

SDAG

Meeting Announcement

Wednesday March 16th 2022

Happy Hour - 5:30 PM

Meeting - 6:00 PM

Please note the **TIME CHANGE**
to accommodate our speakers who are in
Mexico City - Central Time

Zoom Meeting: [CLICK HERE](#)

Meeting ID: Meeting ID: 857 9818 4239 **Passcode:** 461844

The Risk Atlas of Mexico City, Mexico:
a tool for decision-making and disaster prevention



Dr. David A. Novelo-Casanova & Dr. Gerardo Suárez



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TITLE: The Risk Atlas of Mexico City, Mexico: a tool for decision-making and disaster prevention.

Abstract

We present a Risk Atlas of Mexico City based on a Geographical-Information-System (RA-GIS). We identified the prevalent social risk to the more relevant hazards in Mexico City (CDMX): earthquakes, volcanic eruptions, floods, landslides, forest fires, and land subsidence. Seismic hazard was estimated for return periods (RP) of 20, 125, 250, and 475 years. Three areas in central and northwestern CDMX were identified along the Younger Chichinautzin Monogenetic Volcanic Field with a high probability of forming a new volcano. Subsidence is concentrated to the east and southeast of CDMX, where subsidence rates are among the highest worldwide. Flooding events were estimated for RP of 2, 5, 10, 50 and 100 years and most of them are concentrated in the central and northern sectors of the city. During the dry season (December-April), southern CDMX has very high probability of forest fire occurrence. There is high susceptibility of landslides on the west and southwest of the city. The goals of this RA-GIS are to provide a tool to the local and federal authorities and all organizations responsible for disaster prevention and mitigation to: 1) improve the knowledge of the potential physical and social impact of local hazards; 2) provide elements for disaster prevention, mitigation, preparedness, and response; 3) benefit decision-makers with robust risk data; 4) provide information for land-use planning; and 5) support further research to reduce the impact of disasters caused by natural phenomena.



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BY -

David A. Novelo-Casanova
Ph.D. Geology and Geophysics
University of Hawaii

BIOGRAPHY:

In 1980 he graduated as Geophysical Engineer from the National Autonomous University of Mexico (UNAM). In 1986 he obtained his Ph.D. degree in Geology and Geophysics from the University of Hawaii, USA. His research includes the areas of seismology, volcanic seismology, natural hazard risk reduction, and disaster prevention. He acted as Head of the Mexican Seismological Service from 1988 to 1993. From 1993 to 1997 he was director of the Institute of Geophysics of UNAM. From 1999 to 2001 he held the position of Program Director of the Central America Coordination Center for Disaster Prevention (CEPREDENAC). At present, he is Senior Scientist at UNAM and President of the Scientific Advisory Council on Geological Risks of the Mexican National Center for Disaster Prevention (CENAPRED). Dr. Novelo-Casanova has published many scientific articles related to his research. He is a professor of the Graduate Earth Sciences Program at UNAM and member of the American Geophysical Union, the Mexican Geophysical Union, and the Mexican National Academy of Engineering.



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AND -

Gerardo Suárez
Ph.D. in Geophysics from
Massachusetts Institute of Technology

BIOGRAPHY:

Gerardo Suarez (PhD) was born in Mexico City on 3 July 1952.

Since 1983, he is a Senior Research Scientist at the Institute of Geophysics in the National Autonomous University of Mexico (UNAM). He holds a PhD in Geophysics from the Massachusetts Institute of Technology and a degree in geophysical engineering from the National University of Mexico (UNAM).

Dr. Suárez was appointed Director of the Institute of Geophysics and later Dean of Scientific Research of the National University of Mexico.

Suárez was the founding director of the International Monitoring System of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) in Vienna Austria, which in addition to its original purpose has become an important international system for monitoring natural phenomena.

He is the author of over 100 scientific papers in geology and geophysics and has directed undergraduate and doctoral theses in Mexico and worldwide.



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PRESIDENT's CORNER

Hello SDAG Members!

Many thanks to everybody that attended last month's meeting! A very special thank you to Isabelle for her insight into the geology of Portugal. For the meeting this month we are keeping to the loose theme of geology from outside the US. We are pleased to welcome a duo of professors from the Universidad Nacional Autonoma de México geophysics department. Please help me welcome David Novelo-Casanova and Gerardo Suarez! I am looking forward to this talk and taking a deeper look into how Mexico manages risk and geo-hazards. Please join us! And, as always, don't forget to fill out and send in your membership forms (and sponsorship forms, too)!

Cheers,

Luke Weidman

SDAG 2022 OFFICERS

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Next Meeting Wednesday, APRIL 13th

***Meetings are usually held on the 3rd Wednesday of the month. This may change to accommodate the speaker and meeting place schedules. Please check the SDAG website for updates.

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JOB ANNOUNCEMENT

Leighton and Associates is looking for an Engineering Technician/Staff Geologist. Please refer to the attachment for motr details or [CLICK HERE](#) and "Sort By" Title for the posting shows up on the front page.

CALL FOR PHOTOS

We would love to see what you Are Up to! Please send photos to: athenacatanzaro@gmail.com



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CALL FOR ARTICLES

SDAG invites members to submit articles on their current research or an interesting project they are working on for publication in the monthly newsletter. The article should be no more than 1 page in length. Photos are welcomed; too. Please submit articles to the SDAG secretary via email.

SDAG RESEARCH TOOL

A comprehensive listing of all papers published by SDAG, whether as annual field trip guidebooks or special publications, is available on our website. Entries are sorted by primary author, or chronologically by date of publication, starting with our first guidebook in 1972, out to Calico and the Mojave Desert in 2018, and finally up to the Temecula wine country for a return visit in 2020. These can be accessed or downloaded as .pdf files. They are fully searchable in Adobe Reader or Acrobat, so if you are researching a topic, "oikocryst" for example, you can search for that keyword. This listing will be updated as new books are published. Thanks to Greg Cranham and Hargis + Associates, Inc., for making this possible. See the links below:

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SUBMITTED BY MIKE WART

Cretaceous shearing frozen in time: Sample from the Borrego Shear zone near Yaqui Flat south of Pinyon Mountain. The rock exhibits several thin ductile shear zones sandwiched between thin zones of mylonitic gneiss and a one inch thick semi-ductile breccia zone approximately 0.8 inches above the base.



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