

## **Curriculum Vitae (*abbreviated*)**

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### **Alison R. Duvall**

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### **RESEARCH INTERESTS**

- Resolving tectonic deformation in active mountain belts using the erosion record
- Geomorphology, erosion and landscape evolution related to faulting and mountain uplift
- Surface processes and tectonics, geohazards and resilience in subduction zones

### **EDUCATION**

- 2011      Ph.D. in Geological Sciences, University of Michigan, Ann Arbor, Michigan  
Dissertation: *The Tectonic Evolution of the Tibetan Plateau: Insights from the Deformation and Erosion History of Northern Tibet and the Surrounding Region*  
(Supervisor: Marin K. Clark)
- 2003      M.S. in Geology, University of California, Santa Barbara, California  
Thesis: *Bedrock Channel Response to Variability in Rock Strength and Rock-Uplift Rate in the Santa Ynez Mountains, California*  
(Supervisor: Douglas W. Burbank)
- 2000      B.S. in Geological Sciences, Virginia Tech, Blacksburg, Virginia  
Summa Cum Laude

### **PROFESSIONAL EXPERIENCE**

- 2020 – present    Associate Professor, University of Washington
- 2013 – 2020      Assistant Professor, University of Washington
- 2012 – 2013      Assistant Professor (NTT), University of Washington
- 2011 – 2012      Postdoctoral Fellow, University of Colorado, Boulder
- 2006 – 2011      Graduate Research/Teaching Assistant, University of Michigan
- 2003 – 2006      Geologist, United States Geological Survey, Menlo Park, CA
- 2001 – 2003      Graduate Research/Teaching Assistant, UC – Santa Barbara, CA

### **SELECTED HONORS AND AWARDS**

- 2016      Luna B. Leopold Award, AGU Early Career Scientist Award
- 2016      Sharp Lecture Presenter, AGU Annual Meeting
- 2015      Bassett Distinguished Teaching Award, Dept of Earth and Space Sciences
- 2011 – 12      CIRES Visiting Research Fellow, University of Colorado

## TRAINEES & MENTORSHIP

### Current Graduate Students:

4. **Paul Morgan** (2020 – 2025, *expected*)

topic: Tectonic geomorphology of subduction zones

awards: NSF Graduate Research Fellowship (GRF)

3. **Tamara Aranguiz** (2020 – 2025, *expected*)

topic: Strike-slip landscape evolution, geodesy and earthquake early warning

awards: International Fulbright Scholar (Fulbright Chile)

2. **Erich Herzig** (2018 – 2023, *expected*)

topic: Modeling, mapping, dating, and characterizing Seattle landslides

awards: UW ESS/College of the Environment GROE Fellow

1. **Seth Williams** (2018 – 2022, *expected*)

topic: Landscape response to tectonic perturbations in New Zealand

awards: UW ESS Top Scholar Award; Evolving Earth Research Grant; GSA student research grant; GSA John T. and Carol G. McGill Research Award

### *Chaired PhD Degrees (Research Program)*

3. **Philip Schoettle-Greene** (2021) USGS Contract Scientist, Seattle, WA

thesis: Tectonics as recorded by thermochronometry, deformed datums, and submarine landscapes in western North America

2. **Sean LaHusen** (PhD 2019) USGS Mendenhall Postdoctoral Fellow, Mountain View, CA

thesis: Landslides as erosive agents: Using geochronometry and spatial analysis to understand how slope failures shape dynamic landscapes

1. **Sarah Harbert** (PhD 2019) Consultant, Bellingham, WA

thesis: Landscape Response to Oblique Convergence: Insights from Numerical Modeling and from the Marlborough Fault System, New Zealand

### *Chaired Masters Degrees (Research Program)*

1. **Camille Collett** (MS 2015) Staff geologist, USGS Golden, CO

thesis: Accommodating Oblique Plate Motion: Exhumation History of the Kaikoura Mountains, NE South Island, New Zealand

awards: GSA student research grant; National Park Service Geoscientist-In-The-Park

### *Supervised Masters Capstone Research (MESSAGE - Applied Geosciences Program)*

20. **Manique Talaia-Murray** (MS 2021)

topic: Submarine landslides along the Cascadia Margin from high-resolution bathymetry

19. **Pamela Brutzkus** (MS 2021)

topic: Post-fire landslide response, Southern CA and numerical models

20. **Chelsea Bush** (MS 2020)

topic: Holocene marine terraces and landslides at Rialto Beach, WA

19. **Cole Jensen** (MS 2020)

topic: The Lost Lake landslide: Evidence for an earthquake-triggered landslide, Vashon, WA

18. **Joe Sherrod** (MS 2020)

topic: Quaternary Deformation of the Hog-Ranch-Naneum Anticline, Yakima Fold Belt, WA

## TRAINEES & MENTORSHIP (CONT.)

*Supervised Masters Capstone Research (MESSAGE - Applied Geosciences Program)*

17. **Varqa Tavengar** (MS 2019)

topic: Tectonic Geomorphology of the Doty Fault Zone, WA

16. **Nancy Sackman** (MS 2019)

topic: Analysis of the Timing of Building Displacement during Intense Seismic Shaking for three Earthquakes, 2011 Nisqually, 2017 Puebla, 2018 Anchorage

15. **Aleksander Srebro** (MS 2018)

topic: Chambers Creek, Pierce County, WA – Landslide Susceptibility Assessment

14. **Jeff Keck** (MS 2017) PhD student, UW Civil Engineering topic: Fluvial connectivity of a deep seated landslide to upstream tree harvests

13. **Sarah Polster Tribble** (MS 2017) Geoscientist, Oceanering

topic: The Cedar River Landslide Complex: Dating a Hazardous Landform in the Cedar River Municipal Watershed

12. **Susan Wisehart** (MS 2017) Natural Resource Scientist, WA Dept. of Natural Resources

topic: An Analysis of Radiocarbon Sampling Methods on Landslides in the North Fork Stillaguamish River Valley, Washington, USA

11. **Taylor Kenyon** (MS 2016) Geoscientist, Mount Rainier National Park

topic: Assessment, Restoration, and Management of the N. Puyallup Trail

10. **Dorothy Metcalf-Lindenberger** (MS 2016) Consulting Geologist, Geosyntec

topic: A comparison of landslide inventories: office based protocol vs. field based protocol

9. **Connor Kee** (MS 2016) Fluvial Geomorphologist, Freese and Nichols topic: River and Hillslope Response to Localized Uplift Along a Left Bend of the San Andreas

Fault, Santa Cruz Mountains, CA

8. **Coire McCabe** (MS 2016) Field Geologist, Hart Crowser

topic: Erosion of the Gold Basin Landslide Complex, WA from Repeat Terrestrial LiDAR Scans

7. **Kendra Pivaroff-Ward** (MS 2015) Geologist, Associated Earth Scientists, Inc.

topic: Determining Spatial Distribution and Physical Properties of the Vashon Advance, WA  
*Supervised Masters Capstone Research (MESSAGE - Applied Geosciences Program) – (cont.)*

6. **Evelyn Conrado** (MS 2015) Staff Geologist, Golder Associates Inc.

topic: Shallow Landslide Risk Assessment of the Westerly Bluffs of the 7.5-minute Freeland Quadrangle, Whidbey Island, WA

5. **Andrew Gault** (MS 2015) Hydrologist, Bureau of Land Management

topic: Mineralogy and Strength Characteristics of Puget Sound Glaciolactustrine Clays

4. **Rebekah Cesmat** (MS 2014) Engineering Geologist, CA Dept. of Water Resources

topic: Seattle Fault geomorphology

3. **Eric Stata** (MS 2014) Staff Geologist, TRC Companies, Inc.

topic: Paleogeography

2. **Nicholas Novoa** (MS 2014) Earthquake Engineering Section Chief, CA Dept. of Water Resources

topic: A Seismic Hazard Evaluation for the Proposed LNG Export Facility, British Columbia

1. **Robert Pretlow** (MS 2013)

topic: Shorelines on Mars

## TRAINEES & MENTORSHIP (CONT.)

### *Other Significant Graduate Student Supervision & Committee Membership*

12. Madeleine Lucas, PhD candidate University of Washington
11. Susannah Morey, PhD candidate University of Washington
10. Ginevra Moore, MS University of Washington
9. Kelian Dacher-Cousineau, PhD University of California Santa Cruz
8. Michael Turzewski, PhD University of Washington, now at Pacific Lutheran Univ.
7. Matthew Morris, PhD, University of Oregon (2020); now at USGS Salt Lake City, UT
6. Sarah Schanz, PhD, U. of Washington (2018); now Asst. Professor, Colorado College
5. Alex Grant, PhD, U. of Washington (2017); now Geological Engineer, USGS
4. Ronda Strauch, PhD, U. of Washington (2017); now Engineer, Seattle City Light
3. William Jackson, PhD, Univ. of Alabama (2017); now Asst. Professor, Univ. of S. Alabama
2. Omer Yeteman, PhD, U. of Washington (2014); now Lecturer, Univ. of New Castle
1. Logan Chinn, MS, U. of Washington (2013); now Project Manager, Riley Group

### **Undergraduate Students:**

8. Monica Hill, Seattle Fault low-temperature thermochronology
7. Natalie Wisdom, Landslide mapping, characterization, Forest of Nisene Marks, CA
6. Gabriel Alampay, Marine terrace mapping, Haida Gwaii, Canada
5. Kyle Lowery, Landslide mapping, Oregon Coast Range
4. Valerie Bright, Landslide mapping, Oregon Coast Range / NZ tectonic
3. Lauren Thompson, San Andreas Fault geomorphology
2. Hanna Olson, Alpine Fault NZ geomorphology
1. Habibah Yusoff, Faulting, folding, and uplift in Malaysia

## **COURSES TAUGHT**

ESS 427/527 Hillslope Geomorphology (5 credits), 2013, 2014(x2), 2015, 2016, 2017, 2018, 2019, 2020\*; ESS 425/525 Tectonic Geomorphology (3 credits), 2013, 2014, 2016, 2018, 2019, 2020, 2021\*; ESS 400/401 Field Geology (12 credits), 2013, 2014, 2015, 2020\* 2021\*; ESS 590 Inquiry Based Topics for Graduate Students, Advanced Topics in Tectonic Geomorphology (2 - 3 credits), 2017-2021; ESS 595b Earth and Space Sciences Research Methods (1 - 2 credits), 2015-2021. \*significant course redevelopment to entirely virtual content due to Covid-19 pandemic

## **SELECTED PUBLICATIONS - Published in last five years**

Key: student advisee, †corresponding author

†Zhao, X., Zhang, H., Hetzel, R., Kirby, E., **Duvall, A.**, Whipple, K., Xiong, J., Li, Y., Pang, J., Wang, Y., Wang, P., Liu, K., Ma, P., Zhang, B., Li, X., Zhang, J., and Zhang, P., Existence of a continental-scale river system in eastern Tibet during the late Cretaceous-early Palaeogene. *Nature Communications*, *in press*.

### Recent Published Journal Articles – last 5 years (cont.):

- †Schoettle-Greene, P., Duvall, A.R., Blythe, A., Morley, E., Matthews, W., and LaHusen, S.R., Minor upper plate exhumation driven by subduction initiation offshore Haida Gwaii, Canada. *Geology*, 48(9), 908-912. <https://doi.org/10.1130/G47364.1>
- †LaHusen, S.R., Duvall, A.R., Booth, A.M., Struble, W., Grant, A., Wartman, J., Roering, J., and Montgomery, D.R., 2020, Storms trigger more deep-seated landslides than Cascadia earthquakes in the Oregon Coast Range, USA. *Science Advances*, 6(38), DOI: 10.1126/sciadv.aba6790
- †Duvall, A.R., Harbert, S.A., Upton, P., Tucker, G.E., Flowers, R.M., and Collett, C.M., 2020, River patterns reveal landscape evolution at the edge of subduction, Marlborough Fault System, New Zealand: *Earth Surface*, v.8, 177-194. <https://doi.org/10.5194/esurf-8-177-2020>
- Collett, C.M., †Duvall, A.R., Flowers, B., Tucker, G.E., and Upton, P., 2019, The timing and style of oblique deformation within New Zealand’s Kaikōura Ranges and Marlborough Fault System, based on low-temperature thermochronology: *Tectonics*, v.38, 23 pp. <http://doi.org/10.1029/2018TC005268>.
- †Harbert, S.A., Duvall, A.R., and Tucker, G.E., 2018, The role of near-fault relief elements in creating and maintaining a strike-slip landscape: *Geophysical Research Letters*, 45, 10 pp. <http://doi:10.1029/2018GL080045>.
- †Perkins, J. P., J. J. Roering, W. J. Burns, W. Struble, B. A. Black, K. M. Schmidt, A. Duvall, and N. Calhoun, 2018, Hunting for landslides from Cascadia’s great earthquakes, *Eos*, 99, <https://doi.org/10.1029/2018EO103689>.
- †Schanz, S.A., Montgomery, D.R., Collins, B. D., and Duvall, A.R., 2018, Multiple paths to straths: a review and reassessment of terrace generation: *Geomorphology*, v. 312, 11 pp. <http://doi:10.1016/j.geomorph.2018.03.028>.
- †Gray, H.J., Shobe, C.M., Hopley, D.E.J., Tucker, G.E., Duvall, A.R., Harbert, S.A., and Owen, L.A., 2017, Off-fault deformation rate along the southern San Andreas fault at Mecca Hills, southern California, inferred from landscape modeling of curved drainages: *Geology*, v. 46, 4 pp. <http://doi:10.1130/G39820.1>.
- †Booth, A.M., LaHusen, S.R., Duvall, A.R., and Montgomery, D.R., 2017, Holocene history of deep-seated landsliding in the North Fork Stillaguamish River valley from surface roughness analysis, radiocarbon dating, and numerical landscape evolution modeling: *Journal of Geophysical Research, Earth Surface*, v. 122, 17 pp. doi:10.1002/2016JF003934.

### SELECTED GRANTS - Awarded in last five years

- 2021: NSF-CoPe Program. “Large-Scale CoPe: The Cascadia Coastlines and People Hazards Research Hub.” \$18,896,138. Co-PI.
- 2020: NSF-EAR Geomorphology and Landuse Dynamics Program. “Collaborative Research: Tying deep-seated landslides to base level, earthquakes, and a changing climate in the Pacific Northwest” \$236,897. PI.
- 2019: UW Global Innovation Fund. “International Workshop on M9 Disaster Science.” \$12,500, Co-PI with Randy LeVeque (University of Washington).

## **SELECTED GRANTS - Awarded in last five years (cont.)**

2017 – 2020: NSF-EAR Tectonics. EAR-1727046. “Collaborative Research: An integrated mantle to surface study of the causes and consequences of high topography in the Northern US Cordillera.” \$293,888 (UW portion), lead PI, with Co-PIs Gene Humphreys (University of Oregon) and Brian Yanites (Indiana University).

2017 – 2019: NSF-EAR Geomorphology and Land-use Dynamics. EAR-1719622. “RAPID: Testing the erosion signature of coseismic landslides using cosmogenic catchment wide erosion rates – a case study of the 2016 Kaikoura Earthquake, New Zealand.” \$30,128, sole PI.

## **RECENT INVITED KEYNOTE ADDRESSES AND SEMINARS - last 5 years**

- 2021 “The Hutton Club”, University of Edinburgh, Geosciences Dept.  
AEG (Association of Engineering Geology) Puget Sound Chapter  
University of Massachusetts, Amherst, Geosciences Dept.  
Appalachian State University, Dept. of Geological and Environmental Sciences,
- 2020 University of Southern California, Dept. of Earth Sciences  
Landscapes Live International Seminar Series
- 2019 Boston College, Dept. of Earth and Environmental Sciences  
University of Wisconsin, Madison, Dept. of Geoscience, *Weeks Lecture*, Yale  
University, Dept. of Geology and Geophysics, Arizona State University, School of  
Earth and Space Exploration,
- 2018 NSF Coupling of tectonics and surface processes workshop  
Northwest Geological Society/Association of Engineering Geologists Geohazards  
Symposium, University of Michigan
- 2017 Geological Society of America Annual Meeting, *Invited Talks (2)*

## **NOTABLE PRESENTATIONS TO A PUBLIC AUDIENCE**

- 2020 UW Virtual Visit Day, Earth Sciences, *Invited Faculty Lecturer*
- 2019 UW Faculty Field Tour Lecture, *Invited Lecturer*
- 2019 M9 Project Final Stakeholders Meeting, *MC, Talks, Media Interviews*
- 2016 M9 Project Mid-Project Stakeholders Meeting, *Talk*
- 2016 “Megaquake Class”, four-part series, Burke Museum, *Talk*

## **NOTABLE OUTREACH and COMMUNITY ENGAGEMENT**

- 2021 URGE (“unlearning racism in the geosciences” *participant and Pod coordinator*)
- 2020 ESS Rockin’ Out Science Outreach Organization *presenter*
- 2019 Tuff Talk podcast, *invited guest*
- 2018 Hazards Expert Panelist, KUOW Disaster Night (June and July)
- 2016 Geology Narrator, “Subterrarium” artwork, Univ of Wash Lightrail Station
- 2016 Science Mentor / Landslide Expert to author Elizabeth Rusch
- 2012-present *Geologist / Landslide Expert* – various media, local news outlet