

Academic Collaboration between the Paul L. Foster School of Medicine and Ian Donald Inter-University School of Ultrasound in Obstetrics and Gynecology: A Global Health Program's Success Story

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ABSTRACT

Aim: To review the outcomes of the global health program and interinstitutional academic collaboration between the Paul L. Foster School of Medicine (PLFSOM) at Texas Tech University Health Sciences Center El Paso (TTUHSC El Paso) and the Ian Donald Inter-University School of Ultrasound in Obstetrics and Gynecology.

Background: The Ian Donald Inter-University School of Ultrasound was established in 1982 by a multidisciplinary group of enthusiasts. Today our School has active international branches in 75 countries worldwide. They aim to address the specific educational and training needs of clinicians performing OB-GYN ultrasound and organize courses, workshops, congresses, and national conferences according to the character of the respective country, region, and/or area. TTUHSC El Paso is located in the second largest binational metropolitan area on the US–Mexico border. It provides the opportunities and environment for direct intellectual and interpersonal exchanges among health sciences university students on one campus.

Results: During the last 15 years, more than 50 individual TTUHSC El Paso faculty members, six residents, 10 medical students, and 11 staff members participated in writing 173 chapters and 88 Ian Donald School educational videos created. During the same time, more than 40 individual faculty members, 19 students, seven residents, and five staff members contributed to 53 articles of the *Donald School Journal of Ultrasound in Obstetrics and Gynecology*.

Conclusion: Access to valuable international resources and expertise in the field of OB-GYN ultrasound opened new perspectives on research and scholarship which fostered collaboration, relationship building, and career development of the global health program participants.

Keywords: Global health program, Interinstitutional collaboration, OB-GYN ultrasound, Research, Scholarship.

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INTRODUCTION

As stated on the website of the Texas Tech University Health Sciences Center (TTUHSC) El Paso Office of Global Health: "The mission for the TTUHSC El Paso Global Health Program is to promote awareness of global health issues by educating faculty, residents, students, and staff to address current and emerging health concerns affecting the El Paso community and communities abroad. Our priority is to help our students and faculty remain globally competitive while facilitating TTUHSC El Paso's important role in the global health environment. The El Paso area is a tristate, binational community that is considered one of the largest growing cities; combined with neighboring Ciudad Juarez, Mexico, the area composes one of the largest metropolitan areas with over two million residents. The diversity in our area makes El Paso an ideal location to study the health sciences and offers many opportunities in the area of global health" (<https://elpaso.ttuhscc.edu/digh/global-health/default.aspx>).

Indeed, educational programs are best developed by local medical professionals and social entrepreneurs who understand the barriers to quality care in their communities. It is well known that the outcomes of the global health programs are best when they are coordinated with the local academic institutions. This article describes a global health success story detailing the collaboration between the Paul L. Foster School of Medicine (PLFSOM) and the Ian Donald Inter-University School of Medical Ultrasound in obstetrics and gynecology (<https://www.iandonaldschools.com/>).

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GLOBAL HEALTH PROGRAM COLLABORATIVE SUCCESS STORY

Tables 1 and 2 summarize the outcomes of our 15-year collaboration. In 2009, our team was invited to edit Number 3, Volume 4 of the *Donald School Journal of Ultrasound in Obstetrics and Gynecology* dedicated to medical education. Eighteen faculty members from

the Departments of Medical Education and/or Biomedical Sciences at PLFSOM wrote 17 educational articles showcasing the inductive reasoning diagnostic process for the most relevant OB-GYN clinical presentations.¹⁻⁹ During 2011 and 2012, 2 PLFSOM faculty members mentored 12 medical students and two residents in the creation of 10 educational articles with original OB-GYN ultrasound images.¹⁰⁻¹⁹ Our innovative approach to reshaping the pre-clerkship years in reproductive medicine education was published in the *Journal of Perinatal Medicine*.²⁰ In the following 2 years (2013–2014), six faculties supervised seven students and three residents in writing seven educational articles for the *Donald School Journal of Ultrasound in Obstetrics and Gynecology*.²¹⁻²⁷

Simultaneously, in 2011 and 2012, the PLFSOM team edited an atlas and three educational DVDs which were designed and recorded at our Center for Advanced Teaching and Assessment in Clinical Simulation (ATACS).²⁸⁻³¹ The Donald School Video Atlas series consisted of three DVD collections: Video Atlas of Ultrasound in Obstetrics and Gynecology, Video Atlas of Ultrasound in Fetal Anomalies and Gynecologic Oncology, and Video Atlas of Clinical Skills in OB-GYN. The educational material consisting of 38 videos created by 10 PLFSOM faculty members was internationally accepted for the basic and advanced Donald School ultrasound courses worldwide. Dr Stanojevic, the Vice President of the World Association of Perinatal Medicine (WAPM), stated: “Video Atlas of Clinical Skills in OB-GYN” authored by Dr Kupescic and educators from PLFSOM at Texas Tech University in El Paso, USA provides an excellent source of information for different levels of learners in a creative and innovative way. Audiovisual lectures, coupled with succinct information on clinical decision-making algorithms and therapeutic options, allow the most efficient integration of basic and clinical sciences. The learning objectives are precisely identified, and a list of resources, articles, and other references is clearly presented. This Video Atlas is a “must have” material for medical schools worldwide, and I am thrilled that this material

was accepted and adopted by Ian Donald Inter-University School with 75 branches worldwide.³²

A textbook entitled “Step by Step through OB-GYN Case Studies,” published in 2014, also belongs to the Donald School Library. The textbook was based on the most common scenarios in OB-GYN practice, allowing learners to advance their clinical and basic sciences knowledge and gain longitudinal experience through the evaluation of 25 virtual patients.³³ The use of consistent formatting enabled easy assessment of the patients’ chief complaints, history, investigations, management, and follow-up. Each case study provides a list of learning objectives and references to allow the assessment of the learner’s performance and for quick detection of the areas that need improvement. At the end of each block, there were four multiple choice questions relevant to the clinical presentation to test the learner’s clinical and basic science knowledge and understanding. These items were designed to verify whether the learner has met the learning objectives. By the end of each case study, the learner has been tested over 20 high-yield items. Twenty-five case studies with 500 multiple choice questions including explanations for positive and negative choices and high-quality illustrations and images enabled subject-specific practice in the field of reproductive medicine.

In 2014, we were once again invited for the second time to edit a special issue of the *Donald School Journal of Ultrasound in Obstetrics and Gynecology*, which was dedicated to professional development and mentoring practices in OB-GYN ultrasound. The Office of Faculty Development coordinated an academic writing group of 21 PLFSOM faculty members and residents from 7 departments, who wrote 15 original, review, educational, or original scientific articles.³⁴⁻³⁸ Again, our publications were inspired by the potential of incorporating cutting-edge medical imaging into the medical school and residency programs curricula and continuous professional development activities.

Table 1: Participation of the Paul L. Foster School of Medicine, TTUHSC El Paso faculty, residents, students, and staff in the Ian Donald Inter-University School of Medical Ultrasound in obstetrics and gynecology books and DVDs

<i>Donald School of Ultrasound in obstetrics and gynecology books and educational DVDs initiated and edited by PLFSOM faculty</i>	<i>Number of chapters/ videos</i>	<i>PLFSOM faculty</i>	<i>PLFSOM residents</i>	<i>PLFSOM students</i>	<i>PLFSOM staff</i>
Color Doppler, 3D and 4D ultrasound in gynecology, infertility, and obstetrics. Jaypee Publishers: New Delhi 2011.	20	5	–	–	–
Video atlas of ultrasound in OB-GYN. Jaypee Publishers: New Delhi 2011.	11	2	–	–	3
Video atlas of ultrasound in fetal anomalies and GYN oncology, Jaypee Publishers: New Delhi 2011.	15	4	–	1	3
Video atlas of clinical skills in OB-GYN. Jaypee Publishers: New Delhi 2012.	12	4	–	1	3
Step by step through OB-GYN case studies. Jaypee: London, New Delhi, Panama City, St. Louis 2014.	25	1	–	7	–
Intern tips in OB GYN. The Health Sciences Publisher. London, New Delhi, Panama City, Philadelphia 2016.	6	2	–	–	–
Intern tips in internal medicine. The Health Sciences Publisher. London, New Delhi, Philadelphia 2017.	12	11	–	–	–
Urgent skills in medical practice. Jaypee Publishers: London, New Delhi, Panama City, St. Louis 2017.	50/50	17	1	1	2
Illustrated OB-GYN problems, Jaypee Publishers: London, New Delhi, Panama City, St. Louis 2020.	60	17	5	–	–
Total	261	63	6	10	11



Table 2: Participation of the Paul L. Foster School of Medicine, TTUHSC El Paso faculty, residents, students, and staff in the Donald School Journal of Ultrasound in Obstetrics and Gynecology articles

<i>Donald School of Ultrasound in obstetrics and gynecology books and educational DVDs</i>	<i>Number of manuscripts</i>	<i>PLFSOM faculty</i>	<i>PLFSOM residents</i>	<i>PLFSOM students</i>	<i>PLFSOM staff</i>
DSJUOG 3 (4) 2010; special issue on medical education	17	15	–	–	1
DSJUOG 1-4 (5) 2011	2	1	1	1	–
DSJUOG 1-4 (6) 2012	8	1	1	11	–
DSJUOG 1-4 (7) 2013	3	1	1	4	–
DSJUOG 2-4 (8) 2014	4	4	2	3	–
DSJUOG 1 (8) 2014; special issue on professional development and mentoring	15	21	1		2
DSJUOG 1-4 (9) 2015	1	2	–	–	–
DSJUOG 1-4 (11) 2017	3	3	–	–	–
DSJUOG 1-4 (12) 2018	1	3	–	–	–
DSJUOG 1-4 (13) 2019	1	3	1	–	–
DSJUOG 1-4 (14) 2020	1	1	–	–	2
Total	56	54	7	19	5

Our collaboration was continued, and from 2016 to the present, our team consisting of 47 faculties, six residents, one student, and two staff members published four Donald School textbooks.³⁹⁻⁴² During the same period, eight faculty, one resident, and two staff members published seven articles in the *Donald School Journal of Ultrasound in Obstetrics and Gynecology*.⁴³⁻⁴⁹

Our experience with the creation of the PLFSOM institutional medical image library and an online course on ultrasound for TTUHSC El Paso OB-GYN residents helped us rapidly transition to delivering content online during the COVID-19 pandemic. In 2020, our team created a virtual faculty development program offering 118 hours of continuing medical education (CME) on educational, research, clinical simulation, and leadership topics. The hybrid faculty development curriculum was delivered *via* Canvas, our learning management system (LMS) and real-time teleconferencing. The Office of Faculty Development experience was recently published in multiple peer-reviewed journal articles.⁴⁹⁻⁵¹ The shift from delivering CME content in a face-to-face environment to a virtual one opens doors to research opportunities for readers who hold faculty development leadership roles. These individuals along with university administrators have ample opportunity to engage in meaningful scholarship asking questions such as what is the impact of delivering material online on learner satisfaction and faculty success and advancement.

THE FUTURE OF OUR GLOBAL HEALTH PROGRAM IN A POST-COVID WORLD

In response to the impact that COVID-19 is having on global health, travel, and the economy, we have arrived at the crossroads of education, and the Ian Donald Inter-University School of Medical Ultrasound should realize the potential of virtual educational opportunities. The school is recognized as a leader in global OB-GYN ultrasound education, offering a variety of online educational programs to engage different levels of learners with new offerings which are launched regularly. In collaboration with branch directors, world experts, and local partners, the Donald School may continue organizing its fellowship programs and courses through

the creation of high-quality online courses, supplemented with synchronous teleconferences, webinars and virtual workshops, and much more.⁴⁹ Learners would build foundational knowledge mastering a comprehensive online curriculum created by the experts in the field. The knowledge application will occur during their rotation in local/regional recognized centers when they work side by side with competent trainers. Incorporating experiential learning from local experts would efficiently prepare them for the workforce, according to the local requirements and regulations.

The transition of the Donald School Master's and Ph.D. degree programs to a hybrid curriculum would enable learners to apply their theoretical knowledge and relevant skills in the clinical practice setting, supervised by their local mentors while communicating and receiving virtual mentorship from Donald School global partners. Such an approach increases learner awareness of the most pressing local/regional challenges in OB-GYN ultrasound while exploring their interplay with international standards.

Using this approach, participants will learn from a wide network of ultrasound leaders while engaging interactively with local experts and their peers from the region and all over the world. Course sharing across disciplines would allow for more choices for learners, enabling more efficient support for a broad curriculum (e.g., combining ultrasound, human reproduction, and minimally invasive surgery topics) and enriching the diversity of both faculty and learners. It is well documented that online course delivery increases efficiency, flexibility, and quality of adult education.⁵²⁻⁵⁴

This eye-opening exposure to the international learning community enables the objective exploration of how different health systems in various environments and cultural interplays dictate our decision-making. Rapid deployment of active remote learning would ensure that the Donald School will remain relevant by providing synchronous and asynchronous sessions on timely topics, facilitated by local and regional partners, and supported by world leaders in OB-GYN ultrasound and expert collaborators.

CONCLUSION

This article illustrates the impact and outcomes of the interinstitutional collaboration between the PLFSOM and the Ian

Donald Inter-University School of Medical Ultrasound in obstetrics and gynecology. This mutually beneficial interinstitutional academic global health program involved faculty and learners of different stature and experience, who before engagement in various research and scholarly projects agreed on the metrics for determining the success of the collaboration. Impressive outcomes are the result of open and clear communication of the partnership goals, objectives, and expectations. Interinstitutional collaboration increased mutual appreciation of differences in academic culture and practice. Access to valuable international resources and expertise in the field of OB-GYN ultrasound opened new perspectives on research and scholarship which fostered collaboration, relationship building, and career development of the global health program participants.

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