

LUIS CEFERINO

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CURRENT POSITION

PRINCETON UNIVERSITY

Distinguished Postdoctoral Fellow at Andlinger Center for Energy and the Environment &
Civil and Environmental Engineering Department
Advisor: Ning Lin

New Jersey, USA

2019 – 2020

FUTURE POSITION

NEW YORK UNIVERSITY

Assistant Professor
Civil and Urban Engineering Department
Center for Urban Science and Progress

New York, USA

Sep. 2020

EDUCATION

STANFORD UNIVERSITY

PhD Structural Engineering and Geomechanics
Thesis project: “Effective emergency response policies for hospital systems in the wake of time-varying seismic hazard”
Advisors: A. Kiremidjian and G. Deierlein. Committee: J. Baker, J. Mitrani-Raiser, and W. Ellsworth

California, USA

2015 – 2019

STANFORD UNIVERSITY

MS Structural Engineering and Geomechanics

California, USA

2013 – 2014

UNIVERSIDAD NACIONAL DE INGENIERÍA

Bachelor of Science in Civil Engineering
Rank: #1/104

Lima, Peru

2007 – 2011

Thesis project: “Evaluation of the effective flange width for low-ductility reinforced concrete (RC) walls through nonlinear, Finite Element Modeling (FEM) verified by experimental tests”

2013

Advisor: C. Zavala

JOURNAL PUBLICATIONS

- [J1] **Ceferino L.**, Mitrani-Reiser J., Kiremidjian A., and Deierlein G. (*In Review*). “Effective Plans for Hospital System Response to Earthquake Emergencies”. Nature Communications. Preprint: <https://engrxiv.org/nyqug/>
- [J2] Patel S., **Ceferino L.**, Liu C., Kiremidjian A., & Rajagopal R. (*In Review*). “The Resilience Value of Rooftop Solar in Residential Communities”. Earthquake Spectra. Preprint: <https://engrxiv.org/r4nmy/>
- [J3] **Ceferino L.**, Galvez P., Ampuero J.-P., Kiremidjian A., & Deierlein G. (*In Review*). “Bayesian parameter estimation for space and time interacting earthquake rupture model using historical and physics-based simulated earthquake catalogs”. Bulletin of Seismological Society of America. Preprint: <https://eartharxiv.org/3wfr4/>

- [J4] **Ceferino, L.**, Kiremidjian, A., and Deierlein, G. (2020). “Probabilistic space- and time-interaction modeling of main-shock earthquake rupture occurrence”. Bulletin of Seismological Society of America (accepted for publication). Preprint: <https://eartharxiv.org/e9wsu/>
- [J5] **Ceferino L.**, Kiremidjian A., and Deierlein G. (2018). “Regional Multi-severity Casualty Estimation Due to Building Damage Following a Mw 8.8 Earthquake in Lima, Peru”. Earthquake Spectra, 4(3).
- [J6] **Ceferino L.**, Kiremidjian A., and Deierlein G. (2018). “Probabilistic Model for Regional Multi-severity Casualty Estimation due to Building Damage Following Earthquakes. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 4(3), 04018023.
- [J7] Markhvida M., **Ceferino L.**, and Baker J. (2017). “Modeling spatially correlated spectral accelerations at multiple periods using principal component analysis and geostatistics”. Journal of Earthquake Engineering and Structural Dynamics 47(5), 1107-1123.
- [J8] Noh H.Y., Kiremidjian A., **Ceferino L.**, and So E. (2017). “Bayesian Updating of Earthquake Vulnerability Functions with Application to Mortality Rates”. Earthquake Spectra, Vol. 33, No. 3, pp. 1173-1189.
- [J9] Lallemand D., Burton H., **Ceferino L.**, Bullock Z., and Kiremidjian A. (2017). “A Framework and Case Study for Earthquake Vulnerability Assessment of Incrementally Expanding Buildings”. Earthquake Spectra, 33(4).
- [J10] Zavala C., Gibu P., Lavado L., Taira J., Cárdenas L., and **Ceferino L.** (2012). “Cyclic Behavior of Low Ductility Walls Considering Perpendicular Action”. Journal of Disaster Research, 8(2), 313.

CONFERENCE PRESENTATIONS

- [C1] **Ceferino L.**, Mitrani-Reiser J., Kiremidjian A., and Deierlein G. (2018). “Computing Hospital System Resilience: A Supply-Demand Perspective”. In 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, CA.
- [C2] **Ceferino L.**, Kiremidjian A., and Deierlein G. (2018). “Parameter Estimation Methods for Modeling of Time and Space Interactions of Earthquake Rupture”. In 16th European Conference in Earthquake Engineering, Thessaloniki, Greece.
- [C3] **Ceferino L.**, Kiremidjian A., and Deierlein G. (2017). “Space and time interaction modeling of earthquake rupture occurrence”. In 12th International Conference on Structural Safety & Reliability, Vienna, Austria.
- [C4] **Ceferino L.**, Kiremidjian A., and Deierlein G. (2017). “Framework of the estimation of the health status of the population during an earthquake emergency”. In 16th World Conference on Earthquake Engineering, Santiago de Chile, Chile.
- [C5] Markhvida M., **Ceferino L.**, and Baker J. (2017). “Effect of ground motion correlation on regional seismic loss estimation: application to Lima, Peru using a cross-correlated principal component analysis model”. In 12th International Conference on Structural Safety & Reliability, Vienna, Austria.
- [C6] Zavala C., Gibu P., Lavado L., Taira J., Cardenas L., and **Ceferino L.** (2013). “Low Ductility Concrete Wall Test Considering Perpendicular Wall Action”. In 10th International Conference on Urban Earthquake Engineering, Center for Urban Earthquake Engineering, Tokyo Institute of Technology, pp.599-602, 2013.

AWARDS & HONORS

Grant Applications:

- “Innovate Perú” from Ministry of Production in Perú (\$50k) 2017

Scholarships:

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| • Distinguished Fellowship at Andlinger Center (\$130k), Princeton University | 2019 – 2021 |
| • “John A. Blume” Fellowship, Stanford University | 2017 – 2018 |
| • “Shah Family” Fellowship, Stanford University | 2015 – 2016 |
| • “Andrés del Castillo” Scholarship (\$20k), Universidad Nacional de Ingeniería | 2013 |
| • PRONABEC Scholarship (\$90k) | 2013 |

- Fulbright Scholarship in 2012 2012
- “Marfa Foundation” Fellowship for full undergrad funding 2008 – 2011

Awards:

- EERI Student Grant for the National Conference on Earthquake Engineering (NCEE) 2018
- 2nd place in contest of undergraduate research presentations in National Congress of Civil Engineering Students (CONEIC) in Peru 2013
- 1st place in contest of knowledge on Civil Engineering in CONEIC 2011 in Peru.
- Prize “Manuel Pardo y Lavalle” in 2010.
- 8th place out of 4277 in National University of Engineering’s admission contest in 2007.

TEACHING EXPERIENCE AND MENTORSHIP

STANFORD UNIVERSITY

California, USA

- Undergraduate Student Mentor: Emily Alcazar, Arizona State University Jun. – Aug. 2018
- Graduate Student Mentor: Chenying Liu, Stanford University Jan. – Dec. 2018
- Teaching Assistant and Substitute Instructor for graduate-level class “Introduction to Performance-based Earthquake Engineering” Mar. – Jun. 2016 – 2018
- Graduate Student Mentor: Sam Adiputra, Stanford University Mar. – Jun. 2015

RENDEL Inc. & MADOX Inc.

Lima, Peru

- Lecturer of training on ASCE-41 methods for seismic evaluation and retrofit of existing buildings Dec. 2015

INDUSTRY, CONSULTING EXPERIENCE AND ENTREPRENEURSHIP

APPLIED TECHNOLOGY COUNCIL

Earthquake Risk Consultant

California, USA

Sep. 2019 – Jul. 2020

WORLD BANK

Earthquake Risk Consultant

Washington D.C., USA

2017 – 2018

YANAPAY Inc.

Co-founder/CTO (<https://pe.yanapay.net/>)

Lima, Peru

Jan. 2017 – Present

RENDEL Inc.

Co-founder and Structural Engineering Consultant

Lima, Peru

Jan. 2015 – Present

RIVERA CONSULTING GROUP INC.

Staff Structural Engineer

San Francisco, USA

Jun. – Aug. 2014

ACADEMIC SERVICE AND OUTREACH

JOURNAL REVIEWER

Journal of Earthquake Engineering

Natural Hazards

Earthquake Spectra

Computers and Structures

SCIENTIFIC CONFERENCE SUPPORT

Coordinated and co-moderated two sessions on “Post-Earthquake Response, Emergency Management, And Recovery” and “Risk and Resilience of Distributed Infrastructure and Lifelines” at NCEE in Los Angeles 2018

Moderated session on “Seismic Analysis” at the ICOSAR in Vienna, Austria 2017

Fund-raised and co-organized Techsuyo, the annual meeting for the Peruvian professional community in USA in the areas of science, technology, and innovation, at Stanford University 2017

COMMUNITY OUTREACH

Developed material and taught a three-session interactive lecture on earthquake fundamentals at the Sequoia High School in Redwood City, California 2017

Conducted a community session on earthquake vulnerability of soft-story houses for critical neighborhoods in Oakland, California, in coordination with the Oakland Chief Resilience Officer 2015

LEADERSHIP POSITIONS

President, Peruvian Student Association, Stanford University 2016-2018

Board Member, EERI Student Chapter, Stanford University 2016

Vice-President, Peruvian Student Association, Stanford University 2015

Student Representative, Board of the Civil Engineering Department, Universidad Nacional de Ingeniería in Peru 2009 – 2010

OTHER TALKS AND MEDIA COVERAGE

“Disaster Resilience of Hospital Systems and Modern Power Systems”, at University of Delaware, University of Washington, New York University, and Johns Hopkins University. Nov. 2019 – Mar. 2020

“Effective Policies for Hospital System Emergency Response”, at University of Delaware & Princeton University. May. 2019

“Seismic Resilience of Urban Systems to Earthquakes”, at Universidad Nacional de Ingeniería in Lima, Peru. Dec. 2018

“Probabilistic Modeling and Parameter Estimation for Earthquake Ruptures with Application to the Subduction Zone in Peru”, at the Instituto Geofísico del Perú, Lima. Aug. 2018

“Risk Analysis beyond Insurance. Where the Disaster Risk Technologies are Taking us?” at the Understanding Risk Forum organized by the World Bank in Mexico City, Mexico. Jun. 2018

Featured in the CEO Update Newsletter of the Canterbury District Health Board for research on “Seismic Resilience of Hospital Systems” in New Zealand Sep. 2017

“April 16, 2016 Mw 7.8 Ecuador Earthquake” at Pacific Earthquake Engineering Research Center at University of California, Berkeley Jul. 2016

Interviewed by Radio San Borja, in Lima, about seismic risk analysis and performance-based earthquake engineering. Dec. 2014

Interviewed by the Peruvian Association of Civil Engineers about state-of-the-art research on earthquake engineering in USA. Aug. 2014

“Experiences about the admission process at North American Universities” at the National University of Engineering in Lima, Peru. Mar. 2013; Aug., Dec 2014

LANGUAGES

Spanish (native language)

English (second language, TOEFL iBT: 103)