

The 11th IUPS Workshop for Physiology Education: “Towards a new global horizon in the teaching of physiology”, Löwenstein, Germany, 14-16 September 2025

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MEETING REPORT

The 11th IUPS Workshop for Physiology Education: “Towards a new global horizon in the teaching of Physiology,” Löwenstein, Germany, September 14–16, 2025

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INTRODUCTION

The International Union of Physiological Sciences (IUPS), founded in 1889, represents the physiological societies of more than 60 countries around the globe. The IUPS Congress meets every 4 years, and since 1983, there has been a satellite-teaching workshop, organized by the IUPS Education Committee, associated with each Congress. The goal of these workshops is to bring together physiology educators from around the world to discuss the latest developments in evidence-based educational practices and to share their own innovations and challenges when teaching physiology in various settings.

ABOUT THE MEETING

The 11th IUPS/ADI Workshop for Physiology Education: “Towards a new global horizon in the teaching of Physiology” was held 14 to 16 September 2025 in the idyllic German countryside at the Evangelische Tagungsstätte Löwenstein conference center. With continued financial support from ADInstruments (ADI) and the IUPS, the meeting in a residential setting attracted 90 participants from 27 countries and 6 continents for 2 days of lively interaction. New sponsors for the meeting included AI Body and The Physiological Society (UK).

The meeting was organized by an international group of educators, led by the steering committee consisting of Rudolf Schubert (University of Augsburg, Augsburg, Germany), Robert Carroll (East Carolina University, Greenville, NC), Dee Silverthorn (University of Texas, Austin, TX), and Nori Koibuchi (Gunma University, Maebashi, Japan). More than 25 additional volunteers carried out the tasks of the 5 subcommittees (Scientific Program Committee, Publicity, Finance, Social, and Local Organizing Committee).

The early 2025 call for interactive breakout session topics was met with an overwhelmingly positive response from the physiology educator community. The Scientific Program Committee received 33 submissions to be presented in a maximum of 18 breakout sessions. The committee sought a way to accommodate everyone, and realizing there were many thematically close proposals in the submissions, they requested delegates to collaborate and combine sessions. This resulted in truly international presentations, with facilitators from different countries and backgrounds approaching the enhancement of physiology education and sharing best practices in a spirit of openness and collegiality. Among all submissions, two themes surfaced with the greatest frequency: 1) “generative artificial intelligence” (AI), and 2) “equality, diversity, and inclusion” (EDI) in physiology education. These topics, independently brought up by physiology teachers around the globe, became the basis for the two discussion panel sessions. The final program blended panel discussions, interactive breakout sessions, and a poster session, as shown in [Table 1](#).

The meeting activities officially began on the evening of September 14th with a panel on the impact of AI in physiology education, with perspectives from Sri Lanka, Japan, India, and Germany. The panel members discussed how AI can both enhance and challenge traditional educational models, and they underscored the urgency of creating global strategies that are sensitive to diverse social contexts while advancing educational technology in a responsible and inclusive manner. Audience interaction focused on the ethical use of AI and the need to preserve academic integrity while ensuring students are engaged with technological advancements. Several key goals for the use of AI in educational settings emerged, including the need for clear ethical frameworks that are aligned with principles of fairness and transparency, programs for educators and developers to help



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Table 1. Overview of the workshop program

Sunday Evening, September 14, 2025	
Panel discussion 1 (5 speakers)	Rethinking Physiology Education: the Impact of AI on Traditional Teaching-Learning Methods
Monday, September 15, 2025	
ADInstruments-sponsored plenary	From Theory to Practice: Enhancing Physiology Education Through Assessment. Pranjali Divekar, PhD (ADInstruments)
Breakout session 1	4 interactive sessions on teaching methods, educational leadership, and assessment
Lunch	
Breakout session 2	5 interactive sessions on technology, teaching methods, educational leadership, and EDI
Breakout session 3	4 interactive sessions on technology, teaching methods, and educational leadership
Poster session	30 posters
Dinner and cultural evening	
Tuesday, September 16, 2025	
Breakout session 4	4 interactive sessions on technology and teaching methods
Panel discussion 2 (3 speakers)	Perspectives on EDI in physiology teaching from 3 continents
Closing session and awards	

EDI, equality, diversity, and inclusion.

them design inclusive curricula and learning environments, and addressing the digital divide so that all students, regardless of socioeconomic background or geographical location, have equal opportunities to benefit from technological advancements in education.

On the morning of September 15th, the ADInstruments-sponsored plenary delivered by Dr. Pranjali Divekar presented ways that physiology can be made more engaging through hands-on learning and authentic assessment. Delegates then chose from a range of breakout sessions focused on current practices and emerging trends in teaching and learning, allowing participants to see how similar challenges are faced around the globe. The interactive sessions were divided into three broad themes, with each theme appearing at least once in each of the four to five simultaneous time slots:

- 1) "Teaching physiology using technologies" included six sessions ranging from hands-on practical experience in using Lt (ADInstruments-sponsored workshop), ultrasound in teaching cardiovascular physiology, to R coding and AI.
- 2) "Strategies to teach physiology" more effectively also had six sessions that included using team-based learning, clinical cases, analogies, or function diagrams to explain physiology concepts, educational games, and an interactive crime scene investigation requiring laboratory test results analysis to rule suspects in or out.
- 3) "Educational leadership, diversity, and inclusion." The five sessions in this group covered topics as diverse as neurodiversity-informed teaching, how to build an effective supervisor-student relationship, stress reduction in education, leadership from department heads to students, and how culture is important in establishing an effective work/study environment.

The afternoon concluded with a lively poster session featuring 30 presentations of teaching innovations and educational research, including 12 experience reports and 18 research-based posters (Fig. 1). The topics ranged from use of social media and technology in the classroom and student laboratories, to various forms of interactive and inclusive teaching, assessment, and mentoring practices in diverse academic contexts, particularly in African institutions. Together, these presentations emphasized the

importance of student-centered, equitable, and context-adapted educational practices to improve learning outcomes in physiology and related fields.

After dinner, the attendees gathered for a much-anticipated highlight of the meeting: the traditional cultural evening, where participants celebrate their countries with regional attire, songs, dance, and a souvenir exchange. A special addition this year was a multimedia presentation on the history of the IUPS Workshops for Physiology



Figure 1. The presentations in the poster session demonstrated how physiology is taught in many different venues. Prasunpriya Nayak (foreground) examines a poster while Michael Chirillo (white sweater) discusses his poster with Frank Mojiminiyi (red jacket).

Education that was created by Muhammad Irfannuddin (School of Medicine, Universitas Sriwijaya, Palembang, Indonesia). The video is available for viewing at <https://www.youtube.com/watch?v=PebCAYO2nYY>.

The workshop concluded on September 16th with a final set of breakout sessions and a second panel discussion focusing on perspectives on EDI in physiology teaching from three continents. Colleagues from the United Kingdom, Pakistan, and the United States described how their countries and institutions are seeking to promote equal opportunities for success, fair treatment, and full participation of all students. Participation from the audience highlighted the importance of understanding cultural differences and negative associations about disability and diversity in some countries, which can hinder inclusive teaching and learning practices. Strategies for implementing change were discussed, including how students can be effective co-partners in destigmatizing and supporting their peers with conditions such as mental health.

The meeting ended with the presentation of six poster awards selected by a committee of judges. A grant from The Physiological Society (UK) was distributed to seven early- and mid-career speakers to support their travel expenses. The capstone of the meeting was recognition of Robert Carroll for his stellar contributions to promoting physiology education internationally over the past 11 years as Chair of the IUPS Education Committee. Professor Carroll passed the gavel to the new Chair, Professor Fernanda Klein Marcondes (University of Campinas, Campinas, Brazil), who will be responsible for organizing the next IUPS workshop in 2029 in Kobe, Japan.

OUTCOMES AND CONCLUSIONS

The 11th IUPS/ADI Workshop for Physiology Education continued its long-standing tradition of unifying physiology educators from around the globe. The shared meals and camaraderie of the residential setting allowed old

friendships to be renewed after an 8-year hiatus and new friendships to be developed. It was especially inspiring to see a vibrant cohort of young early-career educators who are interested in continuing the work of improving physiology teaching and learning that began over 40 years ago. The international community of physiology educators stays in touch with updates about regional and local activities through a volunteer-moderated Google group at iups-teaching@googlegroups.com. Participation is open to all, and those interested in joining should email Professor Adrianta from Indonesia at adrianta2001@gmail.com to be added.

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GRANTS

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DISCLOSURES

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AUTHOR CONTRIBUTIONS

D.U.S. prepared figures; D.U.S., R.G.C., and E.A.T. drafted manuscript; D.U.S., R.G.C., F.K.M., R.S., M.I., T.T.N., K.S., and E.A.T. edited and revised manuscript; D.U.S., R.G.C., F.K.M., R.S., M.I., T.T.N., K.S., and E.A.T. approved final version of manuscript.