

Jared R. Olyphant

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Solving complex **geological problems** through
geophysical methods and **modeling**

RESEARCH INTERESTS

- Exploration of frontier basins through the integration of multiple geophysical datasets
- Reducing uncertainty in seismic interpretation through seismic inversion and rock physics
- Machine-learning methods to improve geologic reservoir characterization
- The tectonics of conjugately rifted margins through seismic evidence and modeling
- The integration of applied geophysics and structural geology towards shale-play development, carbon sequestration, and geologic hazards

EDUCATION

Ph.D., Geophysics, **University of Arizona**, 2012-2017

- Dissertation: *Seismic Investigations Applied to Landscape Evolution and to Tectonic Development: Valles Caldera, New Mexico and Guinea Plateau, West Africa*

B.S., Geological Sciences, **Indiana University**, 2007-2012, *Minor in Mathematics*

- *Best in class* (Faculty Senior Student Award)

PUBLICATIONS

Olyphant, JR, RA Johnson, AN Hughes. 2017. Evolution of the Southern Guinea Plateau: Implications on Guinea-Demerara Plateau formation using insights from seismic, subsidence, and gravity data. *Tectonophysics*. 717: 258-371, doi: 10.1016/j.tecto.2017.08.036

Olyphant, JR and RA Johnson. 2017. Probabilistic 3-D subsidence analysis of frontier basins: Application to Guinea Plateau, West Africa. (*in prep*).

Olyphant, JR, JD Pelletier, RA Johnson. 2016. Topographic correlations with soil and regolith thickness from shallow-seismic refraction constraints across upland hillslopes in the Valles Caldera, New Mexico. *Earth Surface Processes and Landforms*. 41.12: 1684, doi: 10.1002/esp.3941

INDUSTRY EXPERIENCE

Attendee – ExxonMobil Short Course (*Feb 2016*) – *From Plates to Pores*

- 4-day course involving the holistic process of developing a commercial hydrocarbon system.

Geophysics Intern – Chevron (May 2014 – August 2014)

- **Team:** Reservoir Properties from Seismic
- **Supervisors:** Reynaldo Cardona and Mike Greene
- **Focus:** Development of numerical code that performed rock-property analyses for exploration basins through computation of expected seismic half-space responses based on proposed V_p - V_s and density-porosity relationships.

Geophysics Intern – BP (May 2013 – August 2013)

- **Team:** Reservoir Development for Atlantis Deepwater Gulf of Mexico
- **Supervisor:** Nick Bassett
- **Focus:** Rock-properties analysis of the deepwater Atlantis field in order to constrain placement of planned water-injector wells.

TEACHING EXPERIENCE

Teaching Assistant, *Dinosaurs*, University of Arizona, 2017

- **Duties:** Grading of student essays, answering questions, assisted in weekly preparation

Teaching Assistant, *Oceanography*, University of Arizona, 2016

- **Duties:** Grading and leading weekly discussion sessions

Teaching Assistant, *Structural Geology*, University of Arizona, 2015 – 2016

- **Duties:** Led weekly laboratory section including weekday and weekend field trips, grading, office hours, and exam proctoring
- **Guest Lecturer:** Fault systems in seismic reflection profiles

Teaching Assistant, *Natural Disasters and Society*, 2014 – 2015

- **Duties:** Grading and answering questions during lectures
- **Guest Lecturer:** Tsunami characteristics and hazards

Guest Lecturer, *Exploration Seismology*, 2014

Co-instructor, *Fundamentals of MATLAB Workshop*, 2015

- Taught a classroom of undergraduate and graduate students enrolled in *Geophysics of the Earth* the fundamentals of using MATLAB to numerically model geophysical phenomena.

TECHNICAL PRESENTATIONS and POSTERS

Olyphant, JR, RA Johnson. 2017. *Evolution of the Southern Guinea Plateau: Insights from Exploration Geophysics*. University of Arizona Earthweek Annual Symposium.

Olyphant, JR. 2016. *Shallow-seismic constraints on soil and regolith across upland landscapes in the Valles Caldera, New Mexico*. ExxonMobil Main-Campus Poster Presentation.

Olyphant, JR. 2015. *Topographic controls on soil and regolith thickness from shallow-seismic refraction constraints across upland hillslopes in the Valles Caldera, New Mexico*. University of Arizona Earthweek Annual Symposium.

Olyphant, JR, R Cardona, M Greene. 2014. *Saung Prospect Rock Physics*. Chevron Technical Talk.

Olyphant, JR. 2013. *Atlantis Rock Physics*. BP Technical Session Presentation.

Olyphant, JR. 2013. *Atlantis Rock Physics*. BP Technofest Poster Presentation.

Olyphant, JR, RA Johnson, JD Pelletier. 2013. *Seismic constraints on critical-zone structure in stream catchments within Valles Caldera, New Mexico*. University of Arizona Geodaze Annual Symposium.

AWARDS and SCHOLARSHIPS

- Sumner and Sulzer Research Scholarship 2017
- Sumner Memorial Research Scholarship 2016
- ChevronTexaco Geology Fellowship 2016, 2015
- Galileo Circle Scholarship 2014
- SEG Foundation Student Scholarship Award 2014
- BP Technofest 3rd place poster presentation in Technical Excellence (Houston) 2013
- Faculty Scholarship Senior Student Award (Indiana University) 2012
- Dean's List (Indiana University) 2008-2012

ASSOCIATIONS and OUTREACH

- Society of Exploration Geophysicists – SEG (2012 – present)
- Geodaze Symposium Volunteer – Webmaster (2015 & 2016)
- Volunteer for encouraging 3rd - 12th grade students who excel in mathematics to consider a college career in the Geosciences (2014 & 2015)
- University of Arizona Geophysical Society President (August 2016 – August 2017)