

Msc. Xochilt Esther Zambrana Areas.



SUMMARY

CURRICULUM VITAE

She is a graduate of Geological Engineer at the Faculty of Science and Engineering of the National Autonomous University of Nicaragua, UNAN-Managua, in 2009. She completed a Master's Degree in Sciences Geophysical Exploration at the Postgraduate in Earth Sciences of the National Autonomous University of Mexico (UNAM-Mexico), in 2012. Later in 2014, she completed a Master's Degree in Seismology and Disaster Mitigation at the GRIPS University and the International Earthquake Seismology and Engineering Institute of Japan (GRIPS-ISEE- Tsukuba, Japan). The research areas that Msc Zambrana has worked are the Regional Geology and Geological Studies of Danger by Superficial Failure, Geophysical Research with Gravimetric, Magnetic and Electrical methods for the study of the Geological Conditions of the Subsoil. Msc. Zambrana has also carried out research on Seismic Microzoning, Site Effect Studies and Estimation of Cut Wave Velocity Models using Microtremores methods. Also, she has participated in several research projects developed by UNAN-Managua (IGG-CIGEO / UNAN) in the areas of geophysics, surface failure and soil dynamics, whose studies have been important for the development of the country. She has published articles in memoirs of journals and scientific conferences in the areas of geophysics and earthquake disaster mitigation. She has participated as a speaker in national and international scientific conferences in the application of gravimetric, magnetic and seismic geophysical methods for subsoil modeling.

In addition, from the field of research Msc. Zambrana has worked in the area of teaching courses of seismic threat and geology applied to hydrogeology in graduates and specialized courses developed at UNAN-Managua (IGG-CIGEO / UNAN).

She is currently working as a professor in the Department of Technology of the Faculty of Science and Engineering, teaching semiannual degree courses in the careers of; Geological Engineering, Superior Technician in Construction, Degree in Physics in Mention in Geophysics, Degree in Biology, Architecture Degree, SINACAM Program, as a professor in the subjects of Seismology and Seismic Risk, Geological Engineering, General Geology, Historical Geology, Hydrogeology and Arcgis.

She has tutored thesis and participated as an examining jury in undergraduate and Master's monographs of UNAN-Managua and the National University of Engineering (UNI), in theses focused on seismic danger, hydrogeology, cartography and geological exploration.

CURRICULUM VITAE



GENERAL DATA

Name and surname: Xochilt Esther Zambrana Areas.

Home Address: Colonia Managua, Parque 1C. S. J-61. Managua, Nicaragua.

Professional Profile: Geologist Engineer. Master's Degree in Science (Master in Earth Sciences, Geophysical Exploration, UNAM-Mexico). Master's Degree in Disaster Management (GRIPS-IISEE-BRI-JAPAN).

Place of work: Professor. Faculty of Sciences and Engineering, Department of Technology, National Autonomous University of Managua. UNAN-Managua.

Work address: Rotonda Universitaria Rigoberto López Pérez, 150 metros al Este. | Recinto Universitario "Rubén Darío" Cod. Postal 663 – Managua, Nicaragua, www.unan.edu.ni

Telephone: +505-22485007 (Domicile).

Cellphone: +505-87159620.

Office phone: 2278 6769 / Ext. 6008

E-mail: xza-86@hotmail.com , xochilt.zambrana@unan.edu.ni

UNIVERSITY EDUCATION

2003-2009. Faculty of Sciences and Engineering, National Autonomous University of Managua. UNAN - Managua. Geological Engineer.

MASTER DEGREE

2010-2012. National Autonomous University of Mexico, UNAM-Mexico, Postgraduate in Earth Science, Institute of Geophysics. Master's Degree in Science (Master in Earth Sciences, Geophysical Exploration).

2013-2014. National Graduate Institute for Policy Studies (GRIPS- Tokyo, Japan), International Institute of Seismology and Earthquake Engineering (IISEE), Building Research Institute (BRI, Tsukuba, Japan). Master's Degree in Disaster Management.

LIST OF PUBLICATIONS:

Zambrana, X. (2019). Peligro Sísmico de la falla geológica Aeropuerto, Margen este de la ciudad de Managua, Nicaragua- Seismic hazard on the Airport geological fault, East part of Managua city, Nicaragua. Revista Compromiso Social, 1(2), 61-68. Recuperado a partir de <https://revistacompromisosocial.unan.edu.ni/index.php/CompromisoSocial/article/view/47>.

Zambrana Areas, X. (2020). Peligro Sísmico por Efecto de Sitio en el Recinto Universitario Rubén Darío de la UNAN-Managua. Nicaragua. Seismic Hazard by Site Effect in the Rubén Darío University Campus of UNAN-Managua. Nicaragua. Revista Científica De FAREM-Estelí, (32), 84-93. <https://doi.org/10.5377/farem.v0i32.9233>.

Zambrana, X., Ramón, V., Keppie, D., Campos, J., Leytón, B. y Rodríguez, D. 2012. GGA-4: Fallamiento normal de bloques en el Graben Aeropuerto, rift de tipo pull-apart Managua, Nicaragua: restricciones de la gravimetría y magnetometría. Unión Geofísica Mexicana (UGM). Geos, Vol. 32. No 1, 65-65, Octubre 2012. Link: http://www.ugm.org.mx/bak/raugm/2012/docs/GEOS32-1_PRELIMINAR.pdf

Campos-Enriquez J.O, **Zambrana Areas**, X, Keppie, D; Ramón Márquez, V. Normal block faulting in the Airport Graben, Managua pull-apart rift, Nicaragua: Gravity and Magnetic Constraints. American Geophysical Union, Fall Meeting 2012, abstract #T51B-2563.
Link: <http://adsabs.harvard.edu/abs/2012AGUFM.T51B2563C>

Zambrana, X., Yokoi, T. and Takumi, H., 2014. Estimation of Shear Wave Velocity Structure using Surface Waves on the Airport Fault, Managua, Nicaragua. Bulletin of IISEE, IISEE.kenken.go.jp © 2008, all rights reserved.
Link: <http://iisee.kenken.go.jp/syndb/?action=abstr&id=MEE13606&est=S&year=2014>

Bernardo Ignacio Garcia-Amador¹, Luis Manuel Alva-Valdivia², Norma Betania Palacios-Garcia³ and **Xochilt Esther Zambrana Areas** ⁴. Paleomagnetism and AMS Studies of the Late Cretaceous Dipolito Batholith in Nicaragua: Tectonic Evolution of Chortis Block (Central America). Machtle, B., Holzhauser, I., Ifrim, C., Stinnesbeck, W., Glasmacher, U.A. (Eds) 2017: 24th International Colloquium on Latin American Earth Sciences. Abstracts and Programme. GAEA heidelbergensis 20. Pag. 29. 1: Posgrado de Ciencias de la Tierra, Instituto de Geofísica, Universidad Nacional Autónoma de México, Ciudad Universitaria (UNAM-México). 2: Laboratorio de Paleomagnetismo, Instituto de Geofísica, Universidad Nacional Autónoma de México, Ciudad

Universitaria (UNAM-México). 3: Applied Research in Earth Sciences, Frontera 151, Col. Roma 06700, Ciudad de México. 4: Instituto de Geología y Geofísica, Universidad Nacional Autónoma de Nicaragua (UNAN-Managua).

WORK EXPERIENCE

2010-2012. Technician-Researcher. Institute of Geology and Geophysics, formerly Center of Geoscientific Research (IGG-CIGEO) of the National Autonomous University of Nicaragua (UNAN-Managua).

2012-2017-I SEMESTER. Professor-researcher. Institute of Geology and Geophysics before Center of Geoscientific Research (IGG-CIGEO) of the National Autonomous University of Nicaragua (UNAN-Managua).

2017-II Semester- to the Present. Professor-researcher. Technology Department. Faculty of Science and Engineering. National Autonomous University of Nicaragua. UNAN-Managua.

ACADEMIC RESEARCHERS

Zambrana, X., 2009. Geological Survey of Surface Failure in the area of the National Baseball Stadium "Rigoberto López Pérez. National Autonomous University of Managua, UNAN-Managua.

Zambrana, X., 2012. Geophysical Modeling at Graben Airport, Managua, Nicaragua. National Autonomous University of Mexico, UNAM-Mexico, Postgraduate in Earth Science, Institute of Geophysics.

Zambrana, X., 2014. Estimation of Shear Wave Velocity Structure using Surface Waves on the Airport Fault, Managua, Nicaragua. National Graduate Institute for Policy Studies (GRIPS-Tokyo, Japan), International Institute of Seismology and Earthquake Engineering (IISEE), Building Research Institute (BRI-Tsukuba, Japan).

Study of Site Effect in the Rubén Darío University Campus of the UNAN-Managua. IGG-CIGEO / UNAN-Managua, 2016 -2018. National Autonomous University of Nicaragua (UNAN-Managua).

EXPERIENCE IN PROJECTS

Study of Hazard Assessment and Seismic and Structural Vulnerability of the Stadium National Baseball "Denis Martinez" and its surroundings, Managua, Nicaragua. CIGEO, 2008.

Geophysical Modeling and Geological Hazard by Active Failure in the Graben of Managua, Nicaragua. ANUIES-CSUCA Academic Exchange Project, 2012.

Geological Survey for Surface Failure of the New National Baseball Stadium of Nicaragua. IGG-CIGEO / UNAN-Managua, 2013.

Geophysical and Structural Vulnerability Study Mina Santa Pancha. For the Ministry of Energy and Mines (MEM). IGG-CIGEO / UNAN-Managua, 2013.

Study of soil dynamics. Refinery Project ``Supreme Dream of Bolivar''. Institute of Geology and Geophysics. IGG-CIGEO / UNAN-Managua, 2015.

Seismic microzoning study in the Central and Northeastern Area of Managua. Institute of Geology and Geophysics. IGG-CIGEO / UNAN-Managua, 2015.

Study of Site Effect for the Construction of the Las Piedrecitas Desnivel Step. Institute of Geology and Geophysics. IGG-CIGEO / UNAN-Managua, 2016.

IGG-CIGEO / UNAN-Managua (2016). Geophysical Study to the West of the City of Catarina. [Sequeira, L; Zambrana, X; Espinoza, W; Ulloa, H; Romero C; Obando E; Jimenez, C]. Institute of Geology and Geophysics, National Autonomous University of Nicaragua. For: Specialists in Water Monitoring (EMA). P.p20. Catherine.

IGG-CIGEO / UNAN-Managua (2016). Geophysical Study of Electrical Tomography in Finca Terra Nova, Municipality of Condega, Department of Estelí. [Sequeira, L; Zambrana, X; Espinoza, W; Vázquez, F; Ulloa, H; Romero C; Obando E; Jiménez, C]. Institute of Geology and Geophysics, National Autonomous University of Nicaragua. For Agroindustria Diadema Nicaragua S.A. P.p 21.

IGG-CIGEO / UNAN-Managua (2017). Geophysical Study of Electrical Tomography in Finca Agroindustria Tabacalera, Municipality of Condega, Department of Estelí. [Sequeira, L; Zambrana, X; Espinoza, W; Borge, G; Toruño, M; Vázquez, F; Ulloa, H; Romero C; Obando E; Jiménez, C]. Institute of Geology and Geophysics, National Autonomous University of Nicaragua. For Agroindustria Diadema Nicaragua S.A.

TEACHING EXPERIENCE

2015. Teacher. Seismic hazard Course. Geological Risks and Climate Change Course. Institute of Geology and Geophysics (IGG-CIGEO) of the National Autonomous University of Nicaragua (UNAN-Managua).

2015. Teacher. Academic Course of Geological Engineering for students of the career of Technician in Construction. Department of Construction. Faculty of Sciences and Engineering UNAN-Managua.

2016. Lecturer. Academic Course of General and Historical Geology for students of the career of physics in Mention in Geophysics. Physics Department. Faculty of Sciences and Engineering UNAN-Managua.

2016. Lecturer. Academic Course of Seismology and Seismic Risk for students of the career of the Engineering Degree in Geology. Department of Technology. Faculty of Sciences and Engineering UNAN-Managua.

2016. Lecturer. Course of Introduction to Hydrogeology: Matter Fundamentals of Geology. ANA Capacity Building Program. IGG-CIGEO / UNAN-Managua.

2017. Teacher. Course of Historical Geology for students of the career of Geology Engineering. Department of Technology. Faculty of Sciences and Engineering UNAN-Managua.

2017-II semester. Teacher. Semester Academic Course of Seismology and Seismic Risk for students of the Geology Engineering Degree. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2017-II semester. Teacher. Semester Academic Hydrogeology Course for students of the Geology Engineering Degree. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2017-II semester. Teacher. Semester Academic Course of Historical Geology for students of the Geology Engineering degree. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2017-II semester. Teacher. Semester Academic Course of Hydrogeology for students of the Environmental Engineering Degree. Biology Department. Faculty of Science and Engineering UNAN-Managua.

2018-I semester. Teacher. Semester Academic Course of Introduction to Geology for students of the Geology Engineering Degree. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2018-I semester. Teacher. Semester Geological Engineering Academic Course for students of the Construction Technician Degree. Construction Department. Faculty of Science and Engineering UNAN-Managua.

2018-I semester. Teacher. Semester Geological Engineering Academic Course for students of the Civil Engineering Degree. Construction Department. Faculty of Science and Engineering UNAN-Managua.

2018-I semester. Teacher. Semester Academic Course of General Geology for students of the Biology Career by Encounters. Biology Department. Faculty of Science and Engineering UNAN-Managua.

2018-II semester. Teacher. Semester Academic Course of Environmental Geology for students of environmental engineering career. Biology Department. Faculty of Science and Engineering UNAN-Managua.

2018-II semester. Teacher. Semester Academic Course of applied research for students engineering in geology career. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2018-II semester. Teacher. Semester Academic Course of Specialization Practices II for students engineering in geology career. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2018-II. Teacher. Semester Academic Course of Seismology and Seismic Risk for students of the career of the Engineering Degree in Geology. Department of Technology. Faculty of Sciences and Engineering UNAN-Managua.

2018-II semester. Teacher. Semester Academic Course of Geophysics exploration for students engineering in geology career. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2018-II semester. Teacher. Semester Academic Course of Geophysics exploration for students engineering in geology career. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2018-II semester. Teacher. Course of cartography and geographic information system for students of Environmental engineering of the National Municipal Training System, Academic Program. Faculty of Science and Engineering UNAN-Managua.

2018-II. Teacher. Academic Course of Specialization Practices II for students of the career of physics in Mention in Geophysics. Physics Department. Faculty of Sciences and Engineering UNAN-Managua.

2019-I semester. Teacher. Semester Academic Course of Introduction to Geology for students of the Geology Engineering Degree. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2019-I semester. Teacher. Semester Academic Course of Introduction to geophysics for students of the Geophysics Engineering Degree. Physics Department. Faculty of Science and Engineering UNAN-Managua.

2019-I. Teacher. Semester Academic Course of Seismology and Seismic Risk for students of the career of the Engineering Degree in Geology. Department of Technology. Faculty of Sciences and Engineering UNAN-Managua.

2019-I semester. Teacher. Semester Academic Course of general geophysics for students of the Geophysics Engineering Degree. Physics Department. Faculty of Science and Engineering UNAN-Managua.

2019-I semester. Teacher. Semester Academic Course of geophysical prospection for students of the Geophysics Engineering Degree. Physics Department. Faculty of Science and Engineering UNAN-Managua.

2019-II semester. Teacher. Semester Academic Course of Environmental Geology for students of environmental engineering career. Biology Department. Faculty of Science and Engineering UNAN-Managua.

2019-II semester. Teacher. Semester Academic Course of Geophysics exploration for students engineering in geology career. Technology Department. Faculty of Science and Engineering UNAN-Managua.

2019-II. semester. Teacher. Academic Course of Specialization Practices II for students of the career of physics in Mention in Geophysics. Physics Department. Faculty of Sciences and Engineering UNAN-Managua.

2019-II. semester. Teacher. Academic Course of Georeferenced Systems and Statistics for students of the career of Statistical Engineering. Mathematics Department. Faculty of Sciences and Engineering UNAN-Managua.

TRAINING COURSES

Course of Advanced Geology organized by the Center of Geoscientific Investigations. CIGEO / UNAN- Managua, Nicaragua, 2008.

Intensive Rocks Petrology Course taught by Dr. Juan Carlos Mora of the Institute of Geophysics of the UNAM, Mexico, organized by the Research Center Geoscientific. CIGEO / UNAN-

Managua, Nicaragua, 2008.

Course on Alerting and Risk Assessment for Slips in Central America, Organized by UNU-ITC SCHOOL FOR DISASTER GEO-INFORMATION, CEPREDENAC, ASDI, Antigua Guatemala, 2008.

Seminar-Workshop on Identification and Studies of Unstable Zones in Roads, Organized By NGI, NORSAR, CEPREDENAC, Managua, Nicaragua, 2008.

Intensive Course of Geophysics in "Advanced Techniques in Geoelectrical Investigation". Institute of Geology and Geophysics (IGG-CIGEO / UNAN-Managua) and the Department of Geological Engineering, University of Lund, Managua, Nicaragua, 2011.

CONGRESSES -SEMINARS - MEETINGS

Zambrana X., 2012. Geophysical Modeling in the Airport Graben, Managua, Nicaragua: Case Study Fault Zone Airport and Cofradia. National Council of Universities, IX Scientific Conference: Engineering and Technology, Managua, Nicaragua (speaker).

Zambrana X., 2013. Tectonics and Seismicity of Nicaragua. Colloquium. International Institute of Seismology (IISSE) and Earthquake Engineering and BRI Building Research Institute (BRI), Tsukuba, Japan (speaker).

Second International Symposium on Earthquake Engineering, Japan Association for Earthquake Engineering. Tokyo, Japan, 2013.

Symposium on Policy Studies on Huge Disaster, National Graduate Institute for Policy Studies (GRIPS). Tokyo, Japan, 2014.

Congress of Seismic Engineering of Nicaragua, Institute of Geology and Geophysics IGG-CIGEO / UNAN-Managua, 2016. (Speaker).

ADVISOR OF THESIS

Br. Ethel del Socorro González Martínez, Br. Katia Massiel López Vargas, Br. Karina de los Angeles Moscoso Sandoval. Thesis: Analysis of the Periods Dominating Vibration between Soil and

Structure in the Rubén Darío University Campus of UNAN-Managua, in the year 2016. Advisor: Msc. Xochilt Zambrana. National Autonomous University of Engineering (UNI).

Br. Brigieth del Carmen Mejía Moreno and Br. Johel Enmanuel Calero Dávila. Thesis: Characterization of Geological and Seismic Conditions in Part N and SW of the Rubén Darío University Campus (RURD, UNAN-Managua), in the year 2019 Tutor: Msc. Xochilt Zambrana. Faculty of Sciences and Engineering, National Autonomous University of Managua. UNAN - Managua.

ACADEMIC JURY

Bachelor's degree

Iveth del Carmen Dávila Lorente. Geological Mapping Semi-Detail of the Quadrangle La Esperanza Series (3352-IV) Scale 1: 50,000 Located in the South Atlantic Autonomous Region (RAAS). Geological Engineering. Department of Technologies / Faculty of Sciences and Engineering. September, 2012.

Yasser Alejandro Pérez Jiménez. Update of Geology and Structural Model of the Mining District of Reyna-San Ramón, Matagalpa. Geological Engineering of UNAN-Managua. Director Technology Department. Faculty of Sciences and Engineering. UNAN-Managua, 2015.

Daniela Isabel Gómez Díaz and Betzaida Joliveth Hernández Herrera. Monograph Update of the Geological Mapping and Evaluation of site effect in the Biological Station Francisco Guzman Pasos and its Surroundings, Juigalpa-Chontales. Geological Engineering of UNAN-Managua. Director Technology Department. Faculty of Sciences and Engineering. UNAN-Managua, 2016.

Master's Thesis:

Benancio Henríquez. Evaluation of fundamental vibration periods for the south central area of the City of Santa Tecla, El Salvador. Master's Degree in Risk Assessment and Disaster Reduction. Institute of Geology and Geophysics of UNAN-Managua. 2015.

Leydi Lacayo Martinez. Evaluation of the site effect in the urban area of the city of León. Master's Degree in Risk Assessment and Disaster Reduction. Institute of Geology and Geophysics of UNAN-Managua. 2016.

Amílcar Geovanny and Ivan Alexander Urbina. Proposal of a new local magnitude for the Pacific Rim. Specialty of Seismology. Faculty of Sciences and Engineering. UNAN - Managua. 2016

Ivette de los Angeles Núñez Sandino. Underground water availability and geophysical prospecting for the Solentiname Archipelago of the Macarron Island Aquifer, Solentiname Archipelago of Nicaragua. Central American Master's Degree Program in Water Sciences (CIRA-UNAN-Managua).

LANGUAGES

Spanish, Native speaker.

English, (reading, writing and conversation).