



UNIVERSITETET I BERGEN

Det matematisk-naturvitenskapelige fakultet

STEM EDUCATION RESEARCH CENTER - UPDATE AUGUST 2024

The new [STEM Education Research Center \(SERC\)](#) welcomes you back for a new semester!

We write with a few updates, a pedagogical “tidbit,” and a request that you sign up for future updates from SERC.

UPDATES

- Perhaps the biggest update is that **we officially exist**. The STEM Education Research Center (SERC) is meant to serve as a project hub for evidence-based teaching across the faculty. We aim to conduct primary research in STEM education, to support our colleagues interested in evidence-based teaching, and to create a community of individuals with these interests. We are especially eager to support early-career researchers across the faculty as they investigate STEM education broadly, or their own teaching practices more specifically.
- SERC supports the **STEM Education Research Group (SERG)**, a community of colleagues interested in discussing their own STEM education work. We especially encourage early-career individuals to share their work with us. SERG will meet several times throughout the academic year, typically on Fridays from 11:00 to 12:00 in Det Gylne Snitt (RFB). Our first meeting, 23 August, will feature Pascal Schaldach: *Evaluation of Field Experiences: An Examination of Undergraduate Biology Courses in the Field*. Please join us, and sign up for the SERG mailing list [here](#).
- One of SERC’s initial projects is **the establishment of Mattestua**, a designated room in Realfagbygget (1c7a) that will serve the needs of students in introductory-level math courses (or other courses that require math skills) at UiB. We are currently developing the room, with input from the MatRIC SFU team and our own students, and hiring our first group of tutors. When the room is ready, we will ask for your help getting the word out to our students.
- SERC is also the new home to the [Nordic Journal of STEM Education](#). Despite some wonderful contributions and skilled past leadership, this journal has struggled in recent years, largely due to its entirely voluntary nature and its rotating editorship. With recent funding from the STEM faculties across Norway (via UHR-MNT), SERC can

provide a more permanent location, a fixed editorship, and some resources for maintenance of the journal.

- A core SERC project is **Gjennomføring 202X**, in which we are investigating the experiences of new students in the faculty. With our first iteration “Gjennomføring 2023,” we have learned what students most value during the start of their study program (velkomstuke, mentor program, and their new friends), and what they are most concerned about (making friends, study habits, and math courses). We hope to share a summary of our findings with our colleagues, and ideally, we can work together to help our students remain in MatNat.
- Congratulations to our colleagues across the faculty who received **incentive funding** to improve teaching and learning. This includes projects in BIO (Cotner), KJEM (Jordheim), and MAT (Munthe-Kaas, Alendal). We wish you all the best, and we welcome any updates.
- SERC offers teaching and learning courses for teachers, staff and teaching assistants. The course Introduction to peer teaching for teaching assistants and group leaders ([MNPED101](#), 2,5 ECTS) will run in August with up to 20 students and PhDs from across the Faculty. The teaching and learning course for teachers and staff, Collegial Teaching and Learning in STEM Education ([MNPED660](#), 5 ECTS), is still open for applications (deadline 2 Sept). [Learn more about the courses.](#)
- Are you **interested in changing how you assess your students**? Deadlines for making these changes in 2025/2026 are coming up soon! One of the goals of SERC is to help instructors across the faculty, and especially in our large introductory courses, to use evidence-based assessment. This may mean using more formative assessment, grading with several exams instead of a single high-stakes test, or working on constructive alignment (are you testing based on your learning goals?). At UiA, when an introductory math course replaced a single exam with four lower-stakes exams, course failure rates declined dramatically (from 44% to 11%). Reach out soon if you are interested in changing assessment, especially if you are interested in SERC help with studying the impact of such a change. We can help!

FALL 2024 PEDAGOGICAL TIDBIT

Recent work has suggested that some of our students struggle with feeling that they belong in MatNat, or at UiB. This lack of belonging may explain some of the high attrition rates we see, and is linked to other factors such as performance, exam anxiety, and self-efficacy. Fortunately, there are some simple, evidence-based strategies you can implement to help. Because belonging is closely linked to how students respond to setbacks and challenges (“I don’t belong here, and this bad exam grade proves it” versus

“I did poorly on this exam, I should figure out some better studying techniques”), instructors can help with “growth mindset” messaging. Recent evidence suggests that these messages do not have to be long or complicated. Find some examples [here](#), and let us know if you want help (or if you want to study the impact of these messages in your courses).

DO YOU WANT TO CONTINUE TO RECEIVE SERC UPDATES? If so, please indicate your interest [here](#).

All the best for a productive semester!

Sehoya Cotner, on behalf of the SERC team