Bar Oryan

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Education

Doctor of Philosophy in Geophysics: *Sep 2016 – Current*
Lamont-Doherty Earth Observatory, Columbia University, New York, USA.
Advisors: Prof. Roger W. Buck.
Prof. Michael Steckler.

Master of Science in Geophysics: *July 2014 - July 2016*
Tel Aviv University, Tel Aviv, Israel. Advisor: Prof. Zvi Ben-Avraham.

- Thesis: New heat flow measurements of the Dead Sea and its implication for the Dead Sea basin heat flow paradox.

Bachelor of Science in Physics and Geosciences: *Oct 2010- Jun 2014*
Tel Aviv University, Tel Aviv, Israel.

Publications

- **Oryan, B**., & Buck, W. R. (2020). Larger tsunamis from megathrust earthquakes where slab dip is reduced. Nature Geoscience, 1-6.
- **Oryan, B**., Villinger, H., Lazar, M., Schwab, M. J., Neugebauer, I., & Ben-Avraham, Z. (2019). Heat flow in the Dead Sea from the ICDP boreholes and its implication for the structure of the basin. Quaternary Science Reviews, 210, 103-112.
- Malinverno, A., Cook, A. E., Daigle, H., & **Oryan, B**. (2018). Glacial cycles influence marine methane hydrate formation. Geophysical Research Letters, 45(2), 724-732.

In review:

- **Oryan B**. & Savage H., Locally-observed frictional heating shows evidence of a weak Dead Sea transform fault, Geochemistry, Geophysics, Geosystems

In preparation:

- **Oryan B**., M.S. Steckler, D. R. Mondal, S.H. Akhter, S. Singha, The Indo-Burma Detachment Geometry Constrained by an Updated Vertical and Horizontal GPS Velocity Field in Bangladesh.

Awards & Grants

- Chevron Student Incitive Fund. *2020*
  "Developing the LDEO PhenoCam network to track the fate of forest carbon from photosynthesis to growth" ($3,200).
- Chateaubriand Fellowship. *2020*
  Support to work with Dr. Jean-Arthur Olive at the Laboratoire de Géologie de l'Ecole Normale Supérieure (ENS).

- Stroke Fund. *2019*
  Dept. of Earth and Environmental Sciences graduate student fieldtrip to Peru ($12,500).
- Dean's fellow, Department of Earth and Environmental Sciences, Columbia University. *2016*
- M.Sc. Excellence Scholarship, Tel Aviv University. *2015*

Teaching Experience

- Instructor, Stroke Field Course, Department of Earth and Environmental Sciences, Columbia university. *Spring-Summer 2019*
  Led and organized a geological field trip to Peru.
- Mentor, Lamont-Doherty Earth Observatory Summer intern program. *Summer 2019*
  Served as mentor for a group of low-income high school students.
- Teaching assistant, Life Systems, Department of Earth and Environmental Sciences, Columbia University. *Spring 2019*
- Teaching assistant, Geodynamics, Department of Earth and Environmental Sciences, Columbia University. *Fall 2018*
- Teaching assistant, Lab in Geosciences, Tel Aviv University. *Fall 2015*
  Designed and developed a lab experiment emulating the heat flow of the Earth for an undergrad class.
- AP calculus and electromagnetism tutor, undergrad students, Tel Aviv University. *Fall 2014*
- Elementary school science teacher, Kathmandu, Nepal. *Winter 2010*

Recent Presentations

- AGU Fall 2020, online (poster): Dec 2020
  The Indo-Burma Detachment Geometry Constrained by an Updated Vertical and Horizontal GPS Velocity Field in Bangladesh
- International Geodynamics Series, online (talk): Nov 2020
  Larger tsunamis from megathrust earthquakes where slab dip is reduced
- UC Santa Cruz Seismo Coffee Hour, online (talk): Oct 2020
  Locally-observed frictional heating shows evidence of a weak Dead Sea transform fault
- Lamont-Doherty MGG Seamier, online (talk): May 2020
  Deviation from the standard subduction earthquake cycle model and its effect on upper plate deformation
- AGU Fall 2019, San Francisco , California (poster): Dec 2019
  Updated Vertical and Horizontal GPS Velocity Field in Bangladesh
- Megathrust Modeling Workshop, Eugene, Oregon (poster): Oct 2019
  How Shallowing Slab Dip Could Produce Extensional Upper Plate Earthquakes after a Megathrust Earthquake?
- Crustal Deformation Modeling Workshop, Golden, Colorado (poster): June 2019
  How can slab dip change produce extensional aftershocks?

Field Work

- HT-RESIST EM research cruise, New Zealand. *Winter 2019*
  Deployment and recovery of 120 EM receivers as well as 500 line-km of EM source.
- Borehole temperature profile measurements, Dead Sea, Israel. *Summer 2015*
  ICDP Dead Sea borehole temperature measurement.

- Thermal conductivity measurements, IODP core repository, Bremen, Germany. *Summer 2014*
  Thermal conductivity measurements of the ICDP Dead Sea cores using KD2 pro probe and optical apparatus.

Outreach

- Permanent science writer at the Little Big Science NGO. *2018 - current*
- Lamont Doherty research as art committee. *2018*
- Lamont Doherty open house. *2016 - current*
- Earth-Sun Day at the American Museum of Natural History. *2017*

Other Professional Experience

- Oracle data base administrator, Visa Cal Ltd. *2011-2014*
- Oracle data base administrator, Glasshouse Ltd. *2007-2009*
- Oracle data base administrator, Israeli defense forces. *2004-2007*

Computational Skills

Programming languages:

- Python.
- C.
- Matlab.
- Fortran.
- Arduino.
- GPU CUDA Fortran.

Operating systems:

- Linux.
- Mac.
- Windows.

Languages

- Hebrew (native).
- English (proficient).