

COLLOQUE DE PHYSIQUE

Lundi 29 avril 2024, 12h30

École de Physique, Auditoire Stueckelberg

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**« Establishing a Collaborative Student-Centered Learning
Environment using the SCALE-UP Pedagogy »**

The time-honored conventional lecture (“teaching by telling”) has been shown to be an ineffective mode of instruction for science classes. To enhance critical thinking skills and develop problem-solving abilities, collaborative group-learning environments have proven to be far more effective. In the SCALE-UP pedagogical approach, students sit at round tables in groups of three, where they carry out a variety of pencil/paper exercises (“ponderables”) using small whiteboards and perform hands-on activities such as demos and labs (“tangibles”) during class. Formal lecture is reduced to a minimum and the instructor serves more as a “coach” to facilitate the academic exercises that the students perform.

I will present an overview of the SCALE-UP concept and describe its implementation at George Washington University over the past 16 years. I will also discuss empirical data collected from assessments given to the SCALE-UP collaborative classes and the regular lecture classes at GWU in order to make a comparative study of the effectiveness of the two methodologies.

Finally, if time permits, I will give a brief summary of a pilot project at ETH Zürich in which we implemented a separate SCALE-UP section during the Spring 2017 semester. In this case, the active-learning approach was relatively new to the first-year students. We obtained comparative data between the collaborative class and a partner lecture class running in parallel, and we polled the students for feedback on their reactions to the collaborative group-learning environment.

Une collation en compagnie du conférencier sera offerte après le colloque.