

## DEVON ANNE ORME

### *Curriculum Vitae*

Montana State University  
Department of Earth Sciences  
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### EDUCATION

- Ph.D. Geosciences, University of Arizona (2015)  
Certificate in College Teaching, University of Arizona (2014)  
M.S. Geosciences, University of Arizona (2011)  
B.S. Earth and Planetary Science, *Highest Honors*, University of California Santa Cruz (2009)

### APPOINTMENTS

Assistant Professor	Montana State University	2017-Present
Assistant Professor	University of Nevada, Las Vegas	2017
Postdoctoral Scholar	Stanford University	2015-2016
Graduate Research Associate	University of Arizona	2011-2015
Teaching Assistant	University of Arizona	2009-2014
Teaching Assistant	University of California, Santa Cruz	2006-2009

### RESEARCH EXPERIENCE

2015-2016 Postdoctoral Scholar, Geological and Environmental Sciences, Stanford University

*Mentor:* Stephan Graham

*Project:* Assessing controls on forearc basin subsidence

2011-2015 Ph.D. Geosciences, University of Arizona

*Advising Committee:* Barbara Carrapa, Peter G. DeCelles, Paul Kapp, Peter W. Reiners and George Gehrels

*Dissertation:* Basin evolution and exhumation of the Xigaze Forearc and Indus-Yarlung Suture zone, Tibet

2009-2011 M.S. Geosciences, University of Arizona

*Advising Committee:* Peter W. Reiners, George Gehrels and Jay Quade

*Thesis:* Effects of External Parent Nuclides on Apatite Helium Dates

2005-2009 B.S. Earth and Planetary Science, University of California Santa Cruz

*Advisor:* Jeremy K. Hourigan

*Thesis:* Eocene to late Miocene exhumation of the Southern Coast Ranges, California: Insight from apatite and zircon low-temperature thermochronometry

**PUBLICATIONS** (Google Scholar citations = 319, h-index = 8, i10-index = 8, as of 7/29/2019)

(15) Cai, F., Ding, L., Zhang, Q., **Orme, D.A.**, Wei, H.H., Yao, W., Li, J., Zhang, J., Zaw, T., Sein, K., Initiation and Evolution of Central Forearc Basin in Myanmar, *Geological Society of America Bulletin*, *in press*.

(14) **Orme, D.A.** and Surpless, K.D., (2019) Birth of a Forearc: The Basal Great Valley Group, California, *Geology*, *accepted May 17, 2019*.

(13) Li, L., Fan, M., Davila, N., Jesmok, G., Mitsunaga, B., Tripathi, A., **Orme, D.A.**, (2018), Carbonate stable and clumped isotopic evidence for late Eocene moderate elevation of the east-central Tibetan Plateau and its geodynamic implications, *Geological Society of America Bulletin*, (*accepted August 2018; in press*).

- (12) **Orme, D.A.**, and Graham, S.A., (2018), Four-dimensional model of Cretaceous depositional geometry and sediment flux in the northern Great Valley forearc, California, *in* Ingersoll, R.V., Lawton, T.F., and Graham, S.A., eds., *Tectonics, Sedimentary Basins, and Provenance: A Celebration of William R. Dickinson's Career, Geological Society of America Special Paper 540*, p. 409-424, doi:10.1130/2018.2540(18).
- (11) **Orme, D.A.**, (2017) Burial and exhumation history of the Xigaze Forearc, Yarlung Suture Zone, Tibet, *Geoscience Frontiers: Himalaya Special Issue*, doi: 10.1016/j.gsf.2017.11.011.
- (10) Brown, S.J., Thigpen, J.R., Spotila, J.A., Krugh, W.C., Tranel, L.M., **Orme, D.A.**, 2017, Onset timing and slip history of the Teton fault, Wyoming: A multidisciplinary re-evaluation, *Tectonics*, 36(11).
- (9) **Orme, D.A.**, Guenther, W., Laskowski, A., Reiners, P.W., (2016) Long-term tectonothermal history of Laramide basement from zircon-He age-eU correlations, *Earth and Planetary Science Letters*, 453, 119-130.
- (8) **Orme, D.A.** and Laskowski, A.K., (2016) Basin Analysis of the Albian-Santonian Xigaze forearc, south-central Tibet, *Journal of Sedimentary Research*, doi:10.2110/jsr.2016.59.
- (7) Carrapa, B., Robert, X., DeCelles, P.G., **Orme, D.A.**, Thomson, S., Schoenbohm, L., (2016) Asymmetrical exhumation of the Mount Everest region: Implications for the tectono-topographic evolution of the Himalaya, *Geology*, 44, 611-614.
- (6) Leary, R., **Orme, D.A.**, Laskowski, A.K., DeCelles, P.G., Kapp, P., Carrapa, B., Dettinger, M., (2016) Along-strike diachroneity in the deposition of the Kailas Formation in central southern Tibet: Implications for Indian slab dynamics, *Geosphere*, 12(4), 1-26.
- (5) **Orme, D.A.**, Reiners, P.W., Hourigan, J.K., Carrapa, B., (2015) Effects of inherited cores and magmatic overgrowths on zircon (U-Th)/He ages from Greater Himalayan sequence rocks, Mt. Everest region, Tibet, *Geochemistry, Geophysics, Geosystems*, 16(8), 2499-2507.
- (4) Huang, W., van Hinsbergen, D.J.J., Maffione, M., **Orme, D.A.**, Dupont-Nivet, G., Guilmette, C., Ding, L., Guo, Z., Kapp, P., (2015) The Lower Cretaceous Xigaze ophiolites formed in the Gangdese forearc: evidence from paleomagnetism, sediment provenance, and stratigraphy, *Earth and Planetary Science Letters*, 415, 142-153.
- (3) **Orme, D.A.**, Carrapa, B., and Kapp, P.K., (2015) Sedimentology, Provenance and Geochronology of the western Xigaze Forearc, Southern Tibet, *Basin Research*, 27(4), 287-411.
- (2) Carrapa, B., **Orme, D.A.**, Kapp, P., DeCelles, P.G., Cosca, M., Waldrip, R., (2014) Rapid Miocene Burial and Exhumation of the Indus-Yarlung Suture Zone in Tibet, *Geology*, 42(5), 443-446.
- (1) Murray, K.E., **Orme, D.A.**, Reiners, P.W., (2014) Effects of U-Th-Rich Grain-Boundary Precipitates on Apatite Helium Dates, *Chemical Geology*, 390, 135-151.

#### MANUSCRIPTS IN REVIEW (as of 8/1/2019)

Laskowski, A.K., **Orme, D.A.**, Cai, F., Ding, L., The Ancestral Lhasa River: A Late Cretaceous trans-arc river that drained the proto-Tibetan Plateau, *in review*, *Geology*, August 2019.

#### MANUSCRIPTS IN PREPARATION (\*student)

Bhattacharya, G., Robinson, D.M., **Orme, D.A.**, Najman, Y., Carter, A., Orlee, E., Bosu, S., Miocene-Pliocene cooling history of the Indus Basin in northwest India using low-T thermochronology: Implications for continental slab dynamics, *in preparation for EPSL*, Summer 2019.

Ronemus, C.\*, **Orme, D.A.**, Black, S.\*, Campbell, S.\*, Cook, J.\*, Provenance and Paleogeography and Proterozoic-Mesozoic strata of the Bridger Range, Montana, *in preparation for GSAB, Summer-Fall 2019.*

**CONFERENCE PROCEEDINGS** (\*student)

**Orme, D.A.**, Laskowski, A.K., Cai, F., Ding, L., The Raka Conglomerate: A wedge-top record at the onset of India-Asia collision, southern Tibet, Himalaya-Karakoram-Tibet workshop, June 2019. *Talk.*

**Orme, D.A.**, Laskowski, A.K., Cai, F., Ding, L., Discovery of two new sedimentary successions along the India-Asia collision zone, Tibet, Geological Society of America, Indianapolis, IN, October 2018. *Talk.*

**Orme, D.A.**, Massar, S.\*, Yaeger, M.\*, Late Cretaceous-Early Cenozoic sediment dispersal patterns in southwest Montana, Geological Society of America, Indianapolis, IN, October 2018. *Poster.*

**Orme, D.A.**, Blum, M., Rogers, K., Gleason, J., Najman, Y., Exhumation and erosional history of the Tibetan-Himalayan orogen through U-Pb and (U-Th)/He double dating of Bengal Fan sediments, Thermo2018, Quedlinburg, Germany 2018. *Poster.*

**Orme, D.A.**, and Graham, S.A., A four-dimensional model of Cretaceous depositional geometry and sediment flux in the northern Great Valley forearc, California, Geological Society of America, Seattle, WA, October 2017. *Talk.*

**Orme, D.A.**, Guenther, W.R., Laskowski, A.K., Reiners, P.W., Zircon (U-Th)/He age-eU correlations reveal long-term thermal history of Laurentian basement, Structural Geology and Tectonics Forum 2016, Sonoma, CA, August 2016. *Talk.*

**Orme, D.A.**, Using detrital geochronologic and thermochronologic “Double-Dating” to constrain depositional age, provenance and exhumation signals in ancient forearc basins”, American Geophysical Union, Fall Meeting 2014, Abstract #EP12B-02. *Talk.*

**Orme, D.A.**, Carrapa, B., DeCelles, P.G., Evolution of sedimentary basins along the Indus-Yarlung Suture Zone, southern Tibet: Implications for the timing of the initial stages of the India-Asia Collision, GSA Annual Meeting, Vancouver, October 2014, *Invited Talk.*

**Orme, D.A.**, Carrapa, B., Laskowski, A., Early Cretaceous depositional environments, provenance, and subsidence history of the basal Xigaze Forearc basin, southern, Tibet, GSA Annual Meeting, Vancouver, October 2014. *Talk.*

**Orme, D.A.** and Carrapa, B., Rapid Miocene exhumation of the Indus-Yarlung Suture Zone, Tibet: Evidence from the Xigaze Forearc and Kailas Formation, 14<sup>th</sup> International Conference on Thermochronology, France, September 2014. *Poster.*

**Orme, D.A.**, Carrapa, B., Reiners, P.W., Hourigan, P.K., Multi-thermochronologic dating of leucogranites from the south Tibetan detachment system at Rongbuk Valley, Mt. Everest, Tibet, GeoDaze 2014, University of Arizona, *Best Tectonics/Geochemistry Talk*, Tucson, AZ, April 2014. *Talk.*

**Orme, D.A.**, Carrapa, B., DeCelles, Evolution of sedimentary basins along the Indus-Yarlung Suture Zone, southern Tibet: Insight from sedimentology and geo-thermochronology, GSA Penrose: Linkages and Feedbacks in Orogenic Processes—A conference honoring the career of Robert D. Hatcher Jr., Asheville, NC, April 2014. *Talk.*

**Orme, D.A.**, Carrapa, B., Kapp, P.K., Gehrels, G., Reiners, P.W., Basin Evolution of the Cretaceous-Early Eocene Xigaze Forearc, southern Tibet, American Geophysical Union, Fall Meeting 2013, Abstract #T11A-2417. *Poster. Outstanding Student Paper Award.*

**Orme, D.A.**, Carrapa, B., Abbey, A., Kapp, P.K., Ding, L., Basin Evolution and Exhumation of the Xigaze Forearc, Southern Tibet: Insight from Sedimentology, Stratigraphy and Geo-Thermochronology, American Geophysical Union, Fall Meeting 2012, Abstract #T51E-2641. *Poster. Outstanding Student Paper Award.*

**Orme, D.A.**, and Carrapa, B., Basin Evolution and Exhumation of the Xigaze Forearc, southern Tibet: Insight from field stratigraphy and thermochronology. Geological Society of America Penrose Conference: Deformation, Fluid Flow, and Mass Transfer in the of Convergent Margins, Italy, March 2012. *Poster.*

**Orme, D.A.** and Reiners, P.W., Effects of External Parent Nuclides on Apatite Helium Dates: Sources and Solutions. 12<sup>th</sup> International Conference on Thermochronology, Scotland, August 2010. *Best Student Poster Presentation Award. Poster.*

## **GRANTS, HONORS AND AWARDS**

### **Montana State University**

- Himalaya-Karakoram-Tibet Workshop at Montana State University, 2019-2020

Organization: National Science Foundation, EAR Tectonics Division

PIs: Laskowski, A.K., Orme, D.A., Lageson, D.R., Hubbard, M.S.

Award total: \$24,525

- DAAD Fellowship, 2019

Organization: Deutscher Akademischer Austauschdienst (German Academic Exchange Service)

Award total: \$4,340

- Geological Society of America Bulletin Exceptional Reviewer, 2018

### **University of Arizona**

- GeoDaze Symposium, University of Arizona, Best Overall Talk, 2015
- Department of Geosciences, University of Arizona, Service Award, 2015
- American Association for Petroleum Geologists (AAPG) Student Research Grant, 2014
- Society for Sedimentary Geology (SEPM) Student Research Grant, 2014
- American Geophysical Union Outstanding Student Paper Award, 2013, 2012
- Geological Society of America Student Research Grant, 2012
- Association for Women Geoscientists, Takken Student Research Travel Award 2012
- Arizona Geological Society, Student Poster Award 2012
- Geosciences Galileo Circle Scholar, University of Arizona, 2010, 2012, 2013
- Peter J. Coney Field Award, Department of Geosciences, University of Arizona, 2011
- ConocoPhillips Scholarship, Department of Geosciences, University of Arizona, 2011
- 12<sup>th</sup> International Conference on Thermochronology, Best Student Poster, 2010
- GeoDaze Symposium, University of Arizona, Tectonics/Geochemistry Session Best Talk, 2010, 2014
- Graduate Student and Professional Council (GPSC), Travel Grant, University of Arizona 2010

## **TEACHING**

### **Montana State University**

- Geology and History of Glacier National Park

- Sedimentation and Stratigraphy
- Geology and Geography of Death Valley National Park
- Summer Field Camp
- Geochronology and Thermochemistry

#### **University of Nevada, Las Vegas**

- Principles of Stratigraphy and Sedimentation

#### **University of Arizona**

- Graduate Teaching Associate (2011- 2014): Sedimentology and Stratigraphy, Historical Geology, Geologic Perspective, Summer Field School
- BASIS High School, Tucson Arizona, Summer Session Earth Science Teacher (2013)
- Graduate Teaching Assistant (2009-2011): Geologic Perspective and Summer Field School
- Department of Geosciences Science Academy Day, Activity Leader (Grades 6-12<sup>th</sup>), 2009-2012
- Department of Geosciences, SAGUARO Program, Advisor for undergraduate research, 2010-2011

#### **INVITED TALKS (since 2017)**

- Purdue University, Department of Earth, Atmospheric, and Planetary Sciences, Fall 2017
- University of Utah, Department of Geology and Geophysics Distinguished Lecture Series, Spring 2018
- Utah State University, Department of Geology Distinguished Lecture Series, Fall 2018
- Montana Bureau of Mines and Geology/Montana Tech, Seminar Series, Fall 2018
- Institute of Tibetan Plateau Research, Chinese Academy of Sciences, June, 2018
- University of Montana, Department of Geology, Seminar speaker, April 2019
- Virginia Tech, Department of Geosciences, Seminar Series, *scheduled Fall 2019*
- Idaho State University, Department of Geosciences, Seminar Series, *scheduled Fall 2019*
- South Dakota School of Mines and Technology, Seminar Series, *scheduled February 2020*

#### **FIELD EXPERIENCE**

**Southern Tibet:** Sedimentologic, stratigraphic, sequence stratigraphic, and structural analyses and sample collection.

**Northeast China:** Sedimentologic and structural analysis and sample collection.

**California Coast Ranges:** Structural mapping and thermochronologic sample collection

**Eastern California:** Sedimentologic, structural and glacial instruction.

**Western United States (Utah, Wyoming, Nevada, Montana):** Sedimentologic/structural instruction, sedimentologic research and sample collection.

**Patagonia (Argentina):** Sedimentologic, stratigraphic, and structural analyses.

#### **SERVICE, OUTREACH AND PROFESSIONAL DEVELOPMENT**

##### **Montana State University**

- GIS Search Committee member (2017-2018)
- Geology Curriculum committee (2017-Present)
- Faculty Senate, alternate (2018)
- Undergraduate Research Rendezvous judge (Fall 2017)
- Freshman Research Symposium Speaker (Fall 2017, Fall 2018)

##### **University of Arizona**

- Organizer, Department of Geosciences End of the Year Picnic, 2015
- Panel Member, Office of Instructional Assessment, Academic Interviews, 2015
- Guest Speaker, Department of Geosciences, Graduate student seminar and Orogenic Systems, 2015

- Guest Speaker, Department of Geosciences, Undergraduate SESS Club, February 2013, April 2014
- Associate Graduate Council for the College of Science, Geosciences Representative, 2010-2014, President, 2011-2012; Vice President 2010-2011
- Department of Geosciences, Leader, Field Geology Session, Teacher Symposium, September 2012
- Department of Geosciences, 38<sup>th</sup> Annual GeoDaze Symposium, Field Trip Coordinator, April 2010  
Co-chair, 39<sup>th</sup> Annual GeoDaze Symposium, 2010-2011; Slideshow speaker 2013-2014
- Department of Geosciences Science Academy Day, Activity Leader (Grades 6-12<sup>th</sup>), 2009-2012
- Department of Geosciences, SAGUARO Program, Advisor for undergraduate research, 2010-2011
- Department of Geosciences, Sigma-Gamma-Epsilon (SGE) President, 2009-2011
- Department of Geosciences, Incoming Graduate Student Retreat, Organizer/Trip Leader, 2010
- Graduate Associate, University of Arizona Fission Track Laboratory, 2011-Present
- Graduate Assistant, University of Arizona Radiogenic Helium Dating Laboratory, 2009-2011

### **Tucson, Arizona Community**

- Geology Guest Speaker:
  - Hollinger Elementary, March 2015
  - Tucson Country Day School, April 2013, 2014
  - Palo Freire Elementary, February 2013
  - Lawrence Intermediate School, February 2013
  - BASIS High School, January 2013
- Science Fair Judge, St. Michaels Day School, February 2013, 2014, 2015

### **Los Angeles, California Community**

- Louisville High School: Commencement Speaker, 2016; Career Day Speaker, 2016

### **Member**

Geological Society of America (GSA)  
 American Geophysical Union (AGU)  
 Society for Sedimentary Geology (SEPM)  
 American Association for Petroleum Geologists (AAPG)  
 Association for Women Geoscientists (AWG)  
 National Association of Geoscience Teachers (NAGT)

### **Professional Service**

SEPM International Sedimentary Geosciences Congress 2020 Planning Committee (August 2018-present)  
 GSA Annual Meeting Women in Geology Career Pathways Mentor (Fall 2017)  
 SEPM Semi-Annual conference 2020, Field Trip Coordinator

### **Journal Reviewer**

Basin Research; Earth and Planetary Science Letters; International Geology Review; Geology; Geological Society of America Bulletin; Geology Society of America Special Volumes; Gondwana Research; Geochemistry, Geophysics, Geosystems; Journal of Geophysical Research; Lithosphere; Oxford University Press Books, Nature Scientific Reports; Tectonics.

### **Industry Short Courses**

Exxon Mobil Field School, Sequence Stratigraphy, Guadalupe Mountains (March 2013)  
 Exxon Mobil course on Geology and Geophysics Applied in Industry (April 2009)  
 ConocoPhillips course on Structural Interpretation Fundamentals (March 2010)

### **ACTIVE COLLABORATORS (Past 2 years):**

Barbara Carrapa (University of Arizona), Fulong Cai (Institute of Tibetan Plateau Research), Peter G. DeCelles (University of Arizona), Majie Fan (University of Texas at Arlington), Stephan A. Graham (Stanford University), William R. Guenther (University of Illinois at Urbana Champaign), Jeremy Hourigan (University of California Santa Cruz), Wentao Huang (Utrecht University), Paul Kapp (University of Arizona), Lin Li (University of Texas at Arlington), Ding Lin (Institute of Tibetan Plateau Research), Kendra E. Murray (University of Arizona), Peter W. Reiners (University of Arizona), Delores Robinson (University of Alabama), Kathleen Surpress (Trinity University)

## STUDENT ADVISEE

### Current Graduate Students:

Mariah C. Romero	Ph.D student	Montana State University	Primary advisor
Chance B. Ronemus	M.S. student	Montana State University	Primary advisory

### Current Committee Member:

Caden Howlett	M.S. student	Montana State University	Committee member
E. Aislin Reynolds	Ph.D. student	Montana State University	Committee member
Kelly Helmer	M.S. student	Montana State University	Committee member
Timothy Campbell	M.S. student	Montana State University	Committee member
Christopher Schiller	Ph.D student	Montana State University	Committee member
Gourab Bhattacharya	Ph.D. Candidate	University of Alabama	Committee member
Audrey Warren	Ph.D. student	University of Nevada, Las Vegas	Committee member

### Undergraduate Students Supervised:

#### *Montana State University*

1. Sarah Massar	B.S. 2018	Provenance of Bozeman Group, southwest Montana
2. Matthew Yaeger	B.S. 2018	Provenance of Sphinx Conglomerate and Fort Union Formation, southwest Montana
3. Chance Ronemus	B.S. 2019	Provenance and depositional environments of Paleozoic-Mesozoic stratigraphy exposed in the Bridger Range, Bozeman, MT
4. Sophie Black	Expected B.S. 2022	Provenance of Paleozoic Tyler and Heath Formations, Rocky Happy Core, central Montana
5. Saré Campbell	Expected B.S. 2022	Provenance and depositional environments of Paleozoic-Mesozoic stratigraphy exposed in the Bridger Range, Bozeman, MT
6. John Cook	Expected B.S. 2022	Provenance and depositional environments of Paleozoic-Mesozoic stratigraphy exposed in the Bridger Range, Bozeman, MT

#### *University of Arizona:*

1. Courtney King, B.S. 2011
2. Mariah C. Romero, B.S. 2015 (primary supervisor Barbara Carrapa)
3. Simon Stickroth, B.S., 2013 (primary supervisor Barbara Carrapa)
4. Patrick Boyd, B.S. 2014 (primary supervisor Peter W. Reiners)