implicit velocity model information (2003 - 2003)
- Invited speaker, 12th International Workshop of IUGG's Commission on Controlled-Source Seismology (2003 - 2003)
- Convenor, SEG Workshop Passive Seismic Imaging (2003 - 2003)
- Invited speaker, Geophysical Society of Houston (2002 - 2002)
- Invited speaker, Special session: Depth Imaging, Meeting of Canadian Society of Exploration Geophysicists (2002 - 2002)
- Invited speaker, Interactive session: Wave equation versus ray based methods, Meeting of European Association of Geoscientists and Engineers (2002 - 2002)
- Invited speaker, Geophysical Society of Houston (2001 - 2001)
- Invited speaker, Southeastern Geophysical Society (2001 - 2001)
- Invited speaker, Heiland Lecture at Colorado School of Mines (2001 - 2001)
- Convenor, SEG Workshop Seismic Imaging beyond Kirchhoff (2001 - 2001)
- Convenor, SEG Workshop Changing the way we work: e-business & the Internet (2001 - 2001)

- Invited speaker, International seminar on seismic migration and inversion, Seoul National University, South Korea. (2001 - 2001)
- Invited speaker, Incorporated Research Institutions for Seismology (IRIS) Workshop (2000 - 2000)
- Invited speaker, Workshop: Prestack Depth Imaging: Prospects and Challenges, Meeting of European Association of Geoscientists and Engineers (2000 - 2000)
- Invited Speaker, New Approaches to Seismic Imaging Workshop, 6th International Congress of the Brazilian Geophysical Society (1999 - 1999)
- Short Course Instructor, Daqing, China (1998 - 1998)
- Convenor, EAGE-SEG (Summer) Research Workshop Depth Imaging of Seismic Reservoir Attributes (1998 - 1998)
- Member, Research Committee of the Society of Exploration Geophysicists Research Committee (1996 - Present)

Education

- Ph.D, Stanford University, Geophysics (1990)
- M.S., Stanford University, Geophysics (1987)
- M.Sc., Politecnico di Milano, Electrical Engineering (1984)

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