

Vincent SASSARD *Ph. D. Candidate*

📍 Lafayette, IN

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📄 <https://scholar.google.com/citations?user=3VavhfUAAAAJ&hl=en>

Research Interests

- Lithosphere-asthenosphere interactions using seismic methods and numerical modeling.
- Subduction zone structure and dynamics using seismic imaging.

Education

2027 West Lafayette, IN	Doctor of Philosophy, Purdue University Advisor: Dr. Xiaotao Yang. Ph. D. Dissertation title: <i>Seismic imaging of the Alaskan lithospheric system from the ocean to the continental interior and its tectonic implications.</i>
2022 Utrecht, The Netherlands	Master's of Science, Universiteit Utrecht Geophysics, Earth Structure & Dynamics. Advisor: Dr. Ylona van Dinther. MSc thesis title: <i>What Controls Lateral Segmentation in Cascadia? Sub-slab Density Anomalies or Slab Age Variations?</i>
01/2020 – 06/2020 Eugene, OR, USA	Semester Abroad, University of Oregon
2020 Poitiers, France	Bachelor's of Science, Université de Poitiers Earth Sciences

Publications

07/2025	Slab tearing along a subducted oceanic plate joint beneath the Alaska Peninsula, <i>Nature Geoscience</i> Sassard, V., Yang, X., Liu, L. <i>et al.</i> Slab tearing along a subducted oceanic plate joint beneath the Alaska Peninsula. <i>Nat. Geosci.</i> 18 , 801–807 (2025). https://doi.org/10.1038/s41561-025-01749-6 📄
01/2023	SCENTAR: A High-Density Nodal Array to Study the Structure and Seismogenic Behavior of the Southern Cascadia Forearc, <i>Seismological Research Letters</i> Delph, J. R., Thomas, A. M., Stanciu, A. C., Aslam, K., Chatterjee, A., & Sassard, V. (2022). SCENTAR: A high-density nodal array to study the structure and seismogenic behavior of the southern Cascadia forearc. <i>Seismological Research Letters</i> , 94(1), 496–506. https://doi.org/10.1785/0220220251 📄

Research & Professional Experiences

08/2022 – Present Lafayette, IN, USA	Research and Teaching Assistant, Purdue University
06/2025 – 08/2025	Research Intern, Penn State, Tieyuan Zhu Developed a workflow to process Distributed Acoustic Sensing data in order to apply seismic monitoring of the Susquehanna Shale Hills Critical Zone Observatory.
06/2024	Research Assistant, University of Hawaii, Garrett Apuzen-Ito Selected by Garrett Apuzen-Ito during the Apply-to-Sail program for the recovery of the Marine Imaging of Galápagos Upwelling and Neighboring Archipelago (Marine IGUANA) Ocean Bottom Seismometers (OBS) aboard the R/V Sally Ride from 06/07/2024 (Golfito, Costa Rica) to 07/03/2024 (Puerto Ayora, Galápagos, Ecuador): • Recovered OBS (detection on the surface and tagline). • Analyzed seismic data downloaded directly from the OBS. • Corrected multi-beam data produced by the EM712 and EM124 (MB-system, determines bathymetry).

- Deployed expendable bathythermograph (XBT, determines water properties to create an acoustic wave velocity profile).
- Deployed and recovered magnetometer (determines magnetism in the seafloor).
- Deployed 2 Argo floats (F1578 and F1538, determines water properties to monitor climate change).
- Logged the cruise details.
- Learned to follow safety procedures on a ship.

Volunteer under the supervision of Garrett Apuzen-Ito (UH), Emilie, Hooft (UO), Doug Toomey (UO), and Yang Shen (URI).

National Science Foundation Division of Ocean Sciences Grant #1928197.

07/2023
USA

Volunteer Field Assistant, *Purdue University, Sourav Karmakar*

Helped collect plutonic samples in remote areas of the Northern Cascades for three weeks. Sampled, orientation measurements of fabrics, and drove.

02/2020 – 08/2022
Eugene, OR, USA

Undergraduate Researcher, *University of Oregon, Miles Bodmer*

Testing Mantle Anisotropy Models in the Alaska Subduction Zone through seismic data. NSF Award Number: 1948961.

07/2021 – 08/2021
Ally (43), France

Scientific animator / Tour Guide, *Association Action Ally 2000, Sur le Plateau d'Ally (43)*

Guided visitors in an ancient silver, antimony, and lead mine. Animated a workshop about finding and determining minerals.

04/2020
USA

Volunteer Field Assistant, *University of Oregon, Jonathan Delph*

Helped retrieve a network of seismometers in Northern California (SCENTAR).

Presentations

06/2026

Seismic Constraints on the Structure and Subduction Dynamics along the Alaska Peninsula from Full Wave Ambient Noise Tomography and Shear Wave Splitting, *Workshop on Integrating Seismic Anisotropy, Geodynamics, and Rock Deformation*

Authors: **Sassard, V.**, Yang, X., Bodmer, M., Liu, L., Elliott, J. Poster presentation.

04/2026

Lithosphere Modification and Asthenospheric Upwelling Along Accreted Terrane Boundaries in Interior Alaska: Insights from Full Wave Ambient Noise Tomography, *SZ4D Community Meeting*

Authors: **Sassard, V.**, Yang, X., & Ridgway, K. D. Poster presentation.

04/2026

Evidence of Slab Tearing Along a Subducted Oceanic Plate Joint Beneath the Alaska Peninsula, *SZ4D Community Meeting*

Authors: **Sassard, V.**, Yang, X., Liu, L., Elliott, J. Poster presentation.

12/2025

Shear Wave Splitting Across the Galápagos Hotspot and Western Galápagos Spreading Center from the Marine IGUANA Experiment, *AGU Fall Meeting 2025*

Authors: Adeboye, O., Ito, G., **Sassard, V.**, Hooft, E. E. E., Shen, Y., Toomey, D. R., Hufstetler, R. S., Autumn, K., Kongpet, P., & Ruiz, M. C. Poster presentation by Oluwatofunmi Adeboye.

12/2025

Investigating the Upper-Mantle Dynamics of Galapagos Plume-Ridge Interaction with the Marine IGUANA Ocean Bottom Seismometer Array, *AGU Fall Meeting 2025*

Authors: Ito, G., Hooft, E. E. E., Shen, Y., Toomey, D. R., Ruiz, M. C., Hufstetler, R. S., Autumn, K., Adeboye, O., Kongpet, P., **Sassard, V.**, Cheng, Z., & Young, M. Oral presentation by Garrett Ito.

06/2025

Seismic Characteristics of Structural Modifications of the Lithosphere in Alaska due to Shallow Subduction of the Yakutat Slab, *Gordon Research Conference / Gordon Research Seminar*

Authors: **Sassard, V.**, Yang, X., & Ridgway, K. D. Poster presentation.

05/2024

A Possible Slab Window Along the Alaska Subduction Zone Imaged by Full Wave Ambient Noise Tomography, *SSA Annual Meeting 2024*

Authors: **Sassard, V.**, Yang, X., Elliott, J., & Liu, L. Oral presentation.

05/2024

Lithospheric Modification in Northeastern Alaska Interpreted From Full-Wave Ambient Noise Tomography, *SSA Annual Meeting 2024*

Authors: **Sassard, V.**, Yang, X., Ridgway, K. D., & Flesch, L. Poster presentation.

12/2023	Full-Wave Ambient Noise Tomography Reveals Structural Variations along the Alaska Subduction Zone, AGU Fall Meeting 2023 Authors: Sassard, V. , Yang, X., & Elliott J. Oral presentation.
06/2023	Investigating the Segmentation of Subduction Zones Across the Shoreline with Seismic Tomography: Story of the Alaska Subduction Zone, Gordon Research Conference / Gordon Research Seminar Authors: Sassard, V. , & Yang, X. Poster presentation.
04/2023	Subduction Segmentation Revealed by Full-Wave Ambient Noise Tomography of the AACSE Data, Seismological Society of America Authors: Sassard, V. , & Yang, X. Poster presentation.
12/2022	What Controls Lateral Segmentation in Cascadia? Sub-Slab Density Anomalies or Slab Age Variations, AGU Fall Meeting 2022 Authors: Sassard, V. , van Dinther, Y., Bodmer, M., Hooft, E. E. E., & Toomey, D. R. Oral presentation.
12/2022	Segmentation of the Aleutian-Alaska Subduction Zone Revealed by Full-Wave Ambient Noise Tomography with the AACSE Data, AGU Fall Meeting 2022 Authors: Sassard, V. , & Yang, X. Oral presentation.
12/2021	Evaluating Drivers of Mantle Flow and Sources of Seismic Anisotropy in the Alaskan Subduction Zone: Observations from Offshore/Onshore Shear-Wave Splitting, AGU Fall Meeting 2021 Authors: Sassard, V. , & Bodmer, M. Poster presentation. DOI: 10.1002/essoar.10509368.2.
12/2020	Onshore-offshore shear wave splitting observations beneath the Alaska subduction zone: Mantle flow constraints from the Alaska Amphibious Community Seismic Experiment, AGU Fall Meeting 2020 Authors: Sassard, V. , & Bodmer, M. Virtual poster presentation.

Academic Services

Reviewer, *Journal of Geophysical Research - Solid Earth, Tectonophysics & Geophysical Research Letters*

Skills

Programming Languages

MATLAB, Python, Generic Mapping Tools, Slurm

Field Geology

Teamwork, moving in remote areas, physical tasks

Languages

English

IELTS 7.5/9 (November 2021)

French

Native

Spanish

Conversational

Honors & Awards

05/2026	Bilsland Dissertation Fellowship, <i>Earth, Atmospheric, and Planetary Sciences, Purdue University</i> The Bilsland Dissertation Fellowship is awarded by departments and colleges to PhD students who will enter their final year of their program. Recipients are expected to devote full-time effort to the completion of all requirements necessary to receive their doctoral degree at the conclusion of the year of funding.
05/2026	William J. Hinze Graduate Award in Exploration Geophysics, <i>Earth, Atmospheric, and Planetary Sciences, Purdue University</i>
05/2026	Cedric J. Newby Award, <i>Earth, Atmospheric, and Planetary Sciences, Purdue University</i>
05/2025	Gerald H. Krockover Graduate Fellowship, <i>Earth, Atmospheric, and Planetary Sciences, Purdue University</i> Awarded for outreach efforts throughout the year.

05/2025	William J. Hinze Graduate Award in Exploration Geophysics, <i>Earth, Atmospheric, and Planetary Sciences, Purdue University</i> Awarded for pursuing studies that will lead to a career focused on geophysics.
04/2024	Cedric J. Newby Award, <i>Earth, Atmospheric, and Planetary Sciences, Purdue University</i>
07/2023	Outstanding Student Service Award, <i>Earth, Atmospheric, and Planetary Sciences Department, Purdue University</i>
04/2023	Cedric J. Newby Award, <i>Earth, Atmospheric, and Planetary Sciences, Purdue University</i> "Awarded to students pursuing a degree in solid-earth geosciences leading to professional employment as a geophysicist, who have demonstrated academic proficiency in their chosen field of study, have evidenced a high degree of social, moral, and spiritual character development, and have demonstrated good citizenship and a sense of community responsibility with respect to both Purdue University and their community."
11/2020	Bourse Eole, <i>Réseau Franco-néerlandais (French-Dutch network)</i> Granted for spending my MSc degree in The Netherlands while being French (based on a CV and a cover letter).
06/2020	Earth Sciences Spring Award, <i>Earth Sciences Department, University of Oregon</i> Selected by the Earth Sciences Department of the University of Oregon to receive a Brunton compass awarded from the James Stovall Fellowship Fund.

Teaching Experiences

01/2026 – 05/2026	Computer-Aided Analysis For Geosciences, <i>Purdue University</i> Assisted the students during lab sections and office hours, and graded their work. Gave one lecture on template matching.
01/2026 – 05/2026	Introduction to Earth Sciences, <i>Purdue University</i> Assisted the students during lab sections and office hours, and graded their work. Gave two lectures on earthquakes and seismicity.
08/2025 – 12/2025	Introduction to Earth Sciences, <i>Purdue University</i> Introduced students to various topics, assisted them during two lab sections, and graded their work.
08/2024 – 12/2024	Introduction To Analysis And Computing With Geoscience Data, <i>Purdue University</i> Graded and assisted students in labs and office hours.
01/2024 – 05/2024	Fossil Fuels, Energy, and Society, <i>Purdue University</i> Graded the work of the students.

Short Courses

07/2025	Technical Short Course: Using MsPASS for Data Processing on HPC and Cloud Systems, <i>Earthscope</i> Earthscope-offered technical course taught by Dr. Gary Pavlis on the use of MsPASS and its deployment on high-performance clusters.
03/2024	Gravity and Magnetism for Earth Scientists, <i>Purdue University</i> Learned to interpret gravity and magnetic data in different settings from real data. Learned to use Oasis Montaj, a gravity and magnetism modeling software, on real data from the East African Rift System (Lake Albert). Taught by Mark Longacre from MBL.
06/2020 – 08/2020	IRIS Seismology Skill Building Workshop, <i>Incorporated Research Institutions for Seismology</i> Online summer course. Learned to process seismological data with various tools

Organizations & Leadership Experiences

08/2024 – 05/2026	Graduate Committee, <i>Graduate Student Representative</i> Discussed graduate student matters with the faculty at the department level.
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04/2024 – 05/2026	Seminar Committee , <i>Geology and Geophysics Graduate Student Representative</i> Vote, invite, and arrange talks with speakers at both the local and national scale at the Purdue EAPS Department.
08/2024 – 05/2026	Outreach Committee Helped organize outreach activities with the local community. Graduate student-led committee.
08/2024 – 07/2025	Purdue Graduate Student Government , <i>EAPS Senator, Vice-Chair Legislative Review Committee</i> Vote on graduate students matters at the university level. Vice-Chair of the Legislation Review Committee. Volunteered in events with the Career Team.
08/2023 – 06/2024	Diversity, Equity, and Inclusion Committee , <i>Graduate Student Representative</i> Developed an inclusive Field Safety Plan template for the Purdue EAPS Department

Voluntary Experiences

01/2026	Purdue Science Olympiad General Volunteer. Graded and facilitated sessions throughout the day.
01/2026	Science Saturday 3-hour session where we present quick hands-on experiments to visitors on seismology and atmospheric processes.
11/2025	Homecoming Purdue Represented the Computational Seismology and Tectonics group at the EAPS Department booth. Demonstrated how earthquakes can be recorded using an accelerometer.
09/2025	Wonders on the Wabash Helped set up canoes.
04/2025	Spring Fest Helped running the EAPS outreach booth showing crater formation, volcanoes, and water filters.
03/2025	STEAM Camp Organized and co-led two sessions on plate tectonics and atmospheric processes at Imagination with children aged 7 to 11 years old.
09/2024	Homecoming Purdue Represented the Computational Seismology and Tectonics group at the EAPS Department booth. Demonstrated how earthquakes can be recorded using an accelerometer.
09/2024	Wonders on the Wabash Helped set up canoes, and acted as a raft instructor for children with the Tippecanoe County team.
07/2024	SCIENCE Camp Organized and led two sessions at Imagine Station on July 29th and July 30th at Imagination Station in Lafayette. Day 1: Volcanoes, rocks, hazards Day 2: Space, milk galaxy, crater impacts, fossils
04/2024	Spring Fest Helped running the EAPS outreach booth showing crater formation, volcanoes, and water filters.
03/2024	STEAM Camp Organized two sessions and led one session about natural hazards (volcanoes, earthquakes, tornadoes) and cloud formation at Imagination Station with children aged 7 to 11 years old.
09/2023	Wonders on the Wabash Helped set up canoes, and lunch for children with the Tippecanoe County team.

06/2023

Earth Day at Imagination Station

Demonstrated how earthquakes are recorded to children during Earth Day along with two other students showing the effects of pollution on animals.

09/2022

Homecoming Purdue

Represented the Computational Seismology and Tectonics group at the EAPS Department booth. Demonstrated how earthquakes can be recorded using an accelerometer.