From Policy to Practice: Designing AI-Inclusive and AI-Resistant STEM Learning Experiences

Facilitator: Jeffrey Olimpo
Session Type: 4-hr. workshop

Abstract: As the applications of generative AI (GenAI) within postsecondary education continue to evolve, the need for promoting GenAI fluency among all university constituents is critical (Hackl et al., 2026; Long and Magerko, 2020; MacCallum et al., 2024). This interactive workshop invites attendees to first reflect on their own perceived level of AI fluency as a means to guide their development of STEM course policies and activities that integrate AI-inclusive and/or -resistant perspectives. Attendees will be further supported in this effort through exploration of the Scaffolded Artificial Intelligence Literacy (SAIL) framework. Leveraging these resources and policies/activities, attendees will then evaluate outcomes associated with implementation of a GenAI faculty, staff, and graduate student/postdoc professional development opportunity at the facilitator's institution. This will prompt attendees to consider how they might promote AI fluency on their campuses and to examine, more broadly, how they might apply what they have learned in their own academic and professional spheres.

Intended Audience: This interactive workshop is ideal for both novice and experienced instructors with an interest in exploring the applications of generative artificial intelligence (GenAI) within (in)formal STEM learning environments. Individuals who self-identify as educational developers and/or education researchers will also benefit from participation in this workshop given the inclusion of content focused on the evaluation of GenAI instructional approaches and the design of professional development to further faculty, staff, and student AI fluency. Available seats: 30.

Session Learning Objectives: Following their participation in this workshop, attendees will be able to: 1) create course policies for AI-inclusive and AI-resistant learning experiences; 2)describe the core competencies associated with the Scaffolded AI Literacy (SAIL) framework; 3) apply the SAIL framework and the backward design process to generate a "blueprint" for one AI-inclusive and/or -resistant learning experience in their context; 4) evaluate mixed methods outcomes associated with implementation of a professional development model for faculty and instructional staff; and 5) identify one strategy for promoting the advancement of AI fluency among students, faculty, and/or staff at their institution.

Session Activities: The workshop will open with a think-pair-share exercise (0:00 - 15:00 min.) prompting attendees to reflect on their current level of AI fluency and the factors shaping said fluency. This is intended both to promote community and to serve as a foundation for future workshop activities. Attendees will subsequently be introduced to a freely-available online tool that can be utilized to craft course policies around AI-inclusive and AI-resistant learning experiences and will have an opportunity to engage with this tool to generate policy language specific to their own contexts (15:00 - 60:00 min.). The Scaffolded AI Literacy (SAIL) framework will then be shared with attendees as a means to initiate the backward design process, wherein participants will create a "blueprint" outlining student learning objectives, assessment strategies, and associated activities for one AI-inclusive and/or -resistant experience within their learning environments (60:00 - 195:00 min.). This process will culminate in a gallery walk (195:00 - 220:00 min.), which will afford attendees the opportunity to receive constructive feedback on their "blueprint" from their colleagues. Attendees will then be invited to consider how they might elevate AI fluency on their campus, more broadly, by exploring the structure and outcomes associated with a GenAI community of practice developed by the session facilitator (220:00 - 235:00 min.). As a closing activity for the workshop, attendees will complete a minute paper identifying one strategy that they might adopt to augment AI fluency among students, faculty, and/or staff at their own institutions (235:00 - 240:00 min.). These strategies will be blinded and shared with all attendees in the form of a Google Doc after the conference has concluded.

Essential Takeaways: Through their engagement in the workshop, attendees will acquire a deeper understanding of the multiple dimensions of AI fluency. They will leverage this understanding to create tangible course policies and activities reflecting AI-inclusive and/or -resistant perspectives and will have an opportunity to receive critical feedback on these products from their peers. Finally, attendees will gain a better appreciation for the types of professional development that might be implemented to promote students', faculty's, and/or staff's AI fluency and will map out one strategy that they might adapt for use in their own contexts.

References:

Hackl, V., Müller, A. E., & Sailer, M. (2026). The AI literacy heptagon: A structured approach to AI literacy in higher education. *Computer and Education: Artificial Intelligence*, *10*, https://doi.org/10.1016/j.caeai.2026.100540.

Long, D., & Magerko, B. (2020). What is AI literacy? Competencies and design considerations. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1-16. CHI'20. New York, NY: ACM. https://doi.org/10.1145/3313831.3376727.

MacCallum, K., Parsons, D., & Mohaghegh, M. (2024). The Scaffolded AI Literacy (SAIL) Framework for Education: Preparing learners at all levels to engage constructively with Artificial Intelligence. *He Rourou, 1*(1), 23. https://doi.org/10.54474/herourou.v1i1.10835.