Training Tomorrow's Scientists

universities/faculties should offer training created by professionals and in collaboration with industry that would be part of PhD training as an elective course. If we go further, special PhD programs could be created, as a joint venture of universities and industry that should include contents regarding intellectual property and commercial product development, start-up business practices, project management, and soft skills such as, communication and interpersonal skills, self-efficacy, teamwork etc. Taken together, both academia and industry facing a huge challenge in creating a workforce that will meet the needs of the industry, but above all to contribute to the economic growth and development.

1. Powell K (2018) Industrial strength. *Nature* 555:549–51.
2. Taglar CP and Goodey NM (2015) Views from Academia and Industry on Skills Needed for the Modern Research Environment. *Biochem Mol Biol Educ* 43: 324–32.
3. Woolston C (2017) A love–hurt relationship. *Nature* 550:549–52.

IS-20**CV PREPARATION: HOW TO MAKE THE MOST OF YOURSELF!**

Keith Elliott
FEBS Education Committee
Emeritus, University of Manchester, UK

Your curriculum vitae will probably be the first information a potential employer has about you. A curriculum vitae may also be required when applying for grants and fellowships. It is important to create a good impression and make the most of what you have achieved – making sure that the right information is presented in a logical order, with appropriate emphasis. There is no one correct way to write a curriculum vitae, but there are lots of potential pitfalls that should be avoided. Each application requires a different curriculum vitae, often needing significant rewriting. Preparing a curriculum vitae is like writing a paper and should be given similar care and attention. It should provide evidence of your skills and abilities and not simply be a list of degrees. The talk will give hints on how to approach the task to help ensure that you give yourself the best opportunity to be interviewed, or get the job, fellowship or grant. It will be followed by the opportunity to discuss your curriculum vitae in more detail during the workshop.

IS-21**HOW TO WRITE (AND PUBLISH) A SCIENTIFIC PAPER**

Félix M. Goñi
University of the Basque Country, Bilbao, Spain

I intend to provide a series of very practical tips for writing a scientific communication, aimed at young scientists at the beginning of their careers. Contents of the talk include selection of journal, preparation of figures and of their legends, and specific advice on each part of the paper, including references and acknowledgements. Reactions after reception of the editorial decision will also be dealt with. Related topics such as Open Access, impact factors or h-index will also be discussed.

IS-22**HOW TO WRITE A RESEARCH PROJECT PROPOSAL**

Miguel A. De la Rosa
Institute for Chemical Research, cicCartuja University of Seville & CSIC
Sevilla, Spain

Writing a research proposal is not a simple task if we wish – and we do usually wish! – to succeed in putting our project into practice. Three different developing stages should indeed be clearly born in mind from the very beginning. The first stage requires you (the applicant) “To have your own idea”, thus demanding novelty and originality in the way of thinking. The second has the goal “To get your idea funded”, thus entailing project feasibility and persuasion in the way in which the idea is presented. The third is “To run the project”, thus requiring resources and local implementation. The difficulty decreases as much as the paperwork increases from the first to the second and to the third stages. So the most difficult and key point in the elaboration process is to think out of the box, to be different, to be unique, to be you. Audacity is a key element for any researcher, as was it for Christopher Columbus when

uncovering the Americas to Europeans: “You can never cross the ocean unless you have the courage to lose sight of the shore”.

In this talk, the importance of reading scientific literature, being aware of competitors and developing original thoughts will be discussed. As the Nobel laureate Albert Szent-Gyorgyi said: “Research is to see what everybody else has seen, and to think what nobody else has thought”. And communication – from brain to brain, from yours to proposal reviewers’ mind – will unavoidably emerge as the *voussoir*, the wedge-shaped or tapered stone used to construct the whole project. In this context, the three pillars of the Aristotle’s Rhetorical Triangle will be discussed: *ethos* (credibility), *logos* (reasoning) and *pathos* (empathy). We will end with a basic, central principle as take-home message: “Have the brain full before writing any single word on any blank piece of paper”. In the Group Discussion sessions, the students will further learn practical skills about structuring the proposal (basic scheme and complementary aspects), designing the research strategy, scheduling aims and tasks, budgeting the costs, writing the abstract, etc.

IS-23**THE ART AND SCIENCE OF EFFECTIVE ORAL PRESENTATIONS**

Ferhan Sağın
Ege University, Medical Faculty, Dept. of Medical Biochemistry, İzmir, Türkiye
ferhan.sagin@gmail.com

Successful scientific careers build upon clear, logical and effective delivery of ideas and scientific results. This interactive session will start with discussing the basic elements of any good scientific oral presentation-from journal clubs to short talks in conferences. Brief introduction and some basic guidelines for planning, preparation, practising and delivering of an effective talk will be introduced. Stages of a scientific talk, “what to do” and “what not to do” for each stage will be discussed and exemplified with good practice examples.

The group discussions will use both small and whole group discussions. The interactive format of the session will also include engaging learning activities by the use of short questions and some educational technologies or elements of team-based learning. During the session, enough time for clarification about all phases of an effective presentation including dealing with the Q&A will be allocated. Additional resources (guidelines, checklists and other related printed material) will also be provided to participants.

IS-24**e-TOOLS OF TRADE FOR SCIENTISTS**

Ali Burak Özkaya
İzmir University of Economics, Faculty of Medicine, İzmir, Turkey
ali.ozkaya@ieu.edu.tr

The World becomes increasingly digitalized and the nature as well as the *modus operandi* of science evolves accordingly. Numerous electronic tools as software and websites emerge not only as facilitators of the scientific progresses but also as requirements to be an efficient scientist. These tools connects scientists as they share large files via cloud systems, communicate via social media, pre-publish their work to receive feedback, advertise their work and create their online portfolio to seek employment or collaborations, effectively creating an enormous networking environment. Beyond this digital identity, many life science researchers are now using numerous innovative electronic tools, many of which are online and free; to reach data/papers, facilitate their writing, improve their presentations, manage projects, keep laboratory records and for many other purposes.

This talk aims to introduce the most common of some of these soon to be essential tools and the group discussions aim to explore these tools as well as the possible impact they may have on science in detail.