

Advancing Medical Physics Education and Research in Indonesia: Current Outcomes of the SDG-DAAD Program

Supriyanto Pawiro¹

Indra Budiansah¹, Deni Hardiansyah¹ and Gerhard Glatting²

¹ Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Indonesia

² Medical Radiation Physics, Department of Nuclear Medicine, Ulm University, Ulm, Germany

Advancing Medical Physics Education and Research in Indonesia: Current Outcomes of the SDG-DAAD Program

Supriyanto A. Pawiro¹, Indra Budiansah¹, Deni Hardiansyah¹, Gerhard Glatting²

¹Medical Physics and Biophysics, Physics Department, Faculty of Mathematics and Natural Sciences, Universitas Indonesia, Depok, 16424, Indonesia

²Medical Radiation Physics, Department of Nuclear Medicine, Ulm University, Ulm, Germany

Aims: This study presents an overview of the 2024 activities of the SDG-DAAD program, focusing on capacity building in medical physics education and research in Indonesia.

Materials & Methods: The SDG-DAAD program, titled “*Entwicklung der Medizinischen Physik in Lehre und Forschung in Indonesien*” (funded by the DAAD with the resources of the German Federal Ministry for Economic Cooperation and Development (BMZ) with project number 57657089), is a collaborative initiative aimed at advancing medical physics education and research in alignment with the United Nations' Sustainable Development Goals (SDGs). Funded by the Deutscher Akademischer Austauschdienst (DAAD, German Academic Exchange Service, <https://www.daad.de/de/>), the program supports student and staff mobility, specialized workshops, and curriculum development to align medical physics education at Indonesian Universities with German and international standards. Key activities included scientific exchange visits, curriculum harmonization efforts, and hands-on training sessions in nuclear medicine dosimetry and quality control.

Results: In 2023 and 2024, significant advancements were achieved (Tab. 1). In total, scientific delegations from Indonesia, consisting of twelve master's students, five doctoral students, and five faculty members, conducted an academic visit to Universität Ulm (<https://www.uni-ulm.de/en/>) and Universität Freiburg (<https://uni-freiburg.de/en/>).

Table 1. SDG DAAD activities in 2023 and 2024.

Activities	2023	2024
Mobility program	Six Master students, two PhD students, and four lecturers to Ulm University	Four Master students, three PhD students, and one lecturer to Ulm University Two master students to Freiburg University

Workshops	Four hybrid workshops about curriculum development in the Medical Physics program at Universitas Indonesia	One hybrid workshop about harmonization of the Medical Physics programs of Indonesian Medical Physics Higher Education Institutions (AIPFMI) One hybrid workshop about didactic methods in Medical Physics education at Universitas Indonesia
Training program	-	One training for students and professionals on nuclear medicine dosimetry and quality control at Fatmawati Hospital, Indonesia

Conclusion: The SDG-DAAD initiatives provided valuable academic and professional development opportunities for master's and doctoral students, strengthened research collaborations, and enhanced the medical physics curriculum at AIPFMI to meet German and international educational standards. These efforts contribute to the long-term advancement of medical physics in Indonesia and support the global pursuit of high-quality medical education and research.

Keywords: SDG, DAAD, Medical Physics, Research, Education