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Postdoctoral Researcher
Institute of Geosciences
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Research Interests:

Tectonics; Sedimentology; Low-temperature thermochronology; Geochronology; Fold-thrust belt kinematics and exhumation; Foreland basin development and evolution; Climatic and tectonic interactions; Thermal histories of cratons; Craton stability; Crustal evolution; Deep-time Earth system processes; Himalayan geology; India-Asia collision; Central India geology; Southeast Asia tectonics

Education:

2016–2020

PhD in Geological Sciences

University of Hong Kong, Department of Earth Sciences

Dissertation: *From craton stabilization to continent-continent collision: Temporal and low-temperature thermal constraints on the long-term geologic evolution of central and northern India*

Advisor: Dr. N. Ryan McKenzie

2014–2016

M.S. in Geological Sciences

The University of Texas at Austin, Department of Geological Sciences

Thesis: *Geo-/Thermochronometric constraints on the Exhumation of the Lesser Himalaya of northwest India*

Advisor: Dr. Daniel Stockli

2009–2013

B.S. in Geological Sciences with Honors

The University of Texas at Austin, Department of Geological Sciences

Postdoctoral Training:

2021–Present:

Universität Potsdam, Institute of Geosciences

2020 (4 Months):

University of Hong Kong, Department of Earth Sciences

Teaching Experience:

2016–2020

Teaching Assistant, The University of Hong Kong
EASC2402: *Field and Laboratory Methods*; EASC4955:
Integrated Field Studies (Geology Field Camp)

2015–2016

Teaching Assistant, The University of Texas at Austin
GEO 660: *UT Undergraduate Geology Field Camp*;
GEO 420K: *Introduction to Field Methods*

Laboratory Experience:

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| 2021–Present | Development of the high-resolution, ultra-low temperature $^4\text{He}/^3\text{He}$ thermochronology lab at the University of Potsdam |
| 2016–2020 | Zircon U-Pb and Hf isotopic LA-ICPMS-MC analyses at The University of Hong Kong |
| 2018 | Apatite U-Pb LA-ICPMS analyses at The Chinese University of Geosciences Wuhan |
| 2017–2020 | Craton zircon and apatite (U-Th)/He and zircon U-Pb analyses at the UTChron facilities at The University of Texas at Austin |
| 2014–2016 | Graduate Research Assistant, The University of Texas at Austin Assisted in (U-Th)/He and LA-ICP-MS analyses and training |
| 2013–2014 | Lab Technician, The University of Texas at Austin UTChron Geo-Thermochronology Lab |
| 2011–2013 | Undergraduate Research Assistant, The University of Texas at Austin Mineral Separation Facilities; Zircon U-Pb analyses on subsurface basement samples from the Western Desert, Egypt |

Field Experience:

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| July 2021 | Western Alps of Switzerland (1 week) |
| November 2019 | Uttarakhand and Himachal Himalaya of NW India (3.5 weeks) |
| June 2019 | Teaching Assistant for University of Hong Kong Montana Field Camp (4 Weeks) |
| December 2018 | Southern Thailand (2 Weeks) |
| June 2018 | Teaching Assistant for University of Hong Kong Montana Field Camp (3 Weeks) |
| January 2018 | Bundelkhand craton/Vindhyan basin of Central India (3 Weeks) |
| August 2017 | Northern Thailand (2 Weeks) |
| June 2017 | Teaching Assistant for University of Hong Kong Montana Field Camp (3 Weeks) |
| December 2016 | Southern Shan State, Myanmar (2 weeks) |
| June 2016 | Teaching Assistant for University of Texas and University of Hong Kong field camp throughout TX, NM, UT, WY, MT (6 Weeks) |
| October 2015 | Uttarakhand Himalaya of NW India (2 weeks) |
| October 2015 | 30 th Himalaya-Karakoram-Tibet pre-workshop field trip |
| June 2015 | Teaching Assistant for University of Texas field camp throughout TX, NM, UT, WY (3 Weeks) |
| April 2015 | Class field trip to San Rafael Swell, Utah (1 week) |
| March 2015 | Himachal Himalaya of NW India (2 weeks) |
| March 2015 | Class field trip to Big Bend, Texas (1 week) |
| February 2015 | Class field trip to the Andes of Argentina (2 weeks) |
| September 2014 | Class field trip to Colorado and New Mexico (1 week) |
| August 2013 | Himachal Himalaya of NW India- field assistant (2 weeks) |
| Summer 2012 | University of Texas field camp student throughout TX, NM, WY, UT, MT (6 weeks) |

Awards and Grants:

- 2019 University of Hong Kong Faculty of Science Excellent Teaching Assistant Award
- 2018 Hung Hing Ying Scholarship (30,000 HKD total over 2 years)
- 2016 University of Hong Kong Faculty of Science Dean's Scholarship (42,100 HKD)
- 2015 ExxonMobil/GSA Student Geoscience Grant (\$7,500 USD)
- 2015 ExxonMobil/GSA Student Geoscience Travel Grant (\$500 USD)
- 2015 Geological Society of America Structural Geology & Tectonics Division Research Grant Award (\$500 USD)
- 2015 Jackson School of Geoscience Grant Matching Program (\$1,000 USD)
- 2015 Jackson School of Geoscience Off Campus Research Grant (\$3,000 USD)
- 2013 Jackson School of Geosciences College Scholar
- 2012 Louis and Elizabeth Scherck Geology Scholarship
- 2011 W. Kenley Clark Memorial Endowed Presidential Scholarship
- 2010 Jackson School of Geoscience Undergraduate Merit Scholarship

Reviewer: *Tectonics* (7); *Earth and Planetary Science Letters* (4); *Basin Research* (1); *Journal of Geophysical Research–Solid Earth* (1); *Geological Magazine* (4); *Journal of Asian Earth Sciences* (3)

Publications:

- Liu, H., McKenzie, N. R., **Colleps, C. L.**, Chen, W., Ying, Y., Stockli, L. D., Sardsub, A., Stockli, D. F., 2021, *Zircon isotope-trace element compositions track Paleozoic–Mesozoic slab dynamics and terrane accretion in Thailand*: Earth and Planetary Science Letters
- Colleps, C. L.**, McKenzie, N. R., Guenther, 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
- Colleps, C. L.**, McKenzie, N. R., Sharma, M., Liu, H., Gibson, T. M., Chen, W., and Stockli, D. F., 2021, *Zircon and apatite U-Pb age constraints from the Bundelkhand craton and Proterozoic strata of central India: Insights into craton stabilization and subsequent basin evolution*: Precambrian Research
- Capaldi, T. N., McKenzie, N. R., Horton, B. K., Mackaman-Lofland, C., **Colleps, C. L.**, and Stockli, D. F., 2021, *Detrital zircon record of Phanerozoic magmatism in the southern Central Andes*: Geosphere
- Colleps, C. L.**, McKenzie, N. R., Horton, B. K., Webb, A. A. G., Ng, Y. W., and Singh, B. P., 2020, *Sediment provenance of pre- and post-collisional Cretaceous–Paleogene strata from the frontal Himalaya of northwest India*: Earth and Planetary Science Letters
- Colleps, C. L.**, Stockli, D. F., McKenzie, N. R., Webb, A. A. G., and Horton, B. K., 2019, *Neogene kinematic evolution and exhumation of the NW India Himalaya: Zircon geo- and thermochronometric insights from the fold-thrust belt and foreland basin*: Tectonics
- Colleps, C. L.**, McKenzie, N. R., Stockli, D. F., Hughes, N. C., Singh, B. P., Webb, A. A. G., Myrow, P. M., Planavsky, N. J., and Horton, B. K., 2018, *Zircon (U-Th)/He Thermochronometric constraints on Himalayan thrust belt exhumation, bedrock weathering, and Cenozoic seawater chemistry*: Geochemistry, Geophysics, Geosystems, v. 19, no. 1, p. 257-271.

Manuscripts in Preparation:

- Colleps, C. L.**, McKenzie, N. R., Guenther, W. R., Sharma, M., and Stockli, D. F., *Tracking the long-term burial and erosional evolution of central India: Low-temperature thermochronometric constraints from the Bundelkhand craton and Vindhyan basin (Intend to submit to GSA Bulliten)*
- Colleps, C. L.** and McKenzie, N. R., *Global trends in burial and erosion within continental interiors with implications for deep-time Earth system processes*
- Liu, H., McKenzie, N.R., Smye, A.J., **Colleps, C.L.**, Stockli, L.D., Stockli., D.F., *Zircon Trace Element Compositions as a Proxy for Continental Crust Evolution (Intend to submit to Science Advances)*

Oral Presentations:

- November 2021 University of Potsdam
Tracking the ancient low-temperature thermal evolution of the Bundelkhand craton of central India
- October 2021 University of Calgary
The advantage of detrital zircon and apatite (U-Th)/He data in extracting ancient thermal information from cratonic settings
- September 2021 Thermo2021 Sante Fe, New Mexico
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
- March 2021 University of Southern California, Department of Earth Sciences
Tracking the long-term thermal evolution of the Bundelkhand craton of central India
- April 2019 European Geophysical Union General Assembly 2019
Low-temperature thermochronometric insight into the long-term burial and erosional evolution of the Bundelkhand craton of central India
- Nov 2018 IGCP 668: Equatorial Gondwanan History and Early Palaeozoic Evolutionary Dynamics Meeting, Bangkok, Thailand
Sediment continuity along the equatorial margin of Gondwana: Detrital zircon U-Pb insights from the Shan-Thai Terrane
- Nov 2018 GSA Annual Meeting in Indianapolis, Indiana, USA
Provenance of Cretaceous–Paleogene strata of northwest India: Detrital zircon geochronologic and Hf isotopic insights into the timing of India-Asia collision
- March 2016 University of Hong Kong, Department of Earth Sciences (as visitor)
Lesser Himalaya exhumation and implications for Neogene seawater chemistry
- July 2015 Yale University, The Department of Geology and Geophysics,
Exhumation of the Lesser Himalaya of Northwest India: (U-Th)/He thermochronometric constraints and implications for the Neogene isotopic composition of seawater

Published Conference Abstracts:

- Colleps, C. L.**, McKenzie, N. R., van der Beek, P., Sharma, M., Guenther, W. R., 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
- Liu, H., McKenzie, N.R., **Colleps, C.L.**, Chen, W., Ying, Y.C., Stockli, L., Sardud, A. and Stockli, D.F., 2021, *Tracking Permian–Triassic tectonic transitions in Thailand via detrital zircon U-Pb ages, Hf isotopes and trace elements*: Goldschmidt Abstracts 2021
- Colleps, C.L.**, McKenzie, N.R., Guenther, W.R., Sharma, M., Stockli, D.F., 2019, *Deccan Traps Thermal Overprint on Zircon and Apatite (U-Th)/He Dates from the Bundelkhand Craton of Central India*: Goldschmidt Abstracts 2019
- Liu, H., McKenzie, N.R., Smye, A.J., **Colleps, C.L.**, Stockli, L.D., Stockli, D.F., 2019, *Zircon Trace Element Compositions as a Proxy for Continental Crust Evolution*: Goldschmidt Abstracts 2019
- Colleps, C.L.**, McKenzie, N.R., Guenther, W.R., Sharma, M., Stockli, D.F., 2019, *Low-temperature thermochronometric insight into the long-term burial and erosional evolution of the Bundelkhand craton of central India*: European Geophysical Union General Assembly, Geophysical Research Abstract, v. 21
- Colleps, C.L.**, Hughes, N.C., Myrow, P.M., White, T., Wernette, S., Aung, A.K., Sardud, A., McKenzie, N.R., 2018, *Sediment continuity along the equatorial margin of Gondwana: Detrital zircon U-Pb insights from the Shan-Thai Terrane*: IGCP 668: Equatorial Gondwanan History and Early Palaeozoic Evolutionary Dynamics Meeting, Bangkok, Thailand
- Colleps, C.L.**, McKenzie, N.R., Horton, B.K., Webb, A.A.G., 2018, *Provenance of Cretaceous–Paleogene strata of northwest India: Detrital zircon geochronologic and Hf isotopic insights into the timing of India-Asia collision*: Geological Society of America, Abstracts with Programs, v. 50, no. 6
- Colleps, C.L.**, McKenzie, N.R., Stockli, D.F., Webb, A.A.G., Horton, B.K., Singh, B.P., *Zircon (U-Th)/He thermochronometric constraints on the exhumation of ¹⁸⁷Os enriched Lesser Himalayan strata of northwest India and implications for Cenozoic seawater chemistry*: American Geophysical Union, Fall Meeting 2016
- McKenzie, N.R., Planavsky, N.J., **Colleps, C.L.**, Stockli, D.F., Singh, B.P., Kalderon-Asael, B., Reinhard, C.T., 2016, *Tracking the long-term carbon cycle in Earth history: Himalayan anecdotes*: Goldschmidt Abstracts 2016
- Colleps, C.L.**, McKenzie, N.R., Stockli, D.F., Singh, B.P., Webb, A.A.G., Hughes, N.C., and Myrow, P.M., 2015, *Zircon (U-Th)/He Thermochronometric constraints on the exhumation of the Lesser Himalaya of Northwest India and implications for Neogene seawater evolution*: Geological Society of America, Abstracts with Programs, v. 47, no.7
- Colleps, C.L.**, McKenzie, N.R., Stockli, D.F., Singh, B.P., Webb, A.A.G., Hughes, N.C., Myrow, P.M., and Horton, B.K., 2015, *Exhumation of the Lesser Himalaya of Northwest India: Zircon (U-Th)/He thermochronometric constraints and implications for Neogene seawater evolution*: 30th Himalaya-Karakoram-Tibet Workshop Dehradun, India
- McKenzie, N.R., Hughes, N.C., Myrow, P.M., Singh, B.P., Jiang, Q., Planavsky, N.J., Webb, A.A.G., **Colleps, C.L.**, Banerjee, D.M., Deb, M., and Stockli, D.F., 2015, *Constraints on the stratigraphic architecture of the Uttarakhand-Himachal Lesser Himalaya: implications for the evolution of the North Indian Margin*: 30th Himalaya-Karakoram-Tibet Workshop Dehradun, India