

NICHOLAS CHRISTIE-BLICK

Abbreviated Curriculum Vitae

20 August, 2019

Lamont-Doherty Earth Observatory of Columbia University
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Date and place of birth: 3 June, 1953; St Albans, UK. U.S./British citizen.

Google Scholar profile: <http://scholar.google.com/citations?hl=en&user=vD6gJnEAAAAJ>

DEGREES

Ph.D., University of California, Santa Barbara, 1979 (Geology). Advisor: John C. Crowell¹.

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 University², 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 Company³, P.O. Box 2189, Houston, Texas 77252-2189, 1981-1983. [**Research Geologist**, 1980-1981.]

Postdoctoral Assistant Research Geologist, Department of Geological Sciences⁴, University of California, Santa Barbara, California 93106, 1979-1980.

SELECTED AWARDS AND HONORS

Dr Vikram Sarabhai Chair of the Indian National Science Academy (a speaking tour of Indian universities in February, 2020). Awarded in 2019.

2017 Exceptional Reviewer, Geological Society of America Bulletin. Selected in March, 2018.

Distinguished Alumnus Award, Department of Geological Sciences⁴, 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.

Best Teacher Award, selected by undergraduate students in the Department of Earth and Environmental Sciences of Columbia University, 2010⁵; and by graduate students in 2008 and 1996⁶.

¹ Deceased, 13 May, 2015, the day after his 98th birthday, in Montecito, California.

² Formerly Department of Geological Sciences (before 1996) and Lamont-Doherty Geological Observatory (before 1993).

³ Now ExxonMobil Upstream Research Company (since 2000).

⁴ Now Department of Earth Science (since 2005).

⁵ The inaugural year of this annual award.

Fellow, Geological Society of America, 1995.

CURRENT RESEARCH: SEDIMENTARY GEOLOGY AND TECTONICS

Sedimentation Processes, Crustal Deformation, and Deep-Time Earth History

Current research 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.

PROJECTS

Character, Timing and Origins of the Late Neoproterozoic Shuram-Wonoka Carbon Isotope Excursion and Associated Paleocanyons in South Australia

New research is under way in the Neoproterozoic, with particular reference to the character, timing and origins of the enigmatic Shuram-Wonoka carbon isotope excursion in the Flinders Ranges of South Australia. The project is being undertaken by Sarah M. Giles for her Ph.D. (2018-2023). Research in June-August, 2019 focused on the origin of kilometer-deep buried canyons with which the isotopic anomaly is intimately associated; and pilot sampling of carbonate rocks to test competing explanations for observed isotopic variations, and of sandstones for U-Pb detrital zircon geochronology and $^{40}\text{Ar}/^{39}\text{Ar}$ glauconite geochronology bracketing both the excursion and the paleocanyon level.

Testing the Extensional Detachment Paradigm: A Borehole Observatory in the Sevier Desert Basin

I am lead proponent for an International Continental Scientific Drilling Program (ICDP) initiative to test the extensional detachment paradigm in the Sevier Desert basin, Utah. A priority in 2019-20, in conjunction with Prof. M. Beatrice Magnani at Southern Methodist University, is to seek funds to acquire geophysical data to evaluate the character of the sub-Tertiary contact, and to provide 3-D context for a coring project at the ARCO Hole-in-Rock #1 well.

We continue to work at several other locations in the Basin and Range Province: the Death Valley region of eastern California; adjacent parts of Nevada, Arizona and Utah; and southeastern Idaho.

Geochronologic Tests of Scottish Caledonide Tectonics

As an outgrowth of an ACS-PRF project (2015-2018) to identify the source of the late Silurian–Devonian Old Red Sandstone of Scotland using $^{40}\text{Ar}/^{39}\text{Ar}$ mica geochronology, we are seeking new funds to re-evaluate competing interpretations of the tectonic assembly of the Grampian and Midland Valley terranes and superimposed successor basin using a combination of geochronological and geochemical approaches in a field-based context. The project is being spearheaded by Michael J. DeLuca as part of his Ph.D. research (2016-2020).

Stratigraphic Response to Deformation and Sea-Level Change in the Gulf of Suez, Egypt

The Gulf of Suez, Egypt provides a unique opportunity for evaluating how sedimentation responds to crustal deformation and sea-level change in a setting in which both are known to have been important. A project currently under way in collaboration with Ph.D. student, Raed Badr and Dr Ahmed El-Barkooky at the University of Cairo involves physical stratigraphic and structural mapping, sedimentology, Sr isotopic dating, and biostratigraphy to investigate how patterns of sedimentation and erosion relate to the propagation of faults and growth of folds, the tilting of fault blocks, and independently quantified sea-level change during the early Miocene.

⁶ Second place in 1995. The award for the 2007-08 academic year was made in January, 2009.

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Association for the Advancement of Science, American Association of Petroleum Geologists⁷, American Geophysical Union, Geological Society of America, International Association of Sedimentologists, SEPM (Society for Sedimentary Geology).

SABBATICAL LEAVES

2019-20, University of Western Australia and Curtin University (Perth, Australia)⁸.

2011-12, 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

Geological Excursion to Death Valley, California (2 pts), 2002-2006, 2008-2009, 2011, 2013-2019, planned for 2021-2023

Sedimentary Geology (4 pts), 1997-2007 (odd years), 2010, 2013, 2015, 2017, planned for 2020

⁹Frontiers of Science (4 pts), 2008-2010, 2012, 2014

Sedimentary Environments and Facies (3 pts), 1985¹⁰, 1987¹⁰, 1990, 1994, 1999, 2002

Sedimentary Basins (3 pts), 1985, 1988, 1992, 1994, 1998, 2000

Introduction to Sedimentary Geology (4 pts), 1984-1986¹⁰, 1991, 1993, 1995

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

Principles of Stratigraphy (3 pts), 1983

Tutorials:

Tutorial in Earth Science, Fall, 2017 (3 pts), Spring, 2018 (1 pt)

Seminars:

Stratigraphy: Sedimentation and Tectonics (1 pt), 2011

Structural Geology: Tectonic Evolution of the Norwegian Caledonides (with H.K. Brueckner; 1 pt), 2010

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

⁷ My AAPG membership was allowed to lapse in 2017.

⁸ Visiting Professor (University of Western Australia); Visting Research Fellow (Curtin University).

⁹ Frontiers of Science integrates modern science into Columbia's famed Core Curriculum, and since its first full year in 2004-05 the course has been a requirement for every Columbia College undergraduate. I chaired the course in Fall, 2010, 2012 and 2014.

¹⁰ These courses were team-taught with J.E. Sanders during the years indicated. Sanders retired from Barnard College in 1989, and died on 20 October, 1999.

Structural Geology: Regional Tectonics of Western North America
(with J. Helwig; 2 pts), 1984

Field Seminars:

Sevier Foreland and Orogen of Utah and Adjacent Colorado (2 pts, 13 days), 2019
Basin and Range Tectonics (2 pts, 9 days), 2016
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

Oxford University, Oxford, UK, 1996 and 2018
University of Cape Town, South Africa, 2012
University of Pretoria, Pretoria, South Africa, 2012
University of Canterbury, Christchurch, New Zealand, 2007
Williams College, Massachusetts, 2003
University of Missouri, Columbia, Missouri, 1995

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: Professor, 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 Director of Research and Project Development, Center for Climate Systems Research, Columbia University, and 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 and Head of Department of Earth and Planetary Sciences, Macquarie University, Australia.

Sanjeev Gupta. Postdoctoral Research Scientist, 1994-1995. Controls on sequence geometry and bounding surfaces in ramp settings. Present position: Professor, 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

Sarah M. Giles. Dissertation topic: Character, timing and origins of the late Neoproterozoic Shuram-Wonoka carbon isotope excursion and associated paleocanyons in South Australia. NSF Graduate Research Fellow. Ph.D. expected, 2023.

Michael J. DeLuca. Dissertation topic: Geochronological tests of Scottish Caledonide tectonics. Ph.D. expected, 2020.

Ph.D.s Completed

Marc A. Vankeuren (Ph.D., 2015). Dissertation topic: A structural and $^{40}\text{Ar}/^{39}\text{Ar}$ geochronological re-evaluation of low-angle normal faults in southeastern Idaho. Present position: science teacher, Grant Union High School, Sacramento, California.

Rafael V. Almeida (Ph.D., 2014). Dissertation topic: Mechanisms and magnitude of Cenozoic crustal extension in the vicinity of Lake Mead, Nevada and the Beaver Dam Mountains, Utah: Geochemical, geochronological, thermochronological and geophysical constraints. Present position: Assistant Professor, Yachay Tech University, Urcuquí, Ecuador.

Andrew S. Madof (Ph.D., 2010). Dissertation topic: Noneustatic controls on sediment accumulation in the upper Cretaceous of western Colorado and Pliocene to Holocene of offshore Louisiana. Present position: Chevron Energy Technology Company, Houston, Texas.

Byrdie Renik (Ph.D., 2010)¹¹. Dissertation topic: Distribution of Neogene extension and strike slip in the Death Valley region, California-Nevada, with implications for palinspastic reconstruction and models of normal faulting. NSF Graduate Research Fellow. Present position: ExxonMobil, Houston, Texas.

Katherine C. Leonard (Ph.D., 2009). Dissertation topic: Antarctic snow drift processes (Research Advisor, B. Tremblay, McGill University). Present position: École Polytechnique Fédérale de Lausanne, Switzerland.

Ganqing Jiang (Ph.D., 2002). Dissertation topic: Neoproterozoic sequence and chemostratigraphy. Present position: 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 Director of Research and Project Development, Center for Climate Systems Research, Columbia University, and 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: Eurofins-Anatech, 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: Mildred Routt Distinguished Teaching Professor, University of Tennessee, Chattanooga.

¹¹ Ph.D. defended with distinction.

Neal W. Driscoll (Ph.D., 1992). Dissertation topic: Tectonic and depositional processes inferred from stratal relationships (Co-advisor, J.K. Weissel). 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 the role of advisor for 1990-91 academic year.) Present position: Retired from Chevron Energy Technology Company in Cherry Hill, New Jersey.

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. Retired from the environmental consulting industry in Baldwinsville, New York. Deceased, March, 2018.

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: Geology Program Manager and Principal Geologist at Schlumberger, 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: Assistant Professor, Indian Institute of Science, Bangalore, India.

Melissa J. Saurborn (M.A., 2000). Research topic: Unconformity development in tectonically active settings (Co-advisor, G.D. Karner). Present position: Samson Resources, Denver, Colorado.

Current Ph.D. Advisory Committees

Congyu Yu. Research topic: Early evolution of dinosaurs (Advisor, M.A. Norell, AMNH). Ph.D. expected, 2022.

Past Ph.D. Advisory and Defense Committees

Reader and/or chair of defense committee for 50 other Ph.D. dissertations, 1985-2019.

Guleed Ali (Ph.D., 2018). Dissertation topic: Late glacial and deglacial fluctuations of Mono Lake, California (Advisor, S.R. Hemming). NSF Graduate Research Fellow. Present position: Research Fellow at Earth Observatory of Singapore.

Abagael R. West (Ph.D., 2017). Dissertation topic: Multidisciplinary approaches to understanding the origins and evolution of Notoungulata (Mammalia: Placentalia) (Advisor, J. Flynn, AMNH). NSF Graduate Research Fellow. Present position: Research Associate, Carnegie Museum of Natural History, Pittsburgh, Pennsylvania.

Margaret A. Reitz (Ph.D., 2015). Dissertation topic: The structural evolution of the Calabrian forearc: a multidisciplinary approach to investigating time-transgressive deformation (Advisor, M.S. Steckler). Present position: SUNY Geneseo.

John A. Templeton (Ph.D., 2015). Dissertation topic: Structural evolution of Hornelen basin (Devonian, Norway) from detrital thermochronometry (Advisor, M.H. Anders). NSF Graduate Research Fellow. Present position: ConocoPhillips, Houston, Texas.

Elizabeth Pierce Davis (formerly Elizabeth L. Pierce; Ph.D., 2012). Dissertation topic: Antarctica's geologic and ice sheet history from isotopic sedimentary provenance studies (Advisor: S.R. Hemming). Present position: teacher, Arlington, Massachusetts.

- Michelle Spaulding (Ph.D., 2011).** Dissertation topic: Phylogeny and evolution of locomotor modes in *Carnivoramorpha (Mammalia)* (Advisor, J. Flynn). NSF Graduate Research Fellow. Present position: Assistant Professor, Purdue University Northwest, Westville, Indiana.
- Andres Giallombardo (Ph.D., 2009).** Dissertation topic: New Cretaceous mammals from Mongolia and the early diversification of Eutheria (Advisor, J. Flynn). Present position: La Plata, Buenos Aires, Argentina.
- Sterling J. Nesbitt (Ph.D., 2009)**¹⁰. Dissertation topic: The early evolution of Archosaurs: Relationships and the origin of major clades (Advisor, P.E. Olsen). NSF Graduate Research Fellow. Present position: Assistant Professor, Virginia Polytechnic and State University, Blacksburg, Virginia. Donath Medal, 2017.
- 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 Exploration Technology Center, Houston, Texas.
- Daniel T. Ksepka (Ph.D., 2007).** Dissertation topic: Phylogeny, histology and functional morphology of fossil penguins (Sphenisciformes) (Advisor, M.A. Norell). NSF Graduate Research Fellow. Present position: Curator of science, Bruce Museum, Greenwich, Connecticut.
- 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: Associate Professor, University of Southampton, UK.
- 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: Exploration Project Manager at NEOS GeoSolutions, Denver, Colorado.
- Zvi Karcz (Ph.D., 2005).** Dissertation topic: An observational and experimental study of pressure solution (Advisor, C.H. Scholz). Present position: VP Exploration, Delek Drilling and Avner Oil, Herzelia, Israel.
- Matthew C. Muhlbachler (Ph.D., 2005).** Dissertation topic: Phylogenetic systematics of the *Brontotheriidae (Mammalia, Perissodactyla)* (Advisor: Jin Meng). Present position: Associate Professor of Anatomy, New York Institute of Technology, College of Osteopathic Medicine, Old Westbury, 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: Professor, Ramapo College, New Jersey.
- Malka L. Machlus (Ph.D., 2004).** Dissertation topic: Orbital forcing of continental Eocene climate: Detailed stratigraphy and ⁴⁰Ar/³⁹Ar dating of the Green River Formation in Wyoming (Advisor: P.E. Olsen). Present position: Adjunct Assistant Professor, Kingsborough Community College, CUNY.
- Diego Pol (Ph.D., 2004).** Dissertation topic: Phylogenetic relationships of basal Sauropodomorph dinosaurs (Advisor, M.A. Norell). Present position: Museo Paleontológico Egidio Feruglio, Patagonia, Argentina.

- 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: Research Associate, Lafayette College, Easton, Pennsylvania.
- Candace O. Major (Ph.D., 2002)¹¹.** Dissertation topic: Non-eustatic controls on sea level in semi-enclosed basins (Advisor, W.B.F. Ryan). Present position: National Science Foundation, Washington, D.C.
- Stewart Wills (Ph.D., 2000).** Dissertation topic: Evaluating models of detachment faulting (Advisor, M.H. Anders). NSF Graduate Research Fellow. Present position: Editor and Content Director, *Optics & Photonics News* at The Optical Society.
- 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). NSF Graduate Research Fellow. 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: Senior Research Geophysicist, Geological Survey of Denmark and Greenland (GEUS), Copenhagen, Denmark.
- 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 Research, Brazil.
- 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 Italia 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., 1994).** 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 R. 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: Provost, University of Wisconsin Colleges.

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: Independent contractor, Lettis Consultants International, Walnut Creek, 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: BP, 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: Associate Professor, 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: Hazard Mitigation Planning, FEMA, New York City.

Suzanne B. O'Connell (Ph.D., 1986). Dissertation topic: Anatomy of modern submarine depositional and distributary systems (Advisor, W.B.F. Ryan). Present position: 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). Retired from ExxonMobil in Southbury, Connecticut.

Craig Nicholson (Ph.D., 1985). Dissertation topic: Crustal structure and fault kinematics from the analysis of microearthquake data (Advisor, L.R. Sykes). Present position: Marine Science Institute, 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, Houston, Texas.

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: Retired from ExxonMobil.

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: Freelance writer, Stockholm, Sweden.

Member of advisory committees or briefly, advisor, for miscellaneous other students.

External Advisor

Raed Badr. Provisional dissertation topic: Sequence stratigraphy and architecture of syn-rift sediments, eastern margin of the Gulf of Suez, Egypt (Advisor, A.N. El-Barkooky, University of Cairo, Egypt). Member of advisory committee. Ph.D. expected, 2020.

Safiya M. Hassan (Ph.D., 2011). 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). Present position: Beni-Suef University.

External Examiner

Asma Amjad Ghaznavi (Ph.D., 2019). Dissertation topic: Sedimentology of Jurassic rocks of Ler Dome, Kachchh, western India (Advisor, A.H.M. Ahmad, Aligarh Muslim University, Aligarh, India).

Christi L. Browne (Ph.D., 2014). Dissertation topic: Professional Learning Communities (PLCs) as a means for school-based science curriculum change (Advisor, A.E. Rivet, Teachers College, Columbia University). Present position: Scarsdale Middle School.
<http://www.scarsdaleschools.k12.ny.us/Domain/301>

Mark D. Smith (Ph.D., 2009). Dissertation topic: Stratigraphic and geochemical evolution of the Old Fort Point Formation, southern Canadian Cordillera: The deep-marine perspective of Ediacaran post-glacial environmental change (Advisor, R.W.C. Arnott, University of Ottawa). Present position: ExxonMobil.

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, Ottawa.

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: Geology Program Manager and Principal Geologist at Schlumberger, 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: retired from Chevron in Perth, Australia.

UNDERGRADUATE MENTORING

Bridget C. Craig (intern, 2017-2018). Project topic: Quantitative analysis of fault data from the South Virgin Mountains, Nevada. B.A. expected, 2020.

John D. Wilding (B.A., 2017; intern, 2014). Project topic: Crustal extension and volcanic geochronology. Co-mentors: S.R. Hemming, M.H. Anders and M.A. Vankeuren.

Sarah W.M. George (B.A., 2014, Wellesley College, Massachusetts; summer intern, 2013). Project topic: How does the Earth's crust stretch? A field-based geo/thermochronological study. Co-mentors: S.R. Hemming and M.H. Anders. Present position: Ph.D. program, University of Texas, Austin (Advisor: B.K. Horton).

Marissa M. Tremblay (B.A., 2012, Barnard College; summer intern, 2009). Senior thesis topic: Late Miocene tilting of the Resting Spring Range, California. Co-mentors: S.R. Hemming (2009-2012) and B. Renik (2009). Goldwater Scholar, 2011. NSF Graduate Research Fellow. Ph.D., 2017, University of California, Berkeley (Advisor, D.L. Shuster). Present position: Assistant Professor, Purdue University, West Lafayette, Indiana.

Emily H.G. Cooperdock (formerly Goldstein; B.A., 2011). Senior thesis topic: Depositional setting and detrital zircon analysis of the Jardine metasedimentary sequence from the South Snowy block in Yellowstone National Park. NSF Graduate Research Fellow. Ph.D., 2017, University of Texas, Austin (Advisor, D.F. Stockli). Present position: Assistant Professor, University of Southern California, Los Angeles.

Peri Sasnett (B.A., 2011; summer intern, 2009). Senior thesis topic: Surface exposure dating of phreatic eruptions at Ubehebe Crater, Death Valley, California. Co-mentors: B.M. Goehring and J.M. Schaefer. Fulbright Scholar, University of Canterbury, Christchurch, New Zealand. Present position: Teton National Park.

Lila S. Neiswanger (B.A., 2012; summer intern, 2009). Project topic: Provenance of Miocene breccia-bearing beds in southern Nevada, with implications for the magnitude of crustal extension in the Lake Mead transect. Co-mentors: B. Renik, S.R. Hemming and M.Y. Cai. Present position: freelance stage manager/ theater technician, Sydney, Australia.

Ilana Somasunderam (B.A., 2009; summer intern, 2008). Senior thesis topic: Early Miocene sedimentation, paleoecology and strontium isotope geochronology. Co-mentors: S.L. Goldstein and S.F. Pekar (Queens College, City University of New York). Present position: Environmental media specialist, Crissy Field Center, San Francisco, California.

Samuel C. Schon (B.A., 2006). Senior thesis topic: Re-evaluation of extensional fault geometry and kinematics at Azure Ridge in the South Virgin Mountains, Nevada. Ph.D., 2012, Brown University (Advisor, J. Head). Present position: ExxonMobil, Houston, Texas.

Yekaterina (Kate) Gluzberg (B.A., 2004; 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: Volunteer Projects Manager, Partnerships for Parks, City of New York Parks and Recreation.

Jessyca Harris Keeler (formerly Harris; B.S., 1995, St Lawrence University, Canton, New York; summer intern, 1994). Project topic: Late Cenozoic seismic stratigraphy of the U.S. mid-Atlantic continental margin. Present position: Owner, Align Partnerships, Conway Center, New Hampshire (Portland, Maine area).

Rebecca Hayden Kennedy (formerly Hayden; A.B., 1987, Barnard College). Senior thesis topic: Neoproterozoic stratigraphy in the northern Sheepprock Mountains, Utah. Present position: Pennsylvania Environmental Council.

Co-Director of Undergraduate Studies, Department of Earth and Environmental Sciences, Columbia University, 2007-2011.

Chair, Rabi Scholars Program (Columbia University), 2002-2011. The purpose of the program is to foster undergraduate science in Columbia College by attracting and providing research opportunities to the most able students. During the years in which I was involved, the program included about 35-40 scholars at any one time, representing first through senior years, and drawn from across the sciences and mathematics.

HIGH SCHOOL MENTORING

Alexander Beekman (Senior Experience Internship). Bergen County Technical Schools, 2014-15. Project topic: Is Rockland's water supply still in danger? Presidential Honors Scholar in Chemistry at New York University (2015-2019).

PUBLISHED ARTICLES¹²

- 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.

¹² Twenty-eight articles and one book with more than 100 citations; more than 10,000 total citations; h-index = 44. (Data from Science Citation Index Expanded and Google Scholar.

<http://scholar.google.com/citations?hl=en&user=vD6gJnEAAAAJ>)

Most articles are available in pdf form: <http://academiccommons.columbia.edu/catalog>

10. 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.I., and Christie-Blick, N.H., 1985, Basin formation, structural traps, and controls on hydrocarbon occurrence along wrench-fault zones: *Offshore Technology Conference*, Houston, OTC 4872, p. 291-295. [Biddle's middle initial is T, not I. I do not use mine in publications.]
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. 315, p. 742-746.
14. Harding, T.P., Vierbuchen, R.C., and Christie-Blick, N., 1985, Structural styles, plate-tectonic settings and hydrocarbon traps of divergent (transtensional) wrench 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. 51-77.
15. Christie-Blick, N., 1986, Sea-level fluctuations. Coastal onlap and sea-level change, in 1987 *Yearbook of Science and Technology*, supplement to Encyclopedia of Science and Technology: New York, McGraw-Hill, p. 413-416.
16. Christie-Blick, N., Grotzinger, J.P., and von der Borch, C.C., 1988, Sequence stratigraphy in Proterozoic successions: *Geology*, v. 16, p. 100-104.
17. Christie-Blick, N., and Link, P.K., 1988, Glacial-marine sedimentation, Mineral Fork Formation (Late Proterozoic), Utah, in Holden, G.S., ed., *Geological Society of America Field Trip Guidebook*, Centennial Meeting – Denver, Colorado: Colorado School of Mines Professional Contributions, No. 12, p. 259-274.
18. Christie-Blick, N., Mountain, G.S., and Miller, K.G., 1988, Sea level history: *Science*, v. 241, p. 596.
19. von der Borch, C.C., Christie-Blick, N., and Grady, A.E., 1988, Depositional sequence analysis applied to Late Proterozoic Wilpena Group, Adelaide Geosyncline, South Australia: *Australian Journal of Earth Sciences*, v. 35, p. 59-71.
20. Christie-Blick, N., and Levy, M., 1989, Stratigraphic and tectonic framework of Upper Proterozoic and Cambrian rocks in the western United States, in Christie-Blick, N., and Levy, M., eds., *Late Proterozoic and Cambrian Tectonics, Sedimentation, and Record of Metazoan Radiation in the Western United States*: 28th International Geological Congress Field Trip Guidebook T331, American Geophysical Union, p. 7-22.
21. Christie-Blick, N., and Levy, M., 1989, Concepts of sequence stratigraphy, with examples from strata of Late Proterozoic and Cambrian age in the western United States, in Christie-Blick, N., and Levy, M., eds., *Late Proterozoic and Cambrian Tectonics, Sedimentation, and Record of Metazoan Radiation in the Western United States*: 28th International Geological Congress Field Trip Guidebook T331, American Geophysical Union, p. 23-38.
22. Levy, M., and Christie-Blick, N., 1989, Pre-Mesozoic palinspastic reconstruction of the eastern Great Basin (western United States): *Science*, v. 245, p. 1454-1462.
23. von der Borch, C.C., Grady, A.E., Eickhoff, K.H., DiBona, P., and Christie-Blick, N., 1989, Late Proterozoic Patsy Springs Canyon, Adelaide Geosyncline: submarine or subaerial origin?: *Sedimentology*, v. 36, p. 777-792.

24. Christie-Blick, N., 1990, Sequence stratigraphy and sea-level changes in Cretaceous time, in Ginsburg, R.N., and Beaudoin, B., eds., *Cretaceous Resources, Events and Rhythms*: NATO ASI Series C, v. 304, Dordrecht, Kluwer Academic Publishers, p. 1-21.
25. Christie-Blick, N., Mountain, G.S., and Miller, K.G., 1990, Seismic stratigraphic record of sea-level change, in *Sea-Level Change: Studies in Geophysics*, Washington, D.C., National Academy Press, p. 116-140.
26. Christie-Blick, N., von der Borch, C.C., DiBona, P.A., 1990, Working hypotheses for the origin of the Wonoka canyons (Neoproterozoic), South Australia: *American Journal of Science*, v. 290-A (Cloud volume), p. 295-332.
27. DiBona, P.A., von der Borch, C.C., and Christie-Blick, N., 1990, Sequence stratigraphy and evolution of a basin-slope succession: The Late Proterozoic Wonoka Formation, Flinders Ranges, South Australia: *Australian Journal of Earth Sciences*, v. 37, p. 135-145.
28. Christie-Blick, N., 1991, Onlap, offlap, and the origin of unconformity-bounded depositional sequences: *Marine Geology*, v. 97, p. 35-56.
29. Levy, M., and Christie-Blick, N., 1991, Tectonic subsidence of the early Paleozoic passive continental margin in eastern California and southern Nevada: *Geological Society of America Bulletin*, v. 103, p. 1590-1606.
30. Levy, M., and Christie-Blick, N., 1991, Late Proterozoic paleogeography of the eastern Great Basin, in Cooper, J.D., and Stevens, C.H., eds., *Paleozoic Paleogeography of the Western United States - II: Pacific Section*, SEPM, Book 67, v. 1, p. 371-386.
31. Christie-Blick, N., 1992, Stratigraphy, in *Encyclopedia of Science and Technology*: New York, McGraw-Hill, 7th edition, p. 483-485.
32. O'Brien, P.E., and Christie-Blick, N., 1992, Glacially grooved surfaces in the Grant Group, Grant Range, Canning Basin and the extent of Late Palaeozoic Pilbara ice sheets: *BMR Journal of Australian Geology and Geophysics*, v. 13, p. 87-92.
33. Kennard, J.M., Southgate, P.N., Jackson, M.J., O'Brien, P.E., Christie-Blick, N., Holmes, A.E., and Sarg, J.F., 1992, New sequence perspective on the Devonian reef complex and the Frasnian-Famennian boundary, Canning basin, Australia: *Geology*, v. 20, p. 1135-1138.
34. Holmes, A.E., and Christie-Blick, N., 1993, Origin of sedimentary cycles in mixed carbonate-siliciclastic systems: An example from the Canning basin, Western Australia, in Loucks, R.G., and Sarg, J.F., eds., *Carbonate Sequence Stratigraphy. Recent Developments and Applications*: American Association of Petroleum Geologists Memoir 57, p. 181-212.
35. Link, P.K., Christie-Blick, N., Devlin, W.J., Elston, D.P., Horodyski, R.J., Levy, M., Miller, J.M.G., Pearson, R.C., Prave, A., Stewart, J.H., Winston, D., Wright, L.A., and Wrucke, C.T., 1993, Middle and Late Proterozoic stratified rocks of the western U.S. Cordillera, Colorado Plateau, and Basin and Range province, in Reed, J.C., Jr., Bickford, M.E., Houston, R.S., Link, P.K., Rankin, D.W., Sims, P.K., and Van Schmus, W.R., eds., *Precambrian: Conterminous U.S.*: Boulder, Colorado, Geological Society of America, The Geology of North America, Volume C-2, p. 463-595.
36. Anders, M.H., and Christie-Blick, N., 1994, Is the Sevier Desert reflection of west-central Utah a normal fault?: *Geology*, v. 22, p. 771-774.
37. Levy, M., Christie-Blick, N., and Link, P.K., 1994, Neoproterozoic incised valleys of the eastern Great Basin, Utah and Idaho: Fluvial response to changes in depositional base level, in Dalrymple, R.W., Boyd, R., and Zaitlin, B.A., eds., *Incised Valley Systems: Origin and Sedimentary Sequences*: SEPM (Society for Sedimentary Geology) Special Publication No. 51, p. 369-382.
38. Link, P.K., Miller, J.M.G., and Christie-Blick, N., 1994, Glacial-marine facies in a continental rift environment: Neoproterozoic rocks of the western United States Cordillera, in Deynoux, M.,

- Miller, J.M.G., Domack, E.W., Eyles, N., Fairchild, I.J., and Young, G.M., eds., *Earth's Glacial Record*: Cambridge, Cambridge University Press, p. 29-46.
39. Christie-Blick, N., and Driscoll, N.W., 1995, Sequence stratigraphy: *Annual Review of Earth and Planetary Sciences*, v. 23, p. 451-478.
 40. Christie-Blick, N., Dyson, I.A., and von der Borch, C.C., 1995, Sequence stratigraphy and the interpretation of Neoproterozoic earth history, in Knoll, A.H., and Walter, M., eds., *Neoproterozoic Stratigraphy and Earth History: Precambrian Research*, v. 73 (special volume), p. 3-26.
 41. Anders, M.H., Christie-Blick, N., and Wills, S., 1995, Is the Sevier Desert reflection of west-central Utah a normal fault?: Reply: *Geology*, v. 23, p. 670.
 42. Driscoll, N.W., Hogg, J.R., Christie-Blick, N., and Karner, G.D., 1995, Extensional tectonics in the Jeanne d'Arc Basin, offshore Newfoundland: implications for the timing of break-up between Grand Banks and Iberia, in Scrutton, R.A., Stoker, M.S., Shimmield, G.B., and Tudhope, A.W., eds., *The Tectonics, Sedimentation and Palaeoceanography of the North Atlantic Region*: Geological Society, London, Special Publications, v. 90, p. 1-28.
 43. Christie-Blick, N., 1997, Neoproterozoic sedimentation and tectonics in west-central Utah, in Link, P.K., and Kowallis, B.J., eds., *Proterozoic to Recent Stratigraphy, Tectonics and Volcanology, Utah, Nevada, Southern Idaho and Central Mexico: Brigham Young University Geology Studies*, v. 42, Part 1, p. 1-30.
 44. Christie-Blick, N., Austin, J.A., Jr., and Shipboard Scientific Party, 1998, Introduction: Oligocene to Pleistocene eustatic change at the New Jersey continental margin – a test of sequence stratigraphy, in Austin, J.A., Jr., Christie-Blick, N., Malone, M.J., et al., Proceedings of the Ocean Drilling Program, Initial Reports, v. 174A, *Continuing the New Jersey Mid-Atlantic Sea-Level Transect*: College Station, Texas, Ocean Drilling Program, p. 5-16.
 45. Anders, M.H., Christie-Blick, N., and Wills, S., 1998, Extensional collapse along the Sevier Desert reflection, northern Sevier Desert basin, western United States: Comment: *Geology*, v. 26, p. 474.
 46. Austin, J.A., Jr., Christie-Blick, N., Malone, M., Mountain, G.S., and the Leg 174A Shipboard Scientific Party, 1998, Miocene to Pleistocene sand-rich sequences and sea-level changes at the New Jersey outer shelf: Results from Leg 174A: *JOIDES Journal*, v. 24, No. 1, p. 4-6 and 19.
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 51. Christie-Blick, N., 1999, Formation, in *Encyclopedia of Science and Technology*: New York, McGraw-Hill, 9th edition (on-line version).
 52. Christie-Blick, N., Sohl, L.E., and Kennedy, M.J., 1999, Considering a Neoproterozoic snowball Earth: *Science*, v. 284, p. 1087.
[Full text: <http://www.sciencemag.org/cgi/content/full/284/5417/1087a>]

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54. Steckler, M.S., Mountain, G.S., Miller, K.G., and Christie-Blick, N., 1999, Reconstruction of Tertiary progradation and clinoform development on the New Jersey passive margin by 2-D backstripping: *Marine Geology*, v. 154, p. 399-420.
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