

International Programs in Agriculture and Natural Resources



New zealand

April 2010



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International Programs in Agriculture and Natural
Resources

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GLOBAL CLASSROOM



AGNR Wins Global Classrooms Grant

Partnership with Liberian college continues to grow

The Global Classrooms Initiative, a project of UMD's Office of International Affairs, awarded Taryn Devereux a \$10,000 grant to develop an international course that utilizes digital technologies. The course, AREC360 Global Agriculture: Developing Extension Education and Agriculture Technologies in Africa, further develops AGNR's relationship with Liberian International Christian College (LICC) through weekly joint on-line classes. The course is offered in the Global Poverty minor in AGNR's Agricultural and Resource Economics (AREC) department. Cedric Nwafor is the teaching assistant for the Spring 2019 class.

UMD and LICC students earn credit, but more importantly, the class opens a door to life in another country, engages students in projects that require them to understand the others' culture and their specific set of challenges. The Spring 2019 semester is the first semester the course has been taught. Maryland students are learning through a blend of lectures, readings and on-line classes with their LICC peers, about cropping systems, cross-cultural collaboration, value chains and cooperative extension. A recent class featured a panel discussion

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Global Classroom students during an interactive class with students in Liberia. Photo at left, near to far: Leyla Merlo, Annabelle Arnold, and Obichi Onwukwe.

Students at LICC, Liberia, preparing for the global classroom session.

Left photo by Ann Leger; Right photo by Anna Glenn

with representatives from Liberia's Ministry of Agriculture, Cuttington University, and the Central Agricultural Research Institute. The panelists recounted the success of Farmer Field Schools, but also talked about funding pressures hampering the growth of the Liberian Extension service.

LICC and UMD students had questions for the panelists, and they also had the opportunity to ask questions of each other. Both the UMD and Liberian students talked about the biggest challenges facing farmers. Some of the topics discussed were climate change and the rising cost of inputs in the U.S., and the poverty facing most Liberian farmers that prevents them from buying seeds and fertilizer.

The AGNR-LICC Partnership

The AGNR-LICC partnership began in 2017 when Cedric Nwafor, then an AREC student, heard about AGNR grads working in Liberia in an agricultural college. The grads, Anna McGucken Glenn and Nathan Glenn, began collaborating with Cedric on joint on-line meetings between LICC students and UMD ROOTS Africa, a student group that Cedric co-founded.

Since then, the AGNR-LICC partnership has grown, with LICC hosting ROOTS Africa students and UME Principle Agent Dave Myers over Spring Break 2018. The goal of

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the trip was to learn, teach farm workshops and build relations with the Liberian community. The UMD students conducted workshops on farm management, Myers taught soil testing and pesticide use. Most importantly, though, they learned about the causes of food insecurity in this corner of Africa and how LICC, the Peace Corps, and many international organizations are committed to teaching Liberians how to sustainably grow their food and break free from importing 70% of their food.

Faculty Specialist in Extension Taryn Devereux brings a lot of experience to the Global Classroom. She taught AR-EC 345 Global Poverty and Economic Development and has managed AGNR international research and ex-

tension and projects in Afghanistan, Ethiopia, and Tanzania.

Anna and Nathan Glenn began teaching at LICC in 2016. Anna, who graduated with a B.S. in Animal Sciences and Agricultural Science and Technology, was a Faculty Extension Assistant in Baltimore County. Anna is now LICC's Agriculture Department Chair and Nathan is the Agricultural Research Center (ARC) Business Manager.

On the impact the class has made on her LICC students, Anna said, "they have commented on how this course, even in these first few weeks, has really challenged them to broaden their perspective and understanding about agriculture and the world, in addition to preparing them to think critically and to take action to address the challenges of their generation/community."

AGNR'S LIBERIA CONNECTIONS



UME Poultry Specialist Jon Moyle, center, in Liberia with Anna and Nathan Glenn. Jon visited Liberia on a Farmer to Farmer visit in Dec. 2017, where he worked with farmers to help develop poultry production. Photo courtesy of Jon Moyle



Before becoming an UME Area Extension Director, Chris Seubert worked at Africare-Liberia, a non-governmental organization conducting agricultural and health programs. Chris was the Country Representative from 2008-11. Photo courtesy of Chris Seubert

Liberia GDP

Liberia has the 46th-highest Gross Domestic Product (GDP) at Purchasing Power Parity (PPP) among African countries (3.78 million International dollars). The top 10 African countries by GDP (PPP) are: Africa, Nigeria, Egypt, South Africa, Algeria, Morocco, Angola, Sudan, Ethiopia, Tanzania. (From List of African countries by GDP (PPP))

Liberia's Major Economic

Activities

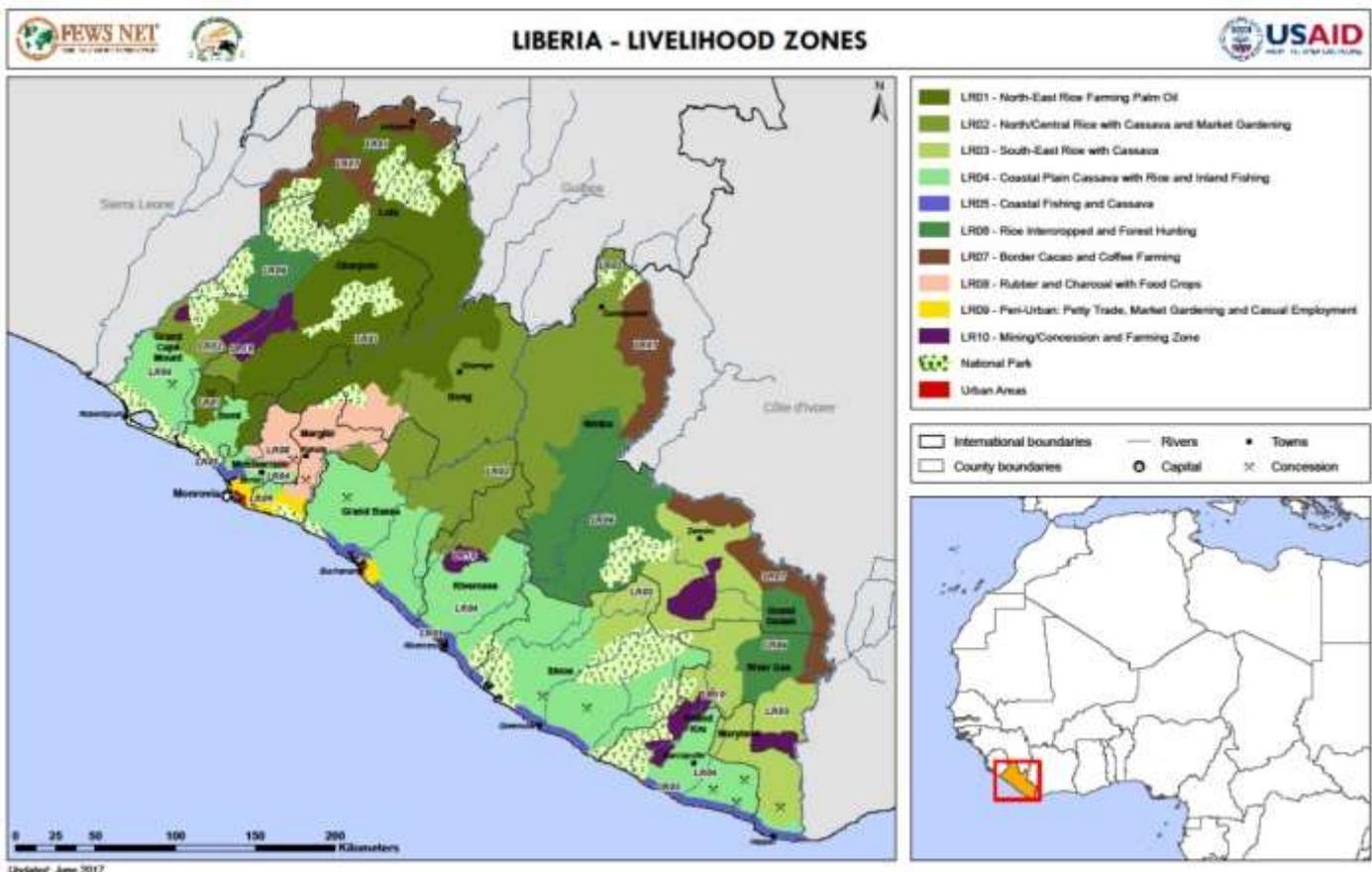
Major exports are rubber, iron ore, gold and diamonds. Palm oil and cocoa are emerging as exports.

Agriculture is a very important part of Liberia's economy and is the major occupation for people in rural areas.

Main food crops include: rice, cassava, sweet potatoes, squash, hot peppers, palm oil

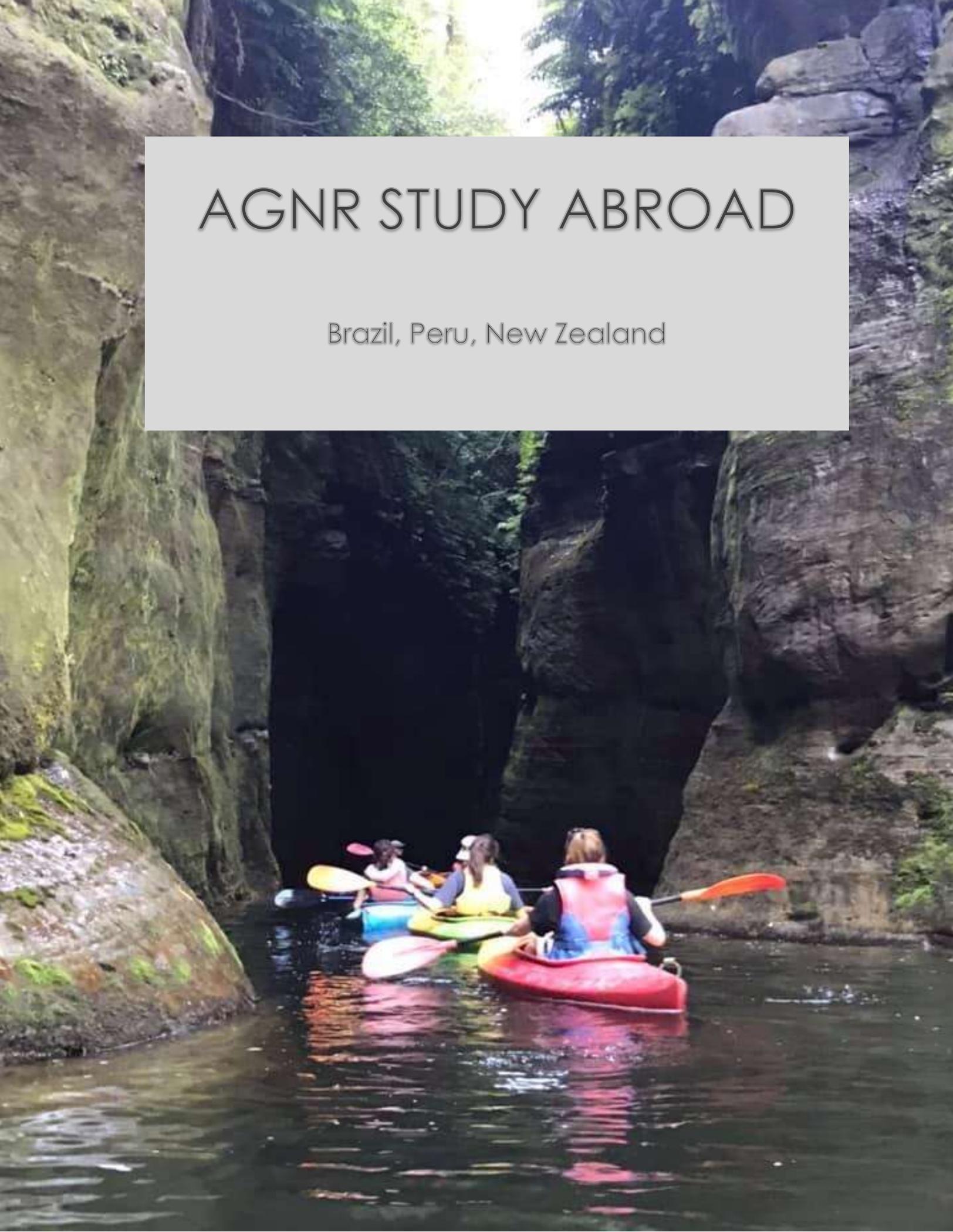
Meat is in short supply and includes: goats, fish, beef and some pork. From CIA Factbook

LIBERIA



AGNR STUDY ABROAD

Brazil, Peru, New Zealand



MARYLAND-RIO Partners Celebrate 26 Years of Student Exchange

AGNR and two Brazilian universities are celebrating 26 years of student exchange. In that time, over 100 AGNR students have visited the universities in Rio de Janeiro, Brazil, to learn about ecology and natural resources management in the city and State of Rio. True to the nature of an exchange program, as many Brazilian students have journeyed to Maryland to learn about our distinct ecosystem.

Maryland and Rio de Janeiro seemingly have little in common, but both have large estuaries and universities with active environmental research programs. The AGNR and Brazil program leaders work throughout the year to plan projects and activities and the UMD-Brazil collaboration has exposed students to dolphin research in Brazil's Sepetiba Bay, Guanabara Bay pollution reduction projects, and radio telemetry research conducted on the endangered Golden Lion Tamarin monkeys. This year, AGNR students will travel to Brazil and join students from Universidade Federal Rural do Rio de Janeiro and Universidade Federal Fluminense to learn about the globally rare Atlantic Coastal Rainforest ecosystem. AGNR's Landscape Architecture (LARC) student program will begin participating in the exchange program this year. The designs of Burle Marx, who was considered one of the most prominent landscape architects of the 20th century, dot the Rio landscape and are a big draw for international visitors.

The summer exchange program was started in 1993 under the umbrella of Partners of the Americas and its Maryland chapter, Maryland-Rio Partners. The Maryland chapter started much earlier and as the organizations began emphasizing environ-

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These are only a few of AGNR's study abroad courses taught by or college faculty. AGNR has had long running courses in Costa Rica and Italy and recently added a courses in England, Chile, and a course that travels to two countries, Germany and Italy. At left is a photo of students paddling in New Zealand. Photo courtesy of Joe Sullivan.



Brazilian students visited Jug Bay Wetlands Sanctuary and learned about the importance of wetlands in the Chesapeake Bay ecosystem. PHOTO courtesy of MD Rio Partners

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mental education, the student exchange program started. The exchange program is headed by the Dept. of Environmental Science and Technology's Assistant Research Professor Dr. Peter May, who took over from Adjunct Assoc. Professor, Dr. Lowell Adams. Dr. Adams retired from UMD in 2011, but remains active in Maryland-Rio Partners and currently is the chapter president.

Many of the projects are on-going. This summer when Dr. May travels to Brazil with the AGNR students, he will be continuing discussions about a carbon sequestration project and an algal turf scrubber water quality treatment project that he and Dr. Pat Kangas have worked on.

May was introduced to the program in 1996, when he participated in the exchange as a graduate student with Dr. Patrick Kangas. "We conducted stream aquatic health bio assessments in the states of Rio, Bahia, and Amazonas in support of developing baseline data from sites for Agroforestry, urban impacts and oil exploration in the Amazon," he said.

Brazilian students and researchers who have traveled to Maryland have visited many of the environmental organizations concerned with the clean-up of the Chesapeake

Bay, including the Chesapeake Bay Foundation, the Anacostia Watershed Society, NOAA, and the Smithsonian Environmental Research Center. Brazil's Guanabara Bay has been the site of oil spills, and it receives untreated sewage and run-off from urban and deforested areas. The cooperation between Maryland and Rio in estuarine ecology and innovative restoration programs and efforts has been an ongoing one and they continue to learn from one another.

Aside from the student exchange program, Maryland-Rio Partners has an active roster of projects, including teacher study tours, environmental education, and parks conservation. The State of Maryland and Rio de Janeiro have been Sister States for over 50 years as a part of President Kennedy's international programs which "provides a government to government forum for the promotion of international cooperation and understanding."



Endangered Golden Lion Tamarin monkey. Photo courtesy of Maryland-Rio Partners



AGNR students in Sepetiba Bay, Brazil, learning about research on dolphin. Dr. Peter May is center. Photo courtesy of MD-Rio Partners

Learn more about:

Maryland-Rio Partners: <https://marylandriopartners.wordpress.com/>

Maryland Sister States Program: <https://www.marylandsisterstates.org/>

PERU: Medicinal Plants of the Amazon and Andes

Peru offers one of the most biologically diverse regions on the planet, and notably, researchers are still discovering uses for native plants, especially for the treatment of ailments. UMD students have traveled to Peru's Amazon six times since 2009 to learn about ethnobotany, or the study of how people in a culture or region use plants.

Plant Sciences and Technology Adjunct Professor, Dr. Andrea Ottesen has been studying Amazonian plants for 24 years, since she met Dr. Jim Duke, a USDA economic and ethnobotanist. Duke wrote "The Green Pharmacy: New Discoveries in Herbal Remedies for Common Diseases and Conditions From the World's Foremost Authority on Healing Herbs" which is an encyclopedia of the medical uses of plants.

In study abroad course PLSC489X, Medicinal Plants of the Amazon and Andes, the region becomes a classroom for the study of the medicinal uses of plants. Students learn about the biochemistry of the flora of the tropical rainforest. For example, calabash gourds, Peruvian ginseng, *Croton lechleri* or dragon's blood, are just a few of the plants growing in the Amazon that are used to treat abscesses, osteoporosis, and anemia.

Students in the study abroad course also visit local healers who demonstrate preparation and use of specific plants, and students examine toxic components of tropical plants.

The January 2019 trip to Peru was the first year without Duke, he had passed away in 2017. The trip included a ceremony to honor Duke, with a shaman blessing and spreading Duke's ashes. Guillermo Rodriguez Gomez is a shaman but also an Amazonian medicinal plant expert who helped establish ReNu PeRu Ethnobotanical garden in Peru with Duke. The garden is a teaching garden and one of the sites that the PSLA students visit.

PERU: MEDICINAL PLANTS OF THE AMAZON AND ANDES



UMD students enjoying the Peruvian rain forest.

Photo courtesy of Andrea Ottesen

PERU: Medicinal Plants of the Amazon and Andes

Guillermo Rodriguez Gomez is an Amazonian medicinal plant expert. Trained as a shaman, Gomez blows tobacco smoke onto Dr. Jim Duke's ashes and offers a blessing in his native Ocaina language. It is a sacred part of many protective blessings and healing ceremonies.

Gomez has collaborated on the [Peru: Medicinal Plants of Amazon](#) course from its beginning. Duke was his long term friend and mentor.



NEW ZEALAND: Ecosystems, Sustainability and Landscapes

AGNR students have two New Zealand study abroad classes to choose from, and both are held over Winter term. New Zealand presents a unique case study since it is a string of islands that must produce most of its energy and food. It is rich in biodiversity, the island has thousands of miles of coastline, glaciers, caves and volcanoes. But the impact of climate change and invasive species have stressed the ecosystem — almost 40% of its native plants are now endangered of becoming extinct, and the glaciers are shrinking.

Both courses are concerned with environmental impacts, though PLSC489Z: Environmental Sustainability is more concerned with how humans have impacted it historically and what is currently done to promote sustainability. Dr. Joe Sullivan has taught this Winter term course since 2015, but he is better known as AGNR's Associate Dean for Academic Programs. In this New Zealand course, Joe wears his professor of Forest Ecology hat as he leads students in studying the impact of environmental stress, climate change and urbanization on trees and forests.

In addition to learning about New Zealand's use of wind, solar and geothermal power, students have many opportunities to explore cultural and geographic features. For example, a visit to an indigenous Maori community offers a chance to meet members of the tribe and learn about the use of flora and fauna in their traditions. A Maori guide takes students on a tour of the Whirinaki Rainforest, one of the world's last prehistoric rainforests that has supplied the Maori with food, medicine and resources.

The Landscape Architecture (LARC) program also has a Winter term study abroad course in New Zealand, LARC489N: Sustainable Culture and Earth: Transformation and Adaptation. This course is open to all majors, but places more emphasis on developing sketching abilities and focuses on culture and how humans might design more sustainable built environments. Dennis Nola is the course leader.

Erin Hyman helps with sheep shearing. Erin is an ENST Ecosystem Health major. Photo courtesy of Joe Sullivan

