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, 2017–2023
Associate Director, 2023-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; $^{40}Ar/^{39}Ar$ 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 Preparation/Review/Revision

Lucas, S.G., Nelson, W.J., Elrick, S.E., Krainer, K., Vachard, D., Barrick, J.E., Amato, J.M., Elrick, S.D., and Vachard, D., Geology of the Fra Cristobal Mountains, New Mexico, New Mexico Bureau of Geology and Mineral Resources Bulletin, in review, May 2024

Vermillion*, K.V., Johnson, E.R., Amato, J.M., Heizler, M.T., and Lente*, J., Onset and tempo of ignimbrite flare-up volcanism in the eastern and central Mogollon-Datil Volcanic Field, southern New Mexico, Geosphere. Revisions submitted to May 2024.

All Refereed Publications Published or In Press

Miller, E.L., Hudson, T.L., and Amato, J.M., 2024, The Mount Distin Assemblage: Proterozoic metasedimentary rocks in the Nome Complex of Seward Peninsula, Alaska: Potential ties to Baltica? Geological Society of America Bulletin, https://doi.org/10.1130/B37430.1.

Lucas, S.G., Krainer, K., Barrick, J.E., Vachard, D., Ottenfeld*, C.F., and Amato, J.M., 2023, Geology of the Mud Springs Mountains, Sierra County, New Mexico, New Mexico Museum of Natural History Bulletin, v. 92, 92 p.

Amato, J.M., Dumoulin, J.A., Gottlieb, E.S., and Moore, T.E., 2022, Detrital zircon ages from upper Paleozoic–Triassic clastic strata on St. Lawrence Island, Alaska: An enigmatic component of the Arctic Alaska-Chukotka microplate, Geosphere, https://doi.org/10.1130/GES02490.1.

Dumoulin, J.A., Amato, J.M., Gottlieb, E.S., Moore, T.E., 2022, Location data for petrographic samples and isotopic and age data from detrital zircon grains from selected rock samples from St. Lawrence Island and the western Brooks Range, Alaska: U.S. Geological Survey Data Release, https://doi.org/10.5066/P99PILIK

Gavel*, M.M., Amato, J.M., Ricketts, J.W., Kelley, S., Biddle*, J.M, and Delfin*, R.A., 2021, Thermochronological transect across the Basin and Range/Rio Grande rift transition: Contrasting cooling histories in contiguous extensional provinces, Geosphere, doi:10.1130/GES02381.1.

Ricketts, J.W., Amato, J.M., and Gavel*, M.M., 2021, The origin and tectonic significance of the Basin and Range–Rio Grande rift boundary in Southern New Mexico, USA, GSA Today, v. 31, p. 4-10, doi:10.1130/GSATG509A.1.

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.

Karlstrom, K.E., Williams, M.L., Heizler, M.T., Holland, M.E., Grambling, T.A., and Amato, J.M., 2016, U-Pb Monazite and $^{40}Ar/^{39}Ar$ data supporting polyphase tectonism in the Manzano Mountains: a record of both the Mazatzal (1.66-1.60 Ga) and Picuris (1.45 Ga) Orogenies, in Guidebook 67 - Geology of the Belen Area, Frey, B. A. et al., eds., New Mexico Geological Society 67th Annual Fall Field Conference Guidebook, p. 177–184.

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.

Amato, J. M., Pavlis, T. L., Clift, P. D., Kochelek*, E. J., Hecker*, J. P., Worthman*, C. M., and Day, E. M., 2013, Architecture of an accretionary complex as revealed by detrital zircon ages and lithologic variations: Evidence for subduction erosion in the Mesozoic Chugach terrane, southern Alaska, Geological Society of America Bulletin, v. 125, p. 1891-1911, doi:10.1130/B30818.1.

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.

Amato, J. M., Athens*, C., McIntosh, W., and Peters, L., 2012, U-Pb zircon ages from crustal xenoliths in a Pliocene basalt flow from the southern Rio Grande rift: Implications for the

timing of magmatism and extension, 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. 273-284.

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.

Clift, P. D., Wares, N. M., Amato, J. M., Pavlis, T. L., Hole, M. J., Worthman*, C., and Day, E., 2012, Evolving heavy mineral assemblages reveals changing exhumation and trench tectonics in the Mesozoic Chugach accretionary complex, south-central Alaska, Geological Society of America Bulletin, v. 124, p. 989-1006, doi:10.1130/B30594.1

Peryam*, T. C., Lawton, T. F., Amato, J. M., González-León, C. M., and Mauel*, D. J., 2012, Lower Cretaceous strata of the Sonora Bisbee basin: A record of the tectonomagmatic evolution of northwestern Mexico: Geological Society of America Bulletin, v. 124, p. 532-548, doi: 10.1130/B30456.1.

Kochelek*, E. J., Amato, J. M., Pavlis, T. L., and Clift, P. D., 2011, Flysch deposition and preservation of coherent bedding in an accretionary complex: Detrital zircon ages from the Valdez Group, Chugach Terrane, Alaska, Lithosphere, v. 3, p. 265-274, doi:10.1130/L131.1.

Amato, J. M., Heizler, M. T., Boullion*, A. O., Sanders*, A. E., McLemore, V. T., Toro, J., and Andronicos, C. L., 2011, Syntectonic 1.46 Ga magmatism and rapid cooling of a gneiss dome in the southern Mazatzal Province: Burro Mountains, New Mexico, Geological Society of America Bulletin, v. 123, p. 1720-1744, doi: 10.1130/B30337.1.

Mauel*, D. J., Lawton, T. F., González-León, C. M., Iriondo, A., and Amato, J. M., 2011, Stratigraphy and age of Upper Jurassic strata in north-central Sonora, Mexico: Southwestern Laurentian record of crustal extension and tectonic transition: Geosphere, v. 7, p. 390-414; doi: 10.1130/GES00600.1.

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Amato, J. M., Toro, J., Miller, E. L., Gehrels, G. E., Farmer, G. L., Gottlieb*, E. S., and Till, A. B., 2009, Late Proterozoic–Paleozoic evolution of the Arctic Alaska Chukotka terrane based on U-Pb igneous and detrital zircon ages: Implications for Neoproterozoic paleogeographic reconstructions, Geological Society of America Bulletin, v. 121, p. 1219-1235, doi: 10.1130/B26510.1.

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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.

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Bering Strait Geologic Field Party (Akinin, V. V., Gelman, M. L., Sedov, B. M., Amato, J. M., Miller, E. L., Toro, J., Calvert, A. T., Fantini, R. M., Wright, J. E., and Natal'in, B. A.), 1997, Koolen metamorphic complex, NE Russia: Implications for the tectonic evolution of the Bering Strait region, Tectonics, v. 16, p. 713-729.

Dumitru, T. A., Miller, E. L., O'Sullivan, P. B., Amato, J. M., Hannula, K. A., Calvert, A. T., and Gans, P. B., 1995, Cretaceous-Early Tertiary extension of the Bering Strait Region, Alaska, Tectonics, v. 14, p. 549-563.

Amato, J. M., Wright, J. E., Gans, P. B., and Miller, E. L., 1994, Magmatically induced metamorphism and deformation in the Kigluaik gneiss dome, Seward Peninsula, Alaska, Tectonics, v. 13, p. 515-527.

ABSTRACTS (2019-2024; *Indicates NMSU student coauthor)

Schantz*, E., Amato, J.M., and Lawton, T.F., 2024, Dating Dinosaurs in the Laramide foreland: U-Pb geochronologic constraints on a stratigraphic section containing Alamosaurus and the postulated Tyrannosaurus mcraeensis in the Love Ranch Basin, New Mexico, Geological Society of America Annual Meeting.

Roeske, S., Pavlis, T., Amato, J., and Worthman*, C., 2024, Evidence for continuous subduction throughout the Jurassic along the outer margin of the Wrangellia-Peninsular terranes, northern North America Cordillera, Geological Society of America Annual Meeting.

Hughes*, L.H., Amato, J.M., and Ricci, J., 2024, Geochemical Evolution and $^{40}Ar/^{39}Ar$ Geochronology of the Uvas Basaltic Andesite: Insights into the Early Rio Grande Rift, New Mexico Geological Society Spring Meeting.

Salmeron*, A.O., Amato, J.M., and Kuykendall, G., 2024, Geologic mapping, structural analysis, and microprobe analysis of the Mazatzal Province in the Salinas Peak region, San Andres Mountains, New Mexico Geological Society Spring Meeting.

Millo*, A., and Amato, J.M., 2024, Newly discovered stromatolites and bimodal magmatism at ~1.23 Ga in the Burro Mountains of New Mexico: Mesoproterozoic rifting formed a shallow ocean basin in southwestern Laurentia, New Mexico Geological Society Spring Meeting.

Schantz*, E., and Amato, J.M., 2024, Age constraints on Upper Cretaceous dinosaurs: Geochronologic and stratigraphic analysis of the McRae Formation, within the Laramide Love Ranch Basin, New Mexico, New Mexico Geological Society Spring Meeting.

Millo*, A., and Amato, J.M., 2023, Mapping steep cliff exposures using structure-from-motion to understand the deformation history of the Proterozoic Mazatzal province in southwestern New Mexico, Abstract EP53C-1737, presented at 2023 Fall meeting, AGU, San Francisco, CA, 11-15 December.

Hughes*, L.H., and Amato, J.M., 2023, The Uvas Basaltic Andesite: A Large-Volume volcanic field erupted during the Initiation of the Southern Rio Grande Rift, New Mexico Geological Society Spring Meeting.

Miller, E.L., Hudson, T., and Amato, J.M., 2023, Characterization of Neoproterozoic metasedimentary rocks in the enigmatic Nome Complex, Alaska, in, The 9th International Conference on Arctic Margins (ICAM 9: 2022) Abstract Volume, (ed.) M.-C. Williamson, B.M. Saumur, A.M. Savoie, and N. Bingham-Koslowski; Geological Survey of Canada, Open File 8941, Abstract no. ICAM9-TS11-1, p. 102. https://doi.org/10.4095/331345.

Vermillion, K., Johnson, E., Amato, J., and Heizler, M., 2022, Onset and tempo of ignimbrite flare-up volcanism in the eastern and central Mogollon-Datil volcanic field, southern New Mexico, Geological Society of America Abstracts with Programs, v. 54, no. 5, doi: 10.1130/abs/2022AM-382369.

Amato, J.M., Johnson, E.R., Ricketts, J.W., Wyatt*, M., Vermillion*, K., Gavel*, M., and Swenton*, V., 2022, Investigating the transition from Eocene subduction to Oligocene extension in southern New Mexico, USA, Geological Society of America Abstracts with Programs, v. 54, no. 2, doi: 10.1130/abs/2022CD-373670.

Vermillion, K., Johnson, E., Amato, J., and Heizler, M.T., 2022, Spatial and temporal variations of Eocene-Oligocene caldera volcanism in southern New Mexico, Geological Society of America Abstracts with Programs, v. 54, no. 2, doi: 10.1130/abs/2022CD-373977.

Stockli, D., Lawton, T., Kortyna, C.D., Clark, J., and Amato, J., 2022, The Paleogene Burgos Basin– Insights into provenance history, basin evolution, and implications for Gulf of Mexico sedimentation, Geological Society of America Abstracts with Programs, v. 54, no. 1, doi: 10.1130/abs/2022SC-373825.

Ricketts, J., Amato, J., and Gavel, M.M., 2021, The origin and tectonic significance of the Basin and Range–Rio Grande rift boundary in Southern New Mexico, USA, Geological Society of America Abstracts with Programs, v. 53, no. 6, doi: 10.1130/abs/2021AM-366822.

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.

Amato, J.M., Richard*, N., and Johnson, E.R., 2019, Late Miocene basalts of the Robledo Mountains, New Mexico, in context of the history of mafic magmatism in the Rio Grande rift, Geological Society of America Abstracts with Programs. v. 51, no. 5, doi: 10.1130/abs/2019AM-336785.

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.

Ricketts, J.W., Amato, J.M., Gavel*, M.M., Biddle, J., and Reade, N.Z., 2019, The thermochronologic record of tectonism and magmatism across the Rio Grande rift–Basin and Range transition (invited), Geological Society of America Abstracts with Programs, v. 51, no. 5, doi: 10.1130/abs/2019AM-336719.

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.

DEPARTMENT COLLOQUIUA 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, Honors Introductory Geology
Geochronology (graduate), Tectonics of the Southwest U.S. (graduate)

STUDENT ADVISING

Current M.S. Students
- Emma Schantz, Volcanic and sedimentary history of a Laramide Basin in central New Mexico
- Lee Hughes, Magmatic Evolution of the Uvas Volcanic Field, south-central New Mexico
- Amit Millo, Structure from Motion study of the Red Rock Proterozoic rocks, Burro Mountains
- Alexis Salmeron, Study of the Proterozoic Geology of Salinas Peak, San Andres Mountains

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 New Mexico Bureau of Geology and Mineral Resources.
- 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. Oregon Department of Geology and Mineral Industries.
- 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. Lab Supervisor, Princeton University.
- 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. Los Alamos National Lab.
- 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 University of Glasgow
- 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 $^{40}Ar/^{39}Ar$ 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

- Jordan Bell, 2023-2024: Study of Mineralogy of low-T metamorphic rocks in the Burro Mountains
- Gideon Kuykendall, 2023-2024: U-Pb zircon geochronology of mafic rocks in the San Andres Mountains
- Paulina Burnside, 2021-2023: Correlation of ash flow tuffs at Table Mountain, City of Rocks State Park, New Mexico.
- Nicole Salladin, 2021-2022: U-Pb detrital zircon ages from Proterozoic metasedimentary rocks, Burro Mountains, New Mexico
- 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

NSF Panel 2024
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)

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)