Huan Cui, Ph.D.

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Department of Geosciences
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Profiles: ResearcherID, ORCID, Google Scholar, University webpage

Research

paleoceanography, biogeochemistry, geobiology, astrobiology, sedimentology, stratigraphy, Earth evolution, global and planetary change

Employment

2022-present, Assistant Professor, Mississippi State University
Department of Geosciences, Starkville, USA

2020-2022, Postdoctoral Scholar, Université Paris Cité & University of Toronto
Geomicrobiology Group, Institut de Physique du Globe de Paris (IPGP), Paris, France; Department of Earth Sciences, University of Toronto, Toronto, Canada

2018-2020, Postdoctoral Scholar, Free University of Brussels (VUB)
Analytical, Environmental & Geo-Chemistry Group, Brussels, Belgium; ET-HOME (Evolution and Tracers of the Habitability of Mars and Earth) Astrobiology Research Consortium, Belgium

2015-2018, Postdoctoral Scholar, University of Wisconsin–Madison
Wisconsin Secondary Ion Mass Spectrometer (WiscSIMS) Laboratory, Department of Geoscience, Madison, USA; NASA Astrobiology Institute / Wisconsin Astrobiology Research Consortium

Education

Ph.D., Geology, 2015, University of Maryland
Paleoclimate / Stable Isotope Laboratory, Department of Geology, College Park, USA. Dissertation: Authigenesis, Biomineralization, and Carbon-Sulfur Cycling in the Ediacaran Ocean

M.S., Geology, 2011, Peking University
Department of Geology, School of Earth and Space Sciences, Beijing, China
Thesis topic: Sedimentological and Geochemical Investigations of Hydrothermal Dolomite Reservoirs in the Tarim Basin, NW China

B.S., Geology, 2008, Southwest Petroleum University
School of Geosciences and Technology, Chengdu, China
Thesis topic: Integrated Facies and Reservoir Characterization for a Drilled Hole in SW China

Awards & Honors

2022, Excellent Reviewer Award
Issued by *Science Bulletin* (Elsevier) Editorial Office

2019, Visiting Fellowship / Awardee of open research grant
Issued by State Key Laboratory of Palaeobiology and Stratigraphy, Nanjing Institute of Geology and Paleontology, Chinese Academy of Sciences, relinquished due to the COVID-19 pandemic

2018, Awardee of early-career travel grant
Issued by NASA Astrobiology Institute

2015, Green Fellowship in Global Climate Change
Issued by University of Maryland, College Park

2015, Best Talk Award of Graduate Talk Day
Issued by Department of Geology, University of Maryland, College Park

2015, Recipient of the MSA Grant for Student Research in Mineralogy and Petrology
Issued by Mineralogical Society of America (MSA)

2014, Recipient of seven research grants for graduate students
Issued by Sigma Xi, Society of Economic Geologists (SEG), International Association of Sedimentologists (IAS), American Association of Petroleum Geologists (AAPG), Geological Society of America (GSA), Explorers Club, Explorers Club Washington Group (ECWG)

2014, Best Talk Award
Issued by the Sino-UK Coevolution of Life & Planet summer school, Nanjing Institute of Geology and Paleontology, Chinese Academy of Sciences

2014, Dean's Outstanding Teaching Assistant Award
Issued by College of Computer, Mathematical, and Natural Sciences, University of Maryland, College Park

2013, Distinguished Teaching Assistant Award
Issued by University of Maryland, College Park

Teaching Experience

Pedagogical Training Participated

- 2023, Three-week program designed for new faculty:
  "New Faculty Teaching Academy"
  Center for Teaching and Learning, Mississippi State University

- 2019, Semester-long course designed for lecturers and postdocs:
  "English for Lecturers: Communication for University Teaching"
  Free University of Brussels-VUB
- 2018, Semester-long course designed for lecturers and postdocs:
  "English for Lecturers: Vocabulary Expansion"
  Free University of Brussels-VUB

Teaching at Mississippi State University, Starkville, USA

- GG 1113 Earth Science Survey
  Fall 2022, Spring 2023
- GG 4443/6443 Principles of Sedimentary Deposits II
  Spring 2023
- GG 4990/6990 Biogeochemical Evolution of Planet Earth
  Fall 2023
- GG 8990 Global and Planetary Change
  In preparation / Spring 2024

Teaching in Belgium

- Guest lecture, Reconstructing the Precambrian
  Ghent University, 2020
- Guest lecture, Sulfur isotopes
  Free University of Brussels-VUB, 2019
- Guest lecture, Life in the Precambrian
  Free University of Brussels-VUB, 2019
- Guest lecture, Precambrian geobiology & biogeochemistry
  Free University of Brussels-VUB, 2018

Teaching at the University of Maryland, College Park, USA

- Dean's Outstanding Teaching Assistant Award
  Issued by College of Computer, Mathematical, and Natural Sciences, University of Maryland, College Park, 2014
- Distinguished Teaching Assistant Award
  Issued by University of Maryland, College Park, 2013
- GEOL 342 Sedimentology and Stratigraphy
  Teaching Assistant, cotaught with Prof. Alan J. Kaufman and Lecturer John Merck, Spring 2012-2014
- GEOL 445 High Temperature Geochemistry
  Teaching Assistant, cotaught with Prof. Roberta Rudnick, Fall 2013-2014
- GEOL 444 Low Temperature Geochemistry
  Teaching Assistant, cotaught with Prof. James Farquhar, Fall 2012
- GEOL 100 Physical Geology Laboratory
  Instructor, Summer 2012

Student Mentoring

Thesis Mentor

- 2023-now, Dongxu Li (PhD student, Mississippi State University)
- 2020, Chaoqun Yin (MS, Free University of Brussels-VUB)

Committee Member

- 2023-now, Christiana Eziashi (PhD student, Mississippi State University)
- 2023-now, Mustafa Rezaei (PhD student, Mississippi State University)

External Examiner

- 2020, Sergio Caetano Filho (Ph.D., University of São Paulo, Brazil)

Laboratory Mentor

- 2015, Zakri Siegel (Intern, Bethesda-Chevy Chase High School)
- 2014, Kalev Hantsoo (BS, University of Maryland)

Review and Editorial Service

Summary

- Reviewed >190 manuscripts for >40 scholarly journals
- Handled >60 manuscripts as an editor
- Verified review and editorial records are available on Web of Science: https://www.webofscience.com/wos/author/record/905681

Manuscript Reviews for Scholarly Journals

- 2022, Excellent Reviewer Awardee
  Issued by *Science Bulletin* (Elsevier) Editorial Office
- 2020-now, Associate Editor
  Marine and Petroleum Geology (Elsevier)
- 2020-now, Editorial Board Member
  Astrobiology (Mary Ann Liebert)
- 2019-now, Academic Editor
  PLOS One (Public Library of Science)
- 2019-2021, Guest Editor
  Special Issue "Neoproterozoic Earth-Life system"
  Precambrian Research (Elsevier)

Grant Proposal Reviews for Funding Agencies

- American Chemical Society (ACS)
  Petroleum Research Fund
- Geological Society of America (GSA)
  Graduate Student Research Grant

- International Association of Sedimentologists (IAS)
  Postdoctoral Research Grant
- National Aeronautics and Space Administration (NASA)
  Postdoctoral Program

Society and Committee Service

Conference Convener

- 2022, Convener & Poster Judge
  International Sedimentological Congress
  Virtual meeting during the COVID-19 pandemic
  Topical session: Development and Applications of In Situ Analysis in Sedimentology and Geobiology
- 2020, Convener
  Geological Society of America annual meeting
  Virtual meeting during the COVID-19 pandemic
  Topical session: Deep-Time Carbon Cycles, Redox Changes, and the Evolution of the Biosphere
- 2020, Co-convener
  Geological Society of America annual meeting
  Virtual meeting during the COVID-19 pandemic
  Topical session: Assessing the Fidelity of Geochemical Signals in Deep Time: Primary, Authigenic, and Diagenetic Signals in Proxy Data
- 2019, Co-convener
  Geological Society of America annual meeting in Phoenix, Arizona, USA
  Pardee keynote symposium & topical session: Understanding the Neoproterozoic Earth-Life System

Academic Organizations

- 2023-now, committee member
  International Association of Sedimentologists Diversity, Equity, and Inclusion (DEI) Task Force
- 2021-2023, committee member
  Geological Society of America research grants committee
- 2019-2022, committee member
  International Association of Sedimentologists early-career scientists committee

Mississippi State University

- 2023-2025, committee member
  Strategic Planning Committee of the Department of Geosciences

Funding

Research Grants

2022, Mississippi State University start-up research grant

2019, Open Research Grant
Issued by the State Key Laboratory of Palaeobiology and Stratigraphy, Nanjing Institute of Geology and Paleontology, Chinese Academy of Sciences, ¥120K for 3 years
Relinquished due to the COVID-19 pandemic
Funded Proposal: Chemostratigraphy of a candidate GSSP for Terminal Ediacaran Stage

Postdoctoral Travel Grants

2019, Belgian Flanders Research Foundation
Postdoctoral travel grant
Trip for Geological Society of America annual meeting in Phoenix, Arizona, USA

2019, Belgian Flanders Research Foundation
Postdoctoral travel grant
Sampling trip to Adelaide, Australia

2018, NASA Astrobiology Institute
Early-career scientist travel grant, $1K
Astrobiology Grand Tour organized by Australian Centre for Astrobiology, University of New South Wales, Australia

Student Research Grants

2015, Mineralogical Society of America
Graduate student research grant, $5K
Funded Proposal: Linking authigenic carbonate mineralization to the largest carbon isotope excursion in Earth history

2014, Geological Society of America
Graduate student research grant, $1.5K
Funded Proposal: Testing the origin of enigmatic $^{87}Sr/^{86}Sr$ anomaly in Ediacaran carbonate successions, Saudi Arabia

2014, American Association of Petroleum Geologists
Student research grant, $3K
Funded Proposal: Reconstructing the biogeochemical C and S cycling for the Ediacaran Dengying Formation, China

2014, International Association of Sedimentologists
Graduate student research grant, $1K
Funded Proposal: Clumped isotope analysis of Ediacaran authigenic carbonates during the Shuram event

2014, Sigma Xi
Graduate student research grant, $0.6K
Funded Proposal: The Hüttenberg Excursion: C and S isotopic clues to the onset of Cryogenian glaciation?

2014, Society of Economic Geologists
Graduate student research grant, $2K
Funded Proposal: Biogeochemical approaches to understanding Ediacaran and Early Cambrian phosphogenesis

2014, Explorers Club
Graduate student research grant, $3K
Funded Proposal: Field investigation of Earth's oldest methane seep deposits in South China

2014, Explorers Club Washington Group grant
Graduate student research grant, $3.5K
Funded Proposal: Searching for early animal skeletons and reconstructing biogeochemical fuse to Cambrian Explosion

Analytical Experiences

Routine laboratory analysis (from rock to data) of light stable isotopes (e.g., $\delta^{13}C$, $\delta^{15}N$, $\delta^{18}O$, $\delta^{34}S$)

- Elemental Analyzer (EA)
- Continuous-Flow Isotope Ratio Mass Spectrometer (CF-IRMS)
- Multi-Flow Isotope Ratio Mass Spectrometer (MF-IRMS)
- Paleoclimate / Stable Isotope Laboratory, University of Maryland

Routine laboratory analysis (from rock to data) of $^{87}Sr/^{86}Sr$

- Thermal Ionization Mass Spectrometer (TIMS)
- Radiogenic Isotope Laboratory, University of Maryland

Integrated in situ isotopic and elemental analyses

- Secondary Ion Mass Spectrometry (SIMS)
- Scanning Electron Microscope (SEM)
- Energy Dispersive Spectroscopy (EDS)
- Electron microprobe analysis (EMPA)
- Elemental mapping by Micro X-ray Fluorescence (μXRF)
- Wisconsin Secondary Ion Mass Spectrometer (WiscSIMS) Laboratory, University of Wisconsin–Madison

Other analyses as an external user:

- Cathodoluminescence analysis of thin sections and SIMS mounts
- U-Pb dating of zircons by laser ablation
- Isotopic mapping by NanoSIMS

- Extraction of detrital zircons by magnetic/gravity separation
- Fluid inclusion analysis by a heating/cooling stage

Invited Talks

2022, Mississippi State University
Department of Geosciences, Starkville, USA

2021, American Geophysical Union fall meeting, online
Session "Carbonate Sediments Through Time: Processes of Deposition and Diagenesis"

2021, Khalifa University
Department of Earth Sciences, UAE, online

2021, Geological Society of America annual meeting, online
Session "The Neoproterozoic Earth-Life System"

2021, Goldschmidt conference, online
Session "Co-evolution of Earth's Surface Environment and Biotic Innovation from the Neoproterozoic through the Pre-Cambrian"

2021, University of North Carolina at Chapel Hill
Department of Geological Sciences, online

2020, China University of Geosciences-Wuhan
Carbonate seminar, online

2020, Shanghai Jiao Tong University
School of Oceanography, online

2020, China University of Geosciences-Wuhan, online

2020, University College London
Department of Earth Sciences, online

2020, University of Texas at Dallas
Department of Geosciences, online

2020, Southwest Petroleum University
School of Geoscience & Technology, online

2020, Nanjing University
Geobiology seminar, online

2020, Southern University of Science and Technology (SUSTech)
Department of Earth and Space Sciences, Shenzhen, China

2019, Nanjing Institute of Geology and Palaeontology
Chinese Academy of Sciences, Nanjing, China

2019, Northwest University
Department of Geology, Xi'an, China

2019, University of Adelaide
Department of Earth Sciences, Adelaide, Australia

2018, Institute of Geology and Geophysics
Chinese Academy of Sciences, Beijing, China

2018, Nanjing University
School of Earth Sciences and Engineering, Nanjing, China

2018, China University of Geosciences
State Key Laboratory of Geological Processes and Mineral Resources, Wuhan, China

2018, Sun Yat-sen University
School of Marine Sciences, Zhuhai, China

2014, Peking University
Geobiology seminar, Department of Geology, Beijing, China

2014, Yunnan University
Institute of Palaeontology, Kunming, China

2014, Southwest Petroleum University
School of Geoscience & Technology, Chengdu, China

2013, Virginia Tech
Geobiology seminar, Department of Geosciences, Blacksburg, USA

Fieldwork

2023/11, Eastern Brazil
Field conference organized by International Subcommission on Ediacaran and Cryogenian Stratigraphy (upcoming)

2023/10, Green River, Utah
SEPM field conference on sequence stratigraphy; Theme "Are Siliciclastic Parasequences Still Relevant?"

2019/10, Guadalupe, Spain
Field conference on Ediacaran-Cambrian Transition

2019/06, Adelaide, Australia
South Australia Drill Core Reference Library, Ediacaran drill cores

2019/04, Shaanxi Province, South China
Ediacaran Dengying Formation at the Lijiagou section

2018/07, Western Australia
Astrobiology Grand Tour, Australian Centre for Astrobiology

2015/12, Ontario, Canada
Paleoproterozoic Huronian Supergroup, Ontario Geological Survey, the Great Oxidation Event

2014/07, Newfoundland, Canada
Golden Spike / Global Boundary Stratotype Section and Point (GSSP) of the Ediacaran-Cambrian boundary

2014/06, Yangtze Gorges area, South China
Ediacaran Doushantuo and Dengying formations

2014/06, Shaanxi Province, China
Ediacaran Dengying Formation at Gaojiashan at the Gaojiashan section

2012-2014, Maryland, Virginia, and Pennsylvania of USA
University of Maryland GEOL342 Sed/Strat field excursions
2011/08, Siberia, Russia
Neoproterozoic Oselok and Karagassy groups, Sayan Mountains
2010/04, Qaidam Basin, NW China
Facies analysis, stratigraphic description, and correlation
2009/08, Tarim Basin, NW China
Cambrian and Ordovician carbonate reservoirs

Publications

2024

xx. **Cui, H.**, …Valley, J.W., 2023. Extreme carbon isotopic variability and dynamic diagenetic history of the oldest-known methane seeps on Earth. *Geochimica et Cosmochimica Acta*, **Moderate Revision.**

xx. Four coauthored papers (Han et al., Kang et al., Stockey et al., Qin et al), **Under Review/ In Revision**

2023

34. Lu, C., Koeshidayatullah, A., Li, F., **Cui, H.**, Zou, H., Swart, P.K., 2023. A clumped isotope diagenetic framework for the Ediacaran dolomites: Insights to fabric-specific geochemical variabilities. *Sedimentology*, **In press,** https://doi.org/10.1111/sed.13144.

2022

33. **Cui, H.**, Kitajima, K., Orland, I.J., Baele, J.-M., Xiao, S., Kaufman, A.J., Denny, A., Spicuzza, M.J., Fournelle, J.H., Valley, J.W., 2022. An authigenic response to Ediacaran surface oxidation: Remarkable micron-scale isotopic heterogeneity revealed by SIMS. *Precambrian Research*, **377**, 106676, https://doi.org/10.1016/j.precamres.2022.106676.

32. **Cui, H.**, Kaufman, A.J., Xiao, S., Zhou, C., Zhu, M., Cao, M., Loyd, S., Crockford, P., Liu, X.-M., Goderis, S., Wang, W., Guan, C., 2022. Dynamic interplay of biogeochemical C, S, and Ba cycles in response to the Shuram oxygenation event. *Journal of the Geological Society*, **179**, jgs2021-081, https://doi.org/10.1144/jgs2021-081.

31. Tang, Q., **Cui, H.**, Zhang, F., 2022. Neoproterozoic Earth-life system. *Precambrian Research*, **368**, 106486, https://doi.org/10.1016/j.precamres.2021.106486.

2021

30. **Cui, H.**, Kitajima, K., Orland, I.J., Xiao, S., Baele, J.-M., Kaufman, A.J., Denny, A., Zhou, C., Spicuzza, M.J., Fournelle, J.H., Valley, J.W., 2021. Deposition or diagenesis? Probing the Ediacaran Shuram Excursion by SIMS. *Global and Planetary Change*, **206**, 103591, https://doi.org/10.1016/j.gloplacha.2021.103591.

29. Farrell, U.C., and 103 authors including **Cui, H.**, 2021. The Sedimentary Geochemistry and Paleoenvironments Project. *Geobiology*, **19**, 545–556, https://doi.org/10.1111/gbi.12462.

28. Mehra, A., Keller, C.B., Zhang, T., Tosca, N.J., McLennan, S.M., Sperling, E., Farrell, U., Brocks, J., Canfield, D., Cole, D., Crockford, P., **Cui, H.**, Dahl, T.W., Dewing, K., Emmings, J., Gaines, R.R., Gibson, T., Gilleaudeau, G.J., Guilbaud, R., Hodgkiss, M., Jarrett, A., Kabanov, P., Kunzmann, M., Li, C., Loydell, D.K., Lu, X., Miller, A., Mills, N.T., Mouro, L.D., O'Connell, B., Peters, S.E., Poulton, S., Ritzer, S.R., Smith, E., Wilby, P., Woltz, C., Strauss, J.V., 2021. Curation and analysis of global sedimentary geochemical data to inform Earth history. *GSA Today*, **31**, 4–10, https://doi.org/10.1130/GSATG484A.1.

27. Wang, W., Hu, Y., Muscente, A.D., **Cui, H.**, Guan, C., Hao, J., Zhou, C., 2021. Revisiting Ediacaran sulfur isotope chemostratigraphy with in situ nanoSIMS analysis of sedimentary pyrite. *Geology*, **49**, 611–616, https://doi.org/10.1130/G48262.1.

26. Liu, X.-M., Kah, L.C., Knoll, A.H., **Cui, H.**, Wang, C., Bekker, A., Hazen, R.M., 2021. A persistently low level of atmospheric oxygen in Earth's middle age. *Nature Communications*, **12**, 351, https://doi.org/10.1038/s41467-020-20484-7.

2020

25. **Cui, H.**, Warren, L.V., Uhlein, G.J., Okubo, J., Liu, X.-M., Plummer, R.E., Baele, J.-M., Goderis, S., Claeys, P., Li, F., 2020. Global or regional? Constraining the origins of the middle Bambuí carbon cycle anomaly in Brazil. *Precambrian Research*, **348**, 105861, https://doi.org/10.1016/j.precamres.2020.105861.

24. **Cui, H.**, Kaufman, A.J., Zou, H., Kattan, F.H., Trusler, P., Smith, J., Ivantsov, A.Y., Rich, T.H., Qubsani, A.A., Yazedi, A., Liu, X.-M., Johnson, P., Goderis, S., Claeys, P., Vickers-Rich, P., 2020. Primary or secondary? A dichotomy of the strontium isotope anomalies in the Ediacaran carbonates of Saudi Arabia. *Precambrian Research*, **343**, 105720, https://doi.org/10.1016/j.precamres.2020.105720.

23. Xiao, S., **Cui, H.**, Kang, J., McFadden, K.A., Kaufman, A.J., Kitajima, K., Fournelle, J.H., Schwid, M., Nolan, M., Baele, J.-M., Valley, J.W., 2020. Using SIMS to decode noisy stratigraphic δ13C variations in Ediacaran carbonates. *Precambrian Research*, **343**, 105686, https://doi.org/10.1016/j.precamres.2020.105686.

22. Wang, W., Guan, C., Hu, Y., **Cui, H.**, Muscente, A.D., Chen, L., Zhou, C., 2020. Spatial and temporal evolution of Ediacaran carbon and sulfur cycles in the Lower Yangtze Block, South China. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **537**, 109417, https://doi.org/10.1016/j.palaeo.2019.109417.

21. Cao, M., Daines, S.J., Lenton, T.M., **Cui, H.**, Algeo, T.J., Dahl, T.W., Shi, W., Chen, Z.-Q., Anbar, A., Zhou, Y.-Q., 2020. Comparison of Ediacaran platform and slope δ238U records in South China: Implications for global-ocean oxygenation and the origin of the Shuram Excursion. *Geochimica et Cosmochimica Acta*, **287**, 111–124, https://doi.org/10.1016/j.gca.2020.04.035.

20. Yan, H., Pi, D., Jiang, S.-Y., Hao, W., **Cui, H.**, Robbins, L.J., Mänd, K., Li, L., Planavsky, N.J., Konhauser, K.O., 2020. Hydrothermally induced 34S enrichment in pyrite as an alternative explanation of the Late-Devonian sulfur isotope excursion in South China. *Geochimica et Cosmochimica Acta*, **283**, 1–21, https://doi.org/10.1016/j.gca.2020.05.017.

19. Vickers-Rich, P., Mhopjeni, K., Schneider, G., **Cui, H.**, Darroch, S., Elliott, D., Fedonkin, M., Hall, M., Hoffmann, K.H., Hofmann, M., Ivantsov, A., Kaufman, A.J., Kriesfeld, L., Laflamme, M., Linnemann, U., Mocke, H., Narbonne, G., Pritchard, S., Rich, T., Sharp, A., Smith, J., Swinkels, P., Trusler, P., Zakrevskaya, M., 2020. Crossing the line: The Ediacaran-Cambrian transition in southern Namibia – How the world began to change @538 million years ago. *Scientific Society Swakopmund*, **52**: 2–25.

18. Grazhdankin, D.V., Marusin, V.V., Izokh, O.P., Karlova, G.A., Kochnev, B.B., Markov, G.E., Nagovitsin, K.E., Sarsembaev, Z., Peek, S., **Cui, H.**, Kaufman, A.J., 2020. Quo vadis, Tommotian? *Geological Magazine*, **157**, 22–34, https://doi.org/10.1017/S0016756819001286.

2019

17. **Cui, H.**, Xiao, S., Cai, Y., Peek, S., Plummer, R.E., Kaufman, A.J., 2019. Sedimentology and chemostratigraphy of the terminal Ediacaran Dengying Formation at the Gaojiashan section, South China.

Geological Magazine, **156**, 1924–1948, https://doi.org/10.1017/S0016756819000293.

2018

16. **Cui, H.**, Kaufman, A.J., Peng, Y., Liu, X.-M., Plummer, R.E., Lee, E.I., 2018. The Neoproterozoic Hüttenberg $\delta^{13}C$ anomaly: Genesis and global implications. *Precambrian Research*, **313**, 242–262, https://doi.org/10.1016/j.precamres.2018.05.024.

15. **Cui, H.**, Kitajima, K., Spicuzza, M.J., Fournelle, J.H., Denny, A., Ishida, A., Zhang, F., Valley, J.W., 2018. Questioning the biogenicity of Neoproterozoic superheavy pyrite by SIMS. *American Mineralogist*, **103**, 1362–1400, https://doi.org/10.2138/am-2018-6489.

14. **Cui, H.**, Kitajima, K., Spicuzza, M.J., Fournelle, J.H., Ishida, A., Brown, P.E., Valley, J.W., 2018. Searching for the Great Oxidation Event in North America: A reappraisal of the Huronian Supergroup by SIMS sulfur four-isotope analysis. *Astrobiology*, **18**, 519–538, https://doi.org/10.1089/ast.2017.1722.

13. Hantsoo, K.G., Kaufman, A.J., **Cui, H.**, Plummer, R.E., Narbonne, G.M., 2018. Effects of bioturbation on carbon and sulfur cycling across the Ediacaran–Cambrian transition at the GSSP in Newfoundland, Canada. *Canadian Journal of Earth Sciences*, **55**, 1240–1252, https://doi.org/10.1139/cjes-2017-0274.

12. Lang, X., Chen, J., **Cui, H.**, Man, L., Huang, K.-J., Fu, Y., Zhou, C., Shen, B., 2018. Cyclic cold climate during the Nantuo Glaciation: Evidence from the Cryogenian Nantuo Formation in the Yangtze Block, South China. *Precambrian Research*, **310**, 243–255, https://doi.org/10.1016/j.precamres.2018.03.004.

11. Zhang, F., Xiao, S., Kendall, B., Romaniello, S.J., **Cui, H.**, Meyer, M., Gilleaudeau, G.J., Kaufman, A.J., Anbar, A.D., 2018. Extensive marine anoxia during the terminal Ediacaran Period. *Science Advances*, **4**, eaan8983, https://doi.org/10.1126/sciadv.aan8983.

2017

10. **Cui, H.**, Kaufman, A.J., Xiao, S., Zhou, C., Liu, X.-M., 2017. Was the Ediacaran Shuram Excursion a globally synchronized early diagenetic event? Insights from methane-derived authigenic carbonates in the uppermost Doushantuo Formation, South China. *Chemical Geology*, **450**, 59–80, https://doi.org/10.1016/j.chemgeo.2016.12.010.

2016

09. **Cui, H.**, Grazhdankin, D.V., Xiao, S., Peek, S., Rogov, V.I., Bykova, N.V., Sievers, N.E., Liu, X.-M., Kaufman, A.J., 2016. Redox-dependent distribution of early macro-organisms: Evidence from the terminal Ediacaran Khatyspyt Formation in Arctic Siberia. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **461**, 122–139, https://doi.org/10.1016/j.palaeo.2016.08.015.

08. **Cui, H.**, Kaufman, A.J., Xiao, S., Peek, S., Cao, H., Min, X., Cai, Y., Siegel, Z., Liu, X.M., Peng, Y., Schiffbauer, J.D., Martin, A.J., 2016. Environmental context for the terminal Ediacaran biomineralization of animals. *Geobiology*, **14**, 344–363, https://doi.org/10.1111/gbi.12178.

07. **Cui, H.**, Xiao, S., Zhou, C., Peng, Y., Kaufman, A.J., Plummer, R.E., 2016. Phosphogenesis associated with the Shuram Excursion: Petrographic and geochemical observations from the Ediacaran Doushantuo Formation of South China. *Sedimentary Geology*, **341**, 134–146, https://doi.org/10.1016/j.sedgeo.2016.05.008.

06. Cao, H., Kaufman, A.J., Shan, X., **Cui, H.**, Zhang, G., 2016. Sulfur isotope constraints on marine transgression in the lacustrine Upper Cretaceous Songliao Basin, northeastern China. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **451**, 152–163, https://doi.org/10.1016/j.palaeo.2016.02.041.

05. Liu, X.-M., Kah, L.C., Knoll, A.H., **Cui, H.**, Kaufman, A.J., Shahar, A., Hazen, R.M., 2016. Tracing Earth's O_2 evolution using Zn/Fe ratios in marine carbonates. *Geochemical Perspectives Letters*, **2**, 24–34, https://doi.org/10.7185/geochemlet.1603.

04. Zhou, C., Guan, C., **Cui, H.**, Ouyang, Q., Wang, W., 2016. Methane-derived authigenic carbonate from the lower Doushantuo Formation of South China: Implications for seawater sulfate concentration and global carbon cycle in the early Ediacaran ocean. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **461**, 145–155, https://doi.org/10.1016/j.palaeo.2016.08.017.

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Short Comments

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Abstracts

Over 20 first-author abstracts and more coauthored abstracts published in GSA, AGU, and Goldschmidt meetings. Abstract list is available upon request.

Membership

Geological Society of America
International Association of Sedimentologists

Society of Sedimentary Geology
Geochemical Society
Geological Society of London (Fellow since 2018)

Personal

Born in 1986 and raised in the Renqiu oil city, Hebei Province, China
First-generation high school graduate
Married, father of two daughters
Languages: Mandarin, English

Career Breaks

2022/05-07, Relocation from Paris, France to Starkville, USA (3 months)
2020/07-09, Relocation from Brussels, Belgium to Paris, France (3 months)
2018/06-08, Relocation from Madison, USA to Brussels, Belgium (3 months)
2015/11-12, Relocation from Maryland to Wisconsin (1 month)

Former Mentors

I have been fortunate to have worked with, inspired, and supported by many great (and humble) scientists. Some of them are role models not only in my career but also in my life.

* Member, National Academy of Sciences

PhD advisor (2011-2015):
- Alan J. Kaufman (Professor, UMD)

PhD advisory committee (2011-2015):
- Alan J. Kaufman (Chair, Professor, UMD)
- Shuhai Xiao* (Professor, Virginia Tech)
- James Farquhar* (Distinguished Professor, UMD)
- Roberta L. Rudnick* (Distinguished Professor, UMD, now UCSB)

Graduate director during my PhD (2011-2015):
- William F. McDonough (Professor, UMD)

Former post-doc mentors/hosts:
- John W. Valley* (Charles R. Van Hise Professor, UW-Madison, 2015-2018)
- Steven Goderis (Research Professor, Brussels, 2018-2020)
- Bénédicte Menez (Professor, Paris, 2020-2022)
- Barbara Sherwood Lollar* (University Professor, Toronto, 2020-2022, remote)

MS advisor (2008-2011):

- Ping Guan (Professor, PKU)