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## Education

- 2005-2007 B.A. in Archaeology and Comparative literature, Hebrew University, Jerusalem, Israel
- 2008-2009 Supplement courses for acceptance to the Earth Science M.Sc program, Hebrew University, Jerusalem, Israel
- 2010-2011 M.Sc in Geology and Geochemistry, Hebrew University, Jerusalem, Israel  
Thesis: *Characterizing rock varnish developed on earliest Holocene Negev flint artifacts as a potential environmental or climatic indicator*  
Advisers: Enzel, Y. and Stein, M.
- 2015 M.Phil in Earth and Environmental Sciences, Columbia University, New York
- 2012-2017 PhD in Geochemistry and Paleoclimate, Lamont-Doherty Earth Observatory of Columbia University, New York  
Thesis: *Trans-Asian glacial - interglacial paleohydroclimate: reconstructed using lake geomorphology and organic and inorganic stable isotopes*  
Advisers: Broecker, W. S., Polissar, P. J. and deMenocal, P.B.

## Academic appointments

- 2017-2018 Post-doctoral Fellow, California Institute of Technology  
Host: Adkins, J. and Sessions, A.
- 2019 Senior Lecture, Hebrew University of Jerusalem

## Research interests

My research interests are: 1) Investigating processes that govern the global hydrologic cycle by quantifying the magnitude, timing and spatial distribution of precipitation and temperature on decadal, millennial, and orbital timescales, and 2) Combining hydroclimate reconstructions with archaeological evidence to investigate possible adaptations of human societies to past climate change. For this purpose, I combine low-temperature stable isotope geochemistry with geomorphology and hydrological modeling.

## Fellowships and awards

- 2014 Peretz-Grader award for excellence in research from the Israel Geological Society.
- 2017 Bruce C. Heezen Award for outstanding academic and research achievement in the Earth Sciences, Lamont-Doherty Earth Observatory, Columbia University.
- 2017 Caltech Postdoctoral Geochemistry Option Fellowship

## Publications

- Goldsmith, Y.**, Polissar, P. J., deMenocal, P. B. and Broecker, W. S., 2019. From plants to soils – leaf wax  $\delta D$  and  $\delta^{13}C$  variability reduction during integration into soils, recorded along a rainfall gradient in Israel. *JGR: Biogeosciences*, 124.
- Shelach-Lavi, G., Mingyu, T., **Goldsmith, Y.**, Wachtel, I., Ovadia, A., Xiongfei, W. and Marder, O., 2019. Onset of northeast China sedentism and domestication occurred during wet conditions. *PLoS ONE*, 14(7):e0218751.

- Yan, D., Xu, H., Yang, M., Lan, J., Hou, W., Wang, F., Zhang, J., Zhou, K., An, Z., and **Goldsmith, Y.** 2019. Responses of cyanobacteria to climate and human activities at Lake Chenghai over the past 100 years. *Ecological Indicators*, 104:755-763.
- Crouvi, O., Barzilai, O., **Goldsmith, Y.**, Amit, R., Porat, N., and Enzel, Y. 2018. Mid- and Late Pleistocene dust accretion in Jerusalem's prehistoric sites indicating a drastic change in upwind Levant deserts. *Quaternary Science Reviews*, 191:101-117.
- Goldsmith, Y.**, Polissar, P. J., Ayalon, A., Bar-Matthews, M., Broecker, W. S. and deMenocal, P. B., 2017. The modern and LGM hydrological cycles of the Eastern Mediterranean and the Levant from a water isotope perspective. *Earth and Planetary Science Letters*, 457:302-312.
- Goldsmith, Y.**, Broecker, W. S., Xu, H., Polissar, P. J., deMenocal, P. B., Porat, N., Lan, J., Zhou, W., Cheng, P. and An, Z. 2017. Northward extent of East Asian Monsoon covaries with intensity on orbital and millennial timescales. *Proceeding of the National Academy of Sciences*, 114(8): 1817-1821.
- Goldsmith, Y.**, Broecker, W. S., Xu, H., Polissar, P. J., deMenocal, P. B., Porat, N., Lan, J., Zhou, W., Cheng, P. and An, Z. 2017. Reply to Liu et al.: East Asian summer monsoon rainfall dominates Lake Dali lake area changes. *Proceeding of the National Academy of Sciences*, 114(15): E2989-2990.
- Shelach-Lavi, G., Mingyu, T., **Goldsmith, Y.**, Wachtel, I., Ovadia, A., Xiongfei, W. and Marder, O., 2016. Human adaptation and socio-economic change in Northern China: Results of the Fuxin regional survey. *Journal of Field Archaeology*, 41(4):467-485.
- Davidovich, U., **Goldsmith, Y.**, Porat, R. and Porat, N., 2014. Dating and interpreting desert structures: The enclosures of the Judean Desert, Southern Levant, re-evaluated. *Archeometry*, 56:878-897.
- Goldsmith, Y.**, Stein, M. and Enzel, Y., 2014. From Dust to varnish: Geochemical constraints on rock varnish formation in the Negev Desert, Israel. *Geochimica et Cosmochimica Acta*. 126:97-111.
- Goldsmith, Y.**, Stein, M. and Enzel, Y., 2012. Systematic Mn fluctuations in laminated rock varnish developed on coeval early Holocene flint artifacts along a climatic transect, Negev desert, Israel. *Quaternary Research*, 78: 474-485.
- Marder, O., Malinsky-Buller, A., Shahack-Gross, R., Ackermann, O., Ayalon, A., Bar-Matthews, M., **Goldsmith, Y.**, Inbar, M., Rabinovich, R. and Hovers, E., 2011. Archaeological horizons and fluvial processes at the Lower Paleolithic open-air site of Revadim (Israel). *Journal of Human Evolution*, 60(4): 508-522.
- Grosman, L., **Goldsmith, Y.** and Smilansky, U., 2011. Morphological analysis of Nahal Zihor Handaxes: A chronological perspective. *PaleoAnthropology*, 2011:203-215.

## Theses

- Goldsmith, Y. 2011.** Characterizing rock varnish developed on earliest Holocene Negev flint artifacts as a potential environmental or climatic indicator. (M.Sc. thesis submitted to the Hebrew University in Jerusalem, Supervisors: Enzel, Y. and Stein, M).
- Goldsmith, Y. 2017.** Trans-Asian glacial - interglacial paleohydroclimate: reconstructed using lake geomorphology and organic and inorganic stable isotopes (PhD submitted to Columbia University, Supervisors: Broecker, W. S., deMenocal, P.B. and Polissar, P. J.)

## Reports

- Goldsmith, Y.**, 2011. Characterizing rock varnish developed on earliest Holocene Negev flint artifacts as a potential environmental or climatic indicator. *GSI report*. GSI/33/2011.
- Shelach-Lavi, G., Mingyu, T., **Goldsmith, Y.**, Su, J., Marder O., Tu, D., and Shavit, R. 2019. 2015 Nian Liaoningsheng Fumengxian Jiagiagouxi yizhi shijue baogao (Report on the 2015 test excavations at the Jiagiagouxi site, Fumeng County, Liaoning Province; 2015). *Bianjian kaogu yanjiu*, 25:1-40.

## Submitted publications

- Goldsmith, Y.**, The Geology and Geomorphology of Nahal Zippori. In: Barzilai (ed.) The Nahal Zippori Salvage excavation project. *Submitted to volume Editor.*
- Xu, H., **Goldsmith, Y.**, Tan, L., Lan, J., Wang, X., Lang, L., Sheng, E., Liu, B., Yu, K., Ye, Y., Yan, D., Zhou, K and Zhou, X. Insolation driven changes of the seasonal structure impact southern China long-term water availability. *Submitted to: JGR.*

## Research projects and field experience

- 2009 Archaeological survey of the Chifeng region, China. As part of the Chifeng International Collaborative Archaeological Research Project (University of Pittsburgh, Jilin University, Hebrew University).
- 2010 Deposition and post deposition processes at the prehistoric site of Arnona, Israel (Headed By: O. Barzilai, Israel Antiquity Authority).
- 2011 Geomorphological and geological survey of Nahal Zippori, Israel (Headed By: O. Barzilai, Israel Antiquity Authority).
- 2011 Deposition and post deposition processes at the prehistoric site of 666 Hadar region, Ethiopia (Headed by: B. Kimbel, Arizona State University and E. Hovers Hebrew University).
- 2009-2013 Geological, Sedimentology and GIS aspects, The Judean Desert Archaeological Survey, Israel (Headed by: U. Davidovich, Hebrew University).
- 2012-2016 Geology and Geomorphology of the Fuxin area, Northern China  
As part of the Fuxin Regional Archaeological Project (Headed by Gideon Shelach, Hebrew University, Jilin University).
- 2013-2016 Atmospheric  $^{36}\text{Cl}$  production in packrat middens, Western USA.
- 2013-2016 Constraining the climatic interpretation of  $\delta\text{D}_{\text{wax}}$  and  $\delta^{13}\text{C}_{\text{wax}}$  in soils and plants recorded along a rainfall gradient in Israel, Israel.
- 2014-2016 The modern and LGM hydrological cycles of the Eastern Mediterranean and the Levant from a water isotope perspective
- 2014-present Spatial-latitudinal shifts of the East Asian Summer Monsoon recorded by paleo-shorelines and  $\delta\text{D}_{\text{wax}}$  from Dali Lake, Inner Mongolia, China.
- 2016-present Quantifying the migration of the East Asian Monsoon during the Late Quaternary using lake-area of Lake Khukh, Mongolia.
- 2016-present Reconstructing paleo-intensity of the Indian Monsoon using lake-area fluctuations from Lake Chenghai, Southern China (Headed by: Xu Hai, Institute of Earth Environment, Xi'an, China).
- 2017-present Quantifying the migration of the East Asian Monsoon during the Late Quaternary using lake-area of Lake Daihai, Central China.
- 2018-present Chemical and isotopic processes of shoreline tufa formation in Mono Lake, USA.

## Invited talks

- 2015 **Goldsmith, Y.**, The modern and LGM hydrological cycles of the Eastern Mediterranean and the Levant from a water isotope perspective. Weizmann Institute.
- 2015 **Goldsmith, Y.**, The modern and LGM hydrological cycles of the Eastern Mediterranean and the Levant from a water isotope perspective. Hebrew University.
- 2016 **Goldsmith, Y.**, The oscillating fringe and paleo-intensity of the East Asian monsoon reconstructed using closed-basin lake-area and  $\delta\text{D}_{\text{wax}}$ . Caltech.

- 2016 **Goldsmith, Y.**, Did the oscillating fringe and intensity variations of the East Asian monsoon impact the onset of domestication and urbanization in North China? University of Connecticut.
- 2016 **Goldsmith, Y.**, The oscillating fringe and paleo-intensity of the East Asian monsoon reconstructed using closed-basin lake-area and  $\delta D_{wax}$ . Institute of Earth Environment - Chinese Academy of Sciences, Xi'an.
- 2016 **Goldsmith, Y.**, The oscillating fringe and paleo-intensity of the East Asian monsoon reconstructed using closed-basin lake-area and  $\delta D_{wax}$ . Weizmann Institute.
- 2016 **Goldsmith, Y.**, The oscillating fringe and paleo-intensity of the East Asian monsoon reconstructed using closed-basin lake-area and  $\delta D_{wax}$ . Beer Sheva University.
- 2017 **Goldsmith, Y.**, The oscillating fringe of the East Asian monsoon and it's impact of social evolution in North China. Climate Change and Human Migration – Busan, South Korea.
- 2018 **Goldsmith, Y.**, Paleohydrology of the East Asian monsoon. Cal-State Long Beach.
- 2019 **Goldsmith, Y.**, East Asian Paleo water availability. USC.

### Conference presentations

- 2008 **Goldsmith, Y.**, and Sharon, I. Positioning Strategies of Square and Oval Iron Age Enclosed Sites in the Negev – A Geographic Approach. New approaches for computer applications in the Archaeology and Cultural Heritage of the Southern Levant.
- 2012 **Goldsmith, Y.** Rock varnish as a potential environmental or climatic indicator. Geological Survey of Israel annual meeting, Jerusalem.
- 2012 **Goldsmith, Y.** Characterizing rock varnish developed on earliest Holocene Negev flint artifacts as a potential environmental or climatic indicator. Israel Geological Society annual meeting, Ashkelon.
- 2012 Ekshtain, R., Sharon, I., **Goldsmith, Y.**, and Birkenfeld, M. Marking old territories: Using ArcGIS models for raw material survey areas in the Levantine Middle Paleolithic. A case study from Qafzeh cave, Israel. Debating Spatial Archaeology: International Workshop on Landscape and Spatial Analysis in Archaeology. Santander, Spain.
- 2013 Crouvi, O., Barzilai, O., **Goldsmith, Y.**, Porat, N., Amit, R., and Enzel, Y. Geoarchaeology of Prehistoric sites in southern Jerusalem: Sediments, Paleosols, dust and flint artifacts. Prof. Gerald M. Friedman Seminar Day in Current Research in Geo-Archaeology.
- 2014 **Goldsmith, Y.**, Broecker, W.S., Xu, H., Polissar, P., deMenocal, P., and An, Z. Spatial-latitude shifts of the East Asian Summer Monsoon recorded by paleo-shorelines from Dali Nou'er Lake, Inner Mongolia, China. Comer Conference.
- 2015 **Goldsmith, Y.**, Broecker, W.S., Xu, H., Polissar, P., deMenocal, P., Porat, N., Peng, C., Zhou, W. and An, Z. Precessional and millennial scale precipitation shifts of the East Asian Summer Monsoon recorded by paleo-lake levels from Dali Lake, Inner Mongolia, China. Comer Conference.
- 2015 **Goldsmith, Y.**, The modern and LGM hydrological cycles of the Eastern Mediterranean and the Levant from a water isotope perspective. GFD (Geophysical fluid dynamics) Days conference 2015 (III), Sde Boqer, Israel.
- 2015 **Goldsmith, Y.**, Polissar, P. J, deMenocal, P. B. and Broecker, W. S. (Poster) Soil  $\delta D_{leafwax}$  as a proxy for  $\delta D_{precipitation}$ . Constraining the climatic interpretation of soil  $\delta D_{leafwax}$  and  $\delta^{13}C_{leafwax}$  recorded along a rainfall gradient in Israel. PlantWax2015, Switzerland.
- 2016 **Goldsmith, Y.**, The oscillating fringe and paleo-intensity of the East Asian monsoon reconstructed using closed-basin lake-area and  $\delta D_{wax}$ . AGU.
- 2016 **Goldsmith, Y.**, Closing the closed-basin-lake gap in East Asia. Comer Conference.
- 2016 **Goldsmith, Y.**, Northeastern China lake-area record confirms rainfall interpretation of Chinese cave deposits records. Loess Forum, Xi'an China.
- 2017 **Goldsmith, Y.**, The oscillating fringe of the East Asian monsoon. Asian monsoon variability workshop, Xi'an China.

- 2017 **Goldsmith, Y.**, Late Pleistocene – Holocene water availability in South China. Comer Conference.
- 2017 **Goldsmith, Y.**, The oscillating fringe of the East Asian monsoon. GSA 2017.
- 2018 **Goldsmith, Y.**, Pairing Stable Isotopes with Lake Level – A Path for Reconstructing Paleo-Evaporation? Goldschmidt 2018.

### **Public professional activities**

- 2016 Reviewer for: Chemical Geology, Climate of the past
- 2017 Reviewer for: Scientific Report, Radiocarbon, GCA (x2), QSR, JGR-A, EPSL
- 2018 Reviewer for: ESPL, JGR-A, P<sup>3</sup>, Holocene, Journal of Human Evolution  
Session convener – Goldschmidt 2018
- 2019 Reviewer for: Israeli Science Foundation, Quaternary (x2), Nature Comm., QI  
Conference organizer: Paleoclimate of East Asia and the tropics, HUJI

### **Membership in professional societies**

American Geophysical Union, Geological Society of America, Geological Society of Israel, Geochemical Society