

Neil C. Sturchio

Department of Geological Sciences
University of Delaware
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630-531-9160 mobile

Education:

Ph.D. (1983) Earth and Planetary Sciences - Washington University, St. Louis, MO
B.A. (1977) Earth Sciences - Fairleigh Dickinson University, Madison, NJ

Professional Positions:

University of Delaware, Department of Geological Sciences: 2014-present
Professor, 2014-present; Department Chair, 2014-present
Director, Environmental Isotope Geochemistry Laboratory, 2014-present
Council of Fellows, Delaware Environmental Institute, 2014-present
Faculty Affiliate, Water Science and Policy Program, 2014-present
University of Illinois at Chicago, Department of Earth and Environmental Sciences: 2000-2014
Professor, 2000-2014
Department Head, 2001-2012
Director, Environmental Isotope Geochemistry Laboratory, 2000-2014
Argonne National Laboratory: 1983-2000
Scientist: 1989-2000; Assistant Scientist: 1985-1989; Postdoctoral Appointee: 1983-1985
Group Leader: 1986-2000 (Chemical Technology & Environmental Research Divisions)
Special Term Appointee: 2000-2001; Guest Associate: 2001-2014

Awards and Honors:

Project of the Year Award, Dept. of Defense, Strategic Environmental Research and Development Program
(with C. Tobias, P. Vlahos, J.K. Böhlke, S. Fallis, and R.W. Smith), 2016
Project of the Year Award, Dept. of Defense, Environmental Security Technology Certification Program
(with P. Hatzinger, J.K. Böhlke, and B. Gu), 2008
Secretary of the Geochemical Society (elected position), 2008-2011
Visiting Professor, Ain Shams University (Cairo, Egypt), 2007
Marsden Visiting Fellow, Institute of Geological and Nuclear Sciences (New Zealand), 2000
Fellow, Geological Society of America (elected), 1997
Pacesetter Award, Argonne National Laboratory, 1996
Outstanding Contributions to Geoscience Research Award, U. S. Department of Energy, Office of Basic
Energy Sciences (with R.P. Chiarello), 1995
Exceptional Performance Award, Argonne National Laboratory, 1995
Visiting Research Scholar, Kyoto University (Japan), 1994
Wheeler Fellow, Washington University, 1981-1982
McDonnell Fellow, Washington University, 1978-1981

Professional Affiliations:

American Association for the Advancement of Science (Member)
American Chemical Society (Member)
American Geophysical Union (Member)
Geochemical Society (Member; Elected Secretary 2008-2011)
Geological Society of America (Fellow, 1997)

Research Interests:

Groundwater biogeochemistry and water-rock interactions; tracer applications of stable and radioactive isotopes in hydrogeologic systems; experimental studies of mineral-fluid interface processes using synchrotron radiation

Neil C. Sturchio -- Additional Professional Activities

Editorial

Editor in Chief: *The Geochemical News* (1997-2001)
Editorial Boards: *Chemical Geology* (2001-)
Geochemical Journal (2008-2014)
Elementa (2013-)
Environmental Forensics (2001-)
Executive Committees: *Elements* (2008-2011)

Reviews

Proposals: Department of Energy (BES; BER; SBIR)
National Science Foundation (EAR; SBIR)
National Academy of Sciences/National Research Council
NASA (Postdoctoral Program; Solar System Workings)
Helmholtz Association (Germany)
Institute of Geophysics and Planetary Physics (University of California)
Israel Science Foundation
Lise Meitner Postdoctoral Program (Austria-FWF)
MacArthur Fellows Program
Australian Research Council
Natural Sciences and Engineering Research Council of Canada
Canada Excellence Research Chairs Program
Advanced Photon Source (beamtime proposals)
Stanford Synchrotron Radiation Laboratory (beamtime proposals)
Swiss National Science Foundation
University of Wisconsin Water Resources Institute
Romanian National Authority for Scientific Research
National Geographic Society
German-Israeli Foundation for Scientific Research and Development

Journals:

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|---|---|
| <i>American Mineralogist</i> | <i>J. Chemical Physics</i> |
| <i>Analytical Chemistry</i> | <i>J. Contaminant Hydrology</i> |
| <i>Analytica Chimica Acta</i> | <i>J. Environmental Quality</i> |
| <i>Atmospheric Chemistry and Physics</i> | <i>J. Forensic Science</i> |
| <i>Applied Geochemistry</i> | <i>J. Geology</i> |
| <i>Bulletin of Volcanology</i> | <i>J. Geophysical Research</i> |
| <i>Chemical Geology</i> | <i>J. Hydrology</i> |
| <i>Chemical Communications</i> | <i>J. Materials Research</i> |
| <i>Chemosphere</i> | <i>J. South American Earth Sciences</i> |
| <i>Earth & Planetary Science Letters</i> | <i>J. Volcanology & Geothermal Research</i> |
| <i>Earth Science Reviews</i> | <i>Materials Research Society Proceedings</i> |
| <i>Economic Geology</i> | <i>Microbial Biotechnology</i> |
| <i>Environmental Forensics</i> | <i>Nature</i> |
| <i>Environmental Pollution</i> | <i>Nuclear & Chemical Waste Management</i> |
| <i>Environmental Science and Technology</i> | <i>Nuclear Instruments & Methods Phys. Res. B</i> |
| <i>European Journal of Mineralogy</i> | <i>Ore Geology</i> |
| <i>Geochemical Journal</i> | <i>Organic Geochemistry</i> |
| <i>Geochimica et Cosmochimica Acta</i> | <i>Pure and Applied Geophysics</i> |
| <i>Geological Society of America Bulletin</i> | <i>Quaternary Geochronology</i> |
| <i>Geology</i> | <i>Quaternary Research</i> |
| <i>Geophysical Research Letters</i> | <i>Rapid Comm. in Mass Spectrometry</i> |
| <i>Hydrogeology Journal</i> | <i>Reviews of Geophysics</i> |
| <i>Hydrological Processes</i> | <i>Science</i> |
| <i>International Geology Review</i> | <i>Sedimentology</i> |
| <i>International Journal of Mass Spectrometry</i> | <i>Vadose Zone Journal</i> |
| <i>J. African Earth Sciences</i> | <i>Water Resources Research</i> |
| <i>J. Archeological Science</i> | |
| <i>J. Chromatography-A</i> | |

Review panels

Member, DOE-BER Committee of Visitors, Germantown, MD, July 19-21, 2016
Member, NASA Review Panel for Solar System Workings, Baltimore, MD, November 2015
Member, DOE Review Committee for Stanford Synchrotron Radiation Lightsource, June 2014
Member, DOE Review Panel for Subsurface Focus Area, Lawrence Berkeley National Lab., May 2013
Member, NSF Proposal Review Panel for Critical Zone Observatories, April 2013
Chair, Visiting Review Committee, Geoscience Department, University of Minnesota at Duluth, April 2013
Member, DOE Review Team for Earth Sciences Division, Lawrence Berkeley National Laboratory, March 2013
Member, DOE Proposal Review Panel for BES Early Career Research Program, February 2013
Member, NSF Proposal Review Panel for Hydrological Sciences, October 2012
Member, DOE-BES Committee of Visitors, Chemical Sciences, Geosciences, and Biosciences Division, April 2011
Member, DOE Review Committee for Stanford Synchrotron Radiation Laboratory, February 2011
Member, DOE Review Team for Subsurface Focus Area, Lawrence Berkeley National Laboratory, May 20-21, 2010
External Reviewer, Strategic Plan for Geosciences Department, Western Michigan University, December 2009
Member, DOE Proposal Review Panel for BES Early Career Research Program, November 2009
Member, Proposal Evaluation Panel for DOE Environmental Remediation Science Program, April 2008
Member, DOE Review Committee for Stanford Synchrotron Radiation Laboratory, January 2008
Member, Proposal Evaluation Panel for DOE Environmental Remediation Science Program, August 2006
External Reviewer, U. S. State Dept, Environmental Hydrology Coalition Project (U.S.-Egypt), December 2005
Chair, Visiting Review Committee, Geological Sciences Department, University of Kentucky, November 2005
Member, DOE Proposal Review Panel for Office of Civilian Radioactive Waste Management, March 2005
External Member, Academic Program Planning Committee for Geosciences, Western Michigan University, January, 2005
Member, NSF Proposal Review Panel for Geobiology and Environmental Geochemistry, 2004-2007
Member, NSF Site Visit Review Team for Environmental Molecular Science Institutes, July 2004
Member, Proposal Evaluation Panel for DOE Environmental Management Science Program, Washington, DC July 14, 2004
Member, Visiting Review Committee, Geosciences Department, U. Wisconsin-Milwaukee, April 2004
Member, Visiting Review Committee, Geology Department, Miami University, Oxford, Ohio, November, 2003
Member, Visiting Review Committee, Geology Department, SUNY-Buffalo, Buffalo, New York, April 2003
Chair, Scattering Chem-Bio-Environ Beamtime Proposal Review Panel, Advanced Photon Source, Argonne IL, 2002-2005
Member, Proposal Evaluation Panel for DOE Environmental Management Science Program, Washington D.C., May 2002

Conference Organization

Session Co-organizer, *Transient Tracers in Aquatic Systems*, Goldschmidt 2016, Yokohama, Japan, June 2016.
Session organizer, *Tracer Applications of Noble Gas Radionuclides in the Geosciences*, AGU Fall Meeting, San Francisco, December 2013.
Co-organizer, *International Workshop on Tracer Applications of Noble Gas Radionuclides in the Earth Sciences*, Argonne National Laboratory, Argonne, IL, June 2012.
Session Co-organizer, *Formation Mechanisms, Stability, and Distribution of Oxyanions in the Environment*, Goldschmidt 2010, Knoxville, TN, June 2010.
Session Chairman, *Geochemical and Isotopic Studies of Rocks, Minerals, and Fluids*, Geological Society of America, North-Central Section, Rockford, IL, April 2009.
Session and Field Trip Co-organizer, *Travertines: Archives of archeology, neotectonics, and paleoclimate*. International Geological Congress, Florence, Italy, August 2004.
Member, International Program Committee for *Goldschmidt 2003*, Kurashiki, Japan, September 2003.
Co-chair, *Applications of Synchrotron Radiation to Low Temperature Geochemistry and Environmental Science*, special session at the American Geophysical Union Annual Fall Meeting, San Francisco, CA, Dec. 6-10, 2002.
Session Chairman and Organizer, *Recent Highlights and New Directions in Environmental Science*, workshop at the 9th Annual Users Meeting of the Advanced Photon Source, Argonne, IL, May 2000.
Session Co-chair, *Mineral Growth Kinetics and Surface Reactivity*, V.M. Goldschmidt Conference, Tucson, AZ, June 1997.
Session Chair, *Aqueous/Isotope Geochemistry*, Spring Meeting of the American Geophysical Union, Baltimore, MD, 1996.
Onsite organizer, DoE Symposium, *Earth Materials: Theory, Simulation, and Experiment*, Argonne National Laboratory, August, 1995.
Session Organizer/Chairman, *Actinide Series Disequilibria in Igneous and Geothermal Processes*, Annual Mtg. of the Geological Society of America, San Diego, CA, October 1991.
Session Organizer/Chairman, *Radionuclide Migration in Natural Systems*, International Symposium on the Scientific Basis for Nuclear Waste Management, Boston, MA, 1990.

Short Courses

- Instructor, *Workshop on Isotope Data Interpretation for IAEA/IWAVE Projects*, Manila, Philippines, Feb. 24-28, 2014
- Instructor, *Workshop on Isotope Data Interpretation for IAEA/IWAVE Projects*, Muscat, Oman, Feb. 16-20, 2014
- Instructor, *International Training Course on the Use of Isotope Hydrology in the Context of Water Resources Assessment*, International Atomic Energy Agency, Vienna, Austria, Nov. 4-15, 2013
- Instructor, *Isotope Techniques for Assessment of Shallow Groundwater Systems and their Interactions with Surface Waters*, International Atomic Energy Agency, Advanced Regional Training Course, Argonne, IL, July 12-23, 2010
- Instructor, *Isotope Techniques for River Basin Management, Including River-Groundwater Interactions*, International Atomic Energy Agency, Advanced Regional Training Course, Argonne, IL, June 15-17, 2009
- Instructor, *Isotopic Age Determination Techniques for Water Resource Management*, International Atomic Energy Agency Workshop, Argonne, IL, June 16-18, 2008
- Instructor, *Isotopes and Geochemistry Applied to Water Resource Evaluation*, Cairo University, Giza, Egypt, Dec. 7-8, 2003
- Organizer, *Applications of Synchrotron Radiation to Low Temperature Geochemistry and Environmental Science*, Geochemical Society/Mineralogical Society of America Short Course, Monterey, CA, Dec. 3-5, 2002
- Participant, MSA Short Course, *Geomicrobiology: Interactions Between Microbes and Minerals*, Salt Lake City, Oct. 1997
- Instructor, *Isotope Geochemistry and Hydrology*, Cairo University, Giza, Egypt, February 22-23, 1997
- Participant, MSA Short Course, *Chemical Weathering Rates of Silicate Minerals*, New Orleans, Louisiana (1995)
- Participant, MSA Short Course, *Stable Isotopes in High Temperature Geological Processes*, San Antonio, Texas (1986)

Invited Talks at Conferences, Workshops, and Institutes

- Invited Speaker, *Environmental Isotope Forensics of Perchlorate*, Dept. of Environmental Sciences, University of Virginia, Charlottesville, VA, December 1, 2016.
- Invited Speaker, *Isotopic Analysis of Perchlorate as a Forensic Tool For Identifying Sources of Perchlorate in Groundwater*, Annual Fall Conference of the American Water Works Association, California-Nevada Section, San Diego, CA, October 2016.
- Invited Participant, Consultants Workshop on *Underground Production of Carbon-14 by Cluster Decay*, IAEA, Vienna, Austria, July 2016.
- Invited Speaker, Symposium on *Adsorption of Metals in Geomedia III*, American Chemical Society National Spring Meeting, San Diego, CA, March 2016.
- Invited Speaker, *Chlorine Isotopic Composition of Urinary Perchlorate as an Indicator of Exposure Source*, International Society of Exposure Science, Henderson, NV, Oct. 22, 2015
- Invited Speaker, *A New Approach to Groundwater Dating in Delaware*, Delaware Geologic Research Symposium, April 14, 2015.
- Invited Speaker, *Terrestrial Perchlorate: Distribution and Isotopic Composition*, Perchlorate on Mars: Implications to Human Exploration and Astrobiology Workshop, NASA Ames Lab., Moffett Field, CA, Dec. 13-14, 2014.
- Invited Speaker, *Isotopic Composition of Perchlorate from Atmosphere to Aquifer*, Energy Biosciences Institute, Berkeley, CA, Nov. 5, 2014.
- Invited Speaker, *Applications of Radionuclide Measurements in Studies of Sedimentation, Pedogenesis, and Carbon Cycling*, U.S. Geological Survey, National Research Program/Eastern Branch Science Seminar, Reston, VA, Aug. 13, 2014.
- Invited Speaker, *Structure, Thermodynamics, and Kinetics of Mineral-Water Interfacial Processes: New Insights from X-ray Reflectivity*, DOE/BES-Geosciences Workshop: Geochemical Probes and Processes, Gaithersburg, MD, March 14-15, 2013.
- Invited Keynote Speaker, *Isotopic Fractionation of Perchlorate from Atmosphere to Aquifer*, Isotopes 2013, Sopot, Poland, June 16-21, 2013
- Invited Speaker, *Applications of Noble Gas Radionuclides in Determining Groundwater Pathways and Residence Times*, Evaluating Groundwater Pathways and Residence Times as Part of Site Investigations and Post-Closure Safety Assessments for Geological Repositories, IAEA Workshop, Trieste, Italy, June 16-21, 2013
- Invited Keynote Speaker, *Environmental Isotope Forensics of Perchlorate*, Symposium on Environmental Forensics in an Era of Emerging Diagnostic Methods, Groundwater Resources Association of California, Irvine, CA, April 12, 2011
- Invited Keynote Speaker, *A new approach to old water: atom-trap trace analysis of Krypton-81*, International Symposium on Isotopes in Hydrology, Marine Ecosystems, and Climate Change Studies, Monaco, Mar. 27-Apr. 1, 2011
- Invited Keynote Speaker, *Tracing origins and transport of perchlorate using Cl and O isotopes*, Goldschmidt 2010, Knoxville, TN, June 2010
- Invited Speaker, *Noble gas radionuclides and ATTA in hydrology: State of the art*, Goldschmidt 2009, Davos, Switzerland, June, 2009.
- Invited Speaker, *Environmental Isotope Forensics of Perchlorate*, U. S. EPA, Chicago, IL, May 1-2, 2007.
- Invited Speaker, 4th Mini-Conference on Noble Gases in the Hydrosphere and in Natural Gas Reservoirs, Potsdam, Germany, March, 2007.
- Invited Speaker, *Radiokrypton Analysis in the 21st Century*, Goldschmidt 2006, Melbourne, Australia, August, 2006.

Invited Speaker, Synchrotron Radiation Research in the Pacific Rim and Emerging Techniques and Applications, Pacificchem 2005, Honolulu, HI, Dec. 16-20, 2005.

Invited Speaker, Workshop on Assessing Groundwater Development Potential in Arid and Hyperarid Regions, Giza, Egypt, Dec. 11-12, 2005.

Invited Panelist, *Ground Water Age: Estimation, Modeling, and Water Quality Sustainability*, National Ground Water Association, Lake Tahoe, CA, Sept. 23-26, 2005.

Invited Speaker at *Environmental Forensics: Focus on Perchlorate*, Workshop sponsored by the International Society of Environmental Forensics, Santa Fe, NM, Sept. 21-22, 2005.

Invited Speaker, Synchrotron Environmental Science-III, Brookhaven National Lab., Upton, NY, Sept. 19-21, 2005.

Invited Speaker at Interfacial Water Workshop, sponsored by Sandia National Laboratory, Santa Fe, NM, April 25-26, 2005

Invited Speaker at *Environmental Forensics: Theory, Application, and Case Studies*, Workshop sponsored by the International Society of Environmental Forensics, Charleston, SC, November 9-10, 2004.

Invited Speaker at *Perchlorate 2004: Perchlorate in California's Groundwater*. Conference sponsored by Groundwater Resources Association of California, August 4, 2004, Glendale CA.

Invited Speaker, Symposium on Application of Environmental Chemistry in Forensic Investigations, Pittcon 2004, Chicago IL, March 7-12, 2004.

Invited Speaker, *International Workshop to Identify Water Resources/Environment-Related Research Needs for Egypt*, Cairo, Egypt, Dec. 3-6, 2003.

Organizer and Speaker, *New Views of Earth and the Environment*, Chicago Teachers as Scholars Workshop, Chicago, IL, April 7-8, 2003.

Invited Speaker, Environmental Science Workshop, Canadian Light Source Fifth Users Meeting, Saskatoon, Nov. 2002.

Invited Speaker, 25th Midwest Environmental Chemistry Workshop, Chicago, IL, Oct. 2002.

Invited Speaker, American Geophysical Union symposium on *Nanoparticles in the Environment and Technology*, San Francisco, CA, Dec. 9-15, 2001.

Invited Speaker, NSF Workshop on Future Directions in Solid State Chemistry, Davis, CA, Oct. 12-14, 2001

Invited Speaker, Eleventh Annual Goldschmidt Conference, Roanoke, VA, May 20-24, 2001.

Invited Participant, Environmental Chemistry at the Clay-Water Interface, Soil Science Society of America, Bouyoucos Conference, Honolulu, HI, March 6-10, 2000.

Invited Speaker, Symposium on Frontiers of Aqueous Physical Chemistry, 13th International Conference on the Properties of Water and Steam, Toronto, Canada Sept. 12-16, 1999.

Invited Speaker, DOE/BES Geosciences Workshop on Interfacial Processes in Geosciences, Richland, WA, Feb. 1-2, 1999.

Invited Speaker, Workshop on Environmental Molecular Science, 8th Annual User's Meeting of the Advanced Photon Source, Argonne, IL, October 1998.

Invited Speaker, DOE/BES Earth Sciences Research Council Workshop, Scaling in Geological Systems: Atomic to Field-Scale Processes, Bodega Bay, CA, Sept. 27-30, 1997.

Invited Speaker, *Mineral Growth Kinetics and Surface Reactivity*, V.M. Goldschmidt Conference, Tucson, AZ, June 3-6, 1997.

Invited Speaker, Symposium on Applications of Synchrotron X-rays in Earth and Environmental Sciences, Fall Meeting of the American Chemical Society, Las Vegas, Nevada, Sept. 1997.

Invited Speaker, X-ray Spectroscopies of Environmental Interfaces: Theory and Experiment Workshop, Richland, WA, September 1996.

Committees and Working Groups, National

Member (elected), Users Executive Committee, National Synchrotron Light Source-II, 2015-2017

Chair, External Advisory Board, Energy Frontier Research Center, Lawrence Berkeley National Lab., 2010-present

Member, Technical Advisory Committee, DOD-ESTCP Rialto-Colton-Fontana Perchlorate Isotope Study, 2010-2015

Invited Participant, NSF Workshop on Geomicrobiology and Microbial Geochemistry, Chicago, IL, Oct. 9-11, 2013.

Chair, Science Team for Advanced Photon Source Renewal Proposal (Geological, Environmental, and Planetary Sciences), June-October, 2008

Invited Participant, DOE/NSF Workshop, Assessing Synchrotron Radiation Capabilities and Future Needs for Molecular Environmental Science and Low-Temperature Geochemistry, Rockville, MD, July 23-24, 2007

Invited Participant, DOE/EM Subsurface Contaminants Focus Area, Phytoremediation Workshop, Argonne, IL, 11/30-12/2/99.

Invited Participant, DoE Workshop on Molecular Environmental Science, Airlie, VA, July 1995.

Member, DOE Interlaboratory Geosciences Coordinating Group (1989-2000)

Member, Extraterrestrial Resource Utilization, DOE Working Group for the Space Exploration Initiative (1990)

Member, Illinois Basin Ultradeep Drillhole Consortium (1986)

Committees and Working Groups, Local and Regional

Member, Search Committee for Dean, UD College of Earth, Ocean, and Environment

Member, Pre-Selection Committee for The Franklin Institute, Bower Award & Prize for Achievement in Science, June 2016

Member, USGS National Research Program Search Committee for Radionuclide Geochemist (Feb-Mar 2016)
 Member, Diversity Committee, UD College of Earth, Ocean, & Environment (2015-)
 Member (elected), Executive Committee, UIC College of Liberal Arts and Sciences (2014)
 Member, UIC Campus Research Board (2012-2014)
 Member (elected), UIC Faculty Senate (2013-2014)
 Chair, UIC Earth & Environmental Sciences Department Faculty Search Committee (2012-2013)
 Member, UIC Chemistry Department Faculty Search Committee (2012-2013)
 Member, Search Committee for Dean of the College of Liberal Arts and Sciences, UIC (2011-2012)
 Organizer, CIC Geoscience Department Heads and Chairs Workshop, Chicago, IL, October 2010
 Participant, CIC Geoscience Department Heads and Chairs Workshop, East Lansing, MI, September 2008
 Participant, CIC Geoscience Department Heads and Chairs Workshop, Ann Arbor, MI, September 2007
 Participant, CIC Geoscience Department Heads and Chairs Workshop, Evanston, IL, September 2006
 Chair, UIC Biological Sciences Department Head Search Committee (2004-2005)
 Participant, CIC Geoscience Department Heads and Chairs Workshop, Madison, WI, October 2004.
 Participant, CIC Geoscience Department Heads and Chairs Workshop, W. Lafayette, IN, October 2003.
 Member, UIC Institute of Environmental Science and Policy Steering Committee (2002-present)
 Chair, UIC Biological Sciences Department Head 5-Year Review Committee (2002-2003)
 Participant, CIC Geoscience Department Heads and Chairs Workshop, Iowa City, IA, October 18, 2002.
 Member, Board of Governors, Consortium for Advanced Radiation Sources (2001-2013)
 Member, UIC Chemistry Department Review Committee (2001)
 Member, X15A Participating Research Team, National Synchrotron Light Source (1997-2000)
 Member, BES Synchrotron Radiation Center Collaborative Access Team, Advanced Photon Source (1992-2000)
 Member, BESSRC-CAT Users Committee (1995-1997)
 Member, BESSRC-CAT Executive Committee (1997-2000)
 Member, ANL Environmental Research Division Promotion and Hire Committee (1997-2000)

Invited Lectures - Other

1987-2000:

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| Associated Colleges of the Chicago Area - Nuclear Chemistry Seminar Series | U.S. Geological Survey (Menlo Park, CA) |
| California Institute of Technology | U. S. Geological Survey (Reston, VA) |
| Carnegie Institution of Washington | Universite Blaise Pascal (France) |
| Egyptian Geological Survey & Mining Authority (Cairo) | University of Chicago |
| Geological Society of Washington | University of Grenoble (France) |
| Geological Survey of Japan | University of Illinois at Chicago |
| Institute of Geological & Nuclear Sciences (New Zealand) | University of Illinois at Urbana-Champaign |
| Kyoto University (Japan), Kyushu University (Japan) | University of Iowa |
| Los Alamos National Laboratory | University of Maryland |
| Miami University | University of Oklahoma |
| Northern Illinois University | University of Paris (France) |
| 28th North Jersey Junior Science & Humanities Symp. | University of Southern California |
| Northwestern University | University of Wisconsin – Madison |
| Purdue University | Washington University, St. Louis, MO |

2001-2010:

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| Miami University, Oxford, OH | Washington University, St. Louis, MO |
| Rensselaer Polytechnic Institute, Troy, NY | University of Kentucky, Lexington, KY |
| University of Wisconsin, Madison, WI | Western Michigan University, Kalamazoo, MI |
| Northwestern University, Evanston, IL | University of Illinois at Chicago, Chicago, IL |
| University of New Mexico, Albuquerque, NM | U. S. EPA Region V, Chicago, IL (2) |
| Ain Shams University, Cairo, Egypt (2) | American Inst. Prof. Geologists, Chicago Chapter |
| SUNY University at Buffalo, NY | University of Wisconsin, Milwaukee, WI |
| Association of Engineering Geologists, Chicago, IL | University of Texas at Arlington |
| University of Chicago, Chicago, IL | Purdue University |

Research Participants Supervised:

Undergraduate Students:

Ben Alsip, UIC (earth and environmental sciences)
Shelby Amsel, U. Delaware (geological sciences)
Matt Averill, Albion College (geology)
Chris Bareither, U. Wisconsin (geological engineering)
Kyle Bareither, Michigan Tech. (geological engineering)
Sherry Bisgrove, University of Rochester (geology)
Valerie Blomgren, UIC (earth and environmental sciences)
Lars Couture, University of Chicago (physics)
Kyle Cronin, UIC (earth and environmental sciences)
Emily Dangremond, Washington U. (earth and planetary sciences)
Terri-Lynn Day, University of Pittsburgh (geology)
Kavita Hardy, Swarthmore College (chemistry)
Nancy Martinez, UIC (earth and environmental sciences)
Nnamdi Lionel Mojekwu, UIC (earth and environmental sciences)
Candice Morrison, UIC (earth and environmental sciences)
Roxanne Myshkowec, University of Chicago (chemistry)
Rachel Owrutsky, University of Delaware (chemistry)
Gavin Phillips, University of Delaware (geological sciences)
Michelle Rau, Duke University (biochemistry)
Jeff Seitz, Washington University (geochemistry)
Michael Shand, University of Delaware (geological sciences)
Megan Smoley, Pennsylvania State University (geology)
Josh Stanford, UIC (earth and environmental sciences)
Sean Stoll, SUNY-Stony Brook (physics)
Ben Thurnhoffer, UIC (earth and environmental sciences)
Jeff Ullian, College of St. Francis (biology)

Graduate Students: (as principal thesis advisor)

Steve Armstrong, University of Illinois at Chicago (geochemistry), M.S. 1997
Francesco Bellucci, U. Illinois Chicago (geochemistry), M.S., 2007; Ph.D. 2011
Abelardo Beloso, University of Illinois at Chicago (geochemistry), M.S. 2004
Joseph Beutler, University of Illinois at Chicago (geochemistry), M.S. 2013
Erika Callagon, University of Illinois at Chicago (geochemistry), Ph.D. 2016
Margaret Corcoran, University of Illinois at Chicago (geochemistry), M.S. 2013
Karyn DeFranco, University of Delaware (geochemistry), M.S. in progress
Sheng Huang, University of Illinois at Chicago (geochemistry), M.S. 2006
Jiajia Lin, University of Illinois at Chicago (geochemistry), Ph.D. 2015
Candice Morrison, University of Illinois at Chicago (geochemistry), M.S. 2009
Leslie Patterson, University of Illinois at Chicago (geochemistry), M.S. 2003
Armen Poghosyan, University of Illinois at Chicago (geochemistry), Ph.D. 2013
Peter Probst, University of Illinois at Chicago (geochemistry), M.S. 2007
Mahmoud Sherif, University of Delaware (geochemistry), Ph.D. in progress
Colin Smalley, University of Illinois at Chicago (geochemistry), M.S. 2013
Kara Sterling, University of Illinois at Chicago (geochemistry), M.S. 2006
Christy Suh, University of Illinois at Chicago (geochemistry), M.S. 2002
Alexs Thompson, University of Illinois at Chicago (geochemistry), M.S. 2007
Gus Vythoukaskas, University of Illinois at Chicago (geochemistry), M.S. 1994

Graduate Thesis Committees: (as member)

Nemesio Perez, Ph.D. Geology, Canary Islands (1992)
Jennifer Lewicki, M.S. Geology, Arizona State University (1993)
Sophie Rihs, D.Sc. Geochemistry, Clermont-Ferrand, France (1998)
Likwan Cheng, Ph.D. Materials Science and Engineering, Northwestern University (1998)
Azza Farag Hassan, M.Sc. Geology, Cairo University, Egypt (2003)
Kingsley Nissanka, M.S. Earth and Environmental Sciences, UIC (2003)
Todd Brown, M.S. Earth and Environmental Sciences, UIC (2003)
Carrie Olsen, M.S. Earth and Environmental Sciences, UIC (2003)
Aref Ali Abdullah Sagheer, M.Sc. Geology, Cairo University, Egypt (2003)
Zhan Zhang, Ph.D. Materials Science and Engineering, Northwestern University (2004)

William Bates, M.S., Earth and Environmental Sciences, UIC (2005)
 Rebekah Fitchett, M.S., Earth and Environmental Sciences, UIC (2005)
 Jennifer Lawson, Ph.D., Earth and Environmental Sciences, UIC (2005)
 Tarfa Alshaiba Khamis Al-Shariani, Ph.D., Geology, Cairo University, Egypt (2005)
 Justin Ford, M.S., Environmental and Occupational Health Sciences, UIC (2005)
 Wenlu Song, Ph.D., Environmental and Occupational Health Sciences, UIC (2005)
 Zenon Mateo, M.S., Earth and Environmental Sciences, UIC (2005)
 Henry Holmstrand, Ph.D., Applied Environmental Sci., Stockholm University, (2006)
 Todd Ventura, Ph.D., Earth and Environmental Sciences, UIC (2006)
 Sang Soo Lee, Ph.D., Earth and Environmental Sciences, UIC (2007)
 Lina Taneva, Ph.D., Biological Sciences, UIC (2007)
 Caroline Jaraula, Ph.D., Earth and Environmental Sciences, UIC (2008)
 Aref Ali Abdullah Sagheer, Ph.D., Geology, Cairo University, Egypt (2008)
 Haytham Mohamed Gamal El-Deen Ismail, M.S., Geology, Cairo University, Egypt (2008)
 Sara O'Brien, Ph.D., Biological Sciences, UIC (2009)
 Rebecca Trueman, Ph.D., Biological Sciences, UIC (2009)
 Mohamed Sayed Mabrouk, M.S., Geology, Cairo University, Egypt (2009)
 Usama Abu Risha, Ph.D., Hydrology, University of South Australia (2010)
 Ahmed Al Gendy, M.Sc., Geology, Cairo University, Egypt (2010)
 Osama Rahil Omar Shaltami, Ph.D., Geology, Cairo University, Egypt (2011)
 Zafer Wagih Seif, M.S., Geology, Cairo University, Egypt (2012)
 Rania Saied Ismaeil, M.S., Geology, Cairo University, Egypt (2013)
 Mohamed Mabrouk, Ph.D., Geology, Cairo University, Egypt (2013)
 Jiehong Guo, Ph.D., Environmental and Occupational Health Sciences, UIC (2014)
 Chris Bloszies, M.S., Earth and Environmental Sciences, UIC (2014)
 Hend Abu Salem, Ph.D., Geology, Cairo University, Egypt (2015)
 Hassan Ahmed Alkhaled, M.S., Geology, Cairo University, Egypt (2015)
 Elena Blanc-Betes, Ph.D., Biological Sciences, UIC (2017)
 Soheil Hosseini, Ph.D., Civil and Materials Engineering, UIC (2016)
 Solidea Bonina, Ph.D., Civil and Materials Engineering, UIC (2016)

K-12 Teachers: Ms. Shakura Haqqe, Crane High School, Chicago (environmental science)

Postdoctoral Appointees:
 (with current address)

Dr. Osama Abu Risha (Desert Research Center, Cairo, Egypt)
 Dr. Greg Arehart (U. Nevada - Reno)
 Dr. Allen Bakel (Argonne National Laboratory)
 Dr. J.K. Böhlke (USGS, Reston, VA)
 Dr. Evilene Bowley (U. Illinois at Chicago)
 Dr. Likwan Cheng (City Colleges of Chicago)
 Dr. Ron Chiarello (Entrepreneur/Consultant)
 Dr. John Hanchar (Memorial University of Newfoundland)
 Dr. Lin Huang (Environment Canada)
 Dr. Sophie Rihs (U. Strasbourg)
 Dr. Hui Henry Teng (George Washington U.)
 Dr. Roy Wogelius (Manchester U.)
 Dr. Reika Yokochi (U. Chicago)

Staff Scientists (Argonne):
 Dr. Teofilo Abrajano (geochemist)
 Dr. Ron Chiarello (physicist)
 Dr. Paul Fenter (physicist)
 Dr. Ben Holt (analytical chemist)

Technical Staff (UIC):
 Ms. Linnea Heraty (environmental geochemist)
 Ms. Leslie Patterson (geochemist)
 Mr. Abe Beloso, Jr. (geochemist)

Technical Staff (U Delaware):
 Ms. Linnea Heraty (Environmental Isotope Geochemistry Laboratory manager)
 Mr. William Parnella (Senior Research Technician I)

Courses Taught at UIC

Introduction to Geochemistry (multiple times)

Environmental Geochemistry (multiple times)

Stable Isotope Geochemistry and Biogeochemistry (graduate course, multiple times)

Environmental Radioactivity (graduate course, multiple times)

Special Topics in the Geosciences (multiple times; topics included Geologic Hazards, Climate Change)

Environmental Forensics (graduate course, co-taught once)

Advanced Soil Science (graduate course, co-taught once)

Courses Taught at U Delaware

Geology of the Southwest (field course; Spring 2015, Spring 2016)

Isotope Geochemistry (graduate course, co-taught, Spring 2016)

Environmental Geochemistry, Spring 2017

Guest lecturer in Environmental Forensics (Spring 2015; Spring 2017)

Neil C. Sturchio: Research Funding History

Research Funding as Principal Investigator (total awards as PI ~\$13M):

Period of Grant: 10/1/1986-9/30/1987
Amount: \$116,000
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project Title: *Trace Element Transport in Lithic Material by Fluid Flow at Elevated Temperature*

Period of Grant: 10/1/1987-9/30/1994
Amount: \$1,494,000
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project Title: *Hydrothermal System Evolution*
Supplemental Capital Equipment Funds: \$251,000 (1990)
Justification: Purchase of VG Prism II Isotope Ratio Mass Spectrometer
Supplemental Capital Equipment Funds: \$64,000 (1991)
Justification: Purchase of HPGe Gamma Spectrometry System
Supplemental Capital Equipment Funds: \$30,000 (1993)
Construction of Laser/Fluorination Apparatus

Period of Grant: 10/1/1988-9/30/1990
Amount: \$50,000
Sources: U. S. Geological Survey/Water Resources Division
Project Title: *Application of U, Ra, and Th Isotopes in Characterizing the Hydrogeology of Mammoth Hot Springs and the Adjacent Yellowstone Valley*

Period of Grant: 10/1/1990-9/30/1993
Amount: \$255,000
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project Title: *Petroleum Maturation Processes*

Period of Grant: 10/1/1991-9/30/1996
Amount: \$2,065,000
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project: *Mineral-Fluid Interactions: Synchrotron Radiation Studies at the Advanced Photon Source*
Supplemental Capital Equipment Funds: \$150,000 (1992)
Justification: Purchase of Multielement X-ray Detector
Supplemental Capital Equipment Funds: \$142,000 (1993)
Justification: Purchase of X-ray Scattering Spectrometer
Supplemental Capital Equipment Funds: \$112,000 (1994)
Justification: Purchase of X-ray Scattering Spectrometer
Supplemental Capital Equipment Funds: \$80,000 (1995)
Justification: Equipment for X-ray Scattering Station at APS

Period of Grant: 10/1/1995-9/30/1996
Amount: \$75,000
Source: Argonne National Laboratory/Laboratory-Directed Research and Development Program
Project: *Stable Isotopic Investigations of the Chemical and Biological Degradation of Chlorinated Organic Solvents*

Period of Grant: 10/1/1996-9/30/1999
Amount: \$825,000
Source: DOE Environmental Management Science Program
Project: *Stable Isotopic Investigations of In Situ Bioremediation of Chlorinated Organic Solvents*

Period of Grant: 10/1/1996-9/30/1999
Amount: \$1,860,000
Source: DOE Office of Basic Energy Sciences
Project: *Mineral-Fluid Interactions: Synchrotron Radiation Studies at the Advanced Photon Source*
Supplemental Capital Equipment Funds: \$225,000 (1996)

Justification: Equipment for X-ray Scattering/Standing Wave Station at APS
Supplemental Capital Equipment Funds: \$197,000 (1997)
Justification: Equipment for X-ray Scattering/Standing Wave Station at APS
Supplemental Capital Equipment Funds: \$245,000 (1998)
Justification: Equipment for Beamline Construction at APS (\$115,000)
Purchase of Atomic Force Microscope (\$130,000)

Period of Grant: 10/01/1999 – 09/30/2002
Amount: \$1,646,000
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project: *Mineral-Fluid Interactions: Synchrotron Radiation Studies at the Advanced Photon Source*
Supplemental Capital Equipment Funds: \$520,000
Justification: Equipment for Beamline Construction at APS

Period of Grant: 3/15/2002-4/14/2004
Amount: \$90,469
Source: NSF/Hydrological Sciences
Title: *Residence Time of Nubian Aquifer Determined Using Atom-Trap Trace Analysis of Krypton-81*

Period of Grant: 1/15/2003 – 1/14/2006
Amount: \$180,773
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project: *Mineral-Fluid Interactions: Synchrotron Radiation Studies at the Advanced Photon Source*
Effort: 2.0 months summer

Period of Grant: 11/24/2003 – 9/30/2004
Amount: \$10,000
Source: Oak Ridge National Laboratory
Project: *Environmental Isotope Forensics of Perchlorate Contamination*

Period of Grant: 7/1/2004-6/30/2007
Amount: \$197,399
Source: NSF/Hydrological Sciences
Title: *Krypton Isotope Hydrology*

Period of Grant: 1/1/2005-12/30/2006
Amount: \$63,500
Source: Metropolitan Water Reclamation District of Greater Chicago
Title: *Stable Isotope Study of Nitrate in the Illinois River Waterway*

Period of Grant: 11/1/2005-10/31/2007
Amount: \$120,000
Source: Henry and Camille Dreyfus Foundation Postdoctoral Fellowship in Environmental Chemistry
Title: *Exploring radiokrypton applications in environmental science: climate change, groundwater, and contaminant transport*

Period of Grant: 1/15/2006 – 1/14/2009
Amount: \$157,846
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project: *Mineral-Fluid Interactions: Synchrotron Radiation Studies at the Advanced Photon Source*
Effort: 2.0 months summer

Period of Grant: 07/01/2007 – 06/30/2008
Amount: \$12,400
Source: NSF-EAR Hydrological Sciences
Project: *SGER: Exploratory Research in Isotope Hydrology (with T. Coplen, USGS)*

Period of Grant: 1/1/2008-12/30/2008
Amount: \$29,200

Source: Metropolitan Water Reclamation District of Greater Chicago
Title: *Stable Isotope Study of Nitrate in the Illinois River Waterway*

Period of Grant: 7/1/2008-12/31/2009
Amount: \$102,000

Source: Metropolitan Water Reclamation District of Greater Chicago
Title: *Greenhouse Gas Emissions from the Stickney Water Reclamation Plant*

Period of Grant: 1/1/2009-12/31/2009
Amount: \$10,000
Source: LAS Interdisciplinary Research Fund
Title: *Nitrate Behavior in a Restored Wetland*

Period of Grant: 1/15/2009 – 1/14/2012
Amount: \$185,729
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project: *Mineral-Fluid Interactions: Synchrotron Radiation Studies at the Advanced Photon Source*
Effort: 2.0 months summer

Period of Grant: 1/1/2011 – 12/31/2012
Amount: \$89,608
Source: NSF/EAR-Instrumentation and Facilities
Project: *Upgrade of Gamma Spectrometry Facility at the Environmental Isotope Geochemistry Laboratory of the University of Illinois at Chicago*

Period of Grant: 1/15/2012 – 1/14/2015
Amount: \$341,035
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project: *Mineral-Fluid Interactions: Synchrotron Radiation Studies at the Advanced Photon Source*
Effort: 2.0 months summer

Period of Grant: 4/1/2012 – 3/30/2013
Amount: \$25,000
Source: NSF EAR/Hydrological Sciences
Project: *International Workshop on Tracer Applications of Noble Gas Radionuclides in the Geosciences*

Period of Grant: 1/1/2015 – 12/31/2017
Amount: \$341,592 (Argonne National Lab subcontract to UD)
Source: DOE Office of Basic Energy Sciences/Geosciences Research Program
Project: *Mineral-Fluid Interactions: Synchrotron Radiation Studies at the Advanced Photon Source*
Effort: 1.5 months summer

Period of Grant: 5/1/2017 – 4/30/2020
Amount: \$1,014,223
Source: DOD Strategic Environmental Research and Development Program
Project: *Application of C and N Stable Isotope Analysis to Evaluate Biotic and Abiotic Degradation of DNAN and NTO (with M. Fuller and P. Hatzinger, CB&I Federal Services, Inc.)*
Effort: 0.5 months summer

Research Funding History as co-PI (total awards as co-PI > \$13M):

Period of Grant: 7/1/1994-6/30/1995
Amount: \$10,180
Source: NATO
Project: *Applied Fluid Geochemistry to Hydrological, Environmental, and Volcanological Studies in the Canary Islands, Spain (with N. Perez)*

Period of Grant: 1/1/1995-12/30/1999
 Amount: \$3,000,000
 Source: U.S.D.A./Egyptian Ministry of International Cooperation
 Project: *Center for Environmental Hazard Mitigation, Cairo University, Giza, Egypt* (with M. Sultan and others)

Period of Grant: 03/15/1998 – 12/31/2000
 Amount: \$81,547
 Source: NSF-EAR Instrumentation and Facilities
 Project: *Acquisition, Upgrade, and Support of an Electron Microprobe Facility at UIC* (with M. Flower (PI); K. Bartels, S. Guggenheim, A. Koster van Groos)

Period of Grant: 04/01/1998 – 03/31/1999
 Amount: \$23,600
 Source: NSF Office of International and Integrative Activities
 Project: *US-Egypt Cooperative Research: Assessment and Remediation of Industrial Sources of Lead in Cairo's Air* (with M. Sultan)

Period of Grant: 7/01/2001 – 6/30/2004
 Amount: \$520,445 (\$75,000 to UIC per subcontract through Argonne National Laboratory)
 Source: NASA
 Project: *Assessment, Monitoring, and Modelling of Land-Cover, Land-Use Changes and Their Impacts on Groundwater Resources, Ecosystems, and Carbon Cycling in Saharan Africa: A Case Study, SW Egypt* (with M. Sultan and R. M. Miller)

Period of Grant: 1/01/2002-12/31/2004
 Amount: \$375,000 (\$80,000 to UIC per subcontract through U California Berkeley)
 Source: NASA Astrobiology Program
 Project: *Biogeochemical Mars-like Environments* (with J. Banfield, G. Luther, D. Emerson, and E. Roden)

Period of Grant: 9/1/2002-8/31/2005
 Amount: \$45,000 (21,000 to NCS)
 Source: U.S.-Egypt Joint Science and Technology Fund (via USDA)
 Title: *Environmental Assessment of Natural Radioactivity and Heavy Metal Pollution, El Fayoum area, Egypt* (with B. El Kaliouby, Y. Dawood, and M. Sultan)

Period of Grant: 4/15/03-9/14/05
 Amount: \$540,000
 Source: DOE Environmental Management Science Program
 Project: *Reactivity of Primary Soil Minerals and Secondary Precipitates beneath Leaking Hanford Waste Tanks* (with K. L. Nagy)

Period of Grant: 9/1/03-8/31/04
 Amount: \$72,000
 Source: NSF-EAR Instrumentation and Facilities
 Project: *Acquisition of an isotope ratio mass spectrometer for continuous flow analyses of carbon, hydrogen, and chlorine isotopic compositions of organic compounds* (with F. Kenig (PI) and P. Doran)

Period of Grant: 3/1/05-9/30/07
 Amount: \$1,142,500 total (\$165,000 to NCS per subcontract through Shaw Environmental)
 Source: Environmental Security Technology Certification Program (DoD)
 Project: *Validation of Chlorine and Oxygen Isotope Ratio Analysis to Differentiate Perchlorate Sources and To Document Perchlorate Biodegradation* (with P. Hatzinger, J.K. Bohlke, and B. Gu)

Period of Grant: 4/1/2005-3/30/2008
 Amount: \$107,941 to NCS
 Source: DOE Atmospheric Sciences Program
 Title: *Determining Aerosol Mean Residence Times and Black Carbon Washout Rates With Natural Radionuclides and Isotopic Signatures* (with J. Gaffney and T. Guilderson)

Period of Grant: 6/1/2005-5/30/2006
 Amount: \$100,000
 Source: The Wetlands Initiative
 Title: *Baseline Study of Carbon and Nitrogen Cycle in Goose Pond Engineered Wetland Project Area* (with M. Gonzalez-Meler)

Period of Grant: 03/01/2006 – 9/30/2008
 Amount: \$732,613 (\$550,000 to UIC)
 Source: DOE/Environmental Management Science Program
 Title: *Nucleation and Precipitation Processes in the Vadose Zone during Contaminant Transport* (with K. L. Nagy, L. Soderholm, and C. Darnault)

Period of Grant: 4/1/2007 – 3/31/10
 Amount: \$412,216
 Source: NSF/EAR – Instrumentation and Facilities
 Title: *Development of New Instrumentation for Laser Atom-Trap Analysis of Radiokrypton* (with Z.T. Lu and A.M. Davis)

Period of Grant: 9/7/2008-9/6/2013
 Amount: \$200,000 to NCS per subcontract from Shaw Environmental
 Source: DOD-SERDP
 Title: *Formation mechanisms and isotopic characteristics of natural perchlorate* (with P. Hatzinger, Shaw Inc.; A. Jackson, Texas Tech; J.K. Bohlke, USGS; B. Gu, ORNL)

Period of Grant: 6/1/2009 – 9/30/13
 Amount: \$231,812 – ARRA grant
 Source: NSF/EAR – Petrology and Geochemistry
 Title: *New Insights on Mantle Volatiles from Noble Gas Radionuclides* (with R. Yokochi)

Period of Grant: 8/16/2009 – 9/15/13
 Amount: \$418,210 – ARRA grant
 Source: NSF/DEB – Ecosystem Science Cluster
 Title: *Effects of long-term elevated CO₂ on earthworm populations, bioturbation and carbon sequestration in soils* (with Y. Sanchez de Leon & M. Gonzalez-Meler)

Period of Grant: 3/15/2010 – 2/29/2012
 Amount: \$1,999,999 – ARRA grant
 Source: NSF Major Research Instrumentation
 Title: *MRI-R2: Acquisition of an Aberration-Corrected Scanning Transmission Electron Microscope for Multidisciplinary Research and Education at UIC* (with R. Klie (PI), S. Erdal, S. Ghosh, L. Hanley, D. He, G. A. Mansoori, F. Mashayek, C. Megaridis, R. Meyer, A. Nicholls, C. Takoudis)

Period of Grant: 10/1/2009 – 9/30/2013
 Amount: \$147,000 to NCS per subcontract through Shaw Environmental
 Source: DOD/SERDP
 Project: *Evaluation Of Perchlorate Sources In the Rialto-Colton-Fontana Area Using Chlorine And Oxygen Stable Isotope Ratio Analysis And Depth-dependent Water Quality Data* (with P. Hatzinger, Shaw Inc.; A. Jackson, Texas Tech; J.K. Bohlke and J. Izbicki, USGS)

Period of Grant: 8/1/2010 – 7/31/2015
 Amount: \$2,000,000
 Source: EPA-Great Lakes National Program Office
 Project: *Great Lakes Sediment Surveillance Program (GLSSP)* (with A. Li, UIC; K. Rockne, UIC; and J.P. Giesy, University of Saskatchewan)

Period of Grant: 3/1/2011 – 1/31/2015
 Amount: \$60,000 to NCS per subcontract through University of Connecticut
 Source: DOD/SERDP

Project: *Tracking the Uptake, Translocation, Cycling, and Metabolism of Munitions Compounds in Coastal Marine Ecosystems Using Stable Isotope Tracers* (with C. Tobias and P. Vlahos, U. Connecticut; J.K. Böhlke, USGS; S. Fallis, Naval Air Warfare Center)

Period of Grant: 3/1/2012 – 2/28/2014
Amount: \$595,000 (\$125,000 to NCS per subcontract through Shaw Environmental)
Source: DOD/SERDP
Project: *Validation of Stable Isotope Ratio Analysis to Document the Biodegradation and Natural Attenuation of RDX* (with P. Hatzinger and M. Fuller, Shaw Environmental; J.K. Böhlke, U.S. Geological Survey)

Period of Grant: 7/1/2012 – 6/30/2013
Amount: \$40,000
Source: NSF/Geobiology and Low-Temperature Geochemistry
Project: *Seeking New Paleotemperature Proxies: Noble Gases in Evaporites* (with R. Yokochi, U. Chicago)

Period of Grant: 10/1/2013 – 9/30/2016
Amount: \$100,000 to NCS per subcontract through Lawrence Berkeley National Laboratory
Source: DOE/Geothermal
Project: *Surface estimates of deep permeability* (with B.M. Kennedy & E. Sonnenthal, Lawrence Berkeley National Laboratory; S. Ingebritsen, U.S. Geological Survey)

Period of Grant: 10/1/2014 – 9/30/2017
Amount: \$75,000 to NCS per subcontract through Lawrence Berkeley National Laboratory
Source: DOE/Geothermal
Project: *Radioisotope Tracers to Define Fracture Attributes for Enhanced Geothermal Systems* (with J.N. Christensen, E. Sonnenthal, S.T. Braun, & D. J. DePaolo, Lawrence Berkeley National Laboratory)

Neil C. Sturchio: Publications

BOOKS EDITED:

Fenter P., Rivers M. L., Sturchio N. C. and Sutton S. (Eds.), 2002. Applications of Synchrotron Radiation in Low-Temperature Geochemistry and Environmental Science. *Reviews in Geochemistry and Mineralogy*, Vol. 49. 579 p.

PATENTS:

U.S. Patent # 5,942,439. Ben D. Holt and Neil C. Sturchio. Method for Isotopic Analysis of Chlorinated Organic Compounds (issued 8/28/1999).

ARTICLES AND BOOK CHAPTERS [Google Scholar Citations *h*-index = 58; times cited = 9,445 as of 3.8.2017]

2017

206. Codling G, Soheil Hosseini, Margaret B. Corcoran, Solidea Bonina, Tian Lin An Li, Neil C. Sturchio, Karl J. Rockne, Kyunghye Ji, Hui Peng John P. Giesy, 2017. Current and historical concentrations of poly and perfluorinated compounds in sediments of the northern Great Lakes – Superior, Huron, and Michigan. (*submitted*)

205. Codling G, Rockne KJ, Li A, Sturchio NC, Sherif M, et al., 2017. Spatial and temporal trends in poly- and per-fluorinated compounds in the Laurentian Great Lakes Erie, Ontario and St. Clair. (*submitted*)

204. Lee SS, Fenter P, Nagy KL, Sturchio NC, 2017. Real-time observation of cation exchange kinetics and dynamics at the muscovite–water interface. *Nature Communications* (accepted for publication).

203. William Jackson; Nubia Luz Estrada, Ph.D.; John K Böhlke; Neil C Sturchio; Baohua Gu; Greg Harvey; Kent O Burke; David A Grantz; Margaret T McGrath; Todd A Anderson; Balaji Rao; Ritesh Sevanthi; Paul Hatzinger; 2017. Stable isotopic composition of perchlorate and nitrate accumulated in plants: hydroponic experiments and field data. *Science of the Total Environment* (accepted for publication).

202. Dandan Cao, Jiehong Guo, Yawei Wang, Zhuona Li, Kang Liang, Margaret B. Corcoran, Soheil Hosseini, Solidea M. C. Bonina, Karl J. Rockne, Neil C. Sturchio, John P. Giesy, Jingfu Liu, An Li, Guibin Jiang, 2017. Organophosphate Esters in Sediments of the Great Lakes. *Environmental Science and Technology* 51, 1441-1449.

201. Böhlke JK, Mroczkowski SJ, Sturchio NC, Heraty LJ, Richman K, Sullivan D, Griffith K, Hatzinger PJ, 2017. Stable isotope analysis of oxygen (^{18}O : ^{17}O : ^{16}O) and chlorine (^{37}Cl : ^{35}Cl) in perchlorate: Reference materials, calibrations, and interferences. *Rapid Communications in Mass Spectrometry* 31, 85-110.

200. Jiehong Guo, Zhuona Li, Prabha Ranasinghe, Solidea Bonina, Soheil Hosseini, Margaret B. Corcoran, Colin Smalley, Karl J. Rockne, Neil C. Sturchio, John P. Giesy, An Li, 2017. Spatial and temporal trends of polyhalogenated carbazoles in sediments of upper Great Lakes: Insights into their origin. *Environmental Science and Technology* 51, 89-97.

2016

199. Yuan K, Lee SS, Andrade VJ, Sturchio NC, Fenter P, 2016. The replacement of calcite (CaCO_3) by cerussite (PbCO_3). *Environmental Science and Technology* 50, 12984-12991.

198. Callagon E, Lee SS, Eng P, Laanait N, Sturchio NC, Nagy KL, Fenter P, 2016. Heteroepitaxial growth of cadmium carbonate at dolomite and calcite surfaces: Mechanism and rates. *Geochimica et Cosmochimica Acta* (accepted for publication).

197. Lee SS, Heberling F, Sturchio NC, Eng P, Fenter P, 2016. Surface Charge of the Calcite (104) Terrace Measured by Rb^+ Adsorption in Aqueous Solutions Using Resonant Anomalous X-ray Reflectivity. *J. Phys. Chem. C* 120, 15216–15223.

196. Soheil Hosseini, Solidea M.C. Bonina, Margaret B. Corcoran, Colin Smalley, Jiehong Guo, Neil C. Sturchio, An Li, and Karl J. Rockne, 2016. Spatial and Temporal Trends in Black Carbon Deposition to the Upper Great Lakes in the Last 100 Years. *Environmental Science and Technology* (submitted).
195. Margaret Corcoran, Solidea Bonina, Jiehong Guo, Armen Poghosyan, An Li, Karl Rockne, John Geisy, Neil Sturchio, 2016. Variations in Sedimentation Rate and Sediment Focusing in Lake Michigan Based on Radionuclide Profiles. *Submitted to J. Great Lakes Res.*
194. Peng, Hui; Chen, Chunli; Cantin, Jenna; Saunders, David; Sun, Jianxian; Tang, Song; Codling, Garry; Hecker, Markus; Wiseman, Steve; Jones, Paul; Li, An; Rockne, Karl; Sturchio, Neil; Giesy, John, 2016. Untargeted Screening and Distribution of Organo-Iodine Compounds in Sediments of Lake Michigan. *Environmental Science and Technology* 50: 10,097-10,105.
193. Guo J, Bonina S, Corcoran M, Kaliappan R, Wu Y, Chen D, Sandy AL, Rockne KJ, Sturchio NC, Giesy JP, Li A, 2016. Accumulation of Atrazine and Related Compounds in Sediments of Upper Great Lakes. *Environmental Science and Technology* 50, 7335–7343.
192. Fuller ME, Heraty LJ, Condee C, Vainberg S, Sturchio NC, Bohlke JK, Hatzinger PB, 2016. Relating carbon and nitrogen isotope effects to reaction mechanisms during aerobic and anaerobic degradation of hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) by pure bacterial cultures. *Applied Environmental Microbiology* 82: 3297–3309.
191. Blanc-Betes, E., Welker, J. M., Sturchio, N. C., Chanton, J. P. and Gonzalez-Meler, M. A., 2016. Winter precipitation and snow accumulation drive the methane sink or source strength of Arctic tussock tundra. *Global Change Biology* 22: 2818–2833.
190. Lee SS, Schmidt M, Fister TT, Nagy KL, Sturchio NC, Fenter P, 2016. Structural characterization of aluminum (oxy)hydroxide films at the muscovite (001) - water interface. *Langmuir* 32, 477-486.
189. Peng, Hui; Chen, Chunli; Cantin, Jenna; Saunders, David; Sun, Jianxian; Tang, Song; Codling, Garry; Hecker, Markus; Wiseman, Steve; Jones, Paul; Li, An; Rockne, Karl; Sturchio, Neil; Giesy, John, 2016. Untargeted Screening and Distribution of Organo-Bromine Compounds in Sediments of Lake Michigan. *Environmental Science and Technology* 50, 321–330.
188. W. Andrew Jackson, Alfonso F Davila, Ph.D.; John K Bohlke, Ph.D.; Neil C Sturchio, Ph.D.; Ritesh Sevanthi; Nubia Estrada, Ph.D.; Megan Brundrett; Denis Lacelle, Ph.D.; Christopher P McKay, Ph.D.; Armen Poghosyan, Ph.D.; Wayne Pollard, Ph.D.; Kris Zacny, 2016. Deposition, accumulation, and alteration of Cl⁻, NO₃⁻, ClO₄⁻ and ClO₃⁻ salts in a hyper-arid polar environment: mass balance and isotopic constraints. *Geochimica et Cosmochimica Acta* 182, 197-215.
- 2015**
187. Nouamane Laanait, Erika B. R. Callagon, Zhan Zhang, Neil C. Sturchio, Sang Soo Lee, Paul Fenter, 2015. X-ray Driven Reaction Front Dynamics at Mineral-Aqueous Interfaces. *Science* 349, 1330-1334.
186. Poghosyan A, Sturchio NC, 2015. Temporal evolution of chlorine-36 abundances in the Great Lakes. *Journal of Environmental Radioactivity* 144, 62–68.
185. Fischer T., Yokochi R, Sturchio NC, Kennedy BM, Ramirez C, 2014. CO₂-rich gas vents in Costa Rica: Mantle volatiles behind the volcanic front. *Geophysical Research Letters* (in revision).
184. Poghosyan A, Morel-Espinosa M, Valentín-Blasini L, Blount BC, Ferreccio C, Steinmaus CM, Sturchio NC, 2015. Chlorine Isotopic Composition of Perchlorate in Human Urine as a Means of Distinguishing Among Natural and Synthetic Exposure Sources. *Journal of Exposure Science and Environmental Epidemiology*, doi: 10.1038/jes.2015.18.
183. Guo J, Chen D, Potter D, Rockne KJ, Sturchio NC, Giesy JP, Li A, 2014. Polyhalogenated Carbazoles in Sediments of Lake Michigan – A New Discovery. *Environmental Science and Technology* 48, 12807–12815.
182. Jackson, W.A., John K Bohlke, Brian J Andraski, Lynne Fahlquist, Laura Bexfield, Frank D Eckardt, John B Gates, Alfonso F Davila, Christopher P McKay, Balaji Rao, Ritesh Sevanthi, Srinath Rajagopalan, Nubia Estrada; Neil C Sturchio, Paul B Hatzinger, Todd A Anderson, Greta Orris, Julio Betancourt, David Stonestrom; Claudio Latorre, Yanhe Li, Greg

Harvey, 2015. Global Survey of Perchlorate and Nitrate Co-occurrence in Arid and Semi-arid Regions. *Geochimica et Cosmochimica Acta* 164, 502-522.

181. Aggarwal P, Matsumoto T, Gastmans D, Sturchio NC, Chang H, et al., 2015. Continental degassing of helium-4 by surficial discharge of groundwater. *Nature Geoscience* 8, 35-39.

2014

180. Izbicki J, Teague N, Hatzinger PB, Bohlke JK, Sturchio NC, 2014. Groundwater movement and potential perchlorate transport in a faulted alluvial aquifer. *Hydrogeology Journal* (published online December 2014).

179. Callagon E, Fenter P, Nagy KL, Sturchio NC, 2014. Incorporation of Pb at the calcite (104) – water interface. *Environmental Science and Technology* 48, 9263-9269.

178. Lu, Z.T., P. Schlosser, W.M. Smethie Jr., N.C. Sturchio, T.P. Fischer, B.M. Kennedy, R. Purtschert, J.P. Severinghaus, D.K. Solomon, T. Tanhua, R. Yokochi, 2014. Tracer applications of noble gas radionuclides in the geosciences. *Earth Science Reviews* 138, 196-214.

177. Poghosyan A, Sturchio NC, Morrison CG, Beloso AD Jr, Guan Y, Eiler JM, Jackson WA, Hatzinger PB, 2014. Perchlorate in the Great Lakes: Isotopic composition and origin. *Environmental Science and Technology* 48, 11146-11153.

176. Fenter P, Zapol P, He H, Sturchio NC, 2014. On the variation of dissolution rates at the orthoclase (001) surface with pH and temperature. *Geochimica et Cosmochimica Acta* 141, 598-611.

175. Codling G, Vogt A, Jones PD, Wang T, Wang P, Lu Y-L, Li A, Sturchio NC, Rockne KJ, Ji1 K, Khim J-S, Naile J, and Giesy JP, 2014. Historical Trends of Inorganic and Organic Fluorine in Sediments of Lake Michigan. *Chemosphere* 114, 203-209.

174. Abouelmagd A, Sultan M, Sturchio NC, Soliman F, Rashed M, Ahmed M, Kehew AE, Milewski A, Chouinard K, 2014. Paleoclimate record in the Nubian Sandstone Aquifer, Sinai Peninsula, Egypt. *Quaternary Research* 81, 158-167.

173. Gonzalez-Meler M, Poghosyan A, Sanchez de Leon Y, Norby R, Sturchio NC, 2014. Does forest growth at elevated CO₂ affect bioturbation and soil carbon burial rate? *Geoderma* (in revision).

172. Sturchio NC, Beloso AD, Jr., Heraty LJ, Wheatcraft S, Schumer R, 2014. Isotopic tracing of groundwater perchlorate sources in Pomona, California. *Applied Geochemistry* 43, 80-87.

171. Sturchio NC, Kuhlman KL, Yokochi R, Probst PC, Jiang W, Lu Z-T, Mueller P, Yang G-M, 2014. Krypton-81 transport in the Culebra Dolomite aquifer near the Waste Isolation Pilot Plant, New Mexico. *Journal of Contaminant Hydrology* 160, 12-20.

2013

170. Purtschert R., Yokochi R., Sturchio N.C., 2013. Kr-81 dating of old groundwater. Chapter 5. In: Suckow A., Aggarwal P., Araguas-Araguas L., Eds., *Isotope Methods for Dating Old Groundwater*. IAEA, Vienna, p. 91-124.

169. Sturchio N.C. and Purtschert R., 2013. Kr-81 case study: The Nubian Aquifer (Egypt). Chapter 14. In: Suckow A., Aggarwal P., Araguas-Araguas L., Eds., *Isotope Methods for Dating Old Groundwater*. IAEA, Vienna, p. 319-324.

168. Yokochi, R., Sturchio N.C., Purtschert R., Jiang W., Yang G.-M., Mueller P., Lu Z.-T., Kennedy B.M., Kharaka, Y., 2013. Noble gas radionuclides in Yellowstone geothermal gas emissions: A reconnaissance. *Chemical Geology* 339, 43-51.

167. Hatzinger PB, Bohlke JK, Sturchio NC, 2013. Application of stable isotope ratio analysis for biodegradation monitoring in groundwater. *Current Opinion in Biotechnology* 24, 542-549.

166. Sultan M, Chouinard K, Ahmed M, Sturchio NC, Yan E, Milewski A, Becker R, Becker D, Wahr J, 2013. Assessment of the vulnerabilities of the Nubian Sandstone Fossil Aquifer, North Africa. *Climate Vulnerability: Understanding and Addressing Threats to Essential Resources*. Elsevier, Academic Press, 311–333.

165. Aziz-Schwanbeck AC, Rockne KJ, Wei H, Zou Y, Corcoran MB, Li A, Christensen ER, Sturchio NC, 2013. Polybromodiphenyl ethers (PBDEs) and polychlorinated biphenyls (PCBs) in urban waterway sediments in the Chicago metropolitan area. *Environmental Science and Technology*, in review.
164. Lee S., Fenter P., Nagy KL, Sturchio NC, 2013. Changes in adsorption free energy and speciation during competitive adsorption between monovalent cations at the muscovite (001)-water interface. *Geochimica Cosmochimica Acta* 123, 416-426.
163. Lee SS, Schmidt M, Laanait N, Sturchio NC, Fenter P, 2013. Investigation of structure, adsorption free energy, and overcharging behavior of trivalent Y³⁺ adsorbed at the muscovite (001)-water interface. *Journal of Physical Chemistry C* 117, 23738-23749.

2012

162. Sturchio N.C., Hoaglund J.R. III, Marroquin R.J., Beloso, A.D., Jr., Heraty L.J., Bortz S.E., Patterson T.L., 2012. Isotopic mapping of groundwater perchlorate plumes. *Ground Water* 50, 94-102.
161. Fenter P., Sturchio N.C., 2012. Calcite (104) – water interface structure, revisited. *Geochimica et Cosmochimica Acta* 97, 58-69.
160. Yokochi R., Sturchio N.C., and Purtschert R., 2012. Determination of crustal fluid residence times using nucleogenic ³⁹Ar. *Geochimica et Cosmochimica Acta* 88, 19-26.
159. Aggarwal P.K., Alduchov O., Froehlich K., Araguas-Araguas L., Sturchio N.C., Kurita N., 2012. Stable isotopes in global precipitation: A unified interpretation based on atmospheric moisture residence time. *Geophysical Research Letters* 39, L11705.
158. Abouelmagd A., Sultan M., Milewski A., Kehew A.E., Sturchio N.C., Soliman F., Krishnamurthy R.V., Cutrim E., 2012. Toward a better understanding of palaeoclimatic regimes that recharged the fossil aquifers in North Africa: Inferences from stable isotope and remote sensing data. *Paleo. Paleo. Paleo.*, 329-330, 137-149.
157. Lee S., Fenter P., Nagy KL, Sturchio NC, 2012. Monovalent ion adsorption at the muscovite (001)–solution interface: Relationships among ion coverage and speciation, interfacial water structure, and substrate relaxation. *Langmuir* 28, 8637–8650.
156. Al Dousari A., Al Ghadban A.N., Sturchio N.C., 2012. Marine environmental impacts of power-desalination plants in Kuwait. *Aquatic Ecosystem Health and Management* 15-S1, 50-55.
155. Jiang W, Bailey K, Lu , Mueller P, O'Connor TP, Cheng CF, Hu SM, Purtschert R, Sturchio NC, Sun YR, Williams WD, Yang GM, 2012. ATTA-3: An atom counter for measuring ⁸¹Kr and ⁸⁵Kr in environmental samples. *Geochimica et Cosmochimica Acta* 91, 1-6.
154. Wei H, Aziz-Schwanbeck AC, Zou Y, Corcoran MB, Poghosyan A, Li A, Rockne KJ, Christensen ER, Sturchio NC, 2012. Polybromodiphenyl ethers and decabromodiphenyl ethane in aquatic sediments from southern and eastern Arkansas, United States. *Environmental Science and Technology* 46, 8017-8024.
153. Bellucci F, Bogner J, Sturchio NC, 2012. Greenhouse gas emissions at the urban scale. *Elements* 8, 445-449.
152. Sturchio NC, Lu Z.T., Schlosser P, 2012. A new capability in isotope geochemistry [meeting report]. *EOS Transactions of the American Geophysical Union* 93 (40).
151. Sturchio NC, Böhlke JK, Gu B, Hatzinger PB, Jackson AJ, 2012. Isotopic tracing of perchlorate in the environment. Chapter 22, pp. 437-452. In: Baskaran M (Ed.), *Handbook of Environmental Isotope Geochemistry*, Springer-Verlag.

2011

150. Fenter P, Lee SS, Zhang Z., Sturchio NC, 2011. In-situ imaging of orthoclase-aqueous interfaces with X-ray reflection interface microscopy. *J. Applied Physics* 110, 102211.

149. Jiang W, Williams WD, Bailey K, Davis AM, Hu S-M, Lu Z-T, O'Connor TP, Purtschert R, Sturchio NC, Sun YR, Mueller P, 2011. ^{39}Ar detection at the 10^{-16} isotopic abundance level with atom trap trace analysis. *Physical Review Letters* 106, 103001.
148. Sultan, M., S. Metwally, A. Milewski, D. Becker, W. Sauck, F. Soliman, N.C. Sturchio, R. Becker, and S. Zhanay, 2011. Modern recharge to fossil aquifers: geochemical, geophysical, and modeling constraints. *Journal of Hydrology* 403, 14-24.
147. Gu B., Böhlke J.K., Sturchio N.C., Hatzinger P.B., Jackson W.A., Beloso A.D., Jr., Heraty L.J., Bian Y., and Brown G.M., 2011. Removal, recovery and fingerprinting of perchlorate by ion exchange processes. Chapter 3, p. 117-144. In: SenGupta, AK (Ed.), *Ion Exchange and Solvent Extraction: A Series of Advances*, vol. 20. CRC Press/Taylor & Francis, Boca Raton.
146. Sultan M., A. F. Yousef, S.E. Metwally, R. Becker, A. Milewski, W. Sauck, N. C. Sturchio, A.M.M. Mohamed, A. Wagdy, Z. El Alfy, D. Becker, Z. Sagintayev, M. El Sayed, and B. Welton, 2011. Red sea rifting controls on aquifer distribution: constraints from geochemical, geophysical, and remote sensing data. *Bulletin of the Geological Society of America* 123, p. 911-924.
145. Yang R., Wei H., Guo J., McLead C., Li A., Sturchio N.C., 2011. Historically and currently used dechloranes in the sediments of the Great Lakes. *Environ. Sci. Technol.* 45, 5156–5163.

2010

144. Lee S.S., Park C., Fenter P., Sturchio N.C., and Nagy K.L., 2010. Competitive adsorption of strontium and fulvic acid at the muscovite-solution interface observed with resonant anomalous X-ray reflectivity. *Geochimica et Cosmochimica Acta* 74, 1762–1776.
143. Jackson, W.A., Böhlke J.K., Gu B., Hatzinger P.B., and Sturchio N.C., 2010. Isotopic composition and origin of indigenous natural perchlorate and co-occurring nitrate in the southwestern United States. *Environmental Science and Technology*, 44, 4869–4876.
142. Fenter P., Lee S.S., Park C., Catalano J., and Sturchio N.C., 2010. Probing interfacial reactions with X-ray reflectivity and X-ray reflection interface microscopy: Influence of NaCl on the dissolution of orthoclase at pOH 2 and 85 °C. *Geochimica et Cosmochimica Acta* 74, 3396-3411.
141. Lee S.S., Fenter P., Park C., Sturchio N.C., Nagy K.L., 2010. Hydrated cation speciation at the muscovite (001)-water interface. *Langmuir* 26, 16647–16651.
140. Rao B, Hatzinger PB, Böhlke JK, Sturchio NC, Andraski BJ, Eckardt FD, Jackson WA, 2010. Natural chlorate in the environment: application of a new IC-ESI/MS/MS method with a $\text{Cl}^{18}\text{O}_3^-$ internal standard. *Environmental Science and Technology* 44, 8429-8434.

2009

139. Li A., Rockne K.J., Sturchio N.C., Song W., Ford J.C., and Wei H., 2009. PCBs in sediments of the Great Lakes – Distribution and trends, homolog and chlorine patterns, and in situ degradation. *Environmental Pollution* 157, 141-147.
138. Hatzinger P., Bohlke J.K., Sturchio N.C., Gu B., Heraty L.J., and Borden R., 2009. Fractionation of stable isotopes in perchlorate and nitrate during in situ biodegradation in a sandy aquifer. *Environmental Chemistry* 6, 44-52.
137. Marley N.A., Gaffney J.S., Tackett M., Sturchio N.C., Heraty L.J., Martinez N.A., Hardy K., Marchany-Rivera A., Guilderson T., MacMillan A., and Steelman K., 2009. The impact of biogenic carbon sources on aerosol absorption in Mexico City. *Atmos. Chem. Phys.*, 9, 1–13.
136. Böhlke J.K., Hatzinger P.B., Sturchio N.C., Gu B., Abbene I., and Mroczkowski S.J., 2009. Atacama perchlorate as an agricultural contaminant in groundwater: Isotopic and chronologic evidence from Long Island, New York, USA. *Environmental Science and Technology* 43, 5619–5625.

135. Sturchio N.C., Caffee M.R., Beloso A. D., Heraty L.J., Böhlke J.K., Gu B., Jackson W.A., Hatzinger P.B., Heikoop J.R., and Dale M., 2009. Chlorine-36 as a tracer of perchlorate origin. *Environmental Science and Technology* 43, 6934–6938.

2008

134. LaSage D., Alan E. Fryar, Abhijit Mukherjee, Neil C. Sturchio, and Linnea J. Heraty, 2008. Groundwater-derived contaminant fluxes along a channelized Coastal Plain stream. *J. Hydrology* 360, 265-280.

133. Fenter P., Park C. and Sturchio N. C., 2008. Adsorption of Rb⁺ and Sr²⁺ at the Orthoclase (001)-Solution Interface. *Geochimica et Cosmochimica Acta* 72, 1848-1863.

132. Sultan M., N. C. Sturchio, S. Al Sefry, A. Milewski, R. Becker, I. Nasr, Z. Sagintayev, 2008. Geochemical, Isotopic, and Remote Sensing Constraints on the Origin and Evolution of the Rub Al Khali Aquifer System, Arabian Peninsula *J. Hydrology* 356, 70-83.

131. Seyfferth A.L., Sturchio N.C., and Parker D.R., 2008. Is perchlorate metabolized or retranslocated within lettuce leaves? A stable-isotope approach. *Environ. Sci. Technol.* 42, 9437–9442.

130. Yokochi R., Heraty L.J., and Sturchio N.C., 2008. Method for purification of krypton from environmental samples for radiokrypton analysis. *Analytical Chemistry* 80, 8688–8693.

129. Park C., Fenter P., Sturchio N.C., and Nagy K.L., 2008. Thermodynamics, interfacial structure, and pH hysteresis of Rb⁺ and Sr²⁺ adsorption at the muscovite (001)-solution interface. *Langmuir* 24, 13993-14004.

2007

128. Sturchio N.C., Beloso A.D., Jr., Böhlke J.K., Streger S.H., Heraty L.J., and Hatzinger P.B., 2007. Oxygen and Chlorine Isotopic Fractionation During Perchlorate Biodegradation: Laboratory Results and Implications for Forensics and Natural Attenuation Studies. *Environmental Science and Technology* 41, 2796-2802.

127. Fenter P., Zhang Z., Park C., Sturchio N.C., Hu X.M., and Higgins S.R., 2007. Structure and Reactivity of the Dolomite (104)-Water Interface: New Insights into the Dolomite Problem. *Geochimica et Cosmochimica Acta* 71, 566-579.

126. Zhang Z., Paul Fenter, Neil C. Sturchio, Michael J. Bedzyk, and David J. Wesolowski, 2007. Structure of Rutile TiO₂ (110) in Water and 1 Molal Rb⁺ at pH 12: Inter-relationship between surface charge, interfacial hydration structure, and substrate structural displacements. *Surface Science* 601, 1129-1143.

125. Sultan M., E. Yan, N. Sturchio, A. Wagdy, K. Abdel Gelil, R. Becker, N. Manocha, and A. Milewski, 2007. Natural discharge: A key to sustainable utilization of fossil groundwater. *Journal of Hydrology* 335, 25– 36.

124. Fenter P., Park C., Nagy K.L., and Sturchio N.C., 2007. Resonant anomalous X-ray reflectivity as a probe of ion adsorption at solid–liquid interfaces. *Thin Solid Films* 515, 5654–5659.

123. Hofstetter T.B., Christopher M. Reddy, Linnea J. Heraty, Neil C. Sturchio and Michael Berg, 2007. Carbon and chlorine isotope effects during abiotic reductive dechlorination of polychlorinated ethanes. *Environmental Science and Technology* 41, 4662-4668. [runner-up for Editor’s Choice - Best Paper of the Year]

2006

122. Zhang Z., Fenter P., Cheng L., Sturchio N.C., Bedzyk M.J., Machesky M.L., Anovitz L.M., Wesolowski D.J., 2006. Divalent ion adsorption at the TiO₂(110)-electrolyte interface: influence of ionic strength, coverage, and anions. *Journal of Colloid and Interface Science* 295, 50-64.

121. Sturchio N.C., Bohlke J.K., Gu B., Horita J., Brown G.M., Beloso A., Hatzinger P., Jackson A., and Batista J., 2006. Stable isotopic compositions of chlorine and oxygen in synthetic and natural perchlorates. Ch. 5, pp. 93-109. In: Gu B. and Coates J.D., Eds., *Perchlorate: Environmental Occurrence, Interactions and Treatment*. Springer, New York.

120. Zhang Z., P. Fenter, S. D. Kelly, J. G. Catalano, A. Bandura, J. D. Kubicki, D. J. Wesolowski, M. L. Machesky, N. C. Sturchio, and M. J. Bedzy, 2006. Structure of Zn²⁺ at the TiO₂ (110) – Aqueous Solution Interface: Comparison of X-Ray Standing Wave, X-ray Absorption Spectroscopy and Density Functional Theory Results. *Geochim. Cosmochim. Acta* 70, 4039-4056.

119. Richter F.M., R. A. Mendybaev, J. Christensen, I. D. Hutcheon, R. W. Williams, N. C. Sturchio and A. D. Beloso Jr., 2006. Kinetic isotopic fractionation during diffusion of ionic species in water. *Geochimica Cosmochimica Acta* 70, 277-289.

118. Park C., Fenter P., Nagy K. L., and Sturchio N. C., 2006. Hydration and distribution of ions at the mica-water interface. *Physical Review Letters* 97, 016101.

117. Schlegel M., Nagy K.L., Fenter P., Cheng L., Sturchio N. C., and Jacobsen S.D., 2006. Cation sorption on the muscovite (001) surface in chloride solutions using high-resolution X-ray reflectivity. *Geochimica Cosmochimica Acta* 70, 3549-3565.

116. Li A., Karl J. Rockne, Neil Sturchio, William J. Mills, Wenlu Song, Justin C. Ford, Dave R. Buckley, 2006. Polybrominated Diphenyl Ethers in the Sediments of the Great Lakes. 4. Influencing Factors, Trend, and Implications *Environ. Sci. Technol.* 40, 7528-7534.

2005

115. Patterson L. J., Sturchio N. C., Kennedy B. M., van Soest M.C., Sultan M.I., Lu Z.T., Lehmann B. E., Purtschert R., El Kaliouby B., Dawood Y., and Abdallah A.M, 2005. Cosmogenic, radiogenic, and stable isotopic constraints on groundwater residence time in the Nubian Aquifer, Western Desert of Egypt. *Geochem. Geophys. Geosyst.* 6(1), Q01005, doi:10.1029/2004GC000779.

114. C. Park, P. Fenter, N. C. Sturchio, and J. R. Regalbuto, 2005. Probing Outer-Sphere Adsorption of Aqueous Metal Complexes at the Oxide-Water Interface with Resonant Anomalous X-ray Reflectivity. *Physical Review Letters* 94, 076104.

113. Song W., Li A., Ford J. C., Sturchio N. C., Buckley D. R., Rockne K. J., 2005. Polybrominated diphenyl ethers in the sediments of the Great Lakes. 2 - Lakes Michigan and Huron. *Environmental Science and Technology* 39, 3474-3479.

112. Song W., Ford J.C., Li A., Sturchio N.C., Rockne K.J., Buckley D.R., Mills W.J., 2005. Polybrominated diphenyl ethers in the sediments of the Great Lakes. 3 - Lakes Ontario and Erie. *Environmental Science and Technology* 39, 5600-5605.

111. Sano Y., Shirai K., Takahata N., Hirata T., and Sturchio N.C., 2005. Nano-SIMS analysis of Mg, Sr, Ba and U in natural calcium carbonate. *Analytical Sciences* 21, 1091-1097.

110. Darnault C., Rockne K., Stevens A., Mansoori A., and Sturchio N. C., 2005. Fate of environmental pollutants. *Water Environment Research* 77, 2576-2658.

109. Bohlke J.K., Sturchio N.C., Gu B., Horita J., Brown G.M., Jackson A., Batista J., Hatzinger P., 2005. Perchlorate isotope forensics. *Analytical Chemistry* 77, 7838-7842.

2004

108. Zhang Z., Fenter P., Cheng L., Sturchio N. C., Bedzyk M. J., Predota M., Bandura A., Kubicki J., Lvov S. N., Cummings P. T., Chialvo A. A., Ridley M. K., Bénézeth P., Anovitz L., Palmer D. A., Machesky M. L., Wesolowski, D. J., 2004. Ion adsorption at the oxide-water interface: Linking molecular and macroscopic properties. *Langmuir* 20, 4954-4969.

107. Drenzek N. J., Eglinton T., Wirsén C., Sturchio N. C., Heraty L., Sowers K., Wu Q., May H., and Reddy C. M., 2004. Invariant chlorine isotope signatures during microbial PCB reductive dechlorination. *Environmental Pollution* 128, 445-448.

106. Zhang Z., P. Fenter, L. Cheng, N. C. Sturchio, M. J. Bedzyk, M. L. Machesky, D. J. Wesolowski, 2004. Imaging adsorbed cations at the crystal-water interface. *Surface Science Letters*, 554(2-3) L95-L100.

105. Park C., Fenter P., Zhang Z., Cheng L., and Sturchio N. C., 2004. Structure of fluorapatite (100)-water interface by high-resolution x-ray reflectivity. *American Mineralogist* 89, 1647-1654.

104. Sturchio N. C., et al. 2004. One million year old groundwater in the Sahara revealed by ^{81}Kr and ^{36}Cl . *Geophysical Research Letters* 31, L05503, doi:10.1029/2003GL019234.
103. Doran, P. T., S. M. Clifford, S. L. Forman, L. Nyquist, D. A., Papanastassiou, B. W. Stewart, Neil C. Sturchio, Timothy D. Swindle, Thure Cerling, Jeff Kargel, Gene McDonald, Kunihiko Nishiizumi, Robert Poreda, James W. Rice and Ken Tanaka, 2004. Mars Chronology: Assessing Techniques for Quantifying Surficial Processes. *Earth Sci. Rev.* 67, 313-337.
102. Rihs S., Sturchio N. C., Orlandini K., Cheng L., Teng H., Fenter P., and Bedzyk M., 2004. The interaction of uranyl with the calcite surface in the presence of EDTA. *Environmental Science and Technology* 38, 5078-5086.
101. Bedzyk M. J., Fenter P., Zhang Z., Cheng L., Okasinski J., and Sturchio N. C., 2004. X-ray standing wave imaging. *Synchrotron Radiation News* 17(3), 5-10.
100. Geissbühler P., Fenter P., DiMasi E., Srajer G., Sorensen L.B., Sturchio N.C., 2004. Three-Dimensional Structure of the Calcite-Water Interface. *Surface Science* 573, 191-203.
99. P. Fenter and N. C. Sturchio, 2004. Mineral-Water Interfacial Structures Revealed by Synchrotron X-ray Scattering. *Progress in Surface Science* 77, 171-258.

2003

98. Fenter P., Park C. Y., Cheng L., Zhang Z., Krekeler M., and Sturchio N. C., 2003. Orthoclase Dissolution Kinetics Probed by In Situ X-ray Reflectivity: Influence Effects of Temperature, pH and Crystal Orientation. *Geochimica et Cosmochimica Acta* 67, 197-211.
97. Kelly S., Newville M., Cheng L., Kemner K., Sutton S., Fenter P., Sturchio N. C., and Spötl C., 2003. Uranyl incorporation in natural calcite. *Environmental Science and Technology* 37, 1284-1287.
96. Sturchio N. C. and Chan L. H., 2003. Lithium isotope geochemistry of the Yellowstone hydrothermal system. *Society of Economic Geologists Special Publication* 10, 171-180.
95. Sturchio N. C., Hatzinger P., Adkins M., Suh C., and Heraty L., 2003. Chlorine isotope fractionation during microbial perchlorate reduction. *Environ. Sci. Technol.* 37, 3859-3863.
94. Wang L.-B., Mueller P., Holt R. J., Lu Z.-T., O'Connor T. P., Sano Y., and Sturchio N. C., 2003. Laser spectroscopic measurement of helium isotope ratios. *Geophysical Research Letters* 30, 1592-1595.
93. Cheng L., Fenter P., Bedzyk M. J., and Sturchio N. C., 2003. Fourier-expansion solutions of atom distributions in crystals using x-ray standing waves. *Physical Review Letters* 90(25), 255503:1-4.
92. Fenter P., L. Cheng L., Park C., Zhang Z., Sturchio N. C., 2003. Structure of the orthoclase (001)- and (010)-water interfaces by high-resolution X-ray reflectivity. *Geochimica et Cosmochimica Acta* 67, 4267-4275.
91. Du X., R. Purtschert, K. Bailey, B. E. Lehmann, R. Lorenzo, Z.-T. Lu, P. Mueller, T. P. O'Connor, N. C. Sturchio, L. Young, 2003. A new method of measuring ^{81}Kr and ^{85}Kr abundances in environmental samples. *Geophysical Research Letters* 30, 2068. doi:10.1029/2003GL018293, 2003.

2002

90. Schlegel M., Nagy K., Fenter P., Cheng L., and Sturchio N. C., 2002. Structures of quartz (100)- and (101)-water interfaces determined by X-ray reflectivity and atomic force microscopy of natural growth surfaces. *Geochim. Cosmochim. Acta* 66, 3037-3054.
89. Minissale A., D. M. Kerrick, G. Magro, M. T. Murrell, M. Paladini, S. Rihs, N. C. Sturchio, F. Tassi and O. Vaselli, 2002. Structural, hydrological, geochemical and climatic parameters affecting the precipitation of Quaternary travertines along the Tiber valley, north of Rome (Italy). *Earth Planet. Sci. Letters* 203, 709-728.
88. Drenzek N., Tarr C., Eglinton T., Heraty L., Sturchio N. C., Shiner V., and Reddy C., 2002. Stable chlorine and carbon isotopic compositions of selected semi-volatile organochlorine compounds. *Organic Geochemistry* 33, 437-444.

87. Reddy, C.M., Xu, L., Drenzek, N.D., Sturchio, N.C., Heraty, L.J., Kimblin, C., and Butler, A., 2002. A chlorine isotope effect for enzyme-catalyzed chlorination. *Journal of the American Chemical Society* 124, 14526-14527.
86. Brown G. E. and Sturchio N. C., 2002. Overview of synchrotron radiation applications to low temperature geochemistry and environmental science. *Rev. Mineral. Geochem.* 49, 1-119.
85. Sturchio N. C., 2002. Geochemistry. *Geotimes* 47(7), 17-18.

2001

84. Doran P., S. L. Forman, N. C. Sturchio, S. M. Clifford, and D. A. Papanastassiou, 2001. Measuring geologic time on Mars. *Earth in Space* 13: 1-16.
83. Sturchio N. C., 2001. Geochemistry. *Geotimes* 46(7), 29-30.
82. Cheng L., Fenter P., Nagy K., Schlegel M., and Sturchio N. C., 2001. Molecular scale density oscillations in water adjacent to a mica surface. *Phys. Rev. Letters* . **87**, 156103:1-4.
81. Fenter P., McBride M. T., Srajer G., Sturchio N. C., and Bosbach D., 2001. Structure of barite(100)- and (210)-water interfaces. *J. Phys. Chem.* **B 105**, 8112-8119.
80. Teng H., Fenter P., Cheng L. & Sturchio N. C., 2001. Resolving orthoclase dissolution processes with atomic force microscopy and x-ray reflectivity. *Geochimica Cosmochimica Acta* **65**, 3459-3474.
79. Holt B. D, Heraty L. J., & Sturchio N. C., 2001. Extraction of chlorinated aliphatic hydrocarbons from groundwater at micromolar concentrations for isotopic analysis of chlorine. *Environmental Pollution* 113, 263-269.
78. Sturchio N. C., Banner J. L., Binz C. M., Heraty L. J. & Musgrove M. L., 2001. Radium geochemistry of ground waters in Paleozoic Carbonate aquifers, midcontinent U.S.A. *Applied Geochemistry* **16**, 109-122.
77. Reddy C. M., Drenzek N. J., Eglinton T. I., Heraty L. J., Sturchio N. C., & Shiner V. J., 2001. Stable chlorine intramolecular kinetic isotope effects from the abiotic dehydrochlorination of DDT. *Environmental Science and Pollution Research* **9**, 183-186.
76. Cheng L., Sturchio N. C., & Bedzyk M. J., 2001. Impurity structure in a molecular ionic crystal: Atomic-scale x-ray study of $\text{CaCO}_3:\text{Mn}^{2+}$. *Physical Reviews B* **63**, 144104:1-7.

2000

75. Doran P., Forman S. L., Sturchio N. C., Clifford S. C., & Papanastassiou D. A., 2000. Measuring geologic time on Mars. *EOS, Transactions, American Geophysical Union* **81**, 533-535.
74. Astheimer R., Bennett K., Brown G. E. Jr., Hoy J., Jones K. W., Sturchio N. C., Sutton S. R., Waychunas G. A., & Woodward N. B., 2000. Inside rocks. *Geotimes* 45, 20-23.
73. Sultan M., Sturchio N. C., Gheith H., Abdel Hady Y., & El Anbeawy M., 2000. Chemical and isotopic constraints on the origin of Wadi El Tarfa ground water, Eastern Desert, Egypt. *Ground Water* **38**, 743-751.
72. Le Gall B., Tiercelin J.-J., Richert, Gente P., Sturchio N. C., Stead D., Le Turdu C., 2000. A morphotectonic study of an extensional fault zone in a magma-rich rift: the Baringo Trachyte Fault System, central Kenya Rift. *Tectonophysics* **320**, 87-106.
71. Hanchar J. M., Nagy K. L., Fenter P., Finch R., Beno D., & Sturchio N. C., 2000. Quantification of minor phases in growth kinetics experiments with powder X-ray diffraction. *American Mineralogist* **85**, 1217-1222.

70. Fouke B. W., Farmer J. D., Des Marais D. J., Pratt L., Sturchio N. C., Burns P. C., & Discipulo M. K., 2000. Depositional facies and aqueous-solid geochemistry of travertine-depositing hot springs (Angel Terrace, Mammoth Hot Springs, Yellowstone National Park, USA). *J. Sedimentary Research* **70**, 565-585.
69. Fenter P., Teng H., Geissbuhler P., Nagy K., & Sturchio N. C., 2000. Atomic –scale structure of the orthoclase (001)-water interface measured with X-ray reflectivity. *Geochimica et Cosmochimica Acta* **64**, 3663-3673.
68. Fenter P., Geissbuhler P., Di Masi E., Srajer G., Sorensen L., & Sturchio N. C., 2000. Surface speciation of calcite observed in situ with X-ray scattering. *Geochimica et Cosmochimica Acta* **64**, 1221-1228.
67. Fenter P., Cheng L., Rihs S., Machesky M., Bedzyk M., & Sturchio N. C., 2000. Electrical double-layer structure at the rutile-water interface as observed in situ with small-period x-ray standing waves. *Journal of Colloid and Interface Science* **225**, 154-165.
66. Cheng L., Sturchio N. C., & Bedzyk M. J., 2000. Local structure of Co(II) incorporated at the calcite surface: An XSW and SEXAFS study. *Phys. Rev. B* **61**, 4877-4883.
65. Reddy C. M., Heraty L. J., Holt B. D., Sturchio N. C., Eglinton T. I., Drenzek N., Lake J. & Maruya K., 2000. Stable chlorine isotopic compositions of Aroclors and Aroclor-contaminated sediments. *Environmental Science and Technology* **34**, 2866-2870.

1999

64. Huang L., Sturchio N. C., Abrajano T., Heraty L., & Holt B. D., 1999. Carbon and chlorine isotope fractionation of chlorinated aliphatic hydrocarbons by evaporation. *Organic Geochemistry* **30**, 777-785.
63. Cheng L., Fenter P., Sturchio N. C., Zhang Z., & Bedzyk M. J., 1999. X-ray standing wave study of arsenite incorporation at the calcite surface. *Geochimica Cosmochimica Acta* **63**, 3153-3157.
62. Fenter P. & Sturchio N. C., 1999. Structure and growth of stearate monolayers on calcite: First results of an *in situ* X-ray reflectivity study. *Geochimica Cosmochimica Acta* **63**, 3145-3152.
61. Heraty L. J., Fuller M. E., Huang L., Abrajano T., & Sturchio N. C., 1999. Carbon and chlorine isotopic fractionation during microbial degradation of dichloromethane. *Organic Geochemistry* **30**, 793-799.
60. Dayan H., Abrajano T., Sturchio N. C., & Winsor L., 1999. Carbon isotopic fractionation during reductive dechlorination of chlorinated solvents by metallic iron. *Organic Geochemistry* **30**, 755-763.
59. Nagy K. L., Cygan R. T., Hanchar J. M., & Sturchio N. C., 1999. Gibbsite growth kinetics on gibbsite, kaolinite, and mucovite substrates: AFM evidence for epitaxy and an assessment of reactive surface area. *Geochim. Cosmochim. Acta* **63**, 2337-2351.

1998

58. Sano Y., Takahata N., Igarashi G., Koizumi N., & Sturchio N. C., 1998. Helium degassing related to the Kobe earthquake. *Chemical Geology* **150**, 171-179.
57. Cheng L., Sturchio N. C., Woicik J., Kemner K., Lyman P. F., & Bedzyk M. J., 1998. High resolution structural study of zinc ion incorporation at the calcite cleavage surface. *Surface Science* **415**, 976-982.
56. Armstrong S. C., N. C. Sturchio, & M. J. Hendry, 1998. Strontium isotopic evidence on the chemical evolution of the Milk River Aquifer, Canada. *Applied Geochemistry* **13**, 463-475.
55. Sturchio N. C., Clausen J. C., Heraty L. J., Huang L., Holt B. D., & Abrajano T., 1998. Stable chlorine isotope investigation of natural attenuation of trichloroethene in an aerobic aquifer. *Environmental Science and Technology* **32**, 3037-3042.

54. Sturchio, N. C., Antonio, M. R., Soderholm, L. B., Sutton, S. R. & Brannon, J. C., 1998. Tetravalent uranium in calcite. *Science* **281**, 971-973.

1997

53. Fischer, T. P., Sturchio, N. C., Stix, J., Arehart, G. B., Counce, D., & Williams, S. N., 1997. The chemical and isotopic composition of fumarolic gases and spring discharges from Galeras Volcano, Colombia. *Journal of Volcanology and Geothermal Research* **77**, 229-253.

52. Cheng L., Lyman P., Sturchio N. C. & Bedzyk M. J., 1997. Adsorption and structure of selenite anions on the calcite (104) surface. *Surface Science* **382**, L690-L695.

51. Holt B. D., Sturchio N. C., Abrajano T. A., & Heraty L. J., 1997. Conversion of chlorinated organic compounds to carbon dioxide and methyl chloride for isotopic analysis of carbon and chlorine. *Analytical Chemistry* **69**, 2727-2733.

50. Sturchio N. C., R. P. Chiarello, L. Cheng, P. F. Lyman, M. J. Bedzyk, Y. Qian, H. You D. Yee, P. Geissbuhler, L. Sorensen, Y. Liang, & D. Baer, 1997. Lead adsorption at the calcite-water interface: Synchrotron X-ray standing wave and X-ray reflectivity studies. *Geochimica et Cosmochimica Acta* **61**, 251-264.

49. Chiarello R. P., N. C. Sturchio, J. Grace, P. Geissbuhler, L. Sorensen, L. Cheng, & S. Tau, 1997. Otavite-calcite solid-solution formation at the calcite-water interface studied in situ by synchrotron X-ray scattering. *Geochimica et Cosmochimica Acta* **61**, 1467-1474.

48. Lewis A. J., M. R. Palmer, N. C. Sturchio, & A. Kemp, 1997. The rare earth element geochemistry of acid-sulphate and acid-sulphate-chloride geothermal systems from Yellowstone National Park, Wyoming, U.S.A. *Geochimica et Cosmochimica Acta* **61**, 695-706.

47. Luo W., R.E. Arvidson, M. Sultan, R. Becker, M.K. Crombie, N.C. Sturchio & Z. El Alfy, 1997. Groundwater sapping processes, Western Desert, Egypt. *Geological Society of America Bulletin* **109**, 43-62.

46. Crombie K., Arvidson R., Sturchio N.C., El Alfy Z., & Abu Zeid K., 1997. Age and isotopic constraints on Pleistocene pluvial episodes in the Western Desert, Egypt. *Palaeogeography, Palaeoclimatology, Palaeoecology* **130**, 337-355.

45. Sultan M., Sturchio N.C., Hassan F., Abdel-Rahman M., Mahmood A.M., El Alfy Z., & Stein T., 1997. Precipitation source inferred from stable isotopic composition of Pleistocene groundwater and carbonate deposits in the Western Desert of Egypt. *Quaternary Research* **48**, 29-37.

1996

44. Fischer T., Arehart G.B., Sturchio N.C., & Williams S.N., 1996. The relationship between fumarole gas composition and eruptive activity at Galeras Volcano, Colombia. *Geology* **24**, 531-534.

43. Sturchio N.C., Sultan M., Arehart G.B., Sano Y., Abo Kamar Y. & Sayed M., 1996. Composition and origin of thermal waters in the Gulf of Suez area, Egypt. *Applied Geochemistry* **11**, 471-479.

42. Sturchio N.C., Ohsawa S., Sano Y., Arehart G.B., Kitaoka K., & Yusa Y., 1996. Geochemical characteristics of the Yufuin outflow plume, Beppu hydrothermal system, Japan. *Geothermics* **25**, 215-230.

1995

41. Chiarello, R.P. & Sturchio, N.C., 1995. The calcite (104) cleavage surface in water: Early results of a crystal truncation rod study. *Geochimica et Cosmochimica Acta* **59**, 4557-4561.

40. Strecker, M.R., Frisch, W., Hamburger, M.W., Ratschbacher, L., Semiletkin, S., Sturchio, N., & Zamoruyev, A., 1995. Quaternary deformation in the eastern Pamirs, Tadjikistan and Kyrgyzstan. *Tectonics* **14**, 1061-1079.

39. Holt, B.D., Sturchio, N.C., Arehart, G.B., & Bakel, A.J., 1995. Ultrasonic vacuum extraction of gases from water for chemical and isotopic analysis. *Chemical Geology (Isotope Geoscience Section)*, 122: 275-284.

1994

38. Sorey, M.L., Kharaka, Y., Stanley, W., & Sturchio, N.C., 1994. Geothermal systems in the Mammoth Corridor of Yellowstone National Park, USA. *Transactions of the Geothermal Research Council*, 18: 241-245.

37. Qian, Y.L., N.C. Sturchio, R.P. Chiarello, P.F. Lyman, T.L. Lee, & M.J. Bedzyk, 1994. Lattice location of trace elements within minerals and at their surfaces with X-ray standing waves. *Science*, 265: 1555-1557.

36. Chiarello, R.P. & N.C. Sturchio, 1994. Epitaxial growth of otavite on calcite observed in situ by synchrotron X-ray scattering. *Geochimica et Cosmochimica Acta*, 58: 5633-5638.

35. Arvidson, R., R. Becker, A. Shanabrook, W. Luo, N. Sturchio, M. Sultan, Z. Lotfy, A.M. Mahmood, & Z. El Alfy, 1994. Climatic, eustatic, and tectonic controls on Quaternary deposits and landforms, Red Sea coast, Egypt. *Journal of Geophysical Research*, 99: 12,175-12,190.

34. Sturchio, N.C., K.L. Pierce, M.T. Murrell, & M.L. Sorey, 1994. Uranium-series ages of travertines and timing of the last glaciation in the northern Yellowstone area, Wyoming-Montana, U.S.A. *Quat. Res.*, 41: 265-277.

1993

33. Chiarello, R.P., R.A. Wogelius, & N.C. Sturchio, 1993. In situ synchrotron x-ray reflectivity measurements at the calcite-water interface. *Geochimica et Cosmochimica Acta*, 57: 4103-4110.

32. Sturchio, N.C., P.N. Dunkley, & M. Smith, 1993. Climate-driven variations in geothermal activity in the northern Kenya Rift. *Nature*, 362: 233-234.

31. Sturchio, N.C., S.N. Williams, & Y. Sano, 1993. The hydrothermal system of Puracé volcano, Colombia. *Bulletin of Volcanology*, 55: 289-296.

30. Schaefer, S., Sturchio, N.C., Murrell, M.T., & Williams, S.N., 1993. Internal U-series systematics in pumice from the 13-November-1985 eruption of Nevado del Ruiz, Colombia. *Geochimica et Cosmochimica Acta*, 57: 1215-1220.

29. Sturchio, N.C., J.K. Bohlke, & F. Markun, 1993. Radium isotope geochemistry of thermal waters, Yellowstone National Park, Wyoming. *Geochimica et Cosmochimica Acta*, 57: 1203-1214.

1992

28. Shaw, D.M. & Sturchio, N.C., 1992. Boron-lithium relationships in rhyolites and associated thermal waters of young silicic calderas, with comments on incompatible element behavior. *Geochimica et Cosmochimica Acta*, 56: 3723-3732.

27. Sturchio, N.C., Murrell, M., Pierce, K., & Sorey, M., 1992, Yellowstone travertines: U-series ages and isotope ratios (C,O, Sr, U). in *Water-Rock Interaction*, v.2 (ed. Y. Kharaka and A. Maest), 1427-1430, Balkema, Rotterdam.

1991

26. Sorey, M.L., Suemnicht, G., Sturchio, N.C., & Sundquist, R., 1991. New evidence on the Long Valley hydrothermal system from wells, fluid sampling, electrical geophysics, and age determinations of hot spring deposits. *Journal of Volcanology and Geothermal Research*, 48: 229-264.

1990

25. Sorey, M.L., E. Colvard, & N.C. Sturchio, 1990. Geothermal systems within the Mammoth Corridor in Yellowstone National Park and the adjacent Corwin Springs KGRA. *Geothermal Resources Council Transactions*, 14.

24. Williams, S.N., N.C. Sturchio, M.L. Calvache, R. Mendez, N. Garcia P., & A. Londono C., 1990. Sulfur dioxide from

Nevado del Ruiz volcano, Colombia: Total flux and isotopic constraints on its origin. *Journal of Volcanology and Geothermal Research*, 42: 53-68.

23. Sturchio, N.C. & S.N. Williams, 1990. Variations in chemistry of acid- sulfate-chloride springs at Nevado del Ruiz volcano, Colombia: November 1985 through December 1988. *Journal of Volcanology and Geothermal Research*, 42: 201-208.

22. Sturchio, N.C., T.E.C. Keith, & K. Muehlenbachs, 1990. Oxygen and carbon isotope ratios of hydrothermal minerals from Yellowstone drill cores. *Journal of Volcanology and Geothermal Research* 40: 23-37.

21. Sturchio, N.C., 1990. Radium isotopes, alkaline earth diagenesis, and age determination of travertine from Mammoth Hot Springs, Wyoming. *Applied Geochemistry*, 5: 631-640.

20. Palmer, M.R. & Sturchio, N.C., 1990. Boron isotope systematics of the Yellowstone (Wyoming) hydrothermal system: A reconnaissance. *Geochimica et Cosmochimica Acta*, 54: 2811-2815.

19. Abrajano, T.A., Sturchio, N.C., Kennedy, B.M., Lyon, G. L., Muehlenbachs, K. & Bohlke, J.K., 1990. Geochemistry of reduced gas related to serpentinization of the Zambales ophiolite. *Applied Geochemistry*, 5: 625-630.

1989

18. Cifuentes, L., C. Corselli, T.C. Hoering, K.A. Kastens, G. DeLange, D. Muller, M. Perfit, N.C. Sturchio, & W.J. Ullman, 1989. Isotopic and chemical evidence on the origin of the "Gypsum Garden" gypsum crystals, Bacino Bannock, Eastern Mediterranean Sea. In: *Anoxic Basins of the Eastern Mediterranean* (M.B. Cita, A. Camerlenghi, and C. Corselli, eds.), University Degli Studi di Milano, Ricerca Scientifica Supplemento, 72: 63-66.

17. Sturchio, N.C., J.K. Bohlke, & C.M. Binz, 1989. Radium-thorium disequilibrium and zeolite-water ion exchange in a Yellowstone hydrothermal environment. *Geochimica et Cosmochimica Acta*, 53: 1025-1034.

16. Sturchio, N.C., T.A. Abrajano, J. Murowchick, & K. Muehlenbachs, 1989. Serpentinization of the Acoje Massif, Zambales ophiolite, Philippines: Hydrogen and oxygen isotope geochemistry. *Tectonophysics*, 168: 101-107.

1988

15. Sturchio, N.C., S.N. Williams, N. Garcia P., & A. Londono C., 1988. The hydrothermal system of Nevado del Ruiz volcano, Colombia. *Bulletin of Volcanology*, 50: 399-412.

14. Sturchio, N.C., T.E.C. Keith, & K. Muehlenbachs, 1988. The dynamics of silica deposition in fractures: Oxygen isotope ratios in hydrothermal silica from Yellowstone drill core Y-13. *Geothermal Resources Council Trans.*, 12: 305-312.

13. Sturchio, N.C. & C.M. Binz, 1988. Uranium-series age determination of calcite veins, VC-1 drill core, Valles Caldera, New Mexico. *Journal of Geophysical Research*, 93: 6097-6102.

12. Abrajano, T.A., N.C. Sturchio, J.K. Bohlke, G.L. Lyon, R. Poreda, & C.M. Stevens, 1988. Methane-hydrogen gas seeps, Zambales ophiolite, Philippines: Deep or shallow origin? *Chemical Geology*, 71: 211-222.

1987

11. Sultan, M., R.E. Arvidson, & N.C. Sturchio, 1987. Reply to Comment by Greiling and El Ramly on "Mapping of serpentinites in the Eastern Desert of Egypt by using Landsat Thematic Mapper data". *Geology*, 15: 874-875.

10. Sultan, M., R.E. Arvidson, N.C. Sturchio, & E.A. Guinness, 1987. Lithologic mapping in arid regions with Landsat Thematic Mapper data: Meatiq Dome, Egypt. *Geological Society of America Bulletin*, 99: 748-762.

9. Sturchio, N.C., C.M. Binz, & C.H. Lewis, III, 1987. Thorium-uranium disequilibrium in a geothermal discharge zone at Yellowstone. *Geochimica et Cosmochimica Acta*, 51: 2025-2034.

1986

8. Sturchio, N.C., K. Muehlenbachs, & M.G. Seitz, 1986. Element redistribution during hydrothermal alteration of

rhyolite in an active geothermal system: Yellowstone drill cores Y-7 and Y-8. *Geochimica et Cosmochimica Acta*, 50: 1619-1631.

7. Sultan, M., R. Arvidson, & N.C. Sturchio, 1986. Mapping of serpentinites in the Eastern Desert of Egypt by using Landsat Thematic Mapper data. *Geology*, 14: 995-999.

6. Tammemagi, H.Y., B. Haverslew, & N.C. Sturchio, 1986. Investigations of the Empire Creek Stock, Montana, as an analogue to a nuclear waste repository. *Chemical Geology*, 55: 375-385.

5. Sultan, M., R. Batiza, & N.C. Sturchio, 1986. The origin of small-scale geochemical and mineralogic variations in a granite intrusion. *Contributions to Mineralogy and Petrology*, 93: 513-523.

1985

4. Sturchio, N.C. & M.G. Seitz, 1985. Behavior of nuclear waste elements during hydrothermal alteration of glassy rhyolite in an active geothermal system: Yellowstone National Park, Wyoming. In: C. Jantzen, J. Stone and R. Ewing (eds.), *Scientific Basis for Nuclear Waste Management*, VIII: 557-564. Materials Research Society.

3. Sturchio, N.C. & K. Muehlenbachs, 1985. Origin of low-¹⁸O metamorphic rocks from a Late Proterozoic shear zone in the Eastern Desert of Egypt. *Contributions to Mineralogy and Petrology*, 91: 188-195.

1984

2. Sturchio, N.C., M. Sultan, P. Sylvester, R. Batiza, C. Hedge, E. El Shazly, and A. Abdel Meguid, 1984. Geology, age, and origin of the Meatiq Dome: Implications for the Precambrian stratigraphy and tectonic evolution of the Eastern Desert of Egypt. In: A. Al Shanti (ed.), *Pan-African Crustal Evolution of the Arabian-Nubian Shield*, Bulletin of the Faculty of Earth Sciences of King Abdulaziz University (Jeddah), 6: 127-143.

1983

1. Sturchio, N.C., M. Sultan, & R. Batiza, 1983. Geology and origin of Meatiq Dome, Egypt: A Precambrian metamorphic core complex? *Geology*, 11: 72-76.

CONFERENCE PROCEEDINGS:

6. Bellucci, Francesco; Kozak, Joseph A.; Heraty, Linnea; Carbone, Jo; Sturchio, Neil C.; O'Connor, Catherine; Kollias, Louis; Lanyon, Richard, 2010. Greenhouse gas emissions from three Chicago wastewater treatment plants. *Proceedings of the Water Environment Federation, WEFTEC 2010*: Session 51 through Session 60, pp. 3563-3590. Water Environment Federation, Alexandria, VA.
5. Kozak, Joseph A.; O'Connor, Catherine; Granato, Thomas; Kollias, Louis; Bellucci, Francesco; Sturchio, Neil, 2009. Methane and nitrous oxide emissions from wastewater treatment plant processes. *Proceedings of the Water Environment Federation, WEFTEC 2009*: Session 81 through Session 90, 5347-5361. Water Environment Federation, Alexandria, VA.
4. Arehart, G.B., Sturchio, N.C., Fischer, T.P. & Williams, S.N., 1995. Gas chemistry and isotopic signature of fumaroles at Galeras Volcano, Colombia. *Proceedings of the 1995 PACRIM Conference, Australasian Inst. Mining and Technology Publ. Series No. 9/95*, 19-24
3. Chiarello, R.P. & N.C. Sturchio, 1995. Synchrotron X-ray scattering studies at mineral-water interfaces. *Materials Research Society Symposium Proceedings*, 375: 181-186.
2. Lewis A.J., Palmer M.R., Kemp A.J., & Sturchio N.C., 1995. Rare-earth element behaviour in the Yellowstone geothermal system. In *Proceedings of the 8th International Conference on Water-Rock Interactions* (Y.K. Kharaka & O.V. Chudaev, eds.), 91-94, Balkema, Rotterdam.
1. Cummings M.L., A. St. John, & N.C. Sturchio, 1994. Hydrogeochemical characterization of the Alvord Basin Geothermal Area, Harney County, Oregon, USA. In: K.C. Lee, M.G. Dunstall, and M.P. Hochstein, eds., *Proceedings of the 15th New Zealand Geothermal Workshop*, 119-124.

REPORTS and MISCELLANEOUS PUBLICATIONS:

16. Sturchio NC, 2016. *Results of radiokrypton analyses of monitoring wells AEC-7R, H-12R, and SNL-16 near the Waste Isolation Pilot Plant, New Mexico*. Final report of Sandia National Laboratories contract 1557037.
15. Hatzinger PB, Bohlke JK, Izbicki J, Teague N, Sturchio NC, 2015. *Evaluation of Perchlorate Sources in the Rialto-Colton and Chino California Subbasins using Chlorine and Oxygen Isotope Ratio Analysis*. Final Report of ESTCP Project ER-200942, March 2015. Available at <http://www.serdp.org>.
14. Hatzinger PB, Bohlke JK, Sturchio NC, Gu B, 2013. *Validation of chlorine and oxygen isotope ratio analysis to differentiate perchlorate sources and to document biodegradation*. Final Report of ESTCP Project ER200509, May 2013. Available at <http://www.serdp.org>.
13. Cartwright, P., Hoaglund, J.R. III, Patil, A., Sturchio, N.C., Undesser, P., Wong, K., 2013. *Reducing Problematic Concentrations of Perchlorate in Residential Water Well Systems*. Industry Best Suggested Practices, National Ground Water Association, Westerville, Ohio, 10 p. Available at: <http://www.ngwa.org>.
12. Bellucci, F., Sturchio, N.C., 2012. *Greenhouse Gas Emissions from the Stickney, Egan, and Northside Water Reclamation Plants*. Metropolitan Water Reclamation District of Greater Chicago, 12 p.
11. Hatzinger, P.B. J.K. Bohlke, N.C. Sturchio, B. Gu, 2011. *Guidance Manual for Forensic Analysis of Perchlorate in Groundwater using Chlorine and Oxygen Isotopic Analyses*. ESTCP Project ER-200509 Guidance Document. 119 p. Online at <http://www.SERDP.org>
10. Sturchio, N.C., 2009. *Isotopic Composition of Nitrate in the Illinois Waterway and Its Tributaries*. Metropolitan Water Reclamation District of Greater Chicago, 23 p.
9. Sultan, M., Manocha, N., Milewski, A., Becker, R., Sturchio, N.C., Yan, E., and Wagdy, A., 2008. *Developing renewable groundwater resources in arid lands – Pilot case: the Eastern Desert of Egypt*. Final Report EDP-601. U.N. Development Program/Global Environment Foundation/Cairo University, 188 p.
8. Gonzalez-Meler, M.A., Sturchio, N.C., 2007. *Biogeochemistry of Goose Pond and Hennepin-Hopper Lakes: Water, Nutrients, and Sediments*. Final Report to The Wetlands Initiative, Chicago, IL. 27 p.

7. Li, A., K. J. Rockne, N. Sturchio, W. J. Mills, W. Song, J. Ford (2006). Chronology of PBDE Air Deposition in the Great Lakes from Sedimentary Records, Final Report, Great Lakes Atmospheric Deposition Program Office, Air and Radiation Division, United States Environmental Protection Agency. March 31, 2006. 190 pp.
6. Minissale A, Sturchio NC, 2004. Travertines of Tuscany and Latium (Central Italy). Guidebook for Field Trip P25, 32nd International Geological Congress, Florence, Italy, August 20-28, 2004, 12 p.
5. Doran, P. T., Clifford, S. M., Forman, S. L., Nyquist, L., Papanastassiou, D.A., Stewart, B. W., Sturchio, N.C., and Swindle, T. D., 2001, *Workshop Report: Assessing Chronometric Techniques for Quantifying Surficial Processes on Mars*. Jet Propulsion Laboratory, NASA, 155 p. Online at http://marsweb1.jpl.nasa.gov/dating/mars_chronology_report.pdf
4. Clausen, J., N. C. Sturchio, L. Heraty, L. Huang, B. D. Holt, and T. Abrajano, 1997. *Evaluation of Natural Attenuation Processes for Trichloroethylene and Technetium-99 in the Northeast and Northwest Plumes at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*. Lockheed-Martin Energy Services, Inc., KY/EM-113.
3. Kharaka, Y., R. Mariner, T. Bullen, B.M. Kennedy, and N.C. Sturchio, 1991. *Geochemical investigations of hydraulic connections between the Corwin Springs Known Geothermal Resources Area and adjacent parts of Yellowstone National Park*. In: Effects of Potential Geothermal Development in the Corwin Springs Known Geothermal Resources Area, Montana, on the Thermal Features of Yellowstone National Park. U.S. Geological Survey, Water-Resources Investigations Report 91-4052, F1-F38.
2. Pierce, K.L., K. Adams, and N.C. Sturchio, 1991. *Geologic setting of the Corwin Springs Known Geothermal Resources Area/Mammoth Hot Springs Area in and adjacent to Yellowstone National Park*. In: Effects of Potential Geothermal Development in the Corwin Springs Known Geothermal Resources Area, Montana, on the Thermal Features of Yellowstone National Park. U.S. Geological Survey, Water-Resources Investigations Report 91-4052, C1-C37.
1. Cole, D., D. Curtis, D. DePaolo, T. Gerlach, J. Laul, H. Shaw, B. Smith, and N.C. Sturchio, 1990. *Isotope Geochemistry: A Critical Component of Energy Research*. Los Alamos National Laboratory Report LA-11849-MS, 20 p.

BOOK REVIEWS:

3. Sturchio, N.C., 1993. Book Review -- "Uranium-Series Disequilibrium: Applications to Earth, Marine, and Environmental Sciences", edited by M. Ivanovich and R.S. Harmon, Oxford: Clarendon Press, 2nd edition, 1992. *Geochimica et Cosmochimica Acta*, 57: 4327-4328.
2. Sturchio, N.C., 1992. Book review - "Radioactive Waste Disposal and Geology", by K. Krauskopf, London: Chapman and Hall, 1st Edition, 1988. *Journal of Geology*, 100: 259.
1. Sturchio, N.C., 1990. Book review - "Geology of High-Level Nuclear Waste Disposal: An Introduction", by I.S. Roxburgh, London: Chapman and Hall, 1st Edition, 1987. *Journal of Geology*, 98: 131.