

Teaching Portfolio

Daniel Ketelhuth
Kardiovaskulær og Renal Forskning
J. B. Winsløw vej 21, 3
5000 Odense C
Email: ketelhuth@health.sdu.dk



Formal Educational Training

2001, 2003 Program for teaching skills improvement (PAE - Programa de Aperfeiçoamento de Ensino), from CAPES (National Council for Scientific and Technological Development). University of São Paulo, Brazil. Two semesters of supervised teaching training in basic immunology. Mentors: Sonia Jancar, Mahasti Sahihi de Macedo, and Magnus Gidlund. In total 105 hours.

2010 Introductory doctoral supervision course, Karolinska Institute. One week course, 1.5 academic credits

2013 Pedagogy for doctoral supervisors, Karolinska Institute. One week course, 1.5 credits

2014 Teaching and Learning in Higher Education. Karolinska Institute. Five weeks course, 7.5 academic credits

Administrative tasks relating to education

Administrative position

- 2015 Member of the steering committee of Karolinska Institutet's Doctoral Programme in Cardiovascular Research (CVR).

Teaching experience

- 2011 - 2013 Course organizer: PhD course "Cytokines in Inflammation". Allergy, immunology and inflammation Programme, Karolinska Institute. 2 weeks course (3 academic credits), and 4 weeks preparation. Examiner for group assignment and written exam.
- 2016, 2018 Course organizer: PhD course "Cardiovascular Research - An overview of the process of atherosclerosis". Cardiovascular Programme, Karolinska Institute. 1 week course (1.5 academic credits), and 2 weeks preparation. Examiner for group assignment and written exam.
- 2019 - present Course leader: Physiology and pharmacology for pharmacists – Module 2: Heart, vessels and kidneys, SU517 at SDU (5 academic credits).

Congress and meeting organization

- 2003 XXVIII Meeting of the Brazilian Society of Immunology, Mangaratiba, Rio de Janeiro, Brazil
- 2011 KiiM & KIRCNET Retreat, Stockholm, Sweden.
- 2015 Mini-symposium of the 20 years Jubilee of the Experimental Cardiovascular Research group, Stockholm, Sweden.
- 2015 Retreat of Cardiovascular Program from Karolinska Institute, Stockholm, Sweden.
- 2016 Retreat of Cardiovascular Program from Karolinska Institute, Stockholm, Sweden.
- 2018 Retreat of Cardiovascular Program from Karolinska Institute, Stockholm, Sweden.
- 2018 Atheroma Club, Ystad, Sweden.
- 2018 CMM-Day, Karolinska Institute, Stockholm, Sweden.
- 2018 Symposium of the ESC Working Group on Atherosclerosis and Vascular Biology - Immunometabolism in Cardiovascular Disease, Vienna, Austria
- 2019 Atheroma Club, Ystad, Sweden.

Production of study materials

- Book Chapter - Ketelhuth DF, Hansson GK. Lymphocytes In Atherosclerosis. Ian MacKay and Noel R. Rose (eds). Encyclopedia of Medical Immunology. New York: Springer-Verlag NY Inc; 2014. ISBN: 978-0-387-84827-3.
- Book Chapter - Gisterå A, Ketelhuth DF. Immunostaining of lymphocytes in mouse atherosclerotic plaque. Vicente Andrés and Beatriz Dorado. Methods in mouse atherosclerosis. Methods in Molecular Biology. New York: Springer-Verlag New York Inc; 2015; 1339:149-59. PMID: 26445787
- Book Chapter - Bäck M, Ketelhuth DF, Malin S, Olofsson PS, Paulsson-Berne G, Yan ZQ, Hansson GK. Immune-mediated Mechanisms of Atherosclerosis. Encyclopedia of Cardiovascular Research and Medicine. Amsterdam: Elsevier B.V.; 2017. ISBN: 9780128096574.

Supervision and mentorship

Main supervisor for PhD students: at KI) 2 students (1 ongoing); at SDU) 1 student (ongoing). Co-supervisor for PhD students: at KI: 5 students (2 ongoing). Postdoc Supervision: at KI: 7 fellows(1 ongoing); at SDU) 1 fellow (ongoing). Main supervisor for Master's students: at KI) 4 students. Main supervision of degree projects: at KI): 6 students.

Evaluation of other's work (public examinations)

PhD thesis evaluation: at KI) 3 PhD candidates; at Lund University) 2 PhD candidates; at Leiden University) 2 PhD candidates; at University of Copenhagen) 1 PhD candidate; at the Aarhus University) 1 PhD candidate. Half-time PhD controls at KI: 9 students.

Methods, materials and tools

Lecturing (PowerPoint, whiteboard), problem-based learning (PBL) for small groups of students, laboratory practical classes and demonstrations.

Educational development and applied research into teaching at university

In my life, I have been involved in several activities that help me developing my teaching skills. Notably, the work as a student instructor for the Basic immunology undergraduate course for nurses and pharmacists, during my doctoral education at the University of São Paulo, sparked my desire to follow an academic career, thus, it may also symbolize my first steps towards docentship. Mentored by three very experienced teachers, Prof. Magnus Gidlund, Prof. Sonia Jancar, and Prof. Mahasti Sahihi de Macedo, I had the chance to learn and discuss several aspects of formal education at the university level, including course content, planning and preparation of teaching materials, organization of practical classes, assignments, etc. It was also during my PhD that I had my first opportunities to supervise students—the co-supervision of undergraduate students, which developed their research projects in our laboratory. Altogether, these experiences prompted me to reflect and increased my awareness about the different forms to engage in the education of undergraduates and postgraduates.

Following up in my career and in order to continue developing my teaching skills, at the Karolinska, I engaged myself into several teaching activities, including seminars, lectures, journal clubs, the organization of courses and conferences, supervision of undergraduates and postgraduates, as well as formal pedagogical education. From all types of teaching that I have been exposed, the long-term supervision of students and post-docs on the day-to-day basis is one of the most gratifying activities of my job. This is because it gives me the unique chance to transmit knowledge while also producing new knowledge.

Supervision demands quite significant technical and theoretical input, especially in the early stages. In this context, all educational encounters with the students and post-docs are crucial for their development. In my team, they occur on a structured way, on a weekly basis with the whole team, or at the individual level during progress report meetings about ongoing projects. In these occasions, basic concepts about methodologies, planning of experiments, and data analysis can be presented and discussed—reflective and critical thinking are always stimulated. These encounters support the students and post-docs to understand their challenges and the responsibility for the development of their own research. In my view, a key aspect of supervision is to combine effective feedback when things are going according to plan or they are not.

Teaching can be both an art and a science. As an art, individuals may have different predisposition to be or to become good teachers. However, considering it as a science, improvement of teaching skills requires studying and practicing. With regard to formal education, I have engaged myself in three different pedagogical courses at KI. Studying about “Teaching and Learning in Higher Education” thought me important lessons. Hence, it has become my aim to teach in accordance with the principles of constructive alignment (Biggs & Tang 2011), and to positively stimulate “deep” and not “superficial” knowledge (SOLO Taxonomy scale; Biggs & Collis 1982).

Apart from supervision, I devote a considerable amount of time in the preparation and presentation of lectures, particularly to postgraduate students. As a lecturer, it is my goal to be as informative as possible, and at same time engage the students to have an active participation. In order to achieve these goals, I have learned that a solid structure is essential. It is important to: i) pre-establish entry and break points; ii) select the appropriate types of material to be used; as well as to have iii) defined intended learning outcomes (ILOs), and iv) suitable assessment tools.

By defining the ILOs, my teaching has become clearer. Rather than thinking only about the content of my lectures, I now concentrate on the knowledge or the abilities that I would like the students to master. The ILOs become especially relevant when considering the selection of verbs used for each outcome goal. For example, the use of verbs like ‘reflect’, ‘hypothesize’, ‘discuss’, ‘criticize’, and ‘justify’ can boost deep learning, and stimulate the student’s capacity to solve problems.

Assessment can be a powerful tool in the learning process. In my lectures for undergraduate and postgraduate students, I usually select different Classroom Assessment Techniques (CATs; Angelo & Cross 1993). For example, I like to use at the beginning of my lectures the “Conceptest” (Mazur 1997), which assists me to obtain real-time feedback regarding students’ pre-knowledge on a subject. In addition to help determining the pace and direction of my remaining lecture, this technique engage the students to be more participative, and importantly, initiates a reflection process that can facilitate their learning. I am always open to implement and test new teaching techniques in my lectures. In order to support my teaching and improve students learning, I think diagnostic and formative tools (Hanna., et al 2004) are useful.

While knowing the difficulties of the academic life, for example the constant search for grants and the dedication to multi-career demands, I am passionate about research and my academic activities. Teaching is an important part of my life and my career. In the future, I will continue working to make significant contributions, including the education of high-qualified professionals that can influence the world towards becoming a better society.