Krittanon "Pond" Sirorattanakul

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Education

2024 **Ph.D. in Geophysics**, with subject minor in *Computer Science and Engineering*
California Institute of Technology, CA, USA

2020 **M.S. in Geophysics**
California Institute of Technology, CA, USA

2018 **B.S. in Physics** (highest honors)
B.A. in Earth and Environmental Sciences (highest honors)
Lehigh University, PA, USA

Professional Appointments

2024- **Geomechanics Specialist / Subsurface Specialty Engineer**
Geomechanics Chapter, Chevron Technical Center, Houston, TX, USA
Supervisor: *Rajesh Nair*

2024 **Postdoctoral Scholar Research Associate**
Division of Geological and Planetary Sciences
California Institute of Technology, CA, USA
Advisor: *Jean-Philippe Avouac*

2018-24 **Graduate Student Researcher**
Seismological Laboratory, Division of Geological and Planetary Sciences,
and the Center for Geomechanics and Mitigation of Geohazards (GMG)
California Institute of Technology, CA, USA
Thesis: *Response of Earthquakes to Transient Stresses, in Nature and Laboratory*
Advisors: *Jean-Philippe Avouac*, *Ares J. Rosakis*
Committee: *Zhongwen Zhan, Nadia Lapusta, Zachary E. Ross*

2022,23 **Petroleum Engineer Ph.D. Internship**
Geomechanics Chapter, Chevron Technical Center, Houston, TX, USA
Supervisor: *Peggy Rijken*
Mentors: *Zijun Fang*, *Yunhui Tan*

2021-23 **Space Technology for Earth Applications (STEA) Project Group Co-Lead**
Space Generation Advisory Council (SGAC), in support of the United Nations Program on Space Applications

2018 **Visiting Student**
Earth Observatory of Singapore, Nanyang Technological University (NTU), Singapore
Finite Fault Inversion of Large Earthquakes in Southeast Asia
Mentor: *Shengji Wei*

2017 **Summer Internship**
Nurture Nature Center, PA, USA
Developing a Science on a Sphere Education Program for Middle School Students
Supervisor: *Kathryn Semmens*

2016 **Lee Teng Undergraduate Internship in Accelerator Science and Engineering**,
Fermi National Accelerator Laboratory, U.S. Department of Energy, IL, USA
Developing Software Interfaces for Testing of Prototype Cryomodule for LCLS-II
Mentor: *Elvin Harms*

2015-18 **Undergraduate Student Researcher**
Department of Physics and Department of Earth and Environmental Sciences
Lehigh University, PA, USA
1. *Characterization of Slip Behaviors Observed at the Bulnay Fault System in Mongolia* (honors thesis)
2. *Finite Frequency Tomography of Central Mongolia*
3. *Photometric Analysis of Cepheids and R Coronae Borealis Imaged by the Kilodegree Extremely Little Telescope (KELT)*
4. *Measuring Self and Collective Diffusivity of Colloids using Dielectrophoresis and Fluorescence Microscopy*

Advisors: *Anne Meltzer* (*1,2*), *Joshua Pepper* (*3*), *H. Daniel Ou-Yang* (*4*)

2011-13 **High School Research Fellow**
Junior Student Talent Project (JSTP), Thailand
Seasonal Variations of Astronomical Seeing in Bangkok, Thailand
Mentor: *Sujint Wangsuya* (Mahidol University)

Fellowships and Grants

2019-24 Caltech GMG Center Project GMG-6 ($306,000), PI: Ares Rosakis
K. Sirorattanakul contributed to the writing of the proposal and execution of the work.

2018-19 Caltech Graduate Fellowship

2013-18 Royal Thai Scholarship for Undergraduate Studies

2017 Grant for Experiential Learning in Health (GELH), Lehigh University ($5,420)

2015-16 CAS Undergraduate Research Grant, Lehigh University ($2,050)

2011-13 Junior Science Talent Project (JSTP), NSTDA, Thailand

2011-12 Young Scientist Competition (YSC), NSTDA, Thailand

Honors and Awards

2024 GPS Award for Academic Excellence in Research, California Institute of Technology

2022,23 Human Energy Award, Chevron Corporation

2020 Member of the Year, Space Technology for Earth Applications (STEA) Project Group, Space Generation Advisory Council (SGAC)

2020 Finalist Team, Mars City State Design Competition, The Mars Society

2018 Named 24 Under 24 Leaders and Innovators in STEAM and Space, The Mars Generation

2018 Donnel Foster Hewett Award, Department of Earth and Environmental Sciences, Lehigh University

2018 Best Talk, Undergraduate Research Symposium, Department of Earth and Environmental Sciences, Lehigh University

2016 Malcolm J. Gordon, Jr. Physics Prize, Department of Physics, Lehigh University

2014 Ranked 260.5/4320, the 75th William Lowell Putnam Mathematical Competition

2012 Gold Medal (Physics), the 1st Asia Pacific Conference of Young Scientists (APCYS), Palangka Raya, Indonesia

2012 Commendation Award, Singapore International Mathematics Challenge (SIMC)

2012 Quarterfinalist Team, Wittaya Subphayuth, Thailand National Science TV Game Show

2011 Bronze Medal, the 5th International Olympiad on Astronomy and Astrophysics (IOAA), Chorzów, Poland

2011 National Outstanding Youth, Ministry of Social Development and Human Security, Thailand

2011 Gold Medal, the 8th Thailand Astronomy Olympiad (TAO)

2010 Bronze Medal and the Best Team, the 4th International Olympiad on Astronomy and Astrophysics (IOAA), Beijing, China

2010 Silver Medal, the 10th Thailand Physics Olympiad (TPhO)

Peer-Reviewed Publications

In Preparation

[12] Lattanzi, A., **Sirorattanakul, K.**, Lapusta, N., Rubino, V., Rosakis, A. J., Experimental Evidence of the Effect of Healing on Friction and Rupture Dynamics, In Preparation.

[11] **Sirorattanakul, K.**, Rubino, V., Lapusta, N., Rosakis, A. J., Effects of Loading Conditions and Roughnesses on Healing of Shear Interfaces, In Preparation.

[10] **Sirorattanakul, K.**, Avouac, J.-P., Earthquake Nucleation Process Revealed by Modulation of Seismicity Rate in California driven by Tectonic, Hydrological, and Tidal Loading, In Preparation.

[9] **Sirorattanakul, K.**, Rubino, V., Lattanzi, A., Rosakis, A. J., Experimental Quantification of Ultraslow Slip Rate of Shear Interfaces Using Digital Image Correlation, In Preparation for *Experimental Mechanics*.

[8] Alghannam, M., Larochelle, S., Lapusta, N., Rubino, V., **Sirorattanakul, K.**, Lattanzi, A., Rosakis, A. J., Reproducing the Lab-Observed Dependence of Rupture Nucleation on Fluid Pressurization Rate in Rate-and-State Simulations, In Preparation for *Proceedings of the Royal Society of London A*.

Under Review

[7] Li, Y., Acosta, M., **Sirorattanakul, K.**, Bourne, S. J., Avouac, J.-P., InSAR Monitoring of Ground Deformation due to Subsurface Operations at Groningen: Implications for Reservoir Rheology, Under Review for *Remote Sensing of Environment*.

[6] **Sirorattanakul, K.**, Larochelle, S., Rubino, V., Lapusta, N., Rosakis, A. J., Sliding and Healing of Shear Interfaces that Appear Stationary, Under Review for *Nature*.

[5] **Sirorattanakul, K.**, Wilding, J., Acosta, M., Li, Y., Ross, Z. E., Bourne, S. J., van Elk, J., Avouac, J.-P., Bursts of Fast Propagating Swarms of Induced Earthquakes at the Groningen Gas Field, Accepted for publication in *Seismological Research Letters*.

Published

[4] Acosta, M., Avouac, J.-P., Smith, J. D., **Sirorattanakul, K.**, Kaveh, H., Bourne, S. J., Earthquake Nucleation Characteristics Revealed by Seismicity Response to Seasonal Stress Variations Induced by Gas Production at Groningen (2023), *Geophysical Research Letters*, 50(19), e2023GL105455, doi:10.1029/2023GL105455.

[3] **Sirorattanakul, K.**, Ross, Z. E., Khoshmanesh, M., Cochran, E. S., Acosta, M. and Avouac, J.-P. (2022), The 2020 Westmorland, California Earthquake Swarm as Aftershocks of a Slow Slip Event Sustained by Fluid Flow, *Journal of Geophysical Research: Solid Earth*, 127(11), e2022JB024693, doi:10.1029/2022JB024693.

[2] Hough, S. E., Thompson, E., Parker, G. A., Graves, R. W., Hudnut, K. W., Patton, J., Dawson, T., Ladinsky, T., Oskin, M., **Sirorattanakul, K.**, Blake, K., Baltay, A. and Cochran, E. (2020), Near-Field Ground Motions from the July 2019 Ridgecrest, California, Earthquake Sequence, *Seismological Research Letters*, 91(3), 1542-1555, doi:10.1785/0220190270.

[1] **Sirorattanakul, K.**, Engle, S., Pepper, J., Wells, M., Laney, C. D., Rodriguez, J. E. and Stassun, K. G. (2017), Period Variations for the Cepheid VZ Cyg, *The Astronomical Journal*, 154(6), doi:10.3847/1538-3881/aa8ccc.

Book Chapter and Technical Reports

[3] **Sirorattanakul, K.** et al. (2021), Perceptions of Space-Related Non-Governmental Organizations in Disaster Risk Management Revealed from a Questionnaire-Based Study, *Space Generation Advisory Council Project Report*, 1-18.

[2] Abdeljelil, N. et al. (incl. **Sirorattanakul, K.**) (2020), The Design of City States on Mars, a Vision from SGAC, In Crossman, F. (Eds.), *Mars City States –New Societies for a New World* (pp. 431-462), Lakewood, Colorado: Polaris Books.

[1] **Sirorattanakul, K.** and Harms, E. (2016), Preparation of LCLS-II 1.3 GHz Prototype Cryomodule Testing at Fermilab, *Final report for Lee Teng Undergraduate Internship in Accelerator Science and Engineering*, Batavia, IL, USA.

Patent

[1] Fang, Z., Tan, Y., Rijken, M. C. M. and **Sirorattanakul, K.**, Pressure and Stress Driven Induced Seismicity History Matching and Forecasting, *World Intellectual Property Organization Patent Application No. WO2024026497(A1)*, filed by Chevron Corporation on July 28, 2023.

Invited Talks and Seminars

[7] Plenary Lecture, Industrial Advisory Board Meeting, The Center for Geomechanics and Mitigation of Geohazards (GMG), California Institute of Technology, CA, USA 03/2024
Response of Faults to Transient Stresses, in Laboratory and Nature

[6] Lithospheric Dynamics Seminar, University of Southern California (USC), CA, USA 11/2023
Response of Faults to Transient Stresses, from Aseismic Slip to Seasonal Strains

[5] Special Seminar, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland 10/2022
What Drives Earthquake Swarms? Insights from the 2020 Westmorland, California Swarm and Fluid-Induced Laboratory Earthquakes

[4] Geomechanics Chapter, Chevron Technical Center, Houston, TX, USA 08/2022
From Newton's Sliding Blocks to Earthquake Sequences, a Geomechanical View of Frictional Interfaces

[3] Geophysics Seminar, University of California, Los Angeles (UCLA), CA, USA 04/2022
What Drives Earthquake Swarms? An Insight from the 2020 Westmorland Swarm in the Salton Trough, California

[3] Deep Dive Meeting, The Center for Geomechanics and Mitigation of Geohazards (GMG), California Institute of Technology, CA, USA 04/2020
Laboratory Fluid Injection Experiments

[2] James S. Knowles Lectures and Solid Mechanics Symposium, Pasadena, CA, USA 03/2020
Injecting Fluids in Laboratory Scale Earthquake Faults

[1] Lehigh Valley Amateur Astronomical Society (LVAAS), Allentown, PA, USA 02/2018
Unfolding Mysterious Evolution of Cepheids

First-Authored Conference Presentations

[14] **Sirorattanakul, K.** and Avouac, J.-P., Constraining Earthquake Nucleation Using Response of Seismicity to Transient Slow-Slip Event and Hydrological Surface Load, *Seismological Society of America Annual Meeting*, Anchorage, USA, April 29 – May 3, 2024, Poster 186.

[13] **Sirorattanakul, K.** and Avouac, J.-P., Seasonal and Tidal Modulations of Seismicity Rate in California, *American Geophysical Union Fall Meeting*, San Francisco, USA, December 11-15, 2023, Oral Presentation S44C-04.

[12] **Sirorattanakul, K.**, Ross, Z. E., Khoshmanesh, M., Cochran, E. S. and Avouac, J.-P., The 2020 Westmorland, California Earthquake Swarm as Aftershocks of a Slow Slip Event Sustained by Fluid Flow, *American Geophysical Union Fall Meeting*, Chicago, IL, USA, December 12-16, 2022, Oral Presentation S56A-02.

[11] **Sirorattanakul, K.**, Ross, Z. E., Khoshmanesh, M., Cochran, E. S. and Avouac, J.-P., The 2020 Westmorland, California Earthquake Swarm as Aftershocks of a Slow Slip Event Sustained by Fluid Flow, *Statistical International Seismology Conference*, Cargese, France, October 17-21, 2022, Oral Presentation.

[10] **Sirorattanakul, K.**, Ross, Z. E., Khoshmanesh, M., Cochran, E. S. and Avouac, J.-P., The 2020 Westmorland, California Earthquake Swarm as Aftershocks of a Slow Slip Event Sustained by Fluid Flow, *Southern California Earthquake Center (SCEC) Annual Meeting*, Palm Spring, CA, USA, September 11-14, 2022, Poster 69.

[9] **Sirorattanakul, K.**, Ross, Z. E., Khoshmanesh, M., Cochran, E. S. and Avouac, J.-P., The 2020 Westmorland Swarm in the Salton trough, California as a Sequence of Non-Interacting Earthquakes Driven by Preceding Aseismic Slip Transient, *American Geophysical Union Fall Meeting*, New Orleans, LA, USA, December 13-17, 2021, Oral Presentation S44C-07.

[8] **Sirorattanakul, K.**, Gualandi, A. and Avouac, J.-P., Imaging Slow-Slip Events in Costa Rica, *American Geophysical Union Fall Meeting*, San Francisco, CA, USA, December 9-13, 2019, Poster T13D-0308.

[7] **Sirorattanakul, K.**, Gualandi, A. and Avouac, J.-P., Imaging Slow-Slip Events in Costa Rica, *Southern California Earthquake Center (SCEC) Annual Meeting*, Palm Spring, CA, USA, September 8-11, 2019, Poster 201.

[6] **Sirorattanakul, K.**, Meltzer A. and Stachnik, J., Characterization of Slip Behaviors Observed at the Bulnay Fault System in Mongolia, *Lehigh EES Undergraduate Research Symposium*, Bethlehem, PA, USA, May 4, 2018, Oral Presentation.

[5] **Sirorattanakul, K.**, Shen, C., Huang, H. and Ou-Yang H. D., Osmotic Compressibility of Colloidal Crystals and Suspensions Measured by Dielectrophoresis and Fluorescence Microscopy, *American Physical Society March Meeting*, Los Angeles, CA, USA, March 5-9, 2018, Poster L60.165.

[4] **Sirorattanakul, K.**, Herrick, S., Survey of Rural Communities in San Juan Del Sur Area, Nicaragua for Lehigh's Engineers without Borders, Grants for Experiential Learning in Health Student Recipient Presentations, Lehigh University, October 3, 2017.

[3] **Sirorattanakul, K.**, Pepper, J. and Clayton G. C., KELT Photometric Observations of R Coronae Borealis Variables, *American Astronomical Society Meeting #230,* Austin, TX, USA, June 4-8, 2017, Poster 217.05.

[2] **Sirorattanakul, K.**, Shen, C. and Ou-Yang, H. D., A New Technique for Measuring Concentration Dependence of Self and Collective Diffusivity by Using a Single Sample, *American Physical Society March Meeting*, New Orleans, LA, USA, March 13-17, 2017, Oral Presentation R17.10.

[1] **Sirorattanakul, K.**, Huang, H., Uhl, C. and Ou-Yang, H. D., On Determination of Equation of State of Colloidal Suspensions, *American Physical Society March Meeting*, Baltimore, MD, USA, March 14-18, 2016, Oral Presentation R17.10.

Nth-Authored Conference Presentations

[11] Li, Y., Acosta, M., **Sirorattanakul, K.**, Bourne, S. J., Avouac, J.-P., InSAR Monitoring of Ground Deformation due to Subsurface Reservoir Operations at Groningen, *Seismological Society of America Annual Meeting*, Anchorage, USA, April 29 – May 3, 2024, Oral Presentation.

[10] Alghannam, M., Larochelle, S., Lapusta, N., Rubino, V., **Sirorattanakul, K.**, Rosakis, A., Lattanzi, A., Dependence of Rupture Nucleation and Propagation on Fluid Injection Rate: Effective Stress vs. Variations in Friction Properties, *American Geophysical Union Fall Meeting*, San Francisco, USA, December 11-15, 2023, Poster S51F-0267.

[9] Li, Y., Acosta, M., **Sirorattanakul, K.**, Avouac, J.-P., InSAR Monitoring of Ground Deformation due to Subsurface Reservoir Operations at Groningen, *American Geophysical Union Fall Meeting*, San Francisco, USA, December 11-15, 2023, eLightning G24B-07.

[8] Acosta, M., Avouac, J.-P., Smith, J. D., **Sirorattanakul, K.**, Kaveh, H., Bourne, S. J., Earthquake Nucleation Characteristics Revealed by the Effect of Short-and-Long-Term Stress Variations on Induced Seismicity, *American Geophysical Union Fall Meeting*, San Francisco, USA, December 11-15, 2023, Oral Presentation S22B-04.

[7] Mukherjee, S., **Sirorattanakul, K.**, Vargas-Sanabria, D., Patial, S., Silwal, A., Atienza, K. J., Supplementing Earth Observation with Twitter data to Improve Disaster Assessments: A Case Study of 2020 Bobcat Fire in Southern California, *72th International Astronautical Congress*, Dubai, UAE, October 25-29, 2021, Oral Presentation B1.5.10.

[6] Muhire, D. et al. (incl. **Sirorattanakul, K.**), Integrating Social Media and Remote Sensing Data for Flood Assessment in Developing Countries: A Case Study in Douala Estuary, Cameroon, *72th International Astronautical Congress*, Dubai, UAE, October 25-29, 2021, Oral Presentation B1.5.9.

[5] Penney, C., **Sirorattanakul, K.** and Avouac, J.-P., Rheological Implications of Post-Seismic Deformation following the 2019 Ridgecrest Earthquakes, *American Geophysical Union Fall Meeting*, Online, December 1-17, 2020, Poster MR010-0008.

[4] Hough, S. E. et al. (incl. **Sirorattanakul, K.**), Near-Field Ground Motions from the 2019 M6.4 and M7.1 Ridgecrest, California, Earthquakes: Subdued Shaking due to Pervasive Non-Linear Site Response?, *American Geophysical Fall Meeting*, San Francisco, CA, USA, December 9-13, 2019, Oral Presentation S42C-01.

[3] Velterop, E. et al. (incl. **Sirorattanakul, K.**), Current and Near-Future State of Space Technology for Disaster Situations, *70th International Astronautical Congress*, Washington, DC, USA, October 21-25, 2019, Oral Presentation B1.1.11.

[2] Traphagen, J., **Sirorattanakul, K.**, Cui, Z. and Meltzer, A., Probing Central Mongolia with Finite Frequency Tomography, *Lehigh EES Undergraduate Research Symposium*, Bethlehem, PA, USA, May 5, 2017, Poster Presentation.

[1] Shen, C., **Sirorattanakul, K.**, Huang, H. and Ou-Yang, H. D., An Experimental Study of the Equation of State of Nano Colloids Using a Novel Dielectrophoresis Osmometer, *American Physical Society March Meeting*, New Orleans, LA, USA, March 13-17, 2017, Oral Presentation S17.7.

Field Experience

2023	San Andreas Fault & Ridgecrest Ruptures, Geomechanics and Mitigation of Geohazards (GMG) Center, Co-leaded with Jean-Philippe Avouac (1 day)
2022	Seismic, Resistivity, Gravity, Ground Penetrating Radar, GPS, and Magnetic Surveys of Garlock Fault, USA (2 days)
2020	Geological Mapping of Piru Gorge Sandstone, Pyramid Lake, CA, USA (6 days)
2019	Boat Surveys and Sedimentology of Wax Lake Delta, LA, USA (7 days)
2019,22	Seismic Nodal Deployment & Retrieval, Los Angeles Basin, CA, USA (3 days)
2019	Survey of Displaced Rocks following M7.1 Ridgecrest Earthquake, CA, USA (1 day)
2019	Geological Mapping of Emigrant Gap Composite Pluton, CA, USA (18 days)
2019	Seismic, Resistivity, Gravity, Ground Penetrating Radar, and GPS Surveys of Homestead Valley Fault, USA (2 days)
2018,22	Drone Surveys of Owens Valley Fault System, CA, USA (19 days)
2017	Seismometer Deployment, Rapid Response for M4.2 Delaware Earthquake, USA (1 day)
2017	Social Science Survey for Engineer Without Borders, Nicaragua (19 days)

Workshops / Short Courses

2023	First Aid/CPR/AED Training, American Red Cross, Caltech, CA, USA
2022	SCEC Workshop: Coordinating Post-Earthquake Field Data Collection, Online
2021	ADVANCEGeo Bystander Intervention Workshop, Caltech, CA, USA
2021	SCEC Workshop: Community Geodetic Model Workshop, Online
2021	SCEC-IRIS-UNAVCO Workshop: Rupture and Fault Zone Observatory (RuFZO), Online
2020	Remote Online Sessions for Emerging Seismologists (ROSES), IRIS, Online
2018	NSF Workshop: Modeling Earthquake Source Processes, Pasadena, CA, USA
2016	Accelerator Fundamentals, U.S. Particle Accelerator School, Fort Collins, CO, USA
2012	Asian Science Camp (ASC), Jerusalem, Israel
2012	International Symposium on Green Growth, Hana Academy, Seoul, South Korea

Synergistic Activities

2020-21 Caltech Seismolab Seminar Organizing Committee

Journal Reviewer for:

Earth and Planetary Science Letters: 2020 (n=1)
Geophysical Research Letters: 2021 (n=1)
Journal of Geophysical Research: Solid Earth: 2022 (n = 1)
Physics of the Earth and Planetary Interiors: 2023 (n = 1)
Geology: 2023 (n = 1)
Asian Journal of Education and Social Studies: 2024 (n = 1)

Teaching

Graduate Teaching Assistant for:

- Ae/AM/CE/ME/Ge265a: Static and Dynamic Failure of Brittle Solids and Interfaces, from the Micro to the Mega, Caltech — Winter 24
- Ge111b: Applied Geophysics Seminar and Field Course, Caltech — Spring 22
- Ge121a: Advanced Field Geology, Caltech — Fall 22
- Ge177: Active Tectonics, Caltech — Spring 20, 22

Undergraduate Grader for:

- ASTR007: Introduction to Astronomy, Lehigh U. — Fall 16,17, Spring 18
- MATH205: Linear Methods, Lehigh U. — Fall 17

Peer Tutors, Center for Academic Success, Lehigh University for: 2015-18

- Introductory Physics (PHY010, PHY011, PHY012, PHY013, PHY021, PHY022)
- Calculus (MATH021, MATH022, MATH023)
- Linear Algebra (MATH205)

Community Involvements and Leadership

2022-23 Board of Directors, Graduate Student Council (GSC), Caltech

2021-22 Geological and Planetary Sciences Outreach (GO) Outdoors program, Caltech

2021 Guest Mentor, Cosmic Sandbox Workshop, Asia Pacific Oceania Space Association

2018-23 Social media manager, Caltech Letters

2019-20 Judge for Perpall Speaker and Gee Poster Competition, SURF program , Caltech

2019-23 Event supervisor and test writer for Los Angeles Regional Tournament and Southern California State Tournament, Science Olympiad, USA

2016-18 President, Astronomy Club, Lehigh University

2016-18 President, Southeast Asia at Lehigh (SEAL)

2015-17 Secretary, Society of Physics Students (SPS), Lehigh University Chapter

2015-16 Recruitment Chair, the Lehigh University Diplomats

Professional Associations

2018- American Geophysical Union (AGU)

2018-24 The Center for Geomechanics and Mitigation of Geohazards (GMG), California Institute of Technology

2018-23 Space Generation Advisory Council (SGAC)

2016-18 American Physical Society (APS)

2016-18 Lehigh Valley Amateur Astronomical Society (LVAAS)

2014-18 Society of Physics Students (SPS), Lehigh University Student Chapter

2014-18 Engineers without Borders (EWB), Lehigh University Student Chapter