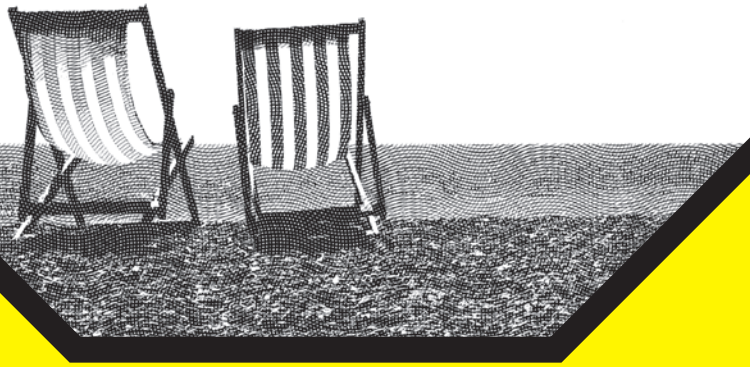
**ABSTRACT BOOK**

**SEB BRIGHTON 2016**
4–7 July, 2016
BRIGHTON CENTRE, UK

SEBIOLOGY.ORG
#SEBAMM

# SUN, SEA & SCIENCE



SOCIETY FOR EXPERIMENTAL BIOLOGY

# 5

# SEB+ ABSTRACTS

# SEB+ 1 ENHANCING BIOLOGY EDUCATION

**ORGANISED BY:** PROF GRAHAM SCOTT (UNIVERSITY OF HULL, UNITED KINGDOM), DR KATHERINE HUBBARD (UNIVERSITY OF CAMBRIDGE, UNITED KINGDOM), DR DAVID SMITH (SHEFFIELD HALLAM UNIVERSITY, UNITED KINGDOM) & DR ANNE TIERNEY (EDINBURGH NAPIER UNIVERSITY, UNITED KINGDOM)

## SEB+1.1 THE ROLE OF LECTURES IN A DIGITAL WORLD: WHO'S GOING, WHY AND DOES IT MATTER?

**MONDAY 4 JULY, 2016** **11:00**

ROS GLEADOW (MONASH UNIVERSITY, AUSTRALIA)

@ ROS.GLEADOW@MONASH.EDU

Academics around the world lament the poor attendance at lectures. Some blame the availability of on-line recordings, others that students have to work to pay their way, while others blame it on poor lecturing or lazy students. The response by universities is variously to reduce the number of face-to-face lectures, taking attendance or going back to old style lectures that are not recorded. Lectures did not disappear after the invention of the printing press, but they did evolve. As a teaching and research academic in a research-intensive university I am keen to engage students in discipline knowledge but what is an appropriate way to do that? We investigated the reasons that students give for skipping lectures in a large (600+ student) compulsory science unit. We also asked students who still attend why they come, even though the material is readily available on-line. This was compared to when and how often on-line materials were accessed. We found that many of the reasons for absenteeism were legitimate and reflect the more complex world students live in, but one consequence is reduced engagement. By making changes to the way the course material is structured, introducing elements of blended learning and improving teaching and recreational spaces we are starting to reverse the trend. The proportion of students attending lectures has increased over the last four consecutive semesters. I will conclude this talk by outlining the steps we have taken to address underlying structural problems and how they can be incorporated into existing programs.

## SEB+1.2 BRIDGING THE GAP: A STUDENT PARTNERSHIP PROJECT TO IMPROVE PRACTICAL CLASS TEACHING

**MONDAY 4 JULY, 2016** **11:40**

KATHARINE HUBBARD (UNIVERSITY OF HULL, UNITED KINGDOM)

@ K.HUBBARD@HULL.AC.UK

First year laboratory classes are essential for scientific training, but require students to process multiple forms of information while also developing technical skill, which many students find stressful. This is particularly true of students who had limited practical experience at school, and those from state schools. There is also concern that students do not adequately prepare for practicals, meaning valuable time in the lab is not used effectively. We present a project to develop online pre- and post- practical resources to aid preparation and consolidation, an approach which has been successfully used in other institutions. Resources were developed using an innovative 'students as producers' model, turning students from passive consumers of information to actively generating content for other students to use. Four undergraduate interns worked with academics to develop quizzes and videos relating to first year biology practicals over the summer of 2015. We will discuss the value and role that student partnership projects such as this might play in the development of university teaching. This work formed the basis of Dr Katharine Hubbard's case study for the Royal Society of Biology HE Bioscience Teacher of the Year 2016 award.

## **SEB+1.3** SUPPORTING DIVERSE FIRST YEAR COHORTS IN PRACTICAL CLASSES

**MONDAY 4 JULY, 2016** **11:55**

SUE R WHITTLE (UNIVERSITY OF LEEDS, UNITED KINGDOM)

@ S.R.WHITTLE@LEEDS.AC.UK

Students enrolling on BSc programmes in biology and other life sciences arrive with a wide range of academic qualifications, and prior practical experience. There is evidence to suggest that many students lack both experience and confidence in their ability to perform practical tasks in a laboratory setting, and that university staff believe that this situation is worsening. Additionally, first year students are often expected to undertake practical classes which involve molecular techniques such as protein separations and enzyme assays, and basic laboratory tasks such as preparation of buffers and solutions. However, as students arrive with a range of entry qualifications which may or may not include either chemistry or mathematics, they may lack the underpinning knowledge or skills to understand and succeed at these tasks. This presentation will describe the design, delivery and evaluation of a range of on-line resources created to support first year students in preparing for, and undertaking, practical classes. These include background chemistry for relevant topics such as pH and buffers, multimedia resources which include both the theoretical background to practical classes and demonstrations of techniques to be performed, and a series of short presentations which aim to help students tackle common laboratory calculations. These resources have been well received by students, and they report that the resources increase their confidence in undertaking practical classes. Evidence will be presented which shows a positive correlation between engagement with these resources and performance in skills modules which include a major practical component.

## **SEB+1.4** ENQUIRY DRIVEN RESEARCH IS NOT JUST FOR FINAL YEARS; AN INTEGRATED MULTI-LEVEL, PROGRAMME WIDE APPROACH

**MONDAY 4 JULY, 2016** **12:25**

JANE GURMAN (SHEFFIELD HALLAM UNIVERSITY, UNITED KINGDOM), CATHERINE DUCKETT (SHEFFIELD HALLAM UNIVERSITY, UNITED KINGDOM), LAURA COLE (SHEFFIELD HALLAM UNIVERSITY, UNITED KINGDOM), CHRISTINE LE MAITRE (SHEFFIELD HALLAM UNIVERSITY, UNITED KINGDOM), KAY SIMMONITE (SHEFFIELD HALLAM UNIVERSITY, UNITED KINGDOM), DAVID P SMITH (SHEFFIELD HALLAM UNIVERSITY, UNITED KINGDOM)

@ SCIJCG@EXCHANGE.SHU.AC.UK

Experimental biology is based on observation and experimentations by drawing conclusions and increasing understanding. In-line with this the majority of under graduate courses culminate in a final year research project preceded by a series of lab experiences. However we observed a lack of transition from conventional labs to the research element of the project and redesigned the 3 year lab program to specifically address this issue. To aid the students in developing essential research skills a program of 'mini-projects' was developed and delivered to all students on biosciences and chemistry programs and were specific to the program of study. =These mini-projects concentrated on technical and academic skills and increased in complexity through the years of study. The mini-projects are research led, with emphasis on hypothesis production and testing; the ability to adapt methods and readdress the methodology. Projects where designed with an initial frame work within which to operate however specific approaches were not given. Students learnt to plan their work and operate with research teams. Assessment was undertaken in the style of a typical research cycle and students submitted research proposals, written reports in the style of research papers and presented their results in conference style poster and oral presentations. Following the introduction of this methodology we have graduated our first co-hort of students following the pedagogy of active and integrative study. In this presentation we will report on student and staff attitudes and the change in the quality of our final year project students.

## **SEB+1.5** COMBINING THE FORMATIVE WITH THE SUMMATIVE: A TWO-STAGE ONLINE TEST DESIGN

**MONDAY 4 JULY, 2016** **12:40**

SUSANNE VOELKEL (UNIVERSITY OF LIVERPOOL, UNITED KINGDOM)

@ SVOELKEL@LIVERPOOL.AC.UK

We know that students learn better when they have plenty of opportunity for formative assessment and receive high quality feedback. Large classes can make it difficult to provide both. Online tests are often used for formative or summative continuous assessment. However, completion rate for purely formative exercises is low, whereas summative tests have a high completion rate but students often do not engage with feedback after they submitted their answers. This presentation will discuss an online test design that consists of two stages: the first stage is formative and students receive immediate detailed feedback after submission. This test stage can be done multiple times. The second test stage can only be accessed once the student had at least one attempt at the first stage. The second stage is summative and can only be done once. Hence, this two-stage online test design combines the benefits of formative and summative assessment. Students appreciate the tests as they find them helpful for their learning and keep them engaged throughout the module. Indeed, average course performance increased significantly after the introduction of the tests, with an effect size of 0.6. Importantly, the two-stage test design benefits not just the good students but also has a positive effect on the performance of weaker students.

## **SEB+1.6** SHOULD WE BE MORE CREATIVE WHEN TEACHING BIOLOGY?

**MONDAY 4 JULY, 2016** **13:55**

MARK CLEMENTS (UNIVERSITY OF LINCOLN, UNITED KINGDOM)

Modularisation of the curriculum can lead to a compartmentalisation of knowledge encouraging a siloed approach to learning. This presentation will explore creative approaches to re-awaken student curiosity, actively engage students in the learning process and encourage a wider exploration of the role biology plays within society. The value of introducing creative approaches to facilitate the co-creation of knowledge and understanding will be explored, as well as, the challenges of finding time and space within the curriculum for such activities to take place.

## **SEB+1.7** EFFECTIVE UNDERGRADUATE INVOLVEMENT WITHIN THE BIOLOGY RESEARCH CYCLE

**MONDAY 4 JULY, 2016** **14:35**

ANTONY N DODD (UNIVERSITY OF BRISTOL, UNITED KINGDOM)

@ ANTONY.DODD@BRISTOL.AC.UK

Increased student numbers, limited resources and a risk-averse funding environment are making it increasingly difficult to provide biology undergraduates with an authentic research experience. This is exacerbated within disciplines involving extensive training such as molecular biology, and projects involving long periods of time such as such as plant physiology and certain types of ecological research. I will present examples of student projects that have contributed to third and fourth year assessment, but have also been published successfully in peer-reviewed journals, therefore giving a genuine research output that is accessible to the wider research community. The benefits of the publication process will be evaluated in terms of student inclusion in the research process and skills development, and I will provide an outline of the strategies that I adopted for including undergraduates within the research cycle.

## **SEB+1.8** OPEN BADGES AS A SUPPLEMENT TO GRADES IN A THIRD YEAR CELL BIOLOGY LABORATORY COURSE

**MONDAY 4 JULY, 2016** **14:50**

LISA GO (UNIVERSITY OF BRITISH COLUMBIA, CANADA), KATHRYN ZEILER (UNIVERSITY OF BRITISH COLUMBIA, CANADA)

@ LISA.KATRICE@HOTMAIL.COM

When grading a student, an instructor evaluates the extent to which a student has mastered course competencies. However, research has shown that grading is inconsistent across institutions, instructors, and in some cases, from the work of one student to another. Various researchers have proposed ideas aimed toward improving the grading process, none of which have proven very practicable. Rather than changing the grading system, we can supplement it with a new system, open badges. Open badges are digital certifications awarded to students when a set of clear objectives are met. Open badges allow instructors to provide credit for specific skills learned in the course, regardless of overall course marks. These digital devices have embedded clickable metadata that contain evidence of the specific competency achieved by the student (see https://credly.com/credit/13152350 for an example). They are portable, and can be attached to resumés and for a such as business-oriented social networking sites. In our introductory cell biology laboratory course, we wanted to examine how badging might affect students in two ways. Firstly, we wanted to see if having more specific learning goals would help students become more focused in their learning and improve their confidence in course material. Secondly, we wanted to determine if the option to earn badges for use in enhancing resumes and applications to post graduate programs/jobs would act as an incentive to learning.

## **SEB+1.9** BIOMIMETICS AND SUSTAINABILITY – A KEY ELEMENT IN SCIENCE EDUCATION

**MONDAY 4 JULY, 2016** **15:05**

OLGA SPECK (UNIVERSITY OF FREIBURG PLANT BIOMECHANICS GROUP, GERMANY)

@ OLGA.SPECK@BIOLOGIE.UNI-FREIBURG.DE

Biomimetics is an interdisciplinary field of science that deals with the analysis and systematic transfer of biological insights into technical applications. Furthermore, in the process of reverse biomimetics, the development of biomimetic products may help to improve the understanding of biological concept generators. This knowledge transfer from biology to technology seems to suggest that bio-inspired innovations are per se sustainable. As these topics are of general societal interest they are indispensably linked to education and teaching. But what does this mean for the education of kindergarten kids, pupils, students, teachers and others interested in biomimetics and bio-inspiration?

The challenge is to have a solid knowledge base in the scientific disciplines involved and to be open-minded enough to develop innovative solutions by an interdisciplinary approach. This apparently contradictory combination ensures the transfer of knowledge from biology to engineering and vice versa on basis of a language that is perfectly understandable by everyone involved in these projects - such as models, algorithms and mathematical formulations. The opportunity is to arouse students' interest for technology through the fascination of biological solutions and to awaken the enthusiasm for living nature through the understanding of technology.

A large number of different educational modules have been developed with respect to bio-inspired and biomimetic products which are available either in the internet or as publications. Good examples are the online available biomimetics quiz, various experiments and learning / teaching materials as well as information about the interoperability of 'biomimetics' and 'sustainability'.

## **SEB+1.10** ENHANCING OF BIOLOGY EDUCATION CAN'T BE DONE WITHOUT ENHANCING BASIC SCIENTIFIC DISCIPLINES FOR BIOLOGISTS

**MONDAY 4 JULY, 2016** **15:20**

IRINA G STRIZH (M.V. LOMONOSOV MOSCOW STATE UNIVERSITY, RUSSIA)

@ IRINA.STRIZH@MAIL.RU

Biology is one of the basic, but integrative sciences. Contemporary biology requires knowledge in mathematics, physics, chemistry and even computer science. It's not so easy to improve biology education if you do not improve education in other basic natural disciplines. It is well known that even clever biologist hardly can be involved in physics, chemistry or mathematic, however specialists in chemistry, physics or mathematic can perform biology experiments. So, what's the point in biology education, if other specialists can also do this job? The point is in an integrative biological knowledge that students should receive and accept to elucidate results of the experiments. We have compared undergraduate students from three faculties in our University: Soil Faculty, Faculty of Biology and Faculty of Bioengineering and Bioinformatics. Students from these faculties have rather similar programs, but only those, who have more courses in mathematic are more prominent. Enhanced biologist should know every basic discipline and also have to be able to draw a whole picture of the biological process or phenomena.

## **SEB+1.11** GLOBAL NETWORKING FOR SCIENTISTS AND EDUCATORS

**MONDAY 4 JULY, 2016** **16:10**

MARY WILLIAMS (ASPB, UNITED STATES)

@ MWILLIAMS@ASPB.ORG

We all have networks of people with whom we share interests and ideas. For many of us these networks are biased towards physical proximity, with greatest interactions occurring within our university or geographical region. But these proximal interactions overlook the countless others whose interests align with our own but who live and work in other countries. How can we best forge networks that span the continents, and reach across languages and time zones? The internet provides such opportunities, but nevertheless the bias towards shared language and culture persists. I will discuss tools and strategies by which each of us can all extend our networks, as well as the experiences we can provide to our students. Successes and challenges will be presented from two initiatives of the American Society of Plant Biologists (ASPB), *Teaching Tools in Plant Biology* and *Plantae.org*.

## **SEB+1.12** A DECADE OF CABS: REFLECTIONS ON THE FIRST 10 YEARS OF THE CAREERS AFTER BIOLOGICAL SCIENCES PROGRAMME

**MONDAY 4 JULY, 2016** **16:40**

CHRIS JR WILLMOTT (UNIVERSITY OF LEICESTER, UNITED KINGDOM)

@ CJRW2@LE.AC.UK

Careers education and graduate employability remain high on the agenda of contemporary universities. Alongside the development of transferable skills, it is also crucial that students have awareness of the breadth of potential careers that can follow from their initial degree. This is particularly true for 'non-vocational' subject such as Bioscience, for which a variety of roles can follow graduation (either directly or after further study).

Since 2007, we have been running the Careers After Biological Science (CABS) programme. Former students are invited back to describe their current role and offer practical advice to undergraduates who may be considering moving into a similar field. The speakers' career profiles and associated resources are then collated onto an open-access website for the benefit of the wider community. The programme intentionally includes a combination of roles that are clearly 'careers IN science' and 'careers FROM science', less obvious roles which Bioscience graduates may not have previously considered but for which they are well qualified. In the first decade that the CABS programme has been running over 60 different careers have been presented (some on a number of occasions).

This presentation will offer practical advice (some of it learned the hard way) for colleagues interested in developing a similar programme for their discipline at their home institution. These will include: methods for contacting alumni; organisation of careers seminars; capturing of appropriate data from the events; and subsequent dissemination of the advice to both local and wider audiences.

## **SEB+1.13** NO SUCH THING AS 'COMMON SENSE': ENGAGING UNDERGRADUATE STUDENTS WITH PROFESSIONAL VALUES AND ETHICAL DECISION-MAKING

**MONDAY 4 JULY, 2016** **16:55**

ANNE OSTERRIEDER (OXFORD BROOKES UNIVERSITY, UNITED KINGDOM), NETTA LLOYD-JONES (OXFORD BROOKES UNIVERSITY, UNITED KINGDOM)

@ A.OSTERRIEDER@BROOKES.AC.UK

Is it wrong to hide a book in the library, to sign an attendance sheet for a friend, or to manipulate data? Unethical decision-making in science has the potential to harm individuals, society and the environment in unforeseen ways, and hurt science itself, through irreproducible studies and loss of public trust in scientists. How can educators facilitate discussion of ethics and professional values in an engaging, supportive and safe environment, which elicits and recognises diverse perspectives and backgrounds? Working interdisciplinarily, we developed and evaluated a blended dialogic approach, combining

group discussion with an e-learning activity. The activity, originally developed for use with medical, dental, and nursing/midwifery students, was adapted for the use with life science students (e.g. biology, environmental sciences, and sports sciences). Before the discussion, students individually completed the online activity and anonymously gave their opinions on unprofessional behaviour in 24 relatable university scenarios: the level of 'wrongness', and what sanctions they thought to be appropriate. We used the survey results to facilitate student-led discussion in class, highlight scenarios that demonstrated the problematic concept of 'common sense', and identify value-based decision-making in real-life case studies. We report on the overwhelmingly positive student feedback from successive runs of small third-year seminar groups and a large first-year lecture, and our changes to session design in response to student suggestions. We compare this set-up to a teacher-led discussion structured around an ethical framework and 'Ethical Decision Making' app. We conclude with suggestions for further development and recommendations for implementing the activity.

## **SEB+1.14** TICKING BOXES OR A VOYAGE OF SELF-DISCOVERY? REFLECTIVE SELF-ASSESSMENT AS A TOOL FOR STUDENT-LED LEARNING

**MONDAY 4 JULY, 2016** **17:10**

KATHERINE A JONES (BANGOR UNIVERSITY, UNITED KINGDOM), JOANNA SMITH (BANGOR UNIVERSITY, UNITED KINGDOM)

@ BSSE18@BANGOR.AC.UK

Modern teaching methods in higher education increasingly rely on the premise of 'active learning', where contact time is used to engage in activities involving problem solving, debate, and discussion rather than passive listening to factual content. A limitation of such teaching methods is they rely on student participation; students may have to do preparatory work prior to class and need to be willing to work with, sometimes unfamiliar, peers. In a given class, students are likely to vary in motivation and ability which can make it difficult to design suitable activities that don't leave half the class bored or the other-half left-behind, unless student engagement is kept high. Low-stakes assessment of participation is one method to increase engagement in tutorials and group-discussion workshops. However, such assessment may be perceived as 'box-ticking' with low value for student learning, versus more tangible, higher-weighted 'products' (e.g. essays or practical reports). Assessment of participation may take a variety of forms (from simple marks for attendance to peer and self-assessment). Reflective self-assessment potentially shifts the emphasis onto the learner to take responsibility for participation. Here I explore the use of both formative and summative self-reflection on two different modules; a small third year module (Animal Ethics and Welfare) adopting a partially flipped-classroom design and a large first year tutorials module. I investigate patterns of engagement with, and student perception of, reflective assessment and how this links to academic attainment.

## **SEB+1.15** WHERE TO GO ON A FIELD TRIP: WHAT INFLUENCES STUDENT CHOICE?

**TUESDAY 5 JULY, 2016** **POSTER SESSION**

GRAHAM W SCOTT (UNIVERSITY OF HULL, UNITED KINGDOM), JULIE FURNELL (UNIVERSITY OF HULL, UNITED KINGDOM), LESLEY MORRELL (UNIVERSITY OF HULL, UNITED KINGDOM)

@ G.SCOTT@HULL.AC.UK

For many students, a choice of field trip is very important. It can be the reason why they chose a particular University or programme of study. Having little or no choice of field trip may mean students engage less with fieldwork. Many factors affect students' engagement of fieldwork. Prior experience of fieldwork (at school and sixth form), age, gender, disability and inclement weather can all deter students from taking modules that include fieldwork and can also mean students are less engaged whilst on field trips. Much of the literature focusses on students' gender, age and disabilities as factors for students' willingness to participate in fieldwork, but the potential negative impacts of these factors on the general student population has not been addressed. Students at the University of Hull attend both residential and non-residential field trips in their first year and have the choice of overseas or a UK field trip in their third year. Using a combination of questionnaires and interviews, I asked students why they chose particular field trips and using a quantitative method, examined the factors that affected their perception of fieldwork and the factors that affect their choice of field trip.

## **SEB+1.16** A BLENDED APPROACH TO PROBLEM BASED LEARNING

**TUESDAY 5 JULY, 2016** **POSTER SESSION**

DAVID P SMITH (SHEFFIELD HALLAM UNIVERSITY, UNITED KINGDOM)

@ D.P.SMITH@SHU.AC.UK

A key indicator for biochemistry graduates is the ability to apply taught knowledge through problem solving. Historically these students are employed as either industry based scientists or go on to research careers through further study. In both situations they are required to draw on what they have learnt and apply this learning practically. To hone these skills a blended problem solving session was developed for a cohort of 60 students studying a final year biochemistry module using real life problems supplied directly by employers and active researchers. Contacts were approached and asked to set a problem relevant to their current work based practice and to reflected the prior teaching material. Each problem was given to the students 48 h in advance of a tutorial in the form of a YouTube video. During the session students were allowed to organise themselves into groups and where given tablets to access resources. The online tool Padlet was used to curate the ideas generated. At the end of the session a second video was played providing the solution that was used. Summative assessment reflected the session by setting similar problems within the exam and required the students to access knowledge from across the module. Feedback from the students has been highly positive, and in addition knowing that what they are being taught can be applied has led to engagement with the material and the teaching sessions.

## **SEB+1.17** ASK A CLEARER QUESTION, GET A BETTER ANSWER: CRITICAL THINKING & INQUISITIVENESS

**TUESDAY 5 JULY, 2016** **POSTER SESSION**

DOMINIC HENRI (UNIVERSITY OF HULL, UNITED KINGDOM), GRAHAM W SCOTT (UNIVERSITY OF HULL, UNITED KINGDOM), LESLEY MORRELL (UNIVERSITY OF HULL, UNITED KINGDOM)

@ D.HENRI@HULL.AC.UK

The aim of the poster is to review the results of a simple intervention study that was aimed at helping students engage with 'higher learning skills' associated with critical thinking. We provided an optional workshop aimed at promoting an inquisitive mind-set and encouraged students to approach essays as a question. The poster will present the impact of this workshop on student attainment and consider how this can be incorporated into module design. We will build upon the contents of the paper below to present our plans to further develop the line-of-inquiry.

Henri D, Morrell L and Scott G. Ask a clearer question, get a better answer. F1000Research 2015, 4:901 (doi: 10.12688/f1000research.7066.1)

## **SEB+1.18** THE ROLE OF HIGHER EDUCATION IN DEVELOPING STUDENT AUTONOMY

**TUESDAY 5 JULY, 2016** **POSTER SESSION**

DOMINIC HENRI (UNIVERSITY OF HULL, UNITED KINGDOM), GRAHAM W SCOTT (UNIVERSITY OF HULL, UNITED KINGDOM), LESLEY MORRELL (UNIVERSITY OF HULL, UNITED KINGDOM)

@ D.HENRI@HULL.AC.UK

The ability to learn autonomously is a key graduate attribute and could therefore be considered to be an anticipated outcome of our degree programs. In the School of Biological, Biomedical and Environmental Sciences at the University of Hull we have explored our student's perceptions of their ability and willingness to learn autonomously through the application of a simple autonomous learning scale (Macaskill & Taylor, 2010; Scott et al., 2015). By surveying our students at different points in their learning journey we are able to explore patterns of self perception of learner autonomy amongst our student body and to measure shifts in self perception of autonomy as students complete that journey.

# SEB+2 SCIENCE COMMUNICATION TOOLKIT

**ORGANISED BY:** DR ANNE OSTERRIEDER (OXFORD BROOKES UNIVERSITY, UNITED KINGDOM) & DR JENNY SNEDDON (LIVERPOOL JOHN MOORES UNIVERSITY, UNITED KINGDOM)

## SEB+2.1 DREAMWRITING THE SCIENCES

**TUESDAY 5 JULY, 2016** **10:35**

GILLY SMITH (UNIVERSITY OF BRIGHTON, UNITED KINGDOM)

@ GS103@BRIGHTON.AC.UK

This presentation looks at the use of Dreamwriting, the author's own version of the rule-free warm-up technique used in adult creative writing classes, and asks if it could be useful in the teaching of and writing about sciences.

Dreamwriting is a response to the Automatic Writing of surrealist Andre Breton who believed that it held the key to liberation from bourgeois ideals to the essential, uncluttered self and the Free Writing of Peter Elbow. Elbow's was a response to his own struggles with academic writing in an educational system which he said made 'people who were smart think they were stupid'. His 'declaration of independence' came from the analysis of his failed academic writing and the need to 'make it good, keep control, figure out my point ahead of time with outlines'.

The research was set within the debate led by Sir Ken Robinson whose national commission on creativity, education and economy for the UK Govt in 1999 argued that a national strategy for creative and cultural education is essential if we are to 'unlock the potential of every young person' as the Government's White Paper in 1997 suggested. Robinson concluded 'that Britain's economic prosperity and social cohesion depend on this'. (Robinson 1999)

Gilly Smith is a senior lecturer in Television, Radio and Journalism at the University of Brighton. She uses Dreamwriting to encourage academics and students to rediscover the passion behind their ideas and the voice to put them on the page.

## SEB+2.2 IMAGES FOR IMPACT

**TUESDAY 5 JULY, 2016** **10:55**

MARY WILLIAMS (AMERICAN SOCIETY OF PLANT BIOLOGISTS, UNITED STATES)

@ MWILLIAMS@ASPB.ORG

Whether you're Tweeting or teaching, well-designed images increase the impact of your message. It's easy to make high-quality images for use in science communication (whether social media, blogs, infographics, animations, teaching or research) simply using tools available in PowerPoint. I will demonstrate PowerPoint's design, editing and drawing tools and talk about how and why to use them effectively and professionally to enhance your story. Finally we will discuss licensing issues such as finding and using Creative-Commons licensed images and when it is and isn't necessary to obtain formal permission for image reuse.

## SEB+2.3 AS SEEN ON TV: USING BROADCAST MEDIA IN BIOSCIENCE TEACHING

**TUESDAY 5 JULY, 2016** **11:15**

CHRIS JR WILLMOTT (UNIVERSITY OF LEICESTER, UNITED KINGDOM)

@ CJRW2@LE.AC.UK

The popularity of YouTube, of TED talks and similar services demonstrates the allure of visual media. Television and radio can also be rich sources of audiovisual material for educational purposes. However a number of factors can restrict the use of these resources including: lack of knowledge about what exist, lack of knowledge about how to access the programmes, and lack of knowledge about how these tools might be used (compounded by underlying suspicion about the academic rigour of such assets).

This presentation will demonstrate some ways in which broadcast media can be used in bioscience education. Box of Broadcasts, a UK-wide service for Higher Education, will be introduced. We will then look in particular at the BiologyOnTheBox archive and at the development of 'viewing lists' which might be included alongside reading lists as para-curricula resources for university bioscience.

## **SEB+2.4** TIPS AND TOOLS FOR NON-ARTISTS TO COMMUNICATE SCIENCE THROUGH CARTOONS

**TUESDAY 5 JULY, 2016** **11:35**

ANNE OSTERRIEDER (OXFORD BROOKES UNIVERSITY, UNITED KINGDOM)

@ A.OSTERRIEDER@BROOKES.AC.UK

You do not need to be Walt Disney in order to turn your science into a cartoon or animated video. All you need is a bit of creativity and a good sense of humour, and technology will do the rest (and make it look pretty as well). I will give an introduction to story telling, and introduce tools (such as 'Paper' or 'PowToon') that can help you to create engaging illustrations and videos for talks and teaching.

## **SEB+2.5** DIGITAL RESEARCH OUTPUTS – WHO'S IN CONTROL?

**TUESDAY 5 JULY, 2016** **11:55**

MARK HAHNEL (DIGITAL SCIENCE, UNITED KINGDOM)

@ MARK@FIGSHARE.COM

According to the Scholarly Kitchen Chefs, one of the things to have the biggest impact on scholarly publishing is the publication of data and objects. While we have seen the launch of 'data journals' in the past few years, we have also seen the pressure from funders for institutions to be better managing the digital products of research carried within their walls. Funders are increasingly requiring grantees to deposit their raw research data in appropriate public archives or stores in order to facilitate the validation of results and further work by other researchers. According to the JISC and RLUK funded Sherpa Juliet site, globally, there are now 34 funders who require data archiving and 16 who encourage it and the list is growing. So are we on course for a collision between publishers and institutions over who has control over the digital products of research?

Previous attempts by institutions to retake control of printed scholarly output through institutional repositories have been beneficial, but have not stemmed the profit margins or reach of the big publishers. This is mainly due to the culture of academia, where for 350 years papers have been the currency and for the last 50, impact factor has been the value. The recent influx of digital-based data and other outputs is, however, creating a culture shift. This session will explore how the web enabled world of multiple digital outputs is playing out and predict what could happen in the next few years.