

Additional information – bioCEED interim evaluation

1. List of Publications

The bioCEED publications (media, platforms, op-eds and media, scientific publications, and commissioned reports) are listed in the Annual Report 2016 pp. 29-30, and on our web page <http://bioceed.b.uib.no/category/outreach/scientific-publications/>.

Publications not included in the Annual report 2016

bioCEED had 11 papers published in the [proceedings of the MNT\(STEM\) –Konferansen 2017](#):

- [Korleis få professorar med på ein kollegial SoTL-kultur?](#) – R. Andersson, P. B. Eidesen, Ø. Fiksen, O. Førland, S. Stefansson & V. Vandvik.
- [Collegial evaluation of writing as a learning activity in a bachelor programme](#) – H. L. Andersen, Ø. Fiksen, L. Kirkendall & S. Stefansson.
- [Strategies to document active learning practices in biology](#) – S. Cotner, L. M. Jenø & C. Ballen.
- [Utnytter vi potensialet for læring og personlig utvikling i feltundervisning?](#) – P. B. Eidesen, A. Vader & J. E. Søreide.
- [Hvordan teknologi bidrar til biologi-studenters motivasjon og læring](#) – L. M. Jenø, J.A. Grytnes & V. Vandvik.
- [Developing work placements in a discipline education](#) – G. Velle & T. Nielsen Hole.
- [Numerical competence and quantitative skills in biology education](#) – S. Eliassen, J. Kolding, J. Smedmark & V. Vandvik.
- [Sense and sensibility in workload calculation](#) – J. Soulé, O. Førland & T. Dahl.
- [Norway's gender gap: classroom participation in undergraduate introductory science](#) – C. Ballen, M. Danielsen, C. Jørgensen, J.-A. Grytnes & S. Cotner.
- [Kan integrering i fagmiljøet øke motivasjon hos studenter?](#) R. Gya & M. V. Bjordal.
- [bioCEED – Senter for fremragende utdanning i biologi](#) O. Førland & V. Vandvik

Papers from bioCEEDs Collegial project course for teaching staff will be presented at the [EuroSOTL 2017](#) conference at Lund in June:

- Exams as learning arena: A criterion-based system for justified marking, student feedback, and enhanced constructive alignment - Jørgensen, Goksøyr, Hjelle & Linge
- Testing the impact of active learning in first year undergraduate natural science courses - Bjune, Grung, Holst & Olsen
- Together for better learning. Transforming patterns of teaching and learning through work placement for students. Results from four case studies Raaheim, Ulvik, Helleve, Brøske, Sætre, Hole, Velle, Bærheim & Grimeland
- Are learning outcomes affected by course intensity and workload? - Damsgård, Strømseng, Varpe
- Active learning and course alignment in thematically complex courses. - Borstad, Forchhammer & Gabrielsen
- How Technologies Motivate and Enhance Student Learning. - Keers, Veia Salvanes, Grytnes & Waagbø

2. ***Student involvement and student engagement.***

*How many students have been involved in projects in the centre and shaping the centre?
Please give an indication of the number of students involved and their background
(discipline/institution).*

bioCEED involve students in different ways and on different levels in the centre activities:

Representation in board and steering group

bioCEED has two student representatives in the board, and four student representatives in the Steering group (two from BIO-UiB, and two from UNIS).

These student representatives have access to all internal information, participate in the weekly steering group meetings, and are therefore involved in decision making and shaping of centre focus and activities.

Working with and for bioCEED

The bioCEED projects involve students as part of the project development and activity. This is organised in different ways.

Students are involved **through the biology courses** – e.g. producing material for bioSTATS and Teach2Learn as part of their courses. Another example is ArtsAPP, which was a project initiated by a student, who is now working as a developer in the same project (now graduated), and the app content is developed further by students through the biology field courses every year.

bioCEED employs and involve students as developers, project members and research assistants, and students also run their own projects and activities supported by bioCEED.

The bioCEED student representatives organize student seminars and student meetings (as described in the Annual report and Self-evaluation). These are open seminars for all students, and usually have between 20-100 participants depending on topic and venue.

Student representatives of bioCEED have participated and contributed to conferences on higher education (e.g. ISSOTL2017: 2 students, 1 talk; MNT2017 4 students, 1 paper). Students also contribute to bioCEEDs outreach activities through, for example, writing Op-eds and articles for the monthly newsletter.

bioCEED has two Master students in Pedagogy doing their master projects on the project Path to Dropout, using biology students in the introductory course BIO100 as informants. The master students are supervised by bioCEED staff.

Table 1. Overview – student involvement

R&D Projects with student involvement (selected¹)			
Project name	Integrated in course	Number of students contributing directly to project content/activities (2015-2017)	Total student number per year
Teach to Learn	BIO101, BIO325, AB204	36	Ca 200 (BIO101, BIO325, AB-204)
bioST@TS	BIO100, BIO102, AB204, and open resource for all staff and students	18	Open access for all, ca 350 in target courses
ArtsAPP	BIO102, BIO325	50	Ca 125 in target courses, plus open access for all
codeRclub	Open resource, targeting MSc students working in R	1 (PhD), + all participants help each other	Ca 100 MSc students
COPUS mapping	N/A	18*	N/A
bioCEED-developed courses			
Course		Students 2015-2017	
Work practice	BIO298	45	
Research practice	BIO299 and AB207	66	
From students to students - Student-driven projects, outreach & activities supported by bioCEED			
	Project leaders	Project members	Participants
biORAKEL & bioBREAKFAST	7 (biology students BSc and MSc)	14 (biology students BSc and MSc)	20-60 weekly (BSc, MSc Biology)
Annual Career Day	Student organizations	Ca 15	Ca 100 students, and ca 20 end users
Student meetings and seminars	4 (bioCEED student rep)		20-100 depending on topic and venue (BSc, MSc Biology)

*as research assistants (collecting and processing of data). MSc students from Biology and Pedagogy UiB

¹ see annual report 2016 for full list

3. **Cooperation across SFUs.**

Please give a short presentation of your cooperation with other SFUs and how this has influenced the Centre's work? Please reflect around how this cooperation will be continued (or not) in the second Centre period.

In addition to the exchange of ideas and best practice in managing an SFU through the network meetings arranged by NOKUT, we collaborate with the other SFUs in the following ways:

- SFU MatRIC – mathematical modelling and biology
 - PhD project Yannis Liakos, working with BIO-students:
https://ucarecdn.com/5db74743-01cf-4354-9652-7ea81ce8a09c/10_MatRICPhDfellow_I_Liakos.pdf.
See SFU Magazine article about the collaboration and project:
http://www.nokut.no/Documents/NOKUT/Artikkelbibliotek/UA-enhet/SFU/2017/SFU_Magasinet_01_17.pdf pp. 14-15
 - Co-produced videos for bioSTATS (2016)
 - Preliminary plans for developing project with Department of Mathematics, UiB, MatRIC & bioCEED (2017).
- SFU CEMPE:
 - 'Together for better learning' is a bioCEED-initiated project including researchers from three HigherEd institutions in Norway (Departments of Biology/bioCEED, Education and Global Public Health and Primary Care at the University of Bergen; CEMPE at the Norwegian Academy of Music, Oslo; Department of Teacher Education at the Norwegian University of Science and Technology, Trondheim). The five involved parties have, based on a common guide, conducted focus-group interviews with students that have finished practical training periods, to try to disentangle the learning that takes place during placement. What characterizes students' learning during placement? In which ways does this learning differ from the learning that takes place within the institution, as part of the ordinary on-campus teaching? How can higher education institutions and workplaces cooperate to optimize students' learning?
 - Joint article in SFU Magazine on Teacher Culture:
http://www.nokut.no/Documents/NOKUT/Artikkelbibliotek/UA-enhet/SFU/2016/SFU_Magasinet_02_16.pdf pp 5-8.
- SFU CCSE: Planned cooperation – bioSTATS and expanding bioCEED Survey to include Physics.
- SFU ProTED: ProTEDs centre leader is a member of bioCEED Advisory Board.

Collaboration between SFUs is fruitful and should be further developed, through e.g. more joint projects and activities, meeting places (such as PhD network). One idea could be a joint Research School for Teaching and Learning in Higher Education, which is under-researched in Norway.

4. **International advisory board.**

How has the centre benefited from/been influenced by having critical friends/external evaluations? All the centres have international advisory boards. How has these boards contributed to developments (or not) and how do you see their role in the second centre period and how will you work to get external input and evaluation? Please add reports from advisory board if possible.

See self-evaluation and Annual report 2016 p. 22:

The bioCEED **Advisory Board**² advises the centre on matters of strategic importance, including research and development priorities, organisation, and communication. The Advisory Board meeting at Svalbard in March 2016, included productive discussions with the bioCEED steering committee, as well as observing bioCEED activities (e.g. presentations from the Collegial Project Course). The resulting bioCEED Advisory Board report (April 2016) contains an assessment of the status and deliverables of the centre, and provides a set of recommendations. In particular, they recommend greater focus on visibility, impact, and dissemination. They also discuss how to measure and document success. The Advisory Board expresses a wish to be closely involved in future bioCEED developments. In response to this challenge, we have repackaged our activities under the four bioCEED strategic focus areas, which are now the core of our communication in all channels, including the web pages and the annual report. We have also identified specific topics and impacts that we prioritize documenting. Members of the Advisory Board have been invited to contribute to bioCEED activities (e.g. Teaching portfolio workshops).

Full report from bioCEED Advisory Board is attached.

² <http://bioceed.b.uib.no/about-bioceed/advisory-board/>