

CURRICULUM VITAE

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EDUCATION

Stanford University: Ph.D., Geological and Environmental Sciences, 1995 (advisor: E. Miller)
Occidental College: B.A., Geology, 1990

EMPLOYMENT

New Mexico State University, Department of Geological Sciences

Professor, August 15, 2011–Present
Associate Professor: July 1, 2005–August 14, 2011
Assistant Professor: July 1, 1999–June 30, 2005

Southern Rift Institute in Geological Sciences at New Mexico State University

Director, November 27, 2017–Present

New Mexico State University, Department of Criminal Justice

Interim Department Head, July 1, 2016–June 30, 2017

University of North Carolina, Chapel Hill, Department of Geological Sciences

Instructor: July 1, 1998–June 30, 1999

University of Wisconsin, Madison, Department of Geoscience

Weeks Post-Doctoral Scholar and Visiting Assistant Professor: July 1, 1996–June 30, 1998

University of Alaska, Fairbanks, Department of Geology and Geophysics

Instructor: January 1, 1996–May 30, 1996

Stanford University, Department of Geological and Environmental Sciences

Post-Doctoral Researcher: June 1, 1995–December 31, 1995

RESEARCH INTERESTS

Structural geology, tectonics, geochronology, isotope geochemistry, and petrology, including: tectonic processes (accretion and erosion) in subduction complexes; origin of gneiss domes in the middle crust; relationship between magmatism and deformation in high-grade metamorphic complexes; Mesozoic tectonics of the Bering Strait region; Proterozoic tectonic history of the southwest U.S.; Cretaceous foreland basin sedimentation and tectonics; volcanism in the Mogollon-Datil volcanic field.

METHODS AND TOOLS

Field mapping; structural analysis; petrology; U-Pb isotopic dating of zircon, monazite, and titanite using SHRIMP and LA-ICPMS; detrital zircon geochronology; $^{40}\text{Ar}/^{39}\text{Ar}$ thermochronology; Nd and Sr isotopic analysis of igneous rocks; Hf isotopic analysis of zircon; U-Th/He dating of zircon and apatite.

PUBLICATIONS (*Indicates student coauthor)

Manuscripts in Review

Gavel*, M.M., Amato, J.M., Ricketts, J.W., Kelley, S., Biddle*, J.M., and Delfin*, R.A.,
Thermochronological transect across the Basin and Range/Rio Grande rift transition:
Contrasting cooling histories in contiguous extensional provinces, submitted to *Geosphere*,
December, 2020.

All Refereed Publications

- Reade*, N.Z., Biddle*, J.M., Ricketts, J.W., and Amato, J.M., 2020, Zircon (U-Th)/He thermochronologic constraints on the long-term thermal evolution of southern New Mexico and western Texas, *Lithosphere*, v. 2020, p. 1-25, doi.org/10.2113/2020/8881315.
- Pavlis, T.L., Amato, J.M., Trop, J.M., Ridgway, K.D., Roeske, S.M., and Gehrels, G.E., 2020, Evidence for subduction polarity in ancient arcs: A call to integrate geological and geophysical approaches to decipher the Mesozoic tectonic history of the northern Cordillera: REPLY, *GSA Today*, v. 30, p. e51-e58, doi.org/10.1130/GSATG465Y.1.
- Lawton, T.F., Amato, J.M., Machin*, S.E.K., Gilbert*, J.C., and Lucas, S.G., 2020, Tectonic transition from Late Jurassic rifting to middle Cretaceous dynamic foreland, southwestern U.S. and northwestern Mexico, *Geological Society of America Bulletin*, v. 132, p. 2489-2516, doi.org/10.1130/B35433.1.
- Pavlis, T.L., Amato, J.M., Trop, J.M., Ridgway, K.D., Roeske, S.M., and Gehrels, G.E., 2019, Evidence for subduction polarity in ancient arcs: A call to integrate geological and geophysical approaches to decipher the Mesozoic tectonic history of the northern Cordillera, *GSA Today*, v. 29, no. 11, p. 4-10, doi.org/10.1130/GSATG402A.1.
- Amato, J. M., 2019, Detrital zircon ages from Proterozoic, Paleozoic, and Cretaceous clastic strata in southern New Mexico, *Rocky Mountain Geology*, v. 54, p. 19-32.
- Amato, J.M., Ottenfeld*, C.F., and Howland*, C.R., 2018, U-Pb geochronology of Proterozoic igneous and metasedimentary rocks in southern New Mexico: Post-collisional S-type granite magmatism, in Mack, G., Hampton, B., Witcher, J., Ramos, F., and Ulmer-Scholle, D., eds., *Las Cruces Country III: New Mexico Geological Society 69th Annual Fall Field Conference Guidebook*, p. 137-145.
- Creitz*, R.H., Hampton, B.A., Mack, G.H., and Amato, J.M., 2018, U-Pb geochronology from middle-late Eocene intermediate volcanic rocks of the Palm Park Formation and Orejon Andesite in south-central New Mexico, in Mack, G., Hampton, B., Witcher, J., Ramos, F., and Ulmer-Scholle, D., *Las Cruces Country III: New Mexico Geological Society Guidebook 69*, p. 147-157.
- Biddle*, J., Ricketts, J.W., and Amato, J.M., 2018, Constraining timing of extension in the southern Rio Grande Rift and Basin and Range using apatite and zircon (U-Th)/He thermochronology, in Mack, G., Hampton, B., Witcher, J., Ramos, F., and Ulmer-Scholle, D., *Las Cruces Country III: New Mexico Geological Society Guidebook 69*, p. 127-135.
- Vandyk*, T.M., Le Heron, D.P., Chew, D.M., Amato, J.M., Thirlwall, M., Hennig, J., Dehler, C.M., Castonguay, S.R., Knott, T., Tofaif, S., Ali, D.O., Manning, C.J., Busfield, M.E., Doepke, D., 2018, Proterozoic olistoliths masquerading as sills from Death Valley, California, *Journal of the Geological Society of London*, doi:10.1144/jgs2017-002.

- Amato, J. M., Akinin, V. V., Toro, J., and Hampton, B. A., 2017, Tectonic evolution of the Mesozoic South Anyui suture zone, eastern Russia: A critical component of paleogeographic reconstructions of the Arctic region—REPLY, *Geosphere*, v. 13, p. 1769-1773, doi:10.1130/GES01541.1.
- Morgan, G.S., Hulbert, R.C., Jr., Gottlieb*, E.S., Amato, J.M., Mack, G.H., and Jonell*, T.N., 2017, The tapir Tapirus (Mammalia: Perissodactyla) from the late Pliocene (early Blancan) Tonuco Mountain Local Fauna, Camp Rice Formation, Doña Ana County, southern New Mexico, *New Mexico Geology*, v. 39, p. 28-39.
- Lawton, T.F., and Amato, J. M., 2017, U-Pb ages of salt diapir xenoliths, La Popa basin: Implications for salt age in onshore Mexico salt basins, *Lithosphere*, v. 9, p. 745-758, doi: 10.1130/L658.1.
- Amato, J. M., Mack, G. H., Jonell*, T. N., Seager, W. R., and Upchurch, G. R., 2017, Onset of the Laramide orogeny and associated magmatism in southern New Mexico based on U-Pb geochronology, *Geological Society of America Bulletin*, v. 129, p. 1209-1226, doi: 10.1130/B31629.1.
- Day*, E. M., Pavlis, T. L., and Amato, J. M., 2016, Detrital zircon ages indicate an Early Cretaceous episode of blueschist facies metamorphism in southern Alaska: Implications for the Mesozoic paleogeography of the northern Cordillera, *Lithosphere*, v. 8, p. 451-462, doi:10.1130/L525.1.
- Rioux, M., Farmer, G. L., Bowring, S. A., Wooton, K. M., Amato, J. M., Coleman, D. S., and Verplanck, P., 2016, The link between volcanism and plutonism in epizonal magma systems: High-precision U-Pb zircon geochronology from the Organ Mountains caldera and batholith, New Mexico, *Contributions to Mineralogy and Petrology*, v. 171, p. 1-22, doi: 10.1007/s00410-015-1208-6.
- Howard*, A. L., Farmer, G. L., Amato, J. M., and Fedo, C. M., 2015, Zircon U-Pb ages and Hf isotopic compositions indicate multiple sources for Grenvillian detrital zircon deposited in western Laurentia, *Earth and Planetary Science Letters*, v. 432, p. 300-310, doi:10.1016/j.epsl.2015.10.018.
- Labrado*, A., Pavlis, T. L., Amato, J. M., and Day*, E. M., 2015, The tectonic significance of the Early Cretaceous forearc-metamorphic assemblage in south-central Alaska based on detrital zircon dating of sedimentary protoliths, *Canadian Journal of Earth Sciences*, v. 52, p. 1182-1190, doi: 10.1139/cjes-2015-0046.
- Amato, J. M., Toro, J., Akinin, V. V., Hampton, B. A., Salnikov, A. S., and Tuchkova, M., 2015, Tectonic evolution of the Mesozoic South Anyui suture zone, eastern Russia: A critical component of paleogeographic reconstructions of the Arctic region, *Geosphere*, v. 11, doi:10.1130/GES01165.1.
- Bright*, R. M., Amato, J. M., Denyszyn, S. W., and Ernst, R. E., 2014, U-Pb geochronology of 1.1 Ga diabase in the southwestern United States: Testing models for the origin of a post-Grenville large igneous province, *Lithosphere*, v. 6, p. 135-156, doi: 10.1130/L335.1.
- Amato, J. M., Aleinikoff, J. N., Akinin, V. V., McClelland, W. C., and Toro, J., 2014, Age, chemistry, and correlations of Neoproterozoic-Devonian igneous rocks of the Arctic Alaska-Chukotka terrane: An overview with new U-Pb ages, in Till, A. B., and Dumoulin, J. A., eds., *Reconstruction of a Late Proterozoic to Devonian continental margin sequence, northern Alaska, its paleogeographic significance, and contained base-metal sulfide deposits*, *Geological Society of America Special Paper 506*, p. 29-58, doi:10.1130/2014.2506.
- Till, A. B., Amato, J. M., Aleinikoff, J.N., and Bleick, H. A., 2014, U-Pb detrital zircon geochronology as evidence for the origin of the Nome Complex, northern Alaska, and implications for regional and trans-Arctic correlations, in Till, A. B., and Dumoulin, J. A., eds., *Reconstruction of a Late Proterozoic to Devonian continental margin sequence, northern Alaska, its paleogeographic significance, and contained base-metal sulfide*

- deposits, Geological Society of America Special Paper 506, p. 111-132, doi:10.1130/2014.2506.
- Till, A. B., Dumoulin, J.A., Ayuso, R.A., Aleinikoff, J.N., Amato, J. M., Slack, J. F., and Shanks, W.C. III, 2014, Reconstruction of an early Paleozoic continental margin based on the nature of protoliths in the Nome Complex, Seward Peninsula, Alaska, in Till, A.B., and Dumoulin, J.A., eds., Reconstruction of a Late Proterozoic to Devonian continental margin sequence, northern Alaska, its paleogeographic significance, and contained base-metal sulfide deposits, Geological Society of America Special Paper 506, p. 1-28, doi:10.1130/2014.2506.
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- Amato, J. M., and Becker*, T., 2012, Proterozoic rocks of the Caballo Mountains and Kingston Mining District: U-Pb geochronology and correlations within the Mazatzal province of southern New Mexico, in Lucas, S. G., McLemore, V. T., Lueth, V. W., Spielmann, J. A., and Krainer, K., eds., New Mexico Geological Society Guidebook, 63rd Field Conference, Warm Springs Region, p. 227-234.
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- Amato, J. M., and Mack, G. H., 2012, Detrital zircon geochronology from the Cambrian-Ordovician Bliss Sandstone, New Mexico: Evidence for contrasting Grenville-age and Cambrian sources on opposite sides of the Transcontinental Arch, Geological Society of America Bulletin, v. 124, p. 1826-1840, doi:10.1130/B30657.1.
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- Draut, A. E., Clift, P. D., Amato, J. M., Blusztajn, J., and Schouten, H., 2009, Arc-continent collision and the formation of continental crust—a new geochemical and isotopic record from the Ordovician Tyrone Igneous Complex, Ireland: *Journal of the Geological Society*, London, v. 166, p. 485-500; doi: 10.1144/0016-76492008-102.
- Lawton, T. F., Bradford*, I. A., Vega, F. J., Gehrels, G. E., and Amato, J. M., 2009, Provenance of Upper Cretaceous–Paleogene sandstones in the foreland basin system of the Sierra Madre Oriental, northwestern Mexico, and its bearing on fluvial dispersal systems of the Mexican Laramide Province, *Geological Society of America Bulletin*, v. 121, p. 820-836, doi:10.1130/B26450.1.
- Amato, J. M., Lawton, T. F., Mauel*, D., Leggett*, W., Gonzales-Leon, C. M., Farmer, G. L., and Wooden, J. L., 2009, Evidence from Paleoproterozoic igneous rocks and deformed Mesozoic strata for the presence of the Caborca block in Mexico by Early Jurassic Time: Implications for the Mojave–Sonora megashear hypothesis, *Geology*, v. 37, p. 75-78, doi:10.1130/G25240A.1.
- Amato, J. M., Boullion*, A. O., and Sanders*, A. E., 2008, Magmatism and metamorphism at 1.46 Ga in the Burro Mountains, southwestern New Mexico, in Mack, G., Witcher, J., and Lueth, V. W., eds., *New Mexico Geological Society Fall Field Conference Guidebook 59: Geology of the Gila Wilderness–Silver City area*, p. 107-115.
- Amato, J. M., and Boullion*, A. O., 2008, Late Cretaceous mafic magmatism in the Burro Mountains, in Mack, G., Witcher, J., and Lueth, V. W., eds., *New Mexico Geological Society Fall Field Conference Guidebook 59: Geology of the Gila Wilderness–Silver City area*, p. 56-58.
- Mack, G. H., Amato, J. M., and McLemore, V. T., 2008, Geology of the Burro Mountains Third-day road log from Silver City to the southern Burro Mountains on Highway 90 West, *New Mexico Geological Society 59th Fall Field Conference Guidebook*, p. 49-56.
- Amato, J. M., Boullion*, A. O., Serna*, A. M., Sanders*, A. E., Farmer, G. L., Gehrels, G. E., and Wooden, J. L., 2008, The evolution of the Mazatzal province and the timing of the Mazatzal orogeny: Insights from U-Pb geochronology and geochemistry of igneous and metasedimentary rocks in southern New Mexico, *Geological Society of America Bulletin*, v. 120, p. 328-346.
- Amato, J. M., Rioux, M. E., Kelemen, P. B., Gehrels, G. E., Clift, P. D., Pavlis, T. L., and Draut, A. E., 2007, U-Pb geochronology of detrital zircons and volcanic rocks from the Lower Jurassic Talkeetna Formation: Implications for the age of magmatism and inheritance in the Talkeetna Arc, in Ridgway, K. D., Trop, J. M., O'Neill, J. M., and Glen, J. M. G., eds., *Tectonic growth of a collisional continental margin: Crustal evolution of southern Alaska*, *Geological Society of America Special Paper 431*, p. 253-271.

- Amato, J. M., Foley*, C., Heizler, M., and Esser, R., 2007, $^{40}\text{Ar}/^{39}\text{Ar}$ and U/Pb geochronology, geochemistry, and tectonic setting of three episodes of Cretaceous-Eocene calc-alkaline magmatism in the Lake Clark Region, southwestern Alaska, in Ridgway, K. D., Trop, J. M., O'Neill, J. M., and Glen, J. M. G., eds., Tectonic growth of a collisional continental margin: Crustal evolution of southern Alaska, Geological Society of America Special Paper 431, p. 455-475.
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ABSTRACTS (2016-2021; *Indicates NMSU student coauthor)

- Roeske, S.M., Pavlis, T.L., Amato, J., and Trop, J., 2020, Mesozoic evolution of the northern Cordillera margin of Laurentia: What we know, what we don't know, and implications for lithosphere development, *Geological Society of America Abstracts with Programs*, v. 52.
- Vermillion*, K.B., Johnson, E.R., Ross, J.I., and Amato, J.M., 2020, Temporal and spatial variations of Eocene-Oligocene ignimbrite flare-up volcanism in south New Mexico, *Goldschmidt Conference abstract* 2677.

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- Gavel*, M.M., Amato, J.M., Ricketts, J.W., and Kelley, S.A., 2019, Different Cooling Histories in the Basin and Range and Rio Grande Rift of Southern New Mexico Revealed Using Low Temperature Thermochronology, Geological Society of America Abstracts with Programs. v. 51, no. 5, doi: 10.1130/abs/2019AM-336930.
- Wyatt*, M.R., Amato, J.M., Swenton*, V.M., and Jonell*, T.N., 2019, Correlating regional ignimbrites and establishing a connection between andesite and rhyolite volcanism, Schoolhouse Mountain Caldera, southwestern Mogollon-Datil volcanic field, New Mexico, Geological Society of America Abstracts with Programs. v. 51, no. 5, doi: 10.1130/abs/2019AM-340524.
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- Gavel*, M.M., Amato, J.M., Ricketts, J.W., and Kelley, S.A., 2019, Cooling histories of exhumed footwall fault blocks from the southern Rio Grande rift and eastern Basin and Range using U-Th/He thermochronology, New Mexico, New Mexico Geological Society Spring Meeting, Proceedings Volume, p. 41.
- Amato, J.M., Toro, J., and Miller, E.L., 2019, A History of Geologic Research on Seward Peninsula, Alaska, by Elizabeth Miller and Collaborators: Crustal Extension from Top to Bottom, Geological Society of America Abstracts with Programs, v. 51, no. 4, doi: 10.1130/abs/2019CD-329026.
- Reade*, N.Z., Ricketts, J.W., Mubako, S.T., Amato, J.M., and Gavel*, M.M., 2018, (U-Th)/He thermochronologic investigation of the long-term thermal history of Proterozoic rocks in west Texas and southern New Mexico: Geological Society of America Abstracts with Programs, v. 50, doi: 10.1130/abs/2018AM-324078.
- Amato, J.M., Lawton, T.F., Machin*, S.E.K., and Lucas, S.G., 2018, Cretaceous foreland-basin development on previously rifted crust in the southwestern U.S.: Far-field response to Guerrero arc collision, Geological Society of America Abstracts with Programs, v. 50, no. 5, doi: 10.1130/abs/2018RM-314341.
- Richard*, N., and Amato, J. M., 2018, Synextensional magmatism in the Prehistoric Trackways National Monument, southern Rio Grande rift, Geological Society of America Abstracts with Programs. v. 50, no. 5, ISSN 0016-7592, doi: 10.1130/abs/2018RM-314243.
- Reade*, N.Z., Ricketts, J.W., and Amato, J.M., 2018, Long-term thermal histories of rocks in the Rio Grande rift basin and range transition zone using zircon (U-Th)/He thermochronologic data, Geological Society of America Abstracts with Programs, v. 50, no. 5, doi: 10.1130/abs/2018RM-314195.
- Howland*, C.R., Amato, J.M., and Ottenfeld*, C.F., 2018, The Paleoproterozoic Mazatzal province of southern New Mexico: Insight from Hf isotope geochemistry of zircons, U-Pb zircon dating, and Nd whole-rock geochemistry, Geological Society of America Abstracts with Programs, v. 50, no. 5, doi: 10.1130/abs/2018RM-314287.
- Hampton, B.A., Mack, G.H., Creitz*, R.H., and Amato, J.M., 2018, New constraints on the middle–late Eocene (~46–36 ma) tectonic transition from late-stage Laramide deformation to bimodal rift volcanism (Rio Grande rift) in southern New Mexico, Geological Society of America Abstracts with Programs, v. 50, no. 5, doi: 10.1130/abs/2018RM-314411.
- Bonar*, A.L., Hampton, B.A., Mack, G.H., and Amato, J.M., 2018, Detrital zircon geochronology from early Permian synorogenic strata in New Mexico: Insights on uplift history and sediment dispersal during final stage Ancestral Rocky Mountain orogenesis, Geological

- Society of America Abstracts with Programs, v. 50, no. 5, doi: 10.1130/abs/2018RM-313906.
- Ricketts, J.W., Biddle*, J., and Amato, J.M., 2018, Patterns in Cenozoic extension along the Rio Grande rift Basin and Range transition in southern New Mexico from apatite and zircon (U-Th)/He thermochronology, Geological Society of America Abstracts with Programs, v. 50, no. 5, doi: 10.1130/abs/2018RM-314361.
- Gavel*, M.M., Amato, J.M., and Ricketts, J.W., 2018, The Timing of Neogene Extension in the Southern Rio Grande Rift and Southeastern Basin and Range Province Using Apatite (U/Th)-He Thermochronometry, New Mexico Geological Society Annual Spring Meeting, Proceedings Volume, p. 29.
- Reade*, N.Z., Biddle*, J.M., Ricketts, J.W., and Amato, J.M., 2018, GIS Analysis and (U-Th)/He Thermochronologic Investigation of Proterozoic Rocks in Southern New Mexico, New Mexico Geological Society Annual Spring Meeting, Proceedings Volume, p. 62.
- Bonar*, A.L., Hampton, B.A., Mack, G.H., and Amato, J. M., 2018, Sediment dispersal trends and timing of basement-block uplift during the early Permian phase of the Ancestral Rocky Mountains, New Mexico, New Mexico Geological Society Annual Spring Meeting, Proceedings Volume, p. 19.
- Dumoulin, J.A., and Amato, J.M., 2017, Petrologic, fossil, and detrital zircon data from Devonian–Triassic strata on St. Lawrence Island, Alaska: Links to northwestern Alaska and eastern Russia, Geological Society of America Abstracts with Programs, v. 49, no. 6, paper 29-12.
- Bonar*, A.L., Hampton, B.A., Mack, G.H., and Amato, J.M., 2017, Provenance and sediment dispersal trends from Early Permian strata of the Abo Formation: Implications for drainage networks and basin fill during the final phase of the Ancestral Rocky Mountain orogeny in New Mexico, Geological Society of America Abstracts with Programs, v. 49, no. 6, paper 43-5.
- Holland, M.E., Heizler, M.T., Amato, J.M., and Karlstrom, K.E., 2017, Maximizing the thermochronologic potential of muscovite through multiple diffusion domain modeling: Episodic $^{40}\text{Ar}^*$ loss in the Burro Mountains, southern New Mexico, Geological Society of America Abstracts with Programs, v. 49, no. 6, paper 352-5.
- Amato, J. M., Swenton*, V.M., McIntosh, W.C., and Jonell*, T.N., 2017, The “Box Canyon tuff” and its relationship to the Schoolhouse Mountain caldera, Mogollon-Datil volcanic field, southwest New Mexico, New Mexico Geological Society Annual Spring Meeting, Proceedings Volume, p. 13.
- Howland*, C., Amato, J. M., 2017, The Paleoproterozoic Mazatzal province of southern New Mexico: Insight from detailed field mapping and isotope geochemistry, New Mexico Geological Society Annual Spring Meeting, Proceedings Volume, p. 37.
- Swenton*, V.M., Amato, J. M., Jonell*, T.N., and McIntosh, W.C., 2017, The onset of rhyolite volcanism and subsequent collapse in the Schoolhouse Mountain caldera, Mogollon-Datil volcanic field, southwest New Mexico, New Mexico Geological Society Annual Spring Meeting, Proceedings Volume, p. 66.
- Creitz*, R. H., Hampton, B.A., Mack, G.H., and Amato, J. M., 2017, Sedimentology, stratigraphy, and geochronology from Early (?)–Middle Eocene, post-Laramide volcanic and volcanoclastic strata of the Palm Park formation in south-central New Mexico, New Mexico Geological Society Annual Spring Meeting, Proceedings Volume, p. 22.
- Amato, J. M., Ottenfeld*, C., and Heizler, M.T., 2016, The Mazatzal province in southern New Mexico: U-Pb dating of Paleoproterozoic rocks to assess magmatism, deposition,

- metamorphism, and deformation, Geological Society of America Annual Meeting, Abstracts with Programs, v. 48, no. 7, doi: 10.1130/abs/2016AM-281074.
- Swenton*, V.M., Jonell*, T.N., Amato, J. M., and McIntosh, W.C., 2016, The lifecycle of the Eocene-Oligocene Schoolhouse Mountain Caldera, Mogollon-Datil volcanic field, southwest New Mexico, Geological Society of America Annual Meeting, Abstracts with Programs, v. 48, no. 7, doi: 10.1130/abs/2016AM-280328.
- Creitz, R.H., Hampton, B.A., Mack, G.H., and Amato, J. M., 2016, Sedimentology, stratigraphy, and geochronology from Early (?)–Middle Eocene rocks of the Palm Park formation in south-central New Mexico, Geological Society of America Annual Meeting, Abstracts with Programs, v. 48, no. 7, doi: 10.1130/abs/2016AM-287394.
- Swenton*, V. M., Amato, J., and McIntosh, W., 2016, The Lifecycle of the Oligocene Schoolhouse Mountain Caldera, Southwest New Mexico, New Mexico Geological Society Annual Spring Meeting, Proceedings Volume, p. 64.

DEPARTMENT COLLOQUIA AND INVITED TALKS

- Northern Arizona University, Colloquium, 2019
New Mexico State University: Colloquium, 2014
Occidental College: Remsen Bird Lecture, 2012
University of Colorado, Boulder: Colloquium, 2012
New Mexico Institute of Technology: Colloquium, 2010
Michigan State University: Colloquium, 2009
West Virginia University: Colloquium, 2007
University of Texas, El Paso: Colloquium, 2007
Los Alamos Geological Society: Colloquium, 2006
Santa Fe Geological Society: Colloquium, 2006
Stanford University: Guest Speaker, 2005
El Paso Community College: Colloquium, 2003
New Mexico Institute of Technology: Colloquium, 2001
University of New Mexico: Colloquium, 2000
University of Texas, El Paso: Colloquium, 1999

FUNDING

National Science Foundation Grants

2016 EAR-Tectonics-1649840 (08/16-07/20, \$101,339): Collaborative Proposal: Testing Models for Extension in the Rio Grande Rift-Basin and Range Transition Zone of Southern New Mexico, PI Jeffrey Amato (collaborative research with Jason Ricketts, UTEP).

2008 EAR-Tectonics-0809608 (08/08-08/13, with 2-year no-cost extension, \$188,033): Collaborative Proposal: Determining triggers for subduction accretion and tectonic erosion in a Mesozoic accretionary complex, Alaska, PI Jeffrey Amato (collaborative research with Terry Pavlis, UTEP).

2003 EAR-Tectonics-0229565 (02/03-12/06, \$204,862): Sedimentary basin development and deformation adjacent to the Mojave-Sonora megashear, Sonora, Mexico, PI's Jeffrey Amato and Tim Lawton, NMSU.

Federal and State Grants

- 2018 B.L.M. Grant (2 years, \$17,640): "Resource Management Planning Support for Organ Mountains Desert Peaks and Prehistoric Trackways National Monuments"
- 2016 B.L.M. Grant (4 years, \$20,000): "Studying the geology of NCLS Unit Prehistoric Trackways National Monument (PTNM), Southern New Mexico"
- 2007 U.S.G.S. EDMAP Grant (1 year, \$30,000): "Geologic mapping of the Bendeleben metamorphic complex, Seward Peninsula, Alaska"
- 2006 U.S.G.S. EDMAP Grant (1 year, \$38,200): "Geologic mapping of the Bendeleben gneiss dome, Seward Peninsula, Alaska"
- 2005 U.S.G.S. EDMAP Grant (1 year, \$23,040): "Geologic mapping of the Kugruk fault zone, Seward Peninsula, Alaska"
- 2005 New Mexico STATEMAP Grant (1 year, \$7150): "Geologic mapping of the Alamogordo South Quadrangle"

TEACHING

Classes Taught

Structural Geology, Field Geology

Natural Hazards, Introductory Geology

Geochronology (graduate), Tectonics of the Southwest U.S. Seminar (graduate)

STUDENT ADVISING

Current M.S. Students

- Allison Mrotek, Petrogenesis of the ~1.4 Ga plutons in southern New Mexico
- Mike Wyatt, Magmatic Evolution in the Schoolhouse Mountain Caldera.

M.S. Theses Supervised (with thesis title and current employment, if known)

- Michelle Gavel, 2019: Low-temperature thermochronological constraints on Neogene extension in the Rio Grande rift and Basin and Range of southern New Mexico. Currently a geologist at the Alaska Division of Geological and Geophysical Surveys, Fairbanks, Alaska.
- Nick Richard, 2019: Cenozoic magmatism in the Rio Grande rift: A case study from the Prehistoric Trackways National Monument. Currently a Ph.D. candidate at University of Nebraska, Lincoln.
- Colby Howland, 2018: Influence of inherited crust on the southern Mazatzal province intrusive rocks: Evidence from zircon xenocrystic core ages and isotope geochemistry. Currently employed by Golder and Associates in New Hampshire.
- Vanessa Swenton, 2017: Lifecycle of the Schoolhouse Mountain caldera, Burro Mountains, New Mexico. Currently a Ph.D. candidate at Portland State University.

- Chelsea Ottenfeld, M.S., 2015: The Paleoproterozoic Mazatzal province in southern New Mexico: Magmatism, sedimentation, metamorphism, and deformation. Currently employed by Los Alamos National Laboratory, New Mexico.
- Rosemary Williams, M.S., 2015: Proterozoic sedimentation and magmatism in the Redrock Area, Burro Mountains, southwest New Mexico. Currently employed by Continental Resources, Oklahoma City.
- Sean Gaynor, M.S., 2013: Petrology, geochronology, geochemistry, deformation, and field relationships of the 1470-1450 Ma Burro Mountain intrusive suite, southwestern New Mexico. Ph.D. from U. North Carolina Chapel Hill.
- Sarah Machin, M.S., 2013: Solving the Beartooth problem: Using U-Pb zircon geochronology to investigate the significance of mid-Cretaceous sandstones in New Mexico.
- Tara Jonell, M.S., 2013: Multiple crustal levels of Paleogene magmatism in the Burro Mountains, southwestern New Mexico. Ph.D. from Louisiana State University in 2017. Currently a Post-doc at Queensland University
- Ryan Bright, M.S., 2012: Age and origin of the Proterozoic diabase dikes of the southwest U.S.
- Caleb Worthman, M.S., 2011: A case study of an accretionary complex: The McHugh Complex and Associated Blueschist-Facies Rocks.
- Evan Kochelek, M.S., 2011: The Valdez Group: Investigation of flysch deposits in a Mesozoic accretionary complex. Currently employed by Parsley Energy, Austin, Texas.
- Eric Gottlieb, M.S., 2008: Geologic mapping and investigation of Cretaceous magmatism and deformation in the Bendeleben metamorphic complex, Seward Peninsula, Alaska. Currently employed by Kaiser-Francis Oil in Tulsa, Oklahoma.
- Cheryl Foley, M.S., 2006: Geochemistry and $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology of Cretaceous-Tertiary igneous rocks in the Lake Clark region, southwest Alaska. Currently employed by Associates of Cape Cod, Inc., East Falmouth, MA.
- Antonio Serna, M.S., 2006: Geochronology of the Proterozoic rocks of the southern San Andres Mountains, south-central New Mexico. Currently employed by Occidental Petroleum, Houston, TX.
- Andre Boullion, M.S., 2006: The tectonic history of Proterozoic crust in the Mazatzal Province: Geochronology, geochemistry, and kinematic analysis of the intrusive rocks of the Burro Mountains, southwest New Mexico. Currently employed by Shell, Houston, TX.
- Matthew Bogar, M.S., 2005: An integrated study of the origin, metamorphism, and structural evolution of the Tlikakila Complex, Lake Clark National Park, Alaska. Currently employed by New Mexico Environment Department, Environmental Health Division.
- Michael Cleary, M.S., 2004 : Quantitative strain analysis and timing of north-south extension in the Little Hatchet Mountains, southwest New Mexico. Currently employed by Blasland, Bouck & Lee, Inc., Lexington, KY.
- Amos Sanders, M.S., 2003: Age of Deposition and Metamorphism of Deformed Proterozoic Metasedimentary Rocks in the Burro Mountains, Southwest New Mexico. Currently employed by Hunt Oil Company, Dallas, TX.

Undergraduate Research Supervision

- Amanda Ables, 2019-2021: Age and Geochemistry of Rio Grande Rift Basalts
- Katie Moody, 2018-2020: Age and Geochemistry of Upper Bell Top Formation Tuffs
- Ana Gomez, 2014-2015: Geology of the Trackways National Monument
- Gabby St. Pierre, 2013-2014: Paleogene Magmatism of Southern New Mexico

- Joe Hecker, 2010-2012: 1.4 Ga Magmatism in the Burro Mountains; Dating clasts in the McHugh Complex, southern Alaska
- Trey Becker, 2006: Proterozoic Rocks of the Caballo Mountains: Geochronology and Petrology
- Carmen Athens, 2006: Zircon ages from Rio Grande Rift xenoliths

PROFESSIONAL SOCIETY MEMBERSHIP

New Mexico Geological Society: 1999–Present
 Geological Society of America: 1990–Present

SERVICE

Professional Service

SG&T Division of GSA, Career Contribution Award Committee (2018-2020)
 Associate Editor, Geosphere (2010-2015)
 Associate Editor, Geological Society of America Bulletin (2007–2014)
 Member, New Mexico STATEMAP Advisory Committee (2007–2013)
 Past-President, New Mexico Geological Society (2006)
 President, New Mexico Geological Society (2004–2005)
 Vice-President, New Geological Society (2003)
 Treasurer, New Mexico Geological Society (2002)
 Member, National Science Foundation Tectonics Panel (2003)

University Service

Member, Faculty Senate (2006–2011)
 Chair, Grading System Revision Ad Hoc Committee (2010-2012)
 Chair, Viewing a Wider World Policy Revision Committee (2007-2008)
 Member, Search Committee for Senior VP of Administration and Finance (2010)

Departmental Service

Chair, Promotion and Tenure Committee (2012-2020)
 Graduate Advisor (2009–2012, 2013–2018)
 Webmaster (1999–2017, 2020-Present)
 Manager, Mineral Separation Lab (1999-Present)
 Alumni Liaison/Newsletter Editor (2013-2020)

ADMINISTRATION

Department Head, Interim, Criminal Justice, Arts and Sciences, NMSU (2016-2017)

AWARDS AND HONORS

GSA Fellow—Elected April 24, 2020

CIRES Fellowship—University of Colorado at Boulder, Cooperative Institute for Research in Environmental Sciences (CIRES), June 15, 2012–December 15, 2012 (Sabbatical)

Exceptional Reviewer—Geosphere (2010)

Award for Exceptional Achievements in Creative Scholarly Activity—NMSU University Research Council (2004)