

Why Should You Apply?

- **Collaborate with other disciplines.** Graduate and undergraduate students from Engineering, Anthropology, and other sustainability-related disciplines work together on common projects related to the performance and perceptions of technologies used to recover resources from wastewater.



- **Give back to the community.** Work on research that addresses sustainable development needs, especially in low and middle-income and vulnerable communities. Share your experiences with students from urban K-12 schools upon returning to Southern California.



- **Learn from another culture.** Students will spend 6 weeks in Brazil where they will be mentored by Brazilian Ph.D. students and professors. An intensive short course prior to departure includes language training in Brazilian Portuguese.



Contact Information – San Diego State

Matthew E. Verbyla, Ph.D.

Assistant Professor of Environmental Engineering
+1 619 594 0711 | mverbyla@sdsu.edu

Erika R. Larkins, Ph.D.

Director of the Behner and Stiefel Program on Brazil
Assistant Professor of Anthropology and Sociology
+1 619 594 5028 | erika.larkins@sdsu.edu

Natalie Mladenov, Ph.D.

William E. Leonard, Jr. Chair

Associate Professor of Environmental Engineering
+1 619 594 0725 | nmladenov@sdsu.edu

Contact Information – Cal Poly Pomona

Monica Palomo, Ph.D.

Associate Professor of Civil Engineering
+1 909 869 4144 | mpalomo@cpp.edu

International Research Experience for Students (IRES) Interdisciplinary Research on Water and Sustainability in Belo Horizonte, Brazil

Summer research opportunities for students from engineering, anthropology, and sustainability-related disciplines



Funding

This material is based upon work supported by the National Science Foundation under Grant No. 1827251. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.



About the Opportunity

This is an opportunity for undergraduate and graduate students to complete a six-week summer research experience in Belo Horizonte, Brazil. Students will study the performance of new sanitation and wastewater treatment technologies to recover water, nutrient, and energy resources. Students will also use ethnographic methods to assess perceptions about the efficacy, benefits, and risks associated with these technologies. We want these research experiences to teach students to assess the critical topic of water sustainability from interdisciplinary and intercultural perspectives. We hope to motivate students to pursue graduate programs at San Diego State University and Cal Poly Pomona. During the six-week summer research experience, students will work under Brazilian mentorship at the Federal University of Minas Gerais (UFMG) in Belo Horizonte, Brazil.

What is Provided?

- All travel-related fees during students' stay in Belo Horizonte, including airfare, lodging, meals, and in-country transportation
- Stipend of \$600/week for approximately six weeks

What is Expected?

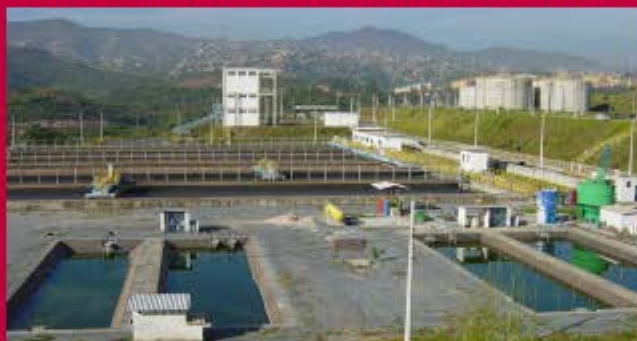
- Mandatory pre-trip orientation training at SDSU
- Full engagement in research and contributions to a safe environment during the entire stay in Brazil
- Final presentation about research results to students and faculty in Brazil
- Turn in a final written report about research as well as original data

What is Strongly Encouraged?

- Pre-trip research immersion by reviewing literature
- Independent efforts to learn Brazilian Portuguese
- Outreach activities to K-12 institutions, peers, and future cohorts of SDSU or Cal Poly Pomona students
- Presentation at a scientific conference
- Contributions to a peer-reviewed journal article(s)

Water and Sustainability

This project will enable cohorts of students from engineering, anthropology, and other sustainability-related disciplines to collaboratively study performance and perceptions of sanitation technologies and their ability to recover energy, nutrients, and clean water from human excreta and wastewater. The CePTS facility, which contains pilot-scale reactors that treat real wastewater, is considered one of the most important research and training centers of its kind. It is used by researchers and practitioners to evaluate and test new technologies for water and sanitation systems.



Above. A pilot-scale upflow anaerobic sludge blanket (UASB) reactor followed by waste stabilization ponds at the CePTS site. (Credit: Dr. Marcos von Sperling, Dr. Juliana Calabria, Dr. Cesar Mota, UFMG-DESA)

Below. Students will use ethnographic research methods to understand local perceptions of sanitation and resource recovery. Students from science, engineering and technology (STEM) fields will work collaboratively with students from the social sciences (e.g., anthropology) on the research.



Dates of the Summer 2019 Trip to Brazil

The proposed dates for the Summer 2019 research trip to Brazil are from the second week of July until the third week of August. All students must travel on the same dates.

How to Apply

Applications must be submitted electronically. More information can be found at the following website:

<https://brazil.sdsu.edu/funding.html>

Priority Deadline: January 10, 2019*

**All applications received by January 10, 2019 will be reviewed. You may submit an application after that date, but there is no guarantee that your materials will be reviewed. Priority will be given to applicants who submit their materials by the priority deadline.*

Eligibility Requirements

- Junior, senior or graduate student standing* at San Diego State or Cal Poly Pomona by Fall 2019
**Exceptional sophomore candidates will be considered on a case-by-case basis; current seniors should apply to graduate programs at SDSU or CPP to start in Summer or Fall of 2019*
- Must be U.S. citizens or permanent residents.
- Ability to travel to Brazil during the specified dates
- Students from groups that are under-represented in science and engineering are encouraged to apply
- Students with existing Portuguese language skills are encouraged to apply
- GPA of 2.8 or higher for undergraduate students or 3.0 or higher for graduate students is preferred

Participating Labs and Programs

