

## NICHOLAS CHRISTIE-BLICK

### Curriculum Vitae

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Lamont-Doherty Earth Observatory of Columbia University  
P.O. Box 1,000, Palisades, New York 10964-8000  
Tel: (845) 365-8821. FAX: (845) 365-8150.

[ncb@ldeo.columbia.edu](mailto:ncb@ldeo.columbia.edu)

<http://www.ldeo.columbia.edu/~ncb>

Date and place of birth: 3 June, 1953; St Albans, UK. U.S./British citizen.

### DEGREES

**Ph.D.**, University of California, Santa Barbara, 1979 (Geology). Advisor: John C. Crowell.

**B.A.** (Honours), University of Cambridge (King's College), UK, 1974 (Natural Sciences/Geology).  
[M.A. awarded, 1978.]

### PROFESSIONAL CAREER

**Professor**, Department of Earth and Environmental Sciences and Lamont-Doherty Earth Observatory of Columbia University<sup>1</sup>, Palisades, New York 10964-8000.  
[**Assistant Professor**, 1983-1987. **Associate Professor**, 1987-1993. Promotion to tenure, 1989. **Professor**, 1993 to present. **Associate Chair**, 2002-2004. **Chair**, and **Deputy Director**, Lamont-Doherty Earth Observatory, 2004-2006.]

**Senior Research Geologist** (Basin Exploration Division), Exxon Production Research Company<sup>2</sup>, P.O. Box 2189, Houston, Texas 77252-2189, 1981-1983.  
[**Research Geologist**, 1980-1981.]

**Postdoctoral Assistant Research Geologist**, Department of Geological Sciences<sup>3</sup>, University of California, Santa Barbara, California 93106, 1979-1980.  
[**Teaching Assistant** and **Faculty Associate** – instructor in optical mineralogy, physical and historical geology, structural geology (twice) and field geology; co-ordinator of departmental teaching assistants. **Research Assistant** and **Staff Research Associate**. 1974-1979.]

### CURRENT RESEARCH: SEDIMENTARY GEOLOGY AND TECTONICS

Current research in sedimentary geology/sequence stratigraphy and tectonics is aimed at such varied topics as how sedimentation responds to sea-level change, deformation and other phenomena; mechanisms of crustal extension, with particular reference to the low-angle normal fault paradox; and the geology of the Neoproterozoic Era, an interval of time that is unusual for its climatic extremes and as a threshold in the history of life. Much of the work is collaborative, with emphasis on challenging conventional thinking and resolving outstanding disagreements.

I am lead proponent for an International Continental Scientific Drilling Program (ICDP) initiative, Testing the Extensional Detachment Paradigm: A Borehole Observatory in the Sevier Desert Basin.

<http://www.ldeo.columbia.edu/sevier/icdp>

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<sup>1</sup> Formerly Department of Geological Sciences (before 1996) and Lamont-Doherty Geological Observatory (before 1993).

<sup>2</sup> Now ExxonMobil Upstream Research Company (since 2000).

<sup>3</sup> Now Department of Earth Science (since 2005).

Proposals planned for 2009 relate to the acquisition of seismic reflection data in the Sevier Desert basin, Utah; a re-evaluation of crustal extension in the central Basin and Range Province of southern Nevada, based on geochronology and isotope geochemistry; and an assessment of tectonic versus eustatic controls on early Miocene sedimentation in Egypt.

### **Current Research Grant**

**Petroleum Research Fund (American Chemical Society), 46983-AC8**, Mechanisms of crustal extension: a structural and geochronological study in the Death Valley region of eastern California, 2007-2009.

### **PAST RESEARCH GRANTS**

#### **National Science Foundation**

**EAR 03-45642**, Testing the methane hydrate hypothesis for the aftermath of severe Neoproterozoic ice ages, 2004-2007. Collaborative research with M.J. Kennedy (University of California, Riverside).

**OCE 01-19019** (with G.S. Mountain, C.M. Gonzalez-McHugh and S.F. Pekar), New tools applied to a classic problem: Towards an understanding of what shapes the stratigraphic record at passive margins, 2002-2006.

**ATM 00-82402** (with P.E. Olsen and S. Hemming), Orbital forcing of continental Eocene climate: The Green River Formation of Wyoming, 2000-2003.

**EAR 00-87559** (with L.E. Sohl), Integrated analysis of the Neoproterozoic Vindhyan basin, India, 2001-2002. Collaborative research with R.D. Tucker (Washington University, St Louis, Missouri).

**INT 00-89252**, Sequence and chemostratigraphic pilot study of the Neoproterozoic Yangtze platform, south China, 2001-2003.

**ATM 99-07640** (with M.A. Chandler and L.E. Sohl), Exploring the limits of life on Earth: Environmental extremes of the Neoproterozoic "super" glacial and interglacial cycles, 1999-2001.

**EAR 99-02782** (with M.H. Anders), Fault deformation studies of rootless detachments: Implications for assessing regional extension, 1999-2003.

**OCE 99-11121** (with S.F. Pekar), Direct calibration of the stratigraphic response to glacioeustatic change using oxygen isotopic data (Oligocene sequences, onshore New Jersey), 2000-2003.

**EAR 96-14070**, Integrated sequence and chemostratigraphy of the Neoproterozoic Krol platform, Lesser Himalaya, India, 1997-2000.

**EAR 94-18294**, Origin and isotopic signature of Neoproterozoic post-glacial cap carbonates, Australia, 1995-1998. Collaborative research with L.A. Derry (Cornell University) and M.J. Kennedy (UCLA).

**EAR 92-06084**, Neoproterozoic to earliest Cambrian sequence stratigraphy and evolution of the Adelaide "geosyncline", South Australia, 1992-1995.

**EAR 92-05623** (with M.S. Steckler), Controls on sequence geometry and bounding surfaces in ramp settings, 1992-1995. Collaborative research with D. Nummedal (Louisiana State University, Baton Rouge, Louisiana).

**OCE 92-03344**, renewal (with G.S. Mountain), Geometry and timing of upper Oligocene to Miocene depositional sequences on the U.S. middle Atlantic margin, 1992-1995.

**EAR 89-17400** (with G.D. Karner), Mechanisms of lithospheric extension and basin evolution in the Canning basin (Paleozoic), northwestern Australia, 1990-1992.

**OCE 89-11810**, supplement (with K.G. Miller and G.S. Mountain), Geometry and timing of upper Oligocene to Miocene depositional sequences on the U.S. middle Atlantic margin, 1991-1992.

**DPP 89-11810** (with K.G. Miller and G.S. Mountain), Geometry and timing of upper Oligocene to Miocene depositional sequences on the U.S. middle Atlantic margin, 1990-1992.

**OCE 88-12509** (with G.D. Karner), In-plane stress variations during the rift/drift transition at passive margins: formation of the break-up unconformity on the Grand Banks, 1988-1990.

**OCE 86-00249** (with G.S. Mountain and K.G. Miller), Tertiary stratigraphy and bottom water history of the North Atlantic, 1986-1988.

**EAR 85-17923** (with A.P. LeHuray), Timing of rifting and initiation of passive subsidence of the Paleozoic continental margin in southeastern California and adjacent Nevada, 1986-1988.

#### **Petroleum Research Fund (American Chemical Society)**

**25986-AC8**, Late Devonian sequence stratigraphy of the Canning basin, Australia: Implications for eustasy and applications in petroleum exploration, 1992-1994.

**19989-AC2**, Sequence-stratigraphic concepts applied to upper Proterozoic and Cambrian sedimentary rocks in the western U.S., 1988-1990.

**Summer Research Fellowship** for P.K. Link, Idaho State University, Pocatello, Idaho, to participate in an existing project (16042-G2), 1985.

**16042-G2**, Timing of rifting and initiation of passive subsidence of the Paleozoic continental margin in the western United States, 1984-1986.

#### **International Continental Scientific Drilling Program (ICDP)**

Testing the extensional detachment paradigm: Scientific drilling in the Sevier Desert basin (Basin and Range Province, western United States). Funding for a workshop held in Salt Lake City, Delta and Solitude, Utah in July, 2008. Lead principal investigator, with M.H. Anders, G. Dresen (GeoForschungsZentrum Potsdam, Germany), G.S. Lister (Australian National University, Canberra, ACT, Australia), G. Manatschal (Université Louis Pasteur Strasbourg, France), and B.P. Wernicke (California Institute of Technology), 2008.

#### **Ocean Drilling Program (ODP)**

**USSSP 174A-F000684**, Integration of seismic reflection data across the New Jersey continental margin, 1997-2000.

**USSSP 174A-F000695** (with D.S. Goldberg), Integrated interpretation of core and log measurements of ODP Leg 174A: Implications for the sequence stratigraphy of the New Jersey margin, 1997-2000.

**USSSP 174A-F000571**, Participation in Leg 174A of the JOIDES Resolution, 1997-1998.

#### **Industrial Consulting and Research Support**

**Oil and Natural Gas Corporation, India** (consulting), Basin analysis of Ganga basin, India, 2007.

**Compagnie Générale de Géophysique-Veritas** (with Ph.D. student, A.S. Madof), License agreement for use of 3D seismic reflection data from the Gulf of Mexico, 2006-2009.

**Paradigm** (with Ph.D. student, A.S. Madof), License agreement for use of VoxelGeo seismic interpretation software, 2006-2009.

**Oil and Natural Gas Corporation, India** (consulting), Sequence stratigraphic analysis of Vindhyan basin, India, 2006.

**San Juan Basin Industrial Consortium** (with M.S. Steckler), High-resolution seismic stratigraphy of ramp setting sequences, 1994-1995. Collaborative research with D. Nummedal and J. Lorenzo (Louisiana State University, Baton Rouge, Louisiana).

**ARCO Exploration and Production Technology** (with N.W. Driscoll), Extensional tectonics, 1993.

**SANTOS, Ltd.** (seminar/consulting), Sequence stratigraphy of the Timor Sea, Australia, 1991.

**ARCO Oil and Gas Company** (seminar/consulting), Unconformities, tectonics, and sea-level change, 1985.

**ARCO Fellowship**, 1984.

### **AWARDS AND HONORS**

**Distinguished Alumnus Award**, Department of Geological Sciences, University of California, Santa Barbara, 2005.

**2003 Outstanding Paper in the Journal of Sedimentary Research**, Stephen F. Pekar, Nicholas Christie-Blick, Kenneth G. Miller, and Michelle A. Kominz, “Quantitative constraints on the origin of stratigraphic architecture at passive continental margins: Oligocene sedimentation in New Jersey, U.S.A.” *Journal of Sedimentary Research*, v. 73, p. 227-245. Awarded in 2005.

**Teaching Prize**, awarded by graduate students in the Department of Earth and Environmental Sciences of Columbia University, 1996 (second place in 1995).

**Fellow, Geological Society of America**, 1995.

**Award for Presentation. Best of the AAPG for the SEG**, “Structural styles and plate-tectonic settings of divergent (transtensional) wrench faults” by T.P. Harding, R.C. Vierbuchen and N. Christie-Blick, presented at the annual meeting of the American Association of Petroleum Geologists in San Antonio, judged as among the 7 best of the meeting, 1984.

**Academic Awards. Sigma Xi Award**, recognition as an outstanding graduate student in the sciences, 1979; **Regents’ Fellowship**, for academic achievement in graduate studies, 1975 (University of California, Santa Barbara). **Senior Scholarship and Powell Prize**, in recognition of first class honours in Part I of Tripos examinations, 1973; **Open Entrance Exhibition**, 1971 (King's College, University of Cambridge, UK).

### **MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

American Association of Petroleum Geologists, American Geophysical Union, Geological Society of America, International Association of Sedimentologists, SEPM (Society for Sedimentary Geology).

### **INTERNATIONAL PROGRAMS**

#### **International Continental Scientific Drilling Program (ICDP)**

A borehole observatory in the Sevier Desert Basin. A priority, following the 2008 workshop, is to acquire new seismic reflection data in the vicinity of the ARCO Hole-in-Rock well, southern Sevier Desert.

Workshop on Testing the extensional detachment paradigm: Scientific drilling in the Sevier Desert basin (Basin and Range Province, western United States), July, 2008: Lead principal investigator, with M.H. Anders, G. Dresen, G.S. Lister, G. Manatschal, and B.P. Wernicke.

### **Integrated Ocean Drilling Program (IODP)**

**Expedition 313** (G.S. Mountain and J.-N. Proust, co-chief scientists), 2009. Proponent, with G.S. Mountain, K.G. Miller, P.J. Sugarman and C.S. Fulthorpe, of the proposal: Shallow-water drilling of the New Jersey continental shelf: Determining the links between sediment architecture and sea-level change. Selected as a member of the Onshore Science Party in Bremen, Germany (sedimentologist)<sup>4</sup>.

### **Ocean Drilling Program (ODP)**

**Joint Oceanographic Institutions-U.S. Scientific Advisory Committee (JOI-USSAC)** (M.A. Arthur, 1997-1999; P. Delaney, 1999-2001). Member, 1998-2000<sup>5</sup>. Member of USSAC Executive, 1999-2000.

**Leg 174A** (J.A. Austin, Jr. and N. Christie-Blick, co-chief scientists), New Jersey shelf, June-July, 1997. Proponent, with K.G. Miller, G.S. Mountain and J.A. Austin, Jr., of the proposal: New Jersey sea level transect.

**Leg 150** (G.S. Mountain and K.G. Miller, co-chief scientists), June-July, 1993. Proponent, with K.G. Miller and G.S. Mountain, of the proposal: Upper Paleogene to Neogene sequence stratigraphy: The ice house world and the U.S. middle Atlantic margin.

**Sedimentary and Geochemical Processes Panel** (E. Suess, 1989-1991; J. McKenzie, 1991- ). Panel member, 1989-1992. North Atlantic Rifted Margins Detailed Planning Group (H.C. Larsen and D. Sawyer), liaison for Sedimentary and Geochemical Processes Panel, 1991.

**Sea-Level Working Group** (P.D. Crevello). Member, 1990-1992.

### **International Commission on Stratigraphy (ICS)**

(a commission of the International Union of Geological Sciences, IUGS)

**Subcommission on Neoproterozoic Stratigraphy**<sup>6</sup> (J. Gehling). Voting member, 2004-.

**Working Group on Sequence Stratigraphy** (A. Salvador and W. Berggren), International Subcommission on Stratigraphic Classification, 1995-2002.

**Subcommission on the Terminal Proterozoic System**<sup>7</sup> (A.H. Knoll). Voting member, 1988-2004. Proponent of terminal Proterozoic stratotype in the Adelaide fold belt (Flinders Ranges), Australia, field excursion, 1998. Field excursions to northern Namibia, 1999; and the Avalon Peninsula of Newfoundland, 2001 (annual meeting of Geological Association of Canada in St. John's). The Enorama Creek section in the Flinders Ranges, and the Nuccaleena post-glacial cap carbonate level in that section, were endorsed by the IUGS in 2004 as a Global Stratotype Section and Point (GSSP) formally marking the base of a newly defined system and period of pre-Cambrian geological time (Ediacaran, 635 to 542 Ma).

**Subcommission on Precambrian Stratigraphy** (L.J. Robb). Voting member, 1996-2004.

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<sup>4</sup> Drilling was originally scheduled for June-July, 2007, with the Onshore Science Party set to convene in Bremen in January-February, 2008. After the expedition's timing slipped repeatedly, as a result of contractual and other difficulties, the work in Bremen was eventually delayed until November-December, 2009. A conflict with teaching commitments at Columbia University (Frontiers of Science) then made it necessary to withdraw. One of the original co-chief scientists (S.P. Hesselbo) also was replaced.

<sup>5</sup> Resigned after 18 months of a three-year term to protest the dismissal of Dr Kate Moran as Director of the Ocean Drilling Program.

<sup>6</sup> Formerly Ediacaran Subcommission (before 2006).

<sup>7</sup> Formerly a working group of the International Commission on Stratigraphy (before 1997).

### **International Geological Correlation Programme (IGCP)**

**Project 512**, Neoproterozoic Ice Ages (G.A. Shields and E. Arnaud). Participant in meetings in Jammu, India, and Oslo, Norway, 2008.

**Project 320**, Neoproterozoic Events and Resources (N. Christie-Blick, M.A. Fedonkin and M.A. Semikhatov). Proponent and project leader, 1991-1995. Participant in field excursions and workshops to the Yangtze platform, China, 1992; Adelaide fold belt and Amadeus basin, Australia, 1993; Lesser Himalaya, India, and Finnmark, northern Norway, 1994; and southern Namibia, 1995.

**Project 303**, Precambrian-Cambrian Event Stratigraphy (M.D. Brasier). Participant in joint meeting on Event Markers in Earth History, with IGCP Projects 216 and 293 in Calgary, Alberta, Canada, 1991; joint field excursions and workshops with IGCP Project 320 to the Yangtze platform, China, 1992; Lesser Himalaya, India, 1994.

**Project 260**, Glaciations and Global Climatic and Geodynamic Evolution (M. Deynoux). Member of working group, and of subgroup on sedimentation, global geochemical signals and sea-level change related to glaciation, 1987-1991.

**Project 179**, Stratigraphic Methods in Proterozoic Rocks (J. Bertrand-Sarfati). Participant in Scottish field excursion, 1985.

**Project 118**, Correlation of the upper Precambrian (R. Trompette). Assistant leader of field excursion through Utah and California, 1978.

**Project 38**, Pre-Pleistocene Tillite Project (W.B. Harland). Contributor to the synthesis of Earth's pre-Pleistocene glacial record, 1981.

**Global Sedimentary Geology Program** (a commission of the International Union of Geological Sciences), Cretaceous Resources, Events and Rhythms (R.N. Ginsburg). Co-ordinator of Working Group 1, Sequence Stratigraphy and Sea-Level Changes, 1988-1991. Participant in NATO Advanced Research Workshop in Digne, France, 1988; and Second High-Resolution Sequence Stratigraphy Conference in Tremp, Spain, 1994.

**INQUA Commission on Formation and Properties of Glacial Deposits**, Working Group on Marine Glacigenic Processes and Products (T.O. Vorren and R.D. Powell). Corresponding member of working group, 1988.

### **ORGANIZATION OF SYMPOSIA AND FIELD EXCURSIONS**

**American Geophysical Union Special Session**, Tectonics of the Sevier Desert basin and related areas along the eastern front of the Cordilleran orogen (N. Christie-Blick and B.P. Wernicke)<sup>8</sup>. Fall meeting in San Francisco, California, 2007.

**Geological Society of America Topical Session**, New perspectives on the character and origin of Late Cretaceous-Cenozoic sequences on the U.S. Atlantic Margin (K. Miller, N. Christie-Blick and P. Sugarman). Annual meeting in Boston, Massachusetts, 2001.

**Geological Society of America Theme Session**, New perspectives on Neoproterozoic Earth history (N. Christie-Blick). Annual meeting in Salt Lake City, Utah, 1997.

**Geological Society of America Field Excursion**, Neoproterozoic sedimentation and tectonics in west-central Utah (N. Christie-Blick). Annual meeting in Salt Lake City, Utah, 1997.

**Geological Society of America Theme Session**, New discoveries in Neoproterozoic Earth history (N. Christie-Blick and S.A. Bowring). Annual meeting in Cincinnati, Ohio, 1992.

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<sup>8</sup> The proposed session was combined with one on Extensional Tectonics in the Basin and Range Province of North America and the Aegean Region of Eastern Europe and Western Anatolia.

**Field Excursion for JOIDES Sea-Level Working Group**, High-resolution sequence stratigraphy in the Cretaceous foreland basin, Utah (N. Christie-Blick). Meeting at Snowbird, Utah, 1992.

**4<sup>th</sup> International Conference on Paleocyanography, Session**, Sea level and the ice-land-ocean connection (U. von Rad and N. Christie-Blick). Meeting in Kiel, Germany, 1992.

**Geological Society of America Symposium**, Late Proterozoic evolution of western North America: A re-evaluation (G.M. Ross and N. Christie-Blick). Annual meeting in Denver, Colorado, 1988.

**Geological Society of America Field Excursion**, Glacial-marine sedimentation, Mineral Fork Formation (Late Proterozoic), Utah (N. Christie-Blick and P.K. Link). Annual meeting in Denver, Colorado, 1988.

**Research Symposium, Society of Economic Paleontologists and Mineralogists**, Strike-slip deformation, basin formation, and sedimentation (K.T. Biddle and N. Christie-Blick). Annual meeting of American Association of Petroleum Geologists in San Antonio, Texas, 1984.

**Geological Society of America Field Excursion**, Proterozoic geology of the northern Wasatch Mountains, Utah (M.D. Crittenden, Jr., B. Bryant, and N. Christie-Blick). Rocky Mountain Section meeting in Ogden, Utah, 1980.

#### ***OTHER THEMATIC CONFERENCES, WORKSHOPS, SYMPOSIA, EXCURSIONS***

**Multidisciplinary Observatory and Laboratory Experiments in Central Italy (MOLE), Drilling Project Workshop**, sponsored by the International Continental Scientific Drilling Program (ICDP). Invited presentation on a borehole observatory in the Sevier Desert basin. Spoleto, Italy, 2008.

**International Conference, University of Jammu, India**, Geology and Hydrocarbon Potential of the Neoproterozoic-Cambrian Basins in India, Pakistan and the Middle East. Invited keynote presentation on sequence development in Neoproterozoic-Cambrian basins, 2008.

**NSF MARGINS Program**, Mini-workshop on Rifting of the Continental Lithosphere (P. Umhoefer and R. Buck), co-ordinated with the American Geophysical Union Fall meeting in San Francisco, California, 2007.

**Penrose Conference, Geological Society of America**, Extending a Continent: Architecture, Rheological Coupling, and Heat Budget (U. Ring, K. Regenauer-Lieb, B.P. Wernicke and C. Fassoulas). Invited presentation on testing the extensional detachment paradigm. Island of Naxos, Aegean Sea, Greece, 2007.

**Penrose Conference, Geological Society of America**, Chronostratigraphy: Beyond the Global Standard Stratotype and Point (W.A. Berggren, J.A. Van Couvering, W. Piller, J.A. Zalesiewicz and B. McGowran). Invited presentations on the Ediacaran GSSP and on the role of sequence stratigraphy in chronostratigraphy. Schloss Seggau, near Graz, Austria, 2006.

**Rutgers University Conference**, co-sponsored by Drilling, Observation and Sampling of the Earth's Continental Crust (DOSECC) and by Biocomplexity: The Evolution and Radiation of Eucaryotic Phytoplankton Taxa (EREUPT). Relationships among long-term sea level, seafloor spreading, and ocean chemistry changes from late Cretaceous to Present. Piscataway, New Jersey, 2005.

**Symposium on the Neoproterozoic**, Global Changes, Major Geological Events and Palecontinental Reconstructions (Shi Xiaoying and Zhang Shihong). Invited participant, and lead-off presentation on geological events in the Ediacaran Period. China University of Geosciences, Beijing, 2004.

**InterMARGINS Workshop**, Modeling the Extensional Deformation of the Lithosphere. Invited presentation on observations from the Basin and Range Province pertinent to the interpretation of regional detachment faults. Pontresina, Switzerland, 2004.

- 9<sup>th</sup> Ramapo River Watershed Conference.** Invited presentation on an assessment of the historical record of precipitation. Ramapo College, New Jersey, 2004.
- Geological Society of America, Annual Meeting, Pardee Keynote Symposium.** Neoproterozoic Geobiology: Fossils, Clocks, Isotopes, and Rocks. Invited presentation on stratigraphic constraints on the character and frequency of extreme climate change during the Neoproterozoic. Seattle, Washington, 2003.
- NSF MARGINS Program, Education and Planning Workshop on Rupturing of the Continental Lithosphere at the Red Sea/Gulf of Suez, at Ras Sudr and Sharm-el-Sheikh, Egypt, 2001.**
- Hedberg Research Conference, Sequence Stratigraphic and Allostratigraphic Principles and Concepts.** Dallas, Texas, 2001. Two presentations on sequence stratigraphic nomenclature, representing the majority consensus of ICS Working Group on Sequence Stratigraphy, and my own perspective.
- NSF MARGINS Program, Source to Sink Workshop at Lake Tahoe, California, 2000.**
- NSF MARGINS Program, Theoretical and Experimental Institute and Workshop on Rheology and Deformation of the Lithosphere at Continental Margins, at Snowbird, Utah, 2000.**
- Canadian Institute for Advanced Research, Field Excursion, Neoproterozoic Glacial Deposits and Related Cap Carbonate Sequences, Otavi Group, Namibia (P.F. Hoffman, G.P. Halverson and G. Soffer).** Invited participant, Windhoek, Namibia, 1999.
- NSF Margins Program, Source to Sink Workshop.** Presented (in written form): Non-eustatic controls on base-level change: a key issue in margins sedimentation. Lake Quinault, Washington, 1999.
- Geological Society of London, British Sedimentological Research Group.** Invited presentation on new insights from the sequence stratigraphy of the Wonoka canyons (terminal Proterozoic), South Australia. Dublin, Ireland, 1996.
- Applications of Sedimentary Geology and Paleontology into the 21st Century. An International Workshop,** sponsored by SEPM (Society for Sedimentary Geology) and International Association of Sedimentologists (H.E. Clifton and G.M. Ashley). Meeting at Snowbird, Utah. Member of Steering Committee, 1994.
- Workshop on MARGINS Sedimentation and Stratigraphy,** sponsored by JOI as part of the Margins initiative (N.W. Driscoll and R.D. Flood). Presented invited overview on sedimentation and stratigraphy. Lamont-Doherty Earth Observatory, New York, 1993.
- Geological Society of London, Marine Studies Group. The Tectonics, Sedimentation and Palaeoceanography of the North Atlantic Region.** Invited presentation on sequence stratigraphy and sea-level change: Examples from the Atlantic margins of the U.S. and Canada. Edinburgh, UK, 1992.
- Penrose Conference, Geological Society of America, Late Precambrian Tectonics and the Dawn of the Phanerozoic (I.W.D. Dalziel, A.H. Knoll and E.M. Moores).** Death Valley area, California. Invited participant, 1992.
- American Association of Petroleum Geologists Field Conference, Sequence stratigraphy: Applications to shelf sandstone reservoirs, Colorado, Utah and New Mexico (J.C. Van Wagoner, D. Nummedal, and others).** Invited participant, 1991.
- Chapman Conference, American Geophysical Union, Causes and Consequences of Long-Term Sea Level Change (D.L. Sahagian and A.B. Watts).** Snowbird, Utah. Invited participant, 1989.
- JOI/USSAC Workshop, The role of ODP drilling in the investigation of global changes in sea level (J.S. Watkins and G.S. Mountain).** Invited presentation on sea-level records provided by drilling in passive continental margins. El Paso, Texas, 1988.

**Workshop Conference on Long Term Stability of the Earth System**, Pennsylvania State University (E.J. Barron). Presented invited half-day tutorial: Interpreting the sedimentary record of planetary change: glaciation and sea-level as examples, 1987.

**Second Conference on Scientific Ocean Drilling (COSOD II)**, Strasbourg, France. Invited lecture: Seismic-stratigraphic evaluation of sea-level changes along passive continental margins (N. Christie-Blick and G.S. Mountain, presented by G.S. Mountain), 1987.

**Penrose Conference, Geological Society of America**, Glacial Facies Models (N. Eyles, C.H. Eyles, and A.D. Miall). Toronto, Ontario. Invited participant, 1987.

**Australian Geological Convention**, Geological Society of Australia. Invited keynote presentation on application of sequence concepts and the analysis of tectonic subsidence to the interpretation of Proterozoic and early Paleozoic rifts and passive margins. Adelaide, South Australia, 1986.

**NASA Conference on Quasiperiodic Climatic Fluctuations on Earth and Mars**, Moffett Field, California. Presented invited lecture on the glacial history of the Earth, 1981.

### ***OTHER PROFESSIONAL ACTIVITIES***

**Associate Editor, Journal of Sedimentary Research**, 1999-2002.

**Associate Editor, American Association of Petroleum Geologists Bulletin**, 1996-1998.

**Associate Editor, Geology**, 1993-1995.

**Editorial Advisory Board, Basin Research**, 1991-1999.

**Associate Editor, Geological Society of America Bulletin**, 1990-1998.

**Sedimentary Basins and Basin Analysis Panel** (L.R. Russell), one of 21 advisory panels formed by the Committee on Status and Research Objectives in the Solid-Earth Sciences: A Critical Assessment. Panel member, 1988-1989. Final report (Solid-Earth Sciences and Society: National Academy Press, 346 p.), 1993.

### **Reviewer for Professional Journals and Books**

American Association of Petroleum Geologists Bulletin, American Journal of Science, Basin Research, Canadian Journal of Earth Sciences, Earth and Planetary Science Letters, G-Cubed, Geological Magazine, Geological Society of America Bulletin, Geological Society of London special publications, Geological Society of Namibia (Henno Martin volume), Geology, GSA Today, International Association of Sedimentologists (Special Publications), Journal of Geological Society of London, Journal of Geology, Journal of Geophysical Research, Journal of Sedimentary Petrology, Journal of Sedimentary Research, Marine and Petroleum Geology, Marine Geology, Nature, Natural History (American Museum of Natural History), New Zealand Journal of Geology and Geophysics, Palaeogeography Palaeoclimatology Palaeoecology, Precambrian Research, Science, Sedimentary Geology, Sedimentology, Stratigraphy, Terra Nova.

Columbia University Press, W.H. Freeman and Company, McGraw-Hill Book Company, Merrill Publishing Company, W.W. Norton and Company.

### **Reviewer for Research Proposals**

American Chemical Society-Petroleum Research Fund (ACS-PRF), Australian Research Council (ARC), Canon National Parks Science Scholars Program for the Americas (American Association for the Advancement of Science), City University of New York, European Science Foundation, National Environment Research Council, U.K. (NERC), National Oceanic and Atmospheric Administration (NOAA), National Science Foundation (NSF), Natural Sciences and Engineering Research Council of Canada (NSERC), U.S. Department of Energy (DOE).

## Invited Seminars

American Museum of Natural History (New York), ARCO Oil and Gas Company (Dallas), Biosphere 2 Center<sup>9</sup> (Arizona), Brooklyn College, Case Western Reserve University, Geoscience Australia<sup>9</sup> (formerly Bureau of Mineral Resources and Australian Geological Survey Organisation, Canberra, Australia), California Institute of Technology, Columbia University (numerous presentations), Colorado School of Mines (Van Tuyl Series), Cornell University<sup>9</sup>, Esso Resources Canada (Calgary, Alberta), Flinders University of South Australia<sup>9</sup> (Adelaide, Australia), Geological and Nuclear Sciences (Lower Hutt, New Zealand), Geological Society of Australia<sup>9</sup> (Adelaide, Australia), Geological Society of New Zealand (Canterbury branch), Geological Survey of Canada (Calgary, Alberta), *GrandLuxe Express* (National Parks of the West by rail, three lectures), Hamilton College, Harvard University<sup>9</sup>, *JOIDES Resolution* New York City Port Call, Lamont-Doherty Geological/Earth Observatory, Louisiana State University (Wilbert Lecture), Massachusetts Institute of Technology<sup>9</sup>, New York Academy of Sciences, Northern Territory Geological Survey (Alice Springs, Australia), Ohio State University, Oil and Natural Gas Corporation (India)<sup>9</sup>, Oregon State University, Oxford University (UK), Princeton University<sup>9</sup>, Queen's University (Kingston, Ontario), Ramapo College of New Jersey, Rensselaer Polytechnic Institute (Earth sciences joint colloquium series with SUNY, Albany), Rice University, Rockland County Mineral and Gem Society (Nanuet, New York), Rutgers University<sup>9</sup> (New Brunswick), SANTOS (Adelaide, Australia), Scripps Institution of Oceanography (La Jolla, California), Sigma Xi (Santa Barbara, California), State University of New York (Albany and Stony Brook<sup>9</sup>), University of Adelaide<sup>9</sup> (Australia), University of Arizona, University of Birmingham (UK), University of Cairo (Egypt), University of California (Berkeley, Los Angeles, and Santa Barbara<sup>9</sup>), University of Canterbury (Christchurch, New Zealand), University of Chicago, University of Edinburgh (UK), University of Illinois (Chicago), University of Maryland (College Park), University of Miami, University of Missouri (Columbia), University of Otago (Dunedin, New Zealand), University of Rhode Island, University of Texas (Austin), University of Washington, University of Western Ontario (London), University of Wisconsin (Milwaukee), Victoria University of Wellington (New Zealand), Williams College (Class of 1960 Scholars Lecture), Yale University<sup>9</sup>.

## Sabbatical Leaves

2011-12, provisionally at University of Cape Town (South Africa).  
2006-07, University of Canterbury (Christchurch, New Zealand).  
1996-97, Oxford University (UK).  
1990-91, Flinders University of South Australia (Adelaide, Australia).

## COURSES TAUGHT

### Columbia University

<sup>10</sup>Frontiers of Science (4 pts), 2008, planned for Fall, 2009 and 2010  
Geological Excursion to Death Valley, California (2 pts), 2002-2006, 2008, 2009  
Sedimentary Geology (4 pts), 1997-2007 (odd years), planned for Spring, 2010  
Sedimentary Environments and Facies (3 pts), 1985<sup>11</sup>, 1987<sup>11</sup>, 1990, 1994, 1999, 2002  
Sedimentary Basins (3 pts), 1985, 1988, 1992, 1994, 1998, 2000  
Introduction to Sedimentary Geology (4 pts), 1984-1986<sup>11</sup>, 1991, 1993, 1995

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<sup>9</sup> Seminars presented at these institutions or organizations on two or more occasions.

<sup>10</sup> Frontiers of Science integrates modern science into Columbia's famed Core Curriculum, and since its first full year in 2004-05 has been a requirement for every Columbia College undergraduate.

<sup>11</sup> These courses were team-taught with J.E. Sanders during the years indicated.

Introduction to Earth Sciences II (with J.D. Hays; 3-4 pts), 1988, 1989 (twice), 1991  
Principles of Stratigraphy (3 pts), 1983

**Seminars:**

Structural Geology: Basin and Range Extensional Tectonics (2 pts), 2004  
Stratigraphy: Geological Interpretation of Seismic Reflection Data (2 pts), 2000  
Stratigraphy: Trends and Events in Terminal Proterozoic Earth History (2 pts), 1996  
Stratigraphy: Seismic and Sequence Stratigraphy (2 pts), 1993  
Stratigraphy: Interpretation of Seismic Reflection Profiles (2 pts), 1988  
Sedimentology: Sheet Sandstones (1 pt), 1986  
Structural Geology: Regional Tectonics of Western North America  
(with J. Helwig; 2 pts), 1984

**Field Seminars:**

Basin and Range Extensional Tectonics (1 pt, 12 days), 2005  
Cretaceous Sevier Orogen-Foreland Transect of Central Utah (2 pts, 12 days), 2001  
Foreland Sedimentation and Tectonics in the Canadian Rocky Mountains  
(2 pts, 12 days), 1998  
Tectonics and Sedimentation in Eastern California and Adjacent Nevada  
(2 pts, 12 days), 1995  
Sedimentation and Tectonics in the Cretaceous Foreland Basin and Adjacent Orogen,  
Utah, Wyoming and Idaho (2 pts, 12 days), 1992  
Modern Carbonate Environments of Southern Florida (1 pt, 3 days), 1989  
Tectonics and Sedimentation in Southern California (2 pts, 12 days), 1988  
Tectonic and Stratigraphic Evolution of Southern Appalachians (1 pt, 7 days), 1984

**Biosphere 2 Center:**

Guest lectures, 1999, 2000.

**Short Course**

Short course in sequence stratigraphy, Universidad del País Vasco, Bilbao, Spain, 1992

**Guest Classes at Other Universities**

University of Missouri, Columbia, Missouri, 1995  
Oxford University, Oxford, UK, 1996  
Williams College, Massachusetts, 2003  
University of Canterbury, Christchurch, New Zealand, 2007

**Exxon Production Research Company**

Fundamentals of structural analysis, 1981-1983  
Basin tectonics (field school) – segments on strike-slip and extensional tectonics, 1982-1983

## **POSTDOCTORAL RESEARCH SCIENTISTS**

**Stephen F. Pekar.** Postdoctoral Research Scientist, 2000-2003. Calibration of the stratigraphic response to glacioeustatic change using oxygen isotopic data (Oligocene, New Jersey). Present position: Assistant Professor (with tenure), Queens College, City University of New York.

**Linda E. Sohl.** Postdoctoral Research Scientist, 2000-2001. Exploring the limits of life on Earth: Environmental extremes of the Neoproterozoic “super” glacial and interglacial cycles. Present position: Associate Research Scientist, Center for Climate Systems Research, Goddard Institute for Space Studies, New York.

**Martin J. Kennedy.** Postdoctoral Research Associate, collaborative with L.A. Derry at Cornell University, 1994-1996. Research in stable isotope geochemistry of carbonate glacial cycles and radiogenic tracers in terrestrial ecosystems. Present position: Professor, University of California, Riverside.

**Sanjeev Gupta.** Postdoctoral Research Scientist, 1994-1995. Controls on sequence geometry and bounding surfaces in ramp settings. Present position: Reader in Sedimentology, Imperial College, London, UK.

**John P. Grotzinger.** Postdoctoral Fellow, 1985-1986. Tectonics and sedimentation of the 1.9 Ga Kilohigok foreland basin, northwest Canadian shield. Member, National Academy of Sciences (since 2002). Present position: Fletcher Jones Professor of Geology, California Institute of Technology, Pasadena.

## **RESEARCH OF GRADUATE STUDENTS**

### **Current Students**

**Byrdie Renik.** Dissertation topic: An evaluation of competing models for extension across the Death Valley region, California-Nevada. NSF Graduate Research Fellow. Ph.D. expected, 2009. Position following graduation: ExxonMobil Exploration Company, Houston, Texas.

**Katherine C. Leonard.** Dissertation topic: Antarctic snow drift processes (Research Advisor, B. Tremblay, McGill University). Ph.D. expected, 2009.

**Andrew S. Madof.** Dissertation topic: Non-eustatic controls on sedimentation in the late Cretaceous foreland of western Colorado and in salt-withdrawal intraslope minibasins, offshore Louisiana. Ph.D. expected, 2009. Position following graduation: Chevron, Houston, Texas.

**Rafael Almeida.** Dissertation topic: Patterns of crustal extension in southern Nevada. Ph.D. expected, 2011.

**Margaret Reitz.** Dissertation topic: Structural and neotectonic evolution of Calabria, southern Italy (Research Advisor, M.S. Steckler). Ph.D. expected, 2012.

### **Ph.D.s Completed**

**Ganqing Jiang (Ph.D., 2002).** Dissertation topic: Neoproterozoic sequence and chemostratigraphy. Present position: Assistant Professor, University of Nevada, Las Vegas.

**Linda E. Sohl (Ph.D., 2000).** Dissertation topic: Paleoclimatology of the Neoproterozoic interglacial to Marinoan glacial succession (~650-575 Ma), central Flinders Ranges, South Australia. Heezen Prize. Present position: Associate Research Scientist, Center for Climate Systems Research, Goddard Institute for Space Studies, New York.

**André A. Bender (Ph.D., 2000).** Dissertation topic: Mechanisms of intracratonic and rift basin formation: Insights from Canning basin, northwest Australia (Co-advisor, G.D. Karner; defended in 1998). Present position: Petrobras Research Center (CENPES), Rio de Janeiro, Brazil.

**Ann E. Holmes (Ph.D., 1996).** Dissertation topic: Paleozoic depositional and structural history of the Canning basin, Western Australia, and constraints on eustatic change. Present position: Assistant Professor (with tenure), University of Tennessee, Chattanooga.

**Neal W. Driscoll (Ph.D., 1992).** Dissertation topic: Tectonic and depositional processes inferred from stratal relationships (Co-advisor, J.K. Weissen). Heezen Prize. Present position: Professor, Scripps Institution of Oceanography, La Jolla, California.

**Marjorie E. Levy (Ph.D., 1991).** Dissertation topic: Late Proterozoic and Early Cambrian sedimentation, sequence stratigraphy, and tectonic evolution of the eastern Great Basin. (P.E. Olsen assumed role of advisor for 1990-91 academic year.) Present position: Chevron Energy Technology Company, San Ramon, California.

**Kenneth W. Hudnut (Ph.D., 1989).** Dissertation topic: Active tectonics of the Salton Trough, southern California. Present position: U.S. Geological Survey, Pasadena, California.

#### Past M.Phil. Students

**David F. Scheuing (M.Phil., 1990).** Research topic: The effect of structure on paleomagnetic data collected in complexly deformed terranes: A case study from the San Jacinto fault zone, southern California. Present position: environmental consulting industry.

**David S. McCormick (M.Phil., 1989).** Research topic: Sedimentology and stratigraphy of the Early Proterozoic Burnside Formation, Kilohigok basin, northwestern Canada (Co-Advisor, J.P. Grotzinger). NSF Graduate Research Fellow. Ph.D., 1992, Massachusetts Institute of Technology (Advisor, J.P. Grotzinger). Present position: Schlumberger-Doll Research, Cambridge, Massachusetts.

#### Past M.A. Students

**Attreyee Ghosh (M.A., 2003).** Research topic: Neogene and Pleistocene sequence development at the New Jersey continental margin. Ph.D., 2008, State University of New York, Stony Brook (Advisor, W.E. Holt). Present position: Postdoctoral Research Associate, University of Southern California.

**Melissa J. Saurborn (M.A., 2000).** Research topic: Unconformity development in tectonically active settings (Co-advisor, G.D. Karner). Present position: ExxonMobil Development Company.

#### Current Ph.D. Advisory Committees

**Andres Giallombardo.** (Advisor, J. Flynn). Ph.D. expected, 2009.

**Sterling J. Nesbitt.** (Advisor, P.E. Olsen). NSF Graduate Research Fellow. Ph.D. expected, 2009.

**Michelle Spaulding.** (Advisor, J. Flynn). NSF Graduate Research Fellow. Ph.D. expected, 2010.

#### Past Ph.D. Advisory and Defense Committees

Reader and/or chair of defense committee for 42 other Ph.D. dissertations, 1985-2009.

**Christopher D. Walker (Ph.D., 2008).** Dissertation topic: A gravity slide origin for the Mormon Peak detachment: Re-examining the evidence for extreme extension in the Mormon Mountains, southeastern Nevada, U.S.A. (Advisor, M.H. Anders). Present position: BP, Houston, Texas.

**Daniel T. Ksepka (Ph.D., 2007).** Dissertation topic: Phylogeny, histology and functional morphology of fossil penguins (Sphenisciformes) (Advisor, M. Norell). Present position: North Carolina State University.

**Jun Liu (Ph.D., 2007).** Dissertation topic: New material from North Carolina and phylogeny, taxonomy of *Traversodontidae* (*Synapsida: Cynodontia*) (Advisor, P.E. Olsen). Present position: Beijing, People's Republic of China.

**Jessica H. Whiteside (Ph.D., 2006).** Dissertation topic: Catastrophic, climatic, and biotic modulation of ecosystem evolution (Advisor, P.E. Olsen). Goldwater Scholar. NSF Graduate Research Fellow. Present position: Assistant Professor, Brown University.

**Susan R. Zimmerman (Ph.D., 2006).** Dissertation topic: Chronology and paleoclimate records of the late Pleistocene Wilson Creek Formation, Mono Lake, California (Advisor: S.R. Hemming). NSF Graduate Research Fellow. Present position: Center for Accelerator Mass Spectrometry, Lawrence Livermore National Laboratory.

**Michael Tischer (Ph.D., 2006).** Dissertation topic: The structure and development of the ocean-continent boundary of the Exmouth Plateau and Cuvier margin, northwest Australia: Implications for extensional strain partitioning (Advisor: G.D. Karner). Present position: ExxonMobil Production Company, Houston, Texas.

**Zvi Karcz (Ph.D., 2005).** Dissertation topic: An observational and experimental study of pressure solution (Advisor, C.H. Scholz). Present position: ExxonMobil Research and Engineering Company, New Jersey.

**Matthew C. Mihlbachler (Ph.D., 2005).** Dissertation topic: Phylogenetic systematics of the Brontotheriidae (Mammalia, Perissodactyla) (Advisor: Jin Meng). Present position: Assistant Professor of Anatomy, New York College of Osteopathic Medicine, New York.

**Emma C. Rainforth (Ph.D., 2005).** Dissertation topic: Ichnotaxonomy of the fossil footprints of the Connecticut Valley (early Jurassic, Newark Supergroup, Connecticut and Massachusetts) (Advisor: P.E. Olsen). Present position: Assistant Professor, Ramapo College, New Jersey.

**Malka L. Machlus (Ph.D., 2004).** Dissertation topic: Orbital forcing of continental Eocene climate: Detailed stratigraphy and  $^{40}\text{Ar}/^{39}\text{Ar}$  dating of the Green River Formation in Wyoming (Advisor: P.E. Olsen). Present position: Schlumberger-Doll Research, Cambridge, Massachusetts.

**Diego Pol (Ph.D., 2004).** Dissertation topic: Phylogenetic relationships of basal Sauropodomorph dinosaurs (Advisor, M. Norell). Present position: Department of Biomedical Informatics, Ohio State University.

**MaryAnn L. Malinconico (Ph.D., 2002).** Dissertation topic: Lacustrine organic sedimentation, organic metamorphism, and thermal history of selected early Mesozoic rift basins, eastern U.S.A. (Advisor, P.E. Olsen). Present position: U.S. Geological Survey, Reston, Virginia; Research Associate, Lafayette College.

**Candace O. Major (Ph.D., 2002).** Dissertation topic: Non-eustatic controls on sea level in semi-enclosed basins (Advisor, W.B.F. Ryan). Present position: Woods Hole Oceanographic Institution, Massachusetts.

**Stewart Wills (Ph.D., 2000).** Dissertation topic: Evaluating models of detachment faulting (Advisor, M.H. Anders). NSF Graduate Research Fellow. Present position: Online Editor, *Science*, Washington, D.C.

**Jia Fang (Ph.D., 2000).** Dissertation topic: Styles and distribution of continental extension derived from the rift basins of eastern Papua New Guinea (Advisor, J.C. Mutter). Present position: Teacher (physics), Union County Vocational Technical School, New Jersey.

**Peter M. LeTourneau (Ph.D., 1999).** Dissertation topic: Tectonic co-evolution of the Late Triassic Taylorsville and Richmond rift basins: Results of an integrated stratigraphic, structural and paleomagnetic analysis (Advisor, P.E. Olsen). Present position: President, Mark GeoEnvironmental Sciences, New York.

**Marc A. Carrasco (Ph.D., 1998).** Dissertation topic: Morphological variation in the dentition of kangaroo rats (genus *Dipodomys*) and its use in distinguishing species in the fossil record (Advisor, M.C. McKenna). Present position: Research Associate, Department of Integrative Biology, University of California, Berkeley.

**Jan M. Vermilye (Ph.D., 1996).** Dissertation topic: The growth of natural fracture systems: A fracture mechanics approach (Advisor, C.H. Scholz). Present position: Seismo Tectonic Reservoir Monitoring, Lyons, Colorado.

**John P. McGinnis (Ph.D., 1995).** Dissertation topic: Stratigraphic discontinuities and their implication for continental margin evolution (Advisors, G.D. Karner and D.E. Hayes). Present position: Senior Vice President, Exploration and Development, Seneca Resources Corporation, Houston, Texas.

**Victor J. DiVenere (Ph.D., 1994).** Dissertation topic: Paleomagnetic results from Marie Byrd Land, West Antarctica: Tectonic implications for West Antarctica and the Atlantic-Pacific circuit (Advisor, D.V. Kent). Present position: Associate Professor, Long Island University-C.W. Post campus, New York.

**John R. Hopper (Ph.D., 1994).** Dissertation topic: Studies of the evolution of continental rifts (Advisor, W.R. Buck). Present position: Assistant Professor, Texas A&M University, College Station.

**Ulisses T. Mello (Ph.D., 1994).** Dissertation topic: Thermal and mechanical history of sediments in extensional basins (Advisors, G.D. Karner and R.N. Anderson). Present position: IBM, New York.

**Carlos Pirmez (Ph.D., 1994).** Dissertation topic: Growth of a submarine meandering channel-levee system on Amazon fan (Advisor, W.B.F. Ryan). Present position: Shell International Exploration and Production, Inc., Houston, Texas.

**Weibin Wang (Ph.D., 1994).** Dissertation topic: Experimental and theoretical studies of rock friction and wear (Advisor, C.H. Scholz). Deceased, September 11, 2001.

**Sarah J. Fowell (Ph.D., 1993).** Dissertation topic: Palynology of Triassic/Jurassic boundary sections from the Newark Supergroup of eastern North America: Implications for catastrophic extinction scenarios (Advisor, P.E. Olsen). Present position: Associate Professor, University of Alaska, Fairbanks.

**David J. Reynolds (Ph.D., 1993).** Dissertation topic: Sedimentary basin evolution: tectonic and climatic interaction (Advisors, M.S. Steckler and P.E. Olsen). Present position: ExxonMobil Exploration Company, Houston, Texas.

**Cecilia M.G. McHugh (Ph.D., 1993).** Dissertation topic: Submarine canyon and deep-sea fan systems of passive and active continental margins (Advisor, W.B.F. Ryan). Present position: Professor, Queens College, City University of New York.

**Mark A. Chandler (Ph.D., 1991).** Dissertation topic: The Early Jurassic climate: General Circulation Model simulations and the paleoclimate record (Advisor, D.H. Rind). Present position: Associate Research Scientist, Goddard Institute for Space Studies (NASA), New York.

**Jin Meng (Ph.D., 1991).** Dissertation topic: Craniodental morphologies and systematics of *Didymoconidae* (Insectivora, Mammalia) (Advisor, M.C. McKenna). Present position: Curator, American Museum of Natural History, New York.

**Karen Schmitt (Ph.D., 1991).** Dissertation topic: Sandstone intrusions of the Andean fold-thrust belt (51-54°S): Implications for the paleohydrogeologic evolution of the southernmost Andes (Advisor, I.W.D. Dalziel). NSF Graduate Research Fellow. Present position: Dean of Career Education, University of Alaska Southeast, Juneau.

**Roy W. Schlische (Ph.D., 1990).** Dissertation topic: Aspects of the structural and stratigraphic development of early Mesozoic rift basins of eastern North America (Advisor, P.E. Olsen). Present position: Professor, Rutgers University, New Jersey.

**Angela M. Barone (Ph.D., 1989).** Dissertation topic: Morphotectonic evolution of subsea volcanoes near the boundary of separating plates: examples from rifting and spreading stages (Advisor, W.B.F. Ryan). Present position: unknown (residing in Italy).

**Patrick L. Williams (Ph.D., 1989).** Dissertation topic: Aspects of earthquake geology and seismotectonics of the southern San Andreas and related faults, southern California (Advisor, L.R. Sykes). Present position: Lawrence Berkeley Laboratory, California.

**John D. Miller (Ph.D., 1988).** Dissertation topic: Paleomagnetism applied to tectonic problems in the Appalachians of North America (Advisor, D.V. Kent). Present position: Amoco, Houston, Texas.

**Kenneth S. Coles (Ph.D., 1988).** Dissertation topic: Stratigraphy and structure of the Pinecone sequence, Roberts Mountains allochthon, Nevada, and aspects of mid-Paleozoic sedimentation and tectonics in the Cordilleran geosyncline (Advisor, R. Schweickert). Present position: Assistant Professor of Education (with tenure), Indiana University of Pennsylvania, Indiana, Pennsylvania.

**Audrey A. Massa (Ph.D., 1988).** Dissertation topic: The origin of sandy shore-parallel ridges and the formation of modern spits: examples from the western end of Fire Island, New York (Advisor, J.E. Sanders). Present position: Department of Homeland Security, New Jersey.

**Suzanne B. O'Connell (Ph.D., 1986).** Dissertation topic: Anatomy of modern submarine depositional and distributary systems (Advisor, W.B.F. Ryan). Present position: Associate Professor, Wesleyan University, Connecticut.

**Michelle A. Kominz (Ph.D., 1986).** Dissertation topic: Geophysical modeling studies (Advisor, W.C. Pitman, III). Present position: Professor, Western Michigan University.

**William J. Devlin (Ph.D., 1986).** Dissertation topic: Geologic and isotopic studies related to latest Proterozoic–early Cambrian rifting and initiation of a passive continental margin, southern British Columbia, Canada, and north-eastern Washington, U.S.A. (Advisor, G.C. Bond). Present position: ExxonMobil Production Company, Houston, Texas.

**Craig Nicholson (Ph.D., 1985).** Dissertation topic: Crustal structure and fault kinematics from the analysis of microearthquake data (Advisor, L.R. Sykes). Present position: Institute for Crustal Studies, University of California, Santa Barbara.

**Julian Thorne (Ph.D., 1985).** Dissertation topic: Studies in stratology: the physics of stratigraphy (Advisor, A.B. Watts). Present position: Chevron Energy Technology Company, San Ramon, California.

**John A. Farre (Ph.D., 1985).** Dissertation topic: The importance of mass wasting processes on the continental slope (Advisor, W.B.F. Ryan). Present position: ExxonMobil Production Company, Houston, Texas.

#### **Past Masters Advisory Committees**

**Naomi Lubick (M.A., 2000).** Research topic: Post-glacial knickpoint retreat on streams in the Finger Lakes region of New York (Advisor, K.A. Kastens; Earth and Environmental Science Journalism Program). Present position: Associate Editor, *Environmental Science and Technology*, Washington, D.C.

Member of advisory committees for miscellaneous other students.

#### **External Advisor**

**Safiya Mohamed Ali (Ph.D., in progress).** Dissertation topic: Sequence stratigraphy and sedimentology of the lower Miocene Moghra Formation in the Qattara depression, northwestern Egypt (Advisors, A.N. El-Barkooky, University of Cairo, Egypt, and G. I. A. El-Gawad, Beni-Suef University, Egypt).

## **External Examiner**

**Paul R. Gammon (Ph.D., 1997).** Dissertation topic: Sequence stratigraphy of the Mangaopari basin, southeastern North Island, New Zealand (Advisor, R.M. Carter, James Cook University, Townsville, Queensland, Australia). Present position: Geological Survey of Canada.

**David T. Miller (Ph.D., 1994).** Dissertation topic: A Delamerian fold-thrust belt: The Stuart shelf to the Murray basin province; geological, geophysical and structural evidence (Advisor, A.E. Grady, Flinders University, Adelaide, South Australia). Present position: unknown.

**David S. McCormick (Ph.D., 1992).** Dissertation topic: Evolution of an Early Proterozoic alluvially-dominated foreland basin, Burnside Formation, Kilohigok Basin, N.W.T., Canada (Advisor, J.P. Grotzinger, Massachusetts Institute of Technology). Present position: Schlumberger-Doll Research, Cambridge, Massachusetts.

**Pietro A. DiBona (Ph.D., 1989).** Dissertation topic: Geologic history and sequence stratigraphy of the Late Proterozoic Wonoka Formation, northern Flinders Ranges, South Australia (Advisor, C.C. von der Borch, Flinders University, Adelaide, South Australia). Present position: petroleum industry, Houston, Texas.

## **UNDERGRADUATE MENTORING**

**Peri Sasnett (sophomore project, 2009).** Project topic: Did climate-induced changes of Holocene groundwater levels in Death Valley trigger hydrovolcanic eruptions? Co-mentors: B. Goehring and J. Schaefer.

**Ilana Somasunderam (B.A., 2009; summer intern, 2008).** Senior thesis topic: Early Miocene sedimentation, paleoecology and strontium isotope geochronology. Co-mentors: S.F. Pekar (Queens College, City University of New York) and S.L. Goldstein. Position following graduation: Teach for America, San Francisco, California.

**Samuel Schon (B.A., 2006).** Senior thesis topic: Re-evaluation of extensional fault geometry and kinematics at Azure Ridge in the South Virgin Mountains, Nevada. Present position: Ph.D. program, Brown University (Advisor, J. Head).

**Yekaterina Gluzberg (Rabi Scholar, 2003).** Project topic: Rainfall patterns, growth and "drought" in the suburbs of New York City. Co-mentors: B. Lyon (EI-IRI, meteorology) and U. Lall (SEAS-DEEE, hydrology). Present position: Outreach Coordinator, City of New York Parks and Recreation.

**Jessyca Keeler (formerly Harris, summer intern, 1994, St Lawrence University, Canton, New York).** Project topic: Late Cenozoic seismic stratigraphy of the U.S. mid-Atlantic continental margin. Present position: Owner, Align Partnerships, Portland, Maine.

**Rebecca Hayden (A.B., cum laude, 1987, Barnard College).** Senior thesis topic: Neoproterozoic stratigraphy in the northern Sheeprock Mountains, Utah. Present position: unknown.

**Co-Director of Undergraduate Studies,** Department of Earth and Environmental Sciences, Columbia University, 2007-present.

**Chair, Rabi Scholars Program (Columbia University),** 2002-present. The purpose of the program is to foster undergraduate science in Columbia College by attracting and providing research opportunities to the most able students. The program currently includes 37 scholars, representing first through senior years, and drawn from across the sciences and mathematics.

## **PUBLISHED ARTICLES**

- Blick, N.H., 1979, Stratigraphic, structural and paleogeographic interpretation of upper Proterozoic glaciogenic rocks in the Sevier orogenic belt, northwestern Utah: Ph.D. dissertation, Santa Barbara, University of California, 633 p.
1. Blick, N., 1981, Late Precambrian glaciation in Utah, in Hambrey, M.J., and Harland, W.B., eds., *Earth's Pre-Pleistocene Glacial Record: International Geological Correlation Programme, Project 38*: Cambridge, Cambridge University Press, p. 740-744.
  2. Knoll, A.H., Blick, N., and Awramik, S.M., 1981, Stratigraphic and ecologic implications of late Precambrian microfossils from Utah: *American Journal of Science*, v. 281, p. 247-263.
  3. Christie-Blick, N., 1982, Upper Precambrian (Eocambrian) Mineral Fork Tillite of Utah: A continental glacial and glaciomarine sequence: Discussion: *Geological Society of America Bulletin*, v. 93, p. 184-186.
  4. Christie-Blick, N., 1982, Upper Proterozoic and Lower Cambrian rocks of the Sheeprock Mountains, Utah: Regional correlation and significance: *Geological Society of America Bulletin*, v. 93, p. 735-750.
  5. Christie-Blick, N., 1982, Pre-Pleistocene glaciation on Earth: Implications for climatic history of Mars: *Icarus*, v. 50, p. 423-443.
  6. Christie-Blick, N., 1983, Structural geology of the southern Sheeprock Mountains, Utah: Regional significance, in Miller, D.M., Todd, V.R., and Howard, K.A., eds., *Tectonic and Stratigraphic Studies in the Eastern Great Basin*: Geological Society of America Memoir 157, p. 101-124.
  7. Christie-Blick, N., 1983, Glacial-marine and subglacial sedimentation, Upper Proterozoic Mineral Fork Formation, Utah, in Molnia, B.F., ed., *Glacial-Marine Sedimentation*: New York, Plenum Press, p. 703-776.
  8. Crittenden, M.D., Jr., Christie-Blick, N., and Link, P.K., 1983, Evidence for two pulses of glaciation during the late Proterozoic in northern Utah and southeastern Idaho: *Geological Society of America Bulletin*, v. 94, p. 437-450.
  9. Christie-Blick, N., 1985, Upper Proterozoic glacial-marine and subglacial deposits at Little Mountain, Utah: *Brigham Young University Geology Studies*, v. 32, Part 1, p. 9-18.
  10. <sup>12</sup>Christie-Blick, N., and Biddle, K.T., 1985, Deformation and basin formation along strike-slip faults, in Biddle, K.T., and Christie-Blick, N., eds., *Strike-Slip Deformation, Basin Formation, and Sedimentation*: Society of Economic Paleontologists and Mineralogists Special Publication No. 37, p. 1-34.
  11. Biddle, K.T., and Christie-Blick, N., 1985. Glossary – Strike-slip deformation, basin formation, and sedimentation, in Biddle, K.T., and Christie-Blick, N., eds., *Strike-Slip Deformation, Basin Formation, and Sedimentation*: Society of Economic Paleontologists and Mineralogists Special Publication No. 37, p. 375-386.
  12. Biddle, K.T., and Christie-Blick, N., 1985, Basin formation, structural traps, and controls on hydrocarbon occurrence along wrench-fault systems: *Offshore Technology Conference*, Houston, OTC 4872, p. 291-295.
  13. Bond, G.C., Christie-Blick, N., Kominz, M.A., and Devlin, W.J., 1985, An early Cambrian rift to post-rift transition in the Cordillera of western North America: *Nature*, v. 316, p. 742-745.
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### **ABSTRACTS**

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<sup>14</sup> This is an extended abstract of an article originally submitted to this special issue. When the special issue was transferred from Marine Geology to Sedimentary Geology, I requested that the full version of the paper be published in a regular issue of Marine Geology (Christie-Blick, 1991).

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