ELIZABETH JACQUELINE CATLOS

Associate Professor
The University of Texas at Austin
Jackson School of Geosciences
Dept. Earth and Planetary Sciences

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RESEARCH INTERESTS

I am a process-driven geochronologist and structural tectonics researcher who uses mineral chemistry to resolve the timing and mechanisms of deformation and lithospheric evolution. My work integrates thermobarometry, mineral equilibria modeling, and accessory mineral geochronology to reconstruct pressure–temperature–time histories and quantify heat and mass transfer during tectonic processes. Across diverse plate boundary systems, I use geochemical signatures preserved in minerals to constrain processes ranging from sediment provenance and tectonic deformation to structural inheritance and impact events. I also incorporate GIS-based spatial analysis and emerging AI tools to refine structural interpretations and geohazard models.

ACADEMIC APPOINTMENTS

Associate Professor (tenured)
Dept. Earth and Planetary Sciences
Jackson School of Geosciences
The University of Texas at Austin
2008–present

Affiliate Faculty
Center for Planetary Systems Habitability
The University of Texas at Austin
2020–present

Affiliate Faculty
Center for Russian, Eastern European, & Eurasian Studies
The University of Texas at Austin
2019–present

Assistant to Associate Professor (tenured)
School of Geology
Oklahoma State University
2001–2008

Postdoctoral Researcher
Department of Mineral Sciences, Smithsonian Museum of Natural History
Department of Earth and Space Sciences, University of California, Los Angeles
2001

VISITING APPOINTMENTS

Online Professor, "The Dynamic Earth"
Soochow University International Programs
Taiwan

Summer 2022, 2024; Winter 2022, 2023/2024

Max Kade Distinguished Visiting Professor
Institut für Geowissenschaften, Germany
Universität Heidelberg
Fall 2017

Fulbright Visiting Researcher
Middle East Technical University
Ankara, Turkey
2008-2009

Donald D. Harrington Fellow
Dept. Earth and Planetary Sciences
The University of Texas at Austin
2007-08

EDUCATION

Ph.D., Geochemistry
University of California, Los Angeles
2000

Phil. Cand., Geochemistry
University of California, Los Angeles
1999

B.Sc, Chemistry with Specialization in Earth Science
University of California, San Diego
1994

HONORS AND AWARDS

Research Honors

Young Scientist Award (Donath Medal), Geological Society of America, 2006

Fellow, Geological Society of America, 2007

Notable Paper, *American Mineralogist*, 2013

Young Innovator, Smithsonian Magazine, 2007

Junior Faculty Award, Oklahoma State University, College of Arts and Sciences, 2006

Predoctoral Fellowship, Smithsonian Institution, 1997

Undergraduate Summer Research Fellowship, NASA, 1994

Teaching Honors

Carolyn G. and G. Moses Knebel Teaching Award for Introductory Course (Geology of National Parks), 2023

UT Austin Experiential Learning Ambassador, 2019–2021

Carolyn G. and G. Moses Knebel Teaching Award for Introductory Course (Introductory Geology), 2015

UT Austin Texas Exes Teaching Award (Earth Materials), 2011

Service & Professional Recognition

Elected Councilor, Geological Society of America, 2013–2017

Outstanding Reviewer, *Earth and Planetary Science Letters*, 2015

Outstanding Reviewer, *Geological Society of America Bulletin*, 2006

JSG Outstanding Service Award (Female Faculty Team Award), 2017

Mentor, JSG NSF-funded Champions of Diversity Program, 2021–2024

RESEARCH FUNDING

Externally Sponsored Research (PI / Co-PI / Co-I)

National Science Foundation (NSF), SPSE-Study of Physics of Earth
PI, $612,882 (UT Austin portion only)
2026–2029
Collaborative Research: Fault or Not? Unraveling the Role of Himalayan Lineaments in Controlling Geohazards and Orogenic Segmentation in Nepal
co-PIs: P. Haproff (Pomona College, $357,357)

National Science Foundation (NSF), International Programs (1460050)
PI, $250,000
2015–2021
International: Research Experiences for Students: Closing Oceans: Assessing the Dynamics of Turkish suture zones
co-PIs: B. Elliott (UT Austin), R. Kyle (UT Austin)

NSF, International Programs (0728519)
PI, $150,000
2008–2012
International: Research Opportunities in Extensional Dynamics for US Undergraduate and Graduate Geosciences Students in Western Turkey
co-PIs: I. Çemen, E. Atekwana

NSF, Tectonics (0440169)
PI, $216,917
2005–2008
Collaborative Research: Extensional Unroofing of the Central Menderes Metamorphic Complex, Southwestern Turkey
co-PIs: I. Çemen, M. Kohn

NSF, International Programs (Standard Grant)
PI, $36,000
2002–2005
Investigation of Activity along the Himalayan Main Central Thrust: Present Geomorphology and Past Slip, Garhwal, NW India
co-PI: R. Marston

Externally Sponsored Research (Key Personnel / Collaborator)

European Union Programme Horizon 2020 MSCA-RISE #823934
US Collaborator, $15,000
2015–2018
Project IN-TIME: Developing a Luminescence Instrument for Geochronology on Mars

PI: Alessio di Iorio, Alma Sistemi Srl (Italy), co-PIs and collaborators at Cyprus Space Exploration Organisation, Università degli Studi "Gabriele D'Annunzio" (Italy); Università degli Studi di Sassari (Sardina, Italy); Universidad Complutense Madrid (Spain); Space System Solutions (Cyprus); Sensia Solutions (Spain)

TUBITAK (Turkish Research Council) (114Y055T)
US Collaborator
2015–2018
Link Between Mineralization in Magmatic-Hydrothermal Systems associated with Granitoid Intrusions in NE of Yenice (Çanakkale, Biga Peninsula).
PI: T. Oyman (Dokuz Eylül Üniversitesi, Turkey)

NSF, Astronomy (0138942)
Co-PI, $70,770
2002–2005
Subcontract from New Frontiers-Research Experience for Undergraduates in the Space and Planetary Sciences
co-PI: R. Marston

Competitive Research Support (Analytical Facility Access)

NASA ARES Analytical Facility (NFAR Proposal Award)
Competitive award of 3 days EBSD analytical time, JEOL 7900 SEM
2025
EBSD imaging of zircon grains from the Ames Astrobleme, Oklahoma

Internal Competitive Research Funding (UT Austin)

UT Austin, Jackson School of Geosciences, Collaborative Research Proposal for Graduate Recruitment and GTA Support, with Marek Locmelis
Full GTA support + $5,000 research supplement
2026
UT Libraries Map and Geospatial Collections Explorer Fellowship

PI, $1,500
Exploring Himalayan Lineaments in ArcGIS to Improve Hazard Mapping
2023

JSG Equipment Matching Program Awards
PI, $48,023
2023, 2017, 2014, 2012

Vice President for Research (VPR) Office, Special Research Grant
PI, $1000
Vertebrate Lies; Arthropods were the First Land Animals
2020

Faculty Innovation Center, Faculty DIY Award
PI, $500
Creating Videos on Site (at a dig in the UK) for an Introductory Geology Course
2019

Center for Teaching and Learning, Faculty Innovation

PI, $9,100
Incorporating Electron Microbeam Technology into Geosciences Undergraduate Education
2018–2019

Texas Global, Global Classrooms Curriculum Integration Grant
PI, $6,500
Integrating the Analysis of Silver Ore from a German Mine into the Education of Students in GEO416K: Earth Materials
2018–2019

UT Austin, JSG Seed Grant
PI, $20,173
Ion Microprobe Stable Isotope Analyses of Fracture-filling Cement—Implications for Basin Structural and Pore Fluid Evolution in Unconventional Oil and Gas Reservoirs.
2014

Student Research Funding (Mentorship Role)

External Student Awards

Clay Minerals Society Research Grant – Hector Garza (Ph.D.), $3,000, 2024

Sandia National Laboratories Summer Research Fellowship – Hector Garza (Ph.D.), $3,500, 2023

Geological Society of America (GSA), Charles A. & June R.P. Ross Research Grant – Hector Garza (Ph.D.), $2,652, 2023

NSF-funded Champions of Diversity program; Geosciences Empowerment Network – Llewnosuke Priimak (B.Sc.), $5,100

GSA, Student Research Grant Award – Hector Garza (Ph.D.), $2,500, 2022

GSA South-Central Section Undergraduate Research Grant – Gabriel Villaseñor (B.Sc.), $300, 2019; Kimberly Aguilera (B.Sc.), $500, 2016; Stephanie Suarez (B.Sc.), $500, 2015; Daniel Lizzardo-McPherson (B.Sc.), $300, 2015

American Institute of Professional Geologists (AIPG) Fellowship – Colin Sturrock (B.Sc.), $1000, 2014

Houston Geological Society Undergraduate Scholarship – Pamela Speciale (B.Sc.), $2000, 2011

Internal Student Awards (UT Austin)

Center for Planetary Systems Habitability – Hector Garza (Ph.D.), $40,959, 2024, 2021

Endowed Presidential Fellowship Award – Hector Garza (Ph.D.), $3,500, 2024

Center for Eastern European Studies, Professional Development Award – Daniel Campos (M.S.), $2,250, 2022–2023, 2021–2022, 2019–2020

Undergraduate Research Fellowships with JSG match – Shania Goodwin (B.Sc.), $2000, 2019–2020; Gabriel Villaseñor (B.Sc.), $1,500, 2019–2020; Theresa Perez (B.Sc.), $1,100, 2018;

Office of Undergraduate Research, Research or Conference Travel Scholarship – Gabriel Villaseñor, Theresa Perez (B.Sc.), $700, 2018; Emily Pease (B.Sc.), $1,940, 2016; Colin Sturrock (B.Sc.), $4,000, 2015, 2013; Bridget Pettit (B.Sc.), $2,000, 2013; Pamela Speciale (B.Sc.), $2000, 2012; Lindsey German (B.Sc.), $2000, 2012; Tim Shin (B.Sc.), $2000, 2011

Center for Eastern European Studies Professional Development Award – Gabriel Villaseñor, Theresa Perez (B.Sc.), $1,600, 2018

Texas Global, Global Research Fellowship – Thomas Etzel (Ph.D.), $5,000, 2017

PUBLICATIONS

Peer-Reviewed Journal Articles (Published)

1. **Catlos, E.J.,** Priimak, L. D., Sorkhabi, R. B., Garza, H., Gautam, P., & Periwal, P. (2025). Integrated geochemical and thermobarometric approach to ascertain provenance and pressure–temperature conditions from detrital Himalayan garnets (Siwalik Group, Surai Khola, Nepal). *Geological Magazine*, 162, e24. doi: 10.1017/S0016756825100149
2. Brookfield, M.E., **Catlos, E. J.,** & Garza, H.K. (2025). Reconciling divergent ages for the oldest recorded air-breathing land animal, the millipede, Pneumodesmus newmani Wilson & Anderson, 2004: A review of the geology and ages of the basal Old Red Sandstone Stonehaven Group (Silurian–Early Devonian), Aberdeenshire, Scotland. *Fossil Studies*, 3(6), 18pp. doi:10.3390/fossils3020006
3. Garza, H. K., **Catlos, E. J.,** Lapen, T. J., Clarke, J. A., & Brookfield, M. E. (2025). New U-Pb constraints and geochemistry of the East Kirkton Quarry, Scotland: Implications for early tetrapod evolution in the Carboniferous. *PLOS ONE*, *20*(4), e0321714. doi:10.1371/journal.pone.0321714
4. Parisi, A.F., **Catlos, E.J.,** Brookfield, M.E., Schmitt, A.K., Stockli, D.F., Miggins, D.P., & Campos, D.S. (2024). The Ordovician meteorite event in North America: Age of the Slate Islands impact structure, northern Lake Superior, Ontario, Canada. *Meteoritics & Planetary Science*, 59(7), 1751-1774. doi:10.1111/maps.14183.
5. Garza, H.K., **Catlos, E.J.,** Brookfield, M.E., Malkowski, M.A., Chamberlain, K.R., Loewy, S.L., & Stockli, D.F. (2024). Detrital U-Pb ages for the first well-preserved vascular plant Cooksonia from the UK and Irish macrofossil record. *Geological Magazine*, 161:e19. doi:10.1017/S0016756824000384
6. Garza, H.K., **Catlos, E.J.,** Chamberlain, K.R., Suarez, S.E., Brookfield, M.E., Stockli, D.F., & Batchelor, R.A. (2023) How old is the Ordovician– Silurian boundary at Dob's Linn, Scotland? Integrating LA-ICP-MS and CA-ID-TIMS U-Pb zircon dates. *Geological Magazine*, 160, 1775–1789. doi:10016756823000717
7. **Catlos, E.J.,** Broska, I., Kohút, M., Etzel, T.M., Kyle, J.R., Stockli, D.F., Miggins, D.P., & Campos, D. (2022). Geochronology, geochemistry, and geodynamic evolution of Tatric granites from crystallization to exhumation (Tatra Mountains, Western Carpathians). *Geologica Carpathica*, 73(6), 517-544. doi:10.31577/GeolCarp.73.6.1
8. **Catlos, E.J.,** Dubey, C.S., & Etzel, T.M. (2022). Imbrication and erosional tectonics recorded by garnets in the Sikkim Himalayas. *Geosciences*, 12(4), 146. doi:10.3390/geosciences12040146
9. Brookfield, M.E., **Catlos, E.J.,** & Suarez, S.E. (2022). Vertebrate lies; arthropods were the first land animals. *Geology Today (UK),* 38(2), 65-68. doi.org:10.1111/gto.12383
10. **Catlos, E.J.,** Mark, D.F., Suarez, S.E., Brookfield, M.E., Miller, C.G., Schmitt, A.K., Gallagher, V., & Kelly, A. (2021). Late Silurian zircon U–Pb ages from the Ludlow and Downton bone beds, Welsh Basin, UK Journal of the Geological Society, 178, jgs2020-107. doi:10.1144/jgs2020-107
11. Etzel, T.M., & **Catlos, E.J.** (2021). Garnet chemical zoning based thermobarometry: Method evaluation and applications in the Menderes Massif, Western Turkey. *Geosciences*, 11(12), 505. doi:10.3390/geosciences11120505
12. Brookfield, M.E., **Catlos, E.J.,** & Suarez, S. (2021). Myriapod divergence times differ between molecular clock and fossil evidence: U/Pb zircon ages of the earliest fossil millipede-bearing sediments. *Historical Biology*, 33(10), 2014-2018. doi: 0.1080/08912963.2020.1762593
13. Brookfield, M.E., Couto, H., **Catlos, E.J.,** & Schmitt, A.K. (2021). U-Pb SIMS zircon ages for Ordovician rocks, Valongo Anticline, northwestern Portugal. *Journal of Mediterranean Earth Sciences*, 13, 19-30. doi:10.13133/2280-6148/17274
14. Villaseñor, G., **Catlos, E.J.,** Broska, I., Kohút, M., Hraško, L., Aguilera, K., Etzel, T.M., Kyle, J.R., & Stockli, D.F. (2021). Evidence for widespread mid-Permian magmatic activity related to rifting following the Variscan orogeny (Western Carpathians). *Lithos*, 290-391, 106083. doi:10.1016/j.lithos.2021.106083

15. Villaseñor, G., **Catlos, E.J.,** Broska, I., Kohút, M., Hraško, L., Aguilera, K., Etzel, T.M., Kyle, J.R., & Stockli, D.F. (2021). Western Carpathian mid-Permian magmatism: Petrographic, geochemical, and geochronological data. *Data-in-Brief*, 36, 107026. doi:10.1016/j.dib.2021.107026
16. **Catlos, E. J.,** Perez, T.J., Lovera, O.M., Dubey, C.S., Schmitt, A.K., & Etzel, T.M. (2020). High-resolution P-T-Time paths across Himalayan faults exposed along the Bhagirathi transect NW India: Implications for the construction of the Himalayan orogen and ongoing deformation. *Geochemistry, Geophysics, Geosystems,* 21, e2020GC009353. doi:10.1029/2020GC009353
17. **Catlos, E.J.,** Pease, E.C., Dygert, N., Brookfield, M., Schwarz, W.H., Bhutani, R., Pande, K., & Schmitt, A. (2019). Nature, age and emplacement of the Spongtang ophiolite, Ladakh, NW India. *Journal of the Geological Society* 176 (2), 284-305. doi:10.1144/jgs2018-085
18. Etzel, T.M. **Catlos, E.J.,** Çemen, I., Ozerdem, C., Oyman, T., & Miggins, D. (2020). Documenting exhumation in the central and northern Menderes Massif (western Turkey): New insights from garnet-based P-T estimates and K-feldspar $^{40}Ar/^{39}Ar$ geochronology. *Lithosphere*,1, 8818289. doi:10.2113/2020/8818289
19. Etzel, T.M., **Catlos, E.J.,** Atakturk, K., Kelly, E.D., Lovera, O.M., Çemen, I., Diniz, E., & Stockli, D. (2019). Implications for thrust-related shortening punctuated by extension from P-T paths and geochronology of garnet-bearing schists. *Tectonics* 38(6), 1974-1998. doi:10.1029/2018TC005335
20. **Catlos, E.J.,** Lovera, O.M., Kelly, E.D., Ashley, K.T., Harrison, T.M., & Etzel, T.M. (2018). Modeling high-resolution Pressure-Temperature paths across the Himalayan Main Central Thrust (central Nepal): Implications for the dynamics of collision. *Tectonics*, 37, 2363-2388. doi:10.1029/2018TC005144
21. **Catlos, E.J.,** & Miller, N.R. (2017). Speculations linking monazite compositions to origin: Llallagua tin ore deposit (Bolivia). For Special Issue Criticality of the Rare Earth Elements: Current and Future Sources and Recycling. *Resources*, 6(3), 36. doi:10.3390/resources6030036
22. Sturrock, C.P., **Catlos, E.J.,** Miller, N.R., Akgun, A., Fall, A., Gabtov, R., Yilmaz, I.O, Larson, T., & Black, K. (2017). Fluids along the North Anatolian Fault, Niksar Basin, north central Turkey: Insight from stable isotopic and geochemical analysis of calcite veins. *Journal of Structural Geology*, 101, 58-79. doi:10.1016/j.jsg.2017.06.004
23. Suarez, S.E., Brookfield, M., **Catlos, E.J.,** & Stockli, D. (2017). A U-Pb zircon age constraint on the oldest-recorded air-breathing land animal. *PLoS One* 12 (6), e0179262. doi:10.1371/journal.pone.0179262
24. **Catlos, E.J.,** Friedrich, A.M., Lay, T., Elliott, J., Carena, S., Upreti, B.N., DeCelles, P., Tucker, B., & Bendick, R. (2016). Nepal at Risk: Interdisciplinary Lessons Learned from the April 2015 Nepal (Gorkha) Earthquake and Future Concerns*. GSA Today*, 26(6) 42-43. doi:10.1130/GSATG278GW.1
25. **Catlos, E.J.,** & Miller, N.M. (2016). Ion microprobe ^{232}Th-^{208}Pb ages from the high common Pb Amelia pegmatite monazite, Virginia: Implications for Alleghenian tectonics. *American Journal of Science*, 316, 470-503. doi:10.2475/05.2016.03
26. **Catlos, E.J.,** Reyes, E., Brookfield, M., & Stockli, D.F. (2016). Age and Emplacement of the Permian- Jurassic Menghai Batholith, Western Yunnan, China. *International Geology Review*, 59(8), 919-945. doi:10.1080/00206814.2016.1237312
27. Azizi, H., Najari, M., Asahara, Y., **Catlos, E.J**., Shimizu, M., & Yamamoto, K. (2015). U-Pb zircon ages and geochemistry of Kangareh and Taghiabad mafic bodies in northern Sanandaj-Sirjan Zone, Iran: Evidence for intra-oceanic arc and back-arc tectonic regime in Late Jurassic. *Tectonophysics*, 660, 47-64. doi:10.1016/j.tecto.2015.08.008
28. **Catlos, E.J.** (2013). Generalizations about monazite: Implications for geochronologic studies. *American Mineralogist*, 98, 819-832. doi:10.2138/am.2013.4336.
29. **Catlos, E.J.,** Huber, K., & Shin, T.A. (2013). Geochemistry and geochronology of meta-igneous rocks from the Tokat Massif, north-central Turkey: implications for Tethyan reconstructions. International Journal of Earth Sciences, 102, 2175-2198. doi:10.1007/s00531-013-0918-0
30. Black, K.N., Catlos, E.J., & Oyman, T. (2013). Timing Aegean extension: Evidence from in situ U–Pb geochronology and cathodoluminescence imaging of granitoids from NW. Turkey (Special Issue:

Geodynamics and Magmatism). *Lithos*, 180-181, 92-108. doi:10.1016/j.lithos.2013.09.001
31. Shin, T.A., **Catlos, E.J.,** Jacob, L., & Black, K. (2013). Relationships between very high pressure subduction complex assemblages and intrusive granitoids in the Tavşanlı Zone, Sivrihisar Massif, central Anatolia. *Tectonophysics*, 595-596, 183-197. doi:10.1016/j.tecto.2012.07.012
32. **Catlos, E.J.,** Jacob, L., Oyman, T., & Sorensen S.S. (2012). Long-term exhumation of an Aegean metamorphic core complex granitoids in the northern Menderes Massif, western Turkey. *American Journal of Science,* 312, 534-571. doi:10.2475/05.2012.03
33. Speciale, P., **Catlos, E.J.,** Yildiz, G.O., Shin, T.A., & Black, K.N. (2012). Zircon ages of the Beypazari granitoid pluton (north central Turkey): Tectonic implications. *Geodinamica Acta*, 25 (3-4), 162-182. doi:10.1080/09853111.2013.858955
34. **Catlos, E.J.,** Baker, C., Sorensen, S.S., Jacob, L., & Çemen, I. (2011). Linking microcracks and mineral zoning of detachment-exhumed granites to their tectonomagmatic history: Evidence from the Salihli and Turgutlu plutons in western Turkey (Menderes Massif). *Journal of Structural Geology*, 33, 951-969. doi:10.1016/j.jsg.2011.02.005
35. **Catlos, E.J.,** Baker, C., Sorensen, S.S., Çemen, I., & Hancer, M. (2010). Geochemistry, geochronology, and cathodoluminescence imagery of the Salihli and Turgutlu granites (central Menderes Massif, western Turkey): Implications for Aegean tectonics. *Tectonophysics*, 488, 110-130. doi:10.1016/j.tecto.2009.06.001
36. Belley, F., Ferre, E.C., Martin-Hernandez, F., Jackson, M.J., Dyar, M.D., & **Catlos, E.J.** (2009). The magnetic properties of natural and synthetic (Fex, Mg1-x)2 SiO4 olivines. *Earth and Planetary Science Letters*, 284, 516-526. doi:10.1016/j.epsl.2009.05.016
37. **Catlos, E.J.,** Dubey, C.S., & Sivasubramanian, P. (2008). Monazite ages from carbonatites and high-grade assemblages along the Kambam Fault Southern Granulite Terrain, South India. *American Mineralogist*, 93, 1230-1244. doi:10.2138/am.2008.2712
38. **Catlos, E.J**., Baker, C.B., Çemen, I., & Ozerdem, C. (2008). Whole rock major element influences on monazite growth: examples from igneous and metamorphic rocks in the Menderes Massif, western Turkey. *Mineralogia*, 38, 5-18. doi:10.2478/v10002-008-0002-8
39. **Catlos, E.J.,** & Çemen, I. (2006). Reply to Whitney and Regnier's comments regarding "Monazite Ages and the evolution of the Menderes Massif, western Turkey" (Int J Earth Sci 94:204-217). *International Journal of Earth Sciences*, 95, 352-354. doi:10.1007/s00531-006-0069-7
40. **Catlos, E.J.,** & Çemen, I. (2005). Monazite ages and the evolution of the Menderes Massif, western Turkey. *International Journal of Earth Sciences*, 94, 204-217. doi:10.1007/s00531-005-0470-7
41. **Catlos, E.J.,** Dubey, C.S., Harrison, T.M., & Edwards, M.A. (2004). Late Miocene movement within the Himalayan Main Central Thrust Shear Zone, Sikkim, NE India. *Journal of Metamorphic Geology*, 22, 207-226. doi:10.1111/j.1525-1314.2004.00509.x
42. Bollinger, L., Avouac, J.P., Beyssac, O., **Catlos, E.J.,** Harrison, T.M., Grove, M., Goffe, B., & Sapkota, (2004). Thermal structure and exhumation history of the Lesser Himalaya in central Nepal. *Tectonics*, 23, TC5015. doi:10.1029/2003TC001564
43. Robinson, D.M., DeCelles, P.G., Garizone, C.N., Pearson, O.N., Harrison, T.M., & **Catlos, E.J**. (2003). Kinematic model for the Main Central Thrust in Nepal. *Geology*, 31, 359-362. doi:10.1130/0091-7613(2003)031<0359:KMFTMC>2.0.CO;2
44. **Catlos, E.J**., & Sorensen, S.S. (2003). Phengite-based chronology of K- and Ba-rich fluid flow within two paleosubduction zones. *Science*, 299, 92-95. doi:10.1126/science.1076977
45. Robinson, D.M., DeCelles, P.G., Garizone, C.N., Pearson, O.N., Harrison, T.M., & **Catlos, E.J.** (2003). Kinematic model for the Main Central Thrust in Nepal: Reply. *Geology*, 31, e41. doi:10.1130/0091-7613-31.1.e41
46. **Catlos, E.J.,** Gilley, L.D., Harrison, T.M. (2002). Interpretation of monazite ages obtained via in situ analysis. *Chemical Geology*, 188, 193-215. doi:10.1016/S0009-2541(02)00099-2
47. **Catlos, E.J.,** Harrison, T.M., Manning, C.E., Grove, M., Rai, S.M., Hubbard, M.S., & Upreti, B.N. (2002). Records of the evolution of the Himalayan orogen from in situ Th-Pb ion microprobe dating of monazite: Eastern Nepal and Garhwal. *Journal of Asian Earth Sciences*, 20, 459-479.

doi:10.1016/S1367-9120(01)00039-6
48. Kohn, M.J., **Catlos, E.J.,** Ryerson, F.J., & Harrison, T.M. (2002). P-T-t path discontinuity in the MCT Zone, central Nepal: Reply. *Geology*, 30, 480-48. doi:10.1130/0091-7613(2002)030<0480:R>2.0.CO;2
49. **Catlos, E.J.,** Harrison, T.M., Kohn, M.J., Grove, M., Ryerson, F.J., Manning, C.E., Upreti, B.N. (2001). Geochronologic and thermobarometric constraints on the evolution of the Main Central Thrust, central Nepal Himalaya. *Journal of Geophysical Research*, 106, 16177-16204. doi:10.1029/2000JB900375
50. Kohn, M.J., **Catlos, E.J.,** Ryerson, F.J., & Harrison, T.M. (2001). P-T-t path discontinuity in the MCT Zone, central Nepal. *Geology*, 29, 571-574. doi:10.1130/0091-7613(2001)029<0571:PTTPDI>2.0.CO;2
51. **Catlos, E.J.,** Sorensen, S.S., & Harrison, T.M. (2000). Th-Pb ion-microprobe dating of allanite. *American Mineralogist* 85, 633-648. doi:10.2138/am-2000-5-601
52. Harrison, T.M., Grove, M., Lovera, O.M., **Catlos, E.J.,** & D'Andrea, J. (1999). The origin of Himalayan anatexis and inverted metamorphism: Models and constraints. *Journal of Asian Earth Sciences*, 17, 755-772. doi:10.1016/S1367-9120(99)00018-8
53. Harrison, T.M., Grove, M., Lovera, O.M., & **Catlos, E.J.** (1998). A model for the origin of Himalayan anatexis and inverted metamorphism. *Journal of Geophysical Research*, 103, 27017-27032. doi:10.1029/98JB02468
54. Harrison, T.M., Ryerson, F.J., Le Fort, P., Yin, A., Lovera, O.M., & **Catlos, E.J.** (1997). A Late Miocene-Pliocene origin for Central Himalayan inverted metamorphism. *Earth and Planetary Science Letters*, 146, E1-E7. doi:10.1016/S0012-821X(96)00215-4

Peer-Reviewed Book Chapters (Accepted/In Press)

1. **Catlos, E. J.,** Haproff, P., Dubey, C. S., & Piuthaimei, G. Z. (2026). Strike-Slip Motion in the Himalayas: Implications for Collisional Dynamics. In: Çemen, I., Catlos, E.J. (Eds.) Strike-Slip Tectonics: From Ocean Transform Faults to Continental Plate Boundaries (Geophysical Monograph 279). American Geophysical Union / John Wiley & Sons, Inc.
2. **Catlos, E. J.,** & Haproff, P. (2026). Strike-Slip Networks in a Compressional Belt: Seismotectonic Implications from the Sikkim Himalaya, Northeastern India. In: Çemen, I., Catlos, E.J. (Eds.) Strike-Slip Tectonics: From Ocean Transform Faults to Continental Plate Boundaries (Geophysical Monograph 279). American Geophysical Union / John Wiley & Sons, Inc.

Manuscripts Under Review

1. **Catlos, E.J**., Parisi, A.F., Brookfield, M.E., Erickson, T., Gulick, S.P.S., Schmitt, A.K., Stockli, D.F., Miggins, D.P., Ruchte, B., & Cloos, M. The Ames structure, Oklahoma: New radiometric dates and implications for North American impact chronology. *Meteoritics and Planetary Science*.
2. Çemen, I., & **Catlos, E.J.** Strike-slip fault zones: Their tectonic settings, analog models, surface and subsurface structures, and seismic hazards. In: Çemen, I., Catlos, E.J., (Eds.) *Strike-Slip Tectonics: From Ocean Transform Faults to Continental Plate Boundaries* (Geophysical Monograph 279) American Geophysical Union / John Wiley & Sons, Inc.
3. Çiçek, M., Oyman, T., Palmer, M.R., **Catlos, E.J.,** Selby, D., Ersoy, Y., & Kaliwoda, M. Integrated geochronological, isotopic (Sr, Nd and Pb) and mineral chemistry investigations of Oligocene intrusive rocks and their link to magmatic-hydrothermal ore systems, Yenice (Biga Peninsula), Türkiye. *Chemical Engineering Journal*.

Book Chapters

1. **Catlos, E.J.,** & Cemen, I. (2025). Processes and Perspectives in Extensional Tectonics. In: Çemen, I., & **Catlos, E.J.** (Eds.). *Extensional Tectonics: Continental Breakup to Formation of Oceanic Basins* (Geophysical Monograph 278). American Geophysical Union / John Wiley & Sons, 1-20. doi:10.1002/9781119773757.ch1

2. **Catlos, E.J.,** & Cemen, I. (2025). Transfer zones in extended terranes: Examples from Western Anatolia. In: Çemen, I., & **Catlos, E.J.** (Eds.). *Extensional Tectonics: Continental Breakup to Formation of Oceanic Basins* (Geophysical Monograph 278). American Geophysical Union / John Wiley & Sons, 317-349. doi:10.1002/9781119773757.ch12
3. **Catlos, E.J.,** Etzel, T.M., & Cemen, I. (2025). Extensional tectonics in Western Anatolia, Turkey: Eastward continuation of the Aegean extension. In: Çemen, I., & **Catlos, E.J.** (Eds.). *Extensional Tectonics: Continental Breakup to Formation of Oceanic Basins* (Geophysical Monograph 278). American Geophysical Union / John Wiley & Sons, 95-152. doi:10.1002/9781119773757.ch5
4. Jaramillo, V., **Catlos, E.J.,** Bell, E.A., Schmitt, A.K., & Yin, A. (2025). Root Problem of Mid-Tertiary Cordilleran Detachment Faults: Deciphering the evolution of the Whipple Mountains detachment shear zone in southeastern California. In: Çemen, I., & **Catlos, E.J.** (Eds.). *Extensional Tectonics: Continental Breakup to Formation of Oceanic Basins* (Geophysical Monograph 278). American Geophysical Union / John Wiley & Sons. 259-287. doi:10.1002/9781119773757.ch1
5. **Catlos, E.J.** (2023). Records of Himalayan metamorphism and contractional tectonics in the central Himalayas (Darondi Khola, Nepal). In: **Catlos, E.J.,** Çemen, I. (Eds.), *Compressional tectonics: Plate convergence to mountain building* (Geophysical Monograph 277) American Geophysical Union / John Wiley & Sons, 155-201. doi.org:10.1002/9781119773856.ch6
6. **Catlos, E.J.,** Çemen, I. (2023). When plates collide. In: **Catlos, E.J.,** Çemen, I. (Eds.), *Compressional tectonics: Plate convergence to mountain building* (Geophysical Monograph 277) American Geophysical Union / John Wiley & Sons, 3-20. doi: 10.1002/9781119773856.ch1
7. **Catlos, E.J.,** Çemen, I. (2023). A review of the dynamics of subduction zone initiation in the Aegean Region. In: **Catlos, E.J.,** Çemen, I. (Eds.), *Compressional tectonics: Plate convergence to mountain building* (Geophysical Monograph 277) American Geophysical Union / John Wiley & Sons, 87-117. doi.org:10.1002/9781119773856.ch4
8. **Catlos, E.J.,** Sayit, K., Sivasubramanian, P., & Dubey, C.S. (2011). Geochemical and geochronological data from charnockites and anorthosites from India's Kodaikanal-Palani Massif, Southern Granulite Terrain, India. In: Ray, J., Sen, G., Ghosh, B. (Eds.), *Topics in Igneous Petrology: a tribute to Prof. Mihir K. Bose*, Springer, 383-417. doi:10.1007/978-90-481-9600-5_15
9. **Catlos, E.J.,** Dubey, C.S., Marston, R.A., & Harrison, T.M. (2007). Geochronologic constraints across the Main Central Thrust shear zone, Bhagirathi River (NW India): Implications for Himalayan tectonics. In: Cloos, M., Carlson, W.D., Gilbert, M.G., Liou, J.G., & Sorensen, S.S. (Eds.), *Convergent Margin Terranes and Associated Regions: A tribute to W. G. Ernst*. Geological Society of America Special Paper, 419, 135-151. doi:10.1130/2006.2419(07)
10. Çemen, I., **Catlos, E.J.,** Gogus, O., & Ozerdem, C. (2006). Post-Collisional Extensional Tectonics and Exhumation of the Menderes Massif in the Western Anatolia Extended Terrane, Turkey. In: Dilek, Y. (Ed.), Post-*collisional tectonics and magmatism in the Eastern Mediterranean region*. Geological Society of America's Special Paper, 409, 353-379. doi:10.1130/2006.2409(18)
11. Dubey, C.S., **Catlos, E.J.,** & Sharma, B.K. (2005). Modeling P-T-t paths constrained by mineral chemistry and monazite dating of metapelites in relationship to MCT activity in Sikkim, eastern Himalayas. In: H. Thomas (ed.) *Metamorphism and Crustal Evolution: Papers in Honor of Prof. R.S. Sharma*, Atlantic Publishers and Distributors, 250-282. ISBN-10: 821690436444
12. Harrison, T.M., **Catlos, E.J**., & Montel, J-M. (2002). U-Th-Pb Dating of Phosphate Minerals. In: J.M. Hughes, M. Kohn, J. Rakovan (Eds.), Phosphates: Geochemical, geobiological and materials importance. Mineralogical Society of America, Washington DC, 523-558. doi:10.2138/rmg.2002.48.14

Edited Volumes

1. Çemen, I., & **Catlos, E.J.** (Eds.). (2025). *Extensional Tectonics: Continental Breakup to Formation of Oceanic Basins* (Geophysical Monograph 278). American Geophysical Union / John Wiley & Sons. 368 pp. ISBN 978-1-119-77374-0.

2. **Catlos, E.J.,** & Çemen, I. (Eds). (2023). *Compressional Tectonics: Plate Convergence to Mountain Building* (Geophysical Monograph 277). American Geophysical Union / John Wiley & Sons. 352 pp. ISBN 978-1-119-77386-3.
3. Hunt, B.B., & **Catlos, E.J.** (Eds). (2013). *Late Cretaceous to Quaternary Strata and Fossils of Texas: Field Excursions Celebrating 125 Years of GSA and Texas Geology, GSA South-Central Section Meeting, Austin, Texas, April 2013*. (GSA Field Guides 30). Geological Society of America. 53 pp. doi:10.1130/9780813700304
4. **Catlos, E.J.** (Ed.). (2008). *Donald D. Harrington Symposium on the Geology of the Aegean*. IOP Conference Series: Earth and Environmental Sciences, 2. doi:10.1088/1755-1315/2/1/011001

Edited Volumes in Process

1. Çemen, I., & **Catlos, E.J.** *Strike-Slip Tectonics: From Ocean Transform Faults to Continental Plate Boundaries*. (Geophysical Monograph 279) American Geophysical Union / John Wiley & Sons.

Extended Abstracts / Peer-Reviewed Proceedings

1. **Catlos, E.J.,** Campos, D., Kohút, M., Broska, I., Wu, C., & Stockli, D. (2025). Thermal history of Variscan Granitoids in the High Tatra Mountains: Insights from U–Pb zircon and apatite geochronology. *Friends of the Bohemian Massif 2025*, Jeseníky Mountains, Czech Republic. (Invited Oral)
2. **Catlos E.J.,** Haproff P.J. & Hubbard M. (2025). Deep Strike-Slip Seismicity Along Himalayan Lineaments: Revisiting the Structural Role of Transverse Features. *37th Himalayan-Karakoram-Tibet Workshop*. Torino, Italy. (Oral)
3. **Catlos E.J.,** Sorkhabi R., Locmelis M., Priimak L.D. & Gautam, P. (2025). Detrital Garnet Thermobarometry (DGT) of the Siwalik Group in Surai Khola of Nepal: Insights into Provenance and Exhumation from the Himalayan Foreland Basin. *37th Himalayan-Karakoram-Tibet Workshop*. Torino, Italy. (Poster)
4. **Catlos, E.J.,** Haproff, P.J., Dubey, C.S., Piuthaime, G.Z., Hubbard, M.S., & Poudel, D. (2025). Himalayan lineaments: Implications for earthquake hazard assessment. *11th Nepal Geological Congress (NGC-XI), Kathmandu, Nepal*. Special Issue, Journal Nepal Geological Society, 68, 24.
5. Haproff P.J., Hubbard M., **Catlos E.J.,** Pandey S.R., Devkota P. & Gajurel A.P. (2025). Preliminary field evidence for orogen-perpendicular, cross-faulting in central Nepal. *37th Himalayan-Karakoram-Tibet Workshop*. Torino, Italy. (Oral)
6. Hubbard M., Gajurel A., Mukul M., Srivastava V., Paudel L., Haproff P. & **Catlos E.J**. (2025). Topographic and Structural Expression of Cross Faults in the Himalaya. *37th Himalayan-Karakoram-Tibet Workshop*. Torino, Italy. (Oral)
7. Hubbard, M.S., Gajurel, A.P., Paudel, L., **Catlos, E.J.,** & Haproff, P.J. (2025). Cross faults in the Himalaya: their topographic and structural expression. *11th Nepal Geological Congress (NGC-XI), Kathmandu, Nepal*. Special Issue, Journal Nepal Geological Society, 68, 9.
8. **Catlos, E.J.,** Priimak, L.D., & Sorkhabi, R.B. (2024). Pressure-Temperature paths from detrital Himalayan garnets: Insights into the early stages of collision from Siwalik sediments (Nepal). *36th Annual Himalayan-Karakoram-Tibet Workshop*, Krakow, Poland. (Poster)
9. **Catlos, E.J.,** Campos, D., Broska, I., Kohut, M., Stockli, D. F., Ketcham, R.A., Wu, C., Ding, L., & Miller, N.R. (2023). Exhumation of the High Tatra Mountains and implications for the Western Carpathians (Slovakia). *5th Bohemian Massif Symposium*, Smolenice, Slovakia. ISBN: 978-80-224-2012-9 (Oral)
10. **Catlos, E.J.,** Broska, I., Kohut, M., Etzel, T.M., Kyle, J.R., Stockli, D.F., Miggins, D.P., Campos, D. (2023). Geochronology, geochemistry, and geodynamic evolution of Tatric granites from crystallization to exhumation (Tatra Mountains, Western Carpathians). XXII International Congress of the CBGA, Plovdiv, Bulgaria. doi:10.22541/essoar.169111368.84168813/v1 (Oral)
11. Campos, D., **Catlos, E.J.,** Kohut, M., Broska, I., & Stockli, D. F. (2023). Investigating exhumation of the High Tatra Mountains: Implications for the Western Carpathians, Slovakia by zircon and apatite

(U-Th)/He thermochronometry. *XXII International Congress of the CBGA*, Plovdiv, Bulgaria. doi:10.22541/essoar.169111334.41110766/v1 (Poster)

12. **Catlos, E.J.,** Etzel, T.M., & Dubey, C.S. (2021). Development and application of high-resolution garnet P-T-t paths to Himalayan Tectonics. *Metamorphic Studies Group 40th Anniversary Meeting*. Online. doi:10.1002/essoar.10501671.1 (Oral)
13. **Catlos, E.J.,** Tandon, S., Etzel, T., Kohut, M., Broska, I., Stockli, D., Elliott, B.A., Aguilera, K., & Yin, Z. (2018). Comparing in situ U-Pb zircon and Th-Pb monazite ages from High Tatra granitoids, Slovakia. *5th Central-European Mineralogical Conference (CEMC) and 7th Mineral Sciences in the Carpathians Conference (MSCC).* Banská Štiavnica, Slovakia. (Oral)
14. Etzel, T.M., **Catlos, E.J.,** Kohut, M., Broska, I., Elliott, B.A., Stockli, D., Miggins, D., O'Brien, T., Tandon, S., Aguilera, K., & Yin, Z. (2018). Dating the High Tatra Mountains, Slovakia: Tectonic Implications. *5th Central-European Mineralogical Conference (CEMC) and 7th Mineral Sciences in the Carpathians Conference (MSCC).* Banská Štiavnica, Slovakia. (Oral)
15. **Catlos, E.J.,** Baker. C.B., Sorensen, S.S., Çemen, I., & Hancer, M. (2008). Monazite geochronology, magmatism, and extensional dynamics within the Menderes Massif, western Turkey. IOP Conference Series, Earth and Environmental Sciences, 2, 012013. doi:10.1088/1755-1307/2/1/012013 (Oral)
16. Baker, C.B., **Catlos, E.J.,** Sorensen, S.S., Çemen, I., & Hancer, M. (2008). Evidence for polymetamorphic garnet growth in the Cine (southern Menderes) Massif, Western Turkey. IOP Conference Series, Earth and Environmental Sciences, 2, 012020. doi:10.1088/1755-1307/2/1/012020 (Oral)
17. Çemen, I., **Catlos, E.J.,** Gogus, O., Diniz, E., & Hancer, M. (2008). Cenozoic extensional tectonics of the Western Anatolia Extended Terrane, Turkey. IOP Conference Series Earth and Environmental Science, 2, 012009. doi:10.1088/1755-1307/2/1/012009 (Oral)

Conference Abstracts (2017-2025)

1. **Catlos, E.J.,** & Çemen, I. (2025). What controls subduction initiation timing? Lessons from the Hellenic Arc and Menderes Massif (Western Turkey). *AGU Fall Meeting* 2025, New Orleans, LA. Abstract T41D-106. (Poster)
2. **Catlos, E.J.,** Priimak, L., Sorkhabi, R.B., Periwal, P., Garza, H., & Gautam, P. (2024). Himalayan detrital garnet provenance and P-T Path analysis (Siwalik Group, Surai Khola, Nepal). *AGU Fall Meeting* 2024, Washington, DC. Abstract V23D-08. (Oral)
3. **Catlos, E.J.,** Haproff, P., Dubey, C.S., & Piuthaime, G.Z. (2024). The role of Indian indenter heterogeneities in the development of the Himalayas and its hazards. *AGU Fall Meeting* 2024, Washington, DC. Abstract T31B-01. (Oral)
4. **Catlos, E.J.,** Dubey, C.S., Etzel, T.M. (2024). Imbrication and erosional tectonics recorded by garnets in the Sikkim Himalayas. *GSA Fall Meeting* 2024, Anaheim, CA. Paper 139-9. (Oral)
5. Çemen, I., & **Catlos, E.J.** (2024). Tectonic settings and earthquake potential of strike-slip fault zones: A review. *AGU Fall Meeting* 2024, Washington, DC. Abstract T31D-3159. (Poster)
6. Garza, H., Xu, G., **Catlos, E.J.,** Powell, M.D., & Fan, C.X. (2024). Rapid elemental analysis using portable XRF as proxies for characterizing rare earth elements and other critical minerals. *GSA Fall Meeting* 2024, Anaheim, CA. Abstract 176-3. (Poster)
7. Campos, D., **Catlos, E.J.,** Stockli, D. F., Ketcham, R.A., Miller, N.R., Broska, I., & Kohut, M., (2023). Exhumation of the High Tatra Mountains and implications for the Western Carpathians, Slovakia. *GSA Fall Meeting* 2023, Pittsburgh, PA. Paper 128-10. (Oral)
8. Garza-Garza, H., **Catlos, E.J.,** Loewy, S.L., Chamberlain, K.R., Malkowski, M., Brookfield, M.A. (2023). Timing vascular plants terrestrial origins with detrital zircon U-Pb dates: Implications for Earth's early Paleozoic biogeochemical cycles. *GSA Fall Meeting* 2023, Pittsburgh, PA. Paper 20-1. (Oral)
9. Priimak, L., **Catlos, E.J.,** & Sorkhabi, R. (2023). Himalayan evolution in the sands of time: Geochemical analysis of Siwalik garnets (Nepal). *AGU Fall Meeting*, 2023, San Francisco, CA. Abstract T23E-0297. (Poster)

10. Jaramillo, V., Yin, A., **Catlos, E.J.,** Bell, E., Chin, E.J., & Schmitt, A.K. (2023). Quantifying pore-fluid pressure ratios and analyzing deformation mechanisms in the Whipple Mountains brittle-ductile shear zone. *GSA Fall Meeting* 2023, Pittsburgh, PA. Paper 253-11. (Oral)
11. Cemen, I., & **Catlos, E.J.** (2022). Extensional tectonics from Continental breakup to formation of ocean basins: A review. *AGU Fall Meeting* 2024, Chicago, IL. Abstract T31B-01. (Poster)
12. Jaramillo, V., Yin, A., **Catlos, E.J.**, Bell, E., Chin, E.J., Schmitt, A.K. (2022). Superposition of 80-55 Ma high P-T (0.7GPa/750°C) metamorphism by mid-Tertiary detachment faulting in the Whipple Mountains, SE California. *GSA Fall Meeting* 2022, Denver, CO. Paper 217-10. (Oral)
13. **Catlos, E.J.,** Etzel, T.M., Dubey, C.S., & Lovera, O.M. (2021). High-resolution P-T paths from garnet-bearing rocks across the Himalayan Main Central Thrust: Implications for understanding the crustal response to orogenic processes. *AGU Fall Meeting, 2021,* New Orleans, LA. Abstract T45C-0245. (Poster)
14. Çemen, I., **Catlos, E.J.,** Etzel, T.M., & Sizemore, T. (2021). Large scale extensional tectonics in the Basin and Ranges USA and Western Anatolia, Turkey. *AGU Fall Meeting, 2021,* New Orleans, LA. Abstract T55E-0113. (Poster)
15. January, R., **Catlos, E.J.,** Cemen, I., Kyle, R., & Orlandini, O. (2021). High-resolution garnet pressure-temperature paths from the Menderes Massif metamorphic core complex, Western Turkey: Implications for extensional driving forces. *AGU Fall Meeting, 2021,* New Orleans, LA. Abstract E35A-0566. (Poster)
16. Keith, D.G., **Catlos, E.J.,** Orlandini, P., & Cemen, I. (2021). Investigating the metamorphic history of the Menderes Massif (Western Turkey) using Electron Backscatter Diffraction. *AGU Fall Meeting, 2021,* New Orleans, LA. Abstract E35A-0569. (Poster)
17. Jarmillo, V., **Catlos, E.J.,** Chin, E., Bell, E., &Yin, A. (2021). Using Paleopiezometry and Paleobarometry to quantify pore-fluid pressure ratios in mid-crustal (15-25 km) semi-brittle shear zones. *AGU Fall Meeting, 2021,* New Orleans, LA. Abstract T15F-02. (Oral).
18. Suarez, S., **Catlos, E.J.,** Brookfield, M., Stockli, D.F., Baird, G., Batchelor, R.A. (2021). U-Pb LA-ICP-MS dates from K-bentonites in the upper Ordovician of eastern North America and Britain. *GSA Fall Meeting* 2021, Portland, OR. Paper 142-4. (Oral)
19. Garza, H., Suarez, S.E., **Catlos, E.J.,** Brookfield, M.E., Stockli, D.F., Batchelor, R.A., & Chamberlain, K. (2021). How Old is the Ordovician-Silurian Boundary GSSP at Dob's Linn, Scotland? *AGU Fall Meeting, 2021,* New Orleans, LA. Abstract E55A-1091. (Poster)
20. **Catlos, E.J.,** & Miller, N.R. (2020). Combining analytical approaches to decipher geological problems: An example using the Morefield (Virginia, USA) monazite age standard using SIMS + LA-ICP-MS + EMPA. *Goldschmidt Conference*, Honolulu, HI. doi:10.46427/gold2020.339 (Poster)
21. **Catlos, E.J.,** Moore, S., Campos, D., & Thomas, D.L. (2020). UT Austin Jackson School of Geosciences enhancing diversity in the geosciences graduate education (EDGE) preview: Impacts and practices. *GSA-South Central Section Meeting*, 2020. Fort Worth, TX. Paper 5-7 (Oral)
22. Villaseñor, G., **Catlos, E.J.,** Elliott, B., Kohut, M., Broska, I., Etzel, T.M., Kyle, R.A., & Stockli, D.F. (2020). Timing of rifting in the central western Carpathians post-Variscan orogeny and ages of sediments overlying Meliata Ocean ophiolites (Slovakia). *GSA-South Central Section Meeting*, 2020.Fort Worth, TX. Paper 23-6 (Poster)
23. **Catlos, E.J.,** Etzel, T.M., Cemen, I., & Lovera, O.M. (2019). Extensional dynamics of the Menderes Massif, western Turkey. *AGU Fall Meeting, 2019,* San Francisco, CA. Abstract 518254. (Invited Oral)
24. **Catlos, E.J.,** Perez, T., Etzel, T., & Lovera, O.M. (2019). Development and use of garnet-based high-resolution P-T-t paths to constrain the dynamics of Himalayan orogenesis. *AGU Fall Meeting, 2019,* San Francisco, CA. Abstract 517520. (Poster)
25. Parisi, A.F., **Catlos, E.J.,** & Brookfield, M.A. (2019). Evidence for the Ordovician Meteorite event in Oklahoma, USA. *GSA Fall Meeting* 2019. Phoenix, AZ. Paper 23-10. (Poster)
26. Etzel, T.M., **Catlos, E.J.,** Cemen, I., Ozerdem, C., Oyman, T., O'Brien, T., & Miggins, D. (2019). Thermal histories of k-feldspar from granites located in the central and northern Menderes Massif,

western Turkey: Implications for regional extension. *AGU Fall Meeting, 2019,* Washington, DC. Abstract T43E-0484. (Poster)

27. Suarez, S.E., **Catlos, E.J.,** Brookfield, M.E., Miller, C.G., Stockli, D.F., & Schmitt, A.K. (2019). Understanding the rate and character of the early land colonization by life using high-precision ^{238}U-^{206}Pb zircon ages. *Geochronology-Gordon Research Conference-Timing, Tempo and Drivers of Biotic Evolution*, Waterville Valley, NH, US. (Oral)
28. **Catlos, E.J.,** Etzel, T.M., Dubey, C.S., Kelly, E.D., Marston, R.A., Perez, T.J., & Schmitt, A.K. (2018). Deciphering the exhumation history of the crystalline core of the Himalayas: New insight from garnet-bearing assemblages. *AGU Fall Meeting, 2018,* Washington, DC. Abstract T43C-04. (Invited Talk)
29. **Catlos, E.J.,** Lovera, O.M., Kelly, E.D., Ashley, K.T., Harrison, T.M., & Etzel, T.M. (2018). Modeling high-resolution Pressure-Temperature paths across the Himalayan Main Central Thrust (Central Nepal): Implications for the dynamics of collision. *AGU Fall Meeting, 2018,* Washington, DC. Abstract V23B-06 (Oral)
30. Etzel, T.M., **Catlos, E.J**., Kelly, E.D., Cemen, I., Atakturk, K.R., & Ozerdem, C. (2018). Tectonometamorphic evolution of the Southern and Central Menderes Massif, western Turkey. *AGU Fall Meeting, 2018,* Washington, DC. Abstract T51F-0224. (Poster)
31. Parisi, A.F., & **Catlos, E.J.,** Brookfield, M., & Miggins, D. (2018). Thermochronological insights on the timing of the Slate Islands impact structure, Lake Superior, Canada. *GSA Fall Meeting* 2018. Indianapolis, IA. Paper 43-3. (Poster)
32. **Catlos, E.J., &** Etzel, T.M. (2018). Development and Use of the Highest-Resolution garnet-based P-T paths. *GSA Fall Meeting* 2018. Indianapolis, IA. Paper 165-12. (Oral)
33. Etzel, T.M., **Catlos, E.J.,** Kelly, E.D., Cemen, I., Ozerdem, C., & Atakturk, K (2017). Defining conditions of garnet growth across the central and southern Menderes Massif, western Turkey. *AGU Fall Meeting, 2018,* New Orleans, LA Abstract T41B-1342 (Poster)
34. Çiçek, M., Oyman, T., Palmer, M.R., **Catlos, E.J**., Selby, D., Michalik, A., & Cooper, M.J. (2017). Geochronology and isotope (Sr, Nd and Pb) geochemistry of the Oligocene intrusions and associated hydrothermal mineralization in the northeast of Yenice, NW Turkey. *Goldschmidt Conference,* Paris, France. (Poster)
35. Pease, E.C., Dygert, N., **Catlos, E.J.,** & Brookfield, M. (2017). New geochemical and thermochronologic constraints on the tectonic affinity, cooling history, and timing of obduction of the Spongtang ophiolite, Northwest India. *51st Annual GSA-South Central Section Meeting*, San Antonio, TX. Paper 8-21. (Poster)
36. Pease, E.C., Dygert, N., **Catlos, E.J.,** & Brookfield, M. (2017). Timing of obduction, tectonic affinity, and cooling history of the Spongtang ophiolite, northwest India. *GSA Fall Meeting* 2017. Seattle, WA. Paper 85-12. (Poster)
37. Yin, Z., Tandon, S., Aguilera, K.N., Etzel, T.M., **Catlos, E.J.,** Elliott, B., & Kyle, R.J. (2017). Lessons learned from an international research experience from the underrepresented student perspective. *51st Annual GSA-South Central Section Meeting*, San Antonio, TX. Paper 28-7. (Oral)

Textbooks and Laboratory Manuals

1. **Catlos, E.J.** (2021). *Geology of national parks for the University of Texas, Austin* (2nd ed.). Kendall Hunt Publishing.
2. **Catlos, E.J.** (2020). *GEO 416K Earth materials lab guide* (2nd ed.). Kendall Hunt Publishing.
3. **Catlos, E.J.** (2016). *Physical geology lab manual*. Great River Learning. ISBN: 9781680751291.
4. **Catlos, E.J.** (2013). *GEO 416K Earth materials lab guide*. Kendall Hunt Publishing, 196 pp. ISBN-10: 1465219102.

INVITED PRESENTATIONS

Invited Academic Seminars (External, since 2008 only)

2022
University of Nevada, Las Vegas, Dept. of Geoscience
University of Louisiana, Lafayette, School of Geosciences
New insights into the uplift of the Himalayas through advances in metamorphic petrology

2021
University of New Mexico, Dept. Earth and Planetary Sciences

2019
UCLA, Dept. Earth, Planetary, and Space Sciences

2018
University of Houston, Dept. Earth and Atmospheric Sciences

2017
Heidelberg University, Germany, Institute of Earth Sciences
Ludwig Maximilian University of Munich, Germany, Dept. Earth and Environmental Sciences

2013
Louisiana State University, Dept. Geology and Geophysics

2010
Pennsylvania State University, Dept. Geosciences
Pennsylvania NASA Space Grant Consortium

2008
University of Arkansas, Dept. of Geology

Invited Conference Lectures & Short Courses

2025
11th Annual Nepal Geological Congress, Kathmandu, Nepal
Himalayan lineaments: Implications for earthquake hazard assessment

Friends of the Bohemian Massif 2025, Jeseníky Mountains, Czech Republic
Thermal history of Variscan Granitoids in the High Tatra Mountains: Insights from U–Pb zircon and apatite geochronology.

2024
36th Himalaya-Karakorum-Tibet, Kraków, Poland
Introduction to the Himalayas: Short course for young scientists, with B. Upreti and P. Haproff

2023
IN TIME project Final Conference, Roma, Italy; Sala Conferenze SPAZIO EUROPA European Parliament delegation in Italy
Challenges in dating impact craters on Earth

Slovak Academy of Sciences Annual Meeting, Smolenice, Slovakia
Exhumation of the High Tatra Mountains and implications for the Western Carpathians (Slovakia)

Be In-Time on Mars Conference, Summer School, Alghero, Sardinia, Italy
Basic problems of dating terrestrial impact craters: Example from the formation of the Ames Astrobleme, Oklahoma, USA

2022
Universidad Complutense de Madrid, Ages of Mars conference, Madrid, Spain
Exploring the timing and dynamics of life terrestrialization on Earth

2019
American Geophysical Union, Topical Session
Extensional dynamics of the Menderes Massif, western Turkey

2018
American Geophysical Union, Topical Session
Deciphering the exhumation history of the crystalline core of the Himalayas: new insight from garnet-bearing assemblages

2017
Geological Society of America Topical Session
Response to slab roll-back: Revealing the geodynamic history of western Turkey from the Biga Peninsula to the Menderes Massif

2015
Geological Society of America Topical Session: Subduction, Fluids, Accessory Minerals, and Trace Elements: A Celebration of Sorena Sorensen's Career
Timing subduction processes via in situ (in thin section) zircon and baddeleyite geochronology: Examples from northern Turkey

2005
15th Annual V.M. Goldschmidt Conference
Accessory Minerals Geochemistry, Monazite Records of Deformation within the Himalayan Main Central Thrust Shear Zone, NW India

Internal Invited Presentations

2024
UT Austin GIS Day
Aftershocks: New insights into Himalayan hazards provided by the 25 April 2015 Nepal Earthquake (Mw 7.8)

2023
DeFord Lecture
Aftershocks: New insights into Himalayan hazards provided by the 25 April 2015 Nepal Earthquake (Mw 7.8)

2018
Planetary Habitability Pop-Up Institute
Searching for Life from a Mineralogical and Geological Perspective

Outreach & External Engagement

2024
Tiny Talks Austin
A geologist's journey from Earth to Mars

2023
Champions of Diversity Seminars
Workshop on attending a scientific conference for the first time; Workshop on conducting international geoscience fieldwork

2022, 2015, 2011
Geosciences Leadership Organization for Women
Workshop on conducting international geoscience fieldwork

2020
UT Austin Center for Teaching and Learning Seminars
Bringing the field into introductory geosciences classrooms
Plans for moving forward after COVID: Recovering from the derailment

2017
Geological Society of America-South Central Section
Panelist, Geoscience career exploration

2016
Geological Society of America 2016 Annual Meeting
Moderator, Women in geology career pathways reception

2014, 2015
Geological Society of America, 2014 and 2015 Annual Meetings
Presenter, Talk to the On-to-the-Future Cohort: Future student engagement on GSA committees

2013
On the Cutting Edge, Workshop for Early Career Geoscience, Faculty Leader

Geological Society of America, 2013 Annual Meeting
Speaker, Women in geology mentor program

GirlTalk to promote STEM education/careers for girls, Speaker

2011
Undergraduate Geological Society,
Speaker, Workshop on conducting international geoscience fieldwork

2010
Expert Witness, 93rd Judicial District Court, Texas

2008
Texas Earth Science Revolution program,
Speaker, presentation on Himalayan research for K–12 educators

CONFERENCE LEADERSHIP & ORGANIZATION

Conferences Primary Organization

2019
European Union IN-TIME RISE: Workshop on Geochronology and Mars Exploration.
Austin, TX
Co-Organizer (Primary), with A. Di Iorio and M. Coradini

2013
Geological Society of America-South Central Section 47th Annual Meeting
Austin TX
Meeting Chair (Largest South-Central Section meeting in over a decade)

2008
The Donald D. Harrington Symposium on the Geology of the Aegean
Austin, TX
Primary Meeting Chair

Conference Sessions Co-Chaired

2025
American Geophysical Union Fall Meeting
Subduction zones: Their initiation and tectonic evolution
Co-organizer with I. Çemen

2024
American Geophysical Union Fall Meeting
Tectonic settings and earthquake potential of strike-slip fault zones
Co-organizer with I. Çemen & H. Ozener

2022
American Geophysical Union Fall Meeting
Oceanic and continental extensional tectonics
Co-organizer with I. Çemen

2021
American Geophysical Union Fall Meeting
Tectonic, topographic, and exhumation history of the Himalaya-Tibetan Orogen
Co-organizer with R. Sorkhabi

2020
Geological Society of America-South Central Section Meeting
The role of geochronology in constraining the development of Earth's lithosphere: Focus on the US South-Central Region, Mexico, and beyond
Co-organizer with R. Economos & J.D. Walker

2017
Geological Society of America-South Central Section Meeting
Advances in understanding Precambrian to Cenozoic magmatic and metamorphic processes and their bearing on lithospheric evolution of Southern Laurentia
Co-organizer with M. DeAngelis & R. Hansen

2016
Geological Society of America-Annual Meeting
Rates in metamorphism and tectonism: From mineral growth to orogenesis
Co-organizer with T.M. Etzel, E.D. Kelly, & K.T. Ashley

2015
Geological Society of America-Annual Meeting
Special Nepal (Gorkha) earthquake session
Co-organizer with A. Friedrich

2012
Geological Society of America- Annual Meeting
Advances in mineralogy and petrology
Co-organizer with J.C. Ayers

TEACHING EXPERIENCE

The University of Texas at Austin

Undergraduate Courses

Earth Materials (Fall 2010, 2012, 2014, 2016, 2018, 2020)

Geology of National Parks (each Fall 2019–2026; each Spring 2021–2026)

Physical Geology (taught to geology majors) (each Spring 2014–2016, 2018, 2020)
Introduction to Geology (taught to non-majors) (Spring 2010)
Gems and Gem Minerals (Fall 2022, 2023)
Rocks & Water of The Middle East (Fall 2011, 2013)
International Learning Seminar (Spring 2016, 2018)

Graduate Courses

Metamorphic Petrology (Spring 2015, 2017)
Analytical Methods: Electron Microbeam Technology (Spring 2021)
Thermodynamics of Petrological Systems (Fall 2018)
Microstructures and Rock Rheology (Spring 2022, Fall 2024)
Geology of The Middle East (Spring 2011, 2012)

Soochow University International Programs, Taiwan

Undergraduate Course

The Dynamic Earth (4-week online) (Summer 2022, 2024; Winter 2022, 2023/2024)

Middle East Technical University, Ankara, Turkey

Undergraduate Courses

Petrography (Spring 2009)
Introduction to Geological Engineering (Fall 2008)
Mineralogy (Fall 2008)

Oklahoma State University

Undergraduate Courses (2001-2007)

Geology and Human Affairs
Practical Mineralogy
Elementary Petrology
Electron Microprobe Analysis
Planetary Geology

PROFESSIONAL SERVICE

Editorial Boards

International Journal of Earth Science, Topic Editor, Metamorphic Petrology (2026–)
Journal of the Geological Society, Subject Editor (2026–)
Episodes, Associate Editor (2017–)
All Earth, Associate Editor, Lithosphere, 2015–)

Service to Funding Agencies

National Aeronautics and Space Administration (NASA)

2002–2017

Service included review panels for Mars Science Laboratory, ROSES Astrobiology, ASTEP, Planetary Instrument Definition and Development Programs, Solar System Workings, and Interdisciplinary Exploration Science.

Lead Science Reviewer, Standing Review Board, Mars Organic Molecule Analyzer–Mass Spectrometer (MOMA-MS); Planetary. Instrument Definition and Development Program; Mars Science Laboratory/Sample Analysis at Mars

Member, Independent Review Team, Mars Organic Molecule Analyzer – Laser Desorption Mass Spectrometer

National Science Foundation (NSF)

Ad Hoc Reviewer and Panelist (2000–)
Divisions served: EAR–Tectonics; Petrology and Geochemistry; Continental Dynamics; International Programs; Sedimentary Geology and Paleobiology; Geography and Regional Science.

Invited Participant, Office of International Science and Engineering Workshop on University Internationalization (2010)

Panelist, EAR–Tectonics Division (2002)

Other Funding Agencies

National Institutes of Health Reviewer, Challenge Grants in Health and Science Research (2009)

Austrian Science Fund – Proposal Reviewer

Research Grants Council of Hong Kong – Proposal Reviewer

Fulbright Egyptian Scholar Program – Technical Reviewer, Geology (2024–2026)

Geological Society of America Leadership

UT Austin Campus Representative, Geological Society of America (2024–present)

Elected Councilor (2013–2017)

Member, Management Board of the GSA South-Central Section (2009–2020)

Vice Chair and Chair, Management Board of the GSA South-Central Section (2012–2013)

Councilor & Chair Arthur L. Day Medal Awards Committee (2013–2016)

Member, Committee for the Donath Medal (Young Scientist Award) Selection (2012–2015)

Councilor/Conferee, Diversity in the Geosciences Committee (2014–2017)

Councilor/Conferee, Doris M. Curtis Memorial Fund for Women in Science Committee (2014–2016)

Member, Ad hoc GSA Committee focused on interest groups and divisions (2015)

Invited Participant on the GSA Council Retreat (Strategic Planning) (2011)

Fulbright Program Leadership

Campus Representative, Fulbright Program (2009–present)

Elected Vice President, Austin Chapter of the Fulbright Alumni Association (2010–2017)

Member, UT Austin Fulbright Student Review Committee (2010–2025)

Editorial and Review Activities

Ad Hoc Reviewer for numerous peer-reviewed journals (2000–)

Textbook and Educational Materials Reviewer & Developer: McGraw Hill (2019); Pearson Education (2011, 2014); AGI/Prentice Hall (2009)

Service to The University of Texas at Austin

University-Level Service

Reviewer, UT Austin Packard Fellowships for Science and Engineering (2026)

Participant, UT Tower Fellows Program (Engagement) (2026)

Member, Outstanding Graduate Research Fellowships Selection Committee (2026)

Internal Reviewer, NSF Research Traineeship (NRT) Program (UT Internal Competition) (2025)

Reviewer, Office of the Vice President for Research - Research & Creative Grants (2024)

Ambassador, Maps & Geospatial Collections Explorer Fellowship 40 Hours for the Forty Acres Campaign (2024)

Judge, Capital of Texas Undergraduate Research Conference (2024–2026)

Judge, Jackson School of Geosciences – Student Research Symposium (2023–2026)

Reviewer, UT Undergraduate Research Fellowship Competition (2023–2024)

Participant, Panel for Undergraduate Research Workshop, Undergraduate Research Committee in the Senate of College Councils (2023)

Member, Committee of a Task Force to Review and Rewrite Course Evaluation Lab Supplementary Form (2022)

Member, Provost's Task Force on the Future of UT Austin Libraries (2018)

Reviewer, Faculty Activities Report Electronic System (2013)

Member, Selection Committee for Faculty-Led Programs for Summer Abroad (2013)

Jackson School of Geosciences

Faculty Mentor, Research Training Experience (RTX), Jackson School of Geosciences (2025)

Faculty Panelist, Graduate to School to STEM (G2S2), Jackson School of Geosciences (2024–2025)

Member, Critical Materials EPS–BEG Joint Hire Search Committee (2022–2024)

Member, Library Advisory Committee (2015–2025)

Mentor, Geosciences Empowerment Network, Champions of Diversity program (2020–2023)

Member, Graduate Admissions and Support Committee (GASC) (2019–2022)

Member, Graduate Studies Committee, Committee on Membership Review (2019–2022)

Member, Diversity Committee (2018–2021)

Faculty Organizer / Coordinator, Master’s Saturday (2015–2024)

Faculty Organizer & Session Chair Coordinator, Master’s Saturday (2025)

Faculty Advisor (Former Organizer), Master’s Saturday (2026)

Member, Equipment Committee (2014–2017)

Member, Graduate Studies Committee, Ad Hoc Committee on Strategic Planning for MS and MA Degrees (2015)

Undergraduate Advisor, Environmental Science Institute Environmental Science (ESI-EVS) program (2015)

Representative, ESI-EVS Admissions Committee (2012–2013)

Lead Instructor, GeoFORCE outreach program (2010–2014)

Department of Earth and Planetary Sciences

Saw Room Supervisor, shared cutting facility (2026–present)

Evaluator, Peer Teaching Evaluation (2022–2025)

Member, Electron Microbeam Facility Oversight Committee (2023–present)

Host, EPS Awards Ceremony (2024)

Facility Director, Electron Microbeam Laboratory (2015–2023)

Member, LDE Faculty Annual Review Committee (2023–2025)

Head, Search Committee for the EPS Microbeam Facility Lab Manager (2017, 2019, 2022–2023)

Member, Awards Committee (2016–2023)

Member, Structural Geology Associate Professor Search Committee (2021–2022)

Member, Distinguished Postdoctoral Search Committee (2021–2022)

Faculty Organizer & Coordinator, DeFord Lecture Series (2015–2021)

Member, Department Head Search Committee (2020)

Member, Search Committee for the EPS Office Manager (2017)

Undergraduate Faculty Advisor, Dept. Geological Sciences (2012–2013)

Chair, Undergraduate Curriculum Review Committee (2012–2013)

Faculty Lead, Undergraduate Academic Affairs Committee (2012–2013)

Member, Search Committee in Tectonics and Geochronology (2010)

Member, Search Committee in Structural Geology and Tectonics (2010)

Organizer, Department Petrography Contest (2010)

STUDENT SUPERVISION AND MENTORSHIP

Doctoral Students – Primary Advisor

Hector Garza (PhD, 2025)

Thomas M Etzel (PhD, 2020)

Masters Students – Primary Advisor (UT Austin)

Victoria Burnette (M.S., 2026–)

Jessica Clarke (M.S., 2026–)

Daniel Campos (M.S., 2023)

Andrew Parisi (M.S., 2017)

Kate Ataktürk (M.S., 2014)

Tim Shin (M.S., 2013, co-supervised)

Karen Black (M.S., 2012)

Kathryn Huber (M.S., 2011)

Lauren Jacob (M.S., 2011)

Master's Students – Primary Advisor (Oklahoma State University)

Courteney Baker (M.S., 2009)

Cenk Ozerdem (M.S., 2004)

Doctor and Master's Committees (UT Austin)

Shelby Clarke (Ph.D., 2026)

Patrick D Boyd (M.S., 2017)

Mehmet O. Gurbuz (M.S., 2015)

Jessica Errico (M.S., 2012)

Autumn Kaylor (M.S., 2011)

Qualifying Examination Committees (External Reviewing Member)

Caleb Earl Adams (Ph.D., 2024)

Liam Norris (Ph.D., 2020)

Scott Eckley (Ph.D., 2019)

Natchanan (Mint) Doungkaew (Ph.D., 2017)

Ahmed Alnahwi (Ph.D., 2015)

Menal Gupta (Ph.D., 2014)

Migdalys Salazar (Ph.D., 2013)

Corinne Wong (Ph.D., 2013)

Undergraduate Research Supervision (UT Austin) (start dates)

Sana Virani (2026–)

Angelica Reyes (2025)

Christina Valles (University of Houston) (2025)

Llewnosuke Priimak (2022)

Rebekah January (Austin Community College) (2020)

David Keith (2020)

Shania Goodwin (2019)

Leah Lievrouw (2019)

Jackson Phillips (2019)

Gabriel Villaseñor (2018)

Thomas Quintero (2018)

Xiafei Zhao (2017)

Tyler Fu (2017)

Theresa Perez (2017)

Emily Pease (2016)

Zoe Yin (2016)

Ashley Zare (2016)

Saloni Tandon (2016)

Enrique Reyes (2015)

Kimberly Aguilera (2015)

Stephanie Suarez (2015)

Daniel Lizzardo-McPherson (2015)

Colin Sturrock (Honors) (2014)

Bridget Pettit (2014)

Chelsea H. Jones (2014)

Pamela Speciale (Honors) (2013)

Isis Garber (2013)

Lindsey German (2012)

Abby Kenigsberg (Honors) (2012)

Tyson McKinney (2012)

Tim Shin (Honors) (2011)

Heather Flynn (2011)

Instructional Supervision (Classroom Assistants)

Skye Hospod (2023–2024)

Joseph Sonello (2024)

Devon Jorgenson (2023)

Kaleigh Haynie (2021–2024)

Laboratory Technical Assistants (Saw Lab)

James Fletcher (2026)

Benjamin L. Blume (2026)

Mackenzie Myers (2026)

Emie Shepherd (2026)

PROFESSIONAL PROFILES & RESEARCH VISIBILITY

ORCID | Google Scholar | ResearchGate | LinkedIn | YouTube

PROFESSIONAL MEMBERSHIPS

Geological Society of America (Fellow); American Geophysical Union; European Geosciences Union; Mineralogical Society of America; Microscopy Society of America