

# Sean Thomas Peters

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## EDUCATION

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**Stanford University**, Stanford, CA Expected 2020  
Ph.D. Candidate in Electrical Engineering

*Dissertation*: "Passive Radar Sounding for Terrestrial and Planetary Glaciology"  
*Advisor*: Dustin M. Schroeder

**Stanford University**, Stanford, CA 2017  
Master of Science in Electrical Engineering

**Rice University**, Houston, TX 2015  
B.S. in Electrical Engineering, *Cum Laude*

## GRANTS, FELLOWSHIPS & AWARDS

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IEEE Geoscience and Remote Sensing Student Prize Paper Award	2019
Stanford Diversifying Academia, Recruiting Excellence (DARE) Fellowship	2018
AGU Cryosphere Flash Freeze Innovation Award	2017
National Science Foundation Graduate Research Fellowship	2016
Stanford Engineering Larry and Joan Owen Fellowship	2015
Stanford Enhancing Diversity in Graduate STEM Education (EDGE) Fellowship	2015
GEM Ph.D. in Engineering Associate Fellowship	2015

## RESEARCH EXPERIENCE

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### Stanford University Department of Electrical Engineering

Radio Glaciology Group, advised by Dustin Schroeder Sept. 2016 – Present  
Developing a low-resource passive radar that uses ambient radio signals for glaciological studies

Radar Remote Sensing Group, advised by Howard Zebker June 2016 – August 2016  
Identified partially correlated persistent scatterers with maximum likelihood estimation

Optical Communications Group, advised by Joseph Kahn Sept. 2015 – May 2016  
Optimized multi-mode fiber index profiles for mode division multiplexing

### Rice University Departments of Electrical Engineering

Light-Matter Interactions Lab, advised by Junichiro Kono August 2014 – January 2015  
Studied aligned single and multi-walled carbon nanotube films for terahertz polarizers

Terahertz Science Lab, advised by Daniel Mittleman January 2014 – May 2014  
Designed 2D and 3D COMSOL models of terahertz parallel-plate waveguide ring modulators

## PUBLICATIONS

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### Peer-Reviewed Journal Articles

1. **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf (2018). In-Situ Demonstration of a Passive Radio Sounding Approach Using the Sun for Echo Detection, *IEEE Transactions on Geoscience and Remote Sensing*, doi.org/10.1109/TGRS.2018.2850662

## Peer-Reviewed Conference Proceedings

2. **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf (2019). Two-Dimensional Image Formation with Passive Radar Using the Sun for Echo Detection, *IEEE Geoscience and Remote Sensing Symposium Proceedings*, doi.org/10.1109/IGARSS.2019.8897880
3. **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf (2018). First In-Situ Demonstration of Passive Radio Sounding Using the Sun as a Source for Echo Detection, *IEEE Geoscience and Remote Sensing Symposium Proceedings*, doi.org/10.1109/IGARSS.2018.8517970

## Manuscripts in Review/Submitted

4. **S.T. Peters**, D.M. Schroeder, A. Romero-Wolf, Passive Radio Sounding to Correct for Europa's Ionospheric Distortion of VHF Signals, *Under review in Planetary and Space Science*, Submitted April 26, 2019
5. **S.T. Peters**, D.M. Schroeder, W. Chu, M. Haynes, A. Romero-Wolf, Glaciological Monitoring Using the Sun as a Radio Source for Echo Detection, *Journal article submitted Feb. 5, 2020*
6. N. L. Bienert, D.M. Schroeder, **S.T. Peters**, M.R. Siegfried, Processing-Based Synchronization Approach for Bistatic Radar Glacial Tomography, *Under review in Proceedings of IEEE Geoscience and Remote Sensing*, Submitted January 15, 2020

## Manuscripts in Preparation

7. **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf, Passive Synthetic Aperture Radar Imaging Using Radio-Astronomical Sources
8. **S.T. Peters**, D.M. Schroeder, A. Romero-Wolf, G. Steinbrügge, Passive Radar Investigations of Io's Subsurface Using Jupiter's Radio Emissions for Echo Detection

## Open Access

9. J. Ding, O. Turk, **S.T. Peters**, and S. Mannava. "License Plate Recognition Matched Filter Technique." OpenStax Connexions, <http://cnx.org/content/col11601/1.1/>

## PROFESSIONAL EXPERIENCE

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Army Test and Evaluation Command - Yuma Proving Ground May 2012 – August 2012  
Test Engineering Intern: Assisted test engineers with planning and executing dynamical tests for ground combat systems and military tactical vehicles

Chevron North American Exploration and Production Company May 2014 – August 2014  
Facilities Engineering Intern: Upgraded recloser system for securing Chevron's Coalinga power grid

## TEACHING EXPERIENCE

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Stanford University, Department of Geophysics Spring 2020  
Introduction to the Foundations of Contemporary Geophysics, Course Assistant

Richard Tapia Center for Excellence & Equity June 2015 – August 2015  
Calculus tutor for Math-Science Scholars Program

<u>Rice Department of Computer &amp; Electrical Engineering</u> Fundamentals of Electrical Engineering, Course Assistant	August 2014 – December 2014
<u>Rice Society of Academic Fellows and Mentors</u> Calculus, Physics, and Engineering tutor for Residential College	March 2013 – May 2015
<u>Office of Academic Advising for Athletes</u> Calculus, Physics, and Chemistry tutor for Rice Student-Athletes	August 2012 – May 2013

### **MENTORING EXPERIENCE**

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<u>Stanford Radio Glaciology Group</u>	2017 – Present
Akua McLeod	Stanford Undergraduate Research
Nicole Bienert	Stanford Graduate Research
<u>El Centro Chicano y Latino Graduate Scholar-in-Residence</u>	2018 – Present
Ismael Garcia	Stanford Undergraduate
Manuel Retana	Stanford ME M.S. Student
<u>El Centro Chicano y Latino Freshman Scholars Mentor</u>	2016 – Present
Anthony Flores	Stanford Undergraduate
Jose Luquin	Stanford Undergraduate
Daniel Estupinan	Stanford Undergraduate
Selaine Rodriguez	Stanford Undergraduate
<u>Stanford Enhancing Diversity in Graduate Education Mentor</u>	2017 – 2018
Francisco Romero	Stanford EE Ph.D. Candidate
Simón Lorenzo	Stanford EE Ph.D. Candidate
<u>Bay Area Graduate Pathways in STEM</u>	2017
Alexia Reyes	San Diego State University
<u>Tapia Math-Science High School Scholars Program</u>	2015
Amber Liu	Dartmouth College
Carlos Sosa	California Institute of Technology
Elizabeth Dang	University of Houston
Errol Williams II	The University of Texas at Austin
Sandra Delgado	Washington University in St. Louis

### **ADDITIONAL AWARDS & HONORS**

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NextProf Nexus Workshop Travel Award	2019
American Association of Hispanics in Higher Education Travel Award	2019
El Centro Chicano y Latino Outstanding Graduate Mentor Award	2019
El Centro Chicano y Latino Graduate Scholar-in-Residence	2018
Ford Foundation Predoctoral Fellowship Honorable Mention	2015
Tapia Diversity in Computing Scholarship	2015
Chevron Engineering Scholarship	2015
IEEE Eta Kappa Nu - Electrical Engineering Honor Society	2014
The Lon Wilson Service to Residential College Award	2014
Elizabeth D. Williams Summer Study Abroad Scholarship	2013
SHPE Foundation Northrop Grumman Scholarships	2013 – 2014
Rice University President's Honor Roll	2012 – 2014
Rice University Trustee Distinguished Scholar	2011 – 2015

## FIELDWORK EXPERIENCE

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Store Glacier, Greenland: Passive radar sounding phased-array and time-series tests	2019
Death Valley, CA: Passive radar imaging and reflectivity time-series measurements	2018
Store Glacier, Greenland: Passive radar sounding development; ApRES experiments	2018
Death Valley, CA: Passive radar sounding two-dimensional image formation	2017
Store Glacier, Greenland: ApRES MIMO deployment; passive radar prototype testing	2017
Big Sur, CA: Passive radar prototype testing using the Sun for echo detection	2016

## PRESENTATIONS

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### Invited Talks

- 2019 **S.T. Peters**, D.M. Schroeder, M. Haynes, A. Romero-Wolf, Ambient Noise Radio Glaciology, University of Trento Remote Sensing Laboratory Seminar, Trento, Italy
- 2018 **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf, First In-Situ Demonstration of Passive Radio Sounding Using the Sun as a Source for Echo Detection, *IEEE Geoscience and Remote Sensing Symposium*, Invited Session, Valencia, Spain
- 2017 **S.T. Peters**, D.M. Schroeder, M. Haynes, A. Romero-Wolf, Passive Radio Sounding for Terrestrial Glaciology, UCL Radar Group Seminar, London, England

### Conference Oral Presentations

- 2019 **S.T. Peters**, D.M. Schroeder, W. Chu, M. Haynes, A. Romero-Wolf, Passive radio sounding with ambient signals of opportunity to monitor cryospheric subsurface conditions, *AGU Fall Meeting*, San Francisco, CA
- 2019 **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf, Two-Dimensional Image Formation with Passive Radar Using the Sun for Echo Detection, *IEEE Geoscience and Remote Sensing Symposium*, Yokohama, Japan
- 2019 A. Romero-Wolf, D.M. Schroeder, **S.T. Peters**, B. Bills, D. Blankenship, L. Bruzzone, B. Campbell, L. Carrer, C. Grima, E. Heggy, Status and prospects of passive sounding with radio-astronomical sources, *International Glaciological Symposium*, Stanford, CA
- 2017 **S.T. Peters**, D.M. Schroeder, M. Haynes, A. Romero-Wolf, Preliminary Field Demonstration of Passive Radio Sounding Using the Sun as a Signal for Echo Detection, *AGU Fall Meeting*, New Orleans, LA
- 2017 **S.T. Peters**, D.M. Schroeder, M. Haynes, A. Romero-Wolf, Passive radio sounding for terrestrial glaciology: preliminary field testing and proof-of-concept, *International Glaciological Symposium*, Boulder, CO
- 2017 **S.T. Peters**, D.M. Schroeder, M. Haynes, A. Romero-Wolf, Passive Radio Sounding for Terrestrial Glaciology, *Bay Area Glaciology Meeting*, Stanford, CA

### Selected Poster Presentations

- 2020 **S.T. Peters**, D.M. Schroeder, A. Romero-Wolf, G. Steinbrügge, Passive Radar Investigations of Io Using Jupiter's Radio Emissions, *Lunar & Planetary Science Conference*, Woodlands, TX

- 2019 **S.T. Peters**, D.M. Schroeder, W. Chu, M. Haynes, A. Romero-Wolf, Passive radio sounding using the Sun as a signal to monitor subsurface processes, *WAIS Workshop*, Julian, CA
- 2019 **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf, Passive Radio Sounding for Glaciological Investigations of Subsurface Processes, *International Glaciological Symposium*, Stanford, CA
- 2019 **S.T. Peters**, D.M. Schroeder, M. Haynes, A. Romero-Wolf, Passive Radio Sounding with Jupiter's Radio Emissions to Correct for Europa's Ionospheric Distortion, *International Glaciological Symposium*, Stanford, CA
- 2019 **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf, Correcting Europa's Ionospheric Distortion with Passive Radar Using Jovian Decametric Radiation, *Lunar & Planetary Science Conference*, Woodlands, TX
- 2018 **S.T. Peters**, D.M. Schroeder, D. Castelletti, M. Haynes, A. Romero-Wolf, A Passive SAR Approach Using the Sun for Echo Detection, *AGU Fall Meeting*, Washington D.C.

### Technical Presentation Competitions

2019	IEEE Geoscience and Remote Sensing Student Paper Competition	2 <sup>nd</sup> / 305
2017	AGU Fall Meeting: Cryosphere Flash Freeze Competition	1 <sup>st</sup> / 10
2017	National GEM Consortium Technical Presentation Competition	3 <sup>rd</sup> / 13
2015	National GEM Consortium Technical Presentation Competition	2 <sup>nd</sup> / 16

### ACADEMIC SERVICE & OUTREACH

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#### Stanford Department of Electrical Engineering

Electrical Engineering Graduate Admissions Committee	2018
Ph.D. Student Panelist for Electrical Engineering Ph.D. Orientation	2018
Ph.D. Student Panelist for DiscoverEE Ph.D. Orientation	2016
Bay Area Science Festival Discovery Day Volunteer	2015

#### Stanford Equity & Inclusion Initiatives

Engineering Diversity Programs Conference Recruiter	2017 – 2019
Graduate Diversity Visit Days Volunteer	2016 – 2019
Ph.D. Student Panelist: What I Wish I Would Have Known	2019
Ph.D. Student Panelist: Thriving in Graduate School	2018
Bay Area Graduate Pathways in STEM Mentor	2017

#### Stanford Vice Provost for Graduate Education

EDGE Mentor Panelist: Identifying Your Research Topic	2018
EDGE Mentor Panelist: Bridging the Stanford Experience to Home	2017
EDGE Mentor Panelist: Adjusting to Graduate School Life at Stanford	2017

### PROFESSIONAL AFFILIATIONS

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IEEE Geoscience and Remote Sensing Society  
 American Geophysical Union  
 International Glaciological Society  
 Society of Hispanic Professional Engineers