

CECILIA MENESES-PONCE

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EDUCATION

University of Oregon (UO) <i>Doctor of Philosophy in Earth Sciences with an emphasis in Seismology</i> GPA: 4.00/4.00	Eugene, OR, US Sep 2024 - Jun 2029
Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California (CICESE) <i>Master of Science in Earth Sciences with an emphasis in Seismology</i> GPA: 96/100 (Honors)	Baja California, Mexico Aug 2022 - Jul 2024
Universidad Internacional del Conocimiento e Investigación (UNICI) <i>Master's Degree in Civil Protection and Emergency Management</i> GPA: 9.7/10.0	Chiapas, Mexico May 2021 - Sep 2022
Escuela Nacional de Protección Civil (ENAPROC) del Centro Nacional de Prevención de Desastres (CENAPRED) <i>Basic Technician in Integrated Risk Management</i> GPA: 9.6/10.0 (Honors)	Mexico City, Mexico Sep 2020 - Sep 2021
Universidad Autónoma Metropolitana (UAM) Unidad Iztapalapa <i>Bachelor's Degree in Physics</i> GPA: 9.57/10.00	Mexico City, Mexico Sep 2015 - May 2021

AWARDS AND HONORS

Fulbright García-Robles Scholarship (STEM - Regional) <i>By the US-Mexico Commission for Educational and Cultural Exchange (COMEXUS)</i>	Mexico City, Mexico Jul 14, 2023
State Youth Award 2020 (Category B, Academic Career Modality) <i>By the Mexico State Government</i> <ul style="list-style-type: none">Winner among over more than 800 participants	Mexico State, Mexico Dec 10, 2020
Outstanding Student in Science Award <i>By the Mexico State's Science and Technology Commission (COMECYT)</i>	Mexico State, Mexico 2015

PUBLICATIONS

1. Meneses Ponce, C. (2025). *Seismic event location using a single station with a neural-guided mixture model* (Master's thesis). Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California. <https://cicese.repositorioinstitucional.mx/jspui/handle/1007/4267>

2. Castro, J. D., Meneses-Ponce, C., Ortega, R., Beltran-Gracia, J., & Gonzalez-Huizar, H. (2024). Single station seismic event location with a neural-guided mixture model: Model-based weighting for improved accuracy. *Journal of Geophysical Research: Machine Learning and Computation*, 1, e2024JH000346. <https://doi.org/10.1029/2024JH000346>

3. Hayman, V., Lopes, J., & Meneses-Ponce, C. (2015). *Exploring the dynamic behavior of mitochondrial biology* (pp. B13 1-6). Rehovot, Israel: Weizmann Institute of Science. Available at: <https://bit.ly/3FMVgWs>

RESEARCH PROJECTS

Seismic event location using a single station with a neural-guided mixture model (Graduate Thesis)	Jun 2023 - Feb 2025
Analysis from a Disasters Management perspective for the time of opportunity communication of Mexico City's Seismic Alert System. (Graduate Thesis)	Mar 2022 - Sep 2022
Model and waveform inversion for local and regional data based on Green's functions (Undergraduate Thesis)	Sep 2020 - Mar 2021
Comprehensive study of microseismicity in the "Sierra Gorda" of Queretaro (Unpaid Research Internship)	Jan 2020 - Apr 2021
Exploring the dynamic behavior of mitochondrial biology (Summer Research Program)	Jul 1 - 28, 2015

CONFERENCE PRESENTATIONS

10th Annual Business, Education, Science, and Technology (BEST) Conference University of Illinois Urbana Champaign (UIUC) - <i>Oral presentation</i> Title: Why 'Drop, Cover and Hold On' may not be the best earthquake strategy in developing countries like Mexico?	IL, US Jul 16 - 17, 2024
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Mexican Geophysical Union Annual Meeting 2023 (RAUGM)

Scientific Poster

Title: *Seismic event location using a single station with a neural-guided mixture model*

Jalisco, Mexico

Oct 29 - Nov 03, 2023

XXXII International Conference of Physics Students

Oral presentation

Title: *It's Two and a Half Minutes to Midnight*

Torino, Italy

Aug 07 - 14, 2017

INTERNATIONAL PROGRAMS

International Youth Development Exchange 2021 (INDEX): Disasters Management

Online

Participant (Mexican Delegate)

Jan 15 - 29, 2022

- Awarded an exclusive full scholarship, securing one of only eight prestigious positions, courtesy of the Mexican Institute of Youth (IMJUVE)
- Represented Mexican youth in Disasters Management for exchanging experiences with Japan and Dominican Republic

V Curso de inverno do Observatório Sismológico da Universidade de Brasília: waveform inversion for moment tensor (ISOLA)

Online

Nov 16 - 20, 2020

Student and Collaborator

- Authored a comprehensive ISOLA software installation manual in Spanish, facilitating seamless utilization for Mexican participants
- Guided Mexican bachelor students to understand seismic moment tensor inversions

International Conference of Physics Students

Torino, Italy

Delegate and Lecturer

Aug 7 - 14, 2017

- Achieved distinction with a coveted scholarship awarded by the International Association of Physics Students (IAPS)
- Delivered a compelling presentation titled '*It is Two and a Half Minutes to Midnight*', emphasizing the critical role of applying physics to shape a brighter future for humanity.
- Contributed on the IAPS future and organization

International Summer Science Institute "Dr. Bessie F. Lawrence"

Rehovot, Israel

Research Student at Weizmann Institute of Science

Jul 1 - 28, 2015

- Awarded with the prestigious '*Antonio Caín*' Full Scholarship, earning the opportunity to participate in the International Summer Science Institute
- Contributed to groundbreaking research on mitochondrial dynamics, utilizing *MTCH2* as a powerful tool

PROFESSIONAL ADDITIONAL EXPERIENCE

International Meeting on Artificial Intelligence and its Applications

Online

Summer School (RIIAA 2022)

Sep 28 - 30, 2022

- Explored the intricate ethical and social dimensions inherent in the applications of Artificial Intelligence
- Gained profound insights into the responsible development and deployment of AI technologies

Seismology Skill Building Workshop (SSWB), *IRIS Incorporated Research*

Online

Institutions for Seismology

Jun 13 - Sep 5, 2022

Average score: **92%** Workshop average: **87.5%**

- Developed beginner level fluency in Python, ObsPy, Shell Scripting, SAC and GMT to analyze and plot seismic data
- Gained experience using webservices to request seismic data

Data Science School: "Beneficios para la industria y empresa desde

Online

el análisis de los datos", *UNAM Institute of Mathematics UCIM*

Oct 26 - 29, 2021

- Mastered the foundational principles of data science, adeptly analyzing large datasets through the application of diverse models and cutting-edge algorithms

International Meeting on Artificial Intelligence and its Applications

Online

Summer School (RIIAA 2021)

Aug 25 - 27, 2021

- Implemented advanced optimization methods within the realm of Machine Learning, enhancing models for peak performance and efficiency
- Acquired expertise in crafting sophisticated image classifiers through the utilization of Deep Learning techniques

International Meeting on Artificial Intelligence and its Applications

Online

Summer School (RIIAA 2019)

Aug 28-31, 2019

- Explored the intricacies of Graph Neural Networks, unlocking an understanding of their applications in diverse domains
- Received comprehensive training in Gaussian processes and Bayesian inference, broadening the spectrum of statistical modeling skills

Science Clubs Mexico: "¡Sácale jugo a tus datos!" (Spanish)

Veracruz, Mexico

Aug 4 - 10, 2019

- Demonstrated proficiency in data visualization by employing the R programming language, translating complex datasets into insightful visual narratives. With the mentorship of BSc. Said Muñoz Montero (Mexican Institute of Genomic Medicine) and Ph. D. Miguel Ángel Núñez Ochoa (University of Guadalajara)

Science Clubs Mexico: "Man vs. Machine: Are computers really smarter than us?"

Guanajuato, Mexico

Jul 29 - Aug 4, 2018

- Built devices to control light reflection and used machine learning to test how much computers are able to “learn” about the physics of light, with the mentorship of Ph.D. Pranay Patil (Boston University) and BSc. Víctor Camarena (University of Guanajuato)

International Masterclasses: hands on particle physics, *Ibero-American University (IBERO) campus Mexico City*

Mexico City, Mexico
Jan 13, 2018

- Performed measurements on real data from particle physics experiments at European Organization for Nuclear Research (CERN)

Science Clubs Mexico. Explorando los sentidos: ¡Ciencia y tecnología!
Designed by Frank Wilczek (Physics Nobel Laureate, 2004)

Guanajuato, Mexico
Jul 31 - Aug 6, 2017

- Translated abstract concepts into tangible reality by combining circuits and programming, enabling the expansion of perception through sensory information, with the mentorship of BSc. Rodolfo Ferro Pérez (CIMAT - University of Guanajuato) and PhD. Clark Alexander (University of Chicago)

Science Clubs Mexico. EarthWork: Interpreting Landscape Signatures

Guanajuato, Mexico
Jan 11 - 17, 2015

- Conducted detailed geomorphological analysis of Guanajuato using QGIS, with the mentorship of MSc. Anna Kladzyk (University of Texas at Austin)

Taller de Ciencia para Jóvenes del Instituto Heisenberg, *University of Colima (UCOL) Faculty of Sciences*

Colima, Mexico
Dec 15 - 19, 2015

- Engaged with university-level subjects in Physics, Biology, and Mathematics.

Taller de Ciencia para Jóvenes 2014, *UNAM Geosciences Center*

Queretaro, Mexico
Jun 29 - Jul 5, 2014

- Explored university-level subjects in Earth Sciences

VOLUNTEER WORK

Science Clubs Mexico
Staff

Ensenada, Mexico
Jul 31 - Ago 05, 2023

- Contributed to coordinating, planning, and executing Science Clubs Week in the Ensenada chapter

Taller de Ciencia para Jóvenes, CICESE - UABC - UNAM
Mentor

Ensenada, Mexico
Jun 25 - Jul 02, 2023

- Contributed as a volunteer in the organization of the program
- Inspired Mexican young girls to pursue a STEM career

Taller de Ciencia para Jóvenes, UNAM Geosciences Center
Mentor and Lecturer

Queretaro, Mexico
2016 - 2020

- Volunteered in organizing and promoting the program
- Inspired Mexican youth to pursue a scientific career

Independent Teacher
Volunteer Teacher

Mexico State, Mexico
Jan 2017 - Jun 2018

- Instructed and mentored local youth facing academic challenges in the community

Brigada de Rescate Topos Tlaltelolco, A. C.
Volunteer “Topo” Rescuer

Mexico City, Mexico
Jan 2017 - Jun 2018

- Handled crisis after the September 19, 2017 earthquake
- Saved lives on collapsed buildings

Sociedad Científica Juvenil
Science Communicator

Mexico City, Mexico
Jan 2017 - Jan 2018

- Lead talks and science fairs to foster enthusiasm and interest in science

WORK EXPERIENCE

University of Oregon
Graduate Employee - Research/Teacher Assistant

Online
Sep 2024 - Sep 2026

- Instructed Earth Sciences courses for the bachelor’s degree program
- Conducted research on Machine and Deep Learning techniques applied to Seismology

Universidad Internacional del Conocimiento e Investigación
Part-time Adjunct Professor

Online
May 2023 - Dec 2023

- Instructed Applied Physics courses for the firefighter bachelor’s degree program

PROFESSIONAL MEMBERSHIPS

European Association of Geoscientists & Engineers (EAGE)
Student Membership

INVITED ORAL PRESENTATIONS

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| 1. From Ground Zero to Seismology: What I Learned Among the Rubble About Leaving or Staying
<i>GeoMeeting, Department of Earth Sciences, CICESE</i>
Oral Presentation | Baja California, Mexico
Jun 5, 2025 |
| 2. Myths and Realities of the Mexican Alert System
<i>JALP MX Civil Protection Communication Group</i>
Outreach Talk | Online
Mar 26, 2021 |
| 3. What's Up with the Earthquake Early Warning?
<i>UNAM Faculty of Sciences TV</i>
Outreach Talk | Online/TV
May 05, 2021 |
| 4. Earthquakes and Beach Balls?
<i>Mexican Academy of Sciences & Autonomous Metropolitan University</i>
Outreach Talk | Online
Feb 25, 2021 |

SKILLS AND INTERESTS

Interests	Seismology, Earthquake Early Warning Systems, Geophysics, Earth Sciences, Scientific Research and Communication, Data Science, Artificial Intelligence, Machine Learning, Deep Learning, Risk and Disasters Management, Disasters Communication, Resilient Communities, Teaching.
Software	Mac OS, Linux OS, GMT, SAC, Seisan, ISOLA, GitHub
Programming Languages	Python, MATLAB, C++, LaTeX, Wolfram Mathematica, Bash Script