SEB+2 INTEGRATING EMPLOYABILITY AND COMMUNICATION SKILLS IN BIOLOGY EDUCATION

ORGANISED BY: LOUISE KUCHEL (UNIVERSITY OF QUEENSLAND)

SEB+2.1 INTEGRATING WORK-BASED LITERACIES INTO BIOLOGY EDUCATION - A UK PERSPECTIVE

TUESDAY 2 JULY, 2019  09:00

AYSHA DEVAN (UNIVERSITY OF LEEDS, UNITED KINGDOM)
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Drawing on qualitative discussions with employers and information drawn from recent publications, this talk will highlight the importance of developing biological science graduates with strong work-based literacies. These include amongst others, the ability to work collaboratively in multi-disciplinary teams, creativity and enterprise, and strong problem-solving and quantitative skills. Innovative learning and teaching practices that are currently being used to develop such skills will be presented using examples from a number of higher education institutions across the UK.

SEB+2.2 ASSESSING THE STUDENT PERSPECTIVES AND CURRICULUM OFFERINGS ON THE PUBLIC COMMUNICATION OF SCIENCE OF AN UNDERGRADUATE PROGRAM IN BIOPHYSICS

TUESDAY 2 JULY, 2019  09:30

ADAM OLIVER BROWN (DEPT. OF BIOLOGY (FACULTY OF SCIENCE) AND FACULTY OF EDUCATION, UNIVERSITY OF OTTAWA, CANADA), ALANDOM OELIVERA (SCHOOL OF SCIENCE EDUCATION, SUNY (ALBANY), UNITED STATES)
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The landscape for the Public Communication of Science (PCS) is rapidly developing, wherein it is becoming increasingly important that scientists communicate directly to the general public and to make their scientific knowledge accessible for informed decision-making by non-scientific citizens. Scholars of science communication note, however, that there is a large body of research on the approaches and skills required for effective communication of science between scientists and non-scientific audiences, as well as the unique challenges associated with communicating science across a number of media platforms. As such, there is a great need for learning, practice and assessment opportunities for students of science to develop the skills required for multi-modal PCS as an integral part of their undergraduate and graduate curricula. We polled exiting students in a 3rd-year A level course on their attitudes, expectations and experience in skill development activities for the PCS and compared these perspectives to the course offerings in PCS learning opportunities. We found that students placed a high priority on PCS skill development for their future lives as professional scientists and that a curriculum analysis of program content showed a lack of such learning opportunities, despite PCS skill development being listed as an important program learning outcome in the department of Biology. We discuss the impact of these results on the work-related training opportunities provided to our undergraduate student of Biology, as well as the contextual role of new courses in PCS skill development to be offered for the first time next year.

SEB+2.3 WORKSHOP – PHD CAREER CHOICE INDICATOR – A TOOL FOR LINKING PHD SKILLS WITH POTENTIAL FUTURE CAREERS

TUESDAY 2 JULY, 2019  09:45

SARAH BLACKFORD (SARAH BLACKFORD, UNITED KINGDOM)
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Surveys indicate that PhD students and postdoctoral researchers have a limited knowledge of the range and potential suitable non-academic careers (e.g. Gould, 2015). In order to address this knowledge gap, I have developed the PhD Career Choice Indicator tool and use it regularly in my career development courses (http://biosciencercareers.org/career-choice). The Indicator tool is an adaptation of Holland’s Model of career choice, which matches interests and personality with possible future work environments (Holland, 1977). Holland’s theory proposes that there are six basic types of work environments and six basic personality types (Realistic, Investigative, Artistic, Social, Enterprising and Conventional) and that people seek environments that match their skills and abilities. Those who choose to work in an environment similar to their personality type are more likely to be successful and satisfied. By examining the tasks they currently carry out during the course of their research and wider activities, PhD students and researchers are able to identify their preferred interests and skills and map them onto different jobs within a wide range of career sectors. In this talk I will reveal how the PhD Career Choice Indicator can be employed to help PhD students and researchers to improve their self-awareness, knowledge of the job market and ability to make informed career choices, whilst acknowledging its potential for other disciplines and student groups, and its limitations.

SEB+2.4 GETTING STUDENTS MOBILE: USING A TREASURE HUNT MOBILE APP TO LINK LECTURES TO THE REAL WORLD

TUESDAY 2 JULY, 2019  10:45

AMANDA RASMUSEN (UNIVERSITY OF NOTTINGHAM, UNITED KINGDOM)
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Researchers have found that students place a high priority on PCS training opportunities provided to our undergraduate students of science. To help tackle this challenge, this workshop will provide an opportunity for practical writing exercises, while incorporating peer work, using the demonstrated tools. The workshop concludes with a summary of suggestions for more effective science writing.

SEB+2.5 WORKSHOP – COMMUNICATION IS THE KEY: ASSESSING AND TEACHING ADVANCED SCIENCE WRITING IN ENGLISH AS A SECOND LANGUAGE FOR STEM GRADUATE STUDENTS

TUESDAY 2 JULY, 2019  14:00

TZIPORA RAKEDON (TECHNION, ISRAEL)
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The ability to write and communicate science is an important factor in the careers of scientists. Not only do they have to follow the professional norm “publish or perish” to advance their academic careers, but the ability to share their ideas and research is an integral part of the scientific process. As such, scientists must be able to write effectively in English to communicate their work. This workshop will present a general background on written science communication – and the difficulties hidden in this skill. Following, I will share the best practices for science writing in English and provide practical suggestions and tools. These tools include current writing scales and user-friendly computerized programs that align structure, level, genre and jargon. Moreover, I will demonstrate the differences in shift from writing for academic to everyday audiences. Moreover, this workshop will provide an opportunity for practical writing exercises, while incorporating peer work, using the demonstrated tools. The workshop concludes with a summary of suggestions for more effective science writing.

SEB+2.6 WORKSHOP – EVERY EMPLOYER DEMANDS QUALITY COMMUNICATION SKILLS: HOW DO AND SHOULD WE TEACH IT IN SCIENCE?

TUESDAY 2 JULY, 2019  16:00

LOUISE KUCHEL (UNIVERSITY OF QUEENSLAND, AUSTRALIA)
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It’s in every job. It’s a point of contention for many academics. And expectations of scientists are rapidly changing. So how do we improve the ability of our future scientists to communicate? I will discuss on current practices for teaching communication skills in general science degrees, contrast these to current expectations and provide practical, evidence-based solutions to help bridge the gap.

SEB+2.7 INTEGRATED SKILLS IN SCIENCE COMMUNICATION: INNOVATIVE ACTIVITIES FROM HIGH SCHOOL DIDACTICS RESEARCHES TO SCIENTIFIC COMMUNICATION WITH STUDENTS

TUESDAY 2 JULY, 2019  17:15

MARINA MINDOLI (UNIVERSITY OF LIGURIA, ITALY)
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Scientific communication is an important phase of research and is very important to promote innovative didactic activities in high schools to promote creativity and passion for science. In this didactics research project, biology teacher-researchers are creators of innovative communication itineraries about science communication in modern biology topics with ICT support and interdisciplinary approaches using science literacy. High school didactics researchers that work in active way realizing with students modern strategies to communicate biology results, working as researchers in universities and science centres. High Schools STEM didactic activities to prepare students in working biology researchers, to increase motivation and interest in science education.

SEB+2.8 WORKSHOP – GETTING STUDENTS TO WRITE IN A FOREIGN LANGUAGE: A SUCCESS TESTED IN SCANDINAVIA

TUESDAY 2 JULY, 2019  18:00

MARIA FRILLO (UNITED KINGDOM)
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The importance of teaching science in a second language is widely accepted in higher education. The London School of Economics (LSE) provides instruction in a second language to 50% of its graduates. However, secondary education has less developed practices in the areas of teaching in a second language in science. The workshop will share experiences from a school in Norway that offers the instruction of Science in English (SE) at all levels of education. The workshop will include a demonstration of the teaching of science in English (SE) at all levels of education. The workshop will include a demonstration of the teaching of science in English (SE) at all levels of education.
HOW DOES THE PUBLIC BUILD THEIR OPINIONS AND BELIEFS RELATED TO SCIENTIFIC ISSUES?

Isabel Mendoza-Poudereux (University of Valencia, Spain), Emppar Venug-Clement (University of Valencia, Spain), Belén María-Bustos (FYG Consultores, Spain), Ana Delgado-Sánchez (University of Coimbra, Portugal), Guiseppe Pellegrini (Observa Science in Society, Italy), Erik Hrnčiari (Philosophical Faculty, University of Zilina, Slovakia), Carolina Llorente (University Pompeu Fabra, Spain), Ana Delgado-Sánchez (University of Coimbra, Portugal), Carolina Moreno (University of Valencia, Spain)

Ideally, science-related policies should be driven by existing data and scientific consensus. However, a number of controversial topics (GMOs, climate change, vaccines, CAMs, etc.) have shown that this is not always the case: public opinion may be a driving force and even the main one. Understanding how the (sometimes significant) gap between scientific consensus and popular beliefs is generated could help minimize said controversies and ease the development of science-related policies. The CONCISE (“Communication role on perception and beliefs of EU citizens about Science”) EU-funded project will try to shed light on this matter by holding a citizen consultation with 500 people, between September and November 2019, in five different EU countries: Italy, Poland, Portugal, Slovakia, and Spain. Through these consultations, researchers aim to gain a deeper insight into the public understanding of science and identify current science communication models. Hopefully, this will also reveal indicators that might help improve science communication.

Similarly, the project will allow understanding how individuals perceive science communication, make decisions on relevant topics (e.g., vaccines), and which information channels are their preferred ones to access science information.