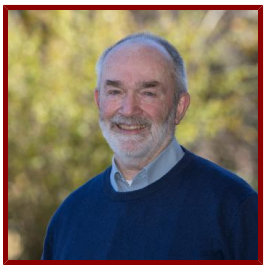
Stanford



Donald Lowe

Max Steineke Professor in Earth Sciences, Emeritus

Earth & Planetary Sciences

Bio

BIO

Don Lowe was born and raised in Sacramento, California, and attended Stanford University for his undergraduate study. In his sophomore year, he chanced to take a class in physical geology from Ben Page, which set the course of his future professional career. He decided to go back "east" for his graduate study and enrolled in geology at the University of Illinois, where he received a PhD degree in 1967. He subsequently was awarded a post-doctoral associate position at the US Geological Survey (1968-70) and started his first academic position as an Assistant Professor at Louisiana State University in 1970. He returned to Stanford in 1988 as a Professor and has continued his education, teaching, and research there since then. His research falls into two broad areas: deep-water sedimentation and Archean sedimentary systems. In the former, he examines the processes of sediment transport and deposition in the deep-sea, resulting lithofacies and lithofacies associations, stacking and facies pattern as reflecting environments of deposition, and overall basin history. The Archean research focuses on rocks older than 3.0 billion-years-old and aims to use sedimentary principles to investigate early surface environments, the nature and role of early organisms, the role of giant meteorite impacts in early crustal development, and Archean basinal settings and tectonics.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Earth & Planetary Sciences
- Member, Bio-X

ADMINISTRATIVE APPOINTMENTS

- Professor Emeritus, Earth and Planetary Sciences, Stanford University, (2024- present)
- Professor of Earth and Planetary Sciences, Stanford University, (2022-2024)
- Professor of Geological & Environmental Sciences, Stanford University, (1993-2022)
- Professor of Geology, Stanford University, (1988-1993)
- Consulting Professor, Department of Earth and Space Sciences, University of California at Los Angeles, (1988-1988)
- Acting Chairman, Department of Geology, Louisiana State University, Baton Rouge, Louisiana, (1982-1983)
- Visiting Lecturer, Department of Geology, Carleton University, Ottawa, Ontario, Canada, (1981-1981)
- Visiting Professor, Department of Geology, University of Ottawa, Ottawa, Ontario, Canada, (1980-1981)
- Professor, Department of Geology, Louisiana State University, Baton Rouge, Louisiana, (1978-1988)
- Associate Professor, Department of Geology, Louisiana State University, Baton Rouge, Louisiana, (1973-1978)
- Assistant Professor, Department of Geology, Louisiana State University, Baton Rouge, Louisiana, (1970-1973)
- Post-doctoral Research Associate, U.S. Geological Survey, Menlo Park, California, (1968-1970)

- Instructor in Geology, University of Illinois, (1967-1968)
- Visiting Graduate Fellow, Sedimentary Research Laboratory University of Reading, Reading, England, (1966-1967)

HONORS AND AWARDS

- Twenhofel Medal, Society of Sedimentary Geology (SEPM) (2018)
- 2016 Alumni Achievement Award, University of Illinois, Department of Geology (2016)
- Fellow, Geological Society of America (2016)
- Grover E. Murray Memorial Distinguished Educator Award, American Association of Petroleum Geologists (2014)
- Honorary Membership, Pacific Section, Society for Sedimentary Geology, SEPM (2012)
- Max Steineke Professor, Stanford University (2012)
- Research Fellowship, Japan Society for the Promotion of Science (1994)
- Post-Doctoral Fellowship, U.S. Geological Survey (1968-1970)
- Graduate Fellowship, National Science Foundation (1964-1967)
- Phi Beta Kappa, Sigma Xi (1964)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Chair, GES, Stanford University (2007 - 2009)
- Co-Director, Stanford Project on Deep-Water Depositional Systems (SPODDS) (1993 - 2019)
- Member, Editorial Board, Precambrian Research (1990 - 2025)
- Member, Editorial Board, Astrobiology (2005 - 2006)
- Member, Interschool Faculty Committee for the Goldman Environmental Honors Program, Stanford University (1993 - 1998)
- Member, GSA Committee on the Penrose Medal Award (1995 - 1997)
- Member, Grant Proposal Review Panel, NASA Exobiology Program (1995 - 1998)
- Invited Scientist, Kyushu University, Collaborative Studies of Japanese Siliceous Sinter (1997 - 1997)
- Invited Lecturer, BP Petroleum (Houston) and Texaco (UK) (1997 - 1997)
- Invited Participant, SEPM Debate at Annual AAPG-SEPM Meeting: Processes of Deep-water Clastic Sedimentation and Their Reservoir Implications: What Can We PredictNULL (1997 - 1997)
- Qualline Lecturer (a series of 3 lectures), Department of Geological Sciences, University of Texas at Austin (1997 - 1997)
- Member, Soil Scientist Search Committee, Stanford University (1997 - 1998)
- Member, Penn State Astrobiology Research Consortium (1998 - 2009)
- Member, GSA Committee on Honorary Fellows (1998 - 2000)
- Field Trip Leader, Unocal, Deep-water Systems in Western California (1998 - 1998)
- Invited Lecturer, San Joaquin Geological Society, Bakersfield, CA (1998 - 1998)
- Invited Participant and Speaker, Statoil Research Summit, Processes, Stratigraphy, and Lithology Distribution in Deep-water Clastic Systems-An Update, Trondheim and Stavanger, Norway (1998 - 1998)
- Invited Lecturer, University of Chicago, Chicago, Ill. (1998 - 1998)
- Leader, Science Definition Team, NASA Astrobiology Research Laboratory (1999 - 2000)
- Member, NASA Ames Space Science Review Panel (1999 - 1999)
- Member, advisory panel,, Calif. Acad. Sci., major new directions for CAS programs over the next 10-15 years (1999 - 1999)
- Member, advisory group, NASA/Ames Astrobiology Program, objectives and goals of new Astrobiology laboratory at NASA/Ames Research Center (1999 - 1999)
- Invited Lecturer, Conference on North Sea Petroleum province (1999 - 1999)

- Member, NRC/NSF/GSA panel to consider future research directions and initiatives in sedimentary geology (1999 - 1999)
- Earth Sciences representative on Walk Through Time committee, Stanford University (1999 - 1999)
- Stanford Office of Technology and Licensing Grants Committee, Stanford University (1999 - 2000)
- Member, Editorial Board, Astrobiology (2000 - 2005)
- Member, UCLA Center for Astrobiology (2000 - 2009)
- Invited Speaker, Barberton Geological Society, South Africa (2000 - 2000)
- Invited Speaker, Triton Energy, Dallas, Texas (2000 - 2000)
- Invited Speaker, Louisiana State University (2000 - 2000)
- Invited Speaker, UCLA (2000 - 2000)
- Invited Speaker, Petrobras Conference on Deep-water Sedimentation, Rio de Janeiro, Brazil (2000 - 2000)
- Member, SETI Advisory Committee on long-range planning for new program on Life in the Universe (2000 - 2002)
- Organizer and Leader, AAPG Hedberg Field Research Conference, Deep-water Sandstones, Submarine Canyon to Basin Plain, Western California, April 9-14 (2000 - 2000)
- Chair, GES Long Range Planning Committee, Stanford University (2000 - 2004)
- Member, GES Admissions Committee, Stanford University (2000 - 2001)
- Invited Speaker, SEPM Diamond Jubilee Symposium, Denver, CO; Peninsula Geological Society; University of California, Davis, CA; US Geological Survey, Menlo Park, CA (2001 - 2001)
- Chair, GES Undergraduate Program Committee, Stanford University (2001 - 2002)
- Member, Impacts Focus Group, NASA Astrobiology Institute (2002 - 2006)
- Invited Speaker, UCLA Rubey Symposium, Impacts and the origin, Evolution, and Extinction of Life (2002 - 2002)
- Invited Speaker, Barberton Geological Society, South Africa; Rohol Aussuchungs Gesellschaft, Vienna, Austria; Osterreichische Geologische Gesellschaft (Austrian Geological Society), Vienna; UCLA Department of Earth and Planetary Sciences (2002 - 2002)
- GES Course designer (4 planetary science courses), NASA/Ames Research Center and USGS (2002 - 2004)
- Organizer and leader of 10-day field conference, Archean Surface Processes, in the Barberton Greenstone Belt, South Africa (29 international participants) (2003 - 2003)
- Member, GES Faculty Search Committee (Surface Processes), Stanford University (2003 - 2004)
- Member, School of Earth Sciences Subcommittee on Core disciplines, Stanford University (2003 - 2004)
- Chair, Promotion and Tenure Committee, Stanford University (2003 - 2003)
- Sabbatical leave, Stanford University (2004 - 2005)
- Invited Speaker, Barberton Geological Society; Goldschmidt Conference, Copenhagen, Denmark (2004 - 2004)
- Invited Lecturer, G. Derwood Baker Distinguished Lecture Series, Avenidas, Palo Alto, CA (2004 - 2004)
- Member, NASA 2009 MSL mission team (2004 - 2005)
- Invited Speaker, Barberton Geological Society, South Africa; UCLA Department of Earth & Planetary Sciences, Institute of Geophysics and Planetary Physics; Shirley A. Kliegal Lecture in Geology, California Institute of Technology (2005 - 2005)
- Co-Chair, Symposium on Deep-Water Sedimentation, Annual Meeting of GSA Cordilleran Section, San Jose, CA (2005 - 2005)
- Member, Subcommission on Subdivision and Calibration of the Precambrian Time Scale , International Commission on Stratigraphy (2005 - 2008)
- Co-Chair, GES Faculty Search Committee (Paleobiology), Stanford University (2005 - 2005)
- Co-Leader (w/Graham), AAPG Field Seminar: Deep-Water Siliciclastic Reservoirs (2006 - 2006)
- Invited Speaker, University of Southern California, Los Angeles, CA (2006 - 2006)
- Chair, Undergraduate Curriculum Committee in Geological Sciences, Stanford University (2006 - 2007)
- Invited Keynote Speaker, Biosignatures in Ancient Rocks Workshop, Sudbury, Ontario (2007 - 2007)
- Invited Speaker/Participant, Core Workshop: Deep-Water Reservoirs of California: AAPG (2007 - 2007)

- Chair, GES Long Range Planning Committee 2, Stanford University (2007 - 2009)
- Member, GES Graduate Admissions Committee, Stanford University (2007 - 2008)
- Invited Speaker, Deepwater Sediments, RAG (petroleum company, Vienna, Austria) and Reliance Industries (India) (2008 - 2008)
- Co-Leader, Pacific Section of AAPG Field Trip, Deepwater Sediments in Central California (2008 - 2008)
- Invited Speaker, Committee on the Origins and Evolution of Life (COEL) of the National Academies of Sciences, Washington, DC. (2008 - 2008)
- Invited Speaker, Geological Society of Vienna (2008 - 2008)
- Invited Speaker, CSU-Channel Islands, Symposium, "Early Life on the Ancient Earth and Mars" (2008 - 2008)
- Chair, GES Graduate Admissions Committee, Stanford University (2008 - 2012)
- Member, GES Space Committee, Stanford University (2008 - 2009)
- Member, University Committee on Health and Safety, Stanford University (2009 - 2011)
- Invited Speaker, Hess Forum on Thin-Bedded Sediments (2009 - 2009)
- Member, Promotion and Tenure Committee, Stanford University (2011 - 2011)
- Chair, Promotion and Tenure Committee, Stanford University (2011 - 2011)
- Leader and Organizer, Stanford-KFUPM Field Trip to Death Valley (2012 - 2012)
- Keynote Speaker, International Geological Congress, Brisbane, Symposium on Large Asteroid Impacts and Crustal Evolution (2012 - 2012)
- Leader and Organizer, Stanford-KFUPM Field Course to El Paso area and Guadalupe Mtns. (2014 - 2014)

PROFESSIONAL EDUCATION

- Ph.D., University of Illinois , Geology (1967)
- B.S., Stanford University , Geology (1964)

LINKS

- SPODDS: http://spodds.stanford.edu/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

I enjoy the historical aspects of geology, looking back in time to explore past events and ancient life. My research and that of my students is focused in two main areas. We use the techniques of sedimentary geology and geochemistry to explore the Earth's earliest surface environments, life, and crustal development, generally before 2.5 billion years ago. Much of this research is focused in South Africa and Western Australia. The other half of my research deals with deep-water sedimentation, especially using outcrops and cores to study the processes by which coarse sediment is transported and deposited in the deep sea.

Teaching

My teaching is focused on topics in sedimentary geology and techniques for interpreting the sedimentary record. This includes an undergraduate/ graduate course (co-taught with Professor Steve Graham) in sedimentary geology and depositional systems, and graduate courses in sedimentation mechanics, sedimentary petrography, and sedimentary environments.

Professional Activities

I engage in a variety of activities in support of sedimentary geology, especially deep-water sedimentation and Archean sedimentology. I am currently Chair of the SEPM Committeee for the Arnold Bouma Conferences on Deep-Water Geoscience and a member of the Subcommission on Precambrian

Stratigraphy of the International Commission on Stratigraphy. I have recently stepped down after 27 years as co-director of the Stanford Project On Deep-water Depositional Systems (SPODDS) and have served on numerous school and departmental committees, especially those aimed at setting goals and directions for long-range planning and graduate admissions, and on the editorial boards of a number of professional journals and on numerous program, grant, and fellowship review panels.

PROJECTS

- Sedimentology, Palaeoenvironment and Diagenesis of the Tertiary Burqan Formation in the Midyan area, Saudi Arabia: Implications for subsurface reservoir quality. - King Fahd University of Petroleum and Minerals (KFUMP), Saudi Arabia
- Investigating the Origin of Layered Outcrops in the Mawrth Vallis Region, Mars - Stanford

Teaching

COURSES

2023-24

- Topics in Sedimentary Geology: EPS 213 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Andrea Zorzi

Publications

PUBLICATIONS

- **Effect of a giant meteorite impact on Paleoarchean surface environments and life.** *Proceedings of the National Academy of Sciences of the United States of America*
  Drabon, N., Knoll, A. H., Lowe, D. R., Bernasconi, S. M., Brenner, A. R., Mucciarone, D. A.
  2024; 121 (44): e2408721121
- **Onverwacht Group, Barberton Greenstone Belt, South Africa: 300 m.y. development of a Paleoarchean stagnant lid** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
  Lowe, D. R.
  2024
- **Ratification of the base of the ICS Geological Time Scale: the Global Standard Stratigraphic Age (GSSA) for the Hadean lower boundary** *EPISODES*
  Halla, J., Noffke, N., Reis, H., Awramik, S., Bekker, A., Brasier, A., Callefo, F., Choudhury, A., Duda, J., Fedo, C., Galante, D., Haddock, J., Haines, et al
  2024; 47 (2): 381-389
- **Geology of the Eastern Barberton Greenstone Belt, South Africa: Early Deformation and the Role of Large Meteor Impacts** *AMERICAN JOURNAL OF SCIENCE*
  Lowe, D. R., Byerly, G. R.
  2024; 324
- **Spatial distribution and variability of lobe facies in a large sand-rich submarine fan system: Neoproterozoic Zerrissene Group, Namibia** *SEDIMENTOLOGY*
  Nieminski, N. M., McHargue, T. R., Gooley, J. T., Fildani, A., Lowe, D. R.
  2023
- **Origin of Silicate Spherules and Geochemistry of Re and Platinum-Group Elements Within Microfossil-Bearing Archean Chert from the 3.4 Ga Strelley Pool Formation, Western Australia.** *Astrobiology*
  Sugitani, K., Mimura, K., Senda, R., Kouketsu, Y., Wallis, S., Takagi, N., Iizuka, T., Lowe, D. R.
  2023; 23 (6): 670-690

- **Progressive accretion recorded in sedimentary rocks of the 3.28-3.23 Ga Fig Tree Group, Barberton Greenstone Belt** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
  Drabon, N., Lowe, D. R.
  2022; 134 (5-6): 1258-1276
- **Destabilization of Long-Lived Hadean Protocrust and the Onset of Pervasive Hydrous Melting at 3.8 Ga** *AGU ADVANCES*
  Drabon, N., Byerly, B. L., Byerly, G. R., Wooden, J. L., Wiedenbeck, M., Valley, J. W., Kitajima, K., Bauer, A. M., Lowe, D. R.
  2022; 3 (2)
- **Mars as a time machine to Precambrian Earth** *Journal of the Geological Society*
  Lapotre, M., Bishop, J., Ielpi, A., Lowe, D., Siebach, K., Sleep, N., Tikoo, S.
  2022
- **Paleomagnetism of 3.5-4.0 Ga zircons from the Barberton Greenstone Belt, South Africa** *EARTH AND PLANETARY SCIENCE LETTERS*
  Fu, R. R., Drabon, N., Wiedenbeck, M., Brenner, A. R., Lowe, D. R., Borlina, C. S.
  2021; 567
- **Windblown Hadean zircons derived by erosion of impact-generated 3.3 Ga uplifts, Barberton Greenstone Belt, South Africa** *PRECAMBRIAN RESEARCH*
  Lowe, D. R., Drabon, N., Byerly, G. R., Byerly, B. L.
  2021; 356
- **Provenance and paleogeography of Archean Fig Tree siliciclastic rocks in the East-Central Barberton Greenstone Belt, South Africa** *PRECAMBRIAN RESEARCH*
  Stoll, E., Drabon, N., Lowe, D. R.
  2021; 354
- **Heterogeneous Hadean crust with ambient mantle affinity recorded in detrital zircons of the Green Sandstone Bed, South Africa.** *Proceedings of the National Academy of Sciences of the United States of America*
  Drabon, N. n., Byerly, B. L., Byerly, G. R., Wooden, J. L., Keller, C. B., Lowe, D. R.
  2021; 118 (8)
- **CONSTRAINTS ON SURFACE TEMPERATURE 3.4 BILLION YEARS AGO BASED ON TRIPLE OXYGEN ISOTOPES OF CHERTS FROM THE BARBERTON GREENSTONE BELT, SOUTH AFRICA, AND THE PROBLEM OF SAMPLE SELECTION** *AMERICAN JOURNAL OF SCIENCE*
  Lowe, D. R., Ibarra, D. E., Drabon, N., Chamberlain, C.
  2020; 320 (9): 790–814
- **The non-glacial and non-cratonic origin of an early Archean felsic volcaniclastic unit, Barberton Greenstone Belt, South Africa** *PRECAMBRIAN RESEARCH*
  Lowe, D. R., Byerly, G. R.
  2020; 341
- **Deposition of >3.7 Ga clay-rich strata of the Mawrth Vallis Group, Mars, in lacustrine, alluvial, and aeolian environments.** *Geological Society of America bulletin*
  Lowe, D. R., Bishop, J. L., Loizeau, D., Wray, J. J., Beyer, R. A.
  2020; 132 (1-2): 17-30
- **Deposition of > 3.7 Ga clay-rich strata of the Mawrth Vallis Group, Mars, in lacustrine, alluvial, and aeolian environments** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
  Lowe, D. R., Bishop, J. L., Loizeau, D., Wray, J. J., Beyer, R. A.
  2020; 132 (1-2): 17–30
- **EDIACARAN (VENDIAN)-PERIOD ALLUVIAL AND COASTAL GEOMORPHOLOGY APPLIED TO DEVELOPMENT OF VERKHNECHONSKOYE AND YARAKTINSKOYE FIELDS, EAST SIBERIA, RUSSIAN FEDERATION** *JOURNAL OF SEDIMENTARY RESEARCH*
  Tye, R. S., Lowe, D. R., Hickey, J. J.
  2020; 90 (1): 67–101
- **EVOLUTION OF AN ARCHEAN FAN DELTA AND ITS IMPLICATIONS FOR THE INITIATION OF UPLIFT AND DEFORMATION IN THE BARBERTON GREENSTONE BELT, SOUTH AFRICA** *JOURNAL OF SEDIMENTARY RESEARCH*
  Drabon, N., Heubeck, C. E., Lowe, D. R.
  2019; 89 (9): 849–74

- **The role of avulsion and splay development in deep-water channel systems: Sedimentology, architecture, and evolution of the deep-water Pliocene Godavari "A" channel complex, India** *MARINE AND PETROLEUM GEOLOGY*
  Lowe, D. R., Graham, S. A., Malkowski, M. A., Das, B.
  2019; 105: 81–99
- **Provenance of the Neoproterozoic deep-water Zerrissene Group of the Damara Orogen, Namibia, and paleogeographic implications for the closing of the Adamastor Ocean and assembly of the Gondwana supercontinent** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
  Nieminski, N. M., Grove, M., Lowe, D. R.
  2019; 131 (3-4): 355–71
- **Crustal fracturing, unconformities, and barite deposition, 3.26-3.23 Ga, Barberton Greenstone Belt, South Africa** *Precambrian Research*
  Lowe, D. R., Drabon, N., Byerly, G. R.
  2019
- **Provenance and tectonic implications of the 3.28–3.23#Ga Fig Tree Group, central Barberton greenstone belt, South Africa** *Precambrian Research*
  Drabon, N., Heubeck, C. E., Lowe, D. R.
  2019: 1-19
- **The terrestrial record of Late Heavy Bombardment** *NEW ASTRONOMY REVIEWS*
  Lowe, D. R., Byerly, G. R.
  2018; 81: 39–61
- **Hadean zircon from a 3.3 Ga sandstone, Barberton greenstone belt, South Africa** *GEOLOGY*
  Byerly, B. L., Lowe, D. R., Drabon, N., Byerly, G. R.
  2018
- **Initial generation of sand across climate zones of the Mojave, Sierra Nevada, and Klamath Batholiths in California, USA** *SEDIMENTARY GEOLOGY*
  Hessler, A. M., Lowe, D. R.
  2017; 347: 37-50
- **A high continental weathering flux into Paleoarchean seawater revealed by strontium isotope analysis of 3.26 Ga barite** *EARTH AND PLANETARY SCIENCE LETTERS*
  Satkoski, A. M., Lowe, D. R., Beard, B. L., Coleman, M. L., Johnson, C. M.
  2016; 454: 28-35
- **Sedimentology of the similar to 3.3 Ga upper Mendon Formation, Barberton Greenstone Belt, South Africa** *PRECAMBRIAN RESEARCH*
  Trower, E. J., Lowe, D. R.
  2016; 281: 473-494
- **Outcrop characterization of a submarine channel-lobe complex: The Lower Mount Messenger Formation, Taranaki Basin, New Zealand** *MARINE AND PETROLEUM GEOLOGY*
  Masalimova, L. U., Lowe, D. R., Sharman, G. R., King, P. R., Arnot, M. J.
  2016; 71: 360-390
- **Interplay between an axial channel belt, slope gullies and overbank deposition in the Puchkirchen Formation in the Molasse Basin, Austria** *SEDIMENTOLOGY*
  Masalimova, L. U., Lowe, D. R., McHargue, T., Derksen, R.
  2015; 62 (6): 1717-1748
- **Sedimentology and geochemistry of Archean silica granules** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
  Stefurak, E. J., Lowe, D. R., Zentner, D., Fischer, W. W.
  2015; 127 (7-8): 1090-1107
- **Geologic record of partial ocean evaporation triggered by giant asteroid impacts, 3.29-3.23 billion years ago** *GEOLOGY*
  Lowe, D. R., Byerly, G. R.
  2015; 43 (6): 535-538
- **Texture-specific Si isotope variations in Barberton Greenstone Belt cherts record low temperature fractionations in early Archean seawater** *GEOCHIMICA ET COSMOCHIMICA ACTA*

Stefurak, E. J., Fischer, W. W., Lowe, D. R.
2015; 150: 26-52

- **High resolution tephra and U/Pb chronology of the 3.33–3.26 Ga Mendon Formation, Barberton Greenstone Belt, South Africa** *PRECAMBRIAN RESEARCH*
  Decker, N. B., Byerly, G. R., Stiegler, M. T., Lowe, D. R., Stefurak, E.
  2015; 261: 54-74
- **PROCESSES OF SEDIMENTATION AND STRATIGRAPHIC ARCHITECTURE OF DEEP-WATER BRAIDED LOBE COMPLEXES: THE PLIOCENE REPETTO AND PICO FORMATIONS, VENTURA BASIN, USA** *JOURNAL OF SEDIMENTARY RESEARCH*
  Rotzien, J. R., Lowe, D. R., Schwalbach, J. R.
  2014; 84 (10): 910-934
- **Paleoarchean ocean crust and mantle excavated by meteor impact: Insight into early crustal processes and tectonics** *GEOLOGY*
  Krull-Davatzes, A. E., Byerly, G. R., Lowe, D. R.
  2014; 42 (7): 635-638
- **Primary silica granules-A new mode of Paleoarchean sedimentation** *GEOLOGY*
  Stefurak, E. J., Lowe, D. R., Zentner, D., Fischer, W. W.
  2014; 42 (4): 283-286
- **Stratigraphic architecture and evolution of a deep-water slope channel-levee and overbank apron: The Upper Miocene Upper Mount Messenger Formation, Taranaki Basin** *MARINE AND PETROLEUM GEOLOGY*
  Rotzien, J. R., Lowe, D. R., King, P. R., Browne, G. H.
  2014; 52: 22-41
- **Physics of crustal fracturing and chert dike formation triggered by asteroid impact, similar to 3.26 Ga, Barberton greenstone belt, South Africa** *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS*
  Sleep, N. H., Lowe, D. R.
  2014; 15 (4): 1054-1070
- **Stratigraphic architecture and evolution of a deep-water slope channel-levee and overbank apron: The Upper Miocene Upper Mount Messenger Formation, Taranaki Basin** *MARINE AND PETROLEUM GEOLOGY*
  Rotzien, J. R., Lowe, D. R., King, P. R., Browne, G. H.
  2014; 52: 22-41
- **Recently discovered 3.42-3.23 Ga impact layers Barberton Belt, South Africa: 3.8 Ga detrital zircons, Archean impact history, and tectonic implications** *GEOLOGY*
  Lowe, D. R., Byerly, G. R., Kyte, F. T.
  2014; 42 (9): 747-750
- **Timing of deposition and deformation of the Moodies Group (Barberton Greenstone Belt, South Africa): Very-high-resolution of Archaean surface processes** *PRECAMBRIAN RESEARCH*
  Heubeck, C., Engelhardt, J., Byerly, G. R., Zeh, A., Sell, B., Luber, T., Lowe, D. R.
  2013; 231: 236-262
- **Crustal fracturing and chert dike formation triggered by large meteorite impacts, ca. 3.260 Ga, Barberton greenstone belt, South Africa** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
  Lowe, D. R.
  2013; 125 (5-6): 894-912
- **Geologic Map of the West-Central Barberton Greenstone belt, South Africa** *GEOLOGICAL SOCIETY OF AMERICA MAP & CHART SERIES*
  Lowe, D. R., Byerly, G. R., Heubeck, C.
  2013; MCS103
- **Channelized debris-flow deposits and their impact on turbidity currents: The Puchkirchen axial channel belt in the Austrian Molasse Basin** *SEDIMENTOLOGY*
  Bernhardt, A., Stright, L., Lowe, D. R.
  2012; 59 (7): 2042-2070
- **Geochemistry and petrology of komatiites of the Pioneer Ultramafic Complex of the 3.3 Ga Weltevreden Formation, Barberton greenstone belt, South Africa** *PRECAMBRIAN RESEARCH*

Stiegler, M. T., Cooper, M., Byerly, G. R., Lowe, D. R.
2012; 212: 1-12

- **Palaeogeography and diachronous infill of an ancient deep-marine foreland basin, Upper Cretaceous Cerro Toro Formation, Magallanes Basin** *BASIN RESEARCH*
  Bernhardt, A., Jobe, Z. R., Grove, M., Lowe, D. R.
  2012; 24 (3): 269-294
- **Climbing-ripple successions in turbidite systems: depositional environments, sedimentation rates and accumulation times** *SEDIMENTOLOGY*
  Jobe, Z. R., Lowe, D. R., Morris, W. R.
  2012; 59 (3): 867-898
- **Mineralogy and diagenesis of 3.24 Ga meteorite impact spherules** *PRECAMBRIAN RESEARCH*
  Krull-Davatzes, A. E., Lowe, D. R., Byerly, G. R.
  2012; 196: 128-148
- **Geologic map of the west-central Barberton greenstone belt, South Africa:** *GEOLOGICAL SOCIETY OF AMERICA Map and Chart Series*
  Lowe, D. R., Byerly, G. R.
  2012; MCS103
- **Fragmentation and dispersal of komatiitic pyroclasts in the 3.5-3.2 Ga Onverwacht Group, Barberton greenstone belt, South Africa** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
  Stiegler, M. T., Lowe, D. R., Byerly, G. R.
  2011; 123 (5-6): 1112-1126
- **Stratigraphic evolution of a submarine channel-lobe complex system in a narrow fairway within the Magallanes foreland basin, Cerro Toro Formation, southern Chile** *MARINE AND PETROLEUM GEOLOGY*
  Bernhardt, A., Jobe, Z. R., Lowe, D. R.
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