

CURRICULUM VITAE

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EDUCATION

Ph.D. in Geology, California Institute of Technology, June 1986.
M.S. in Geology, University of Southern California, June 1981.
Summer Field Camp: Indiana University, 1978
B.S. in Geology: University of Arizona, September 1978

PROFESSIONAL EXPERIENCE

U.S. Geological Survey (W.A.E.), Alaskan Branch, 1981-1997
Exxon Production Research Co., Basin Analysis Section, 1980
Noranda Exploration Co., 1977
Laboratory of Isotope Geochemistry, University of Arizona, 1976

ACADEMIC EXPERIENCE

Professor; University of Arizona, 1985 to present. Courses taught include Physical Geology, Oceanography, Structural Geology, Cordilleran Tectonics, Geology of Arizona, Advanced Geologic Mapping, Regional Tectonics, Straigraphy and Sedimentology, and Geochronology.
Teaching Assistant; California Institute of Technology, 1981-1985
Teaching Assistant; University of Southern California, 1978-1980
Assistant Instructor; Indiana University, 1978

AWARDS

Elected Fellow of the American Geophysical Union, 2015
Member of Golden Key International Honour Society, 2012
Galileo Circle Fellow (College of Science, University of Arizona), 2012
Arthur L. Day Medal from the Geological Society of America, 2010
University of Arizona Distinguished Professor Award, 2005
Elected Fellow of the Geological Society of America, 2003
University of Arizona Provost's General Education Teaching Award, 2000
Geoscience Advisory Board Outstanding Faculty Award, 2000
College of Science Distinguished Advising Award, 1999
University of Arizona Innovations in Teaching Award, 1995
Shell Faculty Career Initiation Award, 1985 to 1988
Exxon Education Foundation Teaching Fellowship, 1982-1985

CURRENT RESEARCH INTERESTS & ACTIVITIES

Current research interests focus on the evolution of collisional and accretionary orogenic belts, and on the development of U-Pb geochronologic techniques. Current projects include field and geochronologic studies in SE Alaska, coastal British Columbia, Nepal, Tibet, and the Grand Canyon. I also oversee the Arizona LaserChron Center, an NSF facility that provides U-Th-Pb geochronology by LA-ICPMS.

PUBLICATIONS

2015

- Chen, X., Yin, A., Gehrels, G., Zhou, Q., and Huang, P., in review, Geochemical and Nd-Sr-Pb-O isotopic constrains on Permo-Triassic magmatism in the basement of the eastern Qaidam Basin, Northern Qinghai-Tibetan Plateau: Implications for Paleo-Tethys tectonics: *Journal of Asian Earth Sciences*.
- Cole, D., Myrow, P., Fike, D., Hakim, A., Gehrels, G., in review, Uppermost Devonian (Famennian) to Lower Mississippian events of the western U.S.: Stratigraphy, sedimentology, chemostratigraphy, and detrital zircon geochronology: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 427, p. 1-19.
- Colpron, M., Crowley, J., Gehrels, G., Long, D., Murphy, D., Beranek, L., and Bickerton, L., 2015, Birth of the northern Cordilleran orogen, as recorded by detrital zircons in Jurassic synorogenic strata and regional exhumation in Yukon: *Lithosphere*, v. 7 (5), p. 541-562.
- DeCelles, P., Carrapa, B., Horton, B., McNabb, J., Gehrels, G., and Boyd, J., 2015, The Miocene Arizaro Basin, central Andean hinterland: Response to partial lithosphere removal?: *Geological Society of America Memoir* 212, p. 359-385.
- DeCelles, P., Zandt, G., Beck, S., Currie, C., Ducea, M., Kapp, P., Gehrels, G., Carrapa, B., Quade, J., Schoenbohm, L., 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, p. 459-490.
- Einhorn, J., Gehrels, G., Vernon, A., and DeCelles, P., 2014, U-Pb zircon geochronology of Neoproterozoic–Paleozoic sandstones and Paleozoic plutonic rocks in the Central Andes (21°S–26°S): *Geological Society of America Memoir* 212, p. 115-124.
- Giesler, D., Gehrels, G., Pecha, M., White, C., Yokelson, I., and McClelland, W., in review, U-Pb and Hf isotopic analyses of detrital zircons from the Taku terrane, southeast Alaska: *Canadian Journal of Earth Sciences*.
- Holland, M.E., Karlstrom, K.E., Doe, M.F., Gehrels, G.E., Pecha, M., Shufeldt, O.P., Begg, G., Griffin, W.L. and Belousova, E., 2015, An imbricate midcrustal suture zone: The Mojave-Yavapai Province boundary in Grand Canyon, Arizona: *Geological Society of America Bulletin*, B31232-1.
- Horstwood, M.S.A., Kosler, J., Gehrels, G., Jackson, S., McLean, N., Paton, C., Pearson, N.J., Sircombe, K., Sylvester, P., Vermeesch, P., Bowring, J., Condon, D.J. and Schoene, B., 2015, Community-derived standards for LA-ICP-MS U-Th-Pb geochronology - uncertainty propagation, age interpretation and data reporting: *Chemical Geology*, in press.
- Ibanez-Mejia, M., Pullen, A., Arenstein, J., Gehrels, G., Valley, J., Ducea, M., Moram A., Pecha, M., and Ruiz, J., 2015, Unraveling crustal growth and reworking processes in complex zircons from orogenic lower-crust: The Proterozoic Putumayo Orogen of Amazonia: *Precambrian Research*, v. 267, p. 285-310.
- Kimbrough, D.L., Grove, M., Gehrels, G.E., Dorsey, R.J., Howard, K.A., Lovera, O., Aslan, A., House, P.K. and Pearthree, P.A., 2015, Detrital zircon U-Pb provenance of the Colorado River: A 5 my record of incision into cover strata overlying the Colorado Plateau and adjacent regions: *Geosphere*, v. 11 (6), p. 1719-1748.
- Lane, L.S., Cecile, M.P., Gehrels, G.E., Kos'ko, M.K., and Parrish, R.R., 2015, Geochronology and structural setting of Latest Devonian – Early Carboniferous magmatic rocks, Cape Kiber, northeast Russia: *Canadian Journal of Earth Sciences*, v. 52, p. 147-160.
- Lane, L.S., Gehrels, G.E. and Layer, P.W., 2015, Provenance and paleogeography of the Neruokpuk Formation, northwest Laurentia: An integrated synthesis: *Geological Society of America Bulletin*,

B31234-1.

- Mako, C.A., Williams, M.L., Karlstrom, K.E., Doe, M.F., Powicki, D., Holland, M.E., Gehrels, G. and Pecha, M., 2015, Polyphase Proterozoic deformation in the Four Peaks area, central Arizona, and relevance for the Mazatzal orogeny: *Geosphere*, v. 11 (6), pp.1975-1995.
- Navarro, E.L., Astini, R.A., Belousova, E., Guler, M.V. and Gehrels, G., 2015, Detrital zircon geochronology and provenance of the Chubut Group in the northeast of Patagonia, Argentina: *Journal of South American Earth Sciences*, v. 63, p. 149-161.
- Pecha, M., Gehrels, G., McClelland, W., Giesler, D., White, C., and Yokelson, I., 2015, Detrital zircon U-Pb geochronology and Hf isotope geochemistry of the Yukon-Tanana terrane, Coast Mountains, southeast Alaska: *Geosphere*, in press.
- Quade, J., Dettinger, M.P., Carrapa, B., DeCelles, P., Murray, K.E., Huntington, K.W., Cartwright, A., Canavan, R.R., Gehrels, G., and Clementz, M., 2015, The growth of the central Andes, 22° S–26° S: *Geological Society of America Memoir* 212, p. 277-308.
- Reiners, P., Thomson, S., Vernon, A., Willett, S., Zattin, M., Einhorn, J., Gehrels, G., Quade, J., Pearson, D., Murray, K., Cavazza, W., 2015, Low-temperature thermochronologic trends across the central Andes, 21°S-28°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, p. 215-249.
- Spencer, J.E., Ferguson, C.A., Johnson, B.J., Gehrels, G., Pecha, M., Doe, M., 2015, A partial compilation and database of U-Pb geochronologic data and sample locations in Arizona and southeastern-most California: *Arizona Geological Survey Digital Information Series* DI-46, 2 p., with ArcMap shapefile, Excel Workbook, and 2 appendices (data tables and location maps).
- White, C., Gehrels, G., Pecha, M., Giesler, D., Yokelson, I., McClelland, W., and Butler, R., 2015, U-Pb and Hf isotope analysis of detrital zircons from Paleozoic strata of the southern Alexander terrane (southeast Alaska): *Lithosphere*, in press.
- Yokelson, I., Gehrels, G., Pecha, M., Giesler, D., White, C., and McClelland, W., 2015, U-Pb and Hf isotope analysis of detrital zircons from Mesozoic strata of the Gravina belt, southeast Alaska: *Tectonics*, v. 34 (10), p. 2052-2066.

2014

- Andreichev, V.L., Soboleva, A.A., and Gehrels, G., 2014, U–Pb Dating and Provenance of Detrital Zircons from the Upper Precambrian Deposits of North Timan: *Stratigraphy and Geological Correlation*, v. 22 (2), p. 147–159.
- Benyon, C., Leier, A., Leckie, D.A., Webb, A., Hubbard, S.M., and Gehrels, G., 2014, Provenance of the Cretaceous Athabasca Oil Sands, Canada: Implications for Continental-Scale Sediment Transport: *Journal of Sedimentary Research*, v. 84 (2), p. 136-143.
- Burton, M.M., Muniz, A.A., Abbott, P.L., Kimbrough, D.L., Haproff, P.J., Gehrels, G.E., and Pecha, M., 2014, Sourcing sandstone cobble grinding tools in southern California using petrography, U–Pb geochronology, and Hf isotope geochemistry: *Journal of Archaeological Science*, v. 50, p. 273-287.
- Carrapa, B., Mustapha, F.S., Cosca, M., Gehrels, G., Schoenbohm, L.M., Sobel, E.R., and Goodman, P., 2014, Multisystem dating of modern river detritus from Tajikistan and China: Implications for crustal evolution and exhumation of the Pamir: *Lithosphere*, v. 6 (6), p. 443-455.
- DeCelles, P.G., Kapp, P., Gehrels, G.E., and Ding, L., 2014, Paleocene-Eocene foreland basin evolution in the Himalaya of southern Tibet and Nepal: Implications for the age of initial India-Asia collision: *Tectonics*, v. 33 (5), p. 824–849.
- Gehrels, G.E., 2014, Detrital zircon U-Pb geochronology applied to tectonics: *Annual Review of Earth*

and Planetary Sciences, v. 42, p. 127-149.

- Gehrels, G. and Pecha, M., 2014, Detrital zircon U-Pb geochronology and Hf isotope geochemistry of Paleozoic and Triassic passive margin strata of western North America: *Geosphere*, v. 10 (1), p. 49-65.
- Ibanez-Mejia, M., Gehrels, G.E., Ruiz, J., Vervoort, J.D., Eddy, M.P., and Li, C., 2014, Small-volume baddeleyite (ZrO₂) U-Pb geochronology and Lu-Hf isotope geochemistry by LA-ICP-MS: Techniques and applications: *Chemical Geology*, v. 384, p. 149-167.
- Lane, L.S., and Gehrels, G.E., 2014, Detrital zircon lineages of late Neoproterozoic and Cambrian strata, NW Laurentia: *Geological Society of America Bulletin*, v. 126 (3-4), p. 398-414.
- Leary, R., DeCelles, P., Gehrels, G., and Morriss, M., 2014, Fluvial deposition during transition from flexural to dynamic subsidence in the Cordilleran foreland basin: Ericson Formation, Western Wyoming, USA: *Basin Research*, 10.1111/bre.12085.
- Mahon, R.C., Dehler, C.M., Link, P.K., Karlstrom, K.E., and Gehrels, G.E., 2014, Detrital zircon provenance and paleogeography of the Pahrump Group and overlying strata, Death Valley, California: *Precambrian Research*, v. 251, p. 102-117.
- Mahon, R.C., Dehler, C.M., Link, P.K., Karlstrom, K.E., and Gehrels, G.E., 2014, Geochronologic and stratigraphic constraints on the Mesoproterozoic and Neoproterozoic Pahrump Group, Death Valley, California: A record of the assembly, stability, and breakup of Rodinia: *Geological Society of America Bulletin*, v. 126 (5-6), p. 652-664.
- Nelson, J., Diakow, L., Mahoney, B., Gehrels, G., van Staal, C., Karl, S., Pecha, M., and Angen, J., 2014, Geology of the north and mid-coast regions, British Columbia: British Columbia Geological Survey, Open-File 2014-2.
- Painter, C.S., Carrapa, B., DeCelles, P.G., Gehrels, G.E., and Thomson, S.N., 2014, Exhumation of the North American Cordillera revealed by multi-dating of Upper Jurassic–Upper Cretaceous foreland basin deposits: *Geological Society of America Bulletin*, v. 126, no. 11-12, p. 1439-1464
- Pierce, E., Hemming, S., Williams, T., van de Flierdt, T., Thomson, S.N., Reiners, P.W., Gehrels, G.E., Brachfeld, S.A., Goldstein, S.L., 2014, A comparison of detrital U-Pb zircon, ⁴⁰Ar/³⁹Ar hornblende, and ⁴⁰Ar/³⁹Ar biotite ages in marine sediments off East Antarctica: implications for the geology of subglacial terrains and provenance studies: *Earth-Science Reviews*, v. 138, p. 156-178.
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- Siddoway, C.S., and Gehrels, G.E., 2014, Basement-hosted sandstone injectites of Colorado: A vestige of the Neoproterozoic revealed through detrital zircon provenance analysis: *Lithosphere*, v. 6 (6), p. 403-408.
- Tochilin, C., Gehrels, G., Nelson, J., and Mahoney, B., 2014, U-Pb and Hf isotope analysis of detrital zircons from the Banks Island assemblage (coastal British Columbia) and southern Alexander terrane (southeast Alaska): *Lithosphere*, v. 6, p. 200-215.
- Volkmer, J.E., Kapp, P., Horton, B.K., Gehrels, G.E., Minervini, J.M., and Ding, L., 2014, Northern Lhasa thrust belt of central Tibet: Evidence of Cretaceous–Early Cenozoic shortening within a passive roof thrust system?: *Geological Society of America Special Paper 507*, p. 59-70.

2013

- Ding, L., Yang, D., Cai, F., Pullen, A., Kapp, P., Gehrels, G., Zhang, L., Zhang, Q., Lai, Q., Yue, Y., Shi, R., 2013, Provenance analysis of the Mesozoic Hoh-Xil-Songpan-Ganzi turbidites in northern Tibet: Implications for the tectonic evolution of the eastern Paleo-Tethys Ocean: *Tectonics*, v. 32 (1) p. 34-48.

- Doe, M., Jones, J., Karlstrom, K., Dixon, B., Gehrels, G., Pecha, M., 2013, Using detrital zircon ages and Hf isotopes to identify 1.48–1.45 Ga sedimentary basins and fingerprint sources of exotic 1.6–1.5 Ga grains in southwestern Laurentia: *Precambrian Research*, v. 231, p. 409-421.
- Fornash, K., Patchett, J., Gehrels, G., Spencer, J., 2013, Evolution of granitoids in the Catalina metamorphic core complex, southeastern Arizona: U–Pb, Nd, and Hf isotopic constraints: *Contributions to Mineralogy and Petrology*, v. 165 (6), p. 1295-1310.
- Gibson, T., Myrow, P., Macdonald, F., Minjin, C., Gehrels, G., 2013, Depositional history, tectonics, and detrital zircon geochronology of Ordovician and Devonian strata in southwestern Mongolia: *Geological Society of America Bulletin*, v. 125 (5-6), p. 877-893.
- Guynn, J., Tropper, P., Kapp, P., and Gehrels, G., 2013, Metamorphism of the Amdo metamorphic complex, Tibet: implications for the Jurassic tectonic evolution of the Bangong suture zone: *Journal of Metamorphic Geology*, v. 31 (7), p. 705-727.
- Kosler, J., Slama, J., Belousova, E., Corfu, F., Gehrels, G., Gerdes, A., Horstwood, M., Sircombe, K., Sylvester, P., Tiepolo, M., Whitehouse, M., Woodhead, J., 2013, U-Pb Detrital Zircon Analysis – Results of an Inter-laboratory Comparison: *Geostandards and Geoanalytical Research*, v. 37 (3), p. 243-259.
- Kuznetsov, N., Soboleva, A.A., Miller, E.L., Udoratina, O.V., Gehrels, G., and Romanyuk, T.V., 2013, First U/Pb datings of detrital zircons from Middle and Upper Paleozoic sandstones of the Polar Urals: Testing the regional tectonic models: *Doklady Earth Sciences*, v. 451 (1), p. 692-697.
- Laskowski, A.K., DeCelles, P.G., and Gehrels, G.E., 2013, Detrital Zircon Geochronology of Cordilleran Retroarc Foreland Basin Strata, western North America: *Tectonics*, v. 32, p. 1-22.
- May, S., Gray, G., Summa, L., Stewart, N., Gehrels, G., Pecha, M., 2013, Detrital zircon geochronology from the Bighorn Basin, Wyoming, USA: Implications for tectonostratigraphic evolution and paleogeography: *Geological Society of America Bulletin*, v. 125 (9-10), p. 1403-1422.
- May, S., Gray, G., Summa, L., Stewart, N., Gehrels, G., Pecha, M., 2013, Detrital zircon geochronology from Cenomanian–Coniacian strata in the Bighorn Basin, Wyoming, U.S.A.: Implications for stratigraphic correlation and paleogeography: *Rocky Mountain Geology*, v. 48 (1), p. 41-61.
- McQuarrie, N., Long, S.P., Tobgay, T., Nesbit, J.N., Gehrels, G., Ducea, M.N., 2013, Documenting basin scale, geometry and provenance through detrital geochemical data: Lessons from the Neoproterozoic to Ordovician Lesser, Greater, and Tethyan Himalayan strata of Bhutan: *Gondwana Research*, v. 23 (4), p. 1491-1510.
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- Pearson, D.M., Kapp, P., DeCelles, P.G., Reiners, P.W., Gehrels, G.E., Ducea, M.N., and Pullen, A., 2013, Influence of pre-Andean crustal structure on Cenozoic thrust belt kinematics and shortening magnitude: Northwestern Argentina: *Geosphere*, v. 9 (6), p. 1766-1782.
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- Thomson, S.N., Reiners, P.W., Hemming, S.R., and Gehrels, G.E., 2013, The contribution of glacial erosion to shaping the hidden East Antarctic landscape: *Nature Geoscience*, v. 6, p. 203-207.

2012

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