

Kiara J. Gomez

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RESEARCH INTERESTS:

The application of biological markers (biomarkers) in geology and petroleum engineering. Using paleoclimate molecular proxies, such as plant leaf wax biomarkers (GDGT) and stable oxygen and hydrogen isotopes, to understand the hydroclimate dynamics of tropical South America (Colombia). Understanding the geochemical and biomarker characteristics of crude oil and source rocks. Ooid formation in carbonate platforms (Bahamas)

EDUCATION:

University of Texas at Austin, Austin, TX (expected 2020)

PhD, Geological Science

Advisor: Timothy Shanahan

Technical University of Crete, Akrotiri, Greece (2016)

Master of Science, Petroleum Engineering

Advisor: Nikos Pasadakis; Specialization: Petroleum Geochemistry

Smith College, Northampton, MA (2014)

Bachelor of Arts, Geosciences with *High Honors*; Minor in Marine Science and Policy

Advisor: Sara B. Pruss, Ooid Formation at Pigeon Creek Delta, San Salvador, Bahamas

WORK AND RESEARCH EXPERIENCE:

Paleoclimatology and Environmental Geochemistry Lab, UT Austin, Austin, TX

Aug 2016—Present

Graduate Research Assistant/ Gates Millennium Scholar

- Studying oxygen ($\delta^{18}\text{O}$) isotopes of river samples from northern Colombia to determine if there is temporal and spatial isotopic variability in the region
- Assessing modern convective and stratiform Tropical Rainfall Measuring Mission (TRMM) surface precipitation data from Colombia to understand the climate dynamics of the tropics
- Analyzing sediments from Lake Titicaca and Lake Yanacocha using lead wax biomarkers (GDGTs) to understand the temporal variability in the Holocene

Hydrocarbon and Technology Lab, Technical University of Crete, Chania, Greece

Sept 2015—Aug 2016

Graduate Research Assistant

- Characterized bitumen of Nigerian tar sands using terpane biomarker ratios (tricyclic and tetracyclic terpanes)
- Mounted tar sand samples onto slides for petrographic analysis
- Assessed the potential uses of new terpane (terpenoid) ratios in characterizing oil samples

Archipelagos Institute of Marine Conservation, Samos, Greece

Aug 2014—Jun 2015

Fulbright Fellow 2014-2015 (Multiple Positions)

Salt Marsh Team Supervisor and Researcher

- Managed and closely collaborated with a team that is currently working on several small-scale studies at Psili Ammos-Alyki salt marsh in Samos, Greece in efforts to facilitate the implementation of a management plan.
- Responsible for scheduling meetings between team members and the scientific director, delegating tasks, tracking individual and overall team progress, and assisting in the planning and execution of experiments.
- Collaborated on revision and editing of scientific proposals, reports, and powerpoint presentations.
- Individual project included locating and mapping ecologically important meadows of *Posidonia oceanica* around Samos Island using ArcGIS.

Environmental Conservation Education Team Supervisor

- Managed all aspects and activities of the Education Team, including coordinating with schoolteachers

around Samos Island, delegating tasks to team members, recruiting students at school fairs, and collaborating with the Media Team in creating posters and other education material.

- Prepared and revised of all lesson plans, presentations, educational games and other teaching aids for a variety of school ages.
- Individual project included creating an E-Learning course titled “Environmental awareness and education: an emphasis on the biodiversity of the Aegean.”

Coral Reef Ed-Ventures, Ambergris Caye, Belize

Summer 2013; 2014

Co-leader, Student-teacher, and Researcher (Apr 2014-Jul 2014)

- Redesigned curriculum for two environmental education programs targeted for 160 local Belizean students, ages 4-16.
- Led group of six undergraduate student teachers including interviewing applicants, training team members on-site, and facilitating meetings
- Conducted research in efforts to determine a health baseline of soft corals at Mexico Rocks. Activities included collecting soft coral video transect surveys (via SCUBA and Free diving) and assessing other sites for future research.

Student-teacher and Researcher (May 2013-July 2013)

- One of six student teachers that in charge of over 140 Belizean schoolchildren, aged 5 to 15, in a two week, inquiry—based program about coral reefs.
- Conducted data collection for marine research; activities included: aerial photography kite (for ArcGIS mapping), creating of beach profiles, and sea turtle nest monitoring.

Smith College, Geosciences Department, Northampton, MA

Jan 2012—May 2014

Research Lab Member

- Conducted independent fieldwork in Pigeon Creek Delta, San Salvador, the Bahamas, where multiple subtidal sand samples were collected and assessed for ooid abundances using observations, petrographic and scanned electron microscopy (SEM), erosion and accretion experiments (performed in Tanja Bosak Geobiology Lab, MIT), and lipid biomarkers (carried out in Roger Summons Geobiology and Astrobiology Lab, MIT).
- Incorporated collected data in an Honors Bachelor’s Thesis, contributing new knowledge and a possible theory on how modern ooids form from the study site are currently forming—a topic of continuous debate.

Skidaway Institute of Oceanography, Savannah, GA

May 2011—Jul 2011

Undergraduate Research Intern (REU Program at Savannah State University)

- Collected weekly water samples and ctenophore sampling.
- Analyzed the abundances of *Mnemiopsis leidy* and *Beroe ovata* along the Skidaway River and assessed new possible trends within data from previous years.

FIELDWORK:

- Mesokambos Bay, Seagrass Patches, Samos, Greece, September-October 2014
- Mexico Rocks, Soft Coral Patches, San Pedro, Belize, Summer 2013 and 2014
- Pigeon Creek Delta, San Salvador, the Bahamas, January 2013
- Sediment-Starved Holocene Conch Beach, Little Exuma, the Bahamas, January 2013

TEACHING EXPERIENCE

- From Mangroves to Coral Reefs, Student Teacher (ages 5-17), Ambergris Caye, Belize, Summer 2013; Summer 2014
- GEO 231(Lab) Invertebrate Paleontology and History of Life, Laboratory Assistant, Smith College, Fall 2013 and Fall 2014
- GEO 108(Lab) Oceanography, Laboratory Assistant, Smith College, Spring 2014

PROFESSIONAL MEMBERSHIPS:

Society of Petroleum Engineers (SPE) 2015 –
American Associate of Petroleum Geologists (AAPG) 2016 -
American Institute of Professional Geologists (AIPG) 2013 -
Association for Women Geoscientists (AWG), 2012 –
Geological Society of America (GSA), 2011 -
Marine Technology Society (MTS), 2012 -
Sigma Xi, 2012 -

GRANTS AND AWARDS:

- Fulbright Fellowship 2014-2015
- Deans List 2010-2011; 2011-2012; 2013-2014
- Mellon Mays Fellowship, funding for undergraduate research for academic year 2012-2014
- Geological Society of America Subaru Minority Scholarship Award 2012
- Awarded Making Strides Leadership in student affairs 2012
- First Group Scholar, awarded to students in top 10%, 2011-2012
- Praxis Summer Internship Grant “GES 303 Greek History and Archeology in their Geological Context” (Participant of Smith College Study Abroad Program), 2012: \$4,000
- International Experience Grant “GEO 270J: Carbonate Systems and Coral Reefs of the Bahamas” (Participant of Geosciences Department course), 2011: \$500
- Student Scholar-Athlete 2010-2011
- Gates Millennium Scholarship, funding for 4 years of undergraduate study, 2 years of master’s study, and 5 years of graduate study, 2010
- Best Buy Scholarship for one year of undergraduate study, 2010: \$1,000

PROFESSIONAL TALKS AND POSTERS:

Gomez, K. (2014), Ooid formation at Pigeon Creek Delta, San Salvador Island, the Bahamas. Unpublished undergraduate thesis. Smith College: Northampton, MA, USA.

Pruss, S.B. and **K. J. Gomez** (2014). Ooids of Pigeon Creek Delta, San Salvador, the Bahamas: an integrated study using field observations, biomarkers and experiments. Poster at Celebrating Collaborations of Students with Faculty, Smith College, Northampton, MA. April 12.

Gomez, K. (2014). Biomarkers and ooids of Pigeon Creek Delta, San Salvador, the Bahamas. Powerpoint presentation at Mellon May Undergraduate Fellowship (MMUF) Collaborations Night, Smith College, Northampton, MA. April 12.

Gomez, K., Pruss, B., Bosak, T. and R.E. Summons (2014). Distribution, organic geochemistry and experimental constraints on ooid formation in modern Bahamian settings. Poster and abstract at 2014 Northeastern Geobiology Symposium, Yale University, New Haven, CT. March 29.

Aluia, V., Camboulives, S., Collier, N., **Gomez, K.,** Lawson, S., Leman, J., Moore, K., and S. Stephan (2013). Investigating unusual brown sand of sediment-starved beaches on the leeward coast of the Bahamian Islands. Poster at Celebrating Collaborations of Students with Faculty, Smith College, Northampton, MA. April 20.

Pruss, S.B. and **K. Gomez** (2013). Mapping ooid distribution at Pigeon Creek Delta, San Salvador, Bahamas. Poster at Celebrating Collaborations of Students with Faculty, Smith College, Northampton, MA. April 20.

Gomez, K. (2012). Analysis of ooid formations found at Pigeon Creek Delta, San Salvador, Bahamas. Poster and abstract at Ivy Plus STEM Symposium, University of Pennsylvania, Philadelphia, PA. October 4-6.

Pruss, S.B. and **K. Gomez** (2012). Distribution and characterization of oolitic sand in Pigeon Creek, San Salvador Island, The Bahamas. Northeast Geological Society of America Meeting, Abstracts with Programs, v. 44, n. 7, p. 278.

Pruss, S.B. and **K. Gomez** (2012). Ooid Formation at Pigeon Creek Delta, San Salvador, Bahamas. Poster at Celebrating Collaborations of Students with Faculty, Smith College, Northampton, MA. April 21.

Pruss, S.B., Wu, S., Shaw, T., and **K. Gomez** (2012), Naticid Predation in Western San Salvador, the Bahamas. Poster at Celebrating Collaborations of Students with Faculty, Smith College, Northampton, MA. April 21.

Fraiser, L. and **K. Gomez** (2011). A Survey of Ctenophore Abundance in a Skidaway River Estuary. Powerpoint presentation at Savannah State University REU Symposium.

Ramsook et al. (2010), Yeast Cell Adhesion Molecules Have Functional Amyloid-Forming Sequences. *Eukaryotic Cell*, 9 (3): 393-404. (Acknowledgement)

Ramsook, C. and **K. Gomez** (2010). The Effect of Amyloid Dyes on Flocculation and Growth Rate of *Saccharomyces cerevisiae* Flo1 and Flo11 Protein Cells. Poster at Intel Science and Engineering Fair 2010 and New York Science and Engineering Fair (NYSEF), Finals Round.

LANGUAGE SKILLS:

English: Native; Excellent

Spanish: Native; Excellent

Italian: Advanced reading and writing; high intermediate speaking

Greek: Advanced reading and writing; high intermediate speaking

OTHER SKILLS:

Excellent communication skills, both verbal and written.

Comfortable with PC, Mac, Linux systems

Experienced with Geospatial Information System (ArcGIS 9.0), MS Office Suite, x-ray diffraction (XRD), scan electron microscopy (SEM), gas chromatography mass spectrometer (GC-MS), net tossing, coring. Familiar with MATLAB, ground penetrating radar (GPR).

EXTRACURRICULAR INTERESTS:

Sports: hiking, swimming, participating in triathlon competitions, rock climbing, rugby

Community: mentoring, volunteering, working with underserved communities