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OPPORTUNITIES FOR COLLABORATION,  
EDUCATION AND RESEARCH: COMBINING  
INTERNATIONAL SERVICE LEARNING AND  
RESEARCH IN THE HEALTH SCIENCES

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## **Opportunities for Collaboration, Education and Research: Combining International Service Learning and Research in the Health Sciences**

### **Synopsis:**

This paper describes a short term study abroad program that incorporates service-learning, research and collaboration in the health sciences. Undergraduate health science and graduate physician assistant studies students operate a clinic in rural Jamaica. The undergraduate students take patient histories and record vital signs, in addition to implementing lessons on topics relevant to Jamaican health. The physician assistant students perform physical exams and biometric data is collected on each patient. The data is used to better understand the population that is being served and to make improvements on future service-learning programs within this community. Students and faculty leaders use the data to conduct meaningful research in their area of expertise.

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**Abstract:**

Lock Haven University (LHU), a member of the Pennsylvania State System of Higher Education, has an international emphasis in its mission that includes study and service abroad. As a university that also places emphasis on professional programs such as health science, faculty are encouraged to engage students in out-of-classroom experiences that are compatible with the mission and vision of the university. Short term study abroad offers the opportunity for students who cannot commit to a semester or year of study abroad to experience first-hand another country and culture. These short term programs also lend themselves to international service-learning opportunities. Here we describe a short term study abroad program that incorporates international service-learning, research and collaboration within the health sciences. The educational objectives are met by a one credit course about comparative healthcare. Undergraduate students enroll in the course and participate in the short term study abroad as a component of the course. The undergraduate health science program works collaboratively with the graduate program in physician assistant studies and with a nonprofit organization in Jamaica to offer a clinic to a rural, mountainous community in south central Jamaica. The physician assistant graduate students offer physical exams under the direction of a graduate faculty member. This experience meets the program's service-learning requirement for those students, and provides them with valuable clinical experience with an underserved population. Additionally, the program provides the opportunity for interprofessional educational experiences which educate future providers on the roles of other professionals and prepare them to work within interdisciplinary teams upon graduation. The undergraduate students work cooperatively with the graduate physician assistant students, taking patient histories, recording vitals, and observing. The undergraduate students also develop educational pieces on topics relevant to the population they are serving. The students are required to search the primary literature as well as international databases for justification for their topic. Students develop a lesson plan and then implement the lesson in found places such as the clinic, community centers and schools. Additionally, health data is collected on each patient who attends the clinic as part of the physical examination. To protect personal health information, each patient is assigned a study-specific unique numerical identifier, which is recorded on the examination sheet. Each year the project proposal is submitted to the Institutional Review Board for the use of human subjects at Lock Haven University. The data is used for several purposes. In an effort to continuously improve the service-learning program to Jamaica, the data is collected annually to create a health profile of the population. Right now, there is limited information about the health status of this small, rural community. Data such as blood pressure, height, weight, age and gender have been used by student researchers to compare the health status of this community to the national data on Jamaica. Annual collection of this data will allow researchers to determine if the educational and medical interventions provided by the service-learning program translate into a healthier population and improved health literacy. A scientific approach to developing and implementing an international service-learning program creates learning opportunities for students beyond the week long experience, and allows faculty to conduct meaningful research in their area of expertise. This collaborative partnership benefits the community being served, the nonprofit

organization working in Jamaica, the students, faculty and university. Students and faculty have the opportunity to publish their research in peer reviewed journals and present at local, national and international conferences. The cumulative experience equips graduates to enter a profession where cultural competency is important and where they will need to gather and evaluate evidence, interpret medical literature and solve complex problems in order to care for their patients.

### **Introduction:**

Lock Haven University, a member of the Pennsylvania State System of Higher Education, has an international emphasis in its mission that includes study and service abroad. As a university that also places emphasis on professional programs such as health science, faculty are encouraged to engage students in out-of-classroom experiences that are compatible with the mission and vision of the university (Lock Haven University). Short term study abroad offers the opportunity for students who cannot commit to a semester or year of study abroad to experience first-hand another country and culture. These short term programs also lend themselves to international service-learning opportunities. International service-learning programs have increased in number among many healthcare education programs and have many added benefits including the opportunity to observe first hand medical practices and conditions not normally encountered in the United States, enhancement of basic physical exam skills, appreciation of alternative therapies, and increased cultural awareness (Kibe 2012).

Unique to this program is the combination of short term study abroad, international service-learning, and interprofessional educational experiences. There is great importance in modern medicine for collaboration between health professions, and most training programs consider integration of interprofessional education activities to educate students on the roles of other professions, and to enhance their abilities to work as a team with other professionals upon graduation. Creating a quality international service-learning program also requires participants to understand the population they are serving. Data collection as part of the service-learning program creates an opportunity to not only understand the population being served but to engage students and faculty in scholarship. Here we describe a short term study abroad program that incorporates international service-learning, research and collaboration within the health sciences.

### **Program Objectives:**

Students apply for a short term study abroad program through the university's institute for international studies. The program application is evaluated based on criteria established by the program leader(s). The short term study abroad program meets the service-learning requirement for graduate students in the physician assistant (PA) studies program, while the undergraduates participate in the program as part of a course. The educational objectives of the course are as follows:

Upon successful completion of the course, students will be able to do the following:

1. Discuss the challenges of healthcare access in Jamaica
2. Compare healthcare access in urban versus rural areas of Jamaica
3. Identify lifestyles and customs that impact healthcare utilization
4. Integrate tours, travel, and class discussions relevant to a discussion of healthcare access in Jamaica

All faculty led programs sponsored by the university are credit-bearing and have been approved by the university curriculum committee. Faculty follow a set of guidelines for developing and implementing short term study abroad programs that is based on the Forum on Education Abroad's Standard of Good Practice for Education Abroad and its Code of Ethics for Education Abroad (2015). These guidelines are inclusive of both the logistical and educational requirements of the program.

As part of the course, the undergraduate students develop educational pieces on topics relevant to the population they are serving. The students are required to search the primary literature as well as international databases for justification for their topic. Students develop a lesson plan and then implement the lesson in found places such as the clinic, community centers and schools. Topics have included nutrition, blood pressure, reproduction, hydration and diabetes, among others. The majority of the students who participate in the program are in the health science and nursing majors at Lock Haven University, although students in other majors have participated. The program is not restricted to a particular major.

Graduate PA students fulfill a program service requirement through their participation in this program. In Jamaica, their learning takes place in multiple formats which includes utilizing the skills they learned in the classroom, and also learning through peer mentoring. The cohort of PA students includes both those in their didactic year of training and others in their clinical phase. Students who are further along in their training and have had more clinical experiences are able to mentor the latter. All students benefit from taking their physical exam and history skills and utilizing them in a unique environment. Additionally, the graduate students benefit from teaching their skills to undergraduate students who are interested in pursuing a career as a healthcare provider. Many of these students gain valuable insight into a possible career, some saying this experience either solidified their choice of career path or changed it.

## **Partnerships**

Lock Haven University has partnerships with thirty international colleges and universities and the study abroad programs at the university typically are offered through these partnerships. In the case of short term study abroad it is often advantageous to work with study abroad providers or educational tour companies to arrange for tours, accommodations and travel. In the case of this program, Lock Haven University partnered with a nonprofit mission organization that has facilitated travel to this Jamaican community for over twenty-five years. Their consistent

presence in this community provides the university team with transportation, accommodations, and the contacts needed to offer a successful program in a foreign country.

### **Program Components**

A major focus of this week of service is a clinic that is run by the students. A rural health clinic in the community is used for both physical exams and education. The PA graduate students offer physical exams under the direction of a graduate faculty member. The undergraduate students work cooperatively with the graduate PA students, managing the clinic, taking patient histories, recording vitals, and observing. Lessons are also scheduled during clinic days and provide the undergraduates with opportunities to educate those who are waiting for their turn for a physical examination. Health data is collected on each patient who attends the clinic as part of the physical examination. To protect personal health information, each patient is assigned a study-specific unique numerical identifier, which is recorded on the examination sheet. The data is used for several purposes, so each year a project proposal is submitted to the Institutional Review Board for the use of human subjects at Lock Haven University. As mentioned above, lessons also are delivered in other found spaces including the schools and community centers.

There are opportunities for the team to interact with the community during more informal settings as well, such as social events and dinner in Jamaican homes. During these times the students experience life and culture in the community. They participate in the standard components of the mission trip which include construction of houses, outreach in the schools and community, and visits to an infirmary of residents with physical, mental and developmental disabilities. The students are asked to reflect on their experiences through guided journal entries. Each day a writing prompt directs the entry, although they are encouraged to include any and all relevant experiences of the day.

### **Research Opportunities:**

Research opportunities exist at many levels. In an effort to continuously improve the service-learning program to Jamaica, the data are collected annually to create a health profile of the population. Right now, there is limited information about the health status of this small, rural community. The data collected during the physical exams are used to assess the current health status of the population, as well as to assess the prevalence of diseases in the population. Because this is a partnership between the university and a nonprofit organization that provides medical outreach independent of the LHU program, there are opportunities to obtain data on surrounding communities as well.

Data such as blood pressure, height, weight, age and gender have been used by student researchers to compare the health status of this community to the national data on Jamaica. Collecting data each year allows researchers to evaluate any changes or trends in the health of the population and will allow researchers to determine if the educational and medical interventions provided by the service-learning program translate into a healthier population and

improved health literacy. These undergraduate research projects provide opportunities for learning that cannot be duplicated in the traditional classroom, including seeking Institutional Review Board approval for projects involving the use of human subjects, publication in research journals and presenting at local and national conferences. The Council on Undergraduate Research “believes that faculty members enhance their teaching and contribution to society by remaining active in research and by involving undergraduates in research, and students succeed in their studies and professional advancement through participation in undergraduate research” (Council on Undergraduate Research Mission Statement). Therefore, creating research opportunities within existing programs like these can expand the student experience beyond a week of service and can engage the student in meaningful research that will benefit both the program and the student.

A sabbatical leave was granted to one faculty leader for the purpose of conducting a needs assessment of the community, as well as developing a five-year plan for the international service-learning program. Several high priority needs were identified during the sabbatical project and a five-year plan was constructed to work on these high priority needs. Continued health data collection will be used to measure changes, with the ultimate goal of improving the quality of health in this rural community in Jamaica.

### **Collaboration and Interprofessional Experiences**

Collaboration between undergraduate and graduate students, and collaboration among faculty from several departments at the university have been the theme of this program, and have led to interdisciplinary grant proposals and research projects. Funding exists to support these types of programs, and faculty leaders of the program have collaborated on grant applications. Such interdepartmental work models the collaborative practice team in the academic setting and exemplifies the goal of interprofessional education in moving “from fragmentation to a position of strength” as stated by the World Health Organization (2010). Students benefit from working with other students from various disciplines, but also with faculty members who come from a range of backgrounds and perspectives. For example, PA students who have had an educational experience limited to working with PA-C and MD/DO faculty and mentors, experience working alongside physiologists and nursing faculty to accomplish tasks and goals related to the program.

Interprofessional service learning activities such these have found positive themes emerge from students, including increased communication and teamwork, and leadership development within a group (Bridges, Abel, & Tomkowak, 2010). Therefore, a phenomenological study was conducted by faculty in PA studies and nursing aimed at understanding the lived experience of PA, nursing and healthcare professions students while providing interprofessional service-learning in the program to Jamaica. Students who participated in the program to Jamaica were invited to participate in this research study. For some, the experience of participating in research as a subject, and not as the researcher, was a unique opportunity. It allowed them give back to the program through this process.

## **Additional Benefits of the Program**

Cultural competence includes development of cross-cultural skills, understanding cultural differences and knowledge of other cultural practices. While definitions of cultural competence are numerous and varied (Shen, 2015), it is generally agreed that the beliefs, practices, and traditions of a culture influence beliefs surrounding health, wellness and disease (Anderson et al., 2003). It is also generally agreed upon that cultural competence is an important component in providing effective healthcare to a diverse population (Anderson et al., 2003; Healthy People 2020, 2015). While it would be impossible to fully develop cultural competence in one week of an international service-learning program, these experiences are important to students who live in less diverse communities and whose exposure to races and cultures different from their own are likely to be quite limited. The guided journal entries compel students to evaluate their own biases, and the experience of being the racial minority for the week is likely to be new for most of them. To date there have been no attempts to measure cultural competence, although that is another area of potential research within the program. While students are educated about health risks and concerns in different ethnic populations as part of their medical training, this program allows them to see first-hand diseases such as sickle cell trait that they have only read about. Increased incidence of hypertension has been documented in this population (Hershey & Way, 2017) and the incidence of prostate cancer in Jamaica is the highest in the world (Morrison, Aiken & Mayhew, 2014). Students who have participated in this program have the opportunity to see these first hand, which can elevate their awareness of health risks in ethnic populations that are different from their own.

Programs such as this inspire students to continue a life-long interest in service and have many institutional benefits. The University and the departments and programs involved receive publicity at various levels. This publicity can lead to the recruitment of students with an interest in international experiences and service-learning.

## **Conclusion**

Service-learning programs connect traditional education with real life lessons that come through service. Using a scientific approach to developing such a program creates learning opportunities for students beyond the week long experience, and allows faculty to conduct meaningful research in their area of expertise. In order to create a sustainable international service-learning program, it is important to understand the population that is being served and to partner with an organization that is rooted in that community. This collaborative partnership benefits the community being served, the nonprofit organization working in Jamaica, the students, faculty and university. Students and faculty have the opportunity to publish their research in peer reviewed journals and present at local, national and international conferences. The cumulative experience equips graduates to enter a profession where cultural competency is important and where they will need to gather and evaluate evidence, interpret medical literature and solve complex problems in order to care for their patients.

## References

Anderson, L.M., Scrimshaw, S.C., Fullilove, M.T., Fielding, J.E., Normand, J., & Task Force on Community Preventive Services. (2003). Culturally competent healthcare systems, a systematic review. *American Journal of Preventive Medicine*, 24(3S), 68-79.

Bridges, D.R., Abel, M.S., & Tomkowiak, J., MD, MOL. (2010). Service learning in interprofessional education: a case study. *Journal of Physical Therapy Education*, 24(1), 44-49.

Council on Undergraduate Research (2016). Mission Statement. Retrieved from [http://www.cur.org/about\\_cur/](http://www.cur.org/about_cur/)

Forum on Education Abroad. (2015). Standards of Good Practice for Education Abroad. Retrieved from <https://forumea.org/resources/standards-of-good-practice/>

Healthy People 2020. (2015). Social determinants in health. In 2020 topics & objectives. Retrieved from <http://www.healthypeople.gov/2020/topicsobjectives/topic/social-determinants-health>.

Hershey, R.M. & Way, A.L. (in press). A preliminary understanding of healthcare needs in rural Jamaica. *Keystone Journal of Undergraduate Research*.

Kibe, L.W. (2012). Necessity and benefits of physician assistants' participation in international clinical experiences. *The Journal of Physician Assistant Education*, 23(4), 50-53.

Lock Haven University. (2015). Mission Statement. Retrieved from <http://www.lhup.edu/About/President/mission.html>

Morrison, B.F., Aiken, W.D., & Mayhew, R. (2014). Current state of prostate cancer treatment in Jamaica. *Ecancermedicalscience*. 2014(8), 456.

Shen, Z. (2015). Cultural competence models and cultural competence assessment instruments in nursing: a literature review. *Journal of Transcultural Nursing*, 26(3), 308-321.

World Health Organization (2010). Framework for action on interprofessional education and collaborative practice. Retrieved from [http://whqlibdoc.who.int/hq/2010/WHO\\_HRH\\_HP\\_N\\_10.3\\_eng.pdf](http://whqlibdoc.who.int/hq/2010/WHO_HRH_HP_N_10.3_eng.pdf).