

Cody L. Colleps
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RESEARCH INTERESTS:

Tectonics; Sedimentology; Low-temperature thermochronology; Geochronology; Landscape evolution; Fold-thrust belts; Foreland basins; Climatic and tectonic interactions; Thermal histories of cratons; Himalayas; 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:

University of Potsdam, Institute of Geosciences

Development and advancement of the $^4\text{He}/\beta\text{He}$ methodology at the University of Potsdam

ERC Funded COOLER Project

Supervisor: Dr. Peter van der Beek

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:

2021–Present	Development of the high-resolution, ultra-low temperature $^4\text{He}/^3\text{He}$ thermochronology lab at the University of Potsdam
2021–Present	Developing efficient protocols for routine and efficient proton irradiations on geologic materials
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

FIELD EXPERIENCE:

July 2022	Jostedalbreen; Norway (2 weeks)
September 2021	Southern Colorado (1 week)
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 FOR THE FOLLOWING JOURNALS (NUMBER OF REVIEWS):

Tectonics (7); Earth and Planetary Science Letters (7); Basin Research (1); Journal of Geophysical Research–Solid Earth (1); Geological Magazine (4); Journal of Asian Earth Sciences (3); Tectonophysics (2); Terra Nova (1)

ORAL PRESENTATIONS:

- May 2022 European Geophysical Union General Assembly 2022
Synthesizing uniform ^3He concentrations in accessory minerals for $^4\text{He}/^3\text{He}$ thermochronology: Current status, complications, and prospects
- 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

MANUSCRIPTS IN REVIEW:

- Colleps, C.L.**, McKenzie, N.R., van der Beek, P., Guenther, W.R., Sharma, M., Nordsvan, A. R., and Stockli, D.F., *Tracking the long-term low-temperature thermal evolution of the Bundelkhand craton of central India (In Revision: American Journal of Sciences)*
- Nordsvan, A.R., McKenzie, N.R., **Colleps, C.L.**, Koch, A., and Khan, N.S., *Multivariate analysis of the sediment starved southeast Australian continental shelf (In Review: Marine and Petroleum Geology)*

MANUSCRIPTS IN PREPARATION:

- Colleps, C.L.**, van der Beek, P., Denker, A., Amalberi, J., Dittwald, A., Bundesmann, J., and Bernard, M., On improving the efficiency of proton irradiations for $^4\text{He}/^3\text{He}$ Thermochronology (Intended to submit to *Geochronology*).
- Liu, H., Garber, J., Smye, A.J., Stockli, D.F, **Colleps, C.L.**, Stockli, L.D., Wei, C., Cole, D., Planavsky, N.J., and McKenzie, N.R., *Statistical assessment of zircon trace elements tracks tectonic regime changes and continental crust evolution for ~4.4 billion years (Intended to submit to Geology)*.
- Erbello, A., Melnick, D., Sobel, E., Bookhagen, B., Pingel, H., Colleps, C.L., Zeilinger, G., van der Beek, P., and Strecker, M.R., *Magma-assisted Continental Rifting: The Broadly Rifted Zone in SW Ethiopia, East Africa (Intended to submit to Tectonics)*.

PEER-REVIEWED PUBLICATIONS:

- Liu, H., McKenzie, N. R., **Colleps, C. L.**, Chen, W., Ying, Y., Stockli, L. D., Sardsub, A., Stockli, D. F., 2022, *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

PUBLISHED CONFERENCE ABSTRACTS (NON PEER-REVIEWED):

- Colleps, C.L.,** van der Beek, P., Denker, A., Amalberi, J., Dittwald, A., Bundesmann, J., and Bernard, M., *Improving the efficiency of proton irradiations for 4He/3He Thermochronology*: American Geophysical Union, Fall Meeting 2022
- Colleps, C.L.,** and McKenzie, N.R., *Tracking the pre-erosive extent and volume of the Deccan Large Igneous Province with Thermochronology*: American Geophysical Union, Fall Meeting 2022
- Erbello, A., Melnick, D., Sobel, E., Bookhagen, B., Pingel, H., **Colleps, C.L.,** Zeilinger, G., van der Beek, P., and Strecker, M.R., *Magma-assisted continental rift evolution: The Broadly Rifted Zone of SW Ethiopia, East Africa*: American Geophysical Union, Fall Meeting 2022
- Nordsvan, A.R., McKenzie, N.R., **Colleps, C.L.,** Bauer, K.W., and Khan, N.S., *Multivariate Analysis of Continental Shelf Morphology at Passive Margins*: : American Geophysical Union, Fall Meeting 2022
- Young, E.K., Oskin, M.E., Stockli, D.F., **Colleps, C.L.,** and Chatterjee, R., *Early rifting exposed: Rapid sedimentation, faulting, and thermal evolution of the northern Gulf Of California Rift recorded in the Fish Creek-Vallecito Basin*: American Geophysical Union, Fall Meeting 2022
- Young, E.K., Oskin, M.E., **Colleps, C.L.,** Stockli, D.F., and Chatterjee, R., *Using apatite (U-Th)/He data to document the history of subsidence, uplift, and thermal conditions of the Fish Creek-Vallecito Basin within the northern Gulf of California Rift*: Geological Society of America Abstracts with Programs, v. 54, No. 5, 2022

- McKenzie, N.R., Liu, G., **Colleps, C.L.**, and Nordsvan, A.R., *Multiproxy evaluation of tectonic regime variability and crustal reworking throughout Earth history*: Goldschmidt Abstracts 2022
- Colleps, C.L.**, van der Beek, P., Amalberti, J., and Bernard, M., 2022, *Synthesizing uniform ^3He concentrations in accessory minerals for $^4\text{He}/^3\text{He}$ thermochronology: Current status, complications, and prospects*: European Geophysical Union General Assembly 2022
- Amalberti, J., van der Beek, P., **Colleps, C.L.**, and Bernard, M., 2022, *New high-resolution $^4\text{He}/^3\text{He}$ laboratory at the University of Potsdam: Toward standardized approaches for efficient and reliable routine $^4\text{He}/^3\text{He}$ analyses for thermochronology applications*: European Geophysical Union General Assembly 2022
- Bernard, M., van der Beek, P., **Colleps, C.L.**, and Amalberti, J., 2022, *PecubeGUI: a new graphical user interface for Pecube, introduction and forward modelling of (U-Th)/He and $^4\text{He}/^3\text{He}$ data on apatite in the Rhone valley, Switzerland*: European Geophysical Union General Assembly 2022
- Webb, A.A.G., McKenzie, N. R., **Colleps, C.L.**, Costantino, D., Adeoti, B., Huang, Y., Hunt, H., and Patrick, S., 2021, *The Himalaya vs. the World*: American Geophysical Union, Fall Meeting 2021
- Colleps, C.L.**, McKenzie, N.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
- 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., and 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., and 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., 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 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., and 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., and 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., and Singh, B.P., *Zircon (U-Th)/He thermochronometric constraints on the exhumation of ^{187}Os 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., and 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