

Knowledge transfer for forensic science development - a cooperation between the Hamburg Institute of Legal Medicine and the University of Rwanda (UR), Rwanda National Police (RNP) and the National Commission for the fight against Genocide (CNLG)

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Development of a DAAD Project from 2012 to 2017

For many years, the Hamburg Institute of Legal Medicine has been collaborating with various institutions in Rwanda. This cooperation has been in existence since 2012 and is financially supported by the German Academic Exchange Services (DAAD) through its Partnerships for the Health Sector in Developing Countries (PAGEL) program. The project includes annual visits by the partners to Hamburg as well as summer schools in Rwanda, during which the exchange of knowledge in the field of legal medicine is made possible. Through this longstanding contact with the collaborating partners in Rwanda, the partnership project has been intensified and as a result, other projects have arisen within the framework of the existing DAAD Project.

Among the key pillars of this cooperation is the DNA workshop, which has been held during the summer school every year since 2012. Dr. Augustin, Head of the Forensic Genetics Department at the Institute in Hamburg, has conducted the workshop every year under various themes according to the needs of the participants. To date, six participant groups have already taken part in this workshop and the number of participants continues to grow.

Furthermore, three scientific staff members of the Rwanda Forensic Laboratory (RFL) have completed six-month internships each in the Department of Forensic Genetics at the institute in Hamburg, during which they acquired advanced knowledge and skills concerning DNA-analysis techniques. It has been noted and acknowledged during the yearly summer

schools, that the trained staff have been able to effectively employ the skills and knowledge acquired in Hamburg during their daily activities and assignments in the laboratory.

In 2014, a bachelor's degree program in forensic sciences was initiated at the National Police College in Musanze, Rwanda due to the need for further training of forensic scientists. The modules of clinical legal medicine, introduction to forensic pathology, advanced pathology and imaging, forensic pathology, advanced DNA analysis and molecular genetics as well as advanced toxicology and drug analysis in this program are taught by experts from the Hamburg Institute of Legal Medicine.

Additionally, the scientists from Hamburg have not only been able to offer lectures, but also personally administer exams as well as end-of-course assessments to the students in the bachelor's degree program. Thanks to the DAAD and the Hamburg Foundation for Science and Culture, Dr. Herbert Mushumba, a medical doctor from Rwanda is now undergoing specialist training in forensic medicine according to the standards of the German Society of Legal Medicine at the Hamburg Institute of Legal Medicine.

Furthermore, the cooperation between the Institute of Legal Medicine and the public prosecutor's office in Rwanda has been in existence since 2005. Through this cooperation, the public prosecutor's office in Rwanda sends molecular genetic samples to Hamburg for DNA analysis in cases of sexual related crimes and the need for identification of human remains. To

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further fortify this partnership, a meeting with the public prosecutor is held annually in Kigali during the summer school.

Additionally, to respond to the posttraumatic effects of the brutal killings and violence that were experienced in Rwanda during the genocide in 1994 (1), a workshop aimed at addressing the appropriate diagnosis and management of Post-traumatic Stress Disorder (PTSD) was integrated into the summer school program. The project manager from Hamburg established contact with the Department of Psychiatry and Psychotherapy at the University Medical Center Hamburg-Eppendorf (UKE) and in cooperation with UR, Department of Psychology, the first workshop on the "Recognition of Post-traumatic Stress Disorders" conducted by PD Dr. med. Ingo Schäfer (UKE) and Prof. Vincent Sezibera (UR) was launched in 2013.

In 2016, the "Center for Mental Health" was established at the UR to address the need for additional training regarding the detection of trauma in post-genocide Rwanda. The aim of the project is to train psychologists, social workers and mentors in this field to create sustainability in Rwanda. Currently, modules for this education and training have already been developed and the project is envisioned to start in 2018 once funding is secured.

The DAAD project is still extraordinarily productive because it enables cooperation with the University of Rwanda in the field of medicine, ensuring that knowledge transfer is expediently extended to the students. It is in this regard that the sixth Summer School organized in the framework of this project was held in Kigali in 2017 from July 10th to 13th with the theme:

"Knowledge Transfer for Forensic Science Development" under the patronage of Prof. Stephen Rulisa, Dean of the School of Medicine and Pharmacy, UR and Prof. Leon Mutesa, Director of the Center for Medical Genetics-UR. The curriculum of this summer school consisted of both theoretical and practical sessions on different aspects of medico-legal casework such as forensic DNA-analysis, toxicology, autopsy, postmortem imaging, tissue/organ transplantation, forensic anthropology and psycho-traumatology.

At the request of all involved, the partnership has been expanded over the years to involve other areas of legal medicine as well as aspects of criminal law. In addition to the annual visits of the partners to Hamburg, workshops for students, scientists, doctors, psychologists as well as social workers have been conducted during the interdisciplinary summer school in Kigali / Rwanda.

Another component that supplements the summer school program relates to the 1994 Genocide against the Tutsi in Rwanda. The remains of the genocide against the Tutsi victims are still being found in mass graves across the country. It is a humane act, especially to the survivors, that the remains of their loved ones are properly restored, conserved, preserved and most importantly, are given a proper burial. Lectures and workshops addressing issues such as the exhumation of human

remains, as well as special reconstruction techniques were introduced by two specialists – a biologist and anthropologist from the Institute of Legal Medicine in 2014. The participants are usually drawn from molecular biologists, medical students, and technical staff of the National Commission for the Fight against Genocide (CNLG) as well as police officers from the Forensic Science Degree program at the National Police College in Musanze.

Through a presentation entitled "Forensic anthropological examination and DNA analysis in the identification of human remains in Germany", the expertise and capabilities that the Hamburg Institute of Legal Medicine has in the examination and identification of human remains and deceased persons, were illustrated to CNLG.

The National Commission for the Fight against Genocide (CNLG) in Rwanda later approached Prof. Püschel and requested help regarding the restoration, preservation and conservation of human remains of the genocide victims in Rwanda, starting with the Murambi Genocide Memorial and after detailed discussions and analysis of the task, Prof. Püschel recommended including other specialists from Germany with expertise regarding restoration, preservation and conservation of human remains. In this regard, two specialists Monica Lehmann and Dorte Schaarschmidt from the Niedersächsisches Landesamt für Denkmalpflege (Lower Saxony Office for Heritage) in Hanover, Unit 3 (Archaeological Restoration), were recruited. They were to visit the Murambi Genocide Memorial to assess the needs and plan for future applications. The two specialists presented the scope of their work to the participants on the first day of the summer school. They traveled from Kigali to Murambi with employees of the CNLG from July 11-13, 2017. Prof. Püschel and Dr. Gasanabo, the CNLG Director General for Research and Documentation visited Murambi on Thursday, July 13, 2017 to assess the progress and identify what needed to be addressed during future visits.

Initially, the CNLG plans that preservation work be done on twenty selected bodies at the Murambi Genocide Memorial. Necessary infrastructure such as specially designed coffins have already been put in place. The partners require that this work be completed in time for the 25th Genocide commemoration.

Furthermore, it was possible to conduct a toxicology workshop within the framework of the summer school in 2017. Dr. Kabera, a lecturer at the UR presented methods and techniques used for both qualitative and quantitative analysis of drugs.

In addition to the project coordinators Prof. Leon Mutesa and Prof. Püschel, the honorary guests present during the official opening of the summer school were: Dr. Murigande, Vice-Chancellor (UR), Dr. Bideri, Representative of the Executive Secretary of CNLG as well as CP. Dr. Nyamwasa, Head of the Kigali Forensic Laboratory. The German Ambassador to Rwanda, H.E Dr. Woeste, also honored the invitation and commended the work and achievements of the cooperation.

As tradition, a group photo involving the guest of honor, other honorary guests and summer school participants was taken.

Finally, the joint work in Rwanda has produced several joint scientific publications (2–4) and the scientific staff of the institute in Hamburg have pledged to continue their contribution to the Rwanda project due to its meaningfulness and the fact that it has achieved and continues to produce tangible and notable success. The DAAD through its PAGEL Project on the other hand committed to fund this project further, ensuring that another summer school is held in 2018.

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