

## Curriculum Vitae

Barbara Carrapa

*Professor*

University of Arizona

Department of Geosciences

Gould-Simpson Building, Tucson, AZ 85721-0077

Cell. 520 891 6559

E-mail: [bcarrapa@arizona.edu](mailto:bcarrapa@arizona.edu)

<https://www.barbaracarrapa.com/>

<https://www.geo.arizona.edu/person/barbara-carrapa>

### PRESENT POSITION

2019 -2025 Professor of Geosciences, University of Arizona

---

### CHRONOLOGY OF EDUCATION

1998-2002 Ph.D., Earth Sciences, Vrije University, Amsterdam, The Netherlands

1992-1998 Undergraduate and M.S. studies, Earth Sciences, University of Pavia, Italy

---

### RESEARCH INTERESTS

I study the interactions between tectonic processes, surface erosion and climate in shaping Earth's greatest topography. I specialize in sedimentary geology, thermochronology, and tectonics. I have worked extensively in the Andes, Pamir, Alps, Tibet, Himalaya and North American Cordillera. Some of the fundamental questions I seek to answer are: how do climate and tectonics affect erosion, paleodepositional environments and paleoecology-paleobiology over millions of years? How are deep (lithospheric and mantle scale) Earth processes affecting crustal and surface evolution? I am also interested in technique development including multi-dating and geochemistry of accessory minerals.

---

### ACADEMIC POSITIONS

Fall 2016-Present: Full Professor, University of Arizona

2018-2023: Department Head of Geosciences, University of Arizona

Fall 2014-Spring 2015: Guest Professor, ETH Zürich, Switzerland

2010-Spring 2016: Associate Professor, University of Arizona

2010-Present: Adjunct to Full Professor, University of Wyoming

2007-2010: Assistant Professor, University of Wyoming

2005-2007: Post-doctoral Research Fellow (DFG: German Research Foundation), Institute of Earth and Environmental Sciences, University of Potsdam, Germany

2003-2005: Alexander von Humboldt Research Fellow, Institute of Earth and Environmental Sciences, University of Potsdam, Germany

2003: Post-doctoral Research Fellow, Earth Science Department, Vrije University, Amsterdam, The Netherlands

---

### HONORS and AWARDS

2022: W.R. Dickinson Medal from the Society for Sedimentary Geology (SEPM)

2022: Arizona Leadership Institute graduate and fellow  
 2017: Geological Society of America (GSA) Fellow  
 2015: Outstanding faculty award, University of Arizona, Dept. of Geosciences  
 2014-2015: Guest Professor ETH, Zürich, Switzerland  
 2006: Sofja Kovalevskaja Award, Alexander von Humboldt Foundation, Berlin, Germany  
 2003-2005: Alexander von Humboldt Foundation, Research Fellow, Berlin, Germany

---

## PUBLICATIONS (\*student paper, #post-doc)

### Peer-reviewed Journal Articles, Chapters in scholarly books and monographs

- (121) Feng, H., Lu, H., Carrapa, B., Cheng, L., Zhang, H., Wang, Q., Yao, Z., 2025, Shift in erosion pattern of the Himalaya-Karakoram mountains during the mid-Pleistocene transition recorded by Indus Fan deposits, *Geological Society of America Bulletin*, 4; <https://doi.org/10.1130/B38154.1>.
- (120) Jepson, J., Carrapa, B., Jones, S., Kohn, B.P., Gleadow, A.J.W., George, S.W.M., Howlett, C.J., Gallagher, K., Frickenstein, A.N., Gehrels, G., Triantafyllou, A., 2025, An Assessment of Monazite Fission-Track Thermochronology as a Proxy for Low-Magnitude Cooling, Catalina-Rincon Metamorphic Core Complex, AZ, USA, *Geochemistry, Geophysics, Geosystems*, <https://doi.org/10.1029/2024GC011881>.
- (119) \*Howlett, C. J., Ronemus, C. B., Carrapa, B., DeCelles, P.G., 2025, Miocene construction of the High Andes recorded by exhumation of the Frontal Cordillera, La Ramada Massif of western Argentina (32°S), *Tectonics*, 44(1), <https://doi.org/10.1029/2024TC008433>.
- (118) #Jepson, G., Carrapa, B., Reeher, L., DeCelles, P.G., Afonso, W., Howlett, C., Caylor, E., Lama-Sherpa, T., Wang, J., Constenius, K., 2025, Regional exhumation of the Laramide Province, *GSA Bulletin*, <https://doi.org/10.1130/B37625.1>.
- (117) #George, S.W.M., Carrapa, B., DeCelles, P.G., Jepson, G., Nadoya, H., Tabor, C., Howlett, C.J., Ronemus, C.B., Clementz, M.T., Schoenbohm, L., 2025, Increased moisture availability in the Central Andes during the Miocene Climatic Optimum, *Palaeogeography, Palaeoclimatology, Palaeoecology*, <https://doi.org/10.1016/j.palaeo.2025.112732>.
- (116) \*Martínez, P.R., Carrapa, B., Clementz, M.T., Gutstein, C.S., Worrell, W.E., Hasiotis, S.T., Martínez-Lopez, J.G., Muñoz, F., 2025, Controls on late Miocene marine vertebrate bonebed genesis in northern Chile, *Palaeogeography, Palaeoclimatology, Palaeoecology*, <https://doi.org/10.1016/j.palaeo.2024.112622>.
- (115) Carrapa, B., Jepson, G., DeCelles, P.G., George, S.W.M., Ducea, M., Campbell, C., Dawson, R.R. (née Canavan), 2024, Crustal bobbing in response to lithospheric foundering recorded by detrital proxy records from the central Andean Plateau, *Geology*, <https://doi.org/10.1130/G52455.1>.
- (114) Caylor, E. \*, Carrapa, B., DeCelles, P., Gehrels, G., 2024, The real McCoy A record of deep-water basin deposition in southwestern North America, *Basin Research*, DOI: 10.1111/bre.12902.
- (113) Fosdick, J.C., Stevens Goddard, A.L., Mackaman-Lofland, C., Lossada, A.C., Rodríguez, M.P., Carrapa, B., 2024, Eocene exhumation of the High Andes at ~30°S differentiated by detrital multimethod U-Pb-He thermochronology, *Geology*, <https://doi.org/10.1130/G52272.1>.
- (112) \*Stendardi, F., Vignaroli, G., Carrapa, B., Albino I., Viola, G., 2024, Thermal history of the

- Epiligurian Marzabotto wedge-top basin records the tectonic development of the Northern Apennines (Italy), *Terra Nova*, <https://doi.org/10.1111/ter.12735>.
- (111) Carrapa, B., DeCelles, P.G., Dawson, R.R. (nee Canavan), Quade, J., Clementz, M.T., Schoenbohm, L., 2024, Uplift of the Puna Plateau was not limited to Miocene and younger time, *PNAS letter*, <https://doi.org/10.1073/pnas.240652812>
- (110) \*Ronemus, C.B., Howlett, C.J., DeCelles, P.G., Carrapa, B., George, S.W.M., 2024, The Manantiales Basin, Southern Central Andes (~32°S), Preserves a Record of Late Eocene–Miocene Episodic Growth of an East-Vergent Orogenic Wedge, *Tectonics*, <https://doi.org/10.1029/2023TC008100>.
- (109) \*Howlett, C.J., Jepson, G., Carrapa, B., DeCelles, P.G., Constenius, K.N., 2023, Late Cretaceous exhumation of the Little Belt Mountains and regional development of the Helena salient, west-central Montana, USA, *GSA Bulletin*, DOI: 10.1130/b37081.1.
- (108) \*Caylor, E., Carrapa, B., Jepson, G., Lama-Sherpa, T., DeCelles, P.G., 2023, The Rise and Fall of Laramide Topography and the Sediment Evacuation From Wyoming, *Geophysical Research Letters*, 10.1029/2023GL103218.
- (107) DeCelles, P.G. and Carrapa, B., 2023, Differences between the central Andean and Himalayan orogenic wedges: A matter of climate, *EPSL*, <https://doi.org/10.1016/j.epsl.2023.118216>.
- (106) #Amadori, C., Maino, M., Marini, M., Casini, L., Carrapa, B., Jepson, G., Hayes, R.G., Nicola, C., Reguzzi, S., Di Giulio, A., 2023, The role of mantle upwelling on the thermal history of the Tertiary- Piedmont Basin at the Alps-Apennines tectonic boundary, *Basin Research*, DOI: 10.1111/bre.12752.
- (105) \*Villarreal, D.P., Robinson, A.C., Chapman, J.B., Carrapa, C., Oimuhammadzoda, I., Gadoev, M., Li, Y., 2023, Early Cretaceous displacement on the Tanymas thrust fault, Northern Pamir, Tajikistan, and regional tectonic implications, *Journal of Asian Earth Sciences*, <https://doi.org/10.1016/j.jaesx.2023.100147>.
- (104) Davis G. H., Reeher, L. J., Jepson, F., Chaudoir, K. M., Carrapa, B., DeCelles, P.G., 2023, Structure and thermochronology of basement/cover relations along the defiance uplift (AZ and NM), and implications regarding Laramide tectonic evolution of the Colorado Plateau, *American Journal of Science*, <https://doi.org/10.2475/09.2022.02>.
- (103) \*Lama-Sherpa, T., DeCelles, P.G., Carrapa, B., Schoenbohm, L.M., Wolpert, J., 2022, Bhumi-chula plateau: a remnant high-elevation low-relief surface in the Himalayan thrust belt of western Nepal, *GSA Bulletin*, <https://doi.org/10.1130/B36481.1>.
- (102) Li, Y., Robinson, A.C., Zucali, M., Gadoev, M., Oimuhammadzoda, I., Lapen, T.J., Carrapa, B., 2022, Mesozoic Tectonic Evolution in the Kurgovat-Vanch Complex, NW Pamir, *Tectonics*, <https://doi.org/10.1029/2021TC007180>.
- (101) Park, S., Carrapa, B., Ducea, M.N., Surdeanu, M., Hayes, R., Collins, D., Answering Geosciences Research Questions at the Global Scale via a Hybrid Machine-Human Learning Approach: The Case Study of the Link Between Climate and Volcanism, *GSA Today*, [https://www.geosociety.org/GSA/Publications/GSA\\_Today/GSA/GSAToday/science/G528A/article.aspx](https://www.geosociety.org/GSA/Publications/GSA_Today/GSA/GSAToday/science/G528A/article.aspx).
- (100) \*Henriquez, S., DeCelles, P.G., Carrapa, B., Hughes, A. (2023), Kinematic evolution of the central Andean retroarc thrust belt in northwestern Argentina and implications for coupling between shortening and crustal thickening, *GSA Bulletin*, <https://doi.org/10.1130/B36231.1>.
- (99) Carrapa, B., DeCelles, P.G., Ducea, M., Jepson, G., Osakwe, A., Balgord, E., Stevens-Goddard, A., Giambiagi, L. (2022), Estimates of paleo crustal thickness at Cerro Aconcagua (Southern

- Central Andes) from detrital proxy-records: insights into models of continental arc evolution, *Earth and Planetary Science Letters*,  
<https://doi.org/10.1016/j.epsl.2022.117526>.  
 Corrigendum: <https://doi.org/10.1016/j.epsl.2022.117635>
- (98) #Jepson G., Carrapa, B., George, S.W.M., Reeher, L.G., Kapp, P.A., DeCelles, P.G., Davis, G.H., Thomson, S.N., Amadori, V., Clinkscales, C., Jones, S., Gleadow, A.W.G, Kohn, B.P., Where did the Arizona-plano go? Protracted thinning via upper- to lower-crustal processes (2022), *Journal of Geophysical Research*, <https://doi.org/10.1029/2021JB023850>.
- (97) Sundell, K.E., George, S.W.M., Carrapa, B., Gehrels, G.E., Ducea, M.N., Saylor, J.E., Pepper, M., 2022, Crustal Thickening of the Northern Central Andean Plateau Inferred from Trace Elements in Zircon, *Geophysical Research Letters*, 10.1029/2021GL096443.
- (96) #Jepson, G., Carrapa, B., Gillespie, J., Feng, R., DeCelles, P.G., Kapp, P., Tabor, C.R., Zhu, J., 2021, Climate as the Great Equalizer of Continental-Scale Erosion, *Journal of Geophysical Research*, <https://doi.org/10.1029/2021GL095008>.
- (95) Ortiz, G., Stevens-Goddard, A., Fosdick, J., Alvarado, P., Carrapa, B., Cristofolini, E. (2021), Fault reactivation in the Sierras Pampeanas resolved across Andean extensional and compressional regimes using thermochronologic modeling, *Journal of South America Earth Sciences*, 112, <https://doi.org/10.1016/j.jsames.2021.103533>.
- (94) #Jepson, G., Glorie, S., Khudoley, A.K., Malyshev, S.V., Gillespie, J., Glasmacher, U.A., Carrapa, B., Soloviev, A.V., Collins, A.S. (2021), The Mesozoic exhumation history of the Karatau-Talas range, western Tian Shan, Kazakhstan-Kyrgyzsta, *Tectonophysics* 814, 228977, <https://doi.org/10.1016/j.tecto.2021.228977>.
- (93) \*Feng, H., Lu, H., Carrapa, B., Zhang, H., Chen, J., Wang, Y., and Clift, P. (2021) Himalaya-Karakoram erosion and Arabian Sea sedimentary record since the Oligocene, *Geology*, 49 (9): 1126–1131.
- (92) DeCelles, P.G. and Carrapa, B. (2021) Coupled Rapid Erosion and Foreland Sedimentation Control Orogenic Wedge Kinematics in the Himalayan Thrust Belt of Central Nepal, *JGR*, <https://doi.org/10.1029/2020JB021256>.
- (91) #Jespon, G., Carrapa, B., George, S.H.M., Ducea, M.N., Egan, S.M., Gehrels, G.E., Constenius, K.N. and Triantafyllou, A. (2021) Resolving mid- to upper-crustal exhumation through apatite petrochronology, *Chemical Geology*, <https://doi.org/10.1016/j.chemgeo.2021.120071>.
- (90) \*Caylor, E.A., Carrapa, B., Smith, J.M., Sundell, K., DeCelles, P.G. (2021), Age and Deposition of the Fort Crittenden Formation: A Window into Late Cretaceous Laramide and Cenozoic Tectonics in Southern Arizona, *GSA Bulletin*, <https://doi.org/10.1130/B35808.1>.
- (89) Haque, Z., Geissman, J.W., DeCelles, P.G. and Carrapa, B. (2020), A magnetostratigraphic age constraint for the proximal synorogenic conglomerates of the Late Cretaceous Cordilleran foreland basin, northeast Utah, USA, *Geological Society of America Bulletin*, <http://orcid.org/0000-0003-0332-5305>.
- (88) \*Henriquez, S., DeCelles, P.G., Carrapa, B., Hughes, A., Davis, G., Alvarado, P. (2020), Deformation history of the Puna plateau, Central Andes of northwestern Argentina, *Journal of Structural Geology*, *Journal of Structural Geology*, 140104133.
- (87) \*Stevens Goddard, A.L., Carrapa, B., and Hernan, A.R. (2020) Sedimentology and basin evolution of the Greater Bermejo Basin, Southern Central Andes: insights into retro-arc foreland basin processes, *Sedimentary Geology*, <https://doi.org/10.1016/j.sedgeo.2020.105704>.

- (86) \*Meek, S., Carrapa, B., DeCelles, P.G. (2020) Recognizing Allogenic Controls on the Stratigraphic Architecture of Ancient Alluvial Fans in the Western US, *Frontiers in Earth Sciences*, doi: 10.3389/feart.2020.00215.
- (85) Wang, X., Carrapa, B., Chapman, J., DeCelles, P., Quade, J. (2020) The role of the westerlies and orography on Asian hydroclimate since the Late Oligocene, *Geology*, v. 48, <https://doi.org/10.1130/G47400.1>.
- (84) Villarreal, D.P., Robinson, A.C., Carrapa, B., Worthington, J., Chapman, J.B., Oimahmadov, I., Gadoev, M., MacDonald, B. (2020), Evidence for Late Triassic crustal suturing of the Central and Southern Pamir, *Journal of Asian Earth Sciences*, v. 3, 2020.
- (83) DeCelles, P.G., Carrapa, B., Ojha, T., Gehrels, G. (2020) Structural and thermal evolution of the Himalayan thrust belt in midwestern Nepal, *GSA Special volume*, [https://doi.org/10.1130/2020.2547\(01\)](https://doi.org/10.1130/2020.2547(01)).
- (82) Wang, X., Carrapa B., Chapman, J.B., Henriquez, S., Wang, M., DeCelles, P.G., Li, Z., Wang, F., Oimuhammadzoda, I., Gadoev, M. and Chen, F., (2019), Parathethys Last Gasp in Central Asia and Late Oligocene Accelerated Uplift of the Pamirs, *GRL*, 10.1029/2019GL084838.
- (81) \*Stickroth, S., Carrapa, B., DeCelles, P.G. Gehrels, G. and Thomson, S., (2019) Tracking the growth of the Himalayan fold-and-thrust belt from lower Miocene foreland basin strata: Dumri Formation, western Nepal, *Tectonics*, <https://doi.org/10.1029/2018TC005390>.
- (80) \*Chapman, J.B., Carrapa, B., DeCelles, P.G., Worthington, J., Mancin, N., Cobianchi, M., Stoica, M., Wang, X., Gadoev, M., Oimahmadov, I. (2019), The Tajik Basin: a composite record of sedimentary basin evolution in response to tectonics in the Pamir, *Basin Research*, doi: 10.1111/bre.12381.
- (79) Carrapa, B., Clementz, M., Feng, R. (2019), Ecological and hydroclimate responses to strengthening of the Hadley circulation on the South American continent during the LMC, *PNAS*, 116 (20) 9747-9752.
- (78) Carrapa, B., DeCelles, P.G., \*Romero, M. C. (2019), Early Inception of the Laramide Orogeny in Southwestern Montana and Northern Wyoming: Implications for Models of Flat-Slab Subduction, *Journal of Geophysical Research*, <https://doi.org/10.1029/2018JB016888>.
- (77) \*Henriquez, S., DeCelles, P.G. and Carrapa, B. (2019), Cretaceous to Middle Cenozoic Exhumation History of the Cordillera de Domeyko and Salar de Atacama Basin, Northern Chile, *Tectonics*, <https://doi.org/10.1029/2018TC005203>.
- (76) \*Kortyna, C., DeCelles, P.G., Carrapa, B. (2019), Structural and Thermochronologic Constraints on Kinematics, Timing and Shortening During Inversion of the Salta rift in the Tonco-Amblayo Sector of the Andean Retroarc Fold-Thrust Belt, Northwestern Argentina, in *Andean Tectonics*, Horton, B., Folguera eds., A., DOI: 10.1016/B978-0-12-816009-1.00018-6.
- (75) \*He, J., Kapp, P., Chapman, J.B., DeCelles, P.G., Carrapa, B. (2019), Structural setting and U-Pb detrital zircon geochronology of Triassic—Cenozoic strata in the eastern Central Pamir, Tajikistan, *Geological Society of London Special volume, Himalayan Tectonics: A Modern Synthesis, Special Publications*, 483, <https://doi.org/10.1144/SP483.11>.
- (74) \*Stevens Goddard, A.L. and Carrapa, B. (2018), Climate control on Miocene sedimentation rates in the southern Central Andes, *Geology*, <https://doi.org/10.1130/G40280.1> |
- (73) \*Chapman, J.B., Robinson, A.C., Carrapa, B., Villarreal, D., Worthington, J., DeCelles, P.G., Kapp, P., Gadoev, M., Oimahmadov, I., Gehrels, G. (2018), Cretaceous shortening and exhumation history of the South Pamir terrane, *Lithosphere*, DOI: <https://doi.org/10.1130/L691.1>.

- (72) \*Stevens Goddard, A.L., Larrovere, M.A., Carrapa, B., Reiners, P.W., Hernán, R. A. (2018), Reconstructing the paleogeography of the Sierras Pampeanas through low-temperature thermochronology: A case study from the Sierra de Velasco, GSABull, in press.
- (71) \*Chapman, J.B., Scoggin, S.H., Kapp, P., Carrapa, B., Ducea, M.N., Worthington, J., Oimahmadov, I., Gadoev, M. (2018), Mesozoic to Cenozoic magmatic history of the Pamir, EPSL, v. 482, p. 181-192.
- (70) DeCelles, P.G., Castaneda, I., Carrapa, B., Liu, J., Quade, J. and Zhang, L. (2018), published online in 2016, Oligocene-Miocene Great Lakes in the India-Asia Collision Zone, Basin Research, 1–20, doi: 10.1111/bre.12217.
- (69) \*Stevens Goddard, A.L., and Carrapa, B. (2017), Using the foreland basin thermal history to evaluate the role of Miocene – Pliocene flat-slab subduction in the southern Central Andes (27° S – 30° S), Basin Research, 1-22, doi: 10.1111/bre.12265.
- (68) \*Chapman, J., Carrapa, B., Ballato, P., DeCelles, P.G., Worthington, J., Oimahmadov, I., Gadoev, M. Ketcham, R. (2017) Intracontinental subduction beneath the Pamir Mountains: Constraints from thermokinematic modeling of shortening in the Tajik fold-and-thrust belt, GSABull., <https://doi.org/10.1130/B31730.1>.
- (67) \*Fosdick, J.C., Reat, E.J., Carrapa, B., Ortíz, G. and Alvarado, P.A. (2017), Retroarc foreland basin reorganization and diachronous aridification during Paleogene uplift of the southern Central Andes, Tectonics, v. 36, 3, p. 493-514.
- (66) Carrapa, B., Hassim, M.F. b., Kapp, P. A. and Gehrels, G.E., (2017), Tectonic and erosional history of southern Tibet recorded by detrital chronological signatures along the Yarlung River drainage, GSA Bull., doi: 10.1130/B31587.1.
- (65) DiGiulio, A., Ronchi, A., Sanfilippo, A., Balgord E., Carrapa, B. and Ramos, V. A., 2017, Cretaceous evolution of the Andean margin between 36°S and 40°S latitude through a multi-proxy provenance analysis of Neuquén Basin strata (Argentina), Basin Research, 1–21, doi: 10.1111/bre.12176.
- (64) McGlue, M.M., Smith, P.H., Zani, H., Carrapa, B., Cohen, A.S., Pepper, M. (2016), An Integrated Actualistic Sedimentary Systems Analysis of the Southern Chaco Foreland Basin, Journal of Sedimentary Research, v. 86, 1359–1377, <http://dx.doi.org/10.2110/jsr.2016.82>.
- (63) DeCelles, P.G., Carrapa, B., Gehrels, G.E., Chakraborty, T., Ghosh, P. (2016), Along-Strike Continuity of Structure, Stratigraphy, and Kinematic History in the Himalayan thrust belt: The View from Northeastern India, Tectonics, doi: 10.1002/2016TC004298.
- (62) Leary, R., Orme, D., Laskowski, A., DeCelles, P., Kapp, P., Carrapa, B., Dettinger, M. (2016), Along-strike diachroneity in the deposition of the Kailas Formation in central southern Tibet: Implications for Indian slab rollback, Geosphere, v. 12, 4.
- (61) Carrapa, B., Robert, X., DeCelles, P.G., Orme, D., Schoenbohm, L., Stuart, T., (2016), Exhumation of Mount Everest and asymmetric growth of the Himalaya, Geology, doi:10.1130/G37756.1.
- (60) Carrapa, B., DiGiulio, A., Mancin, N., Fantoni, R., Hughes, A., Stockli, D, Gupta, S. (2016), Tectonic significance of Cenozoic deformation, exhumation and basin history in the Western Alps, Tectonics, 35 doi: 10.1002/2016TC004132.
- (59) Wang, X., Kraatz, B., Meng, J., Carrapa, B., Abdulov, S., Chen, F. (2016), Central Asian aridification during the late Eocene to early Miocene as inferred from preliminary study of shallow marine-eolian sedimentary rocks from northeastern Tajik Basin, Science China Earth Sciences, doi: 10.1007/s11430-016-5282-z.
- (58) \*Stevens, A.L., Balgord, E.A., Carrapa, B. (2016), Revised exhumation history of the Wind River

- Range, WY and implications for Laramide tectonics, *Tectonics*, 10.1002/2016TC004126.
- (57) Zhou, R., Schoenbohm, L.M., Sobel, E.R., Carrapa, B., Davis, D.W. (2016), Sedimentary record of regional deformation and dynamics of the thick-skinned southern Puna Plateau, central Andes (26–27°S), *EPSL*, 433, 317–325.
- (56) #Fosdick, J., Carrapa, B. and Gustavo Ortíz (2015), Faulting and erosion in the Argentine Precordillera during changes in subduction regime: reconciling bedrock cooling and detrital records, *EPSL*, 432, 73–83.
- (55) \*Orme, D. A., Reiners, P.W., Hourigan, J.K. and Carrapa, B. (2015), Effects of U-Th zonation on zircon (U-Th)/He ages from Greater Himalayan sequence rocks, Mt. Everest region, Tibet, G cube, DOI 10.1002/2015GC005818.
- (54) Carrapa, B., DeCelles, P.G., Wang, W., Clementz, M.T., Mancin, N., Stoica, M., Kraatz, B., Meng, J., Abdulov, S., Chen, F. (2015), Tectono-climatic implications of Eocene Paratethys regression in the Tajik basin of central Asia, *Earth and Planetary Science Letters*, v. 424, p. 168–178.
- (53) DeCelles, P.G., Zandt, G., Beck, S., Currie, C.A., Ducea, M.N., Kapp, P., Gehrels, G.E., Carrapa, B., Quade, J., Schoenbohm, L.M., 2015, Cyclical orogenic processes in the Cenozoic Central Andes in DeCelles, P.G., Ducea, M.N., Carrapa, B., and Kapp, P.A., eds., *Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile: Geological Society of America Memoir 212*.
- (52) Quade, J., Dettinger, M., DeCelles, P., Carrapa, B., Huntington, K., Murray, K., 2015, The Growth of the Central Andes 22–26°S, in DeCelles, P.G., Ducea, M.N., Carrapa, B., and Kapp, P.A., eds., *Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile: Geological Society of America Memoir 212*.
- (51) Carrapa, B., and DeCelles, P.G., 2015, Regional exhumation and kinematic history of the central Andes in response to cyclical orogenic processes, in DeCelles, P.G., Ducea, M.N., Carrapa, B., and Kapp, P.A., eds., *Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile: Geological Society of America Memoir 212*, doi:10.1130/2015.1212.
- (50) Safipour, R., Carrapa, B., DeCelles, P.G., Thomson, S., 2015, Exhumation of the Principal Cordillera and northern Sierras Pampeanas and along strike correlation of the Andean orogenic front, 2015, in DeCelles, P.G., Ducea, M.N., Carrapa, B., and Kapp, P.A., eds., *Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile: Geological Society of America Memoir 212*, doi 10.1130/2015.1212(10).
- (49) Schoenbohm, L.M., Carrapa, B., McPherson, H.M., Pratt, J.R., Reyes-Bywater, S., and Mortimer, E., 2015, Climate and tectonics along the southern margin of the Puna Plateau, NW Argentina: Origin of the late Cenozoic Puna Schotter conglomerates, in DeCelles, P.G., Ducea, M.N., Carrapa, B., and Kapp, P.A., eds., *Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile: Geological Society of America Memoir 212*, p. 251–260, doi:10.1130/2015.1212(13).
- (48) Schoenbohm, L.M., and Carrapa, B., 2015, Miocene–Pliocene shortening, extension, and mafic magmatism support small-scale lithospheric foundering in the central Andes, NW Argentina, in DeCelles, P.G., Ducea, M.N., Carrapa, B., and Kapp, P.A., eds., *Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile: Geological Society of America Memoir 212*, doi:10.1130/2015.1212(09).
- (47) DeCelles, P.G., Carrapa, B., Horton, B., McNabb, J., Boyd, J. and Gehrels, G., Arizaro Basin, Central Andean Hinterland: Response to Partial Lithospheric Removal?, 2015, in

- DeCelles, P.G., Ducea, M.N., Carrapa, B., and Kapp, P.A., eds., *Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile*: Geological Society of America Memoir 212.
- (46) \*Balgord, E. and Carrapa, B. (2014), Basin evolution of the upper Cretaceous-lower Cenozoic strata in the Malargüe fold-and-thrust belt: northern Neuquén Basin, Argentina, *Basin Research*, *Basin Research*, 1–24, doi: 10.1111/bre.12106.
- (45) Carrapa, B., Shazanee, F. M., Schoenbohm, L.M., Cosca, M., Sobel, E.R., DeCelles, P.G., Russell, J. (2014), Multi-dating of modern river detritus from Tajikistan and China: implications for crustal evolution and exhumation of the Pamir, *Lithosphere*, doi:10.1130/L360.1.
- (44) \*Orme, D., Carrapa, B. and Kapp, P. (2014), Sedimentology, Provenance, and Geochronology of the Upper Cretaceous-Lower Eocene Western Xigaze forearc basin, Southern Tibet, *Basin Research*, doi: 10.1130/B30999.1.
- (43) Carrapa, B., Huntington, K.H., Clementz, M., Bywater-Reyes, S., Quade, J., Schoenbohm, L. and Canavan, R. (2014), Uplift of the Central Andes of NW Argentina associated with upper crustal shortening, revealed by multi-proxy isotopic analyses, *Tectonics*, doi: 10.1002/2013TC003461.
- (42) Carrapa, B., Orme, D.A., DeCelles, P.G., Kapp, P., Cosca, M., Waldrip, R. (2014), Miocene burial and exhumation of the India-Asia collision zone in southern Tibet: response to slab dynamics and erosion, *Geology*, v. 42, p. 443–446, doi:10.1130/G35350.1.
- (41) \*Canavan, R., Carrapa, B., Clementz, M., Quade, J., DeCelles, P.G., Schoenbohm, L. (2014), Early Cenozoic uplift of the Puna Plateau, Central Andes, based on stable isotope paleoaltimetry of hydrated volcanic glass, *Geology*, v. 42, 447–450, doi:10.1130/G35239.1.
- (40) #Fan, M. and Carrapa, B. (2014), Late Cretaceous-early Eocene two-stage development of the Laramide Rocky Mountains, *Tectonics*, v. 33, doi:10.1002/2012TC003221.
- (39) \*Painter, C., Carrapa, B., DeCelles, P.G., Stuart, T. and Gehrels, G. (2014), Exhumation of the North American Cordillera revealed by multi dating minerals from Upper Jurassic-Upper Cretaceous foreland basin deposits, *Geological Society of America Bulletin*, doi: 10.1130/B30999.1.
- (38) Carrapa, B., Bywater-Reyes, S., Safipour, R., Sobel, E., Schoenbohm, L., Reiners, P. and Stockli, D. (2014), The effect of inherited paleotopography on exhumation of the Central Andes of NW Argentina, *Geological Society of America Bulletin*, doi:10.1130/B30844.1.
- (37) \*Painter, C. and Carrapa, B. (2013), Flexural versus dynamic processes of subsidence in the North American Cordillera foreland basin, *Geophysical Research Letters*, v. 40, 1–5, doi:10.1002/grl.50831.
- (36) \*Painter, C., York, C. and Carrapa, B. (2013), Sequence stratigraphy of the Upper Cretaceous Sego Sandstone reveals spatio-temporal changes in the paleogeography of the Western interior USA, *Journal of Sedimentary Research*, v. 83, 323–338.
- (35) Peyton, L.S., and Carrapa, B. (2013), An overview of low-temperature thermochronology in the Rocky Mountain and Its application to petroleum system analysis, in C. Knight and J. Cuzella, eds., *Application of structural methods to Rocky Mountain hydrocarbon exploration and development*, AAPG Studies in Geology, v. 65, p. 37–70.
- (34) Peyton, L.S., and Carrapa, B. (2013), An introduction to low-temperature thermochronologic techniques, methodology, and applications, in C. Knight and J. Cuzella, eds., *Application of structural methods to Rocky Mountain hydrocarbon exploration and development*, AAPG Studies in Geology, v. 65, p. 15–36.



- (33) \*Lukens, C., Carrapa, B., Singer, B. and Gehrels, G. (2012), Miocene exhumation revealed by detrital minerals of Tajik rivers: Implications for the tectonic evolution of the Pamir, *Tectonics*, v. 31, doi:10.1029/2011TC003040.
- (32) Rhormann, A., Kapp, P., Carrapa, B., Reiners, Guynn, J., P., Ding, L. and Heizler, M., (2012), Thermochronologic evidence for low magnitude exhumation in central Tibet in the last ~45 Ma, *Geology*, 40, v.b2, 1487-190.
- (31) Peyton, S.L., Reiners, P.W., Carrapa, B. and DeCelles, P.G., (2012), Low-Temperature thermochronology of the Laramide Rocky Mountains, Western U.S.A, *American Journal of Science*, v. 312, p. 145–212, DOI 10.2475/02.2012.04.
- (30) Carrapa, B., Bywater-Reyes, S., DeCelles, P.G., Mortimer, E., and Gerhels, G. (2011), Cenozoic synorogenic basin evolution in the Eastern Cordillera of northwestern Argentina (25°- 26°S): Regional implications for Andean orogenic wedge development, *Basin Research*, v. 23, 1– 20, doi: 10.1111/j.1365-2117.2011.00519.x
- (29) DeCelles, P.G., Carrapa, B. and Horton, H. (2011), Cenozoic foreland basin system in the central Andes of northwestern Argentina: Implications for Andean geodynamics and modes of deformation, *Tectonics*, v. 30, doi:10.1029/2011TC002948.
- (28) \*York, C., Painter, C. and Carrapa, B. (2011), Sedimentological and petrophysical characterization of the Sego Sandstone (NW Colorado, USA): A new scheme to recognize ancient flood-tidal delta deposits and implications for reservoir potential, *Journal of Sedimentary Research*, v. 81, 401-419.
- (27) Carrapa, B., Trimble, J., and Stockli, D. (2011), Timing and Magnitude of Deformation and Exhumation of the Eastern Cordillera of NW Argentina Revealed by (U-Th)/He Thermochronology, *Tectonics*, v. 30, TC3003, 30 PP., doi:10.1029/2010TC002707.
- (26) Carrapa, B. (2010), Resolving tectonic problems by dating detrital minerals, *Geology*, v. 38, 191-192.
- (25) \*Bywater-Reyes, S., Carrapa, B., Clementz, M. and Schoenbohm, L. (2010), The effect of late Cenozoic aridification on sedimentation in the Eastern Cordillera of NW Argentina (Angastaco Basin), *Geology*, v. 38, 235-238.
- (24) Carrapa, B. (2010), Reply to Comment by Bernet (2010), on Tracing exhumation and orogenic wedge dynamics in the Alps via detrital thermochronology by Carrapa (2010), *Geology, Forum*, v. 38, 227.
- (23) Carrapa, B. (2009) Tracing exhumation and orogenic wedge dynamics in the Alps via detrital thermochronology, *Geology*, v. 37, 12, 1127-1130.
- (22) Strecker, M.R., Alonso, R., Bookhagen, B., Carrapa, B., Coutand, I., Hain, M.P., Hilley, G.E., Mortimer, E., Schoenbohm, L., and Sobel, E.R. (2009), Does the topographic distribution of the central Andean Puna Plateau result from climatic or geodynamic processes? *Geology*, v. 37, p. 643–646; doi: 10.1130/G25545A.1.
- (21) Carrapa, B., DeCelles, P.G., Reiners, P. Gerhels, G. (2009), Apatite triple dating and white mica Ar/Ar thermochronology of syn-tectonic detritus in the Central Andes: a multi-phase tectono-thermal history, *Geology*, v. 37, 407-410. This article was covered in *Science* (in Editors' Choice: Highlights of the recent literature): Andean Origins, by Brooks Hanson, *Science* 15 May 2009 324: 857, doi: 10.1126/science.324\_857a.
- (20) Carrapa, B., Hauer, J., Schoenbohm, L., Strecker, M., Schmitt, A., Villaneva, A. and Sosa Gomez, J., 2010, Reply to comment by Davila (2009), on Carrapa et al. (2008), *Geological Society of American Bulletin*, v. 122, p. 950-953, doi:10.1130/B30134.1.
- (19) Murrell, G.R., Sobel, E.R., Carrapa, B. and Andriessen, P. (2009) Calibration and comparison of

- etching and thermal modeling techniques for apatite fission track thermochronology, in *Thermochronological Methods: From Palaeotemperature Constraints to Landscape Evolution Models*, Lisker, K., Ventura, B and Glasmacher, U. (eds.), Geological Society, London, Special Publications, v. 324; p. 73-85.
- (18) Carrapa, B., Hauer, J., Schoenbohm, L., Strecker, M. Schmitt, A., Villaneva, A. and Sosa Gomez, J. (2008), Dynamics of deformation and sedimentation in the Sierras Pampeanas: An integrated study of the Neogene Fiambala basin, NW Argentina, *Geological Society of America Bulletin*, doi 10.1130/B26111.1.
- (17) Carrapa, B. and DeCelles, P.G. (2008), Eocene exhumation and basin development in the Puna of Northwestern Argentina, *Tectonics*, v. 27, TC1015, doi:10.1029/2007TC002127.
- (16) Mortimer, E. and Carrapa, B. (2007), Footwall drainage evolution in response to increasing fault displacement: Loreto fault, Baja California Sur, Mexico, *Geology*, v. 35, 651-654.
- (15) DeCelles, P.G., Carrapa, B. and Gehrels, G.E. (2007), Detrital Zircon U-Pb Ages Provide New Provenance and Chronostratigraphic Information from Eocene Synorogenic Deposits in Northwestern Argentina, *Geology*, v. 35, 323-326.
- (14) Mortimer, E., Carrapa, B., Coutand, I., Schoenbohm, Sobel, E., Gomez, J.S., Strecker, M.R. (2007), Compartmentalization of a foreland basin in response to plateau growth and diachronous thrusting: El Cajon-Campo Arenal basin, NW Argentina, *Geological Society of America Bulletin*, v. 119, 637-653.
- (13) Strecker, M.R., Alonso, R.N., Bookhagen, B., Carrapa, B., Hilley, G.E., Sobel, E.R., Trauth, M.H. (2007), Tectonics and Climate of the Southern Central Andes, *Annual Review Earth Planetary Sciences*, v. 35, 747-787.
- (12) Alonso, R.N., Carrapa, B., Coutand, I., Haschke, M., Hilley, G.E., Schoenbohm, L., Sobel, E. R., Strecker, M.R., Trauth, M.H. (2007) Tectonics, climate, and landscape evolution of the southern Central Andes: The Argentine Puna Plateau and adjacent Regions between 22° and 28°S lat. in Oncken, O., Chong, G., Franz, G., Giese, P., Götze, H.-J., Ramos, V., Strecker, M., and Wigger, P., editors, *The Andes - Active Subduction Orogeny: Frontiers in Earth Sciences*, Springer Verlag, Monograph Series 1, 265-283.
- (11) Carrapa, B., Sobel, E.R. and Strecker, M.R. (2006), Orogenic Plateau growth in the Central Andes: Evidence from sedimentary rock provenance and apatite fission track thermochronology in the Fiambala Basin, southernmost Puna Plateau margin (NW Argentina), *Earth and Planetary Science Letters*, v. 247, 82-100.
- (10) Coutand, I., Carrapa, B., Deeken, A., Schmitt, A.K., Sobel, E.R., Strecker, M.R. (2006), Orogenic plateau formation and lateral growth of compressional basins and ranges: insights from sandstone petrography and detrital apatite fission-track thermochronology in the Angastaco Basin, NW Argentina, *Basin Research*, v. 18, 1-26.
- (9) Carrapa, B., Adelman, D., Hilley, G., Mortimer, E., Strecker, M.R. and Sobel, E.R. (2005), Oligocene uplift, establishment of internal drainage and development of plateau morphology in the southern Central Andes, *Tectonics*, v. 24, doi:10.1029/2004TC001762.
- (8) Carrapa, B. and Garcia Castellanos, D. (2005), Western Alpine back-thrusting as subsidence mechanism in the Tertiary Piedmont Basin (NW Italy), *Tectonophysics*, v. 406, 197-212.
- (7) Carrapa, B., Wijbrans, J., Bertotti, G. (2004) Detecting differences in cooling/exhumation pattern within the Western Alpine arc through  $^{40}\text{Ar}/^{39}\text{Ar}$  thermochronology on detrital minerals (Tertiary Piedmont Basin, NW Italy), in *Detrital thermochronology-Provenance analysis, exhumation and landscape evolution of mountain belts*, Eds. Bernet M. &

Spiegel, Geological Society of America, 378, chapter 5.

- (6) Carrapa, B., Di Giulio, A. and Wijbrans, J. (2004), The early stages of the Alpine collision: an image from the detrital thermochronology of Upper Eocene-Lower Oligocene sediments in the Alps-Appennines knot area, *Sedimentary Geology*, v. 171, 181-203.
- (5) Barbieri, C., Carrapa, B., Di Giulio, A., Wijbrans, J. and Murrell, G. (2003), Provenance of Oligocene syn-orogenic sediments of the Ligurian Alps (NW Italy): inferences on the belt age and its cooling history, *International Journal of Earth Sciences*, v. 92, 758-778.
- (4) Carrapa, B., Bertotti, G. and Krijgsma, W. (2003) Subsidence, stress regime and rotation(s) of a tectonically active sedimentary basin within the Western Alps: the Tertiary Piedmont Basin (Alpine domain, Northwest Italy), in *Tracing Tectonic deformation using the Sedimentary Record*, Eds. T. McCann & A. Saintot, Geological Society of London, 208, 205-227.
- (3) Carrapa, B., Wijbrans, J. and Bertotti, G. (2003), Episodic exhumation in the Western Alps, *Geology*, v. 31, 601-604.
- (2) Di Giulio, A., Carrapa, B., Fantoni, R., Gorla, L. & Valdisturlo, A. (2001), Middle Eocene-to Early Miocene sedimentary evolution of the western-Lombardian segment of the South-Alpine foredeep (Italy), *International Journal of Earth Sciences*, v. 90, 534-548.
- (1) Carrapa, B., Di Giulio, B. (2001), The Sedimentary record of the exhumation of a granitic intrusion into a collisional setting: a case study from Southern Alps (Gonfolite Group, Italy), *Sedimentary Geology*, v. 139, 217-228.

#### Electronic journals

- (2) Carrapa, B. and Wijbrans, J. (2003), Cretaceous  $^{40}\text{Ar}/^{39}\text{Ar}$  detrital mica ages in Tertiary sediments shed a new light on the Eo-Alpine evolution, *Journal of the Virtual Explorer*, v. 13, 43- 55.
- (1) Carrapa, B. (2010), Detrital dating: a powerful approach to resolve tectonics and erosion, invited review article in *Outcrop*, Newsletter of the Rocky Mountain Association of Geologists, November issue.

#### Theses

- Ph.D. Dissertation: Tectonic evolution of an active orogen as reflected by its sedimentary record, an integrated study of the Tertiary Piedmont Basin (Internal Western Alps, NW Italy), Ph.D. Thesis, ISBN 90-9016220-8, 2003, Amsterdam, 177 pp. Advisers: Jan Wijbrans, Giovanni Bertotti, Sierd Cloetingh, Paul Andriessen.
- M.S. Dissertation: The Gonfolite Lombarda (south Alpine foreland basin) in the Como area; petrographic-sedimentological study of the Como Conglomerates and the Val Grande Sandstones, M.S. Thesis, 1998, Earth Science Department, University of Pavia, 222 pp. Adviser: Andrea DiGiulio.

---

#### SELECTED INVITED SCHOLARLY PRESENTATIONS

- March 2025, University of Wyoming invited speaker, "The sedimentary record of crustal bobbing".
- September 2024, Geological Society of America, Anaheim, CA, Invited talk in session T115, Proxy and Model Records of Cenozoic Climates in South America), "The foreland basin record of Cenozoic climate from the Central Andes".
- May 2024, Special Invited Lecture on "the Erosional Record of the Himalaya", Geological Society of India.

- October 2023, University of Pavia, Italy, workshop: “Dynamics and Sedimentary Systems in Collisional Zones”.
- February 1, 2023, Invited speaker in the Monsoonal seminar (organized by Peter Clift), “Continental Record of Cenozoic Paleoclimate from the Central Andes”  
[https://youtube.com/live/FH\\_ifbbOjkh?feature=share](https://youtube.com/live/FH_ifbbOjkh?feature=share)
- November 17, 2022, UT Austin, “Rising from the ashes: marine and continental feedback responses to Andean volcanism and Miocene climate”.
- October 3, 2022, USC, “Rising from the ashes: marine and continental feedback responses to Andean volcanism and Miocene climate”.
- March 2022, NAU, “Rise of Cerro Aconcagua & implications for the evolution of crustal thickness in the southern Central Andes”.
- December 2021, Western Washington University, “Rise of Cerro Aconcagua & implications for the evolution of crustal thickness in the southern Central Andes”.
- October 2020, Geological Society of America Meeting, Carrapa, B. & co-authors “Resolving source-to-sink dynamics by multi-proxy data from the North and South America sedimentary archives”, session T49.
- December 2019, American Geophysical Union, San Francisco, How Far Does the Keel Go? Archean Basement Control on the Laramide Orogeny, AGU 2019, San Francisco.
- August 15, 2019, Arizona Senior Academy, Tucson, “Climate, grasses and teeth: The evolution of South America mammals”.
- December 6, 2017, UC Boulder, “Erosional and sedimentary records of uplift and climate in the Central Andes”.
- November 2017, UAScience - SaddleBrooke Science Café, “Earth's Greatest Mountains: the Rise and Demise of Extreme Topography”.
- October 2016, Geological Society of America Meeting, Timing of exhumation of Laramide ranges in Montana and Wyoming and implications for flat-slab subduction processes, Geological Society of America Abstracts with Programs. Vol. 48, No. 7, doi: 10.1130/abs/2016AM-284129.
- December 2015, American Geophysical Union, San Francisco, Detrital Thermochronology of the Indus-Yarlung suture zone and implications for the tectonic and surface evolution of southern Tibet, T24B-03.
- November 2015, University of Oregon, “Exhumation of the Sevier and Laramide regions and implications for tectonics of the Western US”.
- May 5, 2015, University of Grenoble, France, “Exhumation history of southern Tibet and the Himalaya and tectono-climatic implications”.
- April 2, 2015, ETH, Zurich, Switzerland, “Cenozoic tectonic history of the Central Andes revealed by multi-proxy geochemical analyses”.

---

## AWARDED GRANTS AND CONTRACTS

- (25) 2020-2024, (Carrapa, lead PI): P2C2: Collaborative Research: Rapid Climate Change During the Miocene as a benchmark to understand future climate change, \$301,654.
- (24) 2020-2025, (Carrapa, co-PI): TANGO: TransAndean Great Orogeny, NSF, Integrated Earth System program, \$2,205,238.
- (23) 2019-2023, (Carrapa, lead PI): Timing of cooling and exhumation of Laramide uplifts informs models of flat-slab subduction, NSF-Tectonics EAR- 1919179, \$395,897

- (22) 2018-2021, Collaborative Research (Carrapa, Co-PI): Are Remnants of the Tibetan Plateau Preserved in the Southern Himalayan Thrust Belt?, NSF-Tectonics EAR- 1763432, \$521,973.
- (21) 2015-2018 (no cost extension till 2020), Collaborative Research (Carrapa, Co-PI): Tectonic Significance of Long Run-Out Coarse-Grained Facies in the Cordilleran Foreland Basin, NSF-Tectonics EAR-1524151, \$220,000.
- (20) 2014-2017, Collaborative Research (Carrapa, Co-PI): Investigating Mesozoic Deformation in the Pamir: Implications for Crustal Thickening in the Pamir and the Evolution of the Tibetan Orogen, NSF-Tectonics EAR-14501917, \$332,241.
- (19) 2014-2015, (Carrapa, lead PI) Uplift of Cerro Aconcagua in Argentina and implications for Andean mountain building, National Geographic Society, #9624-14, \$ 25,000.
- (18) 2014-2016, Collaborative Research (Carrapa, Co-PI): Did the Pamir Gneiss Domes and Salient form by Northward Underthrusting of India or Southward Subduction and Rollback of Asia?, NSF- Tectonics EAR-141974, \$206,000.
- (17) 2013-2014 (Carrapa, lead PI) Tectonic and sedimentary evolution of the Argentine Cordillera from ~33S to 40S, Exxon Mobil Research, \$33,000.
- (16) 2013-2014 (Carrapa, lead PI) Mesozoic-Cenozoic basin evolution of the Tajik depression and surrounding regions, \$186,697, Exxon Mobil Exploration.
- (15) 2012-2015, Collaborative research (Carrapa, Co-PI): Erosion and Exhumation History of the Nepalese Himalaya Since Early Miocene Time: Constraints on Kinematic History and Geodynamic Models, NSF-Tectonics, \$580,242.
- (14) 2011-2016, Collaborative Research (Carrapa, Co-PI): The suturing process: Insight from the India-Asia collision zone, NSF-Continental dynamics, \$293,623 (Carrapa's budget).
- (13) 2010-2013, Convergent system analysis (COSA) Long-run-out-project (\$72,134; Carrapa's budget)
- (12) 2009-2013, Collaborative Research (Carrapa, lead PI): In pursuit of missing Andean lithosphere: constraining Late Cenozoic crust-mantle processes in the Puna Plateau, Central Andes, NSF- Tectonics, EAR-0911577, \$326,140.
- (11) 2008-2013, (Carrapa, lead PI): Outcrop study of Sego Formation - a "New" analog for tidal sand deposition, Northwestern Colorado, Shell International Exploration and Production Inc., \$200,000.
- (10) 2010, (Carrapa, lead PI) International workshop: Deep intracontinental subduction in the Pamir; NSF Continental Dynamics, \$39,000.
- (9) 2009-2011, (Carrapa, Co-PI) CO<sub>2</sub> sequestration in depleted compartmentalized gas fields. The key to deploying clean coal technology in the Powder River Basin, Wyoming, Wyoming Geological Society/School of Energy Resources, \$200,000.
- (8) 2008, (Carrapa, lead PI) Indo-Asia collision and the rise of the Pamir: New insights from Tajikistan, National Geographic Exploratory Research Grant, \$25,000.
- (7) 2008, (Carrapa, lead PI) Exploring Indo-Asia collision, the rise of the Pamir and dynamics of foreland basin formation: a record from Tajikistan, Basic Research Grant, A & S, UW, \$2,500.
- (6) 2008, (Carrapa, lead PI) Indo-Asia collision and the rise of the Pamir: new insights from Tajikistan, International Travel Grant, A & S, UW, \$2,000.
- (5) 2007-2010, (Carrapa, lead PI) Collaborative research project: Stratigraphic Signatures of Orogeny: Assessing the Timing of Initial Andean Crustal Shortening, NSF- Tectonics, EAR-0710724, \$133,718.

- (4) 2007-2009, (Carrapa, co-PI) Collaborative research project: Climatic and Tectonic Controls on Sedimentation and Incision in the Marginal Basins of the Southern Puna Plateau, National Science Foundation (Tectonics), EAR-0635630, \$138,189.
- (3) 2007-2011, (Carrapa, co-PI) Collaborative Research: Foreland basin development in NW Argentina; implications for the timing and mechanisms of mountain building in the Central Andes, € 750,000 (\$ 1,060,392), Sofia Kovalevskaja Award, Alexander von Humboldt Foundation.
- (2) 2006-2007, (Carrapa, lead PI) Tertiary orogenic evolution of the southern Central Andes as reflected by the detrital record preserved in the Puna Plateau and Eastern Cordillera of NW Argentina. DFG (German Research Foundation), CA 481-5-1, \$197,000.
- (1) 2003-2005, (Carrapa, lead PI) Plateau formation in a non-collisional mountain belt: The intra-Andean Puna Plateau, NW Argentina, Alexander von Humboldt Foundation, \$121,660.

---

## TEACHING EXPERIENCE (REGULARLY OFFERED CLASSES)

Stratigraphy and Sedimentology (Geos 302-required major class)  
 Historical Geology (Geos 255- required major class)  
 Field camp (Geos 414- required major class)  
 Basin Analysis (graduate level class)  
 Applications in Low-T thermochronology (graduate level class)  
 Science and Society (Honor's seminar)  
 National Parks (Geos 240-Honor's class)

---

## SELECTED PROFESSIONAL DEVELOPMENT and LEADERSHIP EXPERIENCE

### College and University level

Spring 2024-member of the APR committee for the Department of Mathematics  
 2023: co-chair of the search committee for the Director for the new School of Mining and Mineral Resources (Geosciences and Engineering)  
 2021: Arizona Leadership Institute Fellow  
 2020-2023: Member of the steering committee for HeadsUP (Heads Engaged in Advancing Departmental Strategies through Unifying Paradigms). Since 1996, HeadsUP, and other initiatives have served Heads, Chairs, and Directors on campus. The operational framework agreed upon more than 15 years ago still guides the organization's role and activities (<https://headsup.arizona.edu/>)  
 2018-2023: Geosciences representative for SEES – School of Earth and Environmental Sciences  
 2020: Member of the search committee for the new Dean of the College of Science, University of Arizona  
 2020: Member of the search committee for the new Director of Lunar and Planetary Science, University of Arizona  
 2017-Present: University of Arizona Honors students faculty representative for the Dept. of Geosciences  
 2013-2015: Member of the Review/Audit of annual review/post tenure review committee

### Department level

2018-August 2023: Department Head of Geosciences, University of Arizona.

2017: Search committee member for open position at Biosphere 2  
2017: Search committee member for open position in Paleoecology  
2017: Member of the ad Hoc committee for target of opportunity hire  
2016-Spring 2017: Award nomination committee member  
2016: Graduate admissions committee member  
2015: Faculty Performance Evaluation committee member  
2014: Graduate admission committee member  
2013: Faculty Performance Evaluation committee member  
2013: Graduate policy committee member

---

## **SELECTED NATIONAL AND INTERNATIONAL SERVICES and OUTREACH**

December 2024-current, member of the Editorial Board of Journal of South America Earth Sciences.  
September 2024-ongoing: member of the GeoArray committee, within SZ4D, in charge of developing the infrastructure, framework, and best practices for collecting large geologic datasets.  
2023-2024: member of the Collective Impact Committee (CIC) for SZ4D (Subduction zones in 4D: community-driven initiative for a long-term, interdisciplinary research program to define the limits and possibilities of predicting geohazards)  
2014-2023: Member of the International Thermochronology standing Committee and meeting organization committee  
2017 – 2019: GSA Bulletin Associate Editor  
2017 – 2019: NSF panel member  
2018: Member of GSA International award committee  
2013 – 2019: Member of the editorial board for Lithosphere  
March 2019: Member of the advisory board to the Provost of UT Austin for the selection of the new Dean for the Jackson School of Geosciences  
December 2015: Convener at AGU of the session: Building the Andes from mantle to surface dynamics  
Fall 2015: Member of the external departmental review committee for the Dept. of Geosciences at the University of Idaho  
2013: Member of the AGU Tectonophysics Meeting Committee  
August 2019: Public lecture at the Senior Academy of Tucson  
March 2019: Member of the advisory board to the Provost of UT Austin for the selection of the new Dean for the Jackson School of Geosciences  
2018 and 2015: Public lectures for Olli (Osher Lifelong Learning Institute at the University of Arizona), Climate, Grasses and Teeth: the Evolution of South American Mammals

---

## **GRADUATE STUDENTS COMMITTEES, ADVISING AND MENTORING**

### **Graduate Students**

#### *Current*

Priscilla Martinez (Ph.D. candidate)

Luke Basler (Ph.D. candidate)

*Past (graduated)*

Caden Howlett (Ph.D.)

Emilia Caylor (Ph.D.)

Sakinah Aisah Muhammad, U of A M.S. student

Scott Meek, U of A Ph.D. student, now lecturer at Snow College

Emilia Caylor, U of A M.S. student

Walter Afonso, U of A M.S. student

Susana Marisol Enrique Gonzales, U of A Ph.D. (co-advised with P. G. DeCelles) now Assistant Professor at Cal State Bernardino

Jay Chapman, U of A Ph.D. (co-advised with P. G. DeCelles) – now Associate Professor, UT El Paso

Andrea Stevens, U of A Ph.D.; now endowed chair-Assistant Professor at Indiana University

Simon Stickroth, U of A M.S. student

Shana Wolff, U of A M.S. student

Devon Orme, U of A PhD student; now Associate Professor at Montana State U.

Elizabeth Baggord, U of A Ph.D. student; now Associate Professor at Weber State University

Clayton Painter, U of A Ph.D. student

Claire Lukens, U. Wyoming M.S.

John Boyd, U. Wyoming M.S.

John Trimble, U. Wyoming M.S.

Carly York, U. Wyoming M.S.

Sharon Bywater, U. Wyoming M.S., now Assistant Prof. at the University of Northern Colorado

#### **Graduate Committee Memberships (excluding advised and co-advised students)**

*Current*

Amanda Anne Manoogian

*Past (graduated)*

Chance Ronemus, U of A Ph.D.

John He, U of A Ph.D.

Tshering Lama Sherpa, U of A Ph.D.

Felipe Ferroni, U of A Ph.D.

Emily Bowman, U of A Ph.D.

Liam P. O'Connor, U of A M.S.

Chris Clinkscale, U of A Ph.D.

Daniel Portner, U of A Ph.D.

Ryan Leary, U of A Ph.D.

Jack Gibbons, U of A Ph.D.

James Worthington, U of A Ph.D.

Drew Laskowski, U of A Ph.D.

Kate Metcalf, U of A Ph.D.

Edward Cross, U of A M.S.

Robin Canavan, U Wyoming M.S.

#### **External Graduate Committee Memberships**

Francesca Stendardi (Ph.D.), University of Bologna

Shelby Nicole Johnston (Ph.D.), University of Houston



Lorenzo Gimignani (Ph.D.), VU Amsterdam, The Netherlands

Gaia Siravo (Ph.D.) Roma 3, Italy

Mohammadi Ali (Ph.D.), ETH Zurich, Switzerland

**Undergraduate Students at the UA**

*Current*

Jacon Stevens

Manal F AlAhmad

*Past (graduated)*

Maggie Egan

Dan Collins

Joshua Smith

Anahi Carrera

Arthur Osakwe

Kaitlynn Walker

Muhammad Nur Addeen Amran

Mariah Christina Romero

Mohd Faiz Bin Hassim

Fariq Mustapha Shazanee

Jan Hauer (University of Potsdam)

Jan Arndt (University of Potsdam)

**Post-doctoral Advisees:**

Dr. Veledda Muller (current)

Dr. Gilby Jepson (Jan 2019-2022), U of A; now Assistant Prof. at Oklahoma University.

Dr. Julie Fosdick (Dec 2011-2013, U of A); now Associate Prof. at U Conn.

Dr. Majie Fan (2008-2010, U Wyoming); now Associate Prof. at the U. of Texas at Arlington

Dr. William Chris Krugh (2007-2010, U Wyoming); now Associate Prof. at Cal. State Bakersfield