

Introductory Symposium  
**Advancing Pharmacy  
through Education in  
Bosnia and Herzegovina**

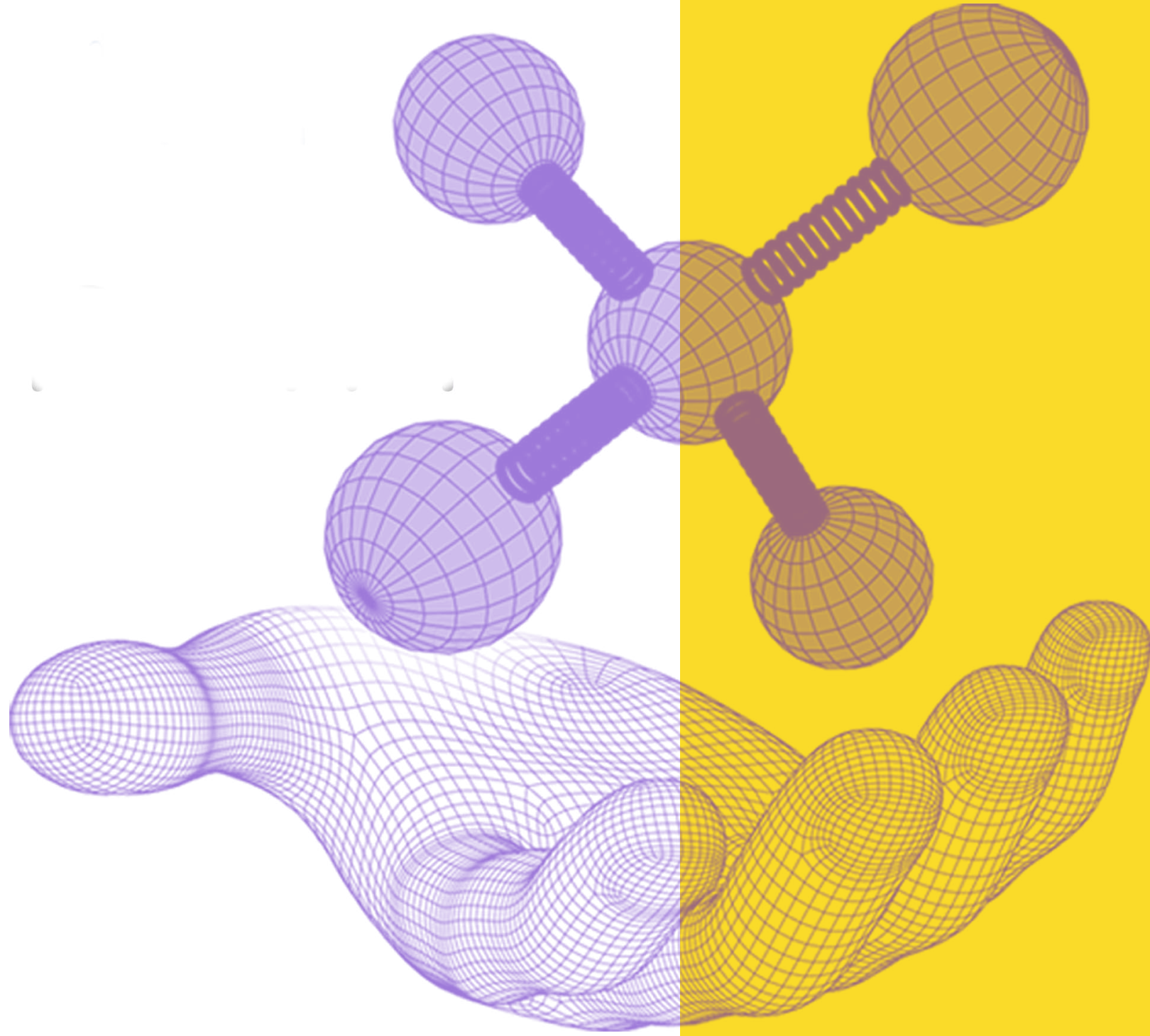
**8-10. July 2021 Sarajevo, B&H**

# Abstract Book



Co-funded by the  
Erasmus+ Programme  
of the European Union

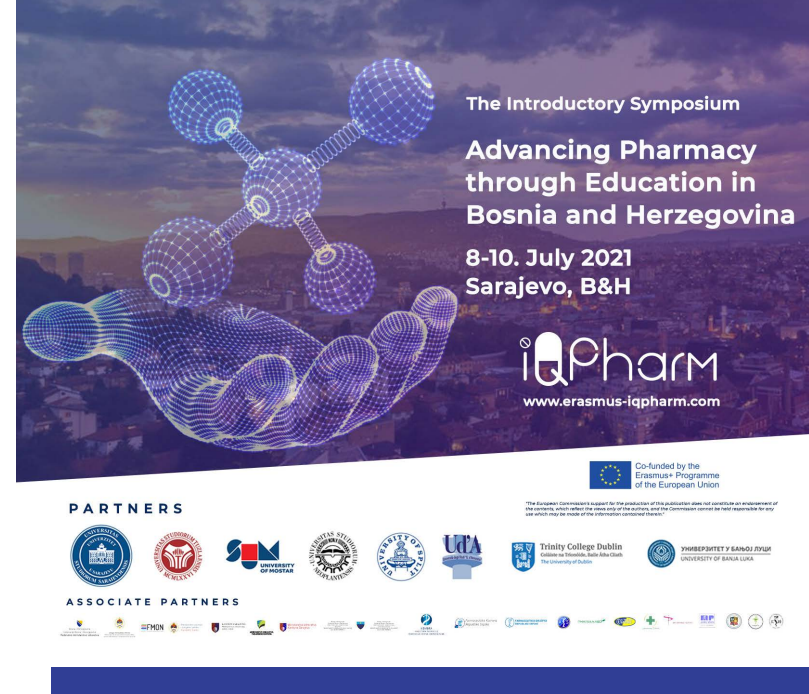
Disclaimer: The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



# Introductory IQPharm Symposium “Advancing Pharmacy through Education in Bosnia and Herzegovina”

Introductory IQPharm Symposium entitled “Advancing Pharmacy through Education in Bosnia and Herzegovina” will be held at the Hills Hotel, Sarajevo, from 8th to 10th July 2021. The symposium is being organized in a hybrid mode and is expected to be attended by over 700 participants.

At the opening ceremony, we will have the honour to listen to the speech of professor Enita Nakaš, PhD, Vice-Rector for International Cooperation, and Mr Suad Muhibić, Director of the National Erasmus+ Office in Bosnia and Herzegovina, on behalf of the University of Sarajevo – IQPharm project coordinator. Ms Snježana Bodnaruk, Secretary of the Federal Ministry of Health, and Ms Anja Margetić, Deputy Mayor of Sarajevo, will also address the audience with words of support.



On behalf of the partner universities, the following professors shall speak: professor Fahir Bečić, PhD, Dean of the Faculty of Pharmacy – University of Sarajevo, professor Ranko Škrbić, PhD, Dean of the Faculty of Medicine – University of Banja Luka, professor Adaleta Softić, PhD, Dean of the Faculty of Pharmacy – University of Tuzla, and professor Ivica Brizić, PhD, Vice-Dean of the Faculty of Pharmacy – University of Mostar.

IQPharm project leader, professor Tamer Bego, PhD, will give the introductory speech to point out the importance of implementing this project for capacity building of all pharmacy studies at public universities in Bosnia and Herzegovina, and officially open the Introductory IQPharm Symposium.

After the opening, a welcome cocktail is planned for all participants.

On the second day of the Introductory IQPharm Symposium, the following lectures are planned:

- Intro IQPharm – professor Tamer Bego, PhD, University of Sarajevo
- BH Pharmacy – professor Fahir Bečić, PhD, University of Sarajevo
- Developments in Global Pharmacy Education – professor Claire Anderson, PhD, the University of Nottingham
- Transforming Pharmacy Education: Possibilities and Constraints – professor Martin Henman, PhD, the Trinity College Dublin, University of Dublin
- Experiences of Innovation in Pharmacy Study Curriculum Remodeling – professor Istvan G. Telessy, PhD, University of Pécs
- IQPharm2021 Study of Expected Competencies of Masters of Pharmacy in Bosnia and Herzegovina: Preliminary Data Presenting – professor Elma Omeragić, PhD, University of Sarajevo

Representatives of partner universities in Bosnia and Herzegovina is also going to present their universities and faculties.

Participants from all pharmacy fields (private sector and academia) will take part in the World Café workshop. Five sessions are organized: pharmacy, industry, marketing and management, and legislation, and the main topics are the current state and problems of the pharmaceutical professional and academic community. The sessions will be moderated by four representatives of academia and two representatives from the private sector.

At the same time, a hybrid student session is going to be held, at which successful students-entrepreneurs will discuss the possibilities of entrepreneurship for young students and masters of pharmacy, and entrepreneurial projects and start-ups that they launched independently will be presented.

On the third day of the Introductory IQPharm Symposium, the following lectures are planned:

- OSCE – Objective Structured Clinical Examination – professor Darko Modun, PhD, University of Split
- Free Modules and Micro-Credentials Transforming Universities Toward Academic Education 4.0 – professor Aleksandra Nikolić, PhD, University of Sarajevo
- EE Platform – Platform for Management of Experiential Education – professor Almir Badnjević, PhD, University of Sarajevo
- KREF – Knowledge Retention Evaluation Framework – professor Biljana Božin, PhD, University of Novi Sad.

In addition to lectures, several workshops are organized:

- OSCE workshop, with the participants from the University of Sarajevo and the University of Split
- EE Platform and KREF workshops, with the participants from the University of Sarajevo and the University of Novi Sad.

Introductory IQPharm Symposium will be concluded with a final discussion and a closing ceremony.

## Organising Committee



**Ivana Tomić**  
University of Mostar



**Mirza Dedić**  
University of Sarajevo



**Esmeralda Dautović**  
University of Tuzla



**Irena Kasagić - Vujanović**  
University of Banja Luka



**Tamer Bego**  
University of Sarajevo



**Alisa Elezović**  
University of Sarajevo



Disclaimer: The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



## ERASMUS+ Project

„Innovating quality assessment tools for pharmacy studies in Bosnia and Herzegovina“ / IQPharm

*IQPharm Introductory Symposium*

### „Advancing pharmacy through education in Bosnia and Herzegovina“

08 – 10 July 2021, Hotel Hills, Sarajevo/Bosnia and Herzegovina

AGENDA DAY 1 - *IQPharm Welcome*, Thursday, 08.07.2021.

Time	Activity
16:00-19:00	Registration - online and live
19:00-20:00	Opening ceremony
20:00-22:00	Welcome cocktail

AGENDA DAY 2 - *IQPharm Starting Point*, Friday, 09.07.2021.

Time	Activity	Led by
9:30-10:00	Intro IQPharm	Tamer Bego
10:00-10:30	BH Pharmacy	Fahir Bečić
10:30-11:00	Developments in Global Pharmacy Education	Claire Anderson
11:30-12:15	Coffee break	
12:15-12:45	Transforming Pharmacy Education: possibilities and constraints	Martin Henman
12:45-13:15	Experiences of innovation in pharmacy study curriculum remodeling	István G. Télessy
13:15-14:30	Lunch break	
14:30-17:30	BH faculties presentations Reporting of questionnaires World Cafe - discussion	BH partners Elma Omeragić
20:00-23:00	Gala dinner	

# Symposium Programme



Disclaimer: The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



AGENDA DAY 3 - *IQPharm Innovations*, Saturday, 10.07.2021.

Time	Activity	Led by
9:30-9:50	OSCE- Objective Structured Clinical Examination	Darko Modun
9:50-12:00	Workshop for OSCE	UNIST and UNSA teams
12:00-12:30	Coffee break	
12:30-12:50	Free Modules and Micro-Credentials Transforming Universities Toward Academic Education 4.0	Aleksandra Nikolić
12:50-13:10	EE platform- Platform for management of Experiential Education	Almir Badnjević
13:10-14:40	Lunch break	
14:40-15:00	KREF- Knowledge Retention Evaluation Framework	Biljana Božin
15:00-16:30	Workshop for EE platform and KREF	UNS and UNSA teams
16:30-17:00	Coffee break	
17:00-17:30	Discussion	
17:30	Closing ceremony	

## Claire Anderson

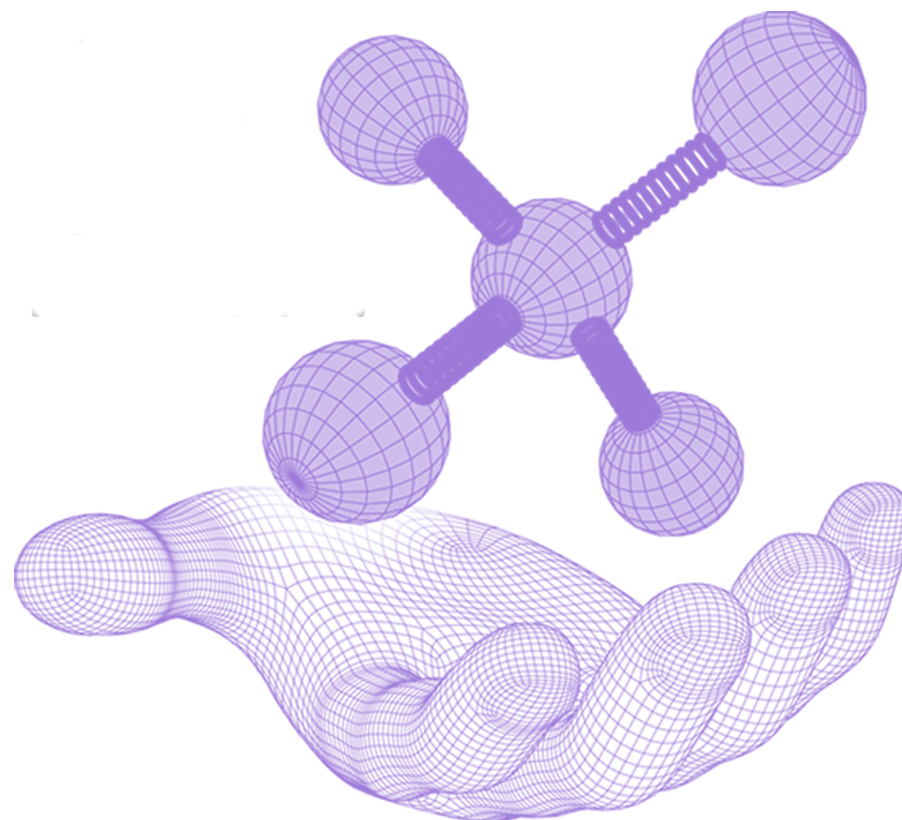


**Claire Anderson** BPharm, PhD,  
FRPharmS, FFRPS, FFIP, FRSPH  
Professor of Social Pharmacy

University of Nottingham | Nottingham | NG7  
2RD  
Division of Pharmacy Practice and Policy  
School of Pharmacy  
United Kingdom

## Developments in Global Pharmacy Education

In many parts of the world, including the United Kingdom, there has been a shift to more clinical pharmacy education, including a shift towards the PharmD as an entry-level qualification. This will be discussed using the University of Nottingham as an example. The International Pharmaceutical Federation Nanjing Conference in 2016 produced a vision, goals and statements about the future of pharmacy education and these will also be discussed.



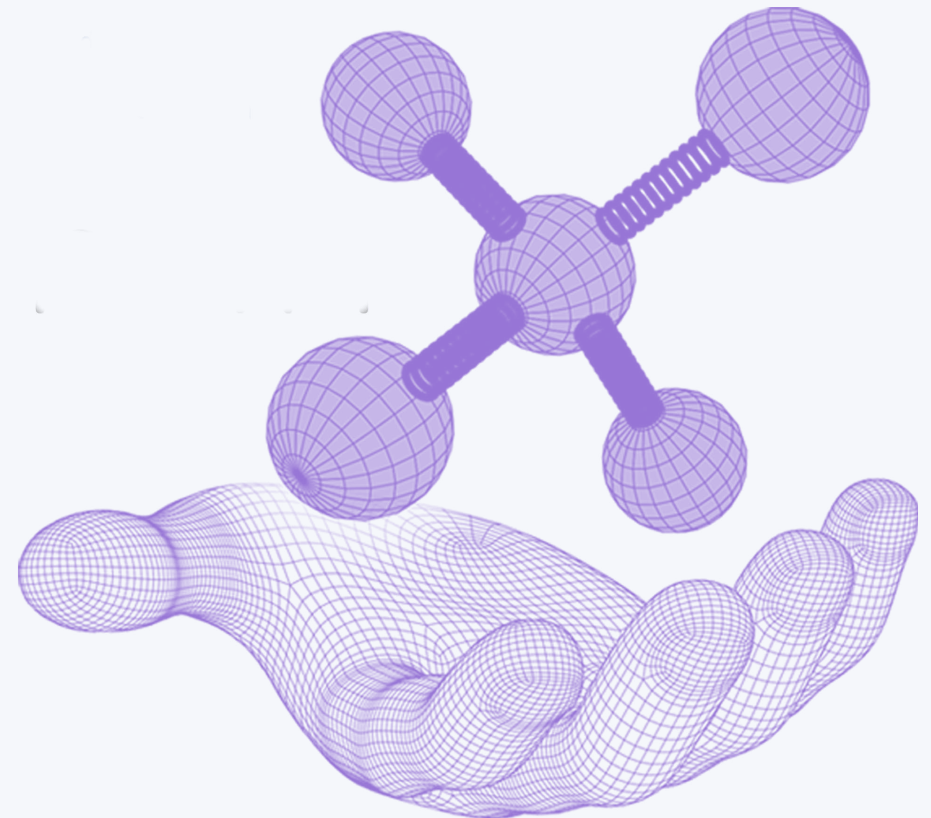


**Martin  
Henman**


**Martin C Henman**, BPharm,  
MA, PhD, MPSI, FESCP, FFIP  
Associate Professor in the  
Practice of Pharmacy

The School of Pharmacy and Pharmaceutical  
Sciences,  
Trinity College Dublin  
Ireland

## Transforming Pharmacy Education: possibilities and constraints







As healthcare changes around the world, so the healthcare professions need to change their practices, and consequently, the education of those professionals must change as well. However, both in the universities and in the world of healthcare practice, there are competing demands and priorities. This means that the decisions about which changes to make are not easy to agree, simple to implement or without risk.

Pharmacy, more than some other professions, faces a wide range of problems. The role of the pharmacist, in community, in hospital, in industry and in other sectors is evolving in different ways and at varying speeds in the European region. Principally, there is always a tension between the demands of the world of professional practice and the priorities of the universities. Practitioners want a graduate who can work effectively and efficiently from day one, while the universities want graduates who will consume and produce research and enhance the university's place in the published ranking systems.

In practice this means that there is a continual demand for more content to be added to the curriculum, more performance-based assessment and a comprehensive competency framework directly linked to learning outcomes and to an assessment strategy.

Since pharmacy is a health profession, its education programmes must be accredited and increasingly the driving force of accreditation is the pursuit of patient safety, which is an admirable goal but one that is difficult to evaluate.

Not surprisingly, reconciling all of these disparate views and requirements is not possible, but it must be attempted because everyone who makes, prescribes, provides and takes medicines needs a pharmacist that they can rely upon. This presentation will set out to suggest some of the approaches that can be used to balance these demands and benefit the students and their lecturers, the pharmacists and the profession, but most of all, the patients.



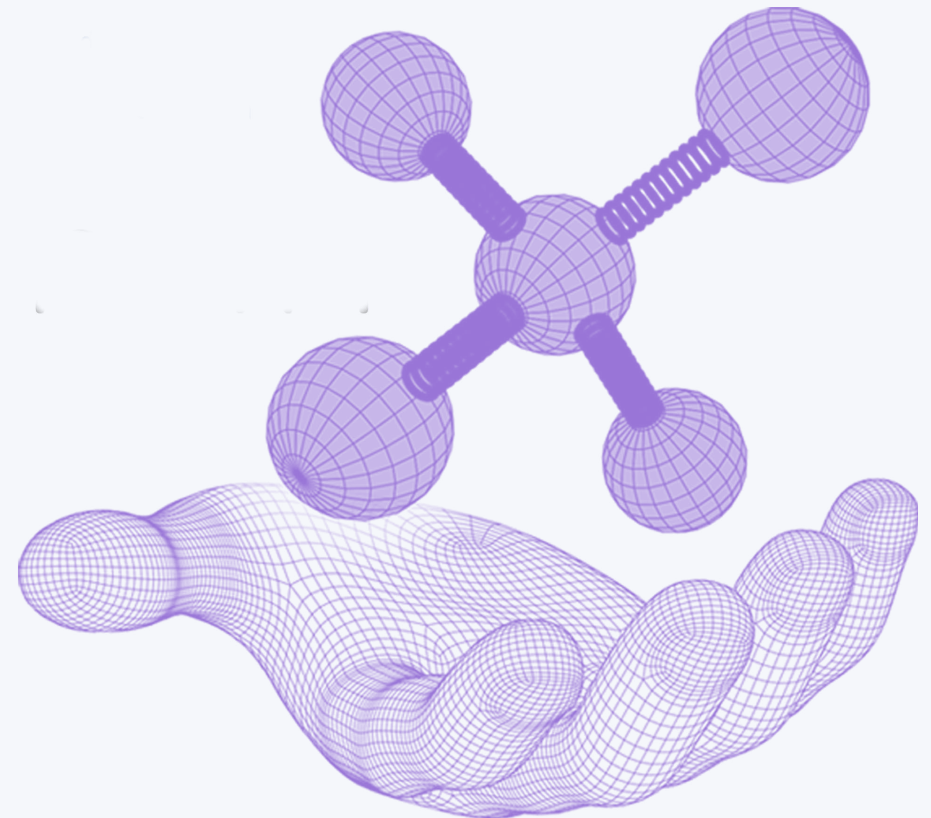
**István  
Télessy**




**Istvan G. Telessy, PhD**  
Visiting Professor, Tutor and  
Researcher

University of Pecs and University of Szeged  
Hungary

## Experiences of innovation in pharmacy study curriculum remodeling





The Hungarian Accreditation Body for Universities and a country-wide survey among pharmacists who attained MSc degree within 5 years indicated that an organizational and substantive reform is needed in every Hungarian pharmaceutical faculty. University of Pécs decided to renew the curriculum early this year. With this end a seven member committee has been appointed by the dean of the Pharmacy Faculty, Pécs University, Hungary. This committee set main targets and worked out a concept for the switch, which followed the FIPs Workforce Development Goals adapted to the local requirements and possibilities. The job started with a thorough evaluation of the present situation. This analysis revealed that the curriculum meets the basic requirements of the European standards however there are repetitions in the programs, the ratio of natural and human sciences is not optimal, some of the responsible for the consecutive subjects did not fit their content to each other and the learning outcomes were not measured properly. We pointed out the problems and asked teachers

to uniformly check their connections with other disciplines/subjects within the learning network. For the sake of better control we set up an electronic slide-pool that can support students' learning process as well in the future. We also decided to offer students opportunities for specialization from the 7th semester in three directions: the industrial, the hospital and clinical and the public pharmacy. Finally we doubled the training period for synthesis of knowledge by case-studies and the problem-solving pharmaceutical skills in exchange for some cut in laboratory training of chemistries in the semesters 1-4. For the time being, bilateral discussions are running between our team and leaders of the disciplines/subjects. Main target is to highlight the impact of cooperation among education providers of consecutive disciplines/subjects and facilitate their regular personal meetings.

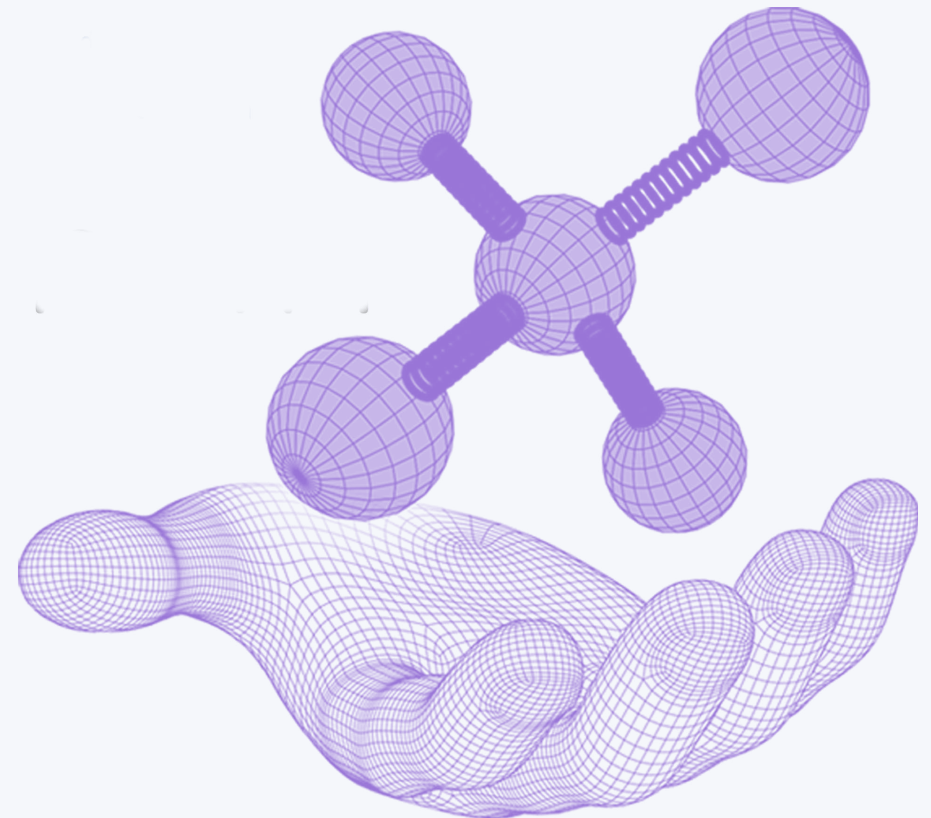
Our experience is very good so far, as the majority of lecturers welcome the initiatives and planned innovations.




**Tamer Bego, PhD**  
Associate Professor  
Vice Dean for International  
Relations  
Project coordinator

University of Sarajevo  
Faculty of Pharmacy  
Bosnia and Herzegovina

## IQPHARM Presentation





IQPharm project is centered on raising the quality and modernization of pharmacy studies at public universities in Bosnia and Herzegovina including reinforcement of semi-structured experiential education (EE) in compliance with EU standards and regulations of higher education for regulated professions. The IQPharm objectives are: 1. Development of academic staff professional and pedagogical competencies for more interactive and practical approach to delivery/teaching and assessment of the existing pharmacy curricula through the exchange of best practices between partner and programme institutions and active involvement of major stakeholders in real sector. 2. Improvement of course delivery through the introduction of assessment tests – Knowledge Retention Evaluation Framework (KREF) and Objective Structured Clinical Examination (OSCE) for pharmacy students. 3. Improvements in experiential education (EE) educators' (pharmaceutical professionals) training and development of E-platform for EE management and administration.

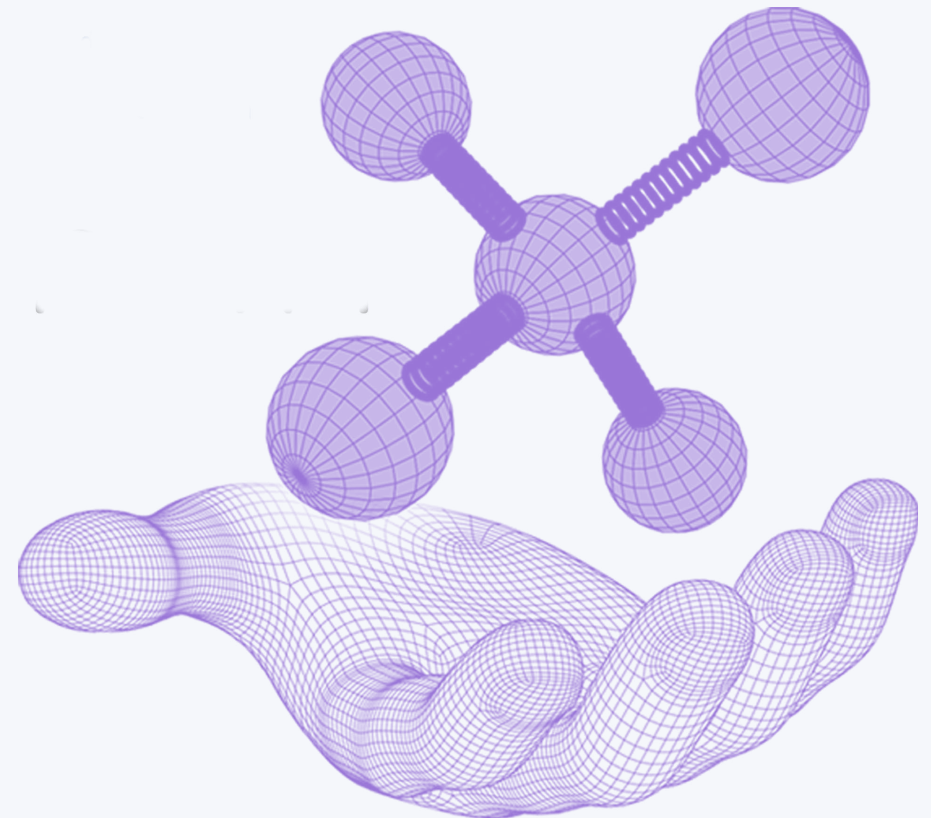
The introduction of new tools for the quality assessment of study programs (KREF) will enable the development of evidence-based recommendations for changes, modification and innovations of the existing methods of knowledge transfer, teachers' didactic approaches and syllabi. The introduction of a new system of knowledge assessment gained through the EE course (OSCE) will set equal standards at the national level for learning outcomes of pharmacy graduates. The E-platform will ensure modernization of EE monitoring. Intensive cooperation with EU partner institutions and mobilization of all relevant stakeholders in BiH is anticipated to explore potential new models and approaches to innovative teaching, learning and assessment methods, achieving high standards of educational process and learning outcomes in accordance with the labour market demands.




**Fahir Bečić, PhD**  
Full Professor  
Dean of Faculty of Pharmacy

University of Sarajevo  
Faculty of Pharmacy  
Bosnia and Herzegovina

## Pharmacy in Bosnia and Herzegovina





This paper presents the origins of Pharmacy and pharmaceutical activity in Bosnia and Herzegovina and explains its development throughout history. Going from distant history to modern times, the importance and responsibility of pharmacy is pointed out, some interesting facts are mentioned, ways of treating some diseases and preparing medicines even when Pharmacy as a science was not much developed. The great responsibility of Pharmacists towards everyone who seeks any advice from them was pointed out, as well as the obligation to communicate appropriately, show understanding and patience,

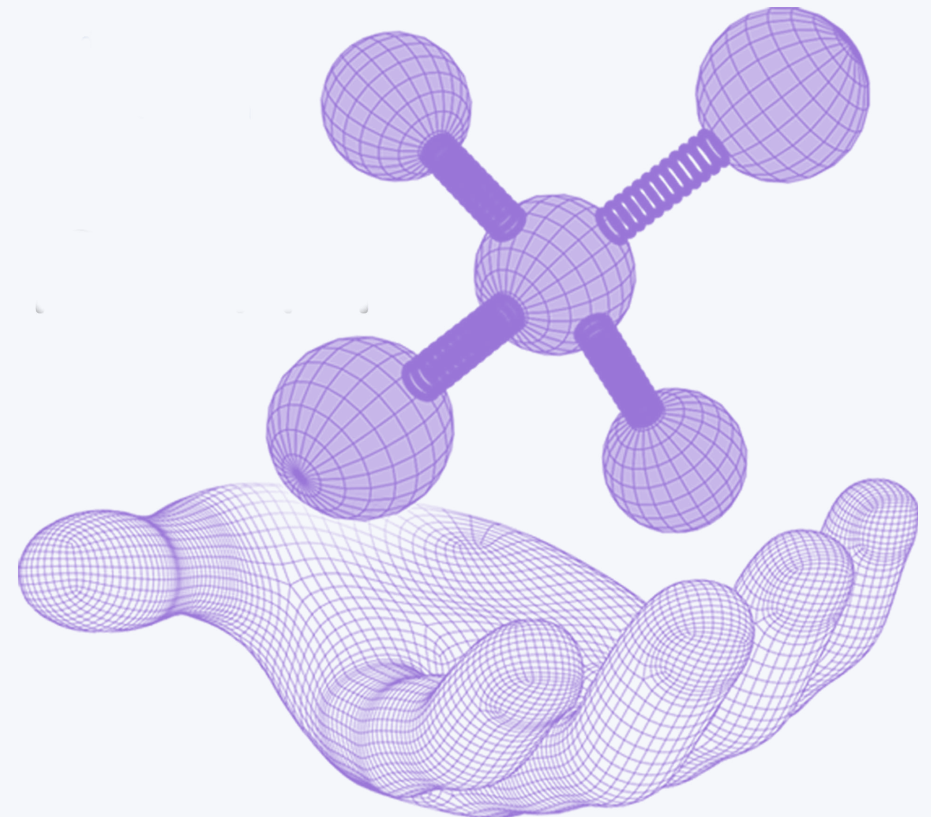
as well as the obligation to react in the best possible way in all situations. Special emphasis is placed on the modern approach to the pharmaceutical industry at a time when new approaches to treatment and artificial intelligence are currently developing extremely fast, which has a significant impact on the development and change of the way of working in Pharmacy.




**Elma Omeragić, PhD**  
Assistant Professor

University of Sarajevo  
Faculty of Pharmacy  
Bosnia and Herzegovina

**IQPharm 2021 study of  
expected competencies of  
masters of pharmacy in  
Bosnia and Herzegovina:  
Preliminary data  
presenting**







The competencies of pharmacists represent a dynamic framework and include knowledge, skills, and abilities to perform tasks with the aim of improving the quality of life and health of patients. One of the documents for the assessment and development of pharmacists' competencies is the Global Competence Framework (GbCF).

The aim of this survey was to gather the views of masters of pharmacy on the importance of certain competencies for their workplace.

The survey used the Global Competence Framework of the International Pharmaceutical Federation (FIP) 2020 v2.

The survey was conducted from June to July 2021 using the SurveyMonkey platform. The target population of this study was Masters of Pharmacy in Bosnia and Herzegovina.

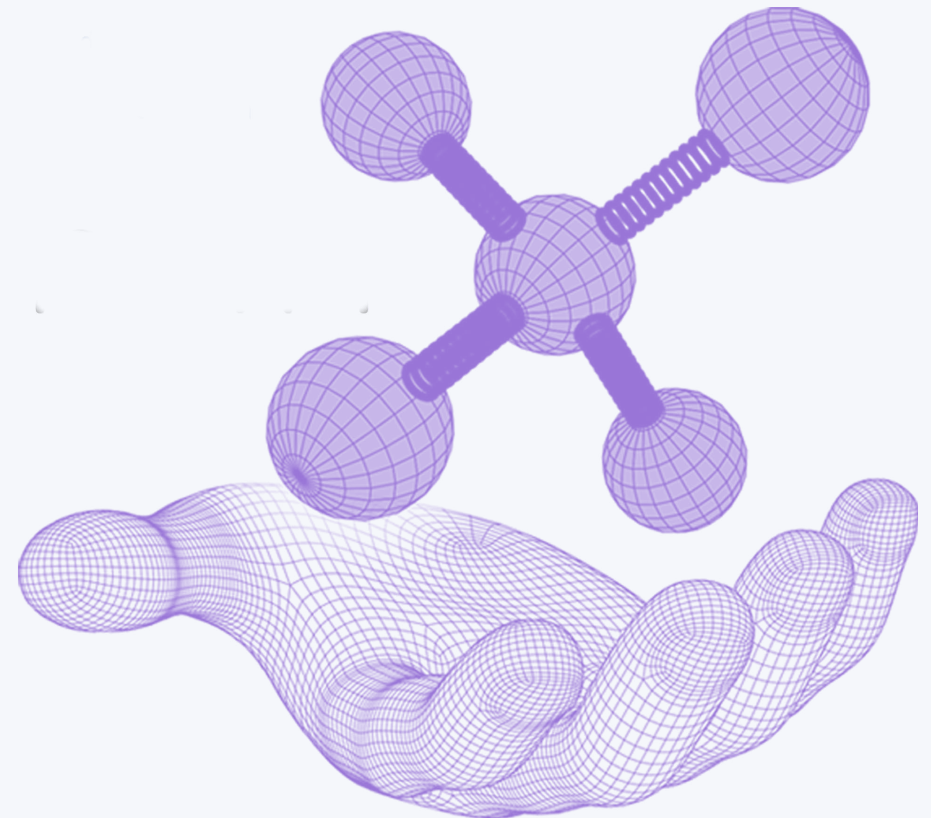
Preliminary research data will be presented at the Introductory symposium of the IQPharm project, and a detailed analysis of the collected data including a comparison with the results of the same surveys conducted in all IQPharm consortium countries will be published in the Required Change and Improvement Report as one of the deliverables of the IQPharm project in September 2021.




**Darko Modun, MD, PhD**  
Full Professor  
Vice-Dean

University of Split  
School of Medicine  
Croatia

## OSCE - Objective Structured Clinical Examination





Objective Structured Clinical Examination (OSCE) has been used for many years as a procedure for assessing the clinical competencies of health students. This test examines clinical knowledge, communication skills, the ability to work with other health professionals, and the ability to make therapy decisions. The advantage of OSCE over classical written or oral exams is a better assessment of the student's ability to apply personal knowledge in practice. It is considered the most appropriate way to assess students' competencies that could affect the quality of their work in practice. It consists of a series of workstations for those alternate students who have limited time to master the tasks at each station.

At each station there is an assessor who checks and evaluates the demonstrated knowledge and skills with a standardized scoring form. OSCE was introduced as a final colloquium of Professional Training at the study of pharmacy in Split in the academic year 2016/2017. OSCE is structured in seven stations: Magistral preparations, Prescriptions, Doctor's consultation, Self-medication, Safe use of drugs, Dispensing of drugs to special groups of patients and Patient consultation.

The Magistral preparations and Recipes stations are designed to be non-interactive, and the other five to be interactive with trained actors. A passing threshold has been agreed, as well as two to three criteria for a direct fall (ili drop) of an individual workstation.

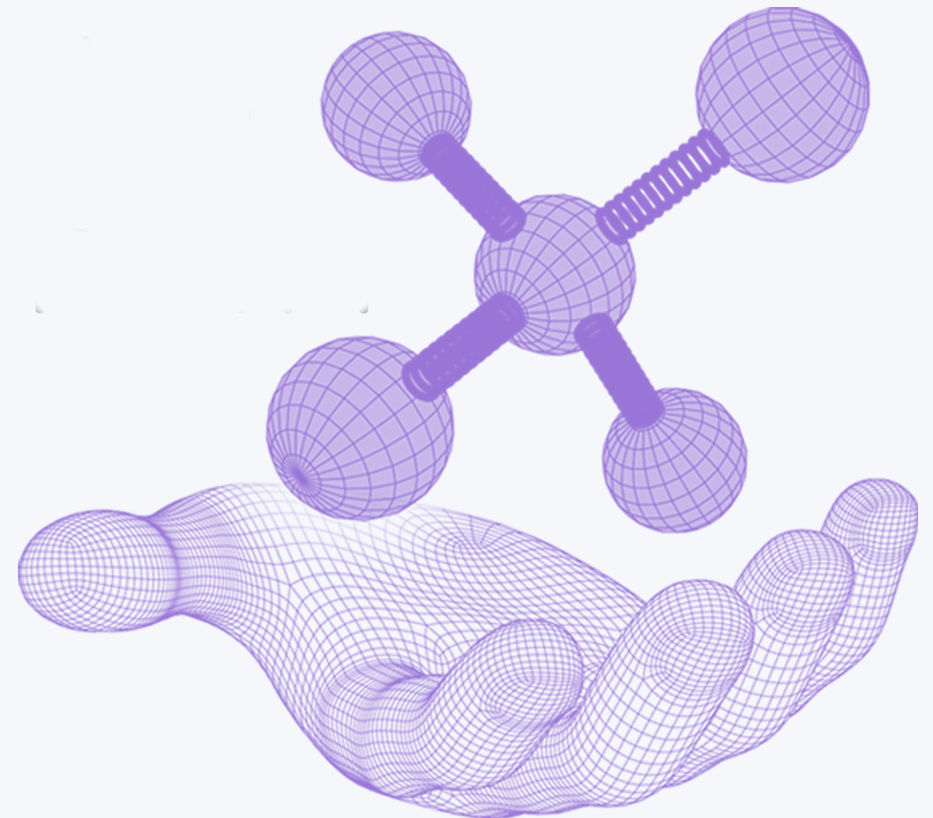



**Aleksandra  
Nikolić**

**Aleksandra Nikolić, PhD**  
Full Professor

University of Sarajevo  
Faculty of Agriculture and Food sciences  
Bosnia and Herzegovina

**Free modules and micro-  
credentials transforming  
universities toward  
Academic Education 4.0**





The main objective of the short presentation is to explore innovative ways to navigate the hot topics of graduate employability and the wider mission of universities in a fast-changing society that is shaped by implications of global pandemics and Industry 4.0 revolution. The free modules and micro-credentials are seen as a tool that shape and drive innovative industry-university-society partnerships linked to skills, student career support services, curricula reform and graduate tracking.

The introduction of ,free credits“ and a different set of micro-credential is a way to touch and deliver transferable skills and competences preparing our graduates for a rapidly-evolving and unpredictable future. At the same time it is a way to modernize the whole educational process to adopt new emerging technologies changing the way we do ,our business“ as well as transforming lives and societies through access to the workplace, research, innovation and engagement. In such a way universities will become open, inclusive, engaging institutions in service of big ideas.

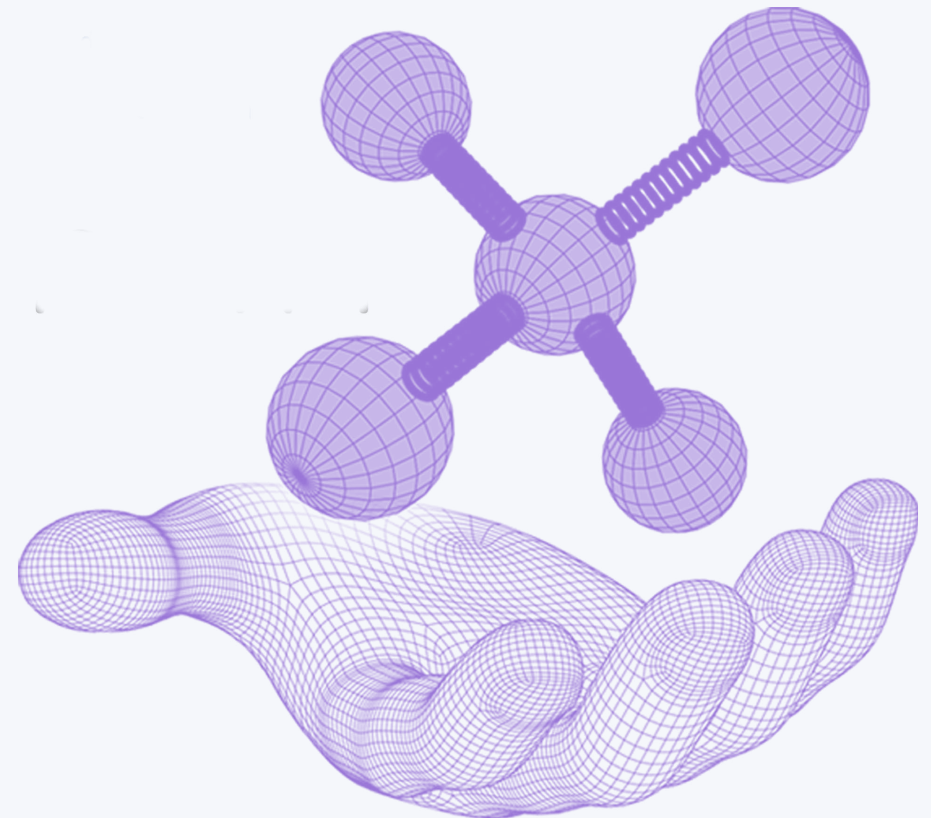



**Biljana  
Božin**

**Biljana Božin, PhD**  
Full Professor  
Head of Department of  
Pharmacy  
Director of CEMPhIC

University of Novi Sad  
Faculty of Medicine  
Serbia

## Knowledge Retention Evaluation Framework





Knowledge retention or knowledge management is the process by which new information is transferred from the short-term to long-term memory. However, because human memory is imperfect, there is a constant need for educators to find effective and creative teaching strategies to support the long-term preservation of knowledge in their students. This means that if knowledge retention is to be effective, it is essential to help learners find creative ways to form links with prior learning and put what they learned into practice as soon as possible. Pharmacy student retention of practical knowledge follows a pattern similar to that found in other scientific domains, characterized by progressive decay after initial acquisition. In contrast, fundamental skills, such as communication with consumers and patients are substantially retained, which could be ascribed to continuous practice.

These findings should be taken into account for devising instructional strategies for enhancing student knowledge and skills maintenance. The implementation of KREF together with OSCE enables greater use of the knowledge acquired during the study and better training of students for the future work.

However, main risks related to implementation of KREF are:

- Teaching staff readiness to adopt and implement new teaching tools and methods;
- Motivation of students to participate and provide feedback and
- Support from faculty management.

Furthermore, awareness of the relevant regulatory bodies about the importance of harmonization of licensing process of the pharmacist in the two entities of B&H (Federation of B&H and Republic of Srpska) with EU acts is one of most important items related to the implementation of the IQPharm project goals.



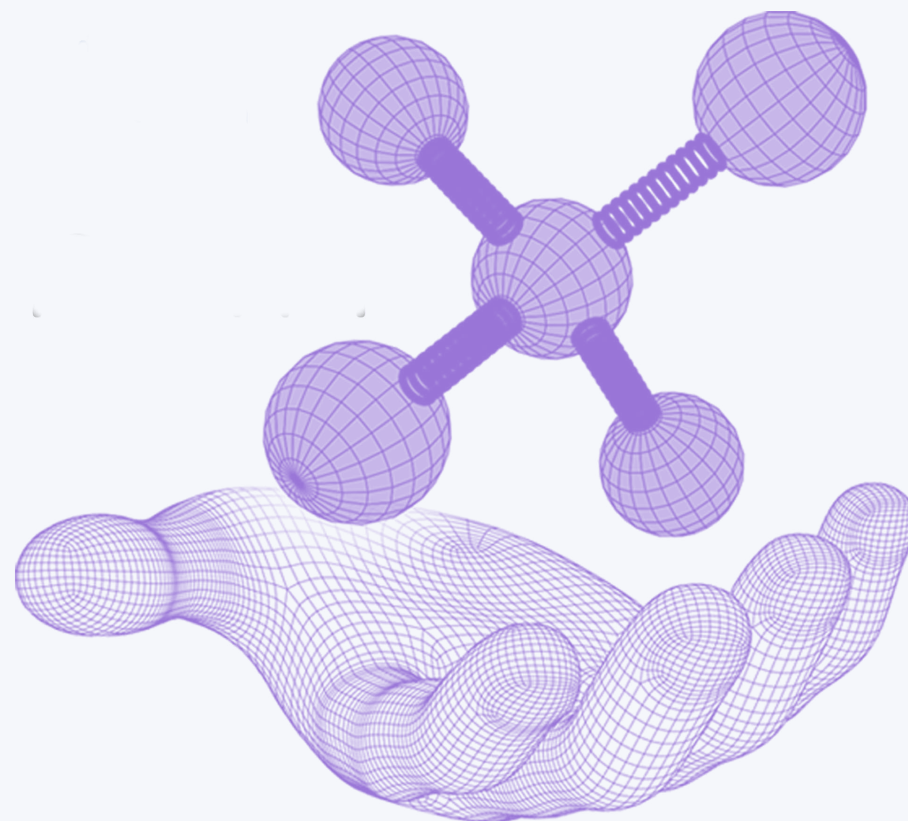
**Almir  
Badnjević**




**Almir Badnjević, PhD**  
Assistant Professor

University of Sarajevo  
Faculty of Pharmacy  
Bosnia and Herzegovina

## Experiential Education e-Platform







The E-platform for experiential education (EE) of pharmacy students will consist of a database with available practice sites and professional educators with direct insight into EE delivery and results, thus meeting the goals of the establishment of information systems for monitoring the implementation and impact of policies, legislation, outcomes and studies on higher education in Bosnia and Herzegovina and other best practices.

The E-platform will enable tracking and linking of students to available mentors (pharmaceutical professionals) in pharmacies, their structured program attendance and successful completion from both mentors' and students' viewpoint, as well as contain educational materials for the assistance of mastering the needed skills. The E-platform will bring the institutionalization and structuring of EE and thus improve its quality leading to better learning outcomes of this segment of pharmacists' education. EE will be semi-structured, due to its inherent nature, but will contain the essential elements needed for high quality pharmaceutical health professionals.

EE relies on a well-developed and maintained database and extensive documentation. The E-platform will be developed at the University of Sarajevo in cooperation with all other IQPharm consortium partners. The capacities of University Tele-informatic Centre (UTIC) will be used for web-hosting. E-platform will be used by all partner BiH institutions, i.e., at national level.

Implementation of E-platform will contribute to improved competencies of pharmacy students and pharmaceutical professionals, and ultimately improved patient care and positive health outcomes. Pharmacy students will be better equipped with more practical knowledge for an ever more demanding labour market. They will have, as well, the benefit from the free modules with more rounded higher educational programs. Also, this will lead to better employability. Competencies of pharmacy graduates are expected to markedly improve, as well as the competencies of educators (both academic staff and apothecary and the other real sector supervisors) through the development of professional competencies, where the emphasis will be given to practical problem-solving approaches, transferable skills and leadership development. This will result in an improvement of recognition of Bosnian-Herzegovinian public university pharmacy programs and higher employability of masters of pharmacy on national and international level.

# Abstract Book

## PARTNERS



Univerzitet u Tuzli  
Bosna i Hercegovina



Trinity College Dublin  
College on St. Andrew's, Ballsbridge Park  
The University of Dublin

## ASSOCIATE PARTNERS

