



EDUCATION COMMITTEE ANNUAL REPORT 2013

Reported by:
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Chair, FEBS Education Committee

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1. Introduction

FEBS Education Committee started officially on 1st January 2007, following the historical decision of the FEBS Council which convened in Istanbul in June 2006, to transform the "Working Group on Teaching Biochemistry" (2001-2007) into an "Education Committee".

2. Structure and Composition of the Committee

According to the latest version of FEBS Statutes, the Education Committee is composed of "a chair elected by Council, four ordinary members elected by Council and ex-officio members with voting rights, Secretary General of FEBS, Treasurer of FEBS, and Chair of Advanced Courses Committee".

The ordinary members who served on the Committee in 2013 are:

Tomas Zima (Czech Republic) (Elected at Turin FEBS Council, 2011-started as of 1st January 2012)

Angel Herraiz (Spain) (Elected at Turin FEBS Council, 2011-started as of 1st January 2012)

Wolfgang Nellen (Elected at Sevilla FEBS Council, 2012 - started as of 1st January 2013)

Francisco Michelangeli (Elected at Sevilla FEBS Council - started as of 1st January 2013)

Chair: Gül-Güner Akdogan (Turkey) (Elected at Prague FEBS Council, 2009- started as of 1st January 2010).

Co-Opted:

Keith Elliott (UK) (Since January 1st, 2008)

Peter Ott (Switzerland) (Since May 14th, 2010)

Ex-Officio Members: Israel Pecht (FEBS General Secretary), Alan Fersht (FEBS Treasurer), and Jaak Jarv (Chair, FEBS Advanced Courses Committee)

3. Education Committee Meeting

In 2013, one official meeting of the Education Committee Meeting was organised, as decided during the Cambridge ED-COM meeting.



FEBS Education Committee Prague Meeting

Saturday, April 20th, 2013

(Hosted by Tomáš Zima, 1st Faculty of Medicine, Charles University)

The meeting was chaired by Prof. Gul Guner Akdogan and the issues discussed and finalized according to the agenda, are summarized below.

Agenda

1. Welcome, Apologies

Apologies were received from the ex-officio members of the Education Committee (Alan Fersht, and Jaak Jarv) and from the co-opted member, Peter Ott. Israel Pecht (IP), Tomas Zima (TZ), Keith Elliott (KE), Wolfgang Nellen (WN), and Angel Herraez (AH) were present and the meeting was chaired by Gul Guner Akdogan (GGA).

2. Presentations of the two new members, Wolfgang Nellen and Francesco Michelangeli
3. Review of the Minutes of Cambridge Meeting (19 December, 2012)
The minutes of Cambridge meeting were reviewed and accepted as true minutes of the meeting.
4. Discuss Strategies for Promoting Undergraduate and Post-Graduate Education in Europe –(Francesco Michelangeli's suggestions and Skills Document)(FM) :

Key skills (scientific and practical)

Main points from the discussion groups at the Cambridge workshop on 'innovation in molecular bioscience education', Dec 2012.

- *There is no alternative to wet lab practicals, but virtual / computer practicals can be used to aid or reinforce specific aspects of the lab practical.*
- *Practical skills are required for bioscience research based employability*
- *Data analysis skills (experimental design and paper writing)*
- *Practicals can also help with teamwork, help support theory, scientific thinking, training in being precise and rigorous.*

List of skills and experiences we thought are essential to molecular bioscience degrees:

- *Pipetting*
 - *Making solutions, pH and buffers, dilutions, etc*
 - *using statistics*
 - *calibrations curves (spectrophotometry, etc)*
 - *microscopy*
 - *aseptic techniques*
 - *purification methods*
 - *analytical methods*
 - *safety implications*
 - *chemistry is important to biochemistry degree*
- Also help with non-lab skills:*
- *communication skills (lab write up/ reports)*
 - *data interpretation (also knowing about accuracy of data and their limitations).*
 - *using databases*
 - *experimental design*
 - *developing mathematical skills*
 - *helps integrate information across modules*
- Alternatives to wet lab practical classes:*
- *bioinformatics and use of databases*
 - *public engagement projects*
 - *critical analysis needs to be incorporated into any literature-based project (possibly incorporating data analysis).*
 - *Educational projects (designing demonstrations, etc)*

5. EU Project- Tentative Outline (GGA)

GGA followed on what was elaborated during Cambridge ED- An outline of a project entitled:

Promoting Molecular Life Sciences (MLS) Education in Wider Europe: Which Skills, Training and Career development for Quality Enhancement

The tentative outline, with some questions and potential points for discussion was the following:

Tentative Outline of Application for a Grant under

“Erasmus for All”, Horizons 2020 (2014-2020)

(To be Discussed)

1. *Proposed Title of Project:*

- *Promoting Molecular Life Sciences (MLS) Education in Wider Europe: Which Skills, Training, and Career Development for Quality Enhancement?*
- *OR Promoting Bioscience Education in Wider Europe: Which Skills, Training, and Career Development for Quality Enhancement?*
- *OR Promoting Biochemistry and Molecular Biology Education in Wider Europe: Which Skills, Training, and Career Development for Quality Enhancement?*
- *OR.....*

2. *Project acronym:*.....

3. *Aim and objectives:*

Aim: To promote Molecular Life Sciences education in wider Europe

Scope:

- *Levels: High school?-BSc?-MSc?-PhD?*
- *Include or exclude molecular life sciences education in:
Schools of Natural Sciences? In Medical Schools? in other Health-Related Schools?
We are strong stakeholders of (molecular) bio-sciences. We should include (as we are the experts!) everything that touches bio-sciences.*
- *Wider Europe: Which Countries? Keep our concentration on eastern Europe?*
- *.....*

Objectives (to be discussed):

- *Build a Thematic network of Molecular Life Sciences (MLS) Education in Europe- with the help of FEBS Constituent Societies*
- *Define the skills needed from a molecular life scientist*
- *Define core knowledge needed from a molecular life scientist*
- *Develop a document defining the expected outcomes of molecular life sciences education that will ensure that graduates have the competences needed for employment within and outside of academia.*

- *Map Molecular Life Science curricula from selected regions of Europe-investigate and analyse the curriculum trends in MLS*
- *Address issues such as standards, outcomes, mobility, transparency and comparability of qualifications (Bologna has resulted in anything but transparency and comparability. Educators in bio-sciences should be the ones that decide and determine what knowledges and skills are required.*
- *Address the Bologna process*
- *Develop an innovative (template) core curriculum (including content and educational methods) conforming to the criteria of the Bologna process Bologna has to be flexible. Teaching methods change and what is best may be different tomorrow (see Hattie). It is sufficiently difficult to define contents (e.g. what is really required today: understanding or just the skills to do something or even the skills to use a kit?). The definition of educational methods is even more difficult because what is right today maybe wrong tomorrow). What we may need is a "code-of-conduct" for educators, what their aims should be and how they may reach them – but the latter should only be suggestions and we should appreciate individual teaching skills and methods.*
- *Promote European molecular life sciences education in wider Europe and internationally, and to encourage international students to do their studies in Europe*
- *Develop a network for sharing knowledge and experience beyond Europe*
- *Education requires a basis in society. We cannot promote bio-science education without the support by society. Keep in mind that large parts of society are anti-science (correlates with developmental status of a country) and that anti-science attitudes are actively (and successfully!) promoted by anti-science groups. Public understanding of science (including schools) is a prerequisite for successful education at universities and for the appreciation of science in society.*
-

4. *Select the Programme and the Action*

(For FP7 it could have been Erasmus Mundus Action 3 Promotion of European Higher Education)

http://eacea.ec.europa.eu/erasmus_mundus

(OR, it could be thematic network building)

For FP8 (Horizons 2020), it may be "Erasmus for All" or another suitable programme.

Priority area:

Deadline for Call:

Programme Guide: will be determined

Amount of Grant: about €300.000 ?? (over 2 or 3 years)

This depends very much on the program. We may develop 1 to 5 courses as "demonstrations", run them as pilot courses in different countries and do a comparative evaluation. This will definitely require more than 300.000. If we include schools and "science and society" it would be even more. Partners that develop courses, carry them out, groups that do the evaluation/documentation etc. Partners have to be motivated (via money!) to participate. The

group should not be too large. 5 or 6 countries with one "pilot university" each would be sufficient.

The Committee agreed that such a project on the European level is needed because the education and training of molecular life scientists to a high standard is critical to the advancement of science, innovation, productivity, wealth, and social cohesion of European society.

It was agreed to limit the scope of the project to Europe and to limit the level to BSc and MSc levels.

It was agreed to include molecular life sciences education in schools of natural sciences, medical schools, and other health-related schools.

The amount of budget should be around 1,000,000 Euros (the budget would be finalised later) and it was agreed to ask FEBS treasury for financial support for getting professional help for the preparation of such a project (around 15,000 Euros).

6. Report on CV Support Activities (KE)

KE gave a report of the CV support activities that he had been undertaking at every FEBS Congress since 2008.

7. Report on Cambridge Workshop (FM)

FM gave an extended report of the Cambridge Workshop (December 2012) which was presented in the 2012 Annual report.

8. Update on 2013 Educational Activities:

Updates on the following events were made by GGA. The reports of these workshops are presented further below .

- St Petersburg 2013 FEBS Congress (Workshop on Monday, July 8th)
- Gdansk Workshop– Saturday, July 13th, 2013 (AH-GG)
- Tbilisi Workshop – 8-9th October 2013
- Sofia revisit and WS- 22nd November 2013

9. Planning for 2014 Educational activities:

GGA introduced the following events for 2014

- FEBS-EMBO Conference, Paris
- Workshops in 2014 (Belgrade and Szeged)

10. Collaborations (IUBMB; IFCC; Wiley-Blackwell)

To continue the collaborations with IUBMB, it was agreed to write a project proposal to IUBMB Education Committee for Gdansk Workshop on Teaching Molecular Evolution.

With IFCC, it was agreed to co-organise a Symposium on “PhD training in Clinical Biochemistry and Laboratory Medicine” during World-LAB Congress in Istanbul (July 2014). With Wiley-Blackwell, it was generally agreed to collaborate during the FEBS Education Workshops - up-loading relevant chapters (in relation to the topic of the Workshop) from Wiley on FEBS Education Platform.

11. Any Other Business and the Next Meeting of the Committee

The next meeting of the committee was decided to take place in Paris during the FEBS-EMBO 2014 Conference (September 2014).

4. Representation at FEBS EX-COM Meetings, FEBS Council and at WGI visits
GGA represented FEBS Education Committee and gave reports during the Rome EX-COM Meeting and the St. Petersburg EX-COM Meeting and Council. In addition, GGA joined the WGI visit to Belgrade in October 2013.

5. Educational Activities

The activities of the Education Committee in 2013 encompass the educational events during St Petersburg FEBS Congress, and education workshops: Gdansk Workshop on “Teaching Molecular Evolution”, and Tbilisi and Sofia Workshops on “Molecular Life Sciences Education”.

5.1. Educational Activities during FEBS St Petersburg Congress 2013

At the 38th FEBS Congress, the FEBS Education Committee organised a workshop entitled ‘Molecular Life Sciences Education for the Needs of Industry’ and a poster session on education in molecular life sciences. In addition, CV advising activity was also performed.

5.1.1. Workshop: Molecular Life Sciences Education for the Needs of the Industry

Introduction:

It is important in the fast-changing, international modern world that universities are aware of what industry requires of its workforce so that graduates are appropriately prepared to continue their careers. These requirements encompass not only scientific skills, but also non-scientific skills such as communication and commercial awareness. This workshop looked at the issues from three perspectives:

- Industry’s needs – what does an industrial company look for in its recruits?
- Developing academic research into applied science and commercialisation.
- The university perspective – how can students be prepared for the needs of industry?

Programme:

July 8, 2013	
17.00 – 17.05	Gül Güner Akdogan (<i>Izmir, Turkey</i>), Keith Elliott (<i>Manchester, UK</i>) Introduction
17.05 – 17.40	Detlev Riesner <i>Heinrich Heine University of Düsseldorf, Qiagen, Germany</i> What the industry expects from molecular life sciences graduates?
17.40 – 18.15	Ruth Arnon <i>Weizmann Institute of Science, Rehovot, Israel</i> From basic research to applied science
18.15 – 18.40	Tomas Zima <i>Prague University 1st Faculty of Medicine, Czech Republic</i> How medical schools prepare students for the industry?
18.40 – 19.05	Panel Discussion (Co-Chairs and Speakers)

The workshop looked at scientific and generic skill requirements, such as communication and commercial awareness, for career success not only within but also outside of academia. Following a brief introduction by Keith Elliott (FEBS Education Committee), the talks of the workshop presented three perspectives on this topic: industry's needs (what does an industrial company look for in its recruits?); how academic research could be developed into applied science and commercialisation; and the university perspective (how can students be prepared for the needs of industry?). At the end, there was an opportunity for open discussion between the speakers and the audience to share experiences – for example how different countries tackle the problems and how industry and academia can work together. Prof. Ruth Arnon's inspiring illustration from the Weizmann Institute of Sciences set an excellent example of how academic research could impact on industry. Prof. Detlev Riesner pointed out that the percentage of PhD holders being recruited in universities was relatively low: though figures differ between countries, in Germany, for example, only 4% of PhD graduates were finally recruited as professors, and 2.5%, as permanent staff. The rest (93.5%) pursued careers outside universities. These overwhelming figures stressed very well the need for collaboration between universities and industry. It was also agreed that universities should plan ways of preparing students for industry, for which Prof. Tomas Zima from Charles University First Faculty of Medicine described an excellent working model.

Attendance:

This workshop was very well attended, with around 100 participants at all career stages and with representatives from both industry and academia. We hope it not only inspired university academic staff to work more on the issue of industrial collaboration, but also motivated young scientists to think more effectively about the translational potential of their research.

Educational Resources:

Wiley-Blackwell (the publishing partner for *FEBS Journal*) offered book chapters on subjects related to the workshop through a website linked to the FEBS education platform and the workshop participants were able to download these chapters.

5.1.2. Poster session:

It involved all posters related to education in molecular life sciences and provided an interactive platform for discussion. Some of the interesting posters presented were: 'European funding for talented life scientists from anywhere in the world' (European Research Council, Brussels, Belgium), 'Careers and Research Performance of PhD Program Graduates of Health Sciences in Turkey' (Dokuz Eylül University, Izmir), 'Why Iranian students prefer doctoral education in Turkey' (Hacettepe University Ankara, Turkey), and 'Promoting deep learning in biochemistry by diversifying assessment strategies – experience at the university of Hong Kong' (University of Hong Kong, Pokfulam).

5.1.3. CV Advising Activity:

Finally, in the traditional collaborative activity between the FEBS Education Committee and the Young Scientists' Forum (YSF), Keith Elliott provided CV advice to 35 YSF participants, which will help the young scientists in their bright future careers.

5.2. Education Workshops

5.2.1. FEBS Education Workshop - Gdańsk, July 2013

Description

This workshop was agreed between FEBS Education Committee (lead by its Chair, Prof. Gül Güner) and both Prof. Jarosław Marszałek (Intercollegiate Faculty of Biotechnology, a joint centre of University of Gdańsk and Medical University of Gdańsk) and Prof. Igor Konieczny (Dean of IFB). These local organisers coordinated the Education Workshop in conjunction with other activities (described below), making an extended event spanning 4 full days.

Main activity: FEBS Education Workshop on "Teaching Molecular Evolution"

The workshop was held on 13 July 2013, morning and afternoon (see schedule)

Due to limitations in running the practical session, half the attendants followed that session in the afternoon on 14 July.

Associate activity: "Molecular Evolution Research"

This was held on 14 July 2013, morning and afternoon sessions.

Additional activity: "XIX Biotechnology Summer School"

This covered the following two days (15 and 16 July) and was devoted to "Teaching soft skills – how to write a good grant"

Parts A and B were jointly organized by

- FEBS Education Committee (with kind support of FEBS Science and Society Committee)
- Intercollegiate Faculty of Biotechnology, University of Gdańsk and Medical University of Gdańsk
- Polish Society of Biochemistry and Molecular Biology
- Foundation for the Development of Gdańsk University

Part C was organized by Foundation for Polish Science.

Venue

All 3 activities over the 4 days were located in a building of the Intercollegiate Faculty of Biotechnology (Kladki 24, 80-822 Gdańsk, Poland).

Attendants

Target audience was PhD students, young scientists and academics involved in biochemistry and related biosciences, with an interest in understanding and teaching molecular evolution.

50 people registered for the event. This is the summary of demographics:

Centre of origin:	Gdańsk	rest of Poland	Houston, TX, USA
N	36 (72%)	11 (22%)	3 (6%)

Position:	student	PhD student	PhD
N	26 (52%)	19 (38%)	5 (10%)

Programme

Full program is available at <http://www.bss.ug.edu.pl/?tpl=schedule&lang=en>

Abridged program:

FEBS EDUCATION WORKSHOP ON TEACHING MOLECULAR EVOLUTION

1st day (Saturday, 13 July)

Morning sessions:

Introductory lecture "Evolution: from modern to functional synthesis" – Jarosław Marszałek (University of Gdansk, Poland)

Lecture "Laboratory molecular evolution" – Dan Tawfik (Weizmann Institute of Science, Rehovot, Israel) + brief discussion

Lecture "Discussing on the origin of life as an educational tool in biochemistry" – Juli Peretó (Valencia University, Spain) + brief discussion

In silico practical (for group A): "Molecular evolution illustrated using protein structure" – Angel Herráez (Alcalá University, Spain)

Afternoon sessions:

Lecture "Teaching metabolism with an evolutionary flavour" – Juli Peretó (Valencia University, Spain) + brief discussion

Small group discussion (three small groups facilitated with the three trainers). Attendants could attend more than one group as they wished by rotating around the three rooms in ca. 30 min. time slots.

Report to the whole group, general discussion and closing.

2nd day (Sunday, 14 July)

Afternoon session: (after the "Molecular evolution research" sessions)

In silico practical (for group B): "Molecular evolution illustrated using protein structure" – Angel Herráez (Alcalá University, Spain)

Funding

FEBS funded the expenses for lecturers of the 1st day (education workshop), combining support from Education Committee and Science & Society Committee. The local organisers provided material and economical support according to the usual terms specified in the agreement between FEBS Education Committee and FEBS Member Societies that apply for celebration of an education workshop.

The additional activities in the extended program (B and C, 14 to 16 of July) were funded by the Gdańsk organisers with grants from other parties (EU European Social Fund, Foundation for the Development of Gdańsk University, Foundation for Polish Science, Intercollegiate Faculty of Biotechnology UG&MUG, Ministry of Science and Higher Education of Poland, Polish Biochemical Society).

Use of FEBS Education Platform (online resources)

As it is usual with FEBS Education Workshops, a section was enabled in the online FEBS Education Platform to offer the attendants and trainers a means for disseminating documents and maintaining discussion, both during and after the event:

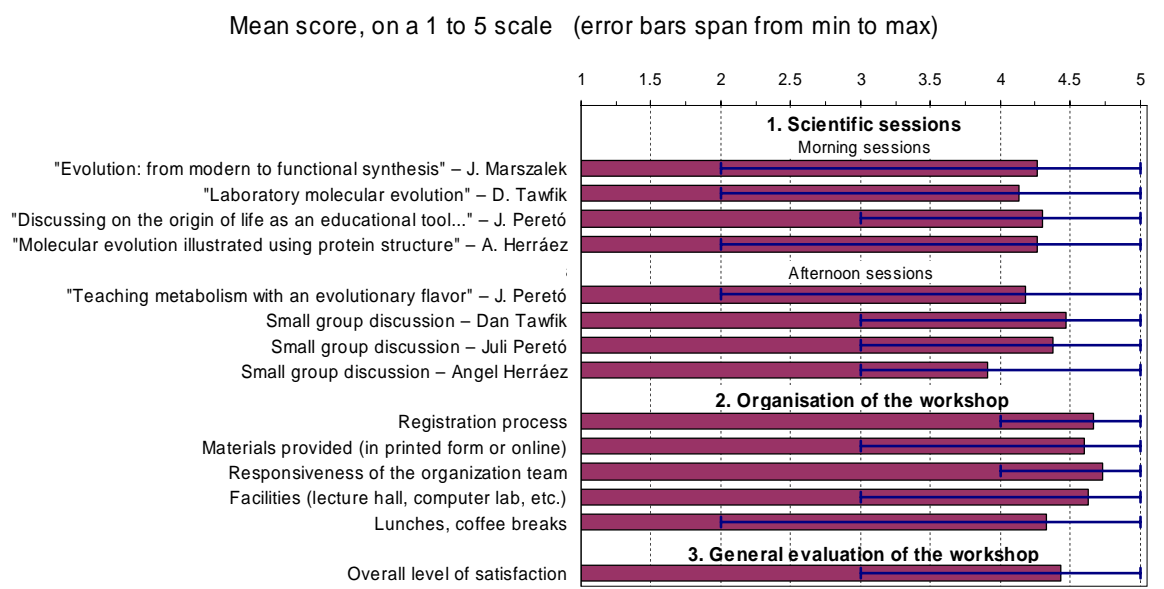
- Slides from the speakers and additional reading material.
- Discussion forums.
- Complimentary book chapters related to education in biochemistry and the topics of the workshop, kindly offered by Wiley in support of FEBS Education Committee activities.

As of 17 July, 17 attendants have registered to access the materials available in the platform, although they have not used the forums. A more detailed report about access and use of the platform may be obtained later from the webmaster, Prof. Peter Ott.

Feedback from attendees

A short feedback form was delivered to the attendants so they could assess their degree of satisfaction with the different lectures and activities, as well as with organisation issues. This is a common practice in all FEBS Education Workshops and helps us improve future activities.

Following is the summary of results and some of the comments received:



Comments on scientific sessions (1):

- More "in silico" practical needed! Start from easy things to more complex bioinformatics analyses. I think it is very important for students who want to learn how to make their own future [...] show them "how to move" in bioinformatics tools.
- At the discussion, when there is a question to the lecturer, please give a microphone, because it's hard to hear some questions (asking people usually talk too quiet).
- I really enjoyed funny and cooperating presentation of Marszałek and Tawfik, the best part of a day.

- It was hard to follow the lecture of Dan Tawfik called “Laboratory molecular evolution” due to the lack of Powerpoint presentation.

Comments on organisation (2):

- Registration: There should be a possibility to choose roommates from your University.
- There was no problem that there were no chairs during coffee breaks, but eating dinner [lunch] while standing is not so comfortable.
- The idea of putting materials online on FEBS Educational Platform is a great one!

Reported by:

Angel Herráez

Member, FEBS Education Committee

5.2.2. Tbilisi (Georgia) Workshop on “Molecular Life Sciences Education” (8-9th October, 2013)

This workshop was agreed with Prof. Revaz Solomonias (AGB) during the FEBS WGI visit to Tbilisi in October 2012, where Gül Güner was a delegate. The special focus on this workshop was on introducing new trends in education as well as presenting tips for the future scientists, as requested by the Society. The Workshop was in the capable hands of Prof. Revaz Solomonias and his team and took place in Ilia State University.

On October 7th, the day before the workshop, the FEBS delegation met with the President of Georgian National Academy of Sciences, Prof. Otari Kvesitadze and members of the Association of Georgian biochemists.

Keith Elliott, Gül Güner Akdogan (FEBS education Committee), and Mathias Sprinzl (FEBS WGI) were the workshop trainers. The Workshop was kindly supported by FEBS General Secretary, Prof. Israel Pecht.

There were around 45 participants from mostly Tbilisi –Ilia State University, Tbilisi State University, St Andre First-Called Georgian University, I. Javakhivhili Tbilisi State University, Agricultural University of Georgia, I. Beritashvili Center of Experimental Biomedicine, and Tbilisi State Medical University.

Programme:

Following a short opening session by Revaz Solomonias and Israel Pecht, a general discussion was held on “Issues on Molecular Life Sciences Education in Georgia”.

Dr. Eka Ekaladze from Tbilisi State Medical University made a presentation on the state of medical education in their university. Ensuite, Dr. Lali Shanshishvili from Ilia State University

described the BSc degrees in her university, with a comprehensive evaluation. A general discussion followed.

The next session was held on “Skills and key Knowledge Expected from a Molecular Life Sciences Graduate”. After a brief introduction of Dr. Keith Elliott, the participants broke-out into groups and discussed separately, after which reports were given to the whole group. Books donated from

Wiley-Blackwell were presented to the volunteer reporters.

In the same afternoon, Dr. Gül Güner gave an overview on “Innovations in PhD training-European perspective”. The following sessions were focused on building on generic skills and on professional development in science. Tips were presented on: “How to write a research proposal” (Israel Pecht), “Applying to funds and programmes” (Gul Güner), “How to read and write a scientific article” (Mathias Sprinzl), and “How to write a CV: How to make the best of yourself?” (Keith Elliott). These talks were well-appreciated by the young scientists and lively discussions ensued.

On the second day, two main themes were treated: Problem-Based Learning in the morning, and biochemistry practicles in the afternoon. The PBL session was organised by Keith Elliott and Gül Güner, in a similar way as they have done many times: A brief introduction was given on PBL and its applications. The main characteristics of PBL were compared with other educational methods. Two different ways of approaching PBL, the first with a lot of freedom and the second, more structured, were presented. Keith Elliott demonstrated examples from application in Manchester and Gul Güner from Izmir. Then, the participants were divided into small PBL groups to discuss the cases.



FEBS Tbilisi Education Workshop participants with FEBS trainers (Oct 8-9th, 2013)

The afternoon session was on “designing laboratory practicals”. Following an introduction and

discussion of general concepts by Keith Elliott, Gül Güner introduced an innovative laboratory research practice: Special Study Modules. The use and usefulness of *In silico* practicals, dry practicals and wet practicals were discussed.

Feedback:

Oral and written feedback was obtained from the participants. Over 95 % of the participants rated the Workshop as "excellent". Some comments quoted:

"Thank-you for such an interesting and useful workshop!" - "excellent workshop, thanks to all organisers"- "needed more time to discuss each item in detail"- "I got a lot of new and useful information from the workshop-thanks".

All slides and reading materials from selected Wiley- Blackwell Book chapters were uploaded on FEBS education platform.

5.2.3. Sofia (Bulgaria) Workshop on "Molecular Life Sciences Education" (22 November, 2013)

FEBS Education Committee revisited a second time Sofia, the very first workshop of the Committee having been held here in 2008. This workshop was an annex to the stimulating St Kliment's Days, organised by the Faculty of Biology of Sofia University. Prof. Mariela Odjakova, Dean of the Faculty of Biology, and Prof. Diana Petkova, President of the BBBA kindly hosted this workshop. Keith Elliott and Gül Güner (FEBS Education Committee) and Mathias Sprinzl (FEBS WGI) ran together this educational event. The participants (around 140) were mostly biology students, MSc and PhD students and young scientists, as well as some professors from the faculty, together with the international invited speakers of St Kliment's days. FEBS team was happy to meet with some faculty who had attended the workshop in 2008.



FEBS team and hosts – Sofia Workshop- 22 November 2013

The aim of the workshop was to promote molecular life sciences education by introducing new trends as well as working to strengthen the scientific skills of young scientists.

The programme involved a talk on “Innovations in PhD training- European perspectives” (Gül Güner), followed by “How to read and Write a Scientific Article” (Mathias Sprinzl), “How to Write a Project Proposal” (Gül Güner), and “How to Write a CV: How to Make the Best of Yourself” (Keith Elliott). A highlight of the Workshop was to meet with Prof. Ganka Kossekova (Sofia Medical University) who had organised the 2008 FEBS Workshop on Biochemistry Education. Her talk on “Molecular Life Science in Bulgaria-2008 FEBS Education Workshop and Beyond” encompassed, among other issues, many episodes of Bulgarian interaction with FEBS and IUBMB and how it impacted the scientific society in Bulgaria. As in Tbilisi, a session was held on “Key Knowledge and Skills expected from the Molecular Life Scientist”, including a short introduction and small group discussions. Books donated from Wiley-Blackwell were presented to the reporters of the small groups.

A gala dinner kindly hosted by the Dean Mariela Odjokova was offered to all participants and trainers.

Feedback:

80 % of the participants who filled in the questionnaire (90 participants) rated the workshop as

excellent.

Some of the comments (mostly from the students):

- "plan another one"
- "to be held more often"
- "the workshop should be in two days"
- "everything was really professional. Thank-you for the experience"
- "I am very impressed of you- Come back again, please"
- "Everything was great. Thank-you for the opportunity to be here. Please come again".
- "It was very interesting and useful for us. Also, to know that there are people who want to help us to be more qualified. Thank-you:)"



Some participants of FEBS Education Committee Sofia Workshop-22.11.2013

5.3. Educational Activities Planned for 2014

5.3.1. Educational Activities during Paris FEBS-EMBO Congress

During the Paris Congress, two workshops on education are planned, one by FEBS Education Committee, and the other by collaboration between FEBS Education Committee and the French Society for Biochemistry and Molecular Biology (SFBMB). In addition, as traditionally, CV advising

clinics will be run by Dr. Keith Elliott.

Workshop 1: Tuesday, September 2nd, 2014, 18:00-20:00

"What Skills and Key Knowledge to Expect from a Molecular Life Scientist?"

Organised by FEBS Education Committee

Co-Chairs: Gül Güner, Frank Michelangeli

18.00-18.05 Introduction

18.05-18:25 Prof. Frank Michelangeli (Birmingham, UK)

"What Skills to Expect from a Molecular Life Scientist?"

18.25-18.45 Prof. Jean Luc Souciet (Strasbourg, France)

"What to teach in biochemistry? Results and prospects of a brief survey in French universities"

18.45-19.30 Small Groups Discussions

Moderated by members of FEBS Education Committee

19.30-20.00 Presentations and Panel Discussion

Workshop 2: Wednesday, September 3rd, 2014

"New technologies to teach molecular life science"

Organised by FEBS Education Committee and SFBMB

Co-Chairs: Jean-Luc Souciet and a member from FEBS Ed-COM

18:00-18.05 Introduction

18.05-18.35 Quentin Vicens (Nice, France)

"Peer Instruction: General view and Application to Specificity of Molecular Life Sciences"

18.35-19.05 Michael. E. Caspersen (Aarhus, Denmark)

"The role of Peer Instruction in Educational Development"
(Getting more scientists to revamp teaching)

19.05- 19.35 Neil Morris (Leeds)

"Using technology to engage with students"

19.35-20.00 General discussion

Supported by the company "Turning Technologies": This company will provide us for free technology rental that would include all receivers and Response Cards for presenters and participants.

Education Workshops Planned for 2014

Workshop on Education in Molecular Life Sciences (Debrecen, Hungary)

24 August, 2014

The Hungarian Society of Biochemistry and Molecular Biology has proposed include the workshop within the framework of the next year annual conference of the Hungarian Biochemical Society, to be held in Debrecen, between August 24. and 28. It was decided to hold it as an "annex" to the Congress, to provide more focused time on education. It will be a one-day workshop. The main topics will be curriculum planning, designing laboratory practicals, problem-based learning, and research in undergraduate education. The coordinator for this Workshop from Hungary is Prof László

Dux, and both Profs. Vértessy and Fésüs are in charge of the Hungarian Congress 2014 of Biochemistry. The workshop trainers will be from FEBS Education Committee as well as from Hungary and neighbouring countries.

5.3.2. Workshop on Molecular Lifes Sciences Education (Belgrade- Serbia)

This workshop was conceived during the WGI visit to Belgrade, which took place in October 2013. The coordinator for this Workshop from the Serbian Society is assistant professor Natalija Polović from the Faculty of Chemistry University of Belgrade, Department of Biochemistry, who is the Secretary of the Serbian Society. The main topics, as requested from the Society, will be:

- Designing laboratory practicals
- How to write a research proposal
- Funds and programmes
- Molecular life sciences education for the needs of the industry
- What skills and key knowledge to expect from a molecular life scientist?

6. 50 YEARS OF FEBS AWARD FROM THE FEBS EDUCATION COMMITTEE:

This award is planned as an activity under the framework of the 50th year celebrations of FEBS. The guidelines for this education award were formulated previously and adapted to the present perspective. This award will be given once under the umbrella of the Anniversary celebrations.

SHORT-TERM TRAINING AWARD FOR MOLECULAR LIFE SCIENCES EDUCATION IN EUROPE

FEBS EDUCATION COMMITTEE

GENERAL GUIDELINES

Award Perspectives

This award aims to provide the awardee with educational opportunities (in a country from one of FEBS Constituent Societies) tailored toward specific home country needs. The awardee visiting the host-country institution studies aspects of undergraduate or post-graduate education that have the potential to promote and expand education programmes / courses/modules in biochemistry, molecular biology, and other biomolecular sciences in his/her home country institution and department.

Aim and Objectives

The award aims to promote molecular life sciences education in Europe to the highest quality at both the undergraduate and post-graduate levels.

The objectives include:

- Assisting European educational institutions in improving and advancing the process of undergraduate or post-graduate education in the molecular life sciences
- Facilitating placement of education training fellows in institutions (faculty, graduate school, research centre providing teaching...) able to provide excellent instructional experiences in areas of recognized home country need
- Advancing the international exchange of information and skills in biochemistry, molecular biology and the molecular life sciences *at large*, and the same, in the context of broader areas, such as biochemistry and molecular biology education in medical training.
- Contributing to the promotion of international understanding and exchange within Europe and with associate countries.

Award Description:

A Short-term Training fellowship will be awarded on merit, with preference for candidates from countries in need, in case of eligible applications. Mentoring will be provided by preceptors in institutions involved with undergraduate or post-graduate teaching within a Constituent Society country. Eligible areas of study include: innovative techniques in education (e-learning, distant learning...), educational methods (problem-based learning, project-based learning...) curriculum planning, designing laboratory practicals, evaluation systems, supervision/mentoring, quality and accreditation.. This study may be conducted in disciplines of molecular biosciences, as well as in educational disciplines, provided that they offer some association with a molecular-bioscience discipline. Although the major emphasis of this programme is to learn educational processes, the trainee may concurrently pursue some collaborative research interest with the host-institution research faculty. The time allocated to training in teaching should be at least 80 %.

The short-term training award is not provided for any of the following: basic or clinical research, degree-granting educational programmes, programmes that require tuition payments, grants for short-term courses or conference attendance, specialty training in residency programmes, training solely in laboratory/clinical procedures, or educational programs in schools of public health.

Eligibility of Applicants

Applicants for this programme must be faculty in biochemistry, molecular biology and other molecular life sciences from countries of FEBS Constituent or Associate Societies, possessing the following eligibility criteria:

- Reside and work in their home countries at the time of application, acceptance and initiation of the education training award.
- Provide evidence of membership of the Constituent Society (thus of FEBS)
- Have a PhD or equivalent degree
- Hold an academic teaching appointment in a school of science, engineering, or medicine, etc or postgraduate education institute/school.
- Have at least three years of teaching experience in the home country following completion of their PhD (or equivalent) studies
- Demonstrate competence in written and oral English (or in the language of the host country)
- Have a position at the home country institution to which they will return upon completion of

the programme.

Duration and Time of the Training Programme

The training programme will range up to two months and will be accomplished during the academic year 2014-2015.

Review Criteria

FEBS Education Committee reviews eligible applications and makes the decision for award. In reviewing applications, consideration is given to the following:

- Appropriateness and specificity of the educational programme proposed by the applicant and the endorsing home country institution.
- The home country institution's plans for and commitment to utilizing the benefits of the fellowship to meet identified needs.
- Assessment of the overall value of the fellowship experience to the individual, institution, home country, and the European Area.
- Evidence that the applicant will be in a position to implement the proposed educational improvements upon return to the home country institution.

Award Announcement

Applicants will be notified of the final result of the review of applications no later than three months after the submission.

Conditions of Appointment

The Training Award recipient must accomplish his/her educational programme during the academic year 2014-2015.

He/she is required to devote full time to the educational programme for which the fellowship was awarded. Any substantial change in the educational programme or a change in the host institution requires prior FEBS Education Committee approval.

The Trainee is required to submit a final report upon completion of the programme, approved and signed by the Host Institution.

Financial Award

The Education Training Award is intended to cover subsistence and travel costs for the Fellow only; expenses incurred by dependents are not provided for. The daily subsistence allowance amounts to €70 per day. Travel costs will provide for a second-class two-way rail fare or a two-way economy flight between the place of residence and the host institution. The trainee is responsible for providing proof of health insurance during the visit period.

Application Procedure

Applications should be made by May 30th, 2014. Results will be communicated at the latest in three

months.

The following documents should be accompanying the application form:

1. CV of the candidate
2. Programme of training visit
3. Nomination-support letter from the host institution, completed by an official of the home country institution.
4. Reference letter: must be completed by the applicant's head of department or equivalent

The applicant should submit the application to the Chairperson of the FEBS Education Committee both by e.mail and by post (and receipt will be acknowledged immediately):

Prof. Gül Güner

Dokuz Eylül University School of Medicine

Department of Biochemistry (Dekanlik Binasi 2. Kat)

Inciralti-35340

Izmir-Turkey

Phone: + 90 533 749 17 96 / + 90 232 412 44 03

Budget Requested from FEBS (50th anniversary budget):

5 000 Euros (60 days X 70 euros + travel)

7. Collaborations

As it was generally agreed, collaborations within and outside of FEBS were continued and new collaborations solicited. Within FEBS, collaboration with Science and Society Committee and with the Working Group on Integration has been fruitful. Within the framework of Paris 2014 FEBS-EMBO Congress, a new collaboration was started with the French Society of Biochemistry and Molecular Biology, while Worldlab 2014 offered a platform for collaboration with IFCC and with ORPHEUS.

8. Conclusions

FEBS Education Committee has made an effort to fulfil its mission of promoting molecular life sciences education throughout Europe. In spite of the reduction of budget due to the general economy strategy of FEBS, a number of high impact educational events have been successfully carried on, due to collaborations within and outside of FEBS. In addition, FEBS Education Committee has made an effort to reflect on its future path. FEBS Education Committee is thankful to FEBS Executive Committee for its support.