

## **Pedagogical/Educational training**

2015-2016

Lecturer Training Program (Universitets pædagogikum) including

Course: "Use student response system in your teaching"

Course: "Det gode kursusrum i Blackboard"

Course: "Aktiviteter i undervisningen"

E-learning project: "Anvendelse af Poll Everywhere til aktiv læring"

Pedagogical project: "Aktivering af studerende før, under og efter en forelæsning"

## **Teaching experience at universities and research institutions**

2014-present

Introductory projects for 2<sup>nd</sup> semester students, (5-10 students)

Lecturer, basic molecular biology for 3<sup>rd</sup> semester students (10ECTS, ~100 students)

Co-responsible lecturer, cellular biology for 1<sup>st</sup> semester students (5ECTS, ~40 students)

Responsible lecturer, next generation sequencing, master students (5ECTS, ~25 students)

Responsible supervisor of bachelor, master and graduate students (15-60ECTS)

2014-2017

Responsible lecturer of a laboratory course for 2<sup>nd</sup> semester students (2ECTS, ~200 students)

Lecturer, basic molecular biology for 3<sup>rd</sup> semester students (10ECTS BMB533, ~100 students)

Introductory projects for 2<sup>nd</sup> semester students, (5-10 students)

2004-2009

Training and co-supervision of undergraduate students (pre and post-bachelor level)

Training and supervision of laboratory technician students

Teaching assistant, basic laboratory course in Molecular Biology

## **Other teaching related activities**

2015-present

Member of the teaching committee at the Department of Biochemistry and Molecular Biology. The committee oversees the Biochemistry, Molecular Biology and Biomedicine study programs.

PhD thesis review panels.

Censor for bachelor and master thesis in Molecular Biology and Biomedicine programs.

2010-2014

Organizer of postdoctoral seminar series in chromatin biology. The seminar series creates a forum for postdocs at NIH to present ongoing research.

Lecture at the NIH research festival (outreach activity).

Abstract referee for FARE applicants at NIH.

## **Teaching experience – responsibility, method and evaluation**

In the past ten years I have taught, instructed and trained students at all levels, ranging from classroom teaching to laboratory training. Most of my teaching experience originates from my time as graduate student and currently as associate professor. My postdoctoral research has primarily been performed at a non-teaching research institution, where very few students work in the laboratories. Hence my postdoctoral teaching/lecture activities have been limited to conferences, seminars, lectures and referee related work.

Currently, as an associated professor, I am involved with a variety of teaching related tasks at the faculty ranging from classroom teaching with more than a hundred students, laboratory-oriented teaching of classes of up to 20 students to individual supervision of bachelor, master and graduate students. Teaching in lecture halls (>100 students, 3<sup>rd</sup> semester) are offered as part of a lecture series, where I provide insights to basic molecular biology using a standard biochemistry textbook as curriculum. These lectures are given as monologue type lectures, where I frequently apply student response systems (mainly Poll Everywhere) to engage the students in active learning. I believe this e-learning tool provides a great opportunity to actively reach a broad spectrum of students even in large lecture halls. Used in the correct way these tools can be used to create a comfortable teaching environment facilitating productive student-to-student and student-to-teacher discussions during the lectures. Students are evaluated by a written four-hour exam.

As co-organizer and lecturer for an introductory course in cellular biology for 1<sup>st</sup> semester students, I aim to provide these freshly admitted students with inspirational insights to molecular and cellular biology. We use a standard cell- and molecular biology textbook as curriculum supplemented with scientific reviews and we engage the students in active learning during the lectures using simple problem solving and student response systems to provoke discussions. Moreover, we introduce the students to scientific papers and give them the opportunity to present the papers for their peers with help from instructors (PhD-students). Due to the early scientific level of the students, we are aware that this

creates some frustrations, however we are careful to help the students read the papers. Importantly, the course evaluation often highlights that the students like this part of the course. At the end of the semester the students are evaluated by a written report that describes scientific findings in a scientific paper (with topic matching the papers presented to the peers) and finally a four-hour exam.

Supervision (as main responsible supervisor) of bachelor, master and graduate students is performed on a weekly basis, through discussions, generation of hypothesis, recording/interpreting scientific observations, hands-on laboratory demonstrations and small student presentations. I encourage students at all levels to work independently as well as in teams by performing peer-to-peer feedback facilitated not only by my presence but also on daily basis in the laboratory. The majority of laboratory instructions are performed in close collaboration with a postdoctoral fellow to secure efficient and up to date instructions of modern laboratory techniques.

### **Personal considerations on teaching**

I consider teaching/instruction to come in numerous flavours depending on the academic level of students (ranging from 1<sup>st</sup> year to graduate students), the number of students in the classroom, teaching environment (i.e. classroom versus laboratory) and type of teaching (i.e. lecture halls versus individual project supervision). Consequently, the pedagogical tools, strategies and considerations may vary greatly. Yet, I fundamentally believe that it is of most importance to educate students to be independent critical individuals who are able to think creatively, critically and independently in order to challenge existing knowledge and solve important society related problems.

Generally, my teaching and instructions methods have changed progressively since my first teaching tasks. Reflecting on my own teaching, I initially was mostly concerned whether my training and teaching of students covered all aspects of a given topic. This resulted in one direction-oriented teaching and training. I now believe that students learn best through their own work-experiences with a subject matter and efforts at solving problems. Thus, I now consider my role more as a facilitator than of the expert with all the answers. I also believe that students evolve best in a comfortable environment, where they are able to freely give their opinions, answers to questions, and ask questions. I try to encourage such an environment by often asking questions, both easy and difficult ones, and by gradually having the student present subject matter to their fellow students. Finally, I believe that the examination form is of major importance for optimal achievement of the learning goals. Often students do not immerse themselves into a subject matter, before they are close to exams and the intensity of this is clearly dependent on the form.

I thrive best with teaching subjects that are related to my own research, and I consider it optimal that the research- and teaching topics evolves in synergy. Teaching gives me the opportunity to broaden my knowledge into areas I am involved with in my research, but that are typically very narrow and much more detailed.