

## Jared R. Olyphant

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<https://jolyphant.github.io/>

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

## RESEARCH INTERESTS

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- Exploration of frontier basins through the integration of multiple geophysical datasets
- The tectonics of conjugately rifted margins through seismic evidence and modeling
- Investigation of critical-zone architecture using shallow-seismic techniques
- The integration of applied geophysics and structural geology towards shale-play development, carbon sequestration, and geologic hazards
- Machine learning and data science in the Geosciences

## EDUCATION

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**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

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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* (under review).

Olyphant, JR and RA Johnson. 2017. 3-D Subsidence Analysis of the 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

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**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**

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### **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**

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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**

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- 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 3<sup>rd</sup> 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**

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- Society of Exploration Geophysicists – SEG (2012 – present)
- Geodaze Symposium Volunteer – Webmaster (2015 & 2016)
- Volunteer for encouraging 3<sup>rd</sup> - 12<sup>th</sup> 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)