

William R. Guenther
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Education

2013	Doctor of Philosophy The University of Arizona, Tucson, AZ Major: Geosciences
2009	Master of Science The University of Arizona, Tucson, AZ Major: Geosciences
2007	Bachelor of Arts, <i>Magna Cum Laude</i> Carleton College, Northfield, MN Major: Geology (with Distinction)

Professional and Academic Experience

2015-present	Assistant Professor Department of Geology, University of Illinois at Urbana-Champaign
2013-2015	Research Assistant Professor Department of Geology, University of Illinois at Urbana-Champaign
2011	Geoscientist (Seasonal Internship) Upstream Research Company, ExxonMobil
2007-2013	Research Associate The University of Arizona
2007-2009, 2013	Graduate Teaching Associate The University of Arizona
2007	Teaching Assistant Carleton College

Research Interests

My research focuses on understanding the kinetics of geochemical systems, and using these insights to describe the dates and rates of erosion and uplift in orogenic belts, plateaux, and cratons. My primary tool in this endeavor is (U-Th)/He low-temperature thermochronometry, a collection of chronometers in which the daughter product, helium, is only retained (i.e. the clock starts ticking) below certain temperatures (from ~200 to ~40 °C depending on the mineral). This research field has greatly enhanced the study of uplift and erosion in Earth systems, and has been integral in showing the links between surface and tectonic processes. The continued use of (U-Th)/He dating as a reliable thermochronometer relies on improving the accuracy of its predictions for a sample's thermal history. Specifically, unresolved challenges include data

interpretation and the proper characterization of diffusion kinetics. By combining laboratory experiments with field methods and modeling, I seek to address these issues, expand the method's utility, and better demonstrate how the combined effects of temperature and time operate in earth systems from the crystal to the continent scale.

Funding

Total: \$2,298,429

NSF-EAR Sedimentary Geology and Paleobiology, lead PI (UIUC portion), Collaborative Research: Using Multisystem Deep-Time Thermochronology to Decipher Neoproterozoic Exhumation Patterns in Time and Space, UIUC. 7/1/21-6/30/23 \$185,211.

NSF-EAR Tectonics, sole PI, CAREER: Refining zircon (U-Th)/He deep-time thermochronology for constraining Neoproterozoic thermal histories, UIUC. 6/1/19-5/31/24 \$530,932.

NSF-EAR Instrumentation and Facilities, sole PI, Laboratory Technician Support: For a new (U-Th)/He dating lab in the Department of Geology, UIUC. 1/1/18-12/31/22 \$673,589.

NSF-EAR Tectonics, lead PI (UIUC portion), Collaborative Research: Evaluating controls on orogenic structural style by constraining the spatio-temporal evolution of a retroarc thrust belt. 8/1/2016-7/31/2019, \$230,006.

NSF-EAR Geomorphology and Land-use Dynamics, co-PI, Chronologies and mechanisms of last glacial loess deposition in the Central Lowlands of North America. 8/1/16-7/31/19, \$349,582.

NSF-EAR Petrology and Geochemistry, lead PI (UIUC portion), EAGER: Collaborative Research: Dating mineralization in a Carlin-type deposit: A test of the Fe-oxide (U-Th)/He chronometer. 6/1/16-5/31/17, \$27,995.

University of Illinois Campus Research Board, sole PI, Radiation damage annealing in the mineral zircon: Implications for rock thermal histories. 1/1/16-6/30/17, \$12,964.

ExxonMobil, sole PI, Raman spectroscopy dating in detrital zircons and correlations with zircon (U-Th)/He dates. 8/1/2013-10/31/2015, \$10,000.

NSF-EAR Instrumentation and Facilities, co-PI, Acquisition of a laser ablation system for the Department of Geology, UIUC. 7/1/2014-6/30/2015, \$278,150.

Service and Public Engagement

Reviewer for NSF-Tectonics program and academic journals including: *Earth and Planetary Science Letters*; *Science Advances*; *GSA Bulletin*; *Geochimica et Cosmochimica Acta*; *Geophysical Research Letters*; *Geochemistry*, *Geophysics*, *Geosystems*; *Tectonophysics*; *Tectonics*; *Journal of Asian Earth Sciences*; *Geochronology*

Professional Affiliations: American Geophysical Union, Geological Society of America, Geochemical Society

2019-present

Associate editor, *Geological Society of America Bulletin*

2019-2020	Member of proposal review panel for Awards for Geochronology Student Research (AGeS) Program (NSF and GSA)
2017	Session co-chair at AGU annual meeting, New Orleans, LA: Applications of thermochronology to understand crustal systems.
2016-present	Department of Geology (UIUC) Undergraduate Advisor
2016-2019	Associate editor, <i>Mineralogy and Petrology</i>
2016	Department of Geology (UIUC) Graduate Admissions Committee member
2016	Member of proposal review panel for EarthScope Awards for Geochronology Student Research (AGeS) Program
2015	Contributor to Next Generation STEAM studio (Champaign, IL) program on mountains for grade-school children
2015	Session co-chair at GSA annual meeting, Baltimore, MD: Novel methods, applications, and data interpretations in thermochronology.
2013-2016	Department of Geology (UIUC) Courses and Curriculum Committee member

Honors and Awards

2020	Charles and Nancy Naesar Prize (early career award of the International Standing Committee on Thermochronology)
2019	List of Teachers Ranked as Excellent by Their Students, Spring semester
2019	NSF CAREER award
2018	List of Teachers Ranked as Excellent by Their Students, Fall semester
2017	List of Teachers Ranked as Excellent by Their Students, Spring semester
2012	Achievement Rewards for College Scientists (ARCS), Prentice Scholar
2010	Galileo Circle Scholar, The University of Arizona
2007	Phi Beta Kappa, Carleton College
2007	Sigma Xi, Carleton College
2007	Distinction in Integrative Exercise (Geology), Carleton College
2006	Duncan Stewart Fellow, Geology Department, Carleton College

Courses Taught

2022	GEOL 107: Physical Geology, Spring semester GEOL 411: Structural Geology & Tectonics, Fall semester
2021	GEOL 564: Geochronology, Spring semester GEOL 411: Structural Geology & Tectonics, Fall semester
2020	GEOL 411: Structural Geology & Tectonics, Spring semester GEOL 411: Structural Geology & Tectonics, Fall semester
2019	GEOL 107: Physical Geology, Spring semester
2018	GEOL 411: Structural Geology & Tectonics, Fall semester GEOL 593-V1: Geochronology, Spring semester
2017	GEOL 411: Structural Geology & Tectonics, Fall semester GEOL 107: Physical Geology, Spring semester
2016	GEOL 593-Q2: Orogenic Systems, Fall semester GEOL 593-V1: Geochronology, Spring semester

Peer-Reviewed Publications

27. Ronemus, C.B., Orme, D.A., **Guenther, W.R.**, Cox, S.E., and Kussmaul, C., 2023, Orogens of Big Sky Country: Reconstructing the deep-time tectonothermal history of the Beartooth Mountains, Montana and Wyoming, USA, *Tectonics*, v. 42, e2022TC007541, <https://doi.org/10.1029/2022TC007541>
26. Colleps, C.L., McKenzie, N.R., van der Beek, P., **Guenther, W.R.**, Sharma, M., Nordsvan, A.R., and Stockli, D.F., 2022, Assessing the long-term low-temperature thermal evolution of the central Indian Bundelkhand craton with a complex apatite and zircon (U-Th)/He dataset, *American Journal of Science*, v. 322 (10), p. 1089-1123, <https://doi.org/10.2475/10.2022.01>
25. McDannell, K.T., Keller, C.B., **Guenther, W.R.**, Zeitler, P.K., and Shuster, D.L., 2022, REPLY to Flowers et. al.: Existing thermochronologic data constrain Snowball glacial erosion below the Great Unconformity, *Proceedings of the National Academy of Sciences*, v. 119 (38), <https://doi.org/10.1073/pnas.2209946119>
24. McDannell, K.T., Keller, C.B., **Guenther, W.R.**, Zeitler, P.K., and Shuster, D.L., 2022, Thermochronologic constraints on the origin of the Great Unconformity, *Proceedings of the National Academy of Sciences*, v. 119 (5), <https://doi.org/10.1073/pnas.2118682119>
23. Karlstrom, K.E., **Guenther, W.R.**, Thurston, O.G., Heizler, M.T., Ricketts, J.W., and Timmons, J.M., 2022, Zircon (U-Th)/He thermochronology reveals pre-Great Unconformity paleotopography in the Grand Canyon region, USA: COMMENT, *Geology*, v. 50 (3), p. 543, <https://doi.org/10.1130/G49843C.1>

22. *Thurston, O.G, **Guenthner, W.R.**, Karlstrom, K.E., Ricketts, J.W., Heizler, M.T., and Timmons, J.M., 2022, Zircon (U-Th)/He thermochronology of Grand Canyon resolves 1250 Ma unroofing at the Great Unconformity and <20 Ma canyon carving, *Geology*, v. 50 (2), p. 222-226, <https://doi.org/10.1130/G48699.1>
21. *Kaempfer, J.M., **Guenthner, W.R.**, and Pearson, D.M., 2021, Proterozoic to Phanerozoic tectonism in southwestern Montana basement ranges constrained by low temperature thermochronometric data, *Tectonics*, v. 40 (11), <https://doi.org/10.1029/2021TC006744>
20. *Dendy, S.N., **Guenthner, W.R.**, Grimley, D.A., Conroy, J.L., and Counts, R.C., 2021, Detrital zircon geochronology and provenance of Pleistocene loess and contributing glacial sources, Midcontinental USA, *Quaternary Science Reviews*, v. 273, <https://doi.org/10.1016/j.quascirev.2021.107201>
19. Thigpen, J.R., Brown, S.J., Helfrich, A.L., Hoar, R., McGlue, M.M., Woolery, E.W., **Guenthner, W.R.**, Swallow, M.L., Dixon, S., and Gallen, S., 2021, Collapse of the northern paleo-Teton Range along the Yellowstone hotspot track, *Lithosphere*, <https://doi.org/10.2113/2021/1052819>
18. Moser, A.C., Ault, A.K., Stearns, M.A., Evans, J.P., and **Guenthner, W.R.**, 2021, Zircon (U-Th)/He radiation damage-He diffusivity patterns record late Oligocene-early Miocene detachment faulting in crystalline basement, Mecca Hills, CA, USA, *Tectonics*, v. 40, <https://doi.org/10.1029/2021TC006809>
17. Colleps, C.L., McKenzie, N.R., **Guenthner, W.R.**, Sharma, M., Gibson, T.M., and Stockli, D.F., 2021, Apatite (U-Th)/He thermochronometric constraints on the northern extent of the Deccan Large Igneous Province, *Earth and Planetary Science Letters*, v. 571, <https://doi.org/10.1016/j.epsl.2021.117087>
16. Ricketts, J.W., Roiz, J., Karlstrom, K.E., Heizler, M.T., **Guenthner, W.R.**, and Timmons, J.M., 2021, Tectonic origin of the Great Unconformities of the Rocky Mountain region: the power of combined zircon (U-Th)/He and K-feldspar $^{40}\text{Ar}/^{39}\text{Ar}$ thermochronology, *Geology*, v. 49, p. 1187-1192, <https://doi.org/10.1130/G49141.1>
15. **Guenthner, W.R.**, 2021, Implementation of a new radiation damage annealing model for zircon (U-Th)/He thermochronology, *Geochemistry Geophysics Geosystems*, v. 22, <https://doi.org/10.1029/2019GC008757>
14. Huff, D.E., Holley, E., **Guenthner, W.R.**, and Kaempfer, J.M., 2020, Fe-oxides in jasperoids from two gold districts in Nevada: characterization, geochemistry, and (U-Th)/He dating, *Geochimica et Cosmochimica Acta*, v. 286, p. 72-102, <https://doi.org/10.1016/j.gca.2020.07.014>
13. Huber, C., **Guenthner, W.R.**, and Karani, H., 2019, A new correction for He loss applied to (U-Th)/He dating of grains with complex shapes and polymineralic aggregates, *Geochemistry Geophysics Geosystems*, v. 20, p. 5744-5764, <https://doi.org/10.1029/2019GC008475>
12. Conroy, J.L., Karamperidou, C., Grimley, D.A., and **Guenthner, W.R.**, 2019, Surface winds across eastern and midcontinental North America during the Last Glacial Maximum: A new data-model assessment, *Quaternary Science Reviews*, v. 220, p. 14-29, <https://doi.org/10.1016/j.quascirev.2019.07.003>

11. Ault, A.K., **Guenthner, W.R.**, Moser, A.C., Miller, G.H., Refsnider, K.A., 2018, Zircon grain selection reveals (de)coupled metamictization, radiation damage, and He diffusivity, *Chemical Geology*, v. 490, p. 1-12, <https://doi.org/10.1016/j.chemgeo.2018.04.023>
10. *DeLucia, M.S., **Guenthner, W.R.**, Marshak, S., Thomson, S.N., and Ault, A.K., 2018, Thermochronology links denudation of the Great Unconformity surface to the supercontinent cycle and snowball Earth, *Geology*, v. 46, p. 167-170, <https://doi.org/10.1130/G39525.1>
9. Nash, T.A., Conroy, J.L., Grimley, D.A., **Guenthner, W.R.**, and Curry, B., 2018, Episodic deposition of Illinois Valley Peoria Silt in association with Lake Michigan Lobe fluctuations during the Last Glacial Maximum, *Quaternary Research*, v. 89, p. 739-755, <https://doi.org/10.1017/qua.2017.66>
8. **Guenthner, W.R.**, Reiners, P.W., Drake, H., and Tillberg, M., 2017, Zircon, titanite, and apatite (U-Th)/He ages and age-eU correlations from the Fennoscandian Shield, southern Sweden, *Tectonics*, v. 36, p. 1254-1274, <https://doi.org/10.1002/2017TC004525>
7. Orme, D.A., **Guenthner, W.R.**, Laskowski, A.K., and Reiners, P.W., 2016, Long-term tectonothermal history of Laramide basement from zircon-He age-eU correlations, *Earth and Planetary Science Letters*, v. 453, p. 119-130, <https://doi.org/10.1016/j.epsl.2016.07.046>
6. **Guenthner, W.R.**, Reiners, P.W., and Chowdhury, U., 2016, Isotope dilution analyses of Ca and Zr concentrations of apatite and zircon for (U-Th)/He chronometry, *Geochemistry Geophysics Geosystems*, <https://doi.org/10.1002/2016GC006311>
5. **Guenthner, W.R.**, Reiners, P.W., DeCelles, P.G., and Kendall, J., 2015, Sevier belt exhumation in central Utah constrained from complex zircon (U-Th)/He data sets: Radiation damage and He inheritance effects on partially reset detrital zircons, *GSA Bulletin*, v. 127, p. 323-348, <https://doi.org/10.1130/B31032.1>
4. **Guenthner, W.R.**, Reiners, P.W., and Tian, Y., 2014, Interpreting date-eU correlations in zircon (U-Th)/He datasets: a case study from the Longmen Shan, China, *Earth and Planetary Science Letters*, v. 403, p. 328-339, <https://doi.org/10.1016/j.epsl.2014.06.050>
3. **Guenthner, W.R.**, Reiners, P.W., Ketcham, R.A., Nasdala, L., and Giester, G., 2013, He diffusion in natural zircon: radiation damage, anisotropy, and the interpretation of zircon (U-Th)/He thermochronology, *American Journal of Science*, v. 313, p. 145-198, <https://doi.org/10.2475/03.2013.01>
2. Ketcham, R.A., **Guenthner, W.R.**, and Reiners, P.W., 2013, Geometric analysis of radiation damage connectivity in zircon and its implications for helium diffusion, *American Mineralogist*, v. 98, p. 350-360, <https://doi.org/10.21318/am.2013.4249>
1. **Guenthner, W.R.**, Barbeau, D.L., Reiners, P.W., and Thomson, S.N., 2010, Slab-window migration and terrane accretion preserved by low-temperature thermochronology of a magmatic arc, northern Antarctic Peninsula, *Geochemistry Geophysics Geosystems*, v. 11, no. 3, <https://doi.org/10.1029/2009GC002765>

*denotes a graduate student advisee

Invited Lectures and Colloquia

12/7/2015: Department of Geology, Utah State University

"Long-term thermal histories in the Sevier and Laramide provinces: Insights from zircon (U-Th)/He age-eU correlations"

9/29/2017: Department of Geography, Geology, and the Environment, Illinois State University

"Deep-time Thermochronology of Cratonic Basements"

1/10/2019: Department of Earth, Atmospheric, and Planetary Science, Purdue University

"In Search of Lost Time: Constraints on exhumation of the Great Unconformity from zircon (U-Th)/He dates"

2/8/2019: Department of Geosciences, Texas Tech University

"In Search of Lost Time: Constraints on exhumation of the Great Unconformity from zircon (U-Th)/He dates"

11/8/2019: Department of Earth and Environmental Sciences, Lehigh University, Donnel Foster Hewett Lecture

"In Search of Lost Time: Constraints on Neoproterozoic exhumation of the Great Unconformity from deep-time thermochronology"

4/16/2021: Grand Canyon Supergroup Field Forum, Colorado River, Grand Canyon, AZ

"Thermochronology of the Great Unconformity"

Meeting Abstracts

66. **Guenthner, W.R.**, McDannell, K., Keller, C.B., Zeitler, P.K., Sigat, R.O., Babarinde, O.O., and Orme, D.A., 2022, (In)stability of the Laurentian surface from multisystem thermochronometry, American Geophysical Union Fall Meeting, Chicago, IL.

65. Babarinde, O., **Guenthner, W.R.**, and Barnes, M., 2022, Long-term thermal history of the Precambrian basement in the U.S. Great Plains using zircon (U-Th)/He thermochronology from bore-hole samples, Geological Society of America Annual Meeting, Denver, CO.

64. Marks, C., **Guenthner, W.R.**, Sigat, R., and Davidson, C., 2022, Where did the time go? Using zircon (U-Th)/He dating to understand the Great Unconformity surface in the Minnesota River Valley, Geological Society of America Annual Meeting, Denver, CO.

63. Armstrong, E., Ault, A.K., Kaempfer, J., and **Guenthner, W.R.**, 2022, Zircon visual metamictization tracks effective radiation damage: Implications for zircon (U-Th)/He date-eU patterns, Geological Society of America Annual Meeting, Denver, CO.

62. Sigat, R., **Guenthner, W.R.**, McDannell, K., Keller, C.B., Zeitler, P., and Orme, D., 2022, Deep-time thermochronology reveals the Great Unconformity formation and Paleozoic reheating of Precambrian basement rocks in the U.S. upper Midwest, Geological Society of America Annual Meeting, Denver, CO.

61. McDannell, K., Keller, C.B., Guenthner, W.R., and Zeitler, P., 2022, Thermochronological tests of the glacial and tectonic origin hypotheses for the North American Great Unconformity, Geological Society of America Annual Meeting, Denver, CO.

60. Thurston, O.G., **Guenthner, W.R.**, Karlstrom, K.E., Heizler, M.T., and Ricketts, J., 2022, Combined ZHe and Ar-Ar MDD thermochronometers for understanding the deep-time (>1 Ga) thermal history of the Grand Canyon, Geological Society of America Annual Meeting, Denver, CO.
59. Kaempfer, J., and **Guenthner, W.R.**, Zircon zonation styles in date-eU space: Explaining forward model deviation from observed data, 2022, Geological Society of America Annual Meeting, Denver, CO.
58. Pearson, D., Parker, S., Finzel, E., Rosenblume, J., Porter, E.C., **Guenthner, W.R.**, Kaempfer, J., and Gardner, C., 2022, Kinematics, timing, and magnitude of shortening within the Cretaceous Sevier-Laramide fold-thrust belt of Idaho and Montana, Geological Society of America Joint Cordilleran and Rocky Mountain Section Meeting, Las Vegas, NV.
57. Miller, E., Goldsby, R., Thigpen, R., Swallow, M.L., Clark, G., Preece, M., and **Guenthner, W.R.**, 2022, A low temperature thermochronologic investigation of the northernmost Teton Range, WY: Testing the paleo-Teton collapse hypothesis, Geological Society of America Joint Cordilleran and Rocky Mountain Section Meeting, Las Vegas, NV.
56. Armstrong, E., Ault, A., Kaempfer, J., and **Guenthner, W.R.**, 2022, Expanding applications of zircon (U-Th)/He thermochronometry by evaluating visual metamictization as a reliable proxy for accumulated radiation damage, Geological Society of America Joint Cordilleran and Rocky Mountain Section Meeting, Las Vegas, NV.
55. Kaempfer, J., **Guenthner W.R.**, Pearson, D., 2022, Proterozoic tectonism in southwestern Montana: Deep-time low-temperature thermochronology of basement rocks, Geological Society of America Joint Cordilleran and Rocky Mountain Section Meeting, Las Vegas, NV.
54. Grimley, D., Nash, T.A., Dendy, S., Rech, J.A., Curry, B., Conroy, J.L., and **Guenthner, W.R.**, 2021, Updated chronology of Peoria Silt accumulation in Illinois from radiocarbon dating of terrestrial gastropod shells and vegetation, Geological Society of America Annual Meeting, Portland, OR.
53. Dendy, S., **Guenthner, W.R.**, Conroy, J.L., Grimley, D., and Counts, R.C., 2021, Detrital zircon geochronology and provenance of Pleistocene loess and contributing glacial sources, midcontinental USA, Geological Society of America Annual Meeting, Portland, OR.
52. Dendy-Metz, S., Conroy, J.L., Grimley, D., **Guenthner, W.R.**, Kerr, P., and Pigati, J.S., 2021, LGM isoscape of central North America: Implications for an ice-proximity climate gradient, Geological Society of America Annual Meeting, Portland, OR.
51. Sigat, R.O., and **Guenthner, W.R.**, 2021, Unraveling the Exhumation History of Precambrian Basement in the US Upper Midwest Cratonic Interior using (U-Th)/He Thermochronology. Thermo2021, Santa Fe, NM.
50. Ronemus, C., Orme, D.A., **Guenthner, W.R.**, and Cox, S., 2021, Orogens of Big Sky Country: Reconstructing the Deep-Time Tectonothermal History of the Beartooth Mountains, Montana and Wyoming, USA. Thermo2021, Santa Fe, NM.

49. Colleps, C., McKenzie, R., van der Beek, P., Sharma, M., **Guenther, W.R.**, and Stockli, D.F., 2021, Extracting ancient low-temperature thermal histories from complex basement and detrital zircon and apatite (U-Th)/He datasets: An example from the stable interior of central India. Thermo2021, Santa Fe, NM.
48. Kaempfer, J., **Guenther, W.R.**, Pearson, D.M., Parker, S.D., and Orme, D.A., 2021, Application of multiple low-T thermochronometers in developing a regional, long-term thermal history: The Idaho-Montana fold thrust belt and foreland. Thermo2021, Santa Fe, NM.
47. Thurston, O.G., **Guenther, W.R.**, and Garver, J.I., 2021, Annealing zircon with zoned radiation damage distribution and implications for (U-Th)/He thermochronology. Thermo2021, Santa Fe, NM.
46. **Guenther, W.R.**, Thurston, O.G., Kaempfer, J., Sigat, R.O., and Babarinde, O.O., 2021, An Appraisal of Zircon (U-Th)/He Thermochronology for Deep-Time (>1 Ga) Thermal Histories: Progress and Remaining Challenges. Thermo2021, Santa Fe, NM (**INVITED**)
45. Kaempfer, J., **Guenther, W.R.**, and Pearson, D.M., 2020, Recurrent Proterozoic to Phanerozoic tectonism in southwestern Montana basement ranges constrained by low temperature thermochronometric data. American Geophysical Union Fall Meeting, Online.
44. Dixon, T., Thigpen, J., Dunn, A.L., Brown, S.J., and **Guenther, W.R.**, 2020, Utilizing apatite (U-Th)/He analyses and inverse thermal history modeling to constrain the uplift history of the south-central part of the Teton Fault. Geological Society of America Annual Meeting, Online.
43. Thurston, O., **Guenther, W.R.**, Karlstrom, K.E., Heizler, M., and Ricketts, J., 2020, Mesoproterozoic to Cenozoic thermal histories of Grand Canyon basement from zircon (U-Th)/He and K-Spar $^{40}\text{Ar}/^{39}\text{Ar}$ thermochronology. Geological Society of America Annual Meeting, Online.
42. DeSilva, C., Kaempfer, J.M., and **Guenther, W.R.**, 2020, Deciphering zircon (U-Th)/He thermochronology data scatter in Archean grains from the Beartooth Range, Montana. Geological Society of America North-Central Section Meeting, Online.
41. Dendy, S.N., **Guenther, W.R.**, Grimley, D.A., and Conroy, J.L., 2019, Detrital-zircon geochronology and provenance of Quaternary loess in central North America. Geological Society of America Annual Meeting, Phoenix, AZ.
40. Kaempfer, J.M., **Guenther, W.R.**, and Pearson, D.M., 2019, Constraining the timing of deformation in southwestern Montana basement cored ranges using low temperature thermochronology. Geological Society of America Annual Meeting, Phoenix, AZ.
39. Thigpen, J.R., Brown, S.J., McGlue, M.M., Woolery, E.W., Hoar, R.M., **Guenther, W.R.**, Gallen, S.F., and Swallow, M.L., 2019, Cataclysmic collapse of mountain topography along the Yellowstone hotspot track. Geological Society of America Annual Meeting, Phoenix, AZ.
38. Kaempfer, J.M., **Guenther, W.R.**, and Pearson, D.M., 2019, Developing zircon (U-Th)/He, deep-time thermal histories of southwest Montana basement uplifts. Gordon Research Conference on Geochronology, Waterville, NH.

37. DeLucia, M.S., **Guenthner, W.R.**, Marshak, S., and Hummel, N., 2019, Neoproterozoic denudation of the Great Unconformity surface constrained from zircon (U-Th)/He data from the upper Midwest, United States. Gordon Research Conference on Geochronology, Waterville, NH.
36. Colleps, C.L., McKenzie, N.R., **Guenthner, W.R.**, Sharma, M., and Stockli, D.F., 2019, Low-temperature thermochronometric insight into the long-term burial and erosional evolution of the Bundelkhand craton of central India. European Geosciences Union General Assembly, Vienna, Austria.
35. Huff, D., Holley, E., and **Guenthner, W.R.**, 2019, Hunting Elephants with Microanalyses – LA-ICP-MS Geo- and Thermochronology Applied to Carlin Exploration. Society of Mining, Metallurgy and Mineral Exploration, Denver, CO.
34. **Guenthner, W.R.**, Huber, C., and Karani, H., 2018, A new metric for alpha ejection corrections in complex Fe-oxide aggregates: Utility for (U-Th)/He dating of fluid-rock interactions in fault-zones. American Geophysical Union Fall Meeting, Washington, D.C.
33. Thurston, O., **Guenthner, W.R.**, and Garver, J.I., 2018, Mapping and quantification of total annealing of zircon alpha-decay radiation damage: Revisions to annealing kinetics for zircon-He thermal histories. Geological Society of America Annual Meeting, Indianapolis, IN.
32. Conroy, J.L., Karamperidou, C., Grimley, D.A., and **Guenthner, W.R.**, 2018, Westerly winds across the North American mid-continent during the Last Glacial Maximum: A new data-model assessment. Geological Society of America Annual Meeting, Indianapolis, IN.
31. Dendy, S.N., Grimley, D.A., **Guenthner, W.R.**, and Conroy, J.L., 2018, U-Pb age density distributions as an indicator of glacial loess provenance in midwestern North America. Geological Society of America Annual Meeting, Indianapolis, IN.
30. DeLucia, M.S., Marshak, S., **Guenthner, W.R.**, Murphy, B.S., Egbert, G., Pavlis, G., Hersh, G., Hamburger, M.W., Chen, C., Yang, X., Larson, T., and Rupp, J.A., 2018, Multidisciplinary approach to characterize tectonic history of the midcontinent USA cratonic platform: The Ozark Plateau-Illinois Basin boundary. Geological Society of America Annual Meeting, Indianapolis, IN.
29. **Guenthner, W.R.**, Huber, C., and Karani, H., 2018, A new metric for assessing alpha ejection corrections in mineral phases with complex topologies: Application to the Fe-oxide (U-Th)/He chronometer. Geological Society of America Annual Meeting, Indianapolis, IN.
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