

# Andrea L Stevens Goddard

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## APPOINTMENTS & PROFESSIONAL EXPERIENCE

*Starting Fall 2020* **Assistant Professor and Lee J. Suttner Professor** | Indiana University, Department of Earth & Atmospheric Sciences

2018 – 2020 **Assistant Professor** | Rowan University, Department of Geology

2017 – 2018 **Postdoctoral Fellow** | University of Connecticut, Center for Integrative Geosciences

2014-2017 **NSF Graduate Research Fellow** | University of Arizona

summer 2014 **Earth Science Intern** | Chevron Energy Technology Company, Houston, Texas

2012-2014 **Graduate Teaching Associate** | University of Arizona Department of Geosciences

summer 2010 **Business Modeling Analyst (Intern)** | Sears Holdings Corp., Hoffman Estates, Illinois

## EDUCATION

**University of Arizona** | Tucson, Arizona

**Ph.D.** 2017 **Geosciences**

Advisor: Barbara Carrapa

Committee: Barbara Carrapa, Peter DeCelles, Peter Reiners, Susan Beck, George Gehrels

**Purdue University** | West Lafayette, Indiana

**B.S.** 2011 **Geology & Geophysics**, *With Highest Distinction*

**B.S.** 2011 **Economics**, *With Highest Distinction*

**Mathematics**, concentration

## PUBLICATIONS – peer reviewed journal publications

8. Worthington, J.R., Ratschbacher, L., Stübner, K., Khan, J., Malz, N., Schneider, S., Kapp, P., Chapman, J.B., **Stevens Goddard, A.**, Brooks, H.L., Lamadrid, H.M., Steele-MacInnis, M., Rutte, D., Jonckheere, R., Pfänder, J., Hacker, B.R., Oimahmadov, I., Gadoev, M., (2020) The Alichur dome, South Pamir, western India-Asia collisional zone: detailing the Neogene Shakh dara-Alichur syn-collisional geniss-dome complex and connection to lithospheric processes, *Tectonics*, 39, doi: 10.1029/2019TC005735.
7. **Stevens Goddard, A.L.**, Fosdick, J.C. (2019). Multi-chronometer thermochronologic modeling of migrating spreading ridge subduction in southern Patagonia: REPLY. *Geology*, 47 (10), 484, doi:10.1130/G46788Y.1.
6. **Stevens Goddard, A.L.**, Fosdick, J.C., (2019) Multi-chronometer thermochronologic modeling of migrating spreading ridge subduction in southern Patagonia. *Geology*, 47 (6), 555-558. doi: 10.1130/G46091.1

5. **Stevens Goddard, A.L.**, Carrapa, B., (2018) Effects of Miocene-Pliocene global climate changes on continental sedimentation: A case study from the southern Central Andes. *Geology*, 46 (7), 647-650. doi: 10.1130/G40280.1.
4. **Stevens Goddard, A.L.**, Larrovere, M., Carrapa, B., \*Aciar, R.H., Alvarado, P., (2018) Reconstructing the thermal and exhumation history of the Sierras Pampeanas through low-temperature thermochronology: A case study from the Sierra de Velasco. *Geological Society of America Bulletin*, 130 (11-12), 1842-1858. doi: /10.1130/B31935.1.
3. **Stevens Goddard, A.L.**, Trop, J.M., Ridgway, K.D. (2018) Detrital zircon record of a Mesozoic collisional forearc basin in south-central Alaska: the tectonic transition from an oceanic to continental arc system. *Tectonics*, 37. doi: 10.1002/2017TC004825
2. **Stevens Goddard, A.L.**, Carrapa, B. (2017). Using basin thermal history to evaluate the role of Miocene – Pliocene flat-slab subduction in the southern Central Andes (27° S – 30° S). *Basin Research*, 30 (3), 564-585. doi: 10.1111/bre.12265.
1. **Stevens, A.L.**, Balgord, E.A., Carrapa, B. (2016). Revised exhumation history of the Wind River Range, WY and implications for Laramide tectonics. *Tectonics*, 35, doi:10.1002/ 2016TC004126.

#### **PUBLICATIONS – in review, revision, and in prep**

##### *in revision*

- Ortiz, G., **Stevens Goddard, A.L.**, Fosdick, J.C., Alvarado, P., Carrapa, B., and Crostofolini, E., Thermal history of rifting from fault to flank: A case study in the southern Central Andes. *Tectonophysics*.
- Stevens Goddard, A.L.**, Carrapa, B., Aciar, R.H., Controls on paleodrainage organization and fluvial sedimentation in the Miocene Greater Bermejo Basin, Southern Central Andes. *Sedimentology* (invited).

##### *in prep*

- Stevens Goddard, A.L.**, Fosdick, J.C., Calderón, M.N., Ghiglione, M.C., Romans, B.W., and Thomson, S.N., Evaluating the Effects of Orogenic Exhumation and Sediment Transfer in Foreland Basin Development: A 4D Perspective from the Southern Patagonian Andes.

#### **PRESENTATIONS– selected conference abstracts (\* = undergraduate student)**

- Stevens Goddard, A.L.**, Fosdick, J.C., 2019, Resolving the Geodynamic Effects of Spreading Ridge Subduction in the Patagonian Andes Using Multichronometer Thermochronology. GSA Annual Meeting (talk).
- Stevens Goddard, A.L.**, Fosdick, J.C., Calderón, M., Ghiglione, C., 2018, Cretaceous through Miocene along-strike changes in exhumation and erosion of the Southern Patagonian Andes, 51° - 54°S, using thermochronology. XV Chilean Geological Congress, Concepcion, Chile (talk).
- Stevens Goddard, A.L.**, Carrapa, B., Aciar, R.H., 2018, Recognizing Drainage Reorganization in the Stratigraphic Record: A Case study in the Neogene Bermejo Basin of the Central Andes. AGU Fall Meeting (**invited talk**).
- Stevens Goddard, A.L.**, Fosdick, J.C., Calderón, M.N., Ghiglione, M.C., Romans, B.W., and Thomson, S.N., 2018, Evaluating the Effects of Orogenic Exhumation and Sediment Transfer in Foreland

- Basin Development: A 4D Perspective from the Southern Patagonian Andes. AGU Fall Meeting (poster).
- Stevens Goddard, A.L.**, Carrapa, B., Larrovere, M., \*Aciar, R.H., 2017, Long-lived control of Sierras Pampeanas Ranges on Andean foreland basin evolution revealed by coupled low-temperature thermochronology and sedimentology. AGU Fall Meeting (poster)
- Stevens, A.L.**, Carrapa, B., \*Aciar, R.H., 2016, Flexural subsidence and heat flow in the Miocene Vinchina Basin, Sierras Pampeanas, Argentina: A case study from above the Central Andean flat-slab subduction zone. Geological Society of America Abstracts with Programs, vol. 48, no. 7. (talk)
- Stevens, A.L.**, Carrapa, B., Larrovere, M., \*Aciar, R.H., December 2015, Inherited weaknesses control deformation in the flat slab region of Central Argentina. AGU Fall Meeting. (poster)
- Stevens, A.L.**, Balgord, E.A., Carrapa, B., 2015, Reanalysis of apatite fission track thermochronology in the Wind River Range produces revised Laramide exhumation history. Geological Society of America Abstracts with Programs, vol. 47, no. 7. (talk)
- Stevens, A.L.**, Carrapa, B., 2014, Synorogenic record of basin reorganization in the Sierras Pampeanas, La Rioja, Argentina. AGU Fall Meeting. (poster)
- \*Aciar, R. H., **Stevens, A.**, Mendoza, M., 2014, Análisis sedimentológico de las formaciones Vinchina y Toro Negro en la Cuenca de Vinchina, La Rioja. Primer Congreso de Estudiantes de Latinoamericanos de Geología. San Luis, Argentina. (talk)
- Stevens, A.L.**, Carrapa, B., 2014, Strengths and challenges of detrital apatite fission track thermochronology: A case study from the Andes: 14<sup>th</sup> International Conference on Thermochronology, Chamonix, France. (poster)
- Stevens, A.L.**, Balgord, E.A., Carrapa, B., Restrepo, J.M., 2013, Utility of statistical methods and data presentation in detrital fission track thermochronology: Geological Society of America Abstracts with Programs, vol. 45, no. 324, p. 305. (invited talk)
- Stevens, A.L.**, Ridgway, K.D., Trop, J.M., 2012, Detrital geochronologic record of Jurassic oceanic arc genesis, arc-continent collision, and Cretaceous construction of a continental arc in a forearc basin, Matanuska Valley-Talkeetna Mountains, Alaska: Geological Society of America Abstracts with Programs, vol. 44, no. 7, p. 284. (poster)

## FUNDING

**Total PI Funding Received = \$198,000**

### Grants and Contracts (Post 2018)

Leary, R. (Lead, PI), **Stevens Goddard, A. (Co-PI)**, Van Wijk, J. (Co-PI), *Collaborative Research: Developing a tectonic model for the timing and rate of intraplate deformation in the Mongolian Altay*. | National Science Foundation, Tectonics Program, \$306,777 to Rowan (declined).

**Stevens Goddard, A. (PI)**, *Investigating Mechanisms for Post-Depositional Heating in Sedimentary Basins: A case study in the Michigan Basin, USA* | American Chemical Society Petroleum Research Fund, Undergraduate Institution, New Investigator (ACS PRF UNI) Grant, \$55,000, **Awarded** (Active 09/2019 – 08/2021)

Stevens Goddard, A. (PI), Determining the Effects of Rock Type on Erosion and Sedimentation Processes in Glacial and Interglacial Climate Regimes: Southern Alps, New Zealand | Rowan University Seed Grant, \$10,000, **Awarded** (Active 07/2019-06/2020)

Gordon, S. (Lead PI), Fosdick, J. (Co-PI), **Stevens Goddard, A. (Co-PI)**, *Collaborative Research: Exhumation of deep-seated rocks within climate-influenced and oblique orogenic systems* | National Science Foundation, Tectonics Program, \$244,916 to Rowan (declined, July 2019)

**Stevens Goddard, A.**, *Application to sail IODP Cruise 383 Dynamics of the Pacific Antarctic Circumpolar Current* | Integrated Ocean Drilling Program, \$60,021 (declined, December 2018)

**Research Fellowships, Scholarships, & Grants (Before 2018)**

2014-2017 **Graduate Research Fellowship Program** | National Science Foundation (\$102,000)  
2016 **Harriet Evelyn Wallace Scholarship** | American Geosciences Institute (\$5,000)  
2016 **AAPG Student Grants in Aid** | AAPG Foundation (\$2,700)  
2016 **SEPM Student Research Grant** | Society for Sedimentary Geology (\$1,300)  
2016 **Sand Travel Award** | Association of Women Geoscientists (\$500)  
2015 **National Geographic Young Explorer Grant** | National Geographic Society (\$5,000)  
2015 **Graduate Student Research Grant** | Geological Society of America (\$1,250)  
2015 **Chevron Research Grant** | Chevron Energy Technology Company (\$5,000)  
2015 **GPSC Research and Projects Grant** | UA Graduate College (\$2,000)  
2015 **Galileo Circle Scholar Award** | UA College of Science (\$1,000)  
2014 **Graduate Student Research Grant** | Geological Society of America (\$2,500)  
2014 **Chevron-Texaco Research Grant** | UA Department of Geosciences (\$1,500)  
2013 **Peter J Coney Research Grant** | UA Department of Geoscience (\$1,500)  
2012, '14, '15 **Student Travel Grant** | UA Graduate and Professional Student Council (\$500-750 ea.)

**SERVICE—professional**

2018 **Technical Session Convener** | American Geophysical Union Annual Meeting  
2016-present **Peer Reviewer** | *Frontiers in Earth Science, Geochemistry Geophysics Geosystems, Geological Magazine, Geological Society of America Bulletin, Geology, Journal of Geophysical Research, Journal of South American Earth Sciences, Mineralium Deposita, Nature, Science Advances, Tectonics*  
2020 – present **Grant Panel Reviewer** | National Science Foundation PF Panel (Jan 2020)  
2017-present **Ad-hoc Grant Reviewer** | National Science Foundation (Tectonics Program); Ciencia y Tecnología de Argentina (FONCyT)  
2012-2016 **GeoDaze Symposium** | UA Department of Geosciences  
*Co-chair, the 44<sup>th</sup> Annual GeoDaze (2016)*  
*Alumni Relations, the 43<sup>rd</sup> Annual GeoDaze (2015)*  
*Awards Chair, the 41<sup>st</sup> and 42<sup>nd</sup> Annual GeoDaze (2013, 2014)*  
2014-2015 **Alumni Relations Graduate Student Liaison** | UA Department of Geosciences  
*Created and implemented position for graduate student alumni relations*  
2014-2016 **Graduate Student Mentor** | UA Department of Geosciences  
2013-2014 **Geoscience Department Representative** | UA College of Science Graduate Council

Andrea L Stevens Goddard | *Curriculum Vitae, Spring 2020*

- 2013 **Coordinator, Geoscience graduate student field trip** | UA Department of Geosciences  
 2012-2013 **Social Coordinator, Weekly Department Colloquium** | UA Department of Geosciences  
 2012, '14, '15 **Travel Grant Judge** | UA Graduate and Professional Student Council

#### SERVICE—science outreach

- 2019-present **Skype a Scientist**  
*Skype with K-12 classroom to discuss geologic processes and scientific tools*
- 2017 **National Geographic featured scientist for Panorama Program**  
*Collaborated for feature story on geologic field work targeted at primary school students (English and Spanish)*
- 2017 **Guest Columnist** | The Journal Gazette (Fort Wayne, IN)  
*Contributed science policy op-ed to major regional daily newspaper*  
 1. <http://www.journalgazette.net/opinion/columns/20171124/generations-gap>  
 2. <http://www.journalgazette.net/opinion/columns/20170505/money-for-nothing>
- 2015 **Science Policy Guest Blogger** | American Geophysical Union  
*Contributed science-policy analysis for AGU science policy blog "The Bridge"*  
<http://thebridge.agu.org/2015/12/22/4713/>
- 2014 **Saturday Science Academy Activity Leader** | UA College of Science  
*Developed and ran a one-day activity for underrepresented middle and high school students*
- 2014 **University of Arizona Teacher Symposium volunteer** | UA Department of Geosciences  
*Assisted in activity preparation and guidance for symposium providing middle and high school earth science teachers in hands-on curriculum development*
- 2013 **Geoscience Coordinator, Starlight Science Cinema** | UA College of Science *Organized public screening of popular sci-fi movies with academic panel Q&A discussion*
- 2009-present **Hamilton Elementary 2<sup>nd</sup> Grade Resident Scientist** | Hamilton Elementary School  
*Developed and presented primary school science curriculum (up to one week) with an emphasis on geosciences in accordance with national common core standards with input from experienced primary school teachers*

#### HONORS & AWARDS

- 2017 **Montgomery Award for Best Overall Presentation** | 45<sup>th</sup> Annual GeoDaze Symposium  
 2015 **Best Geochemistry and Tectonics Oral Presentation** | 43<sup>rd</sup> Annual GeoDaze Symposium  
 2014 **Structural Geology & Tectonics Student Research Award** | Geo. Soc. of Am.  
 2014 **Honorable Mention Poster Presentation** | Intl. Conference on Thermochronology 2014  
 2013 **National Science Foundation Graduate Research Fellowship Honorable Mention**  
 2011 **Crawford Field Camp Award** | Association of Women Geoscientists  
 2009 **Omicron Delta Epsilon** | Purdue University  
 2007-2011 **Toyota Community Scholar** | Toyota Motor Corporation  
 2007-2011 **Indiana Top Resident Scholar** | Purdue University

## INVITED SCIENTIFIC TALKS

- 2020 Indiana University | Bloomington, IN  
Lafayette College | Easton, PA  
University of Connecticut | Storrs, CT
- 2019 Rutgers University, Newark Campus | Newark, NJ  
Queens College | Flushing, NY
- 2018 Rowan University | Glassboro, NJ  
Texas Tech University | Lubbock, TX  
University of Connecticut | Storrs, CT  
University of Nevada | Reno, NV  
University of West Georgia | Carrollton, GA
- 2015 Universidad Nacional de San Juan | San Juan, Argentina  
Centro Regional de Investigaciones La Rioja (CRILAR) | Anillaco, La Rioja, Argentina

## PROFESSIONAL AFFILIATIONS

- 2014-present **American Geophysical Union**
- 2012-present **Geological Society of America**
- 2011-present **Association for Women Geoscientists**
- 2011-present **American Association of Petroleum Geologists**

## TEACHING

### Courses

- Physical Geology | Rowan University (Spring/Fall 2019)  
Sedimentology and Stratigraphy | Rowan University (Fall 2019)

### Professional Development in Teaching & Scholarship

- July 2019 **Early Career Geoscience Faculty Workshop** | SERC at Univ. of Maryland  
*Acquired and practiced new pedagogical methods and research strategies & efficiencies*  
*NSF headquarters visit and networking*
- July 2016 **Preparing for an Academic Career in the Geosciences** | SERC at Univ. of Wisconsin  
*Learned teaching techniques and best practices for Geoscience curricula*
- spring 2016 **Learner Centered Teaching** | University of Arizona  
*Learned and practiced concepts of learner centered teaching*

## UNDERGRADUATE STUDENTS SUPERVISED

### Current Students

- Alexa Aulicino** | Rowan University  
B.S., Mechanical Engineering, 2021 (expected) | *Project: Mechanical controls on climate vs. tectonic driven erosion and exhumation across geologic timescales*
- Tara Lonsdorf** | Rowan University  
B.S., Geology, 2021 (expected) | *Project: Using the thermal history of the Michigan basin to reconstruct models for post depositional heating in intracratonic sedimentary basins*
- Matthew Vitale** | Rowan University

Andrea L Stevens Goddard | *Curriculum Vitae, Spring 2020*

B.S. Geology, 2021 (expected) | *Project: Using the thermal history of the Michigan basin to reconstruct models for post depositional heating in intracratonic sedimentary basins*

### **Former Students**

**Darby Young** (primary UA advisor) | Tufts University (Now in graduate program at the American Natural History Museum)

B.S., 2017 | *Senior Thesis: Sedimentology and flexural record of the distal foreland basin in the Sierras Pampeanas, Mazan, La Rioja, Argentina*

**R. Hernán Aciar** (primary advisor) | Universidad Nacional de San Juan (Now Ph.D. student at the Universidad Nacional de La Rioja)

B.S., 2016 | *Senior Thesis: Sedimentological analysis of the northernmost Vallecito Formation in Valle Hermoso, La Rioja, Argentina*

**Kaitlynn Walker** | University of Arizona (now a graduate student at Purdue University)

B.S., 2016 | *Senior Thesis: Climate and tectonic control on erosion across the Alpine fault, South Island, NZ*

**Mariah Romero** | University of Arizona (M.S., Purdue 2018; now Ph.D. student at Montana State)

B.S., 2015 | *Senior Thesis: Timing of exhumation of Montana Laramide Ranges constrained by detrital and in-situ apatite fission track thermochronology*