



**EDUCATION COMMITTEE  
REPORT TO FEBS COUNCIL  
(Sept. 2016 - Sept. 2017)**

**Jerusalem, Sept. 14-15<sup>th</sup>, 2017**

**Reported by:**

**Gül Güner Akdoğan**

**Chair, FEBS Education Committee**

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## **1. Introduction**

This report includes the activities of the Education Committee realized between 1.09.2016 and 15.09.2017.

## **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”.

There were no vacancies on the Committee and no elections took place for ED-COM during 2016 FEBS Council.

### **The ordinary members who served on the Committee in 2017 are:**

Jean-Luc Souciet (France) (Elected at Berlin FEBS Council and started as of 1st January 2016).

Ferhan Sagin (Turkey) (Elected at Berlin FEBS Council 2015 and started as of 1st January 2016).

Laszlo Dux (Hungary) (Elected at Berlin FEBS Council 2015 and started as of 1st January 2016).

Jason Perret (Belgium) (Elected at Munich FEBS Council 2016 and started as of 1st January 2017).

**Chair:** Gül-Güner Akdogan (Turkey) (Elected at Prague FEBS Council, 2009 and started as of 1<sup>st</sup> January 2010; reelected at Sevilla FEBS Council, 2012- started second term as of 1<sup>st</sup> January 2013); elected for her third term at Berlin FEBS Council 2015 and started on 1st January 2016.

### **Co-Opted:**

Keith Elliott (UK) (Since 01.01.2008) to contribute to Workshops and Research Development.

Angel Herraes (Spain) to take care of newly inaugurated FEBS Education web-site and the educational activities of FEBS network.

**Ex-Officio Members:** Israel Pecht (FEBS General Secretary), Frank Michelangeli (FEBS Treasurer), Winnie Eskild (Assistant to FEBS Treasurer) and Beáta Vértessy (Chair, FEBS Advanced Courses Committee)

### **Education Committee Meetings:**

In 2017, the first Education Committee Meeting was held in Paris on 5th April, with full participation of the ordinary and co-opted members, before the FEBS Education Ambassadors' meeting. The second one will take place in Rehovot, on September 8th, 2017.

### 3. Representation of the Committee by its Chair

- **Visit to Szeged, Hungary , 24-25 October 2016** (Host: Dr. Laszlo Dux), member of FEBS Education Committee and Chair of the Biochemistry department). The main aim was to visit the university, give seminars on different aspects of biochemistry and molecular biology ducation, introduce the activities of FEBS Education Committee. The whole event reached its goals.



- **Paris, France, 24 November 2016** (Host: Dr. Jean Luc Souciet, member of FEBS Education Committee and Chair of the Working Group on Education of the SFBMB). Gül Güner Akdogan was invited to the “Third Interactive Course of the SFBMB: The Technological Revolution” which took place at the Faculty of Pharmacy of Paris Descartes University. She was asked to give a presentation on the activities of FEBS Education Committee and she also had the opportunity to interact with the participants.

### ***3. IUBMB-FEBS Conference on New Horizons in Biochemistry and Molecular Biology Education***

This significant initiative was agreed between IUBMB and FEBS in March 2015 and preparations have been ongoing since then. Registrations have been recorded from all over the World-130 participants including the lecturers, on 11th August 2017.

There are four schemes of bursaries:

1. Young Scientist bursaries from the Conference budget for those with accepted abstracts on education
2. Weizmann Institute of Science bursaries for students of the invited lecturers
3. IUBMB bursaries (10000 Dollars) for scientists organising a Workshop
4. FEBS Education Committee bursaries for FEBS Education Ambassadors participating in a panel discussion.

**Detailed information can be found on the web-site:**

<https://www.weizmann.ac.il/conferences/NHBMB2017/>

#### **Programme**

#### **New Horizons in Biochemistry and Molecular Biology Education Weizmann Institute of Science, Rehovot, Israel**

#### **Wednesday September 6, 2017**

8:00-9:00 **Registration**

9:00-9:15 **Opening and greetings**

9:15-10:15

**Chair:** Israel Pecht

**Plenary talk:** Bruce Alberts (UCSF, USA)

*Why science education is more important for the world than most scientists realize?*

10:15-10:45 **Coffee break**

10:45-12:45 **Session 1 – Mini-symposium:**

### **Key Knowledge and Skills for Molecular Life Scientists**

**Chair:** Keith Elliott (Manchester, UK)

[Robin Wright \(University of Minnesota, USA\)](#)

*Scientific teaching: Strategies for applying education research to improve student engagement and performance in science classes*

[Frank Michelangeli \(University of Chester, UK\)](#)

[Skills and key knowledge for the molecular life sciences degrees](#)

[Ross Nehm \(Stony Brook, NY\)](#)

*Assessing key knowledge and skills in large lecture courses*

**Panel:** Key Knowledge and Skills for Molecular Life Scientists

Robin Wright, Frank Michelangeli, Ross Nehm, Jean-Luc Souciet, Winnie Eskild, Martin Stone

12:45-14:00 **Lunch break and poster session**

14:00-16:00 **Parallel Workshops**

**Workshop 1:** Erin Dolan (CBE), Philippe Ortiz (BAMBED), Angel Herraes, Luciane V. Mello (FEBS Open-Bio)

**Publishing on education**

**Workshop 2:** Gracia Fe B. Yu (University of the Philippines Manila, Philippines) and Phillip Nagley (Monash University, Australia)

**Challenges for biochemistry and molecular biology education in the developing world**

**Workshop 3:** [Robin Wright \(University of Minnesota, USA\)](#)

*Lecture 3.0: Activating your lectures to engage all learners*

**Workshop 4:** Ferhan Sagin (Ege University, Izmir, Turkey)

**Team based learning: Where the magic happens with group work that**

**works!**

16:00-16:30 Coffee break

16:30-18:30 **Session 2 – Mini-symposium:**

**Pre-University Biology Education**

**Chair:** Anat Yarden (Weizmann Institute of Science, Israel)

[Ravit Golan Duncan \(Rutgers, USA\)](#)

*How learning progressions can inform the teaching and learning of molecular genetics*

[Jo Ellen Roseman \(AAAS, USA\)](#)

*Toward high school biology : Helping students make sense of biological growth in*

*terms of atom rearrangement and conservation*

Gilmor Keshet (Ministry of Education, Israel)

*Overview on the teaching and learning of molecular biology in schools in*

*Israel*

**Panel:** *Benefits and Challenges in teaching molecular biology to high school biology majors*

Irit Sadeh (Ministry of Education, Israel), Nadira Sahaka (Al-Nahdah Al-Ahliyya Ateed School, Kfar Qara), Shiri-Rivka Masa (Hashalom high-school, Mitzpe-Ramon), Maya Mayrose (Hadash Holon in the spirit of HTH), Omer Choresch (Harishonim High School, Herzliya)

Trip to Jaffa including dinner

## **Thursday September 7, 2017**

9:00-10:00

**Chair:** Frank Michelangeli (University of Chester, UK)

**Plenary talk:** Robert Harris (Karolinska, Sweden)

*The future of the doctorate*

10:00-10:30 **Coffee break**

10:30-12:00 **Session 3 – Mini-symposium:**

***PhD training – New Prospects***

**Chair:** Gul Guner Akdogan (IEU School of Medicine, Izmir, Turkey)

Michael Mulvany (Aarhus University, Denmark)

*Trends in PhD training in Europe and North America*

Suzanne Ortega (Council of Graduate Schools, USA)

*Preparing versatile scientists*

**Panel: PhD Training, New Prospects**

Michael Mulvany, Suzanne Ortega, Laszlo Dux, Andy Wang

12:00-12.30

Joel Sussman (Weizmann Institute of Science, Israel)

Proteopedia: Interactive Tool to Communicate BioMolecular Concepts in 3D

12:30-14:00 **Lunch break and a round table discussion** Round table discussion on "Teaching the physics behind cell biology in introductory level courses"  
Sam Safran and Edit Yerushalmi (Weizmann Institute of Science, Israel)

14:00-16:00 **Parallel workshops**

**Workshop 1:** Joel Sussman (Weizmann Institute of Science, Israel), Angel

Herráez (Spain) and Jaime Prilusky (Weizmann Institute of Science, Israel)

***Enlightening macromolecular structure- function relationship with***

***Proteopedia***

**Workshop 2:** Robert Harris (Karolinska, Sweden) and Michael Mulvany (Aarhus University, Denmark)

***Training the PhD trainers***

**Workshop 3:** Tien-Hsien Chang (Taiwan)

***On research integrity: Concept and principles***

**Workshop 4:** Lucian V. Mello (University of Liverpool, UK)

***Students as partners and peer learning: enhancing students' transferable skills during postgraduate training***

16:00-16:30 **Coffee break**

16:30-18:30 **Session 4 – Mini-symposium:**

***Research in Undergraduate Education***

**Chair:** Janet Macaulay (Monash University, Australia)

Erin Dolan (University of Georgia, USA)

*When undergraduate research becomes the curriculum*

Susan Rowland (University of Queensland, Australia)

*Escaping the silo: Science students in a novel work integrated learning program learn to transfer their skills and attributes to new contexts*

Jane Saffell (St George's, University of London, UK)

"Research identity as a transformational educational resource".

**Panel: Research in Undergraduate Education**

Erin Dolan, Susan Rowland, Jane Saffell, Jerka Domic

19:00-21:00 **Gala Dinner**

**Friday September 8, 2017**

9:00-10:30 **Session 5 – Mini-symposium:**

***Rethinking Postdoctoral Training***

**Chair: IUBMB member**

Uri Alon (Weizmann Institute of Science, Israel)

*Into the unknown, together*

Beata G. Vertessy (Budapest University of Technology and Economics, Hungary)

*“There is a tide”: Tasks and responsibilities of supervisors and young scientists during the postdoctoral stage*

**Panel: Rethinking Doctoral Education:**

Uri Alon, Beata Vertessy,.....

10:30-11:00 **Coffee break**

11:00-12:00

**Chair:** Joan Guinovart

**Plenary talk: Ada Yonath (Weizmann Institute of Science, Israel)**

*Next generation environmental friendly antibiotics*

12:00-12:15 Closing Remarks Anat Yarden, Janet Macauley, Gul Guner

12:15-13:00 **Lunch**

13:00 **Transportation to Jerusalem**

**Specific Focus- Workshops:** The Organising Committee made a special focus to the organisation of Workshops; some were invited and some were open to applications (support was given to successful applications) and below is the form which was solicited from all convenors of Workshops (altogether, 8):

### **Workshop Plan Requested for the Conference**

**New Horizons in Biochemistry and Molecular Biology Education  
Weizmann Institute of Science, Rehovot, Israel**

5-8 September 2017

Title:

Abstract:

Description:

Significance of the workshop topic

Learning goals and outcomes

Detailed description of the workshop

Participants' active engagement in the workshop

Facilitators

Facilities required:

Maximum number of participants in workshop:

#### **4. FEBS Education Events During FEBS 2017 Jerusalem Congress**

##### **1) Monday September 11, 15:00-17:00:**

Education Committee Session:

« **Practicals in Molecular Life Sciences**»

Chair: Gül Güner Akdogan (Izmir, Turkey)

Opening Lecturer:

Bruce Alberts (San Francisco, USA)

“e-Biolabs” Gus Cameron (Bristol, BUK)

“Wet practicals” Frank Michelangeli (Chester, UK) and Jason Perret (Bruxelles, Belgium)

General Discussion with the Speakers

##### **2) Monday September 11, 18:30-19:30**

**Workshop on “Practicals: Useful Tips”**

Moderator: Gül Güner Akdogan

Bruce Alberts, Frank Michelangeli, Jason Perret, Gus Cameron, and Winnie Eskild

##### **3) Wednesday, September 13th:**

09:00-11:00

**FEBS Special Session on Research and Career Skills — « How to Write and Publish a Scientific Article»**

Co-Organised by FEBS Publications and Education Committees

Chair: Laszlo Fesus (Debrecen, Hungary)

- “The art (and science) of writing a scientific article”, Frank Michelangelo, Chester, UK
- “What journal editors are looking for in a paper: What happens after I submit my manuscript?” Seamus Martin, Ireland
- “Publication Ethics”, Laszlo Fesus, Debrecen, Hungary
- General Discussion

#### **4) Wednesday, September 13th:**

18:30-19:30

#### **Workshop on Writing and Publishing Skills**

Moderator: Mary Purton (Cambridge, UK)

Frank Michelangelo, Laszlo Fesus, Seamus Martin, and Ferhan Sagin

## **6. FEBS Education Events (September 2016 and September 2017)**

### **FEBS Education Events Planned for the 41st FEBS Congress (3-8 September, Ephesus, Kusadasi 2016)**

1. Workshop on “New Paradigms and Methods on Molecular Life Sciences Education”.
2. Workshop on “How to Write and Publish a Scientific Article” will be organised, in collaboration with Prof. Laszlo Fesus, President of FEBS Publications Committee.
3. In addition, a poster session on education in molecular life sciences

Unfortunately, the education events planned for Kusadasi FEBS Congress had to be canceled due to the cancellation of the 41st FEBS Congress.

## **7.**

### **REPORT**

#### **2<sup>nd</sup> FEBS Education Ambassadors’ Meeting, 7-8 April 2017**

#### **Université Paris Descartes**

The Second FEBS Education Ambassadors’ Meeting (7-8 April 2017) took place in Paris, on Descartes University Campus (12 rue de l’école de médecine 75006 Paris), kindly hosted by Frederic Dardel, Rector of the University and Past Chair of FEBS. The Education Ambassadors of 24 FEBS Constituent Societies participated at this important meeting and including the Education Committee, all together there were 34 participants. The meeting started at 13:00 on April 7th and finished at 13:00 on April 8th. There were informative sessions as well as small group discussion times for the Working Groups of the Ambassadors.

The participants were divided into four groups according to their first or second choices. They met twice, one on each day, and the Chairs compiled reports of the meeting, which are presented below:

## **Education Ambassadors Meeting Workgroup No 1 Report**

### **“KEY KNOWLEDGE AND SKILLS EXPECTED FROM A MOLECULAR LIFE SCIENCES GRADUATE”**

Paris Université Paris Descartes, France – April 7-8 2017

#### **Workgroup attendees:**

Jürgen ALVES; Marija G. JANKULOVIC; Pawel POMORSKI; Erkki RAULO; Revaz SOLOMONIA; Anat YARDEN; Jason PERRET (moderator) and Keith ELLIOTT (moderator).

#### **Coordinators: Frank Michelangeli, Jason Perret & Keith Elliott**

**Aim:** To co-operate on composing an inventory for “Key Knowledge and Skills Expected from a Molecular Life Sciences Graduate” for facilitating build a molecular life sciences curriculum which will help progress the career of a young graduate. An EU project would facilitate the co-operation and dissemination, but may not be realistic to achieve. The FEBS Ambassadors-on-Education network and FEBS Education platform could be used for developing the inventory. The skills should include, beside the practical skills, the “transferable skills”, as well. The inventory would firstly cover the BSc degree and later may be extended to the high-school, MSc, and PhD degrees, as well.

#### **Report of discussions:**

Discussion on day 1 revolved around defining what a "bachelor" would require in terms of what "Key Knowledge and Skills Expected from a Molecular Life Sciences Graduate"; as the masters level seemed more obvious, but bachelors was a critical step as it followed high school training and was meant to establish the core knowledge needed.

The group discussion tried to define what a bachelor degree was in terms of what should a bachelor be prepared for; what should they attain at the end of a bachelor curriculum, what should the program contain and to what depth.

Rapidly it became obvious that, though the Bologna Process structure was adopted by most countries, the underlying organization, structure, content, curriculum length and prerequisites, i.e. in general the interpretation of the Bologna process was far

from being the same from country to country and consequently is a major problem in terms of "harmonization".

Indeed, discussions revealed that bachelor degrees had different aims; i.e. some countries bachelor degrees would offer a degree *per se*, thereby allowing the bachelor to go directly out and apply for work, others did not offer a bachelor degree that could be used *per se* and the bachelor degree was just a prerequisite to move on to the masters level. Some countries offered both; where the bachelor's degree as a final degree was delivered by "technical school/higher education schools" and not by the universities; and the bachelor degree in the universities was just the prerequisite to continue on to the master degree.

Likewise, access to a PhD training was restricted to only master degree students in some countries, whereas in others access was made possible to both bachelor and master degree students.

The length of the so called bachelor's degrees could also vary from three to four years depending on countries. The end point requirements and length of high school training turned out to be also a factor influencing length and curriculum content.

Consequently, the depth of subject matters was also variable.

At the end of day one discussions, we agreed that we had to set some common ground to indeed address the aim of the workgroup's task, i.e. what "Key Knowledge and Skills Expected from a Molecular Life Sciences Graduate"; and define a "core" bachelor's degree" regardless of actual outcome and length.

Discussion on day 2, followed up on the conclusions of day 1. The workgroup discussions focused on core areas/subject matters that would be mandatory in all cases; e.g. Chemistry, math, physics, biology and biochemistry. From there, the workgroup tried to understand what other skills such as certain transferable skills (report writing, basic scientific English, ...), wet lab (pipetting, solution preparing, pH measuring, weight measuring, spectrophotometry, light microscopy, western blot, chromatograph and basic molecular biology techniques such as gel electrophoresis, plasmid preparations, restrictions reactions, basic PCR, ...), as well as good laboratory practice (e.g. how to work in specific conditions (e.g. sterile, nuclease free). Likewise basic laboratory safety hazards and measures, handling biological materials, corrosive, toxic and flammable chemicals, their disposal,. They should also be informed about the work in specific (e.g. sterile) conditions and with techniques that are used to maintain those, should be part of bachelor training.

To what "depth" should subject matters go, was also discussed, i.e. ranging from "introduction to" to "advanced courses", considering a "generalist" bachelor program that would prepare for the different outcomes of the bachelor degree existing.

### **Outcome of discussion; follow up to achieve goals of the workgroup's aim(s):**

The workgroup decided that it would be necessary to have an idea of the different bachelor degrees within various countries, in terms of: cursus aim (degree *per se*, preparation for masters, ...), bachelor cursus length, content (what subject matters), credits of the subject matters, wetlabs (what subjects were illustrated by practical's, length/depth, laboratory skills acquired, ...).

We agreed that this inventory does not have to be exhaustive but representative of the major differences. Then a core bachelor cursus "*a minima*" could be drafted.

The take away mission for the work group members was therefore to obtain the information concerning the bachelor degree(s) as organized in their respective countries.

Next would be to "overlay" these various bachelor programs and draft the core bachelor program. Indeed, we were all aware that obtaining substantial changes per country/university was not a realistic goal, and therefore a "minimal core curriculum" would be the most realistic proposal that could be made and implemented in the various countries and universities across Europe, considering the substantial differences and interpretation of the Bologna process.

### **To be noted:**

- 1) **Jürgens ALVES** provided us with a very concise but informative brochure addressing curriculum content, subject matters, ventilated across different bachelor levels and master curricula.

The brochure was issued under Jürgens ALVES's auspice by the Hannover Medical School Institute of Biophysical Chemistry and is entitled: "***Outline of the Subject Matters required for the Acquisition of Bachelor and Master Level Proficiency in the Life Sciences***".

This brochure is an ideal example of what would be necessary to clarify what is being done across Europe.

- 2) **Keith ELLIOTT** sent, following our meeting, links to several **UK** documents centered on Life Science Curricula, entitled:
  - a. *National Subject Profile for higher education programmes in: Biochemistry - 2008*  
Document 1  
(<https://www.heacademy.ac.uk/system/files/biochemistryfinal.pdf>)
  - b. *Subject Benchmark Statement Biosciences - November 2015*  
Document 2 (<http://www.qaa.ac.uk/en/Publications/Documents/SBS-Biosciences-15.pdf>)

In this document pages 11-15 are of particular interest to the workgroup objectives.

These extensive documents cover many aspects of curricula, cohorts, outcomes, etc...and will be valuable aids for addressing the goals set by the workgroup.

Below, are copies of the Table of Contents, and the PDF files will be uploaded to the Education Platform.

## **Education Ambassadors Meeting Workgroup No 2 Report**

### **GOOD PRACTICES on (UNIVERSITY) EDUCATION**

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**There is no university education without research, no more than there is no research without university education**

This postulate should be one of the golden stone of our analytic work; university education and research are strongly linked. The corresponding rationale required that all the members of a teaching staff should be involved in a research team, even if they are not implicated in research. Why? By participating to the weekly seminar lab's they are linked to the rapid evolution of knowledge and technologies in a specific field and they are able to transfer shortly these new outcomes to young students. The teachers are the facilitators to disseminate the new knowledge about Life.

#### **Some kind of definition**

A definition of "Good practices" (1) is an initiative, project and/or policies that provide examples of practice, generate ideas and contribute to policy and curriculum development.

#### **Societal/governmental background: few observations**

University education is highly promoted by governments in most countries. For example the EU goal is to reach, by 2020, 40% of population between years 30-34 to be successful with a university degree (3).

Accordingly, in the last years it is observed a growing trend in the number of university students (2) with the corresponding increase in the variety of expectations and formative profiles. Also, the number of students in each class, tend to increase, but that in many cases (most states funded universities) it does not imply a proportional increase in the human maintenance resources of universities.

Accordingly:

- . Any teaching strategy should consider the different backgrounds of the student cohorts, their distinct formative profiles (in terms of weakness and strengths). Whatever the year or the country we will face at a “Gaussian” distribution of the new students skills regarding their intrinsic abilities, even if it is more homogeneous at the master level.

- . The above raise an excruciating question for academic institutions: shall the teaching staff to focus only on the best students, or to take care of the remaining majority?

- . The university formation should aim to facilitate the students the acquisition of many skills, particularly creativity and critical thinking through a process where students are the main actors where the teachers are “companions” in the learning process. If this goal is reached another important objective of the university formation will be reached: to provide them with the necessary resources to integrate successfully in a knowledge based economy.

### **Common overview of the student population**

Basic question about the ability of students (5). Let’s consider the following case: a group of 10 students, where:

- . 2 are very good; be able to managing more independently their learning process that systematically seek interaction and advice from the teaching staff

- . 4 are “standard” students. They are good but need a more guidance and supervision that respond effectively to it.

- . 2 of them require a special attention and a more intensive, strong involvement of the teaching staff. Eventually they could just reach the minimal, required level of knowledge.

- . 2 are too far from what could be acceptable to reach the minimal level; they need a re-orientation and another pedagogical approach. They need a specific but complicated approach.

The common approach to deal with this situation is to operate on the mean-stream, “average student” population. To this challenge we have to cope with an additional one, since the radical changes in the nature of biosciences (from 2000 with a strong breaking point in 2010/2011): what is the core biological knowledge we should consider to teach efficiently?

### **The positive feedback of teaching**

What researchers gain from teaching? The reported 4 points below have been already described (6) but it is worth to remember here:

- . Teaching at introductory level requires from the teacher a broad spectrum of knowledge: basic questions of students are often difficult to answer and it is a good way for the self-education of the teacher (free feedback!).

- . Teaching means coordination/discussion with colleagues from different fields, another way to be educated and sometimes to start research collaboration!

- . Attracting in the lab genuine students with original ideas or approaches.

- . Organizing lab courses on risky themes at a large scale.

**In conclusion we have listed possible trails to reach these goals in other words: “Good practices on (university) education”.**

The necessary transformations, the core of our meeting, imply:

- 1/ Placing the student in the focus-centre of our discussion.

- 2/ Educating the teachers as teachers. They should be benefited from the advancements.

- 3/ By setting up working groups, academic will be able to meet and discuss pedagogical tools in a fit-for-purpose environment without having to reinvent the wheel!

- 4/ Placing interactive-education as an obligatory approach.

- 5/ Responsibility of the student (individual work; auto-evaluation; common works assembling heterogeneous students in the same group). But the individual evaluation is absolutely required. Some kind of “contract “ included within the Syllabus (4).

- 6/ There is an absolute requirement to change and to adapt the teaching methodology, in a collaborative approach, to a rapidly evolving world

- 7/ Restoring the balance between teaching and research at university institutions.

### References and notes:

(1)<http://www.unesco.org/new/en/education/networks/global-networks/aspnet/good-practices/>:

(2)<http://ec.europa.eu/eurostat/en/web/products-press-releases/-/3-11042014-AP>

(3) [http://ec.europa.eu/education/policy/higher-education/attainment\\_en](http://ec.europa.eu/education/policy/higher-education/attainment_en)

(4) A **syllabus**: is an academic document with numerous variations:

1. That communicates course information

2. Defines expectations and responsibilities. It is descriptive (unlike the prescriptive or specific [curriculum](#))

3. Set out by an [exam](#) board or prepared by the [professor](#) who supervises or controls course quality

The essential components to an academic syllabus are:

- . Instructor information
- . General course information
- . Course objectives
- . Course policies
- . Grading and evaluation
- . Learning resources
- . Course Calendar

However the syllabus content differs significantly from country to country; thus almost never used in France and in Belgium it contains only the scientific documents related to the teacher's course. On the contrary in Spain is the general use as described above.

(5) Students are university students, as considered in the Bologna process L, M, D levels.

(6) ASCB Newsletter, November 2011, 3-5

## **EDUCATION AMBASSADORS MEETING WORKGROUP 3 REPORT**

### **“PROMOTION OF EDUCATION: AMBASSADORS’ EDUCATIONAL ACTIVITIES AND COMMUNICATION WITH ALL STRATEGIC STAKEHOLDERS”**

<i>Coordinators:</i>	Laszlo Dux- Gül Güner Akdogan
<i>Ambassadors:</i>	Vida Mildaziene Catalin Marian Daisy van der Schaft Hannes Stockinger Jiri Hudecek Xavier Coumoul

#### **1st Meeting: Friday, April 7th 2017**

Following introduction of the Chairs and participants of the Working group, firstly, brainstorming was done on the following issues:

- The of Ambassadors of Education represents a significant international body, to be exploited for the advancement of education in molecular life sciences.  
To get our messages through:
- Who are our targets?

- Shall we target the EU bodies, national parliaments and representatives?
- National Societies?
- Madame Curie programme?
- International projects?
- Erasmus +?
- ERC grants?

**Laszlo Dux (Hungary Szeged University) (Member of FEBS Education Committee):**

The EU does not have a common education policy. (Moreover the FEBS includes many non EU member countries as well) The Bologna treaty represents a willingness to harmonize higher education systems in Europe making degrees and diplomas comparable. The role of policy makers, governments in higher education are at the financing and at the quality control, accreditation level. Priorities should be given to recruitment of more teachers into the life and natural sciences education.

**Hannes Stockinger** from the Medical University of Vienna mentioned that each year 7 000 new students are incoming for the MD degree, 660 are being selected. The selection is done on the results of a one-day examination as well as on the origin of the students to guarantee sufficient MDs staying in Austria: thus 5% internationals; 20% EU members; 75% Austrians are selected from the best candidates. Hannes has worked long time on students' issues:

**Laszlo Dux:**

- The Ambassadors should identify the problems: What can be done? Persuade the decision makers at local and EU level-Get in contact with the Decision Making Bodies and- give the necessary information. Try to work in the peer-reviewing programmes, etc. The messages should be simple and short. Contradictory messages coming from the scientific/higher education communities are usually blocking any further activities. No uniform way can be recommended for all countries and professional organizations involved.
- Laszlo Dux mentioned that by the year 2020, 1, 000 , 000 health professionals will be missing from Europe. . The worse is in new member and candidate states like Romania, Bulgaria, Hungary, Serbia, etc. Germany is in the best condition now. Return of young education and research professional after a couple of years abroad, to their original home country should be promoted and supported by governmental and EU programmes..

**Daisy van der Schaft (The Netherlands):**

- **Question:** How are the practicals incorporated? Is there a formal training for Bachelor's thesis?
- Hungary: Practical work in MSc practical training but also some additional practical training in bachelor's degree necessary, depending on the final goal of the individual education programme..
- **Some issues:** Bologna process was implemented to enhance mobility. However, on the third year, which could be the most productive year,

students wish less to move, due to special extra commitments at finishing BSc and starting MSc programmes.

- In one tier system the dynamics of most students as follows:
  - 1st year.(Shocked by new environment)....
  - 2nd year...(Getting in balance)...
  - 3rd year.....(Most productive in research, culture, sport, social, international other activities at the University)
  - 4th year: (same as 3<sup>rd</sup> year)
  - 5th year...(Looking for a job)
  - Actually, the mobility has decreased under the Bologna system.
  - Bachelor's thesis
- Depends on the socioeconomic situation in different countries and we can not make a generalization.

#### **Xavier Coumoul (Paris Descartes University):**

- The decision makers about science are not connected with science.

Example: Ministry of Agriculture The Deputy of the Senate (Chamber) has no biological background. How to connect with these persons?

EPHIS: High rank official from European Commission—Ministry of Science- We invited one.

One way would be to invite one person to FEBS, as a liaison from EU Commission- We have to try..

- Also, decision makers from the Academy of Science.

#### **2nd Meeting: Saturday, April 8th 2017**

##### **Hannes Stockinger:**

We should write "Conclusions" to send to EU, and to National Constituent Societies . We could also go via "Association of European Universities "(EUA).

We need also to contact Ministries.

**Ranking of universities:** We should discuss how the ranking is done. Education is pretty much neglected.

**Merging of Societies:** This is an effective way to be more effective as united. We should also NOT send contradictory messages between related Societies - this is confusing.

Some targets:

- Presidents of Academy of Sciences (One should note that some of these institutions work in conflict with the universities, while some are productive).
- **Vice Ministers working with Science and/or Education**

##### **Gül Güner (Izmir University of Economics) (Chair, FEBS Education Committee):**

In the next period before the next FEBS Education Ambassadors' meeting, we could realize a pilot Project dealing with all these issues and writing and sending a Document to the stakeholders.

##### **Vida Mildaziene (Kaunas, Lithuania) (Member of FEBS WGI):**

Lithuanian universities have strong collaboration with the industry. So, industry could also be a stakeholder.

Document should also be sent to the Ministries.

FEBS can help through WGI (Working Group on Integration).

**Laszlo Dux:**

No more EU funding will be available for the new countries from 2020 on.

**Daisy van der Schaft**

At the EU level:

EAMBES (Engineering Society) to team-up with the EU Lobbying.

Joining forces with EMBO.

BIOMEDALLIANCE:

**Gül Güner:**

FEBS is a member of BIOMEDALLIANCE.

**Laszlo Dux:**

More Societies are represented in FEBS than the EU countries. Their needs and ideas should be incorporated and represented by the education Committee as well as by the Ambassadors.

**Mission:**

Strengthening research and Education capacities in developing countries-balance the capacities.

**Daisy van der Schaft**

Could there be proposals for student fellowships for pursuing MSc in a different country and then coming back?

“Multiplicative Effects of EU funds can be improved with sort of a”“Return to Home Country” fellowship

**Gul Guner.** Why MSc and not PhD?

**Daisy van der Schaft:**

(Chinese fellows have these fellowships)

**Tentative WorkFlow of the WorkGroup (3) Pilot Project)**

1. Firstly, discuss with each other to form an outline
2. Set-up a “Communication Document”
3. Prepare a list at the national levels (each member) (Ministries, university rectors, Academy of Sciences, Science Bodies (EMBO; etc ), Deans of Life Sciences Schools and at the EU level (if possible)
4. Contact FEBS bodies (Science and Society, WGI, etc) and also find some supportive people from FEBS.
5. **From September 2017 to February 2018:**  
Send or communicate personally the “Communication Document” and receive feedback
6. **March 2018:**  
Compile the feedback result and form a Report of the Pilot Project

**Saturday April 8th, Discussion with the big group:**

Laszlo Dux gave a short report to the big group.

In order to have a stronger voice for the governments and other bodies, it was noted that some countries have “united” societies. Some examples:

**Keith Elliott:**

UK example:

Structure of Life Sciences: Royal Academy of Biology :

(One body was formed) They talk as one voice to the politicians and strategists. It took 20-30 years of work.

**Erkki:** Alliance between Education and research communities..

**Ferhan Sagin:**

Science politicians and science educators-Nature has a commentary on that issue.

**Angel Herraез:**

Spain example:

Confederation of Scientific Societies: They meet regularly.

**Jerka Dumic:**

Each society has a committee for information and different activities FES WGI is communicating with the Ministries and strategists of the related FEBS countries, Academy of Sciences, etc.

**Alberto Spasni**

Italy:

Federation of Italian Life Sciences Societies.

## **Education Ambassadors Workgroup No 4 Report:**

### **LEARNING RESOURCES**

- **Short Term Objectives**

- Setup Panel, with co-ordinator, to oversee the Education Resources section. The working group have suggested that the panel consists of Aljosa Bavec, Angel Herraез, Ferhan Sagin, Jerka Dumic, Kaspars Tars, Liliya Nadolnik, Magali Blaud, Steve Minchin (co-ordinator)
- Clarification of the copyright and technical issues
  - We would prefer a system where all the material is uploaded to the FEBS portal, rather than being a 'list of links'. But need to worry about region resources and copyright
- Clarification of what material is required
  - Overview document
    - including a summary, context e.g. year group and what other background material was delivered to the students, learning outcomes
  - The resource
  - Any additional information required to run the session
- To agree a process for the submission and review of resources
- To look at how we expect users to gain access to the material
  - the consensus was that we would want a simple registration process and simple possible

- Get feedback from other education ambassadors on the proposals/options
  - Uploading some exemplars (approximately 5)
  - Promotion of the network with the aim of collecting resources
- **Long Term Objectives** (till next FEBS Education Ambassadors Meeting 2018-12 months)
    - Develop a searchable database and navigation
    - Promotional tutorials on how to use
    - Encourage national societies to promote the network
    - Feedback and testimonials
    - Obtaining data on usage (analytics)

As traditionally, written feedback from the Education Ambassadors Meeting was taken from the participants and the results are presented below:



# Education Ambassadors

FEBS Education Committee

April 7-8<sup>th</sup>, 2017 – Paris, France  
PARTICIPANT FEEDBACK FORM

## PROGRAMME

### 1) April 7<sup>th</sup> Sessions

	Not useful	Useful	Very useful
○ 'FEBS Ed-Com Activities' (Gül Güner Akdogan)		5	13
○ Reports from the Ambassadors & Discussions		7	6
'The Interactive Education Workshops of the French Society (SFBMB): 2016 and 2017' (Jean Luc Souciet)		12	6
'Education Workshop at the Annual Meeting of the Norwegian Biochemical Society 2017' (Winnie Eskild)		11	7
'The Latvian Biochemistry Society: FEBS Education Workshop in Riga in 2016' (Kaspars Tars)		14	4
'The Education Section as Part of the Biochemical Congress of the Czech and Slovak Societies for Biochemistry and Molecular Biology' (Jiří Hudeček)		12	4
'Commitment and Leadership of SEBBM with the Improvement of the Teaching of Biochemistry. Past, Present and Future' (Néstor V. Torres Darias)		8	10
'The Biochemical Society (UK): Learning Resources' (Steve Minchin)		5	15

○ Ambassadors' Working Groups' Discussions (Part 1)		5	13
○ 'A case study approach to engaging with complex biochemical topics' (Steve Minchin)		3	17
○ 'Research and Publishing in Education – FEBS Open Bio' (Ferhan Sagin - Angel Herraéz)	1	3	13

**2) April 8<sup>th</sup> Sessions**

	Not useful	Useful	Very useful
○ 'Educational Technologies' (Angel Herraéz)		10	8
○ Ambassadors' Working Groups' Discussions (Part 2)		3	14
○ Reports of the Working Groups and General Discussion		2	17
○ 'Trends and Tips for Organizing Education Activities' (Jean Luc Souciet - Keith Elliott - Gül Güner Akdogan)		1	10

**SOCIAL EVENTS**

	Not satisfied	Satisfied	Very satisfied
○ Coffee Breaks		16	2
○ Dinner (Restaurant Bouillon Racine)			20
○ Lunch (Salle St. Germain)			4

**OVERALL ORGANIZATION**

	Not satisfied	Satisfied	Very satisfied
○ Communication before the meeting (program, accomodation, etc.)		5	13
○ Meeting packages		2	16
○ Meeting venue and facilities		5	13

**LAST but not LEAST...**

- What was particularly HELPFUL in this meeting?

Working group discussion Part 2  
 Getting to know about events & opportunities and meeting people (network)  
 The interaction between everyone, informal discussions  
 Examples and experiences from the colleagues  
 Sharing of the experience from different countries and from different educational ?  
 Exchange of information  
 Group discussion about learning resources  
 Working groups – Working Group Reports - FEBS – Educ Com Workshops  
 Collecting information an activities in other national societies, finding out similarities and differences in problems on education  
 The working groups and discussion on working groups report  
 The possibility to meet with colleagues from different countries and to discuss in detail the situation and the approaches  
 Realization of diferences between countries even if follow Bolonic system

- Within this meeting, was there something you learned that was particularly SURPRISING or IMPORTANT to you?

S. Minchin's lecture!  
 Was really surprised and liked much about web page of British Biochemical Society – lot educational needs  
 There were some important aspect  
 Funding for ambassadors to organize a workshop  
 As usual, various differences between countries  
 To organize education session during national meeting in 2018  
 To introduce more elements of virtual lab. through tools placed on the website of our society or other available resources (like proteopedia)  
 Flying labs – nice way to attract new students!  
 Perhaps how similar are many problems we are encountering  
 Legal fear which may inhibit resources dissemination

- From some of the knowledge/techniques discussed during the meeting, is there any idea you INTEND TO PUT INTO PRACTICE?

Yes, virtual labs  
 Yes! Tips for event organization  
 Possibly, but not something I did not already know about  
 The friendly atmosphere. The limited number of participants that allow personal interactions  
 Yes... Many ideas... and the most important thing - positive spirit and proofs it is possible to make a difference  
 I liked much the elective from UK about cancer drug design and application and want to introduce it  
 Yes  
 Plicker cards  
 Respond to Working Group "HOMEWORK"  
 ? Special site of educational resources for our society + links to similar sites from other societies of FEBS  
 The little booklet by Prof. Alves seems to be pretty useful...  
 Not of the moment  
 The case oriented course (S. Minchin), I will try to adapt to our situation  
 Plates for test questions during the lecture, presented by Kaspars

- What did you like BEST about this meeting?

Friendly atmosphere  
 Working groups  
 The imbalanced ability of most people participants to speak as some English speaking speaker overtook / dominated the discussion  
 Great positive people, willing to share the info. Great venue! Perfect!!!  
 Organisation –suppl materials, discussions after the lectures  
 Free communication which was effective to generate new ideas  
 Very effective activity of working group 4  
 Getting to know new people and sharing ideas for education  
 Get together dinner

Working groups & Networking  
Positive atmosphere and real outcomes, sharing ideas and generating new ones  
Group meetings about the resources  
Discussions on experiences in other countries  
The relaxed and open informal atmosphere  
Group meetings

- What did you like LEAST about this meeting?

Raise a topic for discussion and allow a round table responses in which everyone in line can respond and provide their opinion. I think the allocation of time to specific speakers was a bit overdoing  
There was no time for informal contacts. Coffee break should be longer.  
Dinner – to be possible to communicate with more people  
? Everything was done well  
Homeworks should be more clearly defined - results to be estimated in the next meeting  
Nothing in particular  
If anything, some lack of time, which was a bit pressing us in some moments  
Problems with timing, maybe less, little longer presentations

- What could be done to make the meeting MORE VALUABLE?

To have the presentation in advance  
Thank you!!!  
More concrete conclusions, tasks, to shift ambassadors who talk, to working groups which work  
More benchmarking, sharing ideas  
Put slides of presentations on the Febs Educ Com web platform  
Perhaps to define a more solid "HOMEWORK" to all participants  
To present info on \*FEBS website \*main outputs \*national societies websites  
To be more focused on practical goal  
To prepare some written materials and send them beforehand to the participants  
Keeping outcome of meeting on-line

- Are you likely to attend Ambassadors on Education Meeting again? **All**  
**responded Yes**  No

#### Other Comments and Topics for the upcoming meetings

Discussion groups sessions were not well prepared  
It would be good to come back to the "projects" of the working groups  
Examples from real life – Experiences from other countries  
To share abstracts of presentations to ambassadors (for sure after author approval)  
Thanks!  
Hotel – Restaurant & Meeting Venue very close - Great!  
Maybe we should talk about teaching evaluation methods

## 8. Joint Event with FEBS Advanced Courses Committee: Research and Career Development Session during the FEBS Advanced Course in Spetses (25 May, 2017)

There was an agreement between FEBS Education and FEBS Advanced Courses Committees to jointly organise a session on Research and Career Development during some of the FEBS Advanced Courses, and the pilot one would be the Spetses Matrix Pathobiology course. The organiser of this course, Prof. Nikos Karamanos kindly agreed to host such a session. The programme, as realized, is presented below.

### 6th FEBS Advanced Lecture Course Matrix Pathobiology, Signaling and Molecular Targets Spetses, May 25th – May 30th, 2017

#### Thursday, 25 May

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*Chairpersons/discussion leaders: Nikolaos Afratis & Ilaria Caon*

#### **Career development Session**

- 17:15 – 17:30     **G. Guner** (Chair, FEBS Education Committee; School of Medicine, Izmir, Turkey)  
*Ph.D. Training: Tips for success for a Ph.D. student*
- 17:30 – 17:35     Discussion
- 17:35 – 17:55     **B. Vertessy** (Chair, FEBS Advanced Course Committee; Budapest, Hungary)  
*Career planning: how to jump the transitions on your career path?*
- 17:55 – 18:00     Discussion
- 18:00 – 18:20     **M. Papatriantafyllou** (Editor of FEBS Letters, Heidelberg, Germany)  
*How to write a scientific paper*
- 18:20 – 18:25     Discussion
- 18:25 – 18:45     Break

## 9. FEBS Workshops Realized

- **FEBS Workshop on Molecular Life Science Education ,November 24-25th, 2016, Riga, Latvia**

Academic Center for Natural Sciences of the University of Latvia, Jelgavas 1, LV 1004

**Hosted by** the Latvian Biochemical Society (LaBS)

**Coordinator of Workshop:** Prof. Kaspars Tars (President of LaBS)

**From FEBS Education Committee:**

1. Keith Elliott (Manchester, UK)
2. Ferhan Sagin (Izmir, Turkey)
3. Frank Michelangeli (Chester, UK)
4. Gül Güner Akdogan (Chair) (Izmir, Turkey)

This workshop, coordinated by Kaspars Tars and hosted by Latvian Society of Biochemistry and Molecular Biology, was conceived during the FEBS WGI visit to Riga in 2014. The workshop took place in the modern building of the Academic Center of Natural Sciences of the University of Latvia. The FEBS team consisted of Frank Michelangeli, Ferhan Sagin, Keith Elliott, and Gül Güner Akdogan. Around 45 participants including faculty members and young scientists, were present. There was also participation from Belorussia as well as from Turkey.

The Workshop themes were selected according to the preferences of the Society: as is the tradition of the FEBS Education Committee.



## Programme

Day 1: Thursday, November 24th 2016		
08:30-09:15	Registration	
09:15-09:30	Welcome Address by Host	Kaspars Tars
09:30-09:45	FEBS Education Committee and Introduction to the Workshop	Gul Guner Akdogan
09:45-10:30	<b>Session 1:</b> Panel Discussion: Skills and Key Knowledge for the Molecular Life Sciences Degrees Open Forum on the State of Molecular Life Sciences Education in Latvia	Frank Michelangeli
10:30-10:45	Coffee	
10:45-11:30	<b>Session 2:</b> Examples of Active Learning Methods Problem-Based Learning: Philosophy and Manchester Experience	Keith Elliott
11:30-	Problem-Based Learning: Izmir Experience	Gul Guner-Akdogan

<b>12:00</b>		
<b>12:00-12:30</b>	“Transforming Your Classroom with Team-Based Learning: Bringing Deep Engagement and the Joy of Learning to Your Students”	Ferhan Sagin
12.30-12:40	Introduction to Small Group Discussions and Divide into Groups	Gul Guner Akdogan
12:40-13:30	Lunch	
13.30-14:30	Small-Group Discussions (30 min each-rotation in 2 groups)	Keith/Gul/Ferhan
	Two Approches to Problem Based Learning Keith Elliott - Gul Guner Akdogan	Team-based Learning Ferhan Sagin
14.30-15:00	Coffee Break and networking	
15:00-15:40	<b>Session 3: Assessment and Feedback</b> 360 degrees view of Assessment	Ferhan Sagin
15:40-16:00	"Criterion- vs norm-referenced assessment"	Keith Elliott
16.00-16:30	Use of Some Educational Technologies	Frank Michelangeli
16:30-17:30	Small-Group Discussions (30 min each group-rotation in two groups)	<u>Keith/ Ferhan/ Frank</u>
	Assessment Keith Elliott- Ferhan Sagin	Use of Technologies Frank Michelangeli
<b>17:30-18:00</b>	<b>General Discussion (Whole Group)</b>	FEBS Team
<b>Day 2: Friday, November 25th, 2016</b>		
<b>09:00-10:30</b>	<b>Session 4: Research in Undergraduate Education (For BSc and MD students)</b>	
09:00-09:30	Research in Undergradaute Education (BSc students)	Frank Michelangeli
09:30-10:00	Research in Undergraduate Education: An Innovative Research Training in a Medical School	Gül Güner
10:00-10:15	General Discussion	Frank/Gul

10:15-10:45	Coffee Break		
<b>10:45-17:00</b>	<b>Session 5: Research and Career Skills for Young Scientists</b>		
10:45-11.30	How to Write a Scientific Paper		Frank Michelangeli
11:30-12:15	How to Write a CV: How to Make the Best of Yourself?		Keith Elliott
12.15-13.15	Lunch		
13.15-13:45	Funds and Programmes		Keith Elliott
13:45-14:15	How to Make the Best of your PhD? Student Role and Supervisor-Student Relationship		Ferhan Sagin
14:15-15:45	Small Group Discussions (45 minutes / group - each participant chooses two groups) (With Coffee)		
	1. How to Write a Scientific Paper (Frank Michelangeli)	2. CV Writing (Keith Elliott)	3. PhD Student Role and Student-Supervisor Relationship (Ferhan Sagin-Gül Güner-Akdogan)
15:45-16:15	General Discussion (Big Group)		FEBS Team
16:15-16:30	General Discussion, Feedback, and Closing of the Workshop		Gül Güner-Kaspars Tars



All together, it was a successful workshop rewarding for both sides. The overall feedback forms is presented below:

**FEBS Workshop on Biochemistry and Molecular Biology Education  
Feedback Form**

**November 24-25th, 2016**

Academic Center for Natural Sciences of the University of Latvia, Riga

("5" is "excellent")

"1" is "very poor")

	1	2	3	4	5
<b>Opening Session</b>			1	10	10
<p><b><i>Suggestions for the session:</i></b></p> <ul style="list-style-type: none"> <li>• "Technical problems +/- resolved (One participant)</li> <li>• "The organisers could have prepared a small introduction on the situation in Latvia or asked someone to prepare one" (One participant)</li> <li>• "Technical problems, some organisation problems" (One participant)</li> <li>• "Should start on time" (One participant)</li> <li>• "It was not good, it was not bad, it was OK" (One participant)</li> </ul>					
<b><i>Session 1: Key Knowledge and Skills for Molecular Life Scientists</i></b>				3	17

**Suggestions for session 1**

- “Conclusions on discussion?” (One participant)
- “Could focus on the need to teach more critical thinking- not to believe everything you read or, be more critical”

**Session 2: Examples of Active Learning methods**

	4	5	1	2	3
<b>“Problem-based learning: Philosophy and Manchester Experience”</b> Keith Elliott				2	20
<b>“ Problem-Based Learning: Izmir Experience”</b> Gül Güner Akdogan				3	19
<b>“Transforming your Classroom with Team-Based Learning (TBL) “</b> F. Sağın			1	1	19 +!!

**Suggestions for session 2:**

- “Very nice thank-you” (One participant)
- “It was very informative, thanks” (One participant)
- “Very nice practical illustration of TBL in small groups” ( One participant)
- “Very informative, especially together with small discussions

<b>Session 3: “Assessment and Feedback”</b>	1	2	3	4	5
<b>“360 degrees view of assessment”</b> Ferhan Sağın			1	7	14
<b>Criterion-vs norm-referenced assessment</b> Keith Elliott			1	6	13

<b>Use of Some Educational technologies</b>				3	16
<b>Frank Michelangeli</b>					!!+
<b>Suggestions for session 3:</b>					
“It was a little bit difficult to follow information due to technical problems” (One participant)					
“Assesment part just was not that interesting and new for me”(One participant)					

(“5” is “excellent”

“1” is “very poor”)

<b>Please kindly fill for the “Small-Group Discussion ” session (s) that you have attended.</b>					
<i>Small Group Discussion Session Name</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b><i>Two approaches to Problem-Based-learning</i></b> <b><i>Keith Elliott-Gül Güner Akdogan</i></b>			<b>1</b>	<b>9</b>	<b>10</b>
<b><i>Team-Based Learning (TBL) (F. Sağın)</i></b>				<b>2</b>	<b>18</b>
<b><i>Assessment (Keith Elliott-Ferhan Sagin)</i></b>				<b>4</b>	<b>9</b>
<b><i>Use of technologies (Frank Michelangeli)</i></b>	<b>could</b>	<b>n’t</b>	<b>attend</b>	<b>2</b>	<b>10</b> <b>!!! +</b>
<b>General Suggestions for the overall evaluation of these sessions:</b>					
<ul style="list-style-type: none"> <li>• <b>Loved Ferhan Sagin Team-Based Learning” (One participant)</b></li> </ul>					

Day 2: Friday, November 25<sup>th</sup>, 2016

	1	2	3	4	5
<i>Session 4: "Research in Undergraduate Education"</i>					
<b>"Research in Undergraduate Education (BSc students)"</b> <b>Frank Michelangeli</b>				2	15
<i>"Research in Undergraduate education: An Innovative Research Training in a Medical School"</i> <b>Gül Güner Akdogan</b>				3	14
<b>Suggestions for session 4:</b> <ul style="list-style-type: none"> <li>• "Unfortunately, I missed the session on 'Research in Undergraduate Education' " (One participant)</li> <li>• "Very nice, thank-you" (One participant)</li> <li>• "I wish I'd known this earlier"</li> </ul>					

“very poor”)

(“5” is “excellent” “1” is

Session 5: “Research and Career Skills for Young Scientists”	1	2	3	4	5
“How to Write a Scientific Paper” Frank Michelangeli				3	16
“How to Write a CV: How to Make the Best of Yourself” Keith Elliott				4	14
“Funds and Programmes” Keith Elliott				4	13
<p><b>Suggestions for the session:</b></p> <ul style="list-style-type: none"> <li>• “Very useful, but could be a nice addition if the lectures tell some examples from their own experience-a summary of mistakes-errors . Unfortunately, I missed the one on “How to Write a Scientific Paper” (One participant)</li> </ul>					

Session: “Closing”	1	2	3	4	5
Overall evaluation of the session					16
<p><b>Suggestions:</b></p>					

Please kindly fill the "Small Group Discussion" session that you have attended.					
	1	2	3	4	5
<i>Small Group Discussion Session Name:</i>					
<i>"How to Write a Scientific Paper"</i> <i>Frank Michelangeli</i>					10
<i>"CV Writing" (Keith Elliott)</i>					9
<i>"Supervisor-Student Relationship"</i> <i>Ferhan Sagin, Gül Güner Akdogan</i>					9
<i>Overall Suggestion for the organisation of the small group discussion sessions:</i>					

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

	1	2	3	4	5
<i>General Evaluation of the Workshop</i>				3	12

## General Evaluation of the Workshop

### Suggestions:

- *“Thank-you for nice workshop” (One participant)*
- *“Brilliant! Got useful ideas at both study programmes and course level” (One participant)*
- *“Very useful, encouraging to start using the prescribed methods, e.a TBL, e-technologies; Lecturers were well prepared and experienced, presentations clear and interesting (One participant)*
- *“Maybe use microphone /check if people can here well” (One participant)*
- *“Very useful. Gives more ideas how to teach students and get better results” (One participant)*
- *“Very useful experience with minor details that perhaps do not need changing, mostly associated with technical details” (One participant)*
- *“There were problems with timing” (One participant)*
- *“Interviewing exchange”(One participant)*
- *“Valuable and inspiring information” (One participant)*
- 

### Are you a:

Faculty member (science):..... 7  
(1/2).....

PhD Student:.....10.....

..

MSc Student:.....

Faculty Member (education):.....7  
(1/2).....

Teacher (medical programme):.....

Medical Training Student:.....

Post doc:..... Other (Please specify)..... 2  
(Pharmacy + Science).....

***Thank-you for your participation!***

**Our deepest thanks go to the Latvian Society of Biochemistry and Molecular Biology for their warm hospitality and interest in biochemical education.**



- **FEBS Workshop on Biochemistry and Molecular Biology Education**

**Kaunas, Lithuania, June 26-27th, 2017**

This workshop, coordinated by Vida Mildaziene (General Secretary of Lithuanian Society of Biochemistry) and Liliya Nadolnik (President of Belorussian Society of Biochemistry) and hosted by Lithuanian Society of Biochemistry, was conceived during the FEBS WGI visit to Grodno in 2016. The workshop took place on the campus of Vytautas Magnus University. FEBS team consisted of Ferhan Sagin, Keith Elliott, and Gül Güner. Around 45 participants including faculty members and young scientists, were present. There was also participation from Belorussia. The Workshop themes were selected according to the preferences of the two Societies and it was the first time in the history of FEBS Education Committee that an Education Workshop was co-ordinated between two Societies.

The programme of the Workshop was finalized as follows:

**FEBS Workshop on Molecular Life Science Education**

**June 26-27<sup>th</sup>, 2017**

**Kaunas, Lithuania**

**Hosted by** the Lithuanian Society of Biochemistry (President: Vida Mildaziene)

**Coordinators of Workshop:** Prof. Vida Mildaziene (President of Lithuanian Society of Biochemistry)

Prof. Liliya Nadolnik (President of Belarussian Society of Biochemistry)

**From FEBS Education Committee:**

5. Keith Elliott (Manchester, UK)
6. Ferhan Sagin (Izmir, Turkey)
7. Gül Güner Akdogan (Chair) (Izmir, Turkey)

**Programme**

<b>Day 1: Monday, June 26th, 2017</b>		
08:30-09:15	Registration	
09:15-09:30	Welcome Address by Host	Vida Mildaziene
09:30-09:45	FEBS Education Committee and Introduction to the Workshop	Gul Guner Akdogan
09:45-10:30	<b>Session 1:</b> Panel Discussion: Molecular Life Sciences Education in Lithuania and Key Knowledge and Skills for Molecular Life Sciences	Vida Mildaziene
10:30-11:00	Coffee	

11:00-12:15	<b>Session 2:</b> Examples of Active Learning Methods: Team-Based learning		Ferhan Sagin
12:15-13:15	Lunch		
13:15-14:15	<b>Session 3:</b> Biochemistry Practicals : Introduction and Wet practicals		Keith Elliott
14:15-15:00	Dry Practicals (Case-Based Discussions)		Gül Güner Akdoğan
	Introduction to Small Group Discussions and Divide into Groups		Gul Guner Akdogan
15:00-17:00	Small-Group Discussions ( Three Groups/ 40 min each) (Rotation in three groups) (With Coffee)		Keith/Gul/Ferhan
	Wet/ <i>In Silico</i> Practicals Keith Elliott	Case –Based Discussions Gul Guner Akdogan	Team-based Learning Ferhan Sagin
17:00-17:15	General Discussion		FEBS Team
17:15-17:45	Feedback of the Day		Gül Güner Akdogan
18:00	Welcome Drinks		
<b>Day 2: Tuesday, June 27th, 2017</b>			
	<b>Session 4: PhD Training</b>		
09:00-09:45	PhD Training: New Horizons		Gül Güner Akdogan
09:45-10:30	Rethinking doctoral education' ( <i>with a focus on student responsibility</i> ): 'Beginning with the end in Mind'		Ferhan Sagin
<b>10:30-12:30</b>	Small-Group Discussions ( Three Groups/ 40 min each) (Rotation in three groups) (With Coffee)		Keith/Gul/Ferhan
	1. How to design PhD programmes? Gül Güner Akdogan	2. Quality of Thesis Keith Elliott	2. Tips for Writing a Research Paper Ferhan Sagin
12:30-13:30	Lunch		
13:30-14:30	Reports of Groups-General Discussion		FEBS Team
	<b>Session 5: Career Skills for Young Scientists</b>		
14:30-	Tips for Writing a Successful Research Project		Gül Güner Akdoğan

15:15		
15:15-15:30	Discussion	
15:30-16:00	Coffee break	
16:00-16:45	Funds and Programmes	Keith Elliott
16:45-17:00	Discussion	
17:00-17:30	General Discussion, Feedback, and Closing of the Workshop	Gül Güner-Vida Mildaziene





All together, it was a successful workshop rewarding for both sides. The feedback taken from the participants ranked the Workshop, as a whole, as excellent ( %93) or very good (%7). The question: "Will you implement one or more of the Workshop

themes in your future teaching? “ received 100 % positive answers, for which the FEBS team is happy. In the future we plan to assess the long term impact of the workshop.

Our deepest thanks go to the Lithuanian and Belorussian Societies of Biochemistry for their warm hospitality and interest in biochemical education.

## **10. FEBS Education Activities planned for 2018**

### **(1) FEBS Education Workshop in Sofia, as an annex to Kliment's days**

(17.11.2017)

**Trainers from FEBS:** Keith Elliott, Ferhan Sagin, and Jerka Dumic

**Coordinator:** Diana Petkova (FEBS Education Ambassador from Bulgaria and the President of the Bulgarian Biochemical, Biophysical, and Molecular Biology Society).

09:00- 9:15 Opening

09:15- 10:00 How to design Biochemistry Practicals?

In Silico Practicals (Keith Elliott)

10:00-10:30 Wet Practicals (Jerka Dumic)

10:30-11:00 Coffee Break

11:00-11:45 Examples of Active Learning methods:

Transforming Your Classroom with Team-Based Learning: Bringing Deep Engagement and the Joy of Learning to Your Students (Ferhan Sagin)

11:45-12:45 Small Group Discussions

(Three Groups- EACH PERSON ONE GROUP)

(1). Team Based Learning - 2. *In silico* Practicals - 3. Wet Practicals)

12:45-13:45 Lunch

13:30- 14:45 How to Make the Best of your PhD? Student Role and Supervisor-Student Relationship (Ferhan Sagin)

14:45-15:30 Funds and Programmes (Keith Elliott)

15:30-15:45 COFFEE BREAK

15:45-16.30 Molecular Life Sciences Education for the Needs of the Industry (Jerka Dumic)

16:30-17:00 Feedback and Close

### **(2) Chester Biochemical Society Workshop on “Evolving Bioscience Education” (April 11-12nd, 2018)**

(With Support from FEBS Education Committee) (Coordinator: Frank Michelangeli)

### **(3) FEBS Education Workshop in Zagreb (April 4-5, 2018) (Hosted by CSBMB)**

### **(4) 3<sup>rd</sup> FEBS Education Ambassadors’ Meeting (April 6-7,2018)**

(Hosted by Jerka Dumic, Zagreb University)

**(5) FEBS Education Workshop in Izmir (September 6,7, 2018) (Hosted by TBS- Coordinated by Gul Guner and Ferhan Sagin)**

## **11. FEBS Network-Contribution of Education Committee**

The FEBS Network is getting ready for its launch in time for the Education Conference and the FEBS Congress. Along the last 18 months, strategic decisions have been taken within the Steering Group regarding the implementation. FEBS Education Committee has a deep involvement on this, with a member (Angel Herraéz) in the Steering Group and a few people already recruited to participate as Education Experts. The initial launch will have “Educator” as one of the 3 Channels (sections for content), as well as “Education Ambassadors” as one of the 2 initial Rooms (private spaces). We are hoping to start making use during the congresses in September and so entice users to engage and contribute to the growth of this Network and the community it will support.

## **12. FEBS Open Bio, Education Section**

It was agreed to start a section within FEBS Open Bio devoted to articles on education, with similar standards to the rest of the journal, and to support this in an open manner to any contributors by FEBS covering publication costs. The Education Section in the journal was announced in April, with two persons as section editors (Angel Herraéz and Luciane V. Mello). There have been two submissions so far; one was rejected after reviewing and the other is ready to be published soon.

## **13. A New Instrument for the FEBS Education Ambassadors: Support for organising local Education Workshops**

FEBS Education Committee has initiated the “FEBS Education Ambassadors’ Project in 2016, for promoting education throughout Europe with the support of Education Ambassadors and it has been developing since. The need for supporting Education Ambassadors to organise education events in their own countries solicited the agreement on a new instrument: the support of 1500 Euros for successful applications. The budget for 2018 allows for four Workshops.

The application from, as sent to the Ambassadors, is presented below:

### ***APPLICATION FOR A FEBS EDUCATION WORKSHOP (2018) TO BE ORGANISED IN A FEBS MEMBER COUNTRY***

(Deadline for application: November 30<sup>th</sup>, 2017)

## **WORKSHOP DESCRIPTION**

NAME OF FEBS CONSTITUENT SOCIETY:

President:

e.mail:

General Secretary:

e.mail:

Education Ambassador:

e.mail:

<b>Title of the Workshop</b>			
<b>Dates</b>			
<b>Total duration (hours)</b>			
<b>Organizer(s)</b>	<b>Title</b>	<b>Name, Surname</b>	<b>Institution</b>

<b>Aim</b>	
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<b>List of the learning objectives</b>	
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<b>Potential Contributors (Speakers, Trainers, etc) and affiliations</b>

<b>Participants</b>
a) Profile of participants expected to attend the workshop (i.e. faculty, PhD students, Master students, researchers ...). b) Number of participants that are expected or that you are able to manage (min. and max.).



<b>Educational Methods</b>
<i>Please, explain what format, techniques, methods are proposed for delivering the contents of the workshop. Example: lectures, work in small groups, hands-on practice by the participants, produce reports...</i>

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**How will the WS budget applied for, from FEBS Education Committee, be used? (Max 1,500 Euros)**

*(Travel and/or accomodation for WS trainers and presenting young educators, WS materials...)*

**Planning of the WS  
Venue**

**(Capacity, break-out  
rooms, audio-visual  
equipment, etc)**

## WORKSHOP BUDGET

<p><b>Contributions of host society</b></p> <p><i>* A detailed list of items and related costs should be included here like Venue, travel and/or accomodation for WS trainers, bursaries for participation of young scientists, printing of WS materials, etc.)</i></p>	
<p><b>Planned justification of FEBS Education Committee Funding</b></p> <p><i>*Max 1,500 Euros can be provided by FEBS Ed Com</i></p> <p><i>* A detailed list of items and related costs should be included here like travel and/or accomodation for WS trainers, bursaries for participation of young scientists, printing of WS materials, etc.)</i></p>	
<p><b>Additional notes:</b></p>	

**Application to be sent to:**

Prof. Gül Güner Akdogan

Chair, FEBS Education Committee

gul.guner@deu.edu.tr

## **14. Conclusions and Future Prospects**

FEBS Education Committee fulfilled its objectives during the period September 2016-September 2017. The Riga Workshop, the Education Ambassadors meeting in Paris, the Kaunas WS, and the Joint Session with FEBS Advanced Courses Committee on Research and Career Development in Spetses have been highly appreciated by the participants. The interest and commitment of the Constituent Societies are remarkable. The Education Ambassadors have taken on significant responsibilities for promoting education at the European level. The contribution of the Committee to FEBS network and the implementation of the Education session of FEBS Open Bio are under good progress. We are looking forward to an excellent Conference on “New Horizons in BMB Education” in Rehovot, as well as to productive FEBS Education sessions (In collaboration with FEBS Publications Committee) in Jerusalem.

## **15. Acknowledgement:**

The Chair of FEBS Education Committee is thankful to all FEBS Education Committee members and co-opted members for their continuous support and dedicated work.

She is grateful to the strong, effective support of the General Secretary (present and past), the Treasurer, all FEBS EX-COM members and their assistants, FEBS Constituent Societies, as well as the President of IUBMB.

The fruitful collaboration with IUBMB Education Committee Chair and the Chair of the Science Education Department, as well as Israelian Society for Biochemistry and Molecular Biology, deserves special acknowledgement.