Keynote

John Georg Seland
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Title: *Team Based Learning – in theory and for practical use in STEM education*

Introductory chemistry can be difficult for students with no prior experience, often leading to frustration and loss of motivation, and to misconceptions and misinterpretations of key concepts. To counteract this, team-based learning (TBL) can be an important pedagogical approach. In its original form, TBL uses a fully flipped classroom model without structured lectures, which can be challenging for students who are new to chemistry. To address this, the concept of information processing from cognitive science can be incorporated through additional sessions, known as "information processing lectures". This keynote lecture focuses on how to implement these teaching strategies in an introductory chemistry course specially designed for non-chemists.
Data presented indicate that students at the lower end of the grading scale in introductory chemistry benefit most from TBL activities, while the impact is less pronounced for higher-performing students. Results from student surveys and the teacher's in-class observations indicate that the students find TBL teaching beneficial, and that the information processing lectures helps to clarify the more challenging concepts in the course and to avoid misconceptions that can be carried over in higher level courses in natural science studies.

Bio:
Associate Professor John Georg Seland is a physical chemist specializing in NMR spectroscopy and Magnetic Resonance Imaging, focusing on how these techniques can be applied to address key research questions in chemistry and medical technology.
He is also an Excellent Teaching Practitioner at the Faculty of Science and Technology at University of Bergen.