



# CROSS-CULTURAL *collaboration*

*The decade-long Botswana-UPenn Partnership is stronger than ever, providing life-changing, career-shaping opportunities for dental students and faculty.*

Last fall marked the ten-year anniversary of the Botswana-UPenn Partnership — a decade of intensive planning, goal-setting, relationship-building, and, most of all, hands-on learning. The Partnership, founded in 2001 by Penn's Perelman School of Medicine, has grown to include the majority of the Schools at Penn, including the School of Dental Medicine.

Since the School became involved in 2008, Penn Dental Medicine's role in the partnership has grown in three ways: through the expansion of the School's thriving externship program, which allows dental students to gain valuable community hospital experience at Princess Marina Hospital in Gaborone, Botswana's capital; through a growing telemedicine program, which utilizes cell phone cameras in the diagnosis of complex oral health cases; and through the launch this past summer of a partnership with the School of Nursing as part of a new community health program.

## AT THE CENTER OF THE WORLD AIDS EPIDEMIC

Though Botswana, a land-locked, largely desert nation of roughly 2 million people in Southern Africa, boasts one of the fastest-growing economies in Africa, it also holds the distinction of having the second-highest incidence of HIV and AIDS in the world, after Swaziland, and among the world's highest prevalence of active tuberculosis, which often accompanies HIV and AIDS. The Botswana-UPenn Partnership was conceived as an interdisciplinary approach to training medical personnel throughout Botswana to treat its staggering number of HIV, AIDS and TB cases, while providing Penn Medicine students with an invaluable introduction to global health as they experienced the epidemic in community and hospital settings. In addition, the Partnership strives to foster collaborative research opportunities that address issues related to the health and welfare of the people of Botswana.

"Because of the support we received from the University and from the School of Medicine, we were able to establish a very strong clinical program at Princess Marina Hospital in Botswana with a focus on HIV and its complications," says Dr. Harvey Friedman, Chief of Infectious Diseases at Penn Medicine and Director of the Botswana-UPenn Partnership, adding that this focus has grown over the years to include successful programs in women's health and pediatrics, and that the School now has 11 full-time doctors residing and practicing in Botswana. "Considering the excellence of our dental school, we naturally wanted to share some of that expertise with our colleagues in Botswana."

Details of Tswana Hope quilt, left, by Cindy Friedman, Art and Cultural Exchange Consultant for the Botswana-UPenn Partnership.





## “ONE WORLD-HEALTH SPECTRUM”

Dr. Robert Collins (D’71), Director of International Relations at Penn Dental Medicine, spent 24 years as a practicing dentist and program director working with Native American communities, and understands firsthand the value of practicing in a different culture.

“Our world has become so small, and we need to start thinking of local and global communities on one world-health spectrum,” he says.

In 2008, when the Provost’s Office offered a travel grant for faculty from any of the schools at Penn to review the research and collaboration opportunities in Botswana, Dr. Collins made the trip with Dr. Andres Pinto (D’99, GD’01, GR’07, GR’12, M’12), who is now Chief of the School’s Division of Community Oral Health (see profile, page 10). There, at Princess Marina Hospital, they met Dr. Motsholathebe Phuthego, whom Collins calls “the source of continuity” in Penn Dental Medicine’s partnership in Botswana. The only practicing oral maxillofacial surgeon in Botswana, the University of Iowa- and University College of London-educated clinician has instructed all of the Penn Dental Medicine externs in Botswana.

## A GROWING EXTERNSHIP PROGRAM

In 2009, Dr. Joseph Foote (D’10) was the first dental student to complete a hospital externship in Botswana. Since then, the number of participants in the month-long experience has grown steadily. A total of 15 students to date have completed externships there, including five students this academic year from the Class of 2012: Galina Filipova, Alison St. Paul, Marjana Knezevic, Karen Kandel, and Lucy Kim.

“I’m very proud of our students for taking advantage of the opportunities in Botswana, and for the additional effort they put in to make it possible,” says Dr. Martin Greenberg, Professor of Oral Medicine and Associate Dean for Hospital Affairs at Penn Dental Medicine, who oversees the hospital externship requirement for all fourth-year students and is also involved in the Botswana telemedicine project. “Our externs are extremely well trained before they leave—for their safety and for their patients’ safety.”

All fourth-year students at Penn Dental Medicine are required to complete a hospital externship as a requirement for graduation, whether it is in a hospital in Philadelphia, elsewhere in the U.S., or overseas. At this point in their educations, students have already had extensive training on communicable disease prevention in the clinic, but those headed to Botswana must prepare further, completing a series of lectures and one-on-one training with Dr. Pinto. They must demonstrate full knowledge of protocols and protective strategies for treating patients with HIV/AIDS and other infectious diseases, and also attend seminars on the local culture of Botswana.

Joining forces with Dr. Phuthego in his daily battle against the ravages of HIV and AIDS and other diseases of the mouth and jaws is an experience that, for externs, has in turns been challenging, rewarding, and thought-provoking. Though their experiences vary, all of the Botswana externs have returned to Penn Dental Medicine with a broader perspective on world health and on their career goals.

“The students who come here have the opportunity to see firsthand most of the pathology that they read about in books on a much larger scale than they would ever see in Philadelphia,” says Dr. Phuthego. “Seeing our patients and taking their histories is of great value to them, as well as exchanging knowledge with my officers. The cross-cultural interactions have been very valuable.”

Dr. Greenberg agrees. “These students have the rare opportunity to see how health care works in a country with an underserved population and a unique culture. Doctor-patient relationships and the way that health care is delivered and financed are all very different,” he says. “That experience and knowledge will change the way they view their education and their practice.”



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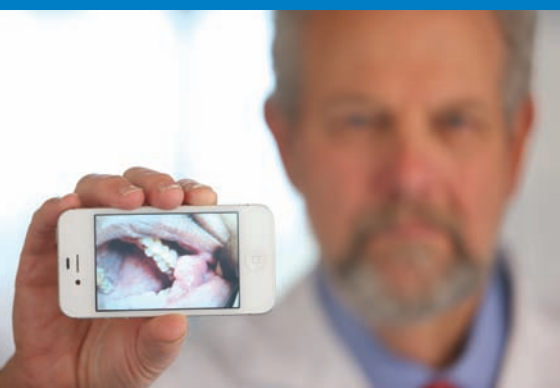
Dr. Robert Collins (D’71)  
Director of International Relations,  
Penn Dental Medicine



Penn Dental Medicine student Saveet Mangat (D’13) visited the Kamogelo Day Care Centre, providing oral health assessments and education as part of a new community health program with the School of Nursing.



Using cell-phone cameras, photos of oral lesions of patients in Botswana are sent to Penn Dental Medicine's Dr. Martin Greenberg for help in diagnosis. Photo above by Ryan Littman-Quinn.



*"Telemedicine has tremendous potential in Botswana and around the world. Pictures can tell you so much about...diseases that affect the oral mucosa."*

Dr. Martin Greenberg  
Professor, Department of Oral Medicine

## TELEMEDICINE AIDING IN DIAGNOSIS

Access to a reliable Internet connection is a rarity in Botswana, especially in rural areas. But cell phones and reception are available, and by using phones with high-resolution cameras to document and transmit photos of complex oral conditions, dentists throughout Botswana are getting faster answers and more accurate treatment options, both from their colleagues at Princess Marina Hospital and, when additional consultation is needed, from Penn Dental Medicine.

The growing telemedicine project of the Botswana-UPenn Partnership began in 2009 as a collaboration between physicians at Princess Marina and Dr. Carrie Kovarik, Assistant Professor of Dermatology and Infectious Diseases at Penn Medicine. In addition to dermatology and dentistry, the Partnership has also initiated telemedicine projects in radiology and cervical cancer.

Using her expertise in identifying skin rashes, as well as photos sent from Gaborone via cell phone, Dr. Kovarik was able to help doctors there diagnose and treat unfamiliar skin conditions. In 2009, when she was asked her opinion on oral lesions, she turned to Dr. Greenberg. The two colleagues began research that has led to improved quality of photographic images and more accurate diagnoses.

"Telemedicine has tremendous potential in Botswana and around the world," says Dr. Greenberg. "In oral medicine, pictures can tell you so much about conditions like Kaposi's sarcoma (a common manifestation of the AIDS virus), yeast infections, herpes lesions, lymphomas, and other diseases that affect the oral mucosa." With newer and better Android phones, he says, dentists in Botswana now have quick, accurate access to information and support for complex oral health cases.

Currently, he and Dr. Kovarik are awaiting news of funding to expand their study, and the telemedicine project, still further: "We hope to increase the number of sites in Botswana using oral telemedicine, and, eventually, to extend the project to other countries in Africa and South America," Dr. Greenberg says.

## PARTNERING WITH THE SCHOOL OF NURSING

In 2009, the School of Nursing introduced a community health program allowing nursing students to complete their community health clinical rotation in Botswana. Supervised by an American nurse and partnering with nursing student peers at the University of Botswana, students benefit from instructional clinical practice in government community health clinics, while receiving an insider's view of the country's health care system. The clinical sites focus on AIDS and tuberculosis, women's health, children's health, and home care.

The dental school's involvement in the new community-based program with Nursing grew out of a series of meetings that Dr. Collins and Dr. Uri Hangorsky, Associate Dean for Academic Affairs at Penn Dental Medicine, had with Dr. Marjorie Muecke, Assistant Dean for Global Health Affairs at the School of Nursing. "I saw it as a logical extension of the hospital experience. Dr. Hangorsky saw it as a unique offering for dental students who were interested in community and interdisciplinary health, especially in Africa. And, for Dr. Muecke, there was an important benefit to having nursing students learn from dental students about oral health and how to screen patients for oral problems," says Dr. Collins.

This past summer, the first Penn Dental Medicine student to participate in the program spent three weeks in Botswana. Third-year student Saveet Mangat (D'13) worked with nursing students at two community sites.



At the Holy Cross Hospice in Gaborone, which is completely run by local volunteers, Mangat met patients of all ages whose lives had been deeply affected by HIV and AIDS. She teamed with nursing students in doing medical and oral assessments and prioritizing the treatment of the hospice's many immunocompromised patients. At the Kamogelo Day Care Centre outside of the city, Mangat conducted oral assessments on 150 children orphaned or otherwise impacted by the AIDS epidemic.

"I had the pleasure of teaching the student nurses how to do basic oral health assessments and screenings," says Mangat. "The best part was teaching each child how to brush his or her own teeth. I gave each child a toothbrush and had them sit across from me, one on one. The children absolutely loved this interactive part of the assessment."

"The nurses and I definitely had a transformative experience," Mangat says. "We were able to work together to achieve the common goal of providing health care. I believe this partnership between Penn Nursing and the School of Dental Medicine will truly improve the quality of life of the people of Botswana."

Seeing the value of both the hospital and community health aspects of the Botswana experience, Dr. Collins hopes that a combined hospital/community health externship will soon be available to Penn Dental Medicine students. As an alternative to the current hospital externship, it would enable students interested in community health to gain experience in that area while fulfilling their hospital externship requirement.

Looking ahead, Dr. Friedman notes that the University is committed to the Partnership and plans to play an important role in the future of health care in Botswana. "Hopefully, in time, the people of Botswana will no longer need as much help with the clinical and educational aspects of the program," he says, "but I think the research aspect will be a long-standing and nourishing relationship." **PDJ**

—Juliana Delany

## A NEW PERSPECTIVE: EVERYDAY DENTISTRY IN BOTSWANA

PRINCESS MARINA, where Penn Dental Medicine externs are based, is a public hospital in Botswana's capital city of Gaborone where services are performed for free. Externs report that on an average day, when Dr. Phuthago and his team arrived at 7:30 a.m., it was not uncommon for 100 patients to be waiting to be seen in the dental clinic.

"The main language spoken in Gaborone is Setswana, but many people speak English as well," says extern Alison St. Paul (D'12). "If there was a patient who did not speak English, one of the assistants or another dentist would help by translating."

A typical day working with Dr. Phuthago at the dental clinic often began with hospital rounds: "We evaluated and worked up newly admitted patients under the close supervision of Dr. Phuthago including maxillofacial trauma, oral infections, and oral lesions," reports Galina Filipova (D'12), an extern who attended high school in Botswana and was thrilled to return. Externs also assisted the local dental staff and, since dental

equipment is limited in Botswana, learned the challenges faced by dentists working without equipment such as high speed suction and saliva ejectors.

"Despite the often difficult working environment," says Filipova, "the staff at the dental clinic was extremely dedicated to their patients' wellbeing." And, as a group, the externs were unanimous in their praise and appreciation of their mentor and instructor.

"Dr. Phuthago is incredibly hardworking and inspiring," says extern Marjana Knezevic (D'12). "He selflessly shares his knowledge and skills. Working with him was an absolute pleasure."



Penn Dental Medicine extern Galina Filipova (D'12), left, and Dr. Motsholathebe Phuthago, oral surgeon at Princess Marina Hospital in Botswana, above, and below, joined by extern Alison St. Paul (D'12), right.

