



EDUCATION COMMITTEE

ANNUAL REPORT
2012

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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”.

This report on the activities of the FEBS Education Committee comprises the period from 1st January 2012 to 31st December 2012.

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 2012 are:

Karmela Barisic (Croatia) (Elected at Athens FEBS Council, 2008 and started as of 1st January 2009)

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

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

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)

Wolfgang Nellen (Since 26 November 2011-following the loss of Constantin Drinas in July 2011)

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

2. Education Committee Meetings

In 2012, the FEBS Education Committee held two meetings, both of which were annexed to the Workshops organised by the Committee (to be more economical and also save time):

- **First (Spring) Meeting in Izmir on March 31st, 2012**
- **Second (Autumn) Meeting of ED-COM in Cambridge on December 18th, 2012**

1. Spring Meeting of the Education Committee:

It was held in Izmir after the FEBS Education Workshop, as all the members of the Committee participated in the Workshop and were available for the Meeting.



FEBS EDUCATION COMMITTEE MEETING
MARCH 31ST, 2012, IZMIR
09.00-17.00
HOTEL KAYA IZMIR Convention Center
Istanbul Lounge

Agenda and Short Summary

(1) Welcome, apologies

Apologies were received from the the ex-officio members of the Education Committee. Karmela Barisic, Tomas Zima, Keith Elliott, Wolfgang Nellen, Angel Herraiz and the meeting was chaired by Gul Guner. Jacques Henry-Weil, Chair of the Sicnece and Society Committee, who was invited to Izmir from outside of FEBS, also attended part of the time during the discussions on the collaboration between the two committees, specially for the Sevilla events.

(2) Remembering Costas Drinas (1950-2011)

Our distingusihed member of Education Committee, Costas Drinas was sadly lost in July 2011 and the Committee members remembered him to our new members. The Tribute to Constantin Drinas which appeared in FEBS News issue was distributed:



It was with great sorrow that we learned about the sudden and tragic loss of Costas Drinas on 5th July 2011. He was last with us at the latest FEBS Council Meeting in Torino, Italy (30th June – 1st July). As usual, he contributed positively and significantly to the discussions. My last communication with him was just the evening before the tragic accident, when we discussed by email his potential European Union project on the clearance of pollution in the Black Sea waters using microbiological methods, for which he was looked for partners from other countries, including Turkey.

Costas was elected to the FEBS Education Committee in 2008 and was a very important member, supporting every activity sincerely and wholeheartedly. We greatly enjoyed working with him and learned a lot from him. He was cooperative, creative and stimulating in all our endeavours – demonstrating to us how collegiality and friendship intermingled can yield a fabulous result. He hosted the FEBS Education Workshop in Athens in 2010, showing excellent

educational, collaborative, networking and organisational skills. He was dedicated to science and to education.

Costas was really a good friend to us all during his time on the Education Committee, and many of us knew him long before. He was sincere, honest, modest, and demonstrated exceptional human qualities; his caring attitude, support, friendliness and sense of humour will be sadly missed. We have realized the extent of his attachment to his family and to his colleagues.

There are very few people in one's life that one can consider as really special, but Costas was, indeed, one of them. We have lost a distinguished colleague and a dear friend.

Gül Güner-Akdoğan

Chair, FEBS Education Committee

(3) Adoption of the Agenda - Review of Minutes of Ljubljana Meeting, 5th November 2011
Minutes of Ljubljana Meeting were accepted as true minutes of the meeting.

(4) Committee Members

• **Presentations of the new Members of the Committee**

- Tomáš Zima
- Angel Herráez
- Wolfgang Nellen (Co-opted)

- **New Education Committee Members – as of 01.01.12**

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Co-Opted Member:

Prof. Wolfgang Nellen

Date of birth 16.09.1949

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(position + name of Institute)

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(5) Future Congresses:

- *Planning for Sevilla IUBMB-FEBS Congress (2012) and Collaboration with the Science and Society Committee (With participation of Jacques - Henry Weil)*
- *St. Petersburg FEBS (2013)-It was agreed that Gul Guner would ask Prof. Sacha Gabibo about the preferences of the Organisers for possible educational themes.*
- *Paris FEBS (2014) –Planning for this Congress will be carried out later in the year.*

(6) FEBS Education Workshops

(Information on this item follows later in the report).

- *What has been done so far- Overview*
- *Report on Slovenia Workshop (4-5th November, 2011)*
- *Preliminary Feedback on Izmir Workshop (29-30th March, 2012)*
- *Planning for Yerevan Workshop (8-9th October 2012)*
- *Planning for Cambridge Workshop (17-18th December 2012)*
- *Future Workshops (2013)*
- *Review of the Workshop Questionnaire*

The workshop questionnaire was reviewed and the 2012 version accepted (presented under the topic “Collaboration with Constituent Societies).

(7) Guidelines for organising FEBS Education Workshops

(8) A New FEBS Instrument: Short-term Training Fellowships for Biochemistry and Molecular Biology Education in Europe (Final Version)

(9) FEBS Education Platform (P Ott)

(10) Visibility of Education Committee Events on FEBS web-site

It was agreed that a better access to FEBS Education Activities would be solicited during the restructuring of FEBS web-site.

(11) Collaborations

- *Other FEBS bodies*
- *Outside of FEBS*
- *Wiley (Wiley resources for Workshop participants)*

Detailed information on some of the above items of the agenda are presented later in the report.

(11) Brainstorming:

- **Mission, vision and aims of FEBS Education Committee-New perspectives**

An evaluation of what the Committee has accomplished so far was done. It was generally agreed that we have established an infrastructure and an acceptable Standard for Workshops on Biochemistry and Molecular Biology Education at the European level, on innovative topics on education, and many Constituent Societies from all over Europe expressed interest. In line with the Statutes and By-laws of FEBS Education Committee, with the mission of promoting Biochemical Education to the highest level within Europe, further development in the exchange of learning resources and further dialogue with bodies within and outside of FEBS were recommended. On top of continuing these activities, the Committee could start thinking on “European Strategies for High Quality Undergraduate and Post-Graduate Education” . Further enhancement of the synergy of cooperation within the Committee, among all Constituent Societies of FEBS, and other international organisations was recommended.

(12) Any other business and date and lieu of the next ED-COM Meeting

The next Meeting of the Committee was agreed to take place in Cambridge, after FEBS

Cambridge Education workshop, on December 19th, 2012.



MINUTES OF THE

FEBS EDUCATION COMMITTEE MEETING DECEMBER 19th, 2012, CAMBRIDGE 09.00-17.00

Gonville and Caius College, Harvey Court, Green Room

1. Welcome, apologies

Apologies were received from the ex-officio members of the Education Committee (Israel Pecht, Alan Fersht, and Jaak Jarv) and from Karmela Barisic and Peter Ott.

Tomas Zima (TZ), Keith Elliott(KE), Wolfgang Nellen(WN), and Angel Herraiez(AH) were present and the meeting was chaired by Gul Guner Akdogan (GGA). Gregor Cicchetti (representing Wiley-Blackwell) was admitted during the agenda item where collaboration with Wiley was discussed.

2. Adoption of the Agenda and Review of the Minutes of Izmir Meeting (31 March, 2012)

The tentative agenda was adopted (as below) and the minutes of Izmir Meeting (31st March 2012) were accepted as true minutes of the meeting.

Adopted Agenda:

1. Welcome, apologies
2. Adoption of the Agenda and Review of the Minutes of Izmir Meeting (31 March 2012)
3. Preliminary Feedback on Cambridge Workshop
4. Restructuring of FEBS
5. Adapting to the New Budget of the Committee (2013) -Cutdowns?
6. Finding New Resources for the Education Committee: EU Project?
7. Discuss Strategies for Promoting Undergraduate and Post-Graduate Education in Europe (Mission of the Committee)-Standards?
8. Planning for the Education Activities of St Petersburg 2013 FEBS Congress
9. Planning for FEBS Education Workshops - 2013
10. Planning for 2014

11. FEBS Education Platform
12. Developing Learning Resources –Wiley and Blackwell
13. Collaborations
14. Any Other Business and the Next Meeting of the Committee

3. Preliminary Feedback on Cambridge Workshop

The general view was that the Cambridge Workshop turned out to be an excellent one. Most of the members thought that the workshop was very successful. It was agreed that hearing about the developments in the UK would have an impact on the participants. All thought that it was the best Education Workshop that FEBS Education Committee ever organised. KE further added that it was, indeed, the best one he had ever attended or participated in. All felt that the Venue offered by Gonville and Caius College was excellent and the organisation realized by the Biochemical Society was professional. The international participation from countries of the FEBS region outside of the UK brought a richness. The programme was such that it was “like a research symposium on education”. It was agreed that hearing about the developments in the UK would have an impact on the participants. This programme was in line with the perspective from the Biochemical Society and FEBS Education Committees. The Workshop was rewarding in two ways: helping the eastern European delegates in their education endeavour, and bringing out innovations in education to the western European delegates, along with sharing of experiences from both sides. Frank Michelangeli was credited for this rewarding outcome, as well as all those who supported and helped. In addition, the FEBS Education platform run efficiently by Peter Ott also enabled more interaction as well as offering the lecturers’ slides and access to the Wiley resources to all registered participants. The only difficulty that WN expressed, from the point of view of a lecturer, was “not knowing beforehand that the audience would be mostly faculty”. In fact, in many previous FEBS Education Workshops, the audience had been either a mixture of faculty and young scientists, or, mostly young scientists and PhD students. It was agreed that the participant list could be communicated to the members before the future workshops. In addition, it would be helpful to have an overview of the education system of the country where the Workshop took place. Altogether, it was a successful joint event and it was concluded that future collaborations between the Biochemical Society and FEBS Education Committees would be rewarding.

4. Restructuring of FEBS

GGA gave a brief report on the restructuring of FEBS. She asked the members to sign the letters sent by FEBS Treasury. In line with the FEBS strategy of careful spending of FEBS funds, Gul asked the members to try to reserve their flight tickets at least four months before the traveling time. The members expressed their agreement but, in order to do that, given that economic flight fares are non-refundable, they would expect that for an exceptional unforeseen circumstance where the intended trip could not be realized, FEBS Treasury would understand.

In addition, Gul communicated that the members should make sure that they have their own travel insurance during any FEBS event. It was also agreed that the activities of the Education Committee would be finetuned in line with the economical measures.

5. Adapting to the New Budget of the Committee (2013) - Cutdowns?

In order to adapt to the new budget of the Committee (2013) and for the future years, the following measures were discussed and agreed:

- (1) To reduce the number of Committee meetings (formerly, it was twice a year) ; organise ONLY one official Education Committee meeting each year and to organise an “unofficial” committee meeting during the yearly FEBS Congress, where those members who were either invited or supported by other funds, could join.
- (2) To reduce the number of educational activities organised during the yearly FEBS Congresses- from two educational workshops to one educational workshop (but to keep on with the CV advising activity (jointly with the FEBS Working Group on the Careers of Young Scientists) and other activities such as poster sessions on Biochemical Education.
- (3) If possible, in order to reduce the costs, to organise the Committee meetings as an annex to an education Workshop, whenever the workshop is held in a country where transportation is feasible.
- (4) To reduce the number of FEBS Education Workshops, as well as the number of trainers for the Workshops and try to involve some competent faculty members from the host country to reduce the costs.
- (5) In line with the above mentioned precautions and taking into consideration the mission of FEBS Education Committee, a reasonable budget was composed, to be proposed to FEBS Treasury and to the FEBS Finance Committee (Budget Proposal- will be sent later)

6. Finding New Resources for the Education Committee: EU Project?

It was agreed that in order to provide a wider network and stronger funding to attain the mission of FEBS Education Committee of promoting molecular life sciences education throughout Europe, the possibility of applying for a EU Project would be considered.

It was thought 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. Standards and content of molecular life sciences education programmes are inconsistent, and the transparency and comparability of qualifications are limited. There is a growing need to train contemporary scientists who are well-qualified not only in science and research, but also in the educational aspects of scientific research. Therefore, the new generation molecular scientists should be equipped with the transferable scientific skills and be capable of training students in this aspect, as well.

The preliminary "title" for such a project could be "How to Promote Scientific, Laboratory and Generic Skills of Young Scientists in Molecular Life Sciences in Europe".

It was suggested to look further on the EU framework programmes to find out what types of instruments could be used in order to develop a thematic network, including countries from the FEBS and associated FEBS region, to attain our goal.

7. Discuss Strategies for Promoting Undergraduate and Post-Graduate Education in Europe (Mission of the Committee)-Standards?

All agreed that throughout Europe, degrees in the molecular life sciences are heterogeneous and, it is a difficult procedure to build a comprehensive database. There are differences between degrees- even the terminology is different. On the other hand, the Committee would be happy to be dedicated in some way to promote the quality of molecular life sciences education in Europe.

As a preliminary solution to the complicated issue, the following strategy was suggested:

To start by doing "case studies" from selected institutions. In order to achieve a comparable database from these institutions, first of all, a "template" would be provided in order to perform the "case studies". Then, an analysis would be made of the different examples studied and the "best example" or the "model" would be described. This approach could be ultimately incorporated into the EU project proposal.

In addition, Frank Michelangeli had sent the Committee an e-mail with some very good suggestions for promoting education and following a brief discussion, it was agreed that these suggestions could be elaborated on, before the next meeting of the committee, and then conclusions could be reached when he would be present at the next meeting.

His e.mail is copied below, in order to allow time for thinking about the innovative ideas:

Dear Gul and the Ed comm, good to meet up with you and the rest of the committee again. I think this was a rather successful workshop with lots of new ideas and

thoughts about the future ways and approaches in which to educate our students.

I am sorry I could not make today's ed comm meeting. Here are a few ideas that I have regarding future policy / proposals.

1) It is clear that we need to engage more with children in the 7-13 years range to promote their interest and fascination in science. After 13 if they are not interested in science by then, then all is lost. How could we promote more science within schools for this age range? I like the idea of Wolfgang doing experiments within schools but this is for older students. Could something similar be done for the lower age range?

2) The biochemical society has a number of online resources specifically aimed at this age range. I wonder whether these could be mirrored on the FEBS site so that they can be accessed more widely across Europe. Any thoughts? please visit the biochemical soc website and look at the different resources for pre university students of all ages. If interested we could ask to see if they could be mirrored (or hyperlinked) onto the FEBS website for wider dissemination.

3) Improving practical and key skills in undergraduate students across Europe. It is clear that employers are looking for specific skills and attributes of their potential employees. Should we produce a document to highlight what we think are essential skills for the students to master during their degree studies. I have started to compile a list of these from the discussion groups I ran. Maybe we could expand on this and submit it to the relevant European biochem societies within FEBS for them to consider in their own educational establishments? This could then feed on to Europe wide core knowledge / quality that you were suggesting at the meeting.

8. Planning for the Educational Activities of St Petersburg 2013 FEBS Congress (July 6-11th, 2013)

The Education Committee would be represented by three activities during the 2013 FEBS Congress in St. Petersburg: A workshop, the traditional CV advising activity, and (possibly) a poster session on education.

(1) Workshop on "Molecular Life Sciences Education for the Needs of the Industry"

(Scheduled for Monday, July 8th, at 17:00-19:05)

This workshop had been agreed and the confirmed speakers were: Detlev Riesner (Germany) and Ruth Arnon (Israel). A third speaker was needed for talking on how the faculties prepare

students for the industry and Tomas Zima kindly accepted to give a talk on what they have been doing, in this perspective, in Charles University First School of Medicine.

The Co-Chairs of the Workshop would be GGA and KE.

(2) CV Advising Activity (Keith Elliott)

The CV advising activity, conducted by KE, has been very fruitful over the years. As is known, KE gave a talk during the Young Scientists' Forum on "How to Write a CV; How to Make the Most of Yourself?" and then asked them to prepare their CV's and present them to KE during the Congress days. It was discussed if this activity could be reduced to three days instead of five (for financial reasons) but then it was thought that the activity was worthwhile and the contact time with the young scientists should not be shortened, neither the number of CV's, reduced. Keith Elliott kindly accepted to continue this activity. It was also suggested to propose to the Chair of the FEBS Working group on Young Scientists if the registration, accommodation and travel expenses of KE could be shared.

(3) Possible Poster Session on Education

The first initiative in Seville had worked well-though the number of posters were 7- the poster session provided a good opportunity for a stimulating discussion on education and and it would be a good idea to pursue this activity during St Petersburg FEBS.

9. Planning for 2013 FEBS Education Workshops :

(1) **A general discussion** was issued on what "types" of Workshops FEBS Education Committee would be running. It was generally accepted that the following "categories" of Workshops would be worthwhile, depending on the demand and on the circumstances:

- **Workshops to "promote molecular life sciences education"** in the Eastern European countries, bringing together both young scientists and experienced faculty to reflect on educational issues of the country, in particular, discuss what could be done, and, also to set an example of how to train young scientists for professional scientific skills. In addition, workshops focused on particular topics such as "teaching molecular evolution" could also be designed with similar aims.
- **Workshops on "Innovations in Education"**- the type that the Education Committee has just successfully run in Cambridge- to bring together faculty and young scientists from all over Europe to discuss together innovations in teaching and learning, in the area of molecular life sciences and biosciences.

- **“Revisit Workshops”:** It was generally felt that a “revisit” could be performed to the same country where the workshop was first held, in order to discuss what has been done and to reflect on what could be done in the future. This type of workshops could be pursued in 4-5 years after the first experience.

(2) Organisation of 2013 workshops:

- **Gdansk (Poland) – 13th July, 2013**

Gdansk Workshop had been agreed (in 2011) between the Polish Society of Biochemistry and Molecular Biology and the FEBS Education Committee (Jolanta Baranska from the Polish side had been the initiator), and the topic would be “Teaching Molecular Evolution”- as a similar workshop would be (and actually was) run during the Sevilla Congress, feedback from this event would help shape this Workshop in Gdansk. In line with the cutdowns on the FEBS Education Committee budget, a general discussion was ensued on how to design this workshop with a good focus on the educational aspect, while not making a financial burden on the Committee. It was generally agreed that, altogether, three individuals could be supported as workshop trainers from FEBS (including the one person from FEBS Education Committee).

GGA informed the Committee that this Workshop would be part of a Summer School in Gdansk, organised by the Dean of the Intercollegiate Faculty of Biotechnology of Gdansk University, Igor Konieczny. Juli Pereto, one of the speakers in the Sevilla Workshop, would be a good candidate as a Workshop trainer in Gdansk, as he was both a good scientist and a good educator. In addition, it would also be a good idea to choose one person (from Europe) from the Konieczny list, who would emphasize on the relationship between science and education. It could be Jan I Anderson (Stockholm), as his research topic in molecular evolution is directly linked to the experimental work in the fields of protein biochemistry, molecular biology and some aspects of biotechnology, thus providing an excellent example of using molecular evolution to understand, and to teach biochemistry and related fields.

GGA proposed that there could be only one person from FEBS Education Committee could be a coordinator from FEBS Education Committee for this workshop and it would be excellent if it could be someone who could also make an input to the programme of the Workshop. At this point, AH made an excellent proposition: **To design “An In Silico practical: “Understanding Molecular Evolution”.** The aim would be to present a tool that instructors may use to support their students’ understanding of molecular evolution, in terms of protein sequence and three-dimensional structure, i.e. conserved and diversified domains within a protein family. It would be based on freely available software to configure a hands-on, practical activity. The Committee thought that this would be a “worthwhile educational event”, with the understanding that the hosts would also find it worthwhile-due to the fact that they represented the Biotechnology Faculty. GGA would be pursuing the communication further.

In terms of further support, Gul would also get in touch with the Science and Society Committee and with the new Chair of IUBMB Education Committee, Prof. Beiros to find out if they are interested in collaboration and could provide further support.

- **Tbilisi (Georgia) – 8-9th October, 2013**

A Workshop on Education in Tbilisi has been on the agenda of the Education Committee during the organisational episode of the Yerevan Workshop. In addition, the FEBS WGI visit to Tbilisi in October 2012 made it clear that there was a definite need for such a workshop (it is also indicated in the report of Mathias Sprinzl) and that there was also local interest, with a possible candidate for host ship, Prof. Dr. Revaz Solomonias who is the acting Secretary of AGB (Association of Georgian Biochemists), scientist at Institute of Physiology, Georgian National Academy of Sciences, and Professor and Director of the Institute of Chemical Biology, Ilia Tbilisi State University. Prof. Solomonias was responsible for the organisation of the FEBS WGI visit in October 2012.

The FEBS Education Questionnaire which has been filled-in by the AGB indicated that their preferred topics were:

- *Postgraduate education*
- *Problem-based-learning*
- *Designing laboratory practicals*

The following contributions were offered from the hosts:

Tbilisi Ilia State University would offer Workshop Venue, Participants registration, lunch for two days and coffee breaks. It is expected that the majority of participants would be from Tbilisi. Tbilisi I. Javakhishvili State University would also be actively involved in all these activities.

The preferred dates for this prospect workshop would be 8-9th October, 2013.

The possibility of finances and the programme for such a workshop was discussed. It was concluded that, taking into consideration the financial situation, a maximum of three trainers from FEBS Would be invited. With regards to the topics, GGA (Post-graduate education and problem-based learning) and KE (problem-based learning) and Wolfgang Nellen (designing laboratory practicals) would be suitable. Mathias Sprinzl would also be invited in case he could join from the Budget of the WGI.

In case of limitations of budget, this workshop can be postponed to 2014.

Revisit: Workshop to Sofia (Bulgaria)

The Education Committee received an invitation from Prof. Diana Petkova, the Chair of the Bulgarian Society of Biochemistry, to hold an Education Workshop during the traditional Kliment's days. It could be a one-day or a one and a half- day workshop, and the topics could be "post-graduate education, and scientific skills for young scientists (Project writing, CV writing, etc)". The Kliment's days were scheduled for 21-23rd November and the FEBS Workshop was proposed for Friday, the 23rd November.

The Committee thought that this would be a good occasion for a "Revisit type Workshop", after the first FEBS Workshop on Biochemistry education in 2008. It was decided that KE and GGA would do the revisit, as the topics were suitable for them and as they had been the FEBS trainers in 2008. The budget (if it permits) would be kept simple- the flights and two-day accommodation for two FEBS trainers.

10. Planning for 2014

- **FEBS-EMBO Congress, Paris (30th August- 4th September, 2014)**

GGA would get in contact with Prof. Frederic Dardel, the President of the French Society of Biochemistry and Molecular Biology and the Chair of the Congress, to ask what would be an interesting topic for an Education Workshop during this Congress.

- **Possibility of a Joint Workshop (FEBS-IFCC-ORPHEUS) on PhD training in Clinical Chemistry and Laboratory Medicine- Where are we heading?**

(during the IFCC Worldlab Istanbul 2014 - 22-26 June 2014)

Tomas Zima who is on the organising committee of this world Congress made the proposal, supported by Gul Guner who was on the international Scientific Advisory Board of the event. The main aim of this workshop would be to discuss recent trends in PhD education in clinical chemistry, clinical biochemistry, laboratory medicine, and related areas. The objectives would be:

- To discuss the recent trends in assuring the quality in PhD education
- To share examples of how this training is accomplished in different countries,
- To discuss problems and possible solutions

Tomas Zima and Gul Guner already had some funding to attend this event. The support of one speaker from the USA or Canada would be asked from the IFCC Education Committee and FEBS Education Committee agreed to support one speaker from Europe.

- **FEBS Education Workshops (2014)**

Interest was expressed from Ukraine and from Hungary for 2014 and the FEBS education Committee questionnaire would be sent to them in order to learn more.

11. FEBS Education Platform (<http://edu.febs.unibe.ch>)

Peter Ott could not attend the Meeting but had done efficient preparations for the Cambridge Workshop- informing the participants of FEBS Education Platform and how to register, informing the Workshop speakers and trainers about sending their presentations for uploading on the platform, collecting them and uploading according to the speakers' preferences (before, during or after the Workshop) and adding a link to the Wiley resources-Book chapters relevant to the Workshop topics, as selected by GGA. The Committee agreed that FEBS Education platform worked also well for the Cambridge Workshop.

12. Developing Learning Resources

- **Pilot Project with Wiley-Blackwell**

Gregor Cicchetti from Wiley-Blackwell was present for this part of the meeting. Firstly, it was pointed out that the pilot Project - the two previous FEBS Education Workshops (Izmir, Yerevan) , where Wiley offered Book Chapters to be uploaded on FEBS education platform for six weeks after the workshop, had worked well and that the survey results from Izmir were encouraging. A survey would also be performed after the Cambridge Workshop, and the results would be considered at the end of the six weeks.

Wiley offered to perform the same during the St. Petersburg FEBS Congress Education Workshop (Molecular Life Sciences Education for the Needs of the Industry) - the first time for a big Congress. The Committee members generally thought that the participants of the FEBS Education Workshop would also benefit from such an offer. This proposal was approved by the Committee and the practicalities were considered:

- *The main issue was how to get the full list of attendance (including the e.mails) at this workshop- as it was not on a registration basis, as were the Workshops run in different countries. Gregor Cicchetti suggested to ask his company if they could procure a "scanner" with which the name badges would be scanned. Then, the e.mail addresses could be procured from the Congress Secretariat, with the permission of the Organisers.*
- *A discussion ensued on what type of information could be offered and here are some of the suggestions: Book Chapters, Journal articles on skills for the industry, ethics and other related subjects.*
- *It was agreed to inform Peter Ott and also take his suggestions.*

13. Collaborations

It was generally agreed that collaborations within and outside of FEBS should be continued and new collaborations solicited, and a special effort would be made to continue the collaboration with the IUBMB Education Committee's new Chair. In addition, within the framework of Paris 2014 FEBS-EMBO Congress, collaborations would be possible at a certain level with EMBO and with the French Society of Biochemistry and Molecular Biology, while Worldlab 2014 would offer a platform for collaboration with IFCC and with ORPHEUS.

14. Any Other Business and Next Meeting of the Committee

The next meeting of the Committee was agreed to take place in Prague, on Saturday, April 20th, 2013. The Meeting would be kindly hosted by Tomas Zima.

4. Representation at EX-COM Meetings and Council

The Education Committee was represented by Gül Güner-Akdogan (Chair of the Education Committee) at FEBS Seville Council (9-10th September, 2012) and two EX-COM Meetings (Prague, 21st April 2012 and Sevilla, 4th September, 2012), as well as during the FEBS WGI visit to Tbilisi (Oct 19-20th, 2012).

5. Educational Activities

5.1 Educational Activities at the IUBMB- FEBS Congress, Sevilla, 4-9th Sept 2012

22nd IUBMB Congress & 37th FEBS Congress: Sevilla, 4-9 September 2012

Biochemistry and Molecular Biology Education Activities

Plenary Lectures

- **Edward Wood Lecture (PL15)**
 - Sunday, 9th Sept., 11:00-12:00
 - Bruce Alberts (San Francisco, CA, US)

Workshop1

- **Teaching Molecular Evolution: a Unifying Principle of Biochemistry (W10)**
 - Wednesday, 5th Sept., 15:30-17:00
 - Speakers:
 - Juli Peretó (Valencia, ES)
 - Peter Schuster (Vienna, AT)
 - Chairpersons:
 - Keith Elliott (Manchester, UK)
 - Athel Cornish-Bowden (Marseille, FR)
 - A joint activity of IUBMB Committee on Education, FEBS Education Committee and FEBS Science and Society Committee

- **Research into Effective Teaching Strategies: What Biochemistry is Learning from Other Sciences (W11)**
 - Thursday, 6th Sept., 15:30-17:00
 - Speakers:
 - Joe (E. F.) Redish (Maryland, MD, US)
 - Roy Tasker (Penrith, AU)
 - Kathleen M. Fisher (San Diego, CA, US) (*pending*)
 - Chairpersons:
 - Susan Hamilton (Brisbane, AU; IUBMB Comm. Educ.)
 - Manuel João Costa (Braga, PT; IUBMB Comm. Educ.)
 - A joint activity of IUBMB Committee on Education and FEBS Education Committee
- **Science in School: Biodiversity and Evolution (W09)**
 - Saturday, 8th Sept., 15:30-17:00
 - Chairpersons:
 - Isabel Varela-Nieto (Madrid, ES) [ivarelanieto@gmail.com]
 - Miguel Castanho (Lisbon, PT)
 - Speakers:
 - Pedro Jordano (Sevilla, ES)
 - Juli Peretó (Valencia, ES)
 - Panel Discussion:
 - Javier Fernández Portal (Madrid, ES)
 - Gérard Cobut (Brussels, BE)
 - Dolores Vega (Sevilla, ES)
 - Isabel Varela Nieto (Madrid, ES)
 - Miguel Castanho (Lisbon, PT)

A joint activity of FEBS Education Committee, FEBS Science and Society Committee and SEBBM

IUBMB–FEBS 2012 witnessed a number of stimulating educational events attended by a high number of interested participants from all over the world.

1. Workshop: "Teaching Molecular Evolution: A Unifying Principle of Biochemistry"
2. Workshop: "Research into Effective Learning Strategies: What Biochemistry Is Learning from the Other Sciences".
3. Workshop: "Science in School: Biodiversity and Evolution".
4. Poster Session on Biochemical Education
5. CV Advising Sessions

A detailed description of these events follows.

The first Workshop: "Teaching Molecular Evolution; A Unifying Principle of Biochemistry", co-Chaired by Athel Cornish Bowden (Marseilles) and Keith Elliott (FEBS Education Committee) was held on Sept. 5th, 15.30–17:00. This event, treating a primordial issue on biochemical science and education, was attended by about 150 participants, both faculty and PhD students from all over the world.

This workshop clearly presented an opportunity for participants both to learn about the basic principles underlying molecular evolution and, also, to understand how these principles can be intricately woven into the teaching of biochemistry. The first speaker, Juli Pereto from Valencia (Spain) talked on "Teaching on the origin of life or the emergence of biochemical functions". Professor Juli Peretó is Professor of Biochemistry and Molecular Biology at the University of València.

He teaches metabolism with an evolutionary flavor to biologists, biochemists and biotechnologists. He shared with the audience the subtle aspects of teaching this exciting topic.

Then, Peter Schuster from Vienna (Austria) gave his fascinating talk on "Molecular evolution as a unifying principle of biochemistry". Professor Peter Schuster is a professor of theoretical chemistry and is Professor Emeritus at Vienna University. His major research topic is *in silico* evolution at molecular resolution and he shared this exciting concept. The panel discussion at the end of the session allowed the participants to actively participate and express their thoughts and experiences, focusing on the significance of this concept in understanding basic biochemical mechanisms.

The second Workshop: "Research into Effective Learning Strategies: What Biochemistry Is Learning from the Other Sciences" was co-organised by IUBMB and FEBS Education Committees

There were two excellent speakers:

Roy Tasker (Penrith, AU). Professor Roy Tasker, a Professor of Chemical Education at the University of Western Sydney, Australia, has interests in how and what students learn in chemistry using interactive multimedia resources – in particular, from learning designs that develop student mental models of the molecular world.

The second speaker, Dr Helen Keates (Gallo, AU) is a lecturer in Veterinary Science in the discipline of anaesthesia at the University of Queensland, Australia. Her interests in education include using assessment to drive student learning outcomes and facilitating the transition of her students from being able to achieve high grades in written assessments to being able to use logical thought processes to solve complex and unfamiliar clinical problems. Her work in education is being recognised for its relevance to many disciplines beyond veterinary science. In her talk on, she presented how she used her interests to promote the veterinary science education in her school as well as setting an example for other sciences and there were important messages to take.

This workshop, co-chaired by Susan Hamilton and Manuel João Costa (Braga, PT; IUBMB Education Committee), witnessed stimulating discussions after the talks.

The third Workshop: Science in School - Biodiversity and Evolution was held on Sept. 8th, 15:30–17:00

This workshop was organized by FEBS Education Committee with kind support from the SEBMB, Isabel Verela Nieto. Miguel Castanho (President of the Portuguese Society for Biochemistry (SPB) and Member of the FEBS Education Committee) co-chaired this event with Isabel.

The event took place mainly in Spanish —due to the fact that the target audience is "local high school teachers". However, in order to attract other interested Congress participants to this event, a simultaneous translation into English was arranged.

The Congress organization issued "Certificates" for the attendee high school teachers, allowing them to get permission and to receive "credits" from their respective administrations. In addition, registration fees were kindly waived for them. The workshop was attended by around 120 participants all together, with at least 60 high school teachers- which was, indeed, a great success!

The introductory talks were given by the two following invited experts in Evolution and Biodiversity: Pedro Jordano (Professor of Research. Integrative Ecology Group Estacion Biológica de Doñana, CSIC. Seville, Spain. The title of his talk was " Doñana as an example of research on biodiversity"

The second talk was given by Juli Pereto (Please see above) on "Natural selection: Not the same as origin of life".

A panel discussion, taking place after the talks, consisted of the following panelists:

- Javier Fernandez Portal, Treasurer of the Spanish Olympiad of Biology
- Gérard Cobut , Association des Professeurs de Biologie, Belgium Olympiad of Biology
- M^a Dolores Vega, Seville Teachers' Center

Lively discussions among panelists and interested participants were ensued.

Poster Session on Biochemical Education; Thursday, 6th Sept, 13:30-15:30

This session was organised for the first time during the FEBS yearly congresses. It grouped all communications in poster form, related to any aspect of undergraduate or graduate molecular life sciences education. Six excellent posters were received and lively discussions were generated during this session.

All these educational events were co-organised by FEBS Education Committee (Chaired by Gül Güner), FEBS Science and Society Committee (Chaired by Jacques Henry-Weil) and IUBMB Education Committee (Chaired by Susan Hamilton), with the kind support of ESBMB (Chaired by Miguel de la Rosa and the educational events coordinated by Angel Herraiz).

All FEBS members (or at large) interested in biochemical education are invited to join FEBS Education Platform run by Peter Ott:

www.unibe.febs

CV Support for YSF participants

Keith Elliott from FEBS Education Committee was again invited to attend the pre-congress Young Scientists Forum (YSF) and to take part in the careers roundtable where he talked about "Preparing your *curriculum vitae*- How to make the most of yourself!" For many of the YSF participants this was the first time that anyone had formally talked to them about preparing a CV.

This year 46 young scientists from 29 different countries took advantage of the offer of a one-to-one session at the main congress where Keith (and Jason Perret) discussed the CVs in detail.

We thank all stakeholders who made it possible for us to run these activities, and our special, deepest thanks go to the organisers-Miguel de la Rosa and his efficient, lively team...

5.2 FEBS Education Workshops:

Background and Historical Note:

Besides organising educational events during every yearly FEBS Congresses since 2002-then as the Working group on Teaching Biochemistry, under the Chairship of Prof. Jean Wallach), FEBS

Education Committee has been also involved with the well-accepted and rewarding project of holding Workshops on Biochemistry and Molecular Biology Education in different countries of FEBS Constituent Societies, since the year 2008. Sofia, Napoca-Cluj, Athens, Opatija near Rijeka, Tallinn, Bratislava, Ljubljana, and Izmir Workshops have been held so far and future workshops have already planned for the coming years.

These workshops were first conceived by the late Chair of FEBS Education Committee, Prof. Edward J. Wood, whose letter to the Constituent Societies (03.08.2011) is copied below:

FEBS Educ Workshops 0308

The Education Committee of FEBS and Workshops on Education

“Successful education is not just about “giving” information to passive students and then assessing whether they can repeat the information in an examination. In recent years, in several countries, there have been “Assessments of the Quality of Education” in universities, often instigated by governments anxious to assure themselves that university teaching is receiving proper attention. This has resulted in lecturers and professors reviewing how they teach (and perhaps trying to do better in the light of psychological and educational studies about how people learn), and of universities examining the procedures by which teaching quality is assured.

Some years ago the Committee on Education of the International Union of Biochemistry and Molecular Biology (IUBMB) was in the habit of offering Workshops on Education on request from member Societies. These Workshops, organized by Professor Frank Vella, typically took place over three days, were held in many countries of the world, and the issues discussed were concerned with increasing the effectiveness of teaching and enhancing students’ experience of teaching so as to improve their learning. There was no set formula for the activities and the issues discussed were very varied. The Workshop “team” usually consisted of three individuals from different countries who had some expertise in teaching. There was discussion of teaching to large classes, laboratory practical teaching, small-group teaching, computer-aided instruction, problem-based learning, postgraduate education [1], training for reading the scientific literature, and many other topics. Indeed, all the issues concerned with teaching, learning and assessment were up for discussion. Usually members of the visiting team gave one “scientific” lecture on their research topic, and often some local individuals (for example at the post-doc level) were invited to speak about their research or prepare a brief critical summary of a current paper from the literature for presentation. The main activity however, was not “scientific” – it was concerned with the process of teaching, sometimes called ‘pedagogy’ [2], and how the activity could be made more effective.

The Education Committee of FEBS now proposes to try to offer similar Workshops and may do this in collaboration with IUBMB. Since the original IUBMB Workshops mentioned above, things have moved on considerably in the world of university education. Although at that time we had “distance education”, we now speak of “E-learning” [3] and “E-assessment” because we now have the Internet and email, making distance communication easier and more immediate. This has changed the way that

we teach and the way in which students learn. Less may happen in formal classes, students may not be physically present on a campus, and may do their learning at their convenience at any time of the day or night depending on their other activities [4]. Less and less do students use libraries because they have Google and Wikipedia, and one suspects that they are less skilled in critically appraising the information that they get hold of. In addition, many of us have been faced with increasingly larger classes of less well prepared or less committed undergraduates, making the task of teaching effectively more challenging as well as increasing the assessment load. There are also questions about assessment: what are the 'best' methods, linking assessment to teaching and learning? How do we make the best use of our time? And what about giving feedback – a process which is widely held to be extremely important in encouraging effective learning? So, there are many 'new' issues in pedagogy to be dealt with alongside the 'old' ones.

The FEBS Education Committee is still discussing how Workshops might be run and what the financial implications might be. In the IUBMB-sponsored Workshops, typically IUBMB provided the travel money for the visiting team, and accommodation was paid for locally, often in campus guest houses, sometimes in modest hotels. Sometimes it was possible to obtain additional funds to support the travel and accommodation of participants, sometimes not. Sometimes individuals from neighbouring countries could be invited and sometimes the Workshop Team visited several countries in a region. Usually Reports of the Workshops were published in Biochemical Education (and these can be read in back-numbers of that journal).

If you, through your local Biochemical Society, would be interested in discussing the possibility of a Workshop – perhaps with a view to reviewing the teaching methods used in your institution, then in the first instance please contact me: e.j.wood@leeds.ac.uk and we can begin to consider the possibilities and feasibility of a visit.

Ed Wood

(Chairman, FEBS Education Committee)

[1] The IUBMB produced a document "Standards for the PhD Degree in the Molecular Biosciences", available as a download from their website: www.iubmb.org.

[2] Pedagogy: Frank Vella tells me that a paedagogus was a Greek slave employed by wealthy Romans so that their children could become bilingual in Greek and Latin?

[3] The FEBS Education Committee has organized a Workshop on E-learning to take place at the FEBS/IUBMB Congress in Athens in June/July of this year when individuals who have organized e-learning courses will speak about their experiences and the problems they faced, to be followed by a round-table discussion. This workshop is scheduled to take place at 17.40–19.40 on Sunday 29th June.

[4] Another word is andragogy which implies 'teaching to adults' rather than to children, in other words treating our students as adults who take responsibility for their own learning.

- **FEBS Izmir Workshop on Biochemistry and Molecular Biology Education**
“Trends and Tips”

**(Trends in Biomolecular Science Education and
Tips for Postgraduate Students and Beyond)
(29-30th March 2012)**

FEBS Education Committee: : K. Barisic, K. Elliott, A. Herraez, W. Nellen, P. Ott, T. Zima, and G. Güner-Akdoğan (Chair)

FEBS General Secretary: I. Pecht

With Kind Support from: F. Goni, D. Riesner, K. Mattick, H. Abacıoğlu, F. Sağın

Workshop Coordinator: F. Sağın (Chair-Educational Activities Committee, Turkish Biochemical Society)

Hosted by: N. Özer (President-Turkish Biochemical Society)

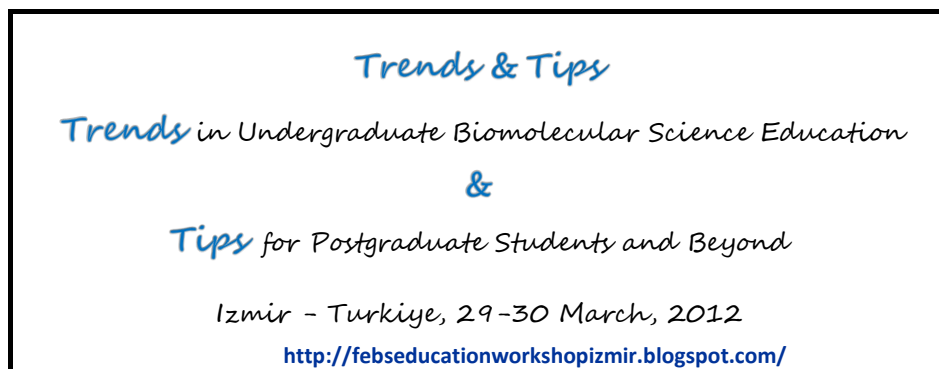
Background

This FEBS Education Workshop was conceived during the Chairship of late Prof. Ed Wood. Turkish Biochemical Society, together with the Izmir Branch, was ready to host this significant Workshop, on 29-30th March, 2012. Prof. Nazmi Ozer, President of Turkish Biochemical Society hosted the Workshop with the elegant Coordination of Prof. Ferhan Sagin, Chair of the Educational Activities of Turkish Society of Biochemistry. The workshop was attended by 105 participants including the trainers.



FEBS Izmir Workshop participants with FEBS trainers (March 30th, 2012)

FEBS Workshop on Biochemistry and Molecular Biology Education



FEBS Education Team: K Elliott, A Herraiez, W Nellen, T Zima, and G. Guner-Akdogan

FEBS General Secretary: I Pecht

With Kind Support from: F Goni, K Mattick, D. Riesner, and H. Abacioglu,

Coordinated by: F. Sagin, Ege University -Department of Biochemistry

Hosted by: N. Ozer, President, Turkish Biochemical Society

The flyer elaborated for the Workshop, together with Turkish Biochemical Society, is presented below:

The aim of this workshop is to promote biochemistry and biomolecular science education by introducing new trends in undergraduate education as well as presenting tips for the future scientists. Thus it will not only provide opportunities to enhance excellence and innovations in teaching at the undergraduate level, but also create a platform for postgraduate students to share and learn from the experts, the issues from peer to peer to public communication. As science touches every part of life in today's global society, it is imperative that postgraduate students learn to communicate with the public, be willing to do so and consider it their duty to do so. It is increasingly important that developments in science, medicine and technology are effectively communicated so as to allow individuals to have an informed opinion on controversial issues. Thus, the workshop also aims to present the challenges of science communication to the public and to train students in transferable skills pivotal to communicating science across a range of professional settings.

The workshop will introduce two special segments which will make it more engaging and interactive for the maximum benefit of the participants:

Great Ideas and Best Practices in Biochemistry Education – New trends in education strongly advocate greater integration of disciplines and more use of innovative technologies with greater involvement of students in the teaching-learning process itself. Such major paradigm shifts have made it imperative for faculty to adopt the best practices in the design and

delivery of the basic science curriculum. Thus this segment is primarily aimed to enhance understanding of these issues and generate discussion through presentation of creative thoughts and best practices which can be adopted. It will involve 10-minute short presentations from the participants.

Meet the Expert – Education and career are closely connected- thus students at the postgraduate level need to implement the skills and information of scientific nature for professional development. This segment is aimed to provide a face to face coaching for future people of science on issues like internet searching, CV writing, oral communications as well as introducing new perspectives for fellowships programs in science.

Objectives of the Workshop

- **To introduce the paradigm shift in biomolecular science education:**
- To discuss the main characteristics of integration of basic science to medical sciences and/or other core disciplines
- To demonstrate examples from current applications
- To enhance understanding of new educational technologies (e-learning, blogs, etc) and discuss their role in basic science education
- To demonstrate examples from various applications
- To share creative thoughts and best practices on integration and educational technologies
- **To present and discuss the issues related to science communication to public**
- To introduce science communication initiatives in developing countries and address issues like science journalism, technology and communication, public perception of science
- To discuss & share good practices in science communication area and to design strategies to reach non scientific audiences
- **To discuss the elements of professional development in science**
- To present tips on how to choose and apply for funds and programmes
- To introduce what the industry expects from researchers
- To present tips on CV writing
- To present tips on the use of internet wisely
- To present tips on scientific presentation

Who Should Attend?

Faculty, post-docs and PhD students from biochemistry, molecular biology, medicine, pharmacy, science education, and all disciplines of basic sciences are invited to attend.

Who are the Workshop Trainers?

Members of FEBS Education Committee, who have participated in several FEBS Workshops conducted in many European countries since 2005, and world experts from related areas.

For More Information:

Ferhan Sagin, Workshop Coordinator

Gül Güner, Chair, FEBS Education Committee

Programme

March 29th, 2012-Thursday

09:00-09:30 Registration

09:30-10:15 Welcome and Opening remarks

F. Sağın-Workshop Coordinator

G. Güner Akdoğan- Chair, FEBS Education Committee

N. Özer- President, Turkish Biochemical Society

10:15-10:30 Coffee break

Session 1 Trends in Undergraduate Biomolecular Science Education - Integration

10:30-11:00 "Integration of biomolecular sciences in undergraduate curriculum"

K. Mattick (UK)

11:00-11:45 Great Ideas and Best Practices (15 min each)

1. "Integration and PBL- Manchester experience K Elliott ? " (UK)

2. "Team-Based learning" F Sağın (Turkey)

3. "Using clinical scenarios in PBL as a tool for integration -Dokuz Eylül Experience"

G Guner (Izmir)

11:45-12:00 Discussion – Q&A

12:00- 13.30 Lunch

Session 2 Trends in Undergraduate Basic Science Education –New Technologies

13:30-14:00 "New technologies and making educational use of them"

A. Herraez (Spain)

14:00-14:45 Great Ideas and Best Practices (15 minute presentations)

1. "Medical Faculties Network (MEFANET) aimed to advance learning with the use of modern information technology." T Zima (Prague)

2. "The impact of online education in clinical biochemistry, the foundations and frontiers" T Özben (Turkey)

3. "Educational use of molecular dockings in drug designs: a sample study"

L. Çavaş (Turkey)

14:45-15:15 Discussion – Q&A

15:15-16:00 Coffee Break

Session 3 Meet the Expert (Upon registration)

16:00-17:30 Simultaneous face to face consultations of participants with the experts

| | | | | |
|----------------------------|-----------------|---------------|--|--|
| Integration (K Mattick) | PBL (K Elliott) | TBL (F Sağın) | Educational Technologies (A.Herraez) | Medical Faculties Network (T Zima) |
| | PBL (G Guner) | | | |

17:30 -19:00 Poster Session

19:00 -21:00 Welcome Cocktail

Day 2 Friday March 30th, 2012

Session 4 Science Communication

09:00- 09:30 "Science communication: Educating the public"

W Nellen (Germany)

09:30- 10:00 Small Group Work

(Dividing into groups: communication ethics, science journalism, perception of science, etc)

10:00-10:30 Presentation of Group Reports and General Discussion

10:30-10:45 Coffee break

10:45- 12:15 **"How to write and publish a scientific article- Editor's view" Interactive lecture**

F Goni (Spain)

12:30-13:30 Lunch

Session 5 Professional Development of Young Scientists

13:30-14:00

"Essential Competences and Skills for the Industry"

D. Riesner (Qiagen, Germany)

14:00-14:15 Discussion – Q&A

14:15-14:45 **"Funds and Programmes for Young Scientists"**

(FEBS Fellowships and Programmes, EMBO Fellowships, Marie Curie, EU Programmes)

T Zima (Prague)

14:45-15:00 Discussion – Q&A

15:00-15:30 **"CV Writing- How to target it successfully"**

K. Elliott (Manchester)

15:30-15:45 Discussion - Q&A

15:45-16:00 Coffee break

16:00-16:30 **"Finding one's way in the internet: where to search effectively"**

A Herraez (Spain)

16:30 -16:45 Discussion - Q&A

16:45 -17:15 **"How to give a scientific lecture?"**

H. Abacioğlu (Turkey)

17:15 -17:30 Discussion - Q&A

Session 6 Meet the Expert (Upon Registration)

17:30 -18:30 Simultaneous face to face consultations of young scientists with experts

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|---|----------------------------------|----------------------------|---------------------------------------|---|
| Career Planning in the Industry (D. Reisner) | Funds & Programs (T. Zima) | CV Writing (K. Elliott) | Using the Internet (A. Herraez) | Oral presentations (H. Abacioğlu) |
|---|----------------------------------|----------------------------|---------------------------------------|---|

18:30-19:00 Closing- Poster Awards-Feedback

20:00- 23:00 Gala Dinner

Short Report of the Workshop:

FEBS Education Committee (Keith Elliott, Tomas Zima, Angel Herraez, Wolfgang Nellen, Karmela Barisic, and Gul Guner Akdogan), together with support from Jacques Henry Weil (Chair of FEBS Science and Society Committee) aimed to promote biochemistry and biomolecular science education by introducing new "trends" in undergraduate education (Integration, PBL, TBL), as well as presenting "tips" for the future scientists. With the excellent contributions of Felix Goni (Former Chair of FEBS Publications Committee), Detlev Riesner (Quiagen), Karen Mattick (Peninsula Medical School, UK), Ferhan Sagin (Izmir), Tomris Ozben (Antalya) and Hakan Abacioglu (Izmir) the workshop created a platform providing not only opportunities to enhance excellence and innovations in teaching, but also, for postgraduate students, great opportunities and tips for excellence in research. The scientific programme was made more interactive with some participants making short

communications in the sessions named “Great Ideas and Best Practices”. At the end of each day, participants were provided the opportunity for “one-to-one” dialogue with the “experts”- “Meet the expert sessions” organised in small groups, according to the choices of the participants, involved issues like: (First Day): PBL in Dokuz Eylul, Izmir (Gul Guner Akdogan), PBL in Manchester (Keith Elliott), TBL (Ferhan Sagin), New technologies and Making educational Use of them (Angel Herraiez), Medical Faculties Network (Tomas Zima) Day 2: Internet Searching, CV Writing (Keith Elliott), Funds and programmes (Tomas Zima) , How to Make a Scientific Presentation (Hakan Abacioglu) , Science and Society Dialogue (Jacques Henry Weil)... These two segments represented innovation of the FEBS Education Workshop programme. On top of these interactive sessions, a poster display (encompassing 55 posters) on educational issues attracted much attention and provided the opportunity for more interaction. At the Closing session, prizes were offered for the three best posters.

Today, it is increasingly important that developments in science, medicine and technology are effectively communicated so as to allow individuals to have an informed opinion on controversial issues. Thus, the Workshop, with great contributions from Wolfgang Nellen and Jacques Henry Weil, presented the challenges of science communication to the public and trained students in transferable skills pivotal to communicating science across a range of professional settings.

The postgraduate student participation was (happily) dominant (2/3rds of the participant body) and made possible by strong local support. Turkish Foundation of Science and Technology provided internal travel and accommodation fellowships for 25 PhD students from all over Turkey. The City of Balçova (Izmir) offered the registration for 40 students living in the Izmir region.

The arrangements in the fascinating Thermal Hotel of Kaya-Izmir, were in the excellent hands of the Turkish Biochemical Society Izmir Branch. The Student support team (wearing orange tea-shirts-as seen on the photo of the cover page), chaired by Ferhan Sagin, made significant footprints on the success of the Workshop.

In oral and written feedback obtained from the participants, 100 % of the participants rated the workshop as ‘excellent’ (88.2%) or ‘very good’ (11.8%). Detailed data on the feedback are given below. The FEBS workshop trainers found the experience stimulating and productive. Our appreciation goes to everyone who made this Workshop possible.

FEEDBACK RESULTS

FEBS Workshop on Biochemistry and Molecular Biology Education Feedback Form

Trends & Tips

Trends in Undergraduate Biomolecular Science Education

&

Tips for Postgraduate Students and Beyond

Kaya Izmir Thermal & Convention, Izmir - Türkiye, 29-30 March, 2012

("5" is "excellent" "1" is "very poor")

| | 1 | 2 | 3 | 4 | 5 |
|--|---|---|-----|----|------|
| Opening session | | | 3.4 | 30 | 66.6 |
| Suggestions: I think no need for the presentation by Izmir (<i>Chamber of Commerce</i>). | | | | | |

| Session: "Trends in Undergraduate Basic Science Education - Integration" | 1 | 2 | 3 | 4 | 5 |
|--|---|------|-------|-------|-------|
| Integration of biomolecular sciences in undergraduate medical curriculum | | | 4.65 | 41.86 | 53.48 |
| Experience from Hacettepe University School of Medicine | | | 25 | 32.5 | 42.5 |
| Use of "Dry Laboratory Practicals" for integration of PBL learning objectives into vignettes: a Dokuz Eylül University experience | | 4.87 | 21.95 | 34.14 | 39.02 |
| Group Work that Works! - Use of team-based learning (TBL) for effective integration of basic science concepts into real life cases | | | 2.27 | 20.45 | 77.27 |
| Suggestions: Since there are posters about Dry Laboratory Practicals I think there was no need for the presentation..... | | | | | |

| Session: "Trends in Undergraduate Basic Science Education - New Educational Technologies" | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| | | | | | |

| | | | | | |
|--|--|-------|-------|-------|-------|
| New technologies and making educational use of them | | 2.43 | 12.19 | 39.02 | 46.34 |
| Medical Faculties Network (MEFANET) aimed to advance learning with the use modern information technology | | 0.025 | 22.5 | 32.5 | 42.5 |
| The impact of online education in clinical biochemistry, the foundations and frontiers | | 7.5 | 22.5 | 25 | 45 |
| Educational use of molecular dockings in drug designs: a sample study | | 8.1 | 24.34 | 32.43 | 35.13 |
| Suggestions: This is a session telling us about things that we know some of them. So it was not too much useful. | | | | | |

| Session: "Meet the Expert" | 1 | 2 | 3 | 4 | 5 |
|--|---|------|------|-------|-------|
| <i>Integration</i> | | 5.5 | 5.5 | 16.66 | 72.22 |
| <i>Problem-Based Learning-(PBL) Manchester Experience</i> | | | | 37.5 | 62.5 |
| <i>Problem-Based Learning (PBL)-Dokuz Eylül (Izmir) Experience</i> | | | | 8.33 | 91.66 |
| <i>Team-Based Learning (TBL)</i> | | | | 5.5 | 94.44 |
| <i>Educational Technologies</i> | | 5.88 | 5.88 | 35.89 | 52.94 |
| <i>Medical Faculties Network</i> | | 7.14 | | 21.42 | 71.4 |
| Suggestion.: | | | | | |

| | 1 | 2 | 3 | 4 | 5 |
|--|---|------|-------|-------|-------|
| Session: Science Communication | | | | | |
| Communication of science: Educating the public | | 3.03 | 12.12 | 21.21 | 63.63 |
| Small group work (Dividing into groups such as communication ethics, science journalism, perception of science, etc) | | 9.61 | 12.9 | 25.8 | 51.61 |
| Researchers' Night 2012; Where Society Meets Scientists (Event Announcement&Short Presentation) | | | 19.22 | 32.2 | 48.38 |
| How to write and publish a scientific article- Editor's view (Interactive lecture) | | | 6.66 | 13.33 | 80 |
| Suggestions: <ul style="list-style-type: none"> • It was a perfect speech, I am also impressed by the subject. • It is excellent presentation • Using some sample slides which is explaining good titles for articles which is bad can be better. • Written down will be needed | | | | | |

| Session: "Professional Development of Young Scientists" | 1 | 2 | 3 | 4 | 5 |
|---|---|------|-------|-------|-------|
| Essential competencies and skills for the industry | | 2.38 | 14.28 | 35.7 | 47.6 |
| Funds and programmes for young scientists (FEBS Fellowships and Programmes, EMBO Fellowships, Marie Curie, EU Programmes) | | | 20 | 30 | 50 |
| Preparing your curriculum vitae (CV) - how to make the most of yourself! | | 2.38 | 11.90 | 26.18 | 59.52 |

| | | | | | |
|---|--|-----|-------|-------|-------|
| Finding one's way in the Internet: where to search effectively | | 2.7 | 16.21 | 32.43 | 48.64 |
| Tips on how to give a successful scientific lecture | | | | 2.38 | 97.62 |
| Suggestions: <ul style="list-style-type: none"> H. Abacıoğlu's talk was wonderful Can be given more CV samples and explain Wrights or Wrongs. | | | | | |

| | 1 | 2 | 3 | 4 | 5 |
|-----------------------------------|---|---|---|----|----|
| Session: "Closing" | | | | | |
| Overall evaluation of the session | | | 5 | 35 | 60 |
| Suggestions: | | | | | |

| | 1 | 2 | 3 | 4 | 5 |
|--|---|---|-------|-------|-------|
| Session: "Meet the Expert" | | | | | |
| <i>Career Planning in the Industry</i> | | | 11.11 | 22.22 | 66.66 |
| <i>CV Clinic</i> | | | 12.5 | 12.5 | 75 |
| <i>Internet Searching</i> | | | 14.28 | 28.57 | 57.14 |
| <i>Oral Scientific Presentations</i> | | | | | 100 |
| <i>Science & Society Dialogue</i> | | | | 33.33 | 66.66 |
| Suggestion: | | | | | |

| General organization of the workshop | | | | | |
|---|---|---|-----|-------|-------|
| | 1 | 2 | 3 | 4 | 5 |
| Registration process | | | | 12.12 | 87.87 |
| Workshop Blog | | | 2.7 | 34.32 | 72.97 |
| Conference Materials | | | | 18.75 | 81.25 |
| Responsiveness of the Organization Team | | | | 6.25 | 93.75 |
| Lunches, Coffe breaks, Dinners | | | 2.7 | 8.10 | 89.1 |
| Transfers | 3.44 | | | 20.68 | 75.86 |
| Suggestion: | <ul style="list-style-type: none"> Very good | | | | |

| General Evaluation of the Workshop | 0 | 0 | 0 | 11.76 | 88.23 |
|------------------------------------|---|---|---|-------|-------|
| General suggestions | <ul style="list-style-type: none"> Thanks for everything it was a great experiment for me. Everything is super thank you very much.... Just the poster viewing session on the first day was too long it might end earlier. Other than this, everything was so good. Thank you a lot I liked and enjoyed a lot. It was helpfull especially meet the expert sessions It was my first workshop but it was wonderful for me. Thank to organization comittee and all students and lecturers Feed back can be at the end of every session. Blog is informative but the appearence is not so good. Thanks to all organizing comitte and team for the great workshop. Hope to see you in others | | | | |

Are you a:

Teacher (science):.....11.....

Faculty Member:.....1.....

Teacher (medical programme):...3.....

Post doc:.....2.....

PhD Student:.....19.....

MSc student:.....7.....

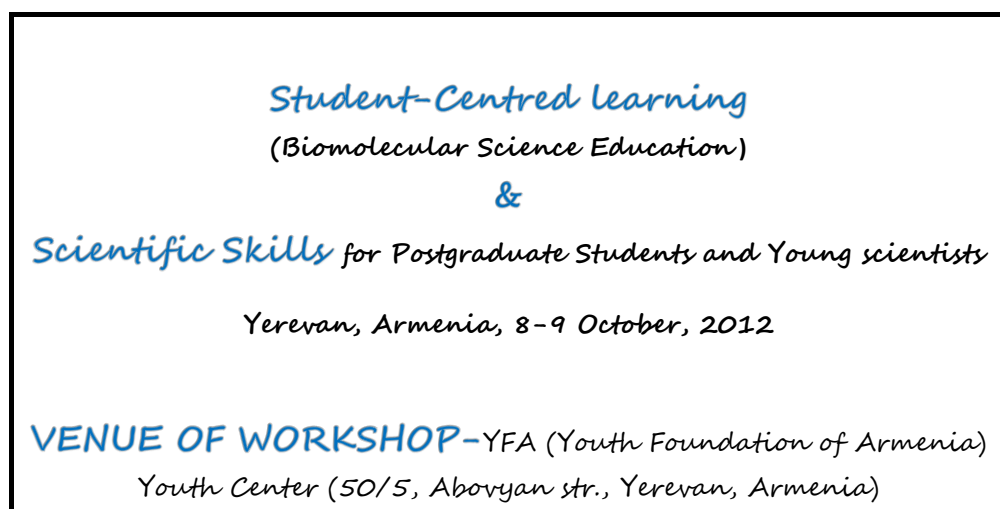
Medical training student:

.....2.....

- **FEBS Yerevan Workshop on Biochemistry and Molecular Biology Education (8-9th October, 2012)**

This workshop was agreed with Prof. Guevork Guevorkian during the WGI visit to Yerevan in October 2011, where the Chair of FEBS Education Committee was a delegate. There has been good progress with the Workshop and the Flyer, as agreed with the hosts, is presented below.

FEBS Workshop on Biochemistry and Molecular Biology Education



FEBS Education Committee : Keith Elliott, Angel Herraiez, Wolfgang Nellen, Tomas Zima and

Gul Guner-Akdogan (Chair)

Kindly supported by: Mathias Sprinzl (Chair-WGI)

Coordinated by: Hovakim Zakaryan (Secretary of External Communications
Committee of Young Biologists Association (YBA))

Hosted by: Guevork Kevorkian (Vice-president of Armenian Association of
Biochemists (AAB))

FEBS web site: www.febs.org AAB web site: <http://aab.sci.am>

YBA web site: www.yba.am

Aim and Scope of the Workshop

The aim of this workshop is to promote biochemistry and biomolecular biology education by introducing new trends in education as well as presenting tips for the future scientists. Thus, it will

provide opportunities to enhance excellence and innovations in teaching (Student centred learning, problem-based learning, innovative educational technologies, new trends in PhD education), but also create a platform for postgraduate students and young scientists to share and learn, from the experts, current issues in biochemistry and molecular bioscience education.

As science touches every part of life in today's global society, it is imperative that postgraduate students learn to communicate science. Thus, the workshop also aims to present the challenges of science communication to the public and to train students in transferable skills pivotal to communicating science across a range of professional settings. An important focus of the workshop will be to develop the "scientific skills" (Project writing, critically reading literature, CV writing), of post-graduate students, **as well as giving the faculty an opportunity to explore ways of how to teach such skills.**

Meet the Expert Sessions –With this segment of the Workshop, it is aimed to provide a face to face interaction for faculty and for future people of science on issues treated during the general sessions.

Objectives of the Workshop

- To introduce the paradigm shift in biomolecular science education: **Student Centred learning**
- To demonstrate examples from current applications : **Problem-Based learning**
- To enhance understanding of **New Educational Technologies** (e-learning, blogs, etc) and discuss their role in biomolecular science education
- To introduce **New Perspectives in PhD Education** (new trends, supervision, and assessment of thesis)
- To present and discuss the issues related to **Science Communication to Public**
- To discuss & share good practices in science communication area and to design strategies to reach **non scientific audiences**
- To show effective ways of **Faculty-Student Cooperation and Student Self-Organisation**
- To focus on **Building on scientific skills and on professional development in science;**
- **To present tips on:**
 - How to choose and apply for **funds and programmes**
 - **CV writing**
 - **Use of internet wisely**
 - **Effective Project writing**
 - **Critically reading literature**

Who Should Attend?

Faculty, post-docs and PhD/MSc students from biochemistry, molecular biology, medicine, pharmacy, science education, and all disciplines of molecular biosciences are invited to attend.

Who are the Workshop Trainers?

Members of FEBS Education Committee, who have participated in several FEBS Workshops conducted in many European countries since 2005, and world experts from related areas.

Internal Young Scientist Fellowships (IYF's):

There will be a number of “internal young scientist travel fellowships” (ITFs) from FEBS, for young scientists (Graduate students and post-docs within 4 years of their PhD) based in Armenia and outside of Yerevan, to attend the Workshop. FEBS will cover travel (to Yerevan and back) and accommodation (2 days) of those selected by FEBS Education Committee (up to 200 Euros for each fellow). Applications should be sent (with a CV, intent letter, and an itemized list of costings) to the Chair of FEBS Education Committee:

Gul Guner Akdogan

E.mail: gul.guner@deu.edu.tr

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

Deadline for applications to the IYF's: 10th September 2012

For More Information:

Hovakim Zakaryan

Secretary of External Communications Committee
of Young Biologists Association (YBA)

E-mail: hovakimzakaryan@gmail.com

Flora Sarukhanyan

PhD, Assistant to Secretary of Armenian
Association of Biochemists (AAB)

E-mail: floras@biochem.sci.am

Programme:

Monday, October 8th, 2012

09:00-09:30 Registration

09:30-10:15 Welcome and Opening remarks

A. Gasparyan –Chair, Young Biologists Association (YBA NGO)

G. Güner Akdoğan-Chair, FEBS Education Committee

M. Sprinzl – Chair, FEBS Working group on Integration

G. Kevorkian-Vice President, Armenian Association of Biochemists(AAB)

10:15-10:30 Coffee break

Session 1 Student Centred Learning

10:30-10:45 “Introduction-What is Student Centred Learning” -*G. Guner-Akdogan*

10:45- 11:30 “Problem-Based Learning- An Example of Student Centred Learning”- *K.Elliott*

11:30-11.45 "Integrated Learning Curriculum in Biosciences" - *N. Hovhannisyan*

11:45-12:00 General Discussion – Q&A

12:00- 13.00 Lunch

Session 2 Tools in Basic Science Education - New Educational Technologies

13:00-13:30 New technologies and making educational use of them -*A. Herraes (Spain)*

14:00-14:15 Medical Faculties Network (MEFANET) aimed to advance learning with the use modern information technology -*T. Zima (Czech Republic)*

14:15-14.30 Discussion- Q&A

14:30-15:00 Faculty-Student Cooperation: “Science for the Public” -*W. Nellen (Germany)*

15:00-15.30 Funds and Programmes -*T. Zima (Czech Republic)*

15.30-15:45 General Discussion – Q&A

15:45-16:00 Coffee Break

Session 3 Meet the Expert (Upon Registration)

16:00-17:30 Structured round-table discussions with the experts

| | | | | | |
|--|--|--|--|--|--|
| <i>Problem-Based learning (PBL)</i> <i>Izmir Experience</i> <i>(G.Guner Akdogan)</i> | <i>Problem-Based Learning(PBL) -Manchester Experience</i> <i>(K. Elliott)</i> | <i>Educational Technologies</i> <i>(A. Herraез)</i> | <i>Science for the Public”</i> <i>(W. Nellen)</i> | <i>Funds& Programmes</i> <i>(T. Zima)</i> | <i>Critical Reading of Literature</i> <i>(M. Sprinzl)</i> |
|--|--|--|--|--|--|

17:30-19:00 Welcome Drinks

Tuesday, October 9th, 2012

Session 5 Trends in PhD education

09:00-09:30 “European Perspective in PhD Education-Supervisor’s Role” *G Guner-Akdogan (Turkey)*

09:30-09:45 Discussion- Q&A

Session 6 Scientific Skills

09.45-10.15 “Finding one’s way in the Internet: where to search effectively” *-A. Herraез (Spain)*

10.15-10.30 Discussion- Q&A

10.30-10.45 Coffee Break

10.45-11.15 “Tips for Reading and Writing a Scientific Article” *-M. Sprinzl (Germany)*

11.15-11.30 Discussion- Q&A

11.30-12.00 “ Tips for Writing a Research Project Proposal” *-T. Zima (Czech Republic)*

12.00-12.15 Discussion- Q&A

12.15- 13.30 Lunch

Session 7 Professional Development of Young Scientists

13.30-14.00 “Preparing your curriculum vitae (CV) - how to make the most of yourself!” *-K. Elliott (UK)*

14.00-14.15 Discussion – Q&A

14.15-14.45 “Student Self-Organisation” *W. Nellen*

14:45-15:00 Discussion – Q&A

15.00-15.15 “Best practice” example from Armenia on Student Organisation

15:15-15:30 Coffee Break

Session 8 Meet the Expert (Upon Registration)

15:30-17.00 Structured round-table discussions with the experts

| | | | | | |
|---|---|---|---|---------------------------------------|---|
| <i>Supervision and Assessment in PhD Training</i> (G. Guner-Akdogan) | <i>Internet Searching</i> (A. Herraez) | <i>Critical Reading of Literature</i> (M. Sprinzl) | <i>Writing a Research Proposal</i> (T. Zima) | <i>CV Writing</i> (K. Elliott) | <i>Student Self Organisation</i> (W. Nellen) |
|---|---|---|---|---------------------------------------|---|

17.00-17.30 Closing (FEBS, AAB, YBA)

- **ED-COM REPORT ON CAMBRIDGE WORKSHOP (17-18th December, 2012)**

A Joint FEBS/Biochemical Society Workshop

Gonville and Caius College, Cambridge (UK)

Workshop on “Innovations in Molecular Biosciences Education” (17-18th December, 2012)

(In memory of Prof. Edward J Wood, 1942-2008)

Frank Michelangeli, Gül Güner Akdogan and Sheila Dargan

www.febs.org www.biochemistry.org <http://edu.febs.unibe.ch>

Educating the next generation of molecular bioscience graduates has always been about ensuring students are equipped with appropriate key skills that enable them to flourish and succeed in their future careers. Moreover, teaching should provide opportunities for students to engage key skills and practice them regularly in a meaningful way. The Cambridge workshop, held jointly with the UK Biochemical Society, focused on improving the student experience and the teaching of transferable employment skills. The Workshop was the really first to be jointly organised by FEBS Education Committee and the Education Committee of the Biochemical Society. It was dedicated to the memory of Prof. Edward J. Wood, (1941-2008), who was the founding chair of the Education Committees of both the Biochemical Society and of FEBS.

The Workshop was kindly hosted by Prof. Sir Alan Fersht (Master, Gonville and Caius College, Cambridge University ; FEBS Honorary Treasurer) and took place in the fascinating atmosphere of Gonville and Caius College. It was co-organised by Francesco Michelangeli (University of Birmingham, UK; Honorary Membership Secretary at the Biochemical Society), Gül Güner Akdogan (Dokuz Eylül University, Turkey; Chair of FEBS Education Committee), and Sheila Dargan (Cardiff University, UK; Member of the Biochemical Society Education Committee). The administrative secretarial task was in the capable hands of Frances van Klaveren from the Biochemical Society.

In this education workshop we aimed, through, lectures, demonstrations, group discussion and posters sessions, to share novel ideas and approaches with bioscience educators, to enhance the student experience and potentially to improve their employment prospects.

The participation was from across the educational establishment, encompassing probationary lecturers, post-graduate students, post-doctoral fellows, teaching fellows and academics. Together with the invited speakers and the administrative staff, there were around 70 participants. Jaak Jarv (Ex-Officio member of FEBS Education Committee) and Heli Jarv were also present and contributed to the workshop. One third of the participants were from the FEBS region outside of the UK, including Armenia, Belgium, Croatia, Czech Republic, Estonia, Germany, Georgia, Hungary, Ireland, Poland, Spain, Sweden, Turkey, and Ukraine. There was also one participant from Nigeria.

FEBS allocated bursaries for the attendance of young scientists and two PhD students from Yerevan, Armenia, one young scientist from Izmir, Turkey and one, from Tbilisi, Georgia received partial support to participate in this workshop. The fellows from Armenia and from Georgia had been encountered during the FEBS WGI visits to these countries.

This event was approved by the Society of Biology (UK) for the purpose of Continuing Professional Development (CPD) and is counted as 45 CPD credits.

Tribute to Prof. Edward J. Wood (1941-2008)



Prof. Edward J. Wood during FEBS Vienna Congress, 2007.

A significant event of this workshop was the Tribute to Prof. Edward J. Wood, given by Gül Güner-Akdogan. Gul presented a summary of what Ed Wood had accomplished in science and in education, focusing on his role of founding the Education Committee of the Biochemical Society and that of FEBS. Some heartfelt notes from the participants ensued. In addition the message from Frank Vella (Education Committee of IUBMB) was shared. The whole family of Ed Wood was present in this event, with the eldest son, Benjamin Wood, expressing the Family's thankfulness.



Tribute to Prof. Edward J. Wood- Gul Guner Akdogan, Benjamin Wood and Ed Wood Family in the front.

This two day workshop was divided into four main sessions, with each session focusing on a particular theme. These sessions included:

- **Session 1: Improving student engagement**

Chaired by Francesco Michelangeli (University of Birmingham, UK) this session involved stimulating presentations from Natalie Rowley (University of Birmingham, UK) who talked on “Novel approaches to engaging students through enquiry”, Neil Morris (University of Leeds, UK), who shared his expertise on using technology to engage with students, and Sheila Dargan (University of Cardiff, UK) who presented “Student driven engagement and the use of shadow modules”.

- **Session 2: The acquisition of key generic and scientific skills**

Chaired by Sheila Dargan, the first talk of this session was on “Virtual practical classes”, by Gus Cameron (University of Bristol, UK) . Then, Francesco Michelangeli (University of Birmingham, UK) presented his talk on “Bridging the gap between practical classes and research projects”. Jeremy Pritchard (University of Birmingham, UK) shared his experience on “Using podcasts to aid

communication”, and, finally, Neil Morris (University of Leeds, UK) described “Bioscience Horizons, an undergraduate journal”.

Session 3: Assessments and feedback

Chaired by Gül Güner Akdogan (Dokuz Eylül University, Turkey), this session encompassed stimulating talks from Erica Morris (The Higher Education Academy, UK), Jon Scott (Student and staff engagement with feedback) (University of Leicester, UK), and Julian Park (University of Reading, UK) (Different methods for giving feedback to students).

Session 4: Careers and improving employability

Chaired by Keith Elliott (Manchester University), this session involved four excellent speakers: Detlev Riesner from Heinrich Heine University of Düsseldorf (Germany) described what employers want from bioscience graduates. Wolfgang Nellen (University of Kassel, Germany) focused on communication with non-science audience as a key employment skill. Chris Willmott (University of Leicester, UK) gave interesting information on careers and careers fairs. Finally, “Accreditation of bioscience degrees” was presented by Richard Reece (University of Manchester, UK).

Discussion Groups: Seven discussion groups were formed, one on each day, and the participants had the possibility to choose a different one for each day.

Key points raised during the round table discussion group sessions

Group 1: Assessments & Feedback

- Thinking beyond classical formats of assessments
- Differentiate the group at an individual student level, and give individual assessments to

meet each students future needs (not all students have same abilities and aspirations)

- Give individual constructive criticism, but this might compromise basic competency required

(ie coaching individual students to pass exams)

- Some bio-scientists are not expert in assessing non-scientific skills such as communication

skills, team-working skills and creative aspects

- Bring in experts that are able to assess these aspects
- Don't use only knowledge-based assessments (which can be outdated in a rapidly moving

field). Look for more flexible assessments, where you assess their ability to find out for

themselves

- Could get students to do audio (recorded) rather than written assessments (easier to mark)

Feedback

- For feedback on MCQs, rather than give feedback on individual questions, group them into key topics and provide more general feedback

- Balance formative (information on how to improve work) and summative (formally marked assessments that contributes to their degree)

- Have some competitive elements and award prizes
- Involve students in some summative assessments (gives them a perspective on marking

criteria). Be careful when using student peer-feedback marking, make it anonymous

- Avoid using only formative feedback let it precede a related summative assessment i.e. use formative feedback to help with the summative marked worked later. Works well if used in a linked way

- In the first year giving formative feedback helps in the learning experience gives confidence
- Could also provide general feedback online i.e. Facebook

Group 2: Key skills scientific and practical

- 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)
- Practical 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

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
- Chemistry modules essential for biochemistry degree

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)

Group 3: student engagement

Key questions discussed:

- How to increase attendance at lectures when not compulsory?
- Ideas for engaging larger groups?
- What can we do to ensure students retain information?
- How can we get students who are not engaging to participate?
- How do we stop students losing enthusiasm as they progress through the course?
- Spending too much time on the students who are not engaging rather than those who are?

Key points from discussion:

- Getting students to text comments during lectures seemed a good idea
- Making audio clips of lectures and uploading them before or after lectures
- Giving students their own clicker on day 1 so it is easier to use turning points with big groups
- Using peer wise to get students to write and answer questions on lecture content (will

encourage them to revisit content and hopefully increase retention)

- Setting clear expectations for students and/or agreeing these with them (student as partners)

- Making an effort to point out links and relevance to students' degree schemes
- Difference between perceived student engagement and actual engagement
- Not making assumptions - ask why not engaging (may be things we are not aware of as

staff)

- Simple methods like passing around post-it notes can work very well

Group 4: Career and employability

- Give students early engagement with careers educators, don't delay until final year (will be too late).
 - Give students career management rather than career planning. Gives flexibility to respond to changing circumstances.
 - Employer engagement: run careers workshop, get employers to talk to students.
 - Bioscience degrees give the students a wide range of generic skills.
 - 50% of bioscience undergraduates won't go in bio-related careers, therefore generic skills, ie numeracy, communication skills, team-working skills, problem solving skills, are all very important and need to be incorporated within the degree programme.
 - Students need to be able to articulate the skills that they have developed during their studies in the job application / CV / interview.
 - Cover letter, CV and application will be seen by HR department first (not scientists themselves) therefore it needs to catch the attention of a non-scientist (not too technical in cover letter).
 - Employers look for (1) degree subject and grade,(2) institution where they studies, (3)PI of lab coming from / research project, (4) personal attributes.
 - Get student to ask for feedback if their application is unsuccessful. This could help improve future applications.
 - Need to be able to show that they have the ability to develop / adapt with the company rather than just applying the skills they have now.
 - Run modules on Entrepreneurship! (Possibly in final year or post-graduate degree level).
- Students are incubators of ideas. Need to motivate students by getting to think about ideas for 'spin-out companies' but don't drown them in practical difficulties.

Group 5: Modern technologies in teaching

- Using Ipad / tablets as a learning resource. Should we give them to all students?
- This depends on WiFi capacity of the institute.
- Need to assess / develop / use apps for learning.

- Need to train staff to use these resources (need to be willing to do so).
- Use LinkedIn for providing graduate destination as well as contact.
- Need to use multi-format technology in teaching , i.e recording lectures, etc. could have

copyright issues

- Need to have nationwide open education policy.

Massive open online course (MOOCS)

- Benefit of doing traditional bioscience degree versus MOOCS
- Get practical training
- Ability to do research
- Direct contact with academics

In the future could MOOCs be :

- a replacement to traditional degrees?
- Complement traditional degrees
- Be used as a training resource
- Accredited?
- Mix and match with work experience (build your own degree versus university provided)
- What do employers think of MOOCS?

Poster Session: Sixteen posters were presented and a lively discussion ensued during the poster session, together with the wine reception.



The poster session of the Workshop, was held together with the Wine Reception.



Feedback: Excellent feedback was received from the participants in general. There were also very good points for improvement, such as suggesting more time for discussion and posters, and providing a summary of the small-group discussions to the whole group. Regarding the Venue, most of the participants were very much satisfied.

- **Some of the many good comments:**

"I encourage Biochemical Society and FEBS to do more joint events of this type, as part of fulfilling the gaps left by the demise of the UK Centre for Biosciences" – "Very apt and interesting tribute to Ed Wood"- "Excellent organisation"- "Excellent venue and value for money"- "Excellent programme"- "High-quality speakers"- "Picked up several very interesting practical ideas to incorporate into programmes/discuss with colleagues for institutional implementation" -"Some excellent presentations - good variety and all relevant".

- The results of the questionnaire filled-out by the participants are presented below:

| Question Text | Answer Text | Count | Percentage |
|---|-------------|-------|------------|
| Overall please rate this event on a scale of 1 to 5 (5 being the best). | 1 | 0 | 0% |
| | 2 | 0 | 0% |
| | 3 | 1 | 4% |
| | 4 | 12 | 50% |
| | 5 | 11 | 46% |
| | | | |
| How did you rate the social and networking opportunities at the meeting, on a scale of 1 to 5 (5 being the best)? | 1 | 0 | 0% |
| | 2 | 0 | 0% |
| | 3 | 5 | 21% |
| | 4 | 8 | 33% |
| | 5 | 11 | 46% |

| How did you rate the 'value for money' of registration fees paid, on a scale of 1 to 5 (1 being the least value and 5 being the best value)? | 1 | 0 | 0% |
|--|---|----|-----|
| | 2 | 0 | 0% |
| | 3 | 1 | 5% |
| | 4 | 4 | 20% |
| | 5 | 15 | 75% |
| | | | |
| How did you rate the time allowed to visit the poster session, on a scale of 1 to 5 (5 being the best)? | 1 | 0 | 0% |
| | 2 | 1 | 4% |
| | 3 | 4 | 17% |
| | 4 | 12 | 50% |
| | 5 | 7 | 29% |
| | | | |
| How do you rate the suitability of the venue for this event, on a scale of 1 to 5 (5 being the best)? | 1 | 0 | 0% |
| | 2 | 0 | 0% |
| | 3 | 2 | 8% |
| | 4 | 7 | 29% |
| | 5 | 15 | 63% |
| | | | |
| How do you rate the standard of the catering provided at this event (on a scale of 1 to 5 - 5 being the best). | 1 | 0 | 0% |
| | 2 | 0 | 0% |

| | | | |
|---|---|----|-----|
| | 3 | 0 | 0% |
| | 4 | 4 | 17% |
| | 5 | 20 | 83% |
| | | | |
| On a scale of 1 to 5, how did you rate the discussion groups; did it add value to the event (1 being 'not at all' and 5 being 'definitely')? | 1 | 0 | 0% |
| | 2 | 1 | 4% |
| | 3 | 5 | 21% |
| | 4 | 10 | 42% |
| | 5 | 8 | 33% |
| | | | |
| How well do you feel this workshop worked as a joint event organized by FEBS and the Biochemical Society? On a scale of 1 to 5 (1 being not at all and 5 being very well) | 1 | 0 | 0% |
| | 2 | 0 | 0% |
| | 3 | 3 | 13% |
| | 4 | 7 | 29% |
| | 5 | 14 | 58% |
| | | | |
| How well do you think the format of this Workshop worked? (1 being not at all and 5 being very well) | 1 | 0 | 0% |
| | 2 | 1 | 4% |
| | 3 | 1 | 4% |
| | 4 | 11 | 46% |
| | 5 | 11 | 46% |
| | | | |

| |
|---|
| How could this workshop be improved? |
| Perhaps a better lecture theatre, more comfortable seats and larger screen. I ended up arriving at the wrong venue and was not the only one to do this so better instructions would have helped. |
| Perhaps have a few break out sessions for using new technologies, rather than only a few participants being able to use them during a session. This requires the facilitator to run multiple sessions, but there might be some other sessions that could run as a round robin. |
| The meeting room could be improved: the screen was not visible from some seats, and notes writing was uncomfortable. Discussions could be encouraged, specially at the end of each communication. It could be worth to make a post poster discussion session to sum up and share their principal findings or contributions. |
| Perhaps the addition of shorter talks selected from abstracts submitted. Not sure if this happened, but I was under the impression that the speakers were invited. |
| Get participants more involved before. provide list of participants and e-mail addresses |
| Poster session was too crowded Getting summary of other discussion group conclusions would have been good Room venues listed in programme would have been helpful |
| Talks could have been more interactive (e.g. like Julian Park's) Poster session divided in 2, such that the poster presenters would also get the chance to visit other posters (half of them) Discussion groups announced sooner with more detailed descriptions |
| It was a little disappointing to see no speakers invited from the Modern Universities in the UK, who now teach more Bioscientists than the Pre92s and have excellent experiences in dealing with many of the topics covered. Perhaps three speaker presentations from a single University was one too many? Ditto two from the HEA, esp as one did not turn up. |
| 1. Perhaps more participants from the continent. 2. Perhaps some connections with pre-university education could be added. 3. Some longer time for discussion groups will make contacts more efficient. |

| |
|---|
| In my opinion it would be better if we, participants, had more time for social and networking opportunities and had opportunity to participate in more than 2 discussion groups (That I found very useful). Unfortunately due to very busy schedule there were lack of time. |
| I only have two comments: It would have been nice to have the list of delegates and abstracts for the presentations in the workshop booklet, and it would have been nice to have built in a couple of hours of free time for those of us from the frozen North to wander around Cambridge and admire how the other half work and study. |
| Overall, the sessions were excellent. For me, the only one that did not work as well as the others was the online resources presentations. but I am not convinced that platform presentations was the best way to show what they had to offer. |
| <p>The Workshop was excellent and most aspects worked extremely well. There are one or two areas that could be improved, all relating to the fostering of interaction and discussion. If it were not for these, I would have given the Workshop a 5 for format.</p> <p>More time for questions and discussion after presentations, or more chances for interaction during them (like Julian Park).</p> <p>Simple introductions round the table before starting discussion groups.</p> <p>Better Chairing of discussion groups to bring in people who are reticent but have things they would like to say. Contributions seemed to be dominated by one or two people and I would have liked to hear from other, quieter, members of the group</p> <p>Inclusion of e-mail list of participants, perhaps even with a 75 word vignette about their bioscience education interests. This would facilitate ongoing interaction beyond the Workshop.</p> |

FEBS Education platform <http://edu.febs.unibe.ch> was uploaded with the slides from the presentations as well as linked to the Wiley web-site for the relevant book chapters form Wiley-Blackwell (the latter, for a period of six weeks after the workshop).

FEBS Education Committee Views on the Workshop:

The general view was that the Cambridge Workshop turned out to be an excellent one. Most of the members thought that the workshop was very successful. It was agreed that hearing about the

developments in the UK would have an impact on the participants. All thought that it was the best Education Workshop that FEBS Education Committee ever organised. Keith Elliott further added that it was, indeed, the best one he had ever attended or participated in. All felt that the Venue offered by Gonville and Caius College was excellent and the organisation realized by the Biochemical Society was professional. The international participation from countries of the FEBS region outside of the UK brought a richness. The programme was such that it was “like a research symposium on education”. It was agreed that hearing about the developments in the UK would have an impact on the participants. This programme was in line with the perspective from the Biochemical Society and FEBS Education Committees. The Workshop was rewarding in two ways: helping the eastern European delegates in their education endeavour, and bringing out innovations in education to the western European delegates, along with sharing of experiences from both sides. Frank Michelangeli was credited for this rewarding outcome, as well as all those who supported and helped. In addition, the FEBS Education platform run efficiently by Peter Ott also enabled more interaction as well as offering the lecturers’ slides and access to the Wiley resources to all registered participants. The only difficulty that WN expressed, from the point of view of a lecturer, was “not knowing beforehand that the audience would be mostly faculty”. In fact, in many previous FEBS Education Workshops, the audience had been either a mixture of faculty and young scientists, or, mostly young scientists and PhD students. It was agreed that the participant list could be communicated to the members before the future workshops. In addition, it would be helpful to have an overview of the education system of the country where the Workshop took place. Altogether, it was a successful joint event and it was concluded that future collaborations between the Biochemical Society and FEBS Education Committees would be rewarding.

Conclusions: This Workshop was successful in many ways: in providing an excellent platform for the sharing of innovations in molecular bioscience education, in presenting “tips” for the careers of young scientists, in helping young interested academics on how to promote their educational skills, and, in bringing together all those interested in Molecular Bioscience Education not only from all over the UK, but from all over the entire FEBS area. We thank everyone who made this workshop a memorable one.

Lastly, we name this workshop the “first” Joint FEBS and Biochemical Society workshop on Molecular Bioscience Education and think that it was useful enough so that others will follow in the coming years.



Cambridge Workshop Dinner at the gorgeous Old Courts, Gonville and Caius College.

- **Guidelines for Organising FEBS Education Workshops**

GUIDELINES FOR ORGANISING

FEBS EDUCATION WORKSHOPS

FEBS EDUCATION COMMITTEE

IZMIR, 2012

Contents:

- **Background**
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- **Who should attend the Workshops?**
- **Planning and distribution of responsibilities**
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Background

FEBS Education Committee has the mission of promoting education of highest quality throughout Europe. Within the scope of this mission, FEBS Education Committee has been organising Education Workshops in Biochemistry and Molecular Biology in different European countries, hosted by the FEBS Constituent Societies. Such Workshops have been organised in Sofia, Bulgaria (2008), Cluj-Napoca, Romania (2009), Athens, Greece (2010), Opatija, Croatia (16-17th September, 2012), Tallinn, Estonia (2011), Bratislava, Slovakia (2011), Ljubljana, Slovenia (2011), and Izmir, Turkey (2012).

Using the experience gained while organising and running these workshops, this handbook is a guide written with the aim of helping both stakeholders, FEBS Education Committee and Constituent Societies, in their collaboration to achieve a productive and smoothly-running Workshop.

General Information on Workshops on Biochemistry and Molecular Biology Education

These Workshops are educational activities organised by FEBS Education Committee with collaboration of the FEBS Constituent and/or Associated Society of the country where the workshop is held. A typical workshop lasts one or two days and focuses on the current thinking and innovations in education that have been explored and found to be useful for enhancing learning. The specific topics to be covered are selected by the Constituent Society according to their needs, from the array of topics offered by the FEBS Education Committee (Annex 1). The Workshop education team is identified and invited by FEBS Education Committee, either from the Committee members, or experts at large, depending on the topics to be covered. The Workshop can stand alone or be associated with a Congress of the Constituent Society and/or any other scientific event.

Who should attend the Workshops?

Faculty, researchers, post-docs, and PhD students, administrators, (and high-school teachers where appropriate) from biochemistry, molecular biology, medicine, pharmacy, science education, and all disciplines of basic sciences should attend the Workshop from the host country or other European countries.

Planning and Distribution of Responsibilities

Typically, the workshop is agreed between the Constituent Society and FEBS Education Committee at least one year before the event. The Constituent Society assigns a local Coordinator for the Workshop, typically, the person responsible for the educational activities of the Society. Although the workshops are intended to target the needs of the Constituent Society members and therefore attended largely by the members of the host Society, any FEBS members from different countries may attend these workshops in case of interest. The Educational activities of the Society. From the Education Committee usually the Chair takes the responsibility. The venue, time and duration, as well as the topics of the workshop are suggested by the local hosts. The Education Committee organises the programme, taking into consideration the needs of the host Society

- Responsibilities of the Constituent Society:

All activities related to the local aspects of the workshop - dissemination of Workshop information within the country (web-site, electronic and/or written dissemination) venue (suitable venue with the requested educational and technical assets - Annex 2), registration of participants (lists, name-badges), logistics, coffee breaks, lunches, transport, social programme, certificates (*signed by FEBS Education Committee Chair and the President of the Constituent Society-Annex 3*) are in the hands of the Constituent Society. If a poster session is programmed, the selection and organisation of posters will be done by the Hosts with help from the FEBS Education Committee. In addition, the wrap-up of the Workshop, including the final list of participants is done by the Constituent Society.

- Responsibilities of FEBS Education Committee:

All activities related to the “programme” of the workshop- trainers, their organisation, their flights, preparing the Workshop Booklet, photocopies to be distributed, preparing feedback forms (annex 4) and taking feedback, running of the FEBS Education Platform (uploading of slides and necessary materials) are in the hands of FEBS Education Committee. The Workshop is also disseminated through FEBS channels by the Education Committee (FEBS web-site, electronic distribution to FEBS Constituent Societies, etc). The final report of the Workshop is prepared by the Education Committee, with input from the Constituent Society. FEBS has no liability on any accident that could occur during the workshop and liability disclaimer form should be signed by the Organisers.

Programme

The scientific (educational) programme will be based on the topics selected by the Hosts. The session will be organised using different educational techniques depending on the character of the topics. These will include lectures, small-group discussions, meet the expert sessions, panel discussions, and, if requested, selected short talks and poster sessions. The posters should be based on educational issues.

Social Programme

Experience has shown that social events associated with the Workshops aid interactions between participants. The social programme may include a “Welcome drink”, a dinner (if can be arranged).

Timeline of Organisational Details

- At least one year before the event:

Agreement between the FEBS Education Committee and the Constituent Society on Time, Duration, Topics, and Venue.

- At least eight months before the event:

Identification of the scientific programme and obtaining confirmation from the FEBS trainers; dissemination of all electronic and written material regarding the workshop

- At least four months before the event:

Flight details of the FEBS trainers and reservations of accommodation for the FEBS education team (depending on the country, this deadline and be shorter); sorting out the technical needs for the Venue

- At least one month before the event:

Obtaining of slides of the speakers and other related educational material in PDF format for uploading on FEBS Education Platform and for including in the Workshop Booklet.

- At least two weeks before the event:
 - Communication of the social programme to the FEBS trainers
 - Communication of the participant list (with e-mails) to FEBS Education Committee so that the participants can be addressed by the Webmaster.
- One month after the event:

Report of the Workshop sent by FEBS Education Committee to all stakeholders.

Finances and Support

The cost of the entire event is taken care of between the FEBS Education Committee and the Constituent Society.

- FEBS Education Committee covers the following costs:

Flight, transport, accommodation and dinners of the Workshop Trainers, Workshop Booklets and all necessary photocopies, Workshop venue costs (if any). In addition, the expenses related to the FEBS team during the social programme are also covered by FEBS.

For the flight and transport expenses, FEBS education team will return the completed and signed travel reimbursement form (Annex 5) to the FEBS Treasury by post after the event, along with original receipts and boarding passes (wherever possible). The Committee Chair should send an e-mail to the FEBS Treasury with a list of the FEBS education team at the Workshops. All expenses incurred in the category of Accommodation, Venue, Workshop Booklets, etc are also sent to FEBS Treasury with a written invoice. FEBS is not liable to the health

- Constituent Society covers the following issues:

Coffee-breaks and lunches, and any other costs within the social/scientific programme, related to the participants (refreshments, name badges, folders for the participants, etc). The local dissemination of the event is also taken care of by the Society (This can be done through registration fees, sponsors, or other funds found by the Society).

- Support for young scientists from FEBS (to be discussed by the EX COM):

Only in the case of Hinary B countries, FEBS Education Committee will partially support the travel of a number of young scientists within the country. The applications should be sent to the Education Committee.

6. LIAISON WITH OTHER BODIES WITHIN AND OUTSIDE OF FEBS

- **FEBS WGI (Working Group on Integration)**

FEBS Education Committee is in close collaboration with WGI. Prof. Mathias Sprinzl, Chair of WGI, invited G Guner Akdogan as an ex-officio member of WGI to a visit to Tbilisi, Georgia where she had the chance to introduce the activities of FEBS Education Committee and it was agreed that a FEBS Workshop on Biochemistry Education would be hosted by the Georgian Society of Biochemistry and Molecular Biology in 2012.

- **FEBS Science and Society Committee**

There is an ongoing collaboration between FEBS Education Committee and Science and Society Committee. Two joint events were conducted during Sevilla IUBMB-FEBS Congress:

A Workshop on “Molecular Evolution- the Unifying Principle of Biochemistry” and a Science in School event: “Biodiversity and Evolution”. Jacques Henry-Weil, Chair of FEBS education Committee, joined part of the education Committee meeting in Izmir on March 31st, 2012, to discuss the joint events planned for Sevilla.

- **FEBS Constituent Societies**

In order to enhance communication and collaboration with the possible education groups of the Constituent Societies of FEBS, the questionnaires which have been sent to Constituent Societies- are being collected. These questionnaires provide evidence for the interest of the Societies on educational issues.

- **IUBMB (International Union of Biochemistry and Molecular Biology)**

Collaboration with IUBMB Education Committee is one of the objectives of FEBS Education Committee, as indicated in the FEBS Statutes. The Chair of FEBS Education Committee is serving as a member of IUBMB Education Committee to enhance the collaboration. In 2012, Gül Güner Akdoğan was invited to be a trainer for one workshop, sponsored by IUBMB:

IUBMB Workshop on Student Centred learning, organised in Karachi, Pakistan, 10-11th July, 2012, with D. Nessar Ahmed (Manchester) as the Coordinator.

7. PROJECT: PILOT PROJECT OF FEBS EDUCATION COMMITTEE WITH WILEY

Aim:

To provide reading material and other learning resources for the participants of FEBS Education Events

Conditions:

1. Wiley would be prepared to provide online reading material as a pilot project for the education platform in an education workshop. The access would be restricted to workshop participants as in the previous workshops
2. The FEBS Education Committee will identify the workshop that serves as the pilot.
3. Communication to identify and prepare the pilot workshop and the online material will be by email.

Workshop material from Wiley should be made available on the platform two weeks before the course starts.

4. The possible distribution of hardcopies of Wiley books to workshop participants will be discussed AFTER completion of the online pilot project and following negotiations for a longer-term agreement.

Coordination of the Pilot Project:

Gregor Cichetti. Representing Wiley for the pilot Project

Peter Ott: Responsible for issues related to FEBS Education Platform

Gül Güner Akdoğan: Representing FEBS Education Committee for general issues related to the coordination of the pilot project (Choice of materials to be linked, coordination with the FEBS Secretariat, workshops, etc).

The Wiley project has been realized in 2012 with participation of Wiley during the three education Workshops: Izmir, Yerevan, and Cambridge.

8. CONCLUSIONS

FEBS Education Committee has largely fulfilled the goals set for the year 2012. We greatly appreciate all the support of FEBS EX COM and of other committees. Special thanks go to Karmela Barisic for her outstanding support and contribution to the Committee over the last four years. Welcoming the new members to the Committee- Angel Herráez, Tomas Zima, and Wolfgang Nellen (co-opted for 2012) FEBS Education Committee is determined to strive forward in its mission and vision of promoting biochemistry and molecular biology to the highest level in Europe.

FEBS Education Committee thanks deeply all bodies and individuals for their interest in FEBS education activities and for their effective support.

Reported by:
Gül Güner-Akdogan
Chair, FEBS Education Committee
Izmir, June 24th, 2013