



Haiti Development Studies Center

Fall 2023 Sponsors' Activity Report

Dr. Robert H. Giles, University of Massachusetts Lowell Physics Department



Akwaaba (*Welcome*) On Sunday, July 16th, 2023, UEW Professor, Dr. Richard Agjei, and Gordon Donkoh-Halm greet HDSC's Director, Dr. Giles, as he arrives at the Kotoka International Airport in Accra, Ghana. Gordon, Executive Director of the African Community Center in Lowell, and Lordina Baaba Bruce, (his grandniece) a UEW math major, stand in front of a poster on the UEW campus announcing Professor Giles' seminar on the challenges of Energy in the Developing world.

HDSC - A History of Building International Partnerships

January 2003, Professor Giles started travelling biannually to Haiti. Studying the culture and community dynamics, he began mentoring teams of science and engineering students working on the challenges of food, energy and water in impoverished international communities. With this experience, Giles leased a two-story building in the city of Les Cayes and established the Haiti Development Studies Center (HDSC) June 2013. Several young Haitian adults served as HDSC's research interns while taking UML courses online. Professor Giles visited Cayes two to four times annually along with faculty-led student engineering teams. These teams focused on energy equity and water security projects and taught these concepts at one of the local High schools.

During the initial five-year period, UMass Lowell faculty leading these advanced undergraduate science and engineering capstone teams at HDSC's facility in Cayes, Haiti were Professors Silas Laycock, Cecil Joseph, Edward Hajduk, Lori Weeden, Onur Apul and Christopher Niezrecki. HDSC's program enabled the visiting UML student/faculty-led teams to practice their research skills and raise their awareness about factors that hinder progress in impoverished countries. In

addition, the program helped Haitian students expand their education with the intent of moving their country forward.

Unfortunately, the facility was shut down in June 2020 due to the growing gang violence in Haiti. Subsequently, Giles created an academic partnership with the University's Science of Education program in the Southern Department of Haiti (UPSAC) and, with the assistance of UML's advanced undergraduate students, began teaching a Science of Energy course with laboratory curriculum involving applications in solar photovoltaics.



A tree-planting ceremony was held Monday, July 17th, 2023, at the forecourt of the Faculty of Science Education, UEW South Campus, to symbolize the newly established partnership between the University of Education, Winneba (UEW) and the University of Massachusetts Lowell (UMass Lowell).

The Current Activities – Building New Partnerships in Africa

During the Fall of 2022, Gordon Donkoh-Halm as Executive Director of the African Community Center of Lowell (ACCL), invited Professor Giles to replicate HDSC's international research program in Winneba, Ghana. With ACCL Director Halm's help, Giles participated in online discussions with faculty and administrators at UEW to explore the opportunities of an academic partnership between UMass Lowell and UEW leading to the establishment of a formal agreement.

Upon hearing of our new partnership with UEW, UML's Professor Chris Niezrecki suggested we expand the involvement to a host of universities across Africa in support of developing a Global Center of Excellence involving Energy and Climate. Professor Richard Agjei, UEW's faculty coordinator for the UML/UEW partnership, organized online meetings with faculty

representatives in South Africa, Morocco, Nigeria and Ethiopia. All these partners signed onto the agreement, while Chris Niezrecki organized a response to a National Science Foundation / Request for Proposal (NSF/RFP) with other partner institutions around the world. Though NSF chose not to support the proposal, this work laid the foundation for ongoing research opportunities in Africa.

During these online meetings, UEW's Faculty of Science decided to host Professor Giles in July 2023, giving him the opportunity to address the faculty and students on the issues of Global Energy and Climate. He also conducted discussions with UEW's science faculty on the challenge of establishing climate friendly affordable energy in the developing world.



To an audience of more than two hundred and fifty faculty and students at the University of Education Winneba, Giles delivers a presentation on "Energy and the Developing World". With UEW's faculty and administrative steering committee on stage (left), the presentation was followed by a brisk question and answer period exploring the challenges of global energy and the driving impact on climate.

Continued Activities with Our Partners in Haiti



UPSAC's students gather in groups as they fabricate an electronic circuit for practicing soldering skills (left photo). Completing her undergraduate degree with distinction as a member of UML's Honors College, HDSC's Research Intern, Marie Dayana Alabre, received her Bachelor's degree in English at the Spring 2023 graduation ceremony.

Committed to our academic partnership with the Université Publique du Sud Aux Cayes (UPSAC) in Laborde, Haiti; in the third year under the UML-HDSC/UPSAC academic collaborative, HDSC's faculty and students continue to teach the "Science of Energy" lecture course along with delivering electronics laboratory curriculum. Professor Silas Laycock and his graduate research assistant, Sayantan Bhattacharya, also conducted a lecture series in Astronomy. We conducted the lecture/lab course Wednesday's 11:00 AM to 2:00 PM and have successfully completed the AY2022/2023 online curriculum with the aid of UPSAC's Language Assistant, Steevenson Rosema.

When discussing the challenges of global energy and its impact on climate, UPSAC's students always look forward to projects involving solar photovoltaic energy. Recognizing the opportunity to demonstrate the affordability of harvesting energy from the sun using photovoltaics (PV), UPSAC's General Secretary, Prospere Dume, asked Giles and his research assistant, Cameron Abell to lead the students through the design and fabrication of a 12-volt solar photovoltaic system for the UPSAC's campus. *This year's recipient of HDSC's Endowed Scholarship Award was Cameron Abell in recognition of his work developing and teaching UPSAC's laboratory course curriculum.*

It is a great pleasure to congratulate HDSC's Research Intern, Marie Dayana Alabre, on completion of her Bachelor of Arts degree in English. It is with deep gratitude that the HDSC members recognize her commitment as an HDSC undergraduate intern since September of 2015. We were inspired by her academic excellence as an English major for over six years in UML's online program. Her hard work culminated in her participation on the University campus as a full-time Honors College student during the past academic year. Professor Keith Mitchell served as Dayana's Honors Thesis Advisor.

Making a Difference Together

Serving as a model international academic framework, UML researchers seek partnerships with philanthropic foundations for supporting the Haiti Development Study Center and are grateful for its

growing base of sponsors. By providing scholarships and operational support for HDSC programs, these partnerships strengthen our commitment to impoverished international communities using research, technology and education to make a lasting difference. The HDSC is an academic engine, small, but powerful enough to work in both directions; sharpening the research skills of UMass Lowell students and raising their awareness about factors that hinder progress in impoverished countries, while also helping international students get the education they need to move their country forward.



As an expanding circle of friends, Professor Giles gathers with UEW's Faculty of Science on stage after his address on the challenges of "Energy and the Developing World". Dr. Victus Bobonkey Samiafo, UEW's Dean of Sciences, and Public Health Professor Dr. Richard Osei Agiei are hoping to visit UMass Lowell's campus during the Spring 2024 semester to provide presentations on their research and teaching at the University of Education Winneba.

The University of Massachusetts Lowell, Haiti Development Studies Center



Committed toward the University of Massachusetts Lowell's mission to provide a transformational education that fosters student global awareness, the Haiti Development Studies Center recognizes Board of Advisors;

*Honors College Dean Jenifer Whitten-Woodring, and Brian Corr, Executive Director, Cambridge Peace Commission
English Professor Dr. Keith Mitchell, Environmental Science Professor Lori Weeden,
Physics Professors Dr. Silas Laycock and Dr. Cecil Joseph, Mechanical Engineering Professor Chris Niezrecki*

A complete list of its advisors, participating faculty and sponsored activities available at

<https://www.uml.edu/research/hdsc/>

The University of Massachusetts Lowell is a public research university committed to excellence in teaching, research and community engagement. Our mission is to provide a transformational education that fosters student success, lifelong learning and global awareness. UMass Lowell offers affordable, experience-based undergraduate and graduate academic programs taught by internationally recognized faculty who conduct research to expand the horizons of knowledge.



Friday evening, July 21st, Gordon Donkoh-Halm and his wife Beatrice hosted a farewell celebration at their home, “referred to as the Lowell Villa”, in Winneba, Ghana. With family, friends and neighbors in attendance they honored Giles by recognizing him as Robert “Kwame” Giles, now his African name. Depicted on the right, UEW’s undergraduate students Bernice (History), Isaac, Joy (Mathematics), and Mary (Mathematics) were eager to converse with Giles about their academic journey and professional ambitions; all hoping for an opportunity to study in the US as graduate students.



On several occasions, Giles and Prof Agjei (standing on the right) walked the beaches in Winneba with some of UEW’s undergraduate students. As physics majors, Evans, Gilbert, and Lawrence (from left to right) took great interest in hearing of Prof Giles’ academic journey in the US while Giles learned of their perspective on science and technology.