



## Allegra Hosford Scheirer

Physical Sci Res Scientist  
Geological Sciences

### Bio

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#### BIO

A physical science research scientist with the Basin and Petroleum System Modeling Group at Stanford, Allegra spent ~6 years at the U. S. Geological Survey following her Ph.D. from the MIT-WHOI Joint Program in Oceanography. Her research at the USGS focused on building computerized three-dimensional models of sedimentary basins, assessment of undiscovered oil and gas resources in California, and potential field analysis. She served as a member of the AAPG Research Committee and as an Associate Editor of the Journal of Geophysical Research-Solid Earth. She is the editor of USGS Professional Paper 1713. At Stanford, Allegra advises graduate students, teaches courses, engages with industrial affiliates, and does research.

#### ACADEMIC APPOINTMENTS

- Phys Sci Res Assoc, Geological Sciences

#### ADMINISTRATIVE APPOINTMENTS

- Research Geophysicist, U.S. Geological Survey, (2002-2008)
- Postdoctoral Scholar, Woods Hole Oceanographic Institution, (2001-2002)

#### HONORS AND AWARDS

- STAR Award for excellence in support of San Joaquin Basin assessment, U.S. Geological Survey (2003)
- STAR Award for excellence in geophysics, U.S. Geological Survey (2006)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Association of Petroleum Geologists Research Committee (2007 - present)
- Invited lecture, Sacramento Petroleum Association (2007 - 2007)
- Associate Editor, Journal of Geophysical Research-Solid Earth (2006 - present)
- Editor, Professional Paper 1713 (31 chapters), U.S. Geological Survey (2004 - present)
- Co-organizer and chair, Annual Convention Special Section, AAPG Pacific Section (2004 - 2004)
- Invited lecturer, Lawrence Livermore National Laboratory (2004 - 2004)
- Invited lecturer, Sacramento Petroleum Association (2004 - 2004)
- Invited lecturer, San Francisco State University (2004 - 2004)

#### PROFESSIONAL EDUCATION

- Ph.D., MIT-Woods Hole Oceanographic Institution , Marine Geology and Geophysics (2001)
- B.S., Brown University , Geology-Physics/Mathematics (1995)

## LINKS

- Basin and Petroleum System Modeling Group: <http://bpsm.stanford.edu/>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

#### Research

Allegra Hosford Scheirer is a research geophysicist at Stanford University, specializing in basin and petroleum system modeling. Her work is centered on the strong belief in the integration of geological, geochemical, and geophysical data in a unified working environment.

#### Teaching

She co-teaches courses and co-advises several graduate students with a focus on basin and petroleum system modeling and investigative methods for exploring conventional and unconventional hydrocarbons.

#### Professional Activities

Prior to joining Stanford, Allegra was a member of the Geophysical Unit of Menlo Park and the Energy Resources Program at the U.S. Geological Survey, where she constructed three-dimensional geologic models for use in the resource assessment process. Allegra has led and participated in numerous field programs at sea and in the United States. She is the editor of U.S.G.S. Professional Paper 1713 and a past Associate Editor of Journal of Geophysical Research.

## Teaching

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### COURSES

#### 2021-22

- Basin and Petroleum System Modeling: GEOLSCI 255 (Win)
- Sedimentary Basins: GEOLSCI 251 (Aut)
- The Petroleum System: Investigative method to explore for conventional & unconventional hydrocarbons: GEOLSCI 248 (Aut)

#### 2020-21

- The Petroleum System: Investigative method to explore for conventional & unconventional hydrocarbons: GEOLSCI 248 (Aut)

## Publications

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### PUBLICATIONS

- **Lithofacies-dependent rock-physics templates of an unconventional shale reservoir on the North Slope, Alaska** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*  
Minh Tran, Mukerji, T., Scheirer, A.  
2020; 8 (3): T611–T623
- **A lateral well in the Shublik Formation, Alaska North Slope, with implications for unconventional resource potential** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*  
Scheirer, A., Bird, K. J.  
2020; 8 (2): SJ35–SJ49
- **Tectonic Uplift Destabilizes Subsea Gas Hydrate: A Model Example From Hikurangi Margin, New Zealand** *GEOPHYSICAL RESEARCH LETTERS*  
Burton, Z. M., Kroeger, K. F., Scheirer, A., Seol, Y., Burgreen-Chan, B., Graham, S. A.  
2020; 47 (7)
- **A lateral well in the Shublik Formation, Alaska North Slope, with implications for development of unconventional resource potential** *Interpretation*

- Hosford Scheirer, A., Bird, K. J.  
2020; 8 (2): SJ36-SJ49
- **Identification of genetically distinct petroleum tribes in the Middle Magdalena Valley, Colombia** *AAPG BULLETIN*  
Thompson-Butler, W., Peters, K. E., Magoon, L. B., Scheirer, A., Moldowan, J., Orlando Blanco, V., Eugenio Gonzalez, R., Graham, S. A., Zumberge, J. E., Wavrek, D. A.  
2019; 103 (12): 3003–34
  - **Integrating strike-slip tectonism with three-dimensional basin and petroleum system analysis of the Salinas Basin, California** *AAPG BULLETIN*  
Menotti, T., Scheirer, A., Meisling, K., Graham, S. A.  
2019; 103 (6): 1443–72
  - **Integrating statistical rock physics and pressure and thermal history modeling to map reservoir lithofacies in the deepwater Gulf of Mexico** *GEOPHYSICS*  
Alkawai, W. H., Mukerji, T., Scheirer, A., Graham, S. A.  
2018; 83 (4): IM15–IM28
  - **Combining seismic reservoir characterization workflows with basin modeling in the deepwater Gulf of Mexico Mississippi Canyon area**  
Alkawai, W. H., Mukerji, T., Scheirer, A., Graham, S. A.  
*AMER ASSOC PETROLEUM GEOLOGIST*.2018: 629–52
  - **Past, present, and future of basin and petroleum system modeling**  
Baur, F., Scheirer, A., Peters, K. E.  
*AMER ASSOC PETROLEUM GEOLOGIST*.2018: 549–61
  - **Special Issue: The Future of Basin and Petroleum System Modeling, A Hedberg Research Conference Introduction** *AAPG BULLETIN*  
Baur, F., Scheirer, A., Peters, K. E.  
2018; 102 (4): 545–47
  - **A basin modeling and organic geochemistry study in the Vallecitos syncline, San Joaquin Basin, California** *MARINE AND PETROLEUM GEOLOGY*  
He, M., Graham, S., Scheirer, A. H., Peters, K. E.  
2014; 49: 15-34
  - **The great integrator in petroleum exploration** *E&P*  
Hosford Scheirer, A.  
2014; 87 (11)
  - **Toward successful petroleum production from unconventional and conventional reservoirs in the Central Alaska North Slope** *Unconventional Resources Technology Conference*  
Hosford Scheirer, A., Magoon, L. B., Bird, K. J., Duncan, E. A., Peters, K. E.  
2014
  - **The three-dimensional geologic model used for the 2003 National Oil and Gas Assessment of the San Joaquin Basin Province, California** *Petroleum systems and geologic assessment of oil and gas in the San Joaquin Basin Province, California: U.S. Geol. Surv. Prof. Pap. 1713*  
Hosford Scheirer, A.  
2013; 7: 1-82
  - **Eocene total petroleum system—North and east of the Eocene West Side Fold Belt Assessment Unit of the San Joaquin Basin Province, California** *Petroleum systems and geologic assessment of oil and gas in the San Joaquin Basin Province, California: U.S. Geol. Surv. Prof. Pap.*  
Gautier, D. L., Hosford Scheirer, A.  
2009; 1713
  - **Neogene Gas Total Petroleum System—Neogene Nonassociated Gas Assessment Unit of the San Joaquin Basin Province** *Petroleum systems and geologic assessment of oil and gas in the San Joaquin Basin Province, California: U.S. Geol. Surv. Prof. Pap. 1713*  
Hosford Scheirer, A., Magoon, L. B.  
2009
  - **Miocene Total Petroleum System—Lower Bakersfield Arch Assessment Unit of the San Joaquin Basin Province** *Petroleum Systems and Geologic Assessment of Oil and Gas in the San Joaquin Basin Province, California: U.S. Geol. Surv. Prof. Pap. 1713*  
Gautier, D. L., Hosford Scheirer, A.  
2008; 1713

- **Miocene Total Petroleum System—Southeast Stable Shelf Assessment Unit of the San Joaquin Basin Province** *Petroleum Systems and Geologic Assessment of Oil and Gas in the San Joaquin Basin Province, California: U.S. Geol. Surv. Prof. Pap. 1713*  
Gautier, D. L., Hosford Scheirer, A.  
2008; 1713
- **Three-dimensional stratigraphic framework for the San Joaquin Basin Province, California** *Petroleum Systems and Geologic Assessment of Oil and Gas in the San Joaquin Basin Province, California: U.S. Geol. Surv. Prof. Pap. 1713*  
Hosford Scheirer, A.  
2008; 1713
- **Age, Distribution, and Stratigraphic Relationship of Rock Units in the San Joaquin Basin Province, California** *Petroleum Systems and Geologic Assessment of Oil and Gas in the San Joaquin Basin Province, California: U.S. Geol. Surv. Prof. Pap. 1713*  
Hosford Scheirer, A., Magoon, L. B.  
2008; 107
- **A four-dimensional petroleum systems model for the San Joaquin Basin Province, California** *Petroleum systems and geologic assessment of oil and gas in the San Joaquin Basin, California: U.S. Geol. Surv. Prof. Pap. 1713*  
Peters, K. E., Magoon, L. B., Lampe, C., Hosford Scheirer, A., Lillis, P. G., Gautier, D. L.  
2008; 1713
- **Evolution of the Southwest Indian Ridge from 55 degrees 45 ' E to 62 degrees E: Changes in plate-boundary geometry since 26 Ma** *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS*  
Baines, A. G., Cheadle, M. J., Dick, H. J., Scheirer, A. H., John, B. E., Kusznir, N. J., Matsumoto, T.  
2007; 8
- **Assessment of Undiscovered Natural Gas Resources of the Sacramento Basin Province of California, 2006** *U.S. Geological Survey Fact Sheet 2007-3014*  
Hosford Scheirer, A., Tennyson, M. E., Magoon, L. B., et al  
2007
- **Winters-Domengine Total Petroleum System—Northern Nonassociated Gas Assessment Unit of the San Joaquin Basin Province** *Petroleum systems and geologic assessment of oil and gas in the San Joaquin Basin Province, California: U.S. Geol. Surv. Prof. Pap. 1713*  
Hosford Scheirer, A., Magoon, L. B.  
2007
- **Petroleum Systems and Geologic Assessment of Oil and Gas in the San Joaquin Basin Province, California** *U.S. Geol. Surv. Prof. Pap. 1713*  
edited by Hosford Scheirer, A.  
2007
- **Discrete and Continuous Gravity Studies of the Arbuckle-Simpson Aquifer** *American Geologists Union, Fall Meeting*  
Scheirer, D., Hosford Scheirer, A., Herr, R.  
2005
- **A combined basalt and peridotite perspective on 14 million years of melt generation at the Atlantis Bank segment of the Southwest Indian Ridge: evidence for temporal changes in mantle dynamics?** *CHEMICAL GEOLOGY*  
Coogan, L. A., Thompson, G. M., MacLeod, C. J., Dick, H. J., Edwards, S. J., Scheirer, A. H., Barry, T. L.  
2004; 207 (1-2): 13-30
- **Assessment of Undiscovered Oil and Gas Resources of the San Joaquin Basin Province of California, 2003** *U.S. Geological Survey Fact Sheet FS-2004-0343*  
Gautier, D. L., Hosford Scheirer, A., Tennyson, M. E., et al  
2004
- **A mechanism for generating the anomalous uplift of oceanic-core complexes: Atlantis Bank, SW Indian Ridge** *Geology*  
Baines, A. G., Cheadle, M. J., Dick, H. J., Hosford Scheirer, A., John, B. E., Kusznir, N. J., Matsumoto, T.  
2003; 31 (12): 1105-1108
- **Crustal magnetization and accretion at the Southwest Indian Ridge near the Atlantis II fracture zone, 0-25 Ma** *Journal of Geophysical Research B: Solid Earth*  
Hosford, A., Tivey, M., Matsumoto, T., Dick, H., Schouten, H., Kinoshita, H.  
2003; 108

- **Structural Evolution From a Strike-Slip Transform Fault to a Non-transform Discontinuity: Examples From 57°-58°30'E on the SW Indian Ridge and Geodynamic Implications** *AGU Fall Meeting*

Hosford, A., Lin, J.  
2002

- **Crustal evolution over the last 2 m.y. at the Mid-Atlantic Ridge OH-1 segment, 35°N** *Journal of Geophysical Research: Solid Earth*

Hosford, A., Lin, J., Detrick, R. S.  
2001; 106: 13269-13285