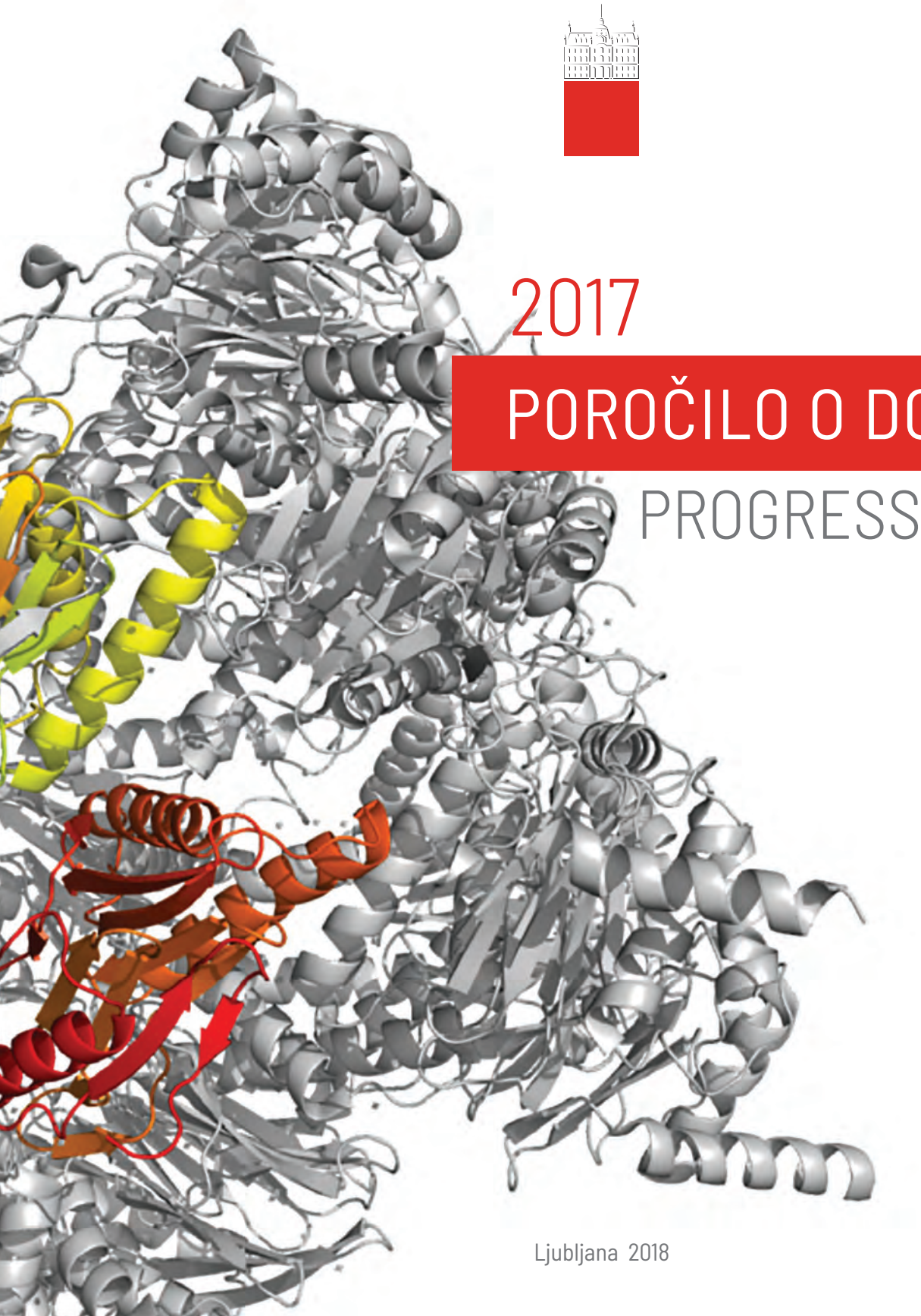
Univerza *v Ljubljani*
Fakulteta *za farmacijo*



2017

POROČILO O DOSEŽKIH

PROGRESS REPORT

Ljubljana 2018

Univerza *v Ljubljani*
Fakulteta *za farmacijo*

2017

POROČILO O DOSEŽKIH

PROGRESS REPORT

KAZALO / CONTENT

Predstavitev Fakultete za farmacijo
Presentation of the Faculty of Pharmacy

UVODNA BESEDA

Ustvarjamo tudi odnose.

Spoštovani,

z varne distance ocenjujem dinamiko leta 2017 in ugotavljam, da je nova ekipa uspešno prevzela in kreativno nadgrajuje delo predhodnikov pod vodstvom prof. dr. Boruta Božiča. Zahvaljujem se mu za predanost in neusahljiv vir energije, ki ga je v preteklem desetletju namenil rasti fakultete in pridobivanju boljših pogojev dela in pričakujem še veliko doprinosov.

Pričujoča monografija je odsev vizije vodenja fakultete, ki temelji na razvojni naravnanosti in utrditvi pripadnosti. Fakulteta za farmacijo Univerze v Ljubljani (UL FFA) je nerazdružljiv preplet študentov in zaposlenih ter naših alumnov, je institucija, ki z odličnostjo v izobraževanju ter na znanstvenoraziskovalnem področju zagotavlja dragoceno podporo slovenski družbi na področjih farmacije, laboratorijske biomedicine in kozmetologije.

Smo del zelo konkurenčnega področja, zato morajo biti naši načrti za razvoj ambiciozni, vključujoč potrebne reforme in povečane investicije. Skladno s tem smo v preteklem letu dokončali projektno nalogo z natančnimi izrisi potrebnih prostorov za novogradnjo UL FFA BRDO. K uspešnemu delu bo doprinesel tudi nakup velike raziskovalne opreme, tekočinskega kromatografa z masnim spektrometrom visoke ločljivosti. Zavedamo se namreč dejstva, da lahko vrhunske kadre vzgajamo in izobražujemo le v učnih bazah z najsodobnejšo opremo in z dostopom do najsodobnejših tehnologij. Vse to pa je le nujen predpogoj, za preboje so potrebni ljudje, najboljši ljudje.

Fakulteta z odgovornostjo prepoznava snovalce idej in nosilce razvoja in ustvarja pogoje za njihovo uveljavitev tudi tako, da jim kot skupnost izkazujemo priznanja. V preteklem letu smo prvič podelili priznanja in nagrade izjemnim posameznikom, ki so s svojim predanim delom in neusahljivo željo po odkrivanju in pridobivanju novega znanja prispevali k prepoznavnosti in kakovosti delovanja fakultete. Počastili smo dosežke svojih kolegov, študentov, poslovnih partnerjev in prejemnika častnega doktorata Univerze v Ljubljani. Izjemne dosežke naših kolegov je prepoznala tudi širša znanstvena skupnost in jim podelila Preglovo nagrado, nagrado Za ženske v znanosti, Rektorjevo nagrado za inovativnost, Lapanjetovo priznanje, Krkine nagrade ter mnogo druga priznanja.

UL FFA je na znanosti temelječa fakulteta, naši pedagogi so uveljavljeni raziskovalci, kreatorji novih znanj in spoznanj, ki jih uspešno prenašamo v okolje tudi s pomočjo naših študentov in diplomantov. Smo tudi družbeno odgovorni, smo snovalci sprememb in napredka družbe. Naš izobraževalni program razvija kompetence, ki bodo omogočile diplomantom in doktorandom, da se bodo v prihodnosti pravilno odzivali na izzive in jih tudi uspešno reševali.

UL FFA je uspešno vpeta v stroko in družbo. Svoja znanja in izkušnje smo delili in pridobivali na številnih simpozijih in izobraževanjih, ki smo jih soorganizirali. Sodelovanje s stroko vzdržujemo oziroma poglabljamo tudi z rednimi obiski in strokovnimi ekskurzijami v farmacevtsko industrijo, veledrogerijo in lekarne. Ogledali smo si stalno zbirko zgodovine zdravstva v Pomurju, Lavičkovo zbirko in organizirali številne dogodke, namenjene povezovanju in krepitvi pripadnosti.

UL FFA je odgovorna in odzivna partnerica v krožišču številnih mladih karier. Poleg redno vpisnih se nam vsako leto pridruži več študentov na izmenjavi. Menim, da so to naši najboljši ambasadorji v svetu stroke in družbe kot celote.

Stvaritve in odnosi
oblikujejo družbo in ustanovo.

Prof. dr. Irena Mlinarič-Raščan, mag. farm.,
dekanja

INTRODUCTION

We also create relations.

Dear reader,

When evaluating the dynamics of the year 2017 from a distance it is clear that the new team has successfully taken over the work of our predecessors, which was guided by the former dean, Prof. Dr. Borut Božič, and that the work is being resumed in a creative fashion. I wish to thank Prof. Dr. Božič for his commitment and for the inexhaustible energy which he devoted throughout the past decade to the Faculty's progress and the advancement of a creative working environment. I look forward to many more contributions.

The present monograph reflects a development oriented and participative leadership vision, which will foster a culture of inclusivity. The Faculty of Pharmacy of the University of Ljubljana (UL FFA) is an inseparable interlacement of students, employees, and alumni. It is an institution that, through excellence in both education and research, provides a valuable service to Slovenian society in the fields of pharmacy, laboratory biomedicine, and cosmetology.

We are part of a very competitive field, so we need to be ambitious in our development plans, including the planning of necessary reforms and increased investments. In accordance with this, we have, in the past year, finalized the preparatory phase of the project aimed at identifying the needs and requirements for planning the premises for the new Faculty of Pharmacy building at Brdo. The acquisition of equipment for liquid chromatography with high-resolution mass spectrometer will complement our current infrastructure and improve research capacity. While high-standard facilities and access to contemporary technologies are a fundamental requirement for successful research and the education of competent and confident professionals, the key component of success is and will always remain people. The best people are needed for breakthroughs.

At the UL FFA we reinforce the importance of looking at people's inherent creative potential, we recognize and promote outstanding individuals among faculty members, students and staff. Last year, for the very first time, we gave recognition awards and prizes to exceptional individuals who, through their dedicated work and inexhaustible desire to discover and acquire new knowledge, contributed to the esteem and quality of the Faculty. We honoured the achievements of our colleagues, students, business partners, and the awardee of the University of Ljubljana's honorary doctorate. The exceptional achievements of our colleagues have also been recognized by the wider scientific community, through which members of our family received the Pregl Award, the Women in Science award, the Rector Award for the best innovation, the Lapanje award, the Krka Award, as well as other forms of recognition.

The Faculty of Pharmacy is a science-based faculty. Our teachers are prominent researchers and creators of new knowledge, which are then transferred into wider society with the help of our students and graduates. The Faculty of Pharmacy aims to provide a forum for communication and to educate competent pharmacy professionals who will serve the needs of society.

The UL FFA is well integrated into professional societies. We share and gain knowledge and experiences through active participation at symposia and conferences. To foster and maintain cooperation, faculty members and students visited partners in the pharmaceutical industry, wholesalers, pharmacies, hospitals and others. We participated in team building events and visited the permanent exhibition of The History of Health Care in Pomurje and the Bohuslav Lavička Pharmaceutical Collection.

The Faculty of Pharmacy is a responsible and responsive partner in the crossroads of numerous young careers. Along with the regularly enrolled students, many exchange students join us every year. I believe that exchange students, are our best ambassadors in the professional world and to society at large.

Creations and relations
form the society as well as the institution.

Prof. Dr. Irena Mlinarič-Raščan, M. Pharm.,
Dean

ORGANIZIRANOST

Fakulteta za farmacijo je raziskovalno usmerjena pedagoška ustanova, kar izkazuje tako z objavami raziskovalnih dosežkov svojih zaposlenih v uglednih mednarodnih revijah kot tudi s prenosom teh znanj v pedagoški proces na vseh programih.

Osnovne naloge so ustvarjanje, prenašanje in ohranjanje znanja. Torej ob inovativnosti in raziskavah tudi učinkovito poučevanje in ohranjanje zgodovinskega spomina, vezanega na stroko. Število objav v znanstvenih revijah, število citatov, število projektov z gospodarstvom nas uvršča v sam vrh Univerze v Ljubljani. In ta način dela in razmišljanja je vpet tudi v študijske programe.

Fakulteta za farmacijo kot del Univerze v Ljubljani gradi svoj ugled, integriteto in razvoj na odličnosti, učinkovitosti in etični drži študentov in učiteljev. Gradimo na dolgoletni tradiciji farmacevtskih izkušenj v slovenskem in širšem prostoru, vendar smo pri tem usmerjeni v prihodnost.

Po evropskih merilih smo srednje velika farmacevtska fakulteta, matična za širše področje farmacije, klinične biokemije in kozmetologije, ki letno sprejme 150 študentov na program Farmacija, 90 študentov na program Laboratorijska biomedicina (50 na 1. stopnji, 40 na 2. stopnji), 40 študentov na program Kozmetologija, 25 študentov na program Industrijska farmacija in 20 do 30 študentov doktorskega študija. V zadnjih letih je na FFA vpisanih skupno s specializanti okrog 1500 študentov.

Vizija Fakultete za farmacijo je prispevati k sooblikovanju prihodnosti, ostati v svet odprta, odzivna in odgovorna akademska izobraževalna in raziskovalna ustanova ter z ustvarjanjem in širjenjem znanstvenih spoznanj delovati v dobrobit slovenskih državljanov, širiti splošni razvoj ter tako utrjevati nacionalno samobitnost.

ORGANISATION

The Faculty of Pharmacy is a research-oriented pedagogical institution, evidenced from the publications of research achievements in highly esteemed international journals, as well as in the transfer of knowledge.

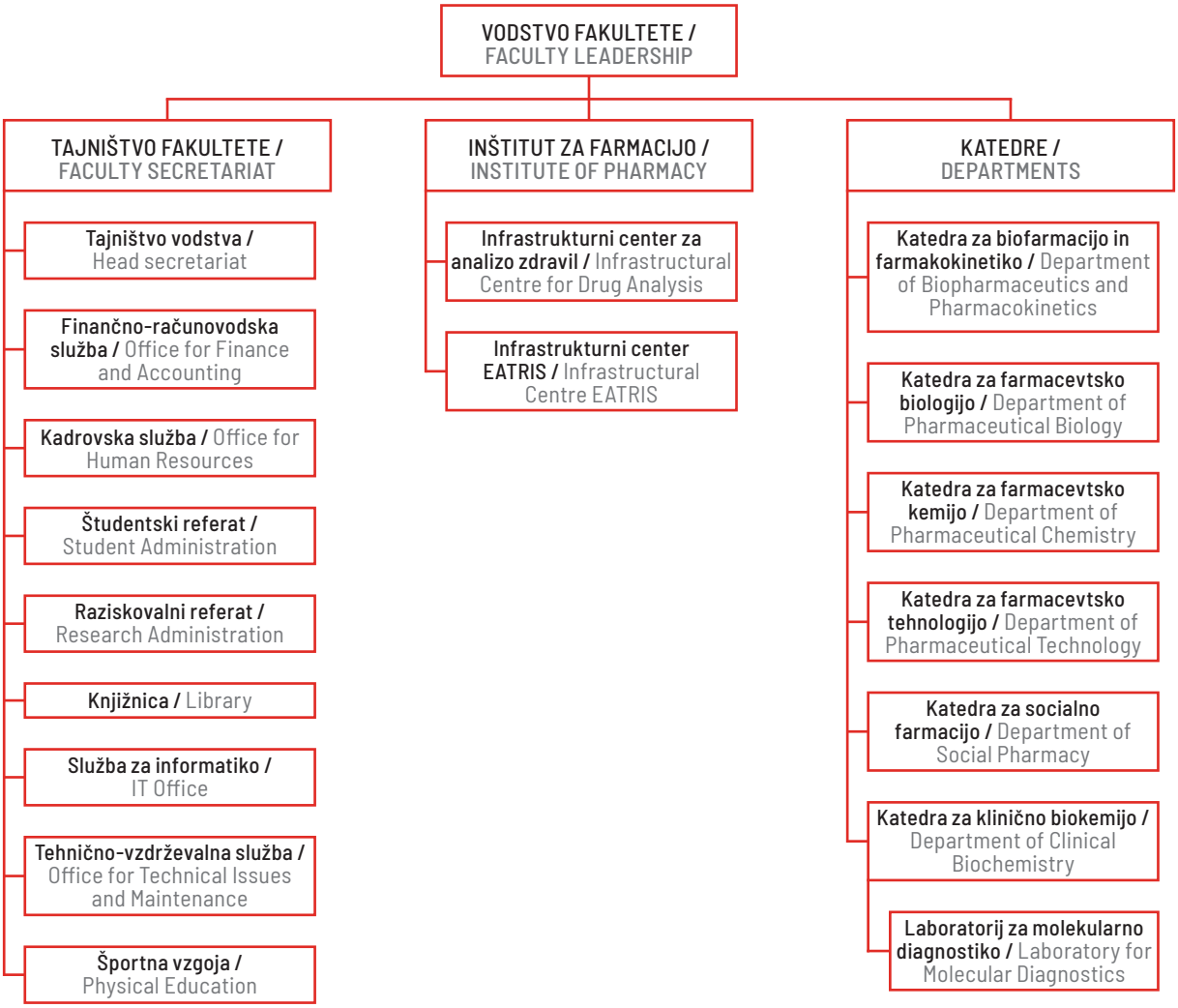
The Faculty's basic tasks are creating, transmitting, and retaining knowledge. Therefore, the priority, besides innovativeness and research, is effective teaching and retaining the profession-related historic memory. The number of publications in scientific journals, the number of citations, and the number of projects rank the faculty at the very top of the University of Ljubljana.

As part of the University of Ljubljana, the Faculty of Pharmacy builds its reputation, integrity, and development on excellence, efficiency, and the ethical stance of its students and teachers. We are building on the long-term tradition of pharmaceutical experience in Slovenia and beyond, while always looking towards the future.

The faculty is a medium-sized pharmaceutical faculty that is parent to the wider field of pharmacy, clinical biochemistry, and cosmetology. Each year, the faculty admits 150 students to the programme of Pharmacy, 90 to the programme of Laboratory Biomedicine (50 graduate and 40 post-graduate students), 40 to the programme of Cosmetology, 25 to the programme of Industrial Pharmacy, and between 20 and 30 students to doctoral studies. In the past years, there were about 1500 students enrolled in the Faculty of Pharmacy, including the students doing their.

The Faculty of Pharmacy's vision is to contribute to the co-creation of the future, to remain an accesible, responsive, and responsible academic educational and research institution, which by making and spreading scientific knowledge wishes to work for the welfare of Slovenian citizens, contribute to general development, and thus strengthen the national identity.

ORGANIZACIJSKE ENOTE UL FFA / FACULTY OF PHARMACY'S ORGANISATIONAL UNITS



VODSTVO FAKULTETE (mandat od 1. 10. 2017) / FACULTY'S GOVERNANCE (in mandate since 1. 10. 2017)

DEKANJA FAKULTETE / DEAN:

prof. dr. Irena Mlinarič-Raščan, mag. farm.

PRODEKAN ZA ŠTUDIJSKO PODROČJE / VICE-DEAN FOR EDUCATION:

prof. dr. Marko Anderluh, mag. farm.

PRODEKAN ZA ZNANSTVENO-RAZISKOVALNO PODROČJE / VICE-DEAN FOR SCIENTIFIC RESEARCH**:**

izr. prof. dr. Rok Dreu, mag. farm.

PRODEKAN ZA MEDNARODNO SODELOVANJE / VICE-DEAN FOR INTERNATIONAL RELATIONS**:**

prof. dr. Iztok Grabnar, mag. farm.

KATEDRE FAKULTETE ZA FARMACIJO

Katedra za biofarmacijo in farmakokinetiko
predstojnik: prof. dr. Albin Kristl, mag. farm.

Katedra za farmacevtsko biologijo
predstojnik: doc. dr. Tomaž Bratkovič, mag. farm.

Katedra za farmacevtsko kemijo
predstojnik: prof. dr. Stanislav Gobec, mag. farm.

Katedra za farmacevtsko tehnologijo
predstojnica: prof. dr. Mirjana Gašperlin, mag. farm.

Katedra za socialno farmacijo
predstojnik: izr. prof. dr. Mitja Kos, mag. farm.

Katedra za klinično biokemijo
predstojnica: doc. dr. Nataša Karas Kuželički, mag. farm.

Vodja Laboratorija za molekularno diagnostiko:
prof. dr. Janja Marc, mag. farm., spec. med. biokem.

INŠTITUT ZA FARMACIJO

Predstojnik: izr. prof. dr. Rok Dreu, mag. farm.

ORGANI FAKULTETE

Senat
predsednica: prof. dr. Irena Mlinarič-Raščan

Akademski zbor
predsednica: prof. dr. Marija Sollner Dolenc

Upravni odbor
predsednik: izr. prof. dr. Matjaž Jeras

Študentski svet
predsednik: Anže Zidar

TAJNIŠTVO

Tajnica fakultete
Stanislava Menard, univ. dipl. prav.

Tajnica vodstva
Lidija Ribič, dipl. ekon.

Finančno-računovodska služba
Aleš Kolenko, univ. dipl. ekon., vodja službe

FACULTY OF PHARMACY'S DEPARTMENTS

Department of Biopharmaceutics and Pharmacokinetics
Head: Prof. Albin Kristl, M. Pharm., Ph.D.

Department of Pharmaceutical Biology
Head: Assist. Prof. Tomaž Bratkovič, M. Pharm., Ph.D.

Department of Pharmaceutical Chemistry
Head: Prof. Stanislav Gobec, M. Pharm., Ph.D.

Department of Pharmaceutical Technology
Head: Prof. Mirjana Gašperlin, M. Pharm, Ph.D.

Department of Clinical Biochemistry
Head: Assist. Prof. Nataša Karas Kuželički, M. Pharm., Ph.D.

Head of Laboratory for Molecular Diagnostics:
Prof. Janja Marc, M. Pharm., Ph.D., EuSpLM

Department of Social Pharmacy
Head: Assoc. Prof. Mitja Kos, M. Pharm., Ph.D.

INSTITUTE OF PHARMACY:

Head: Assoc. Prof. Rok Dreu, M. Pharm., Ph.D.

FACULTY'S GOVERNING BODIES

Senate
Chair: Prof. Irena Mlinarič-Raščan, M. Pharm., Ph.D.

Academic Assembly
Chair: Prof. Marija Sollner Dolenc, M. Pharm., Ph.D.

Management Board
Chair: Assoc. Prof. Matjaž Jeras, M. Pharm., Ph.D.

Students' Council
Chair: Anže Zidar

FACULTY SECRETARIAT

Faculty Secretariat
Stanislava Menard, LLB

Head Secretariat
Lidija Ribič, BSc Econ.

Office for Finance and Accounting
Head: Aleš Kolenko, BSc Econ.

Kadrovska služba
Zdenka Gantar, viš. upr. del., vodja službe

Študentski referat
Tanja Kadunc, dipl. org. tur., vodja referata

Raziskovalni referat
Judita Merjasec, mag. manag., vodja referata

Knjižnica
Borut Toth, prof. fil. in sociol., vodja knjižnice

Služba za informatiko
Tanja Gregorič, univ. dipl. org. inf., vodja službe

Tehnično-vzdrževalna služba

Športna vzgoja
pred. Dušan Videmšek, prof. športne vzg.

KOMISIJE

Komisija za doktorski študij
predsednik: izr. prof. dr. Rok Dreu

Komisija za raziskovalno in razvojno delo
predsednik: prof. dr. Rok Dreu

Komisija za kakovost in akreditacijo
predsednik: doc. dr. Bojan Doljak

Habilitacijska komisija
predsednica: prof. dr. Marija Bogataj

Komisija za priznanja in nagrade
predsednik: prof. dr. Odon Planinšek

Komisija za študijsko področje
predsednik: prof. dr. Marko Anderluh

Komisija za strokovna vprašanja
predsednica: izr. prof. dr. Mojca Kerec Kos

Komisija za priznavanje tuje izobrazbe
predsednik: prof. dr. Marko Anderluh

Komisija za internacionalizacijo
predsednik: prof. dr. Iztok Grabnar

Komisija za etična vprašanja
predsednik: izr. prof. dr. Simon Žakelj

Računalniška komisija
predsednica: Tanja Gregorič

Office for Human Resources
Head: Zdenka Gantar, Sr. Admin. Work.

Student Administration
Head: Tanja Kadunc, BSc (Tourism)

Research Administration
Head: Judita Merjasec, MMgt

Library
Head: Borut Toth, Prof. Phil. and Sociol.

IT Office
Head: Tanja Gregorič, BSc (Organisational Informatics)

Office for Technical Issues and Maintenance

Physical Education
lecturer Dušan Videmšek, Prof. of Sports Education

COMMITTES

Commitee for Doctoral Study
Chair: Assoc. Prof. Rok Dreu, M. Pharm., Ph.D.

Commitee for Research and Development
Chair: Assoc. Prof. Rok Dreu, M. Pharm., Ph.D.

Commitee for Quality Assurance and Accreditation
Chair: Assist. Prof. Bojan Doljak, M. Pharm., Ph.D.

Commitee Commission
Chair: Prof. Marija Bogataj, M. Pharm., Ph.D.

Commitee for Awards and Decorations
Chair: Prof. Odon Planinšek, M. Pharm., Ph.D.

Commitee for Study Affairs
Chair: Prof. Marko Anderluh, M. Pharm., Ph.D.

Commitee for Professional Issues
Chair: Assoc. Prof. Mojca Kerec Kos, M. Pharm., Ph.D.

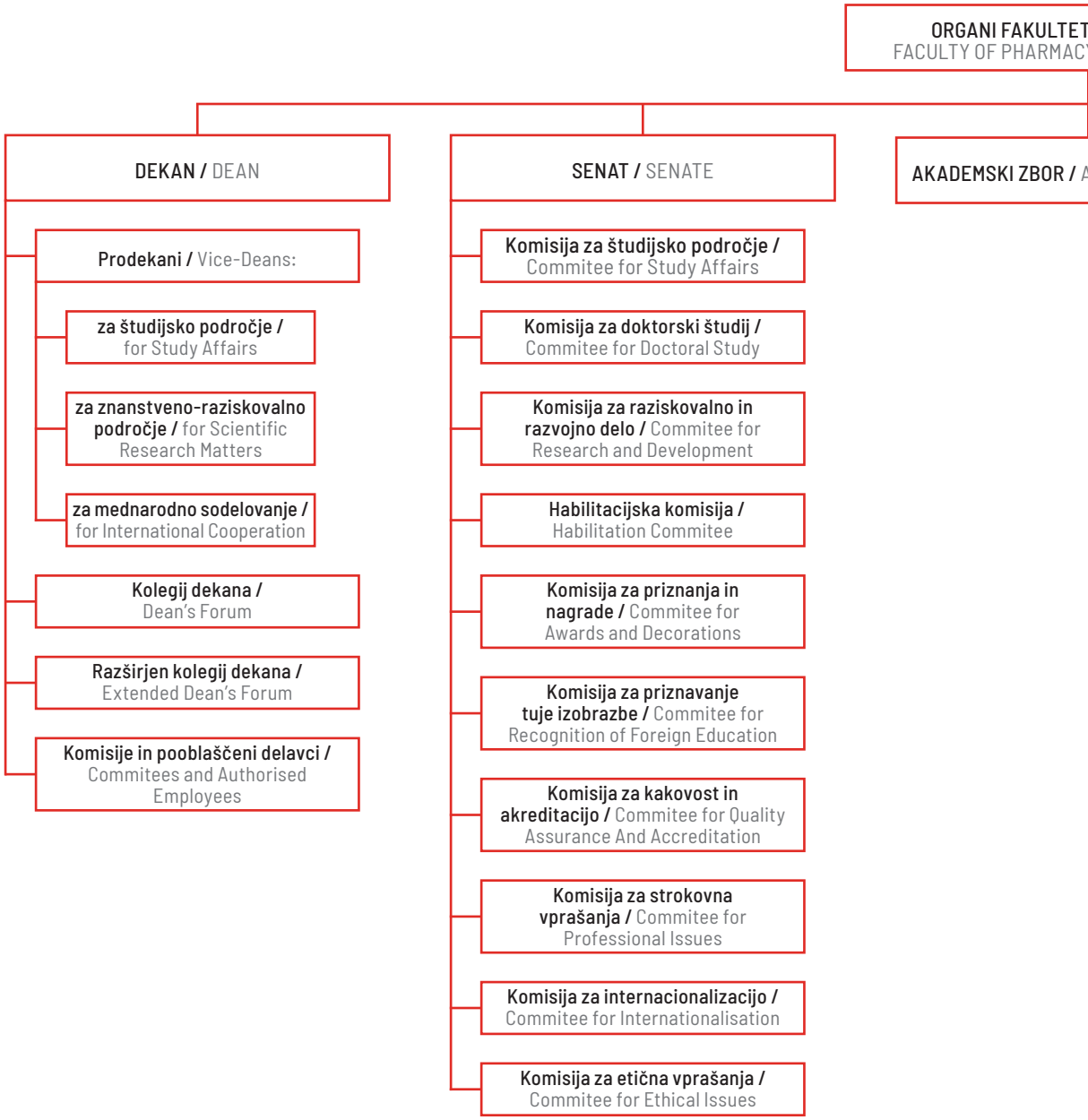
Commitee for Recognition of Foreign Education
Chair: Prof. Marko Anderluh, M. Pharm., Ph.D.

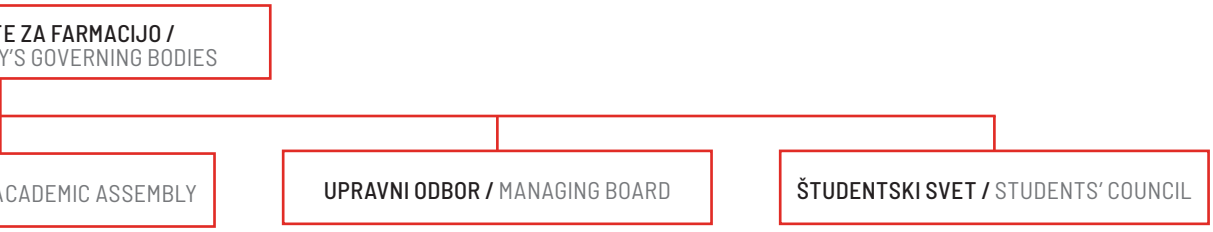
Commitee for Internationalisation
Chair: Prof. Iztok Grabnar, M. Pharm., Ph.D.

Commitee for Ethical Affairs
Chair: Assoc. Prof. Simon Žakelj, M. Pharm., Ph.D.

IT Commitee
Chair: Tanja Gregorič

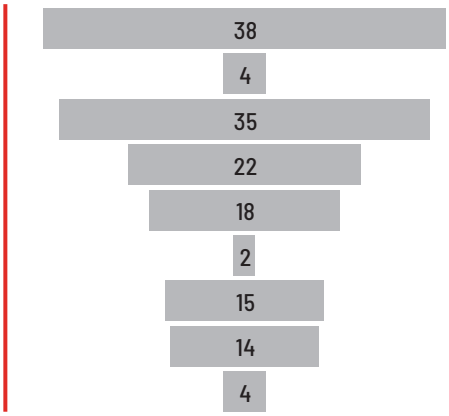
ORGANI UL FFA / FACULTY OF PHARMACY'S GOVERNING BODIES



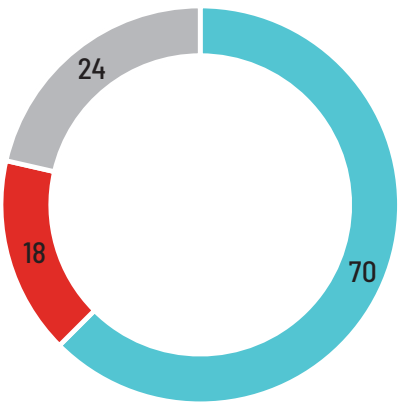

E ZA FARMACIJO /
Y'S GOVERNING BODIES
ACADEMIC ASSEMBLY
UPRAVNI ODBOR / MANAGING BOARD
ŠTUDENTSKI SVET / STUDENTS' COUNCIL

ZAPOSLENI / EMPLOYEES

ZAPOSLENI NA FAKULTETI ZA FARMACIJO / FACULTY OF PHARMACY'S EMPLOYEES



IZOBRAZBENA STRUKTURA ZAPOSLENIH NA FFA / EDUCATIONAL STRUCTURE OF FACULTY OF PHARMACY'S EMPLOYEES



PREDSTAVITEV KATEDER

Katedre so jedro pedagoškega, znanstvenoraziskovalnega, razvojnega in strokovnega dela fakultete. Hkrati pa so tudi povezovalni element raziskovalnega dela, ki se odvija tako v okviru kateder kot tudi v okviru raziskovalnih in programskih skupin. Slednje oblike delovanja niso organizacijske enote fakultete in so vezane na potrebe in možnosti po pridobivanju sredstev za raziskovalno delo na razpisih ter na zahteve po povezovanju v interdisciplinarne skupine glede na vsebino posameznega raziskovalnega vprašanja.

PRESENTATION OF DEPARTMENTS

The departments are the core of the Faculty's pedagogical, scientific research, developmental, and professional work. They are also connective elements for research work that takes place in the framework of the departments, as well as in the framework of research and programme groups. The latter forms of operation are in themselves not organisational units of the Faculty but are linked to the needs and abilities to acquire funds for research work at public tenders, and to the demands to connect into interdisciplinary groups depending on the content of an individual research question.

Gradimo pripadnost / Team building event

KATEDRA ZA KLINIČO BIOKEMIJO

Na Katedri za klinično biokemijo razvijamo področje laboratorijske medicine, še posebno tistega dela, ki obsega klinično biokemijo. Klinična biokemija uporablja kemijske, molekulske in celične pristope za razumevanje in ovrednotenje človekovega zdravja in bolezni. Še posebej intenzivno se ukvarjamo s področji hematologije, genetike in imunologije, ki jih samostojno in v sodelovanju s kliniki tudi znanstveno razvijamo. Poleg vsebin klinične biokemije se ukvarjamo tudi z drugimi področji laboratorijske medicine, kot so toksikologija, matične celice in tkivno inženirstvo.

Na katedri iščemo biološke kazalce etiopatogeneze kompleksnih bolezni (osteoporoza, metabolni sindrom, kronična limfocitna levkemija, prirojene srčne napake, orofacialne shize, ateroskleroza, avtoimunske bolezni) na genomskem, epigenetskem, transkriptomskem, proteomskem in metabolomskem nivoju.

Intenzivno se ukvarjamo tudi s sodobnimi personaliziranimi pristopi v medicini, ki vključujejo tudi diagnostiko. Katedra za klinično biokemijo je začetnica razvoja področja farmakogenomike na FFA, predvsem na področju onkologije.

Nedavno smo začeli razvijati področje dela z matičnimi celicami, kjer intenzivno sodelujemo s kliniki na področju regenerativne medicine sklepov.

Na vseh opisanih področjih katedra intenzivno sodeluje s stroko, kar rezultira v visoki stopnji prenosljivosti naših raziskovalnih rezultatov v klinično prakso.

DEPARTMENT OF CLINICAL BIOCHEMISTRY

At the Department of Clinical Biochemistry, we work on developing the field of laboratory medicine, especially the part that encompasses clinical biochemistry. Clinical biochemistry uses chemical, molecular, and cellular approaches to understanding human health and illness. Our work is especially intense in the fields of haematology, genetics, and immunology, which we, independently and in cooperation with clinicians, also work on developing scientifically. Besides the contents of clinical biochemistry, we also deal with other fields of laboratory medicine, for instance, toxicology, stem cell research, and tissue engineering.

At the Department we search for biological indicators of etiopathogeneses of complex illnesses (osteoporosis, metabolic syndrome, chronic lymphocytic leukaemia, congenital heart defects, orofacial clefts, atherosclerosis, autoimmune diseases) on the levels of genomes, epigenetics, transcriptomics, proteomics, and metabolomics.

In addition, we intensely deal with modern personalised approaches in medicine, which also include diagnostics. The Department of Clinical Biochemistry is a pioneer at the Faculty of Pharmacy in developing the field of pharmacogenomics, especially in the field of oncology.

We have recently started developing the field of stem cell research, where we intensely cooperate with clinicians in the field of joint regenerative medicine.

In all the aforementioned fields, the Department intensely cooperates with professional societies, which is resulting in a high degree of transferability of our research results into clinical practice. Medical Labo-

V okviru katedre deluje tudi medicinski laboratorij z dovoljenjem za delo Ministrstva za zdravje RS (Laboratorij za molekularno diagnostiko – LMD).

ratory for Molecular Diagnostics (LMD), which is authorised by Slovenian Ministry of Health, is also a part of the Department.

Ključni dosežki v letu 2017

V sklopu mednarodnega sodelovanja smo objavili dva članka v revijah z visokim faktorjem vpliva, in sicer enega s področja diagnostike kompleksnih bolezni (Ann Rheum Dis. 2018 77: 378–385. doi: 10.1136/annrheumdis-2017-212469), pri katerem je sodelovala skupina prof. dr. Janje Marc, ter enega s področja famakogenomike (Clinical pharmacology & therapeutics, 2017, 684–695), pri katerem je sodelovala skupina prof. dr. Irene Mlinarič-Raščan.

Člani katedre so bili tudi povabljeni k sodelovanju pri monografijah priznanih založnikov: Epigenetic mechanisms in osteoporosis (chapter 18, izr. prof. dr. Barbara Ostanek s sodelavci).

Člani katedre so pridobili dva evropska projekta: Interreg ARTE (dr. Tilen Kranjc) in ERA-NET Transcan2 BioEndoCar (prof. dr. Joško Osredkar). Prof. Osredkar je v letu 2017 dobil tudi terciarni projekt UKCL Izbor nekaterih laboratorijskih preiskav pri otrocih s spektroavtističnо motnjo (SAM).

V letu 2017 sta dva člana katedre, prof. dr. Borut Božič in asist. dr. Janja Zupan, prejela Priznanje delavcu fakultete za izjemne rezultate pri delu, prof. Božič pa je prejel tudi priznanje Lekarne Ljubljana za prispevek k njenemu razvoju.

Key achievements in 2017

In the framework of international cooperation, we have published two articles in journals with a high impact factor - one is from the field of diagnostics of complex illnesses (Ann Rheum Dis. 2018 77:378-385. doi: 10.1136/annrheumdis-2017-212469), a group under the leadership of Prof. Janja Marc, M. Pharm., Ph.D., EuSpLM was taking part in this project. The other article deals with the field of pharmacogenomics (Clinical pharmacology & therapeutics, 2017, 684-695), and was written in cooperation with a group under the leadership of Prof. Irena Mlinarič-Raščan, M. Pharm., Ph.D.

The Department members have also been invited to publish their findings in monographs of esteemed publishers: Epigenetic mechanisms in osteoporosis (chapter 18, Assoc. Prof. Barbara Ostanek et al.).

The Department members have gained two European projects – Interreg ARTE (Assist. Tilen Kranjc, M. Pharm., Ph.D.) and ERA-NET Transcan2 BioEndoCar (Prof. Joško Osredkar, M. Pharm., Ph.D.) In 2017, Prof. Joško Osredkar, M. Pharm., Ph.D., has also gained a tertiary project of Ljubljana University Medical Centre – Selection of some laboratory examinations in children with autism spectre disorder (ASD).

In 2017, two members of the Department – Prof. Borut Božič, M. Pharm., Ph.D., EuSpLM and Assist. Janja Zupan, M. Pharm., Ph.D. – were awarded with the Outstanding Staff Award for their exceptional achievements. Prof. Borut Božič, M. Pharm., Ph.D., EuSpLM was also given the Lekarna Ljubljana (Pharmacy of Ljubljana) Award for his contribution to its development.

KATEDRA ZA FARMACEVTSKO BIOLOGIJO

Na Katedri za farmacevtsko biologijo odkrivamo, razvijamo in analiziramo zdravila naravnega izvora (tj. rastlinske in glivne sekundarne metabolite in biotehnološke učinkovine) ter raziskujemo molekularne mehanizme bolezenskih procesov.

Na področju farmakognozije razvijamo analizne metode za preverjanje identitete in vrednotenje kakovosti zdravilnih rastlin. Iz gliv in rastlin (tradicionalno uporabljanih za zdravljenje bolezni ali takih, ki jih še ne uporabljamo v zdravilne namene) izoliramo biološko aktivne snovi in vrednotimo njihovo delovanje.

Ukvarjamo se z analizo fizikalno-kemijskih in bioloških lastnosti (gliko)proteinskih učinkovin, pridobljenih s tehnikami genskega inženirstva. Razvijamo nove metode za kvantifikacijo peptidnih in proteinskih učinkovin v bioloških vzorcih. S pomočjo bioloških kombinatoričnih knjižnic odkrivamo nove biološko aktivne peptide (zaviralce terapevtsko pomembnih encimov, ligande za afinitetno kromatografijo in peptide, ki posnemajo strukturo alergenov za imunoterapijo).

Na področju celične in molekularne biologije raziskujemo mehanizme nastanka in napredovanja raka, protitumorskega imunskega odziva in nevrodegenerativnih ter nevroloških bolezni s ciljem opredeliti nova terapevtska prijemališča in diagnostične označevalce.

DEPARTMENT OF PHARMACEUTICAL BIOLOGY

At the Department of Pharmaceutical Biology, we discover, develop, and analyse medicine of natural origin (i.e. plant and fungal secondary metabolites and biotechnological active substances) and explore molecular mechanisms of illness processes.

In the field of pharmacognosy, we develop analytical methods to check the identity and to estimate the quality of medicinal plants. We use fungi and plants (that are either traditionally used to treat illnesses or have not yet been used for such purposes) to isolate biologically active substances and estimate their functions.

We deal with the analysis of physicochemical and biological properties of (glyco)protein active ingredients that are acquired through the techniques of genetic engineering. We develop new methods to quantify peptide and protein active ingredients in biological samples. With the help of biological combinatorial libraries, we discover new, biologically active peptides (inhibitors of therapeutically important enzymes, ligands for affinity chromatography, and peptides that imitate the structures of allergens for immunotherapy).

In the field of cellular and molecular biology, we explore the mechanisms for the onset and progression of cancer, anti-tumour immune response, and neurodegenerative and neurological diseases, with the purpose of defining new therapeutic points of medicines' applicatiion and diagnostic markers.

Ključni dosežki v letu 2017

V raziskavi, objavljeni v reviji Neuropharmacology (Pišlar in sod. 2017), smo pokazali vlogo katepsina X in njegovega substrata, γ-enolaze, v nevrodegenerativnih procesih, spodbujenih z vnetjem. Izsledki raziskave nakazujejo na povečano izražanje in aktivnost katepsina X ter izločanje slednjega v zunajcelično okolje aktivirane mikroglije, kar vodi v nevrodegenerativne procese. Zaviranje katepsina X in s tem razgradnje γ-enolaze, ki izkazuje nevroprotektivno delovanje, vodi v zaviranje aktivacije mikroglije in s tem v zmanjšano nevrodegeneracijo. Doc. dr. Anja Pišlar, prva avtorica raziskave, je prejela Lapanjetovo priznanje, ki ga Slovensko biokemijsko društvo podeljuje mlajšim članom za vrhunske znanstvenoraziskovalne dosežke na širšem področju biokemije.
Plod sodelovanja z raziskovalci s Katedre za farmacevtsko kemijo sta dve pomembni objavi. V raziskavi, objavljeni v reviji Scientific Reports (Pečar Fonović in sod. 2017), smo ovrednotili derivate triazola kot prve reverzibilne, učinkovite in selektivne zaviralce katepsina X. Zaviranje peptidaze, ki je potencialna tarča pri zdravljenju raka in nevrodegenerativnih bolezni, je močno zmanjšalo migracijo celic raka prostate ter povečalo zmožnost izraščanja nevritov pri živčnih celicah. Doc. dr. Urša Pečar Fonović, prva avtorica raziskave, je za delo prejela Dekanovo nagrado. V raziskavi, objavljeni v reviji Oncotarget (Mitrović in sod. 2017), smo pokazali, da dodatek 2-(etilamino) acetonitrilne skupine na mesto 7 nitroksolina značilno izboljša njegovo protitumorno delovanje. Novi zaviralec katepsina B učinkovito zmanjša invazijo tumorskih celic in migracijo na celičnih modelih in izkazuje boljše delovanje kot spojina vodnica pri zmanjšanju rasti tumorjev *in vivo* na tumorskem mišjem modelu fibrosarkoma.

Raziskovalna skupina pod vodstvom prof. Boruta Štruklja je zasnovala prototip splošne platforme za detekcijo poljubnih ligandov endogenih receptorjev, ki jih kot prepovedane snovi uporabljajo za doping. Težava uveljavljenih analiznih metod je njihova specifičnost, saj omogočajo zgolj detekcijo snovi z znano strukturo. Izjemen potencial univerzalne metode je na osnovi intenzivne strokovne evalvacije prepoznala svetovna protidopinška organizacija WADA, ki je projektu nadaljnjega razvoja tehnologije namenila dodatna finančna sredstva.

Key achievements in 2017

In a research published in the journal Neuropharmacology (Pišlar et al., 2017), we have demonstrated the role of cathepsin X and its substrate γ-enolase in neurodegenerative processes initiated by the inflammation. The results of the research point to an increased expression and activity of cathepsin X, and to its secretion into the extracellular environment of the activated microglia, which leads to neurodegenerative processes. Inhibiting cathepsin X and with that dissolving γ-enolase, which demonstrates neuroprotective activities, leads to the inhibition of the microglia's activation, and therefore to a reduced neurodegeneration. Assist. Prof. Anja Pišlar, M. Pharm., Ph.D., the main author of the research, was given the Lapanje award, which is given by the Slovenian Biochemical Society to its young members for outstanding scientific research achievements in the wider field of biochemistry.

Cooperation with researchers from the Department of Pharmaceutical Chemistry has resulted in two important publications. The research published in the Scientific Reports journal (Pečar Fonovič et al., 2017) has evaluated the derivatives of triazole to be the first reversible, effective, and selective inhibitors of cathepsin X. Inhibition of peptidase, which is a potential target in the treatment of cancer and neurodegenerative diseases, has strongly reduced the migration of prostate cancer cells and increased the ability of axons to grow in nerve cells. Assist. Prof. Urša Pečar Fonović, M. Pharm., Ph.D., the main author of the research, has received the Dean's award for her work. The research published in Oncotarget journal (Mitrović et al, 2017) has shown that the addition of 2-(ethylamino)acetonitrile group to nitroxoline at position 7 significantly improves its anti-tumour activity. The new inhibitor of cathepsin B efficiently reduces the invasion of tumour cells and the migration at cellular models, and shows better activity as a lead compound in reducing the growth of tumours *in vivo* on a tumour mouse model of soft tissue sarcoma.

The research group, led by Prof. Borut Štrukelj, M. Pharm., Ph.D., has designed a prototype of a general platform for detecting optional endogenous receptor ligands, the substance illegally used for doping. The problem of established analytical methods lies in their specificity, since they only enable the detection of a substance with a known structure. On the basis of intensive professional evaluation, World Anti-Doping Agency (WADA) has recognised the great potential of the universal method and allocated additional funds to the project for further development of the technology.

KATEDRA ZA FARMACEVTSKO KEMIJO

Katedra za farmacevtsko kemijo (FK) organizira in opravlja pedagoško, znanstvenoraziskovalno in strokovno delo na širšem področju farmacevtske kemije, farmacevtske analize in toksikologije. Na katedri izvajamo raziskave načrtovanja, sinteze in biološkega vrednotenja novih spojin kot potencialnih novih učinkovin ter razvoj novih molekulskih orodij za proučevanje interakcij z biološkimi makromolekulami in makromolekulskimi strukturami. Glavni raziskovalni poudarki so na razvoju novih učinkovin za naslednje tarče: encimi, ki so udeleženi v sintezi bakterijske stene, encimi, udeleženi v biosintezo mikolnih kislin mikobakterij, encimi v verigi transformacij steroidnih spojin, lektinska receptorja DC-SIGN in FimH, napetostno odvisni natrijevi kanali, Toll-u podobni receptorji (TLR), NOD receptorji, tarče v procesu koagulacije krvi in vitronektinski receptorji. Razvijamo nove sintezne poti, nove separacijske in analizne metode za karakterizacijo spojin, nove metode za biološko karakterizacijo sintetiziranih spojin, nove antioksidante, nove stabilne nitroksidne ter fluorescenčne označevalce. Glavnina raziskav poteka na katedri, del pa v povezavi z Medicinsko fakulteto, Kemijskim inštitutom in Institutom »Jožef Stefan« v okviru Programske skupine Farmacevtska kemija (2015–2020) in raznih projektov.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

The Department of Pharmaceutical Chemistry organises and performs pedagogical, scientific research, and professional work in the wider field of pharmaceutical chemistry, pharmaceutical analysis, and toxicology. At the Department, we carry out various types of research for planning, syntheses, and biological evaluation of new compounds to be used as potential new active ingredients, and develop new molecular tools to study interactions with biological macromolecules and macromolecular structures. The main research focus is put on the development of new active ingredients targeting enzymes involved in bacterial cell wall synthesis, enzymes involved in the biosynthesis of mycolic acids in mycobacteria, enzymes in the chain of transformations of steroidal compounds, DC-SIGN and FimH lectin receptors, voltage-gated sodium channels, Toll-like receptors (TLR), NOD receptors, targets in the process of blood coagulation, and vitronectin receptors. We develop new paths for syntheses, new separation methods and analytical methods for the characterisation of compounds, new methods for biological characterisation of synthesised compounds, new antioxidants, and new stable nitroxide and fluorescent markers. The majority of research takes place at the Department itself, while the rest is carried out in cooperation with the Faculty of Medicine, National Institute of Chemistry, and Jožef Stefan Institute, in the frameworks of Pharmaceutical Chemistry programme group (2015-2020), and various other projects.

Ključni dosežki v letu 2017

Prof. dr. Stanislav Gobec je dobitnik Preglove nagrade za izjemne dosežke na Kemijskem inštitutu. Nagrada predstavlja priznanje za vrhunske dosežke na področju osnovnih ali uporabnih raziskav na področju kemije in sorodnih ved.

Raziskovalca na Fakulteti za farmacijo, profesor dr. Stanislav Gobec in dr. Vita Godec, sta sodelovala pri raziskavi, ki sta jo vodila profesor David Roper (Warwick's School of Life Sciences) in dr. Luiz Pedro Carvalho (The Francis Crick Institute). V raziskavi so pojasnili, kako antibiotik D-cikloserin deluje na molekularni ravni. D-cikloserin je staro antibiotično zdravilo, ki je učinkovito pri številnih okužbah, npr. pri tuberkulozi, vendar se zaradi nekaterih neželenih učinkov pogosto uporablja kot zdravilo drugega izbora. Članek, objavljen v Nature Communications, razkriva globlje razumevanje, kako se D-cikloserin veže na encim D-alanin-D-alanin-ligaza in se kemično spremeni po vezavi na encim. (https://www.nature.com/articles/s41467-017-02118-7)

Prof. dr. Marko Anderluh (koordinator projekta), izr. prof. dr. Žiga Jakopin in doc. dr. Tihomir Tomašič so na razpisu programa Obzorje 2020 v okviru Marie Skłodowska-Curie Innovative Training Networks pridobili štiriletni projekt European Joint Doctorate z akronimom PhD4GlycoDrug. To je prvi projekt v okviru Obzorja 2020, kjer je članica UL koordinatorica projekta. (https://www.phd4glycodrug.eu/)

Key achievements in 2017

Prof. Stanislav Gobec, M. Pharm., Ph.D. was given the Pregl Award for outstanding achievements at the National Institute of Chemistry. The award represents recognition of outstanding achievements in basic and applied research in the fields of chemistry and related sciences.

Researchers at the Faculty of Pharmacy, Prof. Stanislav Gobec, M. Pharm., Ph.D. and Vita Godec, Ph.D., have cooperated in a research led by Prof. David Roper (Warwick's School of Life Sciences) and Luiz Pedro Carvalho, Ph.D. (The Francis Crick Institute). In the research, they have explained how the antibiotic D-cycloserine works at the molecular level. D-cycloserine is an old antibiotic medicine that can be used for the treatment of many infections, such as tuberculosis. Due to some unwanted side-effects, however, it is frequently used as a second-choice medicine. The article published in the Nature Communications journal reveals a deeper understanding of how D-cycloserine links itself to the enzyme D-alanine–D-alanine ligase and how it chemically transforms after that. (https://www.nature.com/articles/s41467-017-02118-7)

Prof. Marko Anderluh, M. Pharm., Ph.D. (project coordinator), Assoc. Prof. Žiga Jakopin, M. Pharm., Ph.D., and Assist. Prof. Tihomir Tomašič, M. Pharm., Ph.D. have gained a four-year project called European Joint Doctorate (with the acronym PhD4GlycoDrug) at the EU's Horizon 2020 programme tender, in the framework of Marie Skłodowska-Curie Innovative Training Networks. This is Horizon 2020's first project that is coordinated by a University of Ljubljana member. (https://www.phd4glycodrug.eu/)

KATEDRA ZA FARMACEVTSKO TEHNOLOGIJO

Katedra za farmacevtsko tehnologijo je usmerjena v razvoj, izdelavo in vrednotenje klasičnih farmacevtskih oblik in naprednih dostavnih sistemov. Študentom posreduje znanja iz predformulacijskih študij, farmacevtske tehnologije, nanotehnologije, industrijske farmacije, kozmetičnih izdelkov, farmacevtsko-tehnološke analitike in numeričnih simulacij tehnoloških procesov. Glavna raziskovalna področja katedre so: predformulacijske raziskave učinkovin in pomožnih snovi, pacientu prijazni dostavni sistemi (mini in (oro) disperzibilne tablete, dermalne mikroemulzije in tekoči kristali), trdne farmacevtske oblike (zrnca, pelete, tablete, mikrokapsule), prirejeno in ciljano sproščanje, pristopi za povečevanje topnosti učinkovin (na lipidih osnovani sistemi in njihova solidifikacija), nanovlakna, polimerni in trdni lipidni nanodelci, nanosuspenzije, liposomi, termoodzivni miceli in hidrogeli ter SPION-osnovani nanoteranostiki. V laboratorijih katedre uporabljamo in razvijamo specifične tehnologije (vrtinčnoslojno tehnologijo, visokostrižno granuliranje, granuliranje s talinami, oblaganje, tabletiranje (konvencionalno, večplastno), sušenje/strjevanje z razprševanjem, visokotlačno in ultrazvočno homogenizacijo, liofilizacijo, mikroenkapsuliranje, elektrodinamično sukanje in razprševanje) ter uporabljamo termične, reološke, EPR, mikroskopske (SEM, mikroskopijo na atomsko silo, nanoindentacijo, fluorescentno mikroskopijo) in kromatografske analizne tehnike kakor tudi metode za karakterizacijo nanomaterialov ter varnost in toksičnost nanozdravil in ostalih dostavnih sistemov.

DEPARTMENT OF PHARMACEUTICAL TECHNOLOGY

The Department of Pharmaceutical Technology is focused on developing, creating, and evaluating classical pharmaceutical forms and advanced drug delivery systems. It transmits knowledge of preformulation studies, pharmaceutical technology, nanotechnology, industrial pharmacy, cosmetic products, pharmaceutical-technological analytics, and numerical simulations of technological processes. The Department's main research areas are: preformulaton studies of active substances and excipients substances, patient-friendly drug delivery systems (mini and (oro)dispersible pills, dermal microemulsions, and liquid crystals), solid pharmaceutical dosage forms (granules, pellets, pills, and microcapsules), modified and targeted release, approaches to increase solubility of active ingredients (lipid-based systems and their solidification), nanofibers, polymer-lipid and solid lipid nanoparticles, nanosuspensions, liposomes, thermoresponsive micelles and hydrogels, and SPION-based nanotheranostics. In the Department's laboratories, we use and develop specific technologies (vortex layer technology, high shear granulation, melt granulation, coating, tabletting (conventional and multilayer), spray drying and spray congealing, high-pressure and ultrasonic homogenisation, lyophilization, microencapsulation, and electrodynamic twisting and spraying), and employ thermic, rheological, EPR, microscopic (SEM, atomic force microscopy, nanoindentation, fluorescent microscopy), and chromatographic analytical techniques, as well as methods for characterising nanomaterials and learning about the safety and toxicity of nanomedicine and other medicine delivery systems.

Ključni dosežki v letu 2017

Asist. Špela Zupančič, dobitnica nagrade Ženske v znanosti 2017
L'Oréal Slovenija in Slovenska nacionalna komisija za UNESCO sta 16. 2. 2017 v Atriju ZRC SAZU trem izjemnim, perspektivnim mladim znanstvenicam podelila štipendije 11. nacionalnega programa »Za ženske v znanosti«, ki je letos potekal pod geslom »Ženske v znanosti imajo moč, da spreminjajo svet«.

Asist. Janja Mirtič, prejemnica nagrade za najboljši poster na mednarodni konferenci
Asist. Janja Mirtič, mag. farm., mlada raziskovalka na Katedri za farmacevtsko tehnologijo, je prejela nagrado za najboljši poster na 7th BBBB International Conference on Pharmaceutical Sciences (Balaton, Madžarska) za poster z naslovom: Microencapsulation of probiotics as biotherapeutic agents for their local delivery.

2. mesto na natečaju za Rektorjevo nagrado za leto 2017 – Mikro oblagalnik delcev
Fakulteta za farmacijo je vnovič potrdila svojo inovativno naravnanost in je del zmagovalnih inovacij za Rektorjevo nagrado. Projektno ekipo nagrajene inovacije sestavljajo: izr. prof. dr. Rok Dreu (UL FFA), dr. Rok Šibanc (UL FFA in Institute for Pharmaceutics and Biopharmacy, Duesseldorf), Gregor Ratek (UL FFA), Jure Korber (UL FS), Timotej Ratek (UL FS), Jure Štojs (UL EF), Žan Jelen (UL FRI), Domen Kitak (UL FFA), prof. dr. Stanko Srčič (UL FFA).

Skupina je razvila inovativno, prenosno vrtinčnoslojno napravo, imenovano mikro oblagalnik (μFBD), namenjeno oblaganju delcev mikronskih velikosti v gramskih količinah. Napravo je moč postaviti v biološko varno komoro in jo krmiliti brezžično. Unikatna možnost izvedbe procesa oblaganja na nivoju le nekaj gramov (do 20 gramov) je izjemnega pomena pri začetnih študijah razvoja zdravil. To omogoča izvedbo večjega števila eksperimentov ob sprejemljivih stroških in krajšem času raziskav. Lastnosti naprave napovedujejo prodajni potencial tudi v izobraževalnih ustanovah.

Mitja Pohlen, eden izmed treh individualnih zmagovalcev regionalnega BioCampa

Key achievements in 2017

Assist. Špela Zupančič, M. Pharm., Women in Science 2017 award winner
On 16th of February 2017, in the atrium of the Research Centre of the Slovenian Academy of Sciences and Arts (ZRC SAZU), L'Oreál Slovenia and Slovenian National Commission for UNESCO awarded scholarships to three outstanding, perspective young female scientists. The scholarships were part of the 11th national programme "For Women in Science," which last year took place under the slogan "Women in science have the strength to change the world."

Assist. Janja Mirtič, M. Pharm., Best Poster Award at the 7th BBBB International Conference on Pharmaceutical Sciences
Assist. Janja Mirtič, M. Pharm., young researcher at the Department of Pharmaceutical Technology, received the Best Poster Award at the 7th BBBB International Conference on Pharmaceutical Sciences (Balaton, Hungary) for her poster entitled "Microencapsulation of probiotics as biotherapeutic agents for their local delivery."

Second place in the Rector award 2017 competition – Micro Coating Machine for particles
The Faculty of Pharmacy has once more proved its innovation-oriented approach by developing one of the winning innovations for the Rector Award. The project team of the awarded innovation was comprised of Assoc. Prof. Rok Dreu, M. Pharm., Ph.D. (University of Ljubljana, Faculty of Pharmacy), Rok Šibanc, M. Pharm., Ph.D. (UL, Faculty of Pharmacy and Institute for Pharmaceutics and Biopharmacy, Düsseldorf), Gregor Ratek (UL, Faculty of Pharmacy), Jure Korber (UL, Faculty Of Mechanical Engineering), Timotej Ratek (UL, Faculty Of Mechanical Engineering), Jure Štojs (UL, Faculty of Electrical Engineering), Žan Jelen (UL, Faculty of Computer and Information Science), Domen Kitak (UL, Faculty of Pharmacy), and Prof. Stanko Srčič, M. Pharm., Ph.D. (UL, Faculty of Pharmacy).

The group has developed an innovative, portable, vortex layer device called Micro Coating Machine (μFBD), intended for coating micron-sized particles in gram quantities. The device can be placed in a biological safety chamber and controlled wirelessly. The unique opportunity to carry out the coating process at the level of just a few grams (up to 20g) is extremely important in the initial studies of the development of medicines. This enables a larger number of experiments to be carried out at acceptable costs, as well as shorter research times. The device's properties give it a promising sales potential – also in educational institutions.

Mitja Pohlen one of three individual winners of regional BioCamp

KATEDRA ZA BIOFARMACIJO IN FARMAKOKINETIKO

Na Katedri za biofarmacijo in farmakokinetiko raziskujemo procese, ki potekajo v človeškem telesu po aplikaciji zdravila. Te procese lahko razdelimo na sproščanje zdravilne učinkovine iz farmacevtske oblike, njeno absorpcijo, porazdelitev, metabolizem in izločanje (sistem LADME). Za vrednotenje farmakokinetike spojin razvijamo različne kromatografske metode z UV/Vis, EC, fluorescenčno in MS-MS detekcijo. V okviru predformulacijskih raziskav pa proučujemo njihove fizikalno-kemijske lastnosti, kot so topnost, hitrost raztapljanja, stabilnost, ionizacija, permeabilnost ter metabolične pretvorbe. Na osnovi teh parametrov in profilov sproščanja *in vitro* napovedujemo lastnosti farmacevtske oblike *in vivo*. S tako pridobljenim znanjem razvijamo tudi farmakokinetično-farmakodinamične modele, ki omogočajo napovedovanje kliničnih učinkov zdravil ter iskanje vzrokov za njihovo variabilnost. Ti modeli omogočajo uvedbo individualnega odmerjanja zdravil glede na posameznikove genotipske in fenotipske značilnosti. Raziskave, ki so podprte z vsemi najsodobnejšimi tehnologijami, pripomorejo k učinkovitejšemu in varnejšemu zdravljenju z zdravili.

DEPARTMENT OF BIOPHARMACEUTICS AND PHARMACOKINETICS

The Department of Biopharmaceutics and Pharmacokinetics is engaged in the research of processes taking place within a human body after the application of a medicine. The processes can be divided into several steps: the release of the active substance from the pharmaceutical form, its absorption, distribution, metabolism, and excretion (LADME system). For evaluation of pharmacokinetics of substances, we develop various chromatographic methods using UV/Vis, EC, fluorescent, and MS-MS detection. In the framework of preformulation studies, we asses physico-chemical properties, such as solubility, dissolution rate, stability, ionisation, permeability, and metabolic conversion. On the basis of these parameters and *in vitro* release profiles, we can predict *in vivo* properties of a pharmaceutical form. The acquired knowledge allows to develop the pharmacokinetic-pharmacodynamic models, which enable us to predict the clinical effects of medicines. Considering the characteristics of a singular patient's genotypes and phenotypes, allow personalized dosing. Studies that are supported by this kind of modern technologies contribute to more effective and safer treatment with the medicines.

Ključni dosežki v letu 2017

Erman Andreja, Križan-Hergouth Veronika, Blango Matthew G., Kerec Kos Mojca, Mulvey Matthew A., Veranič Peter: Repeated treatments with chitosan in combination with antibiotics completely eradicate uropathogenic Escherichia coli from infected mouse urinary bladders. - The Journal of infectious diseases, 2017, 216, 3, 375-371.

Uropatogena Escherichia coli (UPEC), primarni povzročitelj infekcij sečil, napada sečni urotelij, kar lahko vodi v oblikovanje trdovratnih znotrajceličnih rezervoarjev, odpornih na terapijo z antibiotiki. Predhodno smo predstavili novo strategijo zdravljenja z luščilcem urotelijskih celic hitosanom, ki odstrani rezervoarje UPEC. Enkratna aplikacija hitosana s ciprofloksacinom sicer pomembno zmanjša titer UPEC v sečnem mehurju, a ne prepreči ponovitev bakteriurije. V tem prispevku dokazujemo, da večkratna aplikacija hitosana v kombinaciji z antibiotikom ciprofloksacinom popolnoma izkorenini UPEC iz sečil in prepreči ponovitev infekcije. Poleg tega rezultati mikroskopiranja kažejo hitro povrnitev integritete sečnega mehurja po terapiji s hitosanom.

Zupančič Justin Maja, Gerl Marko, Lakovič Gorazd, Klančar Anita, Trontelj Jurij, Rozina Tinkara, Grum Jošt, Marinovič Mario, Teslić Luka, Pokorn Lovro, Roškar Robert, Finžgar Neža, Kristl Albin, Čater Maša, Meglič Andrej, Yakuntsov Andrey, Hamiti Branko: Degradation of pharmaceuticals in wastewaters from nursing homes and hospitals : LIFE13 ENV /SI/000466 : LIFE PharmDegrade. Ljubljana: Arhel: Fakulteta za farmacijo, 2017, 35 str.

Key achievements in 2017

Erman Andreja, Križan-Hergouth Veronika, Blango Matthew G., Kerec Kos Mojca, Mulvey Matthew A., Veranič Peter: Repeated treatments with chitosan in combination with antibiotics completely eradicate uropathogenic Escherichia coli from infected mouse urinary bladders. - The Journal of infectious diseases, 2017, 216, 3, 375-371.

Uropathogenic Escherichia coli (UPEC), the primary cause of urinary tract infections, attacks the urothelium, which can lead to a formation of persistent intracellular reservoirs that are resistant to antibiotic treatment. We had earlier presented a new strategy of treating this condition with chitosan working as a peeler of urothelium cells, which removes the UPEC reservoirs. Although a single application of chitosan in combination with ciprofloxacin significantly reduces the UPEC titre in the urinary bladder, it does not prevent bacteriuria from happening again. In this contribution, we prove that multiple applications of chitosan in combination with the antibiotic ciprofloxacin completely eradicates UPEC from the urinary tract and prevents the repetition of the infection. In addition, the results of microscope examinations reveal that the urinary bladder quickly regains its integrity after the chitosan treatment.

Zupančič Justin Maja, Gerl Marko, Lakovič Gorazd, Klančar Anita, Trontelj Jurij, Rozina Tinkara, Grum Jošt, Marinovič Mario, Teslić Luka, Pokorn Lovro, Roškar Robert, Finžgar Neža, Kristl Albin, Čater Maša, Meglič Andrej, Yakuntsov Andrey, Hamiti Branko: Degradation of pharmaceuticals in wastewaters from nursing homes and hospitals: LIFE13 ENV /SI/000466 : LIFE PharmDegrade. Ljubljana: Arhel: Fakulteta za farmacijo, 2017, 35 str.

KATEDRA ZA SOCIALNO FARMACIJO

Na Katedri za socialno farmacijo proučujemo vplive zdravil na sodobnega človeka in družbo. Ukvarjamo se predvsem z nadzorom zdravil po prihodu na trg oz. v roke bolnika. Pri svojem delu uporabljamo naravoslovne metode raziskovanja, ki pa jih zelo pogosto prepletamo z družboslovnimi. V okviru farmakoepidemiologije spremljamo varnost in učinkovitost zdravil na večjem številu ljudi – populaciji, s farmakoekonomiko pa osvetlimo stroškovne vidike uporabe zdravil. Posebej nas zanima tudi raziskovanje farmacevtovih aktivnosti v lekarni. S programi t. i. farmacevtske skrbi, ki jih vrednotimo v naših raziskavah, skušamo izboljšati kakovost bolnikovega življenja. Pri tem uporabljamo sodobne informacijsko-komunikacijske pristope. V okviru Katedre za socialno farmacijo raziskujemo tudi značilnosti domače in mednarodne regulative, ki ureja področje zdravil in farmacevtske stroke. Pri tem tvorno prispevamo k nastajanju nove zakonodaje in uvajanju najvišjih standardov v vsakodnevno prakso.

DEPARTMENT OF SOCIAL PHARMACY

The Department of Social Pharmacy studies the effects of medicines on a modern individual and society. We mostly deal with controlling the drugs after they have reached the market – in other words, the hands of the patient. In our work, we mostly use natural-science research methods, which we frequently combine with social-science research methods. In the framework of pharmacoepidemiology, we follow the medicines' safety and effectiveness observed on a larger patient group, the population, while in the framework of pharmacoeconomics, we shed light on the cost aspect of the medicine usage. We are also especially interested in exploring the role of a pharmacist working in a pharmacy. With the so-called pharmaceutical care programmes, which we evaluate, we try to improve the quality of the patient's life. We do this by using modern technological communication approaches. In the Department of Social Pharmacy, we also explore the properties of domestic and foreign regulations that cover the area of medicines and pharmaceutical profession. In doing so, we actively contribute to creating new legislation and implementing the highest standards into everyday practice.

Ključni dosežki v letu 2017

10. konferenca Pharmaceutical Care Network Europe (PCNE), www.pcne.org

Od 1. do 4. februarja je na Bledu v organizaciji Katedre za socialno farmacijo, Fakultete za farmacijo potekala 10. delovna konferenca organizacije Pharmaceutical Care Network Europe (PCNE), ki združuje raziskovalce s področja farmacevtske skrbi. Na konferenci se je zbralo 100 udeležencev iz 26 držav, predvsem evropskih, Bled pa je obiskalo tudi nekaj udeležencev iz Avstralije, Malezije in Tajvana.

Konferenca je postregla s tremi plenarnimi predavanji, ki so dodatno osvetlila tematike nekaterih delavnic. Dr. Alison Roberts (Avstralija) je v sredinem plenarnem predavanju predstavljala načine, kako zgraditi zmožnosti in vire za zagotavljanje storitev farmacevtske skrbi s poudarkom na izkušnji uvedbe tovrstnega programa s strani Avstralskega farmacevtskega združenja. Jamie Wilkinson (Belgija) iz Pharmaceutical Group of the European Union (PGEU) je v svojem predavanju govoril o razvoju in uporabi e-zdravja na sistemskem nivoju. Dr. Anna Millar pa je predstavila koncept osnovnega seta izidov (Core Outcome Set – COS) za standardizacijo poročanja izidov v kliničnih raziskavah. Več o vsebini predavanj lahko najdete na: http://www.pcne.org/conference/23/10th-pcne-working-conference-2017.

V času delovne konference so udeleženci lahko izbirali med petimi različnimi delavnicami, v sklopu katerih so 14 ur ustvarjali in razvijali nove ideje, se učili in izmenjavali izkušnje.

Key achievements in 2017

10th Pharmaceutical Care Network Europe (PCNE) conference, www.pcne.org

Between the 1st and 4th of February in Bled, the Department of Social Pharmacy of the Faculty of Pharmacy organised the 10th working conference of the Pharmaceutical Care Network Europe (PCNE) organisation, which unites researchers from the field of pharmaceutical care. 100 people from 26 (mostly European) countries attended the conference, among them there were also a few participants from Australia, Malaysia, and Taiwan.

The conference hosted three plenary lectures that provided additional insights on the topics of some workshops. On Wednesday's plenary lecture, Alison Roberts, Ph.D. (from Australia) presented the ways on how to create possibilities and acquire funding to be able to provide pharmaceutical care, and focused on the experience of the Pharmaceutical Society of Australia in the implementation of such a programme. In his lecture, Jamie Wilkinson (from Belgium) of the Pharmaceutical Group of the European Union (PGEU) talked about the development and systematic use of eHealth. Anna Millar, Ph.D. presented the concept of Core Outcome Set (COS) for standardising the reporting of outcomes in clinical studies. More about the lectures can be found on:

http://www.pcne.org/conference/23/10th-pcne-working-conference-2017.

During the conference, the participants could choose to attend five different workshops, in the framework of which they spent 14 hours on creating and developing new ideas, learning, and sharing experience.

INŠTITUT ZA FARMACIJO

Inštitut za farmacijo je povezovalna organizacijska enota Fakultete za farmacijo. Osnovno poslanstvo inštituta je spremljanje trendov raziskav na širšem farmacevtskem in biomedicinskem področju in podajanje pobud glede raziskovalnih usmeritev fakultete. V okviru inštituta se izvajajo znanstvenoraziskovalni, razvojno-aplikativni in strokovni projekti ter mednarodne aktivnosti, ki presegajo aktivnosti posamezne katedre. Inštitut deluje kot projektna ali delovna povezava delavcev različnih kateder ali s svojimi zaposlenimi sodelavci.

V okviru Inštituta delujeta dva infrastrukturna centra:

1. **Infrastrukturni center za analizo zdravil,** ki deluje v sklopu Mreže raziskovalnih infrastrukturnih centrov Univerze v Ljubljani (MRIC UL) in je namenjen podpori raziskovalnega in pedagoškega dela na področju farmacije. Izvajanje dejavnosti IC za analizo zdravil zagotavlja Javna agencija za raziskovalno dejavnost RS. Infrastrukturni center nudi primarno ekspertno in instrumentalno podporo raziskovalnim programom in raziskovalnim skupinam na Fakulteti za farmacijo kot tudi drugim raziskovalnim ter izobraževalnim ustanovam znotraj in izven Univerze v Ljubljani.
2. **EATRIS Slovenija** je član konzorcija EATRIS.ERIC, velike evropske raziskovalne infrastrukture na področju translacijskih raziskav.

eatris
European infrastructure for translational medicine

S povezovanjem partnerjev iz akademskih, raziskovalnih, zdravstvenih in gospodarskih okolij želimo doseči dosledno uvajanje principov translacijskih raziskav v prakso in s tem boljši in hitrejši razvoj zdravil in storitev.

INSTITUTE OF PHARMACY

Institute of Pharmacy is a connecting organisational unit within the Faculty of Pharmacy. The Institute's primary mission is to follow research trends in the wider areas of pharmacy and biomedicine and follow initiatives in relation to the Faculty's research fields and directions. Several research, applicative professional projects and international activities that go beyond the activities of the individual departments are carried out. The Institute functions as a connecting unit for projects and activities of employees of various departments and the people it itself employs.

There are two infrastructural centres functioning in the framework of the Institute of Pharmacy:

1. I**nfrastructural Centre for Drug Analysis** functions within the Network of Research and Infrastructural Centres of the University of Ljubljana (MRIC UL) and is intended to support research and pedagogical work in the field of pharmacy. The Centre's activities are funded by the Public Agency of the Republic of Slovenia for Research Activity. The Infrastructural Centre offers primary expert and instrumental support to research programmes and research groups at the Faculty of Pharmacy, as well as to other research and educational institutions within and outside the University of Ljubljana.
2. **EATRIS Slovenia** is a member of the consortium EATRIS.ERIC, a large European research infrastructure in the field of translational research.

By connecting partners from the academic, research, medical, and economic circles, we wish to achieve a consistent implementation of translational research principles into practice, and thus ensure a better and faster development of drugs and services.

The goal of EATRIS Slovenia is to establish a hub, or a consortium, for translational research in the fields of biomedicine and pharmacy, that will be led strategically and will be included in and connected with

Cilj EATRIS Slovenija je vzpostaviti vozlišče oziroma konzorcij za translacijske raziskave na področju biomedicine in farmacije, ki bo strateško voden, povezan z nacionalno in mednarodno raziskovalno sfero ter bo spodbujal inovativnost in vizijo iskanja novih podjetniških možnosti na področju biomedicinskih raziskav, razvoja zdravil in optimizacije uporabe zdravil.

the national/international research sphere, and will encourage innovation and the vision of searching for new business opportunities in the fields of biomedical research, medicine development, and the optimisation of medicine use.

Ključni dosežki v letu 2017

Povezovanje z industrijo, uspešno izpeljan 3-letni projekt Razvoj kadrov

S povezovanjem prostorskih in kadrovskih potencialov z gospodarskimi družbami mladim strokovnjakom omogočamo, da se v okviru doktorskega ali specialističnega podoktorskega izobraževanja vključujejo v aplikativne projekte na področju razvoja novih farmacevtskih izdelkov, analitskih metod, vrednotenja (geno)toksičnosti učinkovin, registracije novih zdravil in regulative. Namen tovrstnega sodelovanja je utrjevaje in poglabljanje povezovanja akademske in gospodarske sfere. Gospodarske družbe imajo možnost, da se mladi strokovnjaki v času izobraževanja poglobljeno in usmerjeno posvečajo aktualnim izzivom v njihovem podjetju.

Organizacija nacionalnega simpozija »Doprinos farmacevtske znanosti in izobraževanja h gospodarski uspešnosti«

EATRIS Slovenija je v sodelovanju s sekcijo farmacevtskih znanosti Slovenskega farmacevtskega društva organiziral nacionalni simpozij v obliki plenarnih predavanj in okrogle mize, na kateri so sodelovali vodilni predstavniki slovenske farmacevtske industrije (Lek, Krka), direktor ARRS, predstavnik MIZŠ, SVRK, SIS EGIZ, Fakultete za farmacijo in Kemijskega inštituta. Simpozija se je udeležilo več kot 100 udeležencev iz farmacevtske industrije, vladnih institucij, raziskovalnih in akademskih organizacij.

Organizacija posveta »Strateško povezovanje za razvoj raziskovalne infrastrukture«

EATRIS Slovenija (Univerza v Ljubljani, Fakulteta za farmacijo) je v sodelovanju s Slovenskim inovacijskim stičiščem SIS EGIZ organiziral posvet strateških partnerjev na področju translacijskih raziskav v biomedicini in farmaciji v Sloveniji. Posveta se je udeležilo več kot 50 predstavnikov raziskovalno akademske sfere in industrije.

Key achievements in 2017

Connecting with industry – successfully finished three-year personnel development project.

By connecting spatial and personnel potentials of the Faculty and the companies, we enable young experts to become included in applicative projects in the fields of new pharmaceutical products development, analytical methods, evaluation of (geno)toxicity of active ingredients, registration of new medicines, and regulation. Young experts who enter such projects do so in the framework of doctoral studies or in the framework of a specialisation that is a part of their postdoctoral education. The purpose of such cooperation is creating deeper and stronger connections between the academic and economic spheres. Companies have the opportunity to have young experts, while they are still studying, deeply and directly focus on the real challenges the companies are facing.

Organising national symposium "Science and education in Pharmacy for economic growth of Slovenia"

In cooperation with the Section of Pharmaceutical Sciences of the Slovenian Pharmaceutical Society, EATRIS Slovenia organised a national symposium in the form of plenary lectures and a panel, which gave voice to the leading representatives of Slovenian pharmaceutical industry (Lek, Krka), the director of Slovenian Research Agency, and representatives of Slovenian Ministry of Education, Science and Sport, Slovenian Government Office for Development and European Cohesion Policy, Slovenian Innovation Hub – European Economic Interest Grouping, the Faculty of Pharmacy, and the National Institute of Chemistry. The symposium was attended by over a hundred people from the pharmaceutical industry, government institutions, and research and academic organisations.

Organising conference "Strategic connection for research infrastructure development"

In cooperation with Slovenian Innovation Hub (SIS EGIZ), EATRIS Slovenia (University of Ljubljana, Faculty of Pharmacy) organised a conference of strategic partners in the field of translational research in biomedicine and pharmacy in Slovenia. The conference was attended by over 50 representatives of the research-academic sphere and the industry.

DRUŠTVO ŠTUDENTOV FARMACIJE SLOVENIJE IN ŠTUDENTSKA SEKCIJA SLOVENSKEGA FARMACEVTSKEGA DRUŠTVA (DŠFS IN ŠSSFD).

DŠFS in ŠSSFD delujeta kot ena organizacija z isto ekipo, ki vodi projekte in zastopa naše društvo na nacionalnem in mednarodnem nivoju. S pomočjo članov pod vodstvom koordinatorjev se izvajajo različne javne kampanje, humanitarni projekti, mednarodne izmenjave Twinnet in SEP, mednarodni poletni farmacevtski tabor (IPSC), strokovni večeri, trikrat letno izide študentsko glasilo Spatula.

Študentski svet Fakultete za farmacijo, Univerze v Ljubljani (ŠSFFA)

Študentski svet je organ fakultete, katerega člani so predstavniki letnikov, izvoljeni na letnih volitvah. ŠSFFA predstavlja študente UL FFA v organih fakultete (senat UL FFA, upravni odbor UL FFA in različne komisije) in pa v študentskem svetu Univerze v Ljubljani. ŠSFFA se ukvarja predvsem s študijem na UL FFA ter zagovarjanjem pravic študentov na vseh ravneh zastopanja.

Študentska organizacija Fakultete za farmacijo (ŠOFFA)

ŠOFFA je ena izmed podružnic družine ŠOU v Ljubljani, kakršno ima vsaka fakulteta Univerze v Ljubljani. ŠOFFA organizira različne dogodke izobraževalnega in družabnega značaja, kot so božična ekskurzija, farmacevtski piknik, farmacevtsko smučanje in ostale aktivnosti. Aktivnosti družabnega programa so potrebne za povezovanje mlajših in starejših študentov, kar omogoča izmenjavo znanj in izkušenj.

SLOVENIAN PHARMACY STUDENTS' SOCIETY AND STUDENTS' SECTION OF SLOVENIAN PHARMACEUTICAL SOCIETY (DŠFS AND ŠSSFD)

DŠFS and ŠSSFD function as a single organisation with the same team that leads projects and represents our Society at the national and the international levels. With the help of our members and under the guidance of the coordinators, the organisation carries out various public campaigns, humanitarian projects, Twitnnet and SEP international exchanges, International Pharmaceutical Summer Camp (IPSC), and professional training evenings. The organisation also publishes the Spatula student bulletin three times per year.

Students' council of the faculty of pharmacy, university of ljubljana; ŠSFFA

The Student's Council is one of the Faculty's governing bodies. Its members, who are elected at the annual election, are representatives of each year of their respective study programmes. ŠSFFA represents the Faculty of Pharmacy's students in the other governing bodies of the Faculty (the Senate, the Managing Board, and various committees), as well as in the Student Council of the University of Ljubljana. ŠSFFA mainly deals with the studies at the Faculty of Pharmacy and with defending students' rights at all levels of representation.

Students' organisation of the faculty of pharmacy; ŠOFFA

ŠOFFA is one of ŠOU Ljubljana's (the University of Ljubljana Student Organisation) branches, which exists at each of University of Ljubljana's faculties. ŠOFFA organises various educational and social events, such as the Christmas excursion, pharmaceutical picnic, pharmaceutical skiing, and other activities. Social activities are necessary in order to connect younger and older the students, which in turn enables exchanges of knowledge and experience.

2 Poročilo o delu
Activity report

PREGLED POSLOVANJA

UL FFA je v letu 2017 poslovala uspešno in dosegla zastavljene cilje. Realizirani prihodki so znašali 8.939.444 EUR, odhodki pa 8.837.838 EUR. Ustvarjeni presežek prihodkov nad odhodki pred in po obračunu davka od dohodkov pravnih oseb (DDPO) je tako znašal 101.606 EUR, saj obveznosti iz naslova DDPO FFA ne izkazuje zaradi uveljavljanja davčnih olajšav za investicije.

V primerjavi z letom 2016 so se realizirani prihodki UL FFA v letu 2017 povečali za 185.299 EUR oz. 2,1 %, prav tako pa so bili višji odhodki za 222.286 EUR oz. 2,6 %, zaradi česar je bil ustvarjen poslovni izid v letu 2017 nekoliko (26,7 %) nižji kot v letu 2016.

Največja absolutna rast prihodkov v letu 2017 v primerjavi z letom 2016 je bila dosežena pri financiranju osnovne dejavnosti s strani MIZŠ (za 141.061 EUR oz. 2,6 %) kot posledica višjega financiranja študijskih programov I. in II. stopnje, ki sledi povečevanju stroškov dela zaradi sproščanj ukrepov ZUJF. Relativno pa je bila največja rast dosežena v kategoriji »druga javna služba« (za 79.989 EUR oz. 15,4 %), predvsem zaradi izvedbe specialističnega izobraževanja iz radiofarmacije, ki ga FFA izvaja vsaki dve leti, ter večjega števila vpisanih študentov na vse stopnje študijskih programov in specialistične študije Lekarniške zbornice. Znižali so se prihodki od ARRS za 29.702 EUR oz. 1,6 % zaradi manj sredstev Agencije za financiranje mladih raziskovalcev in prihodki od prodaje blaga in storitev na trgu za 27.374 EUR oz. 3,7 %. Kljub nekoliko nižjim tržnim prihodkom v letu 2017 glede na leto 2016 so ti še vedno med višjimi v zadnjih nekaj letih, zaradi česar je bilo leto v tem oziru vseeno uspešno.

BUSINESS OVERVIEW

In 2017, University of Ljubljana, Faculty of Pharmacy was successful in its business performance and achieved most of the set goals. Generated revenue amounted to 8.939.444 EUR, while the expenses were in amount of 8.837.838 EUR leading to achieved excess of revenue over expenditure in amount of 101.606 EUR before and after income tax. UL FFA did not pay any income tax due to tax relief on investments.

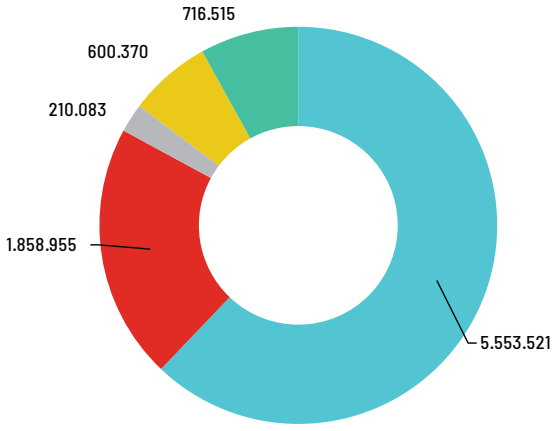
Compared to 2016, the revenues increased by 185.299 EUR or 2,1% and the expenses by 222.286 EUR or 2,6% which lead to lower net income by 26,7%.

The highest revenue growth in amount of 141.061 EUR or 2,6% was from financing of undergraduate and postgraduate study programmes by Ministry of Education, Science and Sport for covering an increase in labour costs due to the relief of the Fiscal Balance Act measures. The highest relative revenue growth by 79.989 EUR or. 15,4% was recorded in the »other public services« category, mainly due to the Radiopharmacy specialization course which runs every other year and due to more students being enrolled into all cycles of study programmes including Chamber of Pharmacy specialisation courses. Revenues from Slovenian Research Agency decreased by 29.702 EUR or 1,6% due to lower funds for financing young researchers. Even though revenues from market services also decreased by 27.374 EUR or 3,7%, they were still one of the highest in past few years, which is regarded as a success.

Prihodki v EUR / Revenue, EUR	2017	2016	"Struktura 2017 / Structure 2017"	"Indeks 17/16 Index 17/16"
Prihodki od MIZŠ / Ministry of Education, Science and Sport	5.553.521	5.412.460	62,12 %	102,6
Prihodki od ARRS / Slovenian Research Agency	1.858.955	1.888.657	20,79 %	98,4
EU skladi in mednarodni projekti / EU Funds and International Research Projects	210.083	188.758	2,35 %	111,3
Druga javna služba / Other Public Services	600.370	520.381	6,72 %	115,4
Prodaja blaga in storitev na trgu / Market	716.515	743.889	8,02 %	96,3
Skupaj prihodki	**8.939.444**	**8.754.145**	**100,00 %**	**102,1**

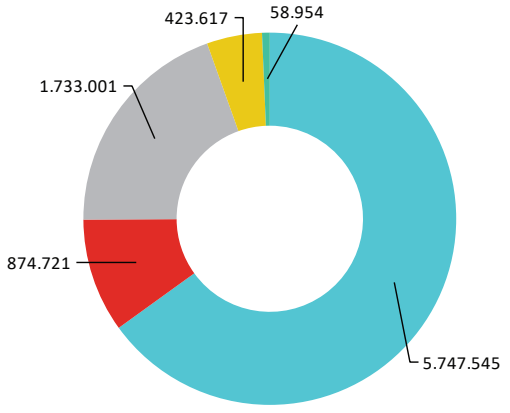
Odhodki v EUR / Expenses, EUR	2017	2016	"Struktura 2017 / Structure 2017"	"Indeks 17/16 Index 17/16"
Stroški dela / Labour	5.747.545	5.549.709	65,03 %	103,6
Stroški materiala / Material	874.721	853.166	9,90 %	102,5
Stroški storitev / Services	1.733.001	1.708.548	19,61 %	101,4
Stroški amortizacije / Depreciation	423.617	450.786	4,79 %	94,0
Drugi stroški in odhodki / Other	58.954	53.343	0,67 %	110,5
Skupaj odhodki	**8.837.838**	**8.615.552**	**100,00 %**	**102,6**
Razultat poslovanja / Economic outturn	**101.606**	**138.593**		

STRUKTURA PRIHODKOV V 2017, V EUR
REVENUE STRUCTURE IN 2017, IN EUR



Prihodki od MIZŠ / Ministry of Education, Science and Sport
Prihodki od ARRS / Slovenian Research Agency
EU skladi in mednarodni projekti / EU Funds and International Research Projects
Druga javna služba / Other Public Services
Prodaja blaga in storitev na trgu / Market

STRUKTURA ODHODKOV V 2017, V EUR
EXPENSES STRUCTURE IN 2017, IN EUR



Prihodki od MIZŠ / Ministry of Education, Science and Sport
Prihodki od ARRS / Slovenian Research Agency
EU skladi in mednarodni projekti / EU Funds and International Research Projects
Druga javna služba / Other Public Services
Prodaja blaga in storitev na trgu / Market

ŠTUDIJSKO PODROČJE

PREDSTAVITEV ŠTUDIJSKIH PROGRAMOV

Značilnost študija na FFA je velika interdisciplinarnost znanj ter vključevanje študentov v raziskovalno delo na vseh ravneh študija, kar se odraža v visoki kakovosti in motiviranosti diplomantov.

Programi izobraževanja:

Dodiplomski študijski programi FFA

- Farmacija, enoviti magistrski študijski program (EM FAR)
- Kozmetologija, univerzitetni študijski program (S1 KOZ)
- Laboratorijska biomedicina, univerzitetni študijski program (S1 LBM)
- Industrijska farmacija, magistrski študijski program (S2 INF)
- Laboratorijska biomedicina, magistrski študijski program (S2 LBM)

Podiplomski študijski programi FFA

- Biomedicina, interdisciplinarni doktorski študijski program (smeri: Farmacija, Klinična biokemija in laboratorijska biomedicina ter Toksikologija)

Specialistični podiplomski študij, kjer FFA izvaja teoretične vsebine, nosilca študija sta pa Lekarniška zbornica Slovenije in Zbornica laboratorijske medicine Slovenije

- Farmacija, področja: Oblikovanje zdravil, Preizkušanje zdravil, Klinična farmacija, Farmakognozija in Lekarniška farmacija ter mednarodna specializacija Radiofarmacija
- Laboratorijska biomedicina: Medicinska biokemija

Vseživljenjska izobraževanja

Nacionalna

- Strokovno izpopolnjevanje za magistre farmacije
- Laboratorijska biomedicina: akreditirani deli programa S2 LBM:

FIELD OF STUDY

PRESENTATION OF STUDY PROGRAMMES

Studying at the Faculty of Pharmacy is characterised by a high degree of interdisciplinary knowledge and the inclusion of students into research work in all cycles of education, which results in excellent and highly motivated graduates.

Education programmes:

Undergraduate study programmes

- Pharmacy, single-cycle Master degree programme (EM FAR),
- Cosmetology, bachelor degree programme (S1 KOZ),
- Laboratory Biomedicine, bachelor degree programme (S1 LBM),
- Industrial Pharmacy, Master degree programme (S2 INF),
- Laboratory Biomedicine, Master degree programme (S2 LBM).

Postgraduate study programmes

- Biomedicine, interdisciplinary Doctoral study programme (fields: Pharmacy, Clinical Biochemistry and Laboratory Biomedicine, Toxicology).

Postgraduate specialisation programmes, ULFFA is responsible for theoretical content, while the Slovene Chamber of Pharmacist and the Slovenian Chamber of Laboratory Medicine carry out practical training. Pharmacy areas: Drug Design, Drug Testing, Clinical Pharmacy, Pharmacognosy, Community Pharmacy, and the International Radiopharmacy specialisation,

- Laboratory Biomedicine: Medical Biochemistry

Lifelong education programmes

National

- Professional training for Masters of Pharmacy,
- Laboratory Medicine: accredited parts of the S2 LBM programme:
  - Fundamental natural-scientific contents of biomedicine,

- Temeljne naravoslovne biomedicinske vsebine
- Splošne strokovne vsebine laboratorijske biomedicine
- Usmerjene strokovne vsebine laboratorijske biomedicine

Mednarodna

- Postgraduate European Radiopharmacy Course
- CEMDC – Cooperative European Medicines Development Course, Modul II: Non-clinical, pharmaceutical and early clinical development (CEMDC)
- Poletna šola CEEPUS: Novel diagnostic and therapeutic approaches to complex genetic disorders.

ENOVITI magistrski študijski program Farmacija

Študij farmacije izobražuje za reguliran poklic farmacevt skladno z evropsko direktivo 2006/36/ES in omogoča pridobitev naziva magister / magistra farmacije, ki je priznan v vseh državah članicah EU.

Študij usposobi študenta za izvajanje strokovnih del in nalog na področju farmacije, vključujoč skrb in svetovanje pacientom, izdajo zdravil, proizvodnjo zdravil, razvoj in raziskave, analizo in nadzor kakovosti zdravil ter daje osnovo za nadaljevanje študija na doktorski stopnji in je odprt za stalno vseživljenjsko strokovno usposabljanje. Študij traja 5 let in vključuje obvezno polletno praktično usposabljanje v učnih zavodih – lekarnah in izdelavo magistrske naloge.

UNIVERZITETNI in MAGISTRSKI študijski program Laboratorijska biomedicina

Študent laboratorijske biomedicine pridobi po prvi stopnji študija (3 leta) naziv diplomirani inženir / diplomirana inženirka laboratorijske biomedicine, po drugi stopnji (2 leti) pa magister / magistrica laboratorijske biomedicine. Po obeh stopnjah je možnost zaposlitve v različnih medicinskih laboratorijih in v industriji, po drugi stopnji pa tudi nadaljevanje študija na doktorski stopnji ali specializaciji iz medicinske biokemije.

- General professional contents of laboratory biomedicine, and
- Selected professional contents of laboratory biomedicine.

International

- Postgraduate European Radiopharmacy Course
- CEMDC – Cooperative European Medicines Development Course, Module 2: "Non-clinical, pharmaceutical and early clinical development"
- CEEPUS Summer School: Novel diagnostic and therapeutic approaches to complex genetic disorders.

SINGLE-CYCLE Master degree programme of Pharmacy

In accordance with the European Directive 2006/36/ES, Pharmacy study programme educates students to obtain the regulated Pharmacist profession and enables them to obtain the title Master of Pharmacy, which is recognised by all EU member states. The study programme gives the students competencies to carry out professional work and tasks in the field of pharmacy, including patients counselling, medicines dispensing, developing and researching, analysing, and controlling the quality of medicines. The programme gives the students firm grounds to continue their education at Doctoral degree level and enables them a constant, lifelong professional training. The 5 years study programme includes a mandatory six-months practical training in pharmacies and the Master's thesis research and defense.

BACHELOR and MASTER degree programmes of Laboratory Biomedicine

After the first cycle of studying (3 years), a Laboratory Biomedicine student obtains the title Bachelor in Laboratory Biomedicine. After the second cycle (additional 2 years), the student recieves Master of Laboratory Biomedicine title. After each of the two cycles, the students can search for employment in various medical laboratories or within the industry. At the end of the second cycle the students can also continue their education at Doctoral degree levels or with a specialisation in Medical Biochemistry.

UNIVERZITETNI študijski program Kozmetologija

Univerzitetni študijski program traja 3 leta in daje strokovni naslov diplomirani kozmetolog (UN) / diplomirana kozmetologinja (UN). Njegov glavni namen je usposobiti strokovnjake na področju kozmetoloških znanosti. Poleg osnovnih znanj naravoslovne usmeritve nudi program poglobljena znanja iz strokovnih ved kozmetologije.

MAGISTRSKI študijski program Industrijska farmacija

Magistrski študij (2 leti) omogoča pridobitve znanj in veščin za delo v farmacevtsko industrijskem okolju, vendar ne v okviru reguliranega poklica farmacevt. Strokovni naslov, ki ga pridobi diplomant, je magister/magistrica industrijske farmacije.

DOKTORSKI študijski program Biomedicina

Na doktorskem študiju izvaja Fakulteta za farmacijo programe Farmacija, Klinična biokemija in laboratorijska biomedicina ter Toksikologija, ki omogočajo pridobitev naziva doktor/doktorica znanosti. Osnovna ideja študija biomedicine in izvajanja na več članicah je v veliki izbirnosti, ki bodočim doktorjem znanosti omogoča študij po meri in pridobivanje specifičnih kompetenc, ki jih težko pokriva le ena članica UL.

BACHELOR degree programme of Cosmetology

This university study programme lasts for 3 years and gives its students the title Bachelor of Cosmetology. Its main purpose is to provide experts with competencies in the field of cosmetic sciences. Besides the fundamental knowledge of natural sciences, the programme offers a in depth knowledge of professional cosmetology sciences.

MASTER degree programme of Industrial Pharmacy

This Master's study programme (2 years) enables the students to obtain the knowledge and skills needed to work in a pharmaceutical industrial environment, but not in the framework of the regulated Pharmacist profession. The professional title the student obtains is Master of Industrial Pharmacy.

DOCTORAL study programme of Biomedicine

The Faculty of Pharmacy is responsible for the fields of Pharmacy, Clinical Biochemistry and Laboratory Biomedicine, and Toxicology. The basic idea of interdisciplinary programme organised at multiple University of Ljubljana members, lies in the multiplicity of choices. In this way the future Doctors of Science acquire specific competencies, which would be difficult to achieve at a single faculty.

ŠTUDENTI IN DIPLOMANTI 2016/2017 / 2016/17 STUDENTS AND GRADUATES

Število študentov

V študijskem letu 2016/17 je bilo na vseh programih dodiplomskega in podiplomskega študija UL FFA vpisanih 1393 študentov.

V študijskem letu 2016/2017 je **zaključilo** študij:

- 248 diplomantov na 1. in 2. stopnji (133 EM FAR, 31 S1 KOZ, 34 S1 LBM, 18 S2 INF, 32 S2 LBM),
- 20 diplomantov na 3. stopnji.

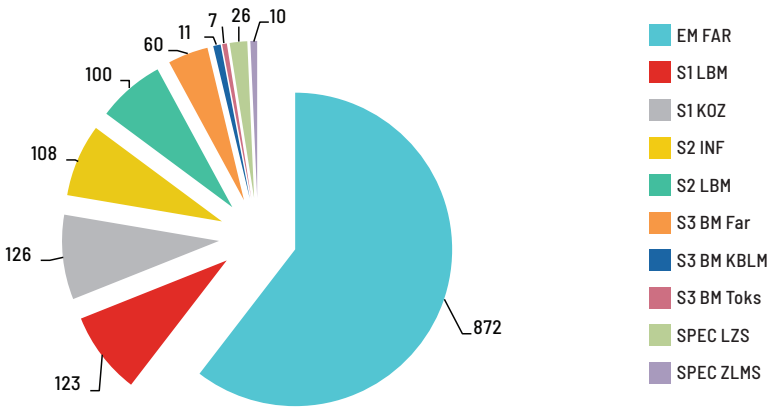
The number of students

In the 2016/17 academic year, there were altogether 1393 students enrolled in the undergraduate and postgraduate study programmes offered by the University of Ljubljana's Faculty of Pharmacy.

In the 2016/17 academic year, there were:

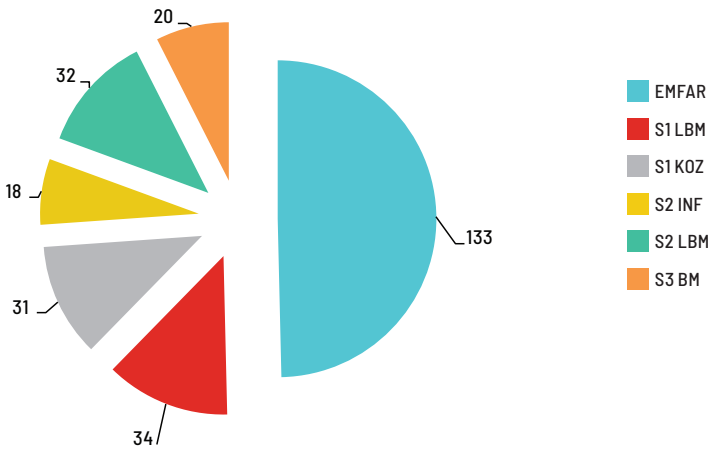
- 248 graduates in cycles 1 and 2 (133 EM FAR, 31 S1 KOZ, 34 S1 LBM, 18 S2 INF, 32 S2 LBM), and
- 20 graduates in cycle 3.

ŠTUDENTI PO ŠTUDIJSKIH PROGRAMIH V 2016/17 / STUDENTS ACCORDING TO STUDY PROGRAMMES 2016/17



EM FAR – Farmacija (enoviti magistrski študij) / Pharmacy (sinle-cycle master degree); **S1 LBM – Laboratorijska biomedicina (1. stopnja) /** Laboratory biomedicine (1st degree); **S1 KOZ – Kozmetologija (1. stopnja) /** Cosmetology (1st degree); **S2 INF – Industrijska farmacija (2. stopnja) /** Industrial pharmacy (2nd degree); **S2 LBM – Laboratorijska biomedicina (2. stopnja) /** Laboratory biomedicine (2nd degree); **S3 BM – Biomedicina (3. stopnja): področja Farmacija, Klinična biokemija in laboratorijska biomedicina ter Toksikologija /** Biomedicine (3rd degree) in the fields of Pharmacy, Clinical biochemistry and laboratory medicine, and Toxicology; **SPEC – Specializacija v sodelovanju z Lekarniško zbornico Slovenije za področja: Klinična farmacija, Lekarniška farmacija, Oblikovanje zdravil, Preizkušanje zdravil in Farmakognozija ter v sodelovanju z Zbornico laboratorijske medicine Slovenije za področje Medicinske biokemije /** Specialization in collaboration with Pharmacy Chamber of Slovenia in the fields of Clinical pharmacy, Community pharmacy, Medicinals design, Medicinals testing, and Pharmacognosy and in collaboration with Laboratory Medicine Chamber of Slovenia in the field of Medical biochemistry

DIPLOMANTI PO ŠTUDIJSKIH PROGRAMIH V 2016/17 / GRADUATES ACCORDING TO STUDY PROGRAMMES 2016/17



Podelitev diplom 2017 / Graduation ceremony 2017

Promocija doktorjev znanosti 2017 / Promotion ceremony 2017

ZNANSTVENA, RAZISKOVALNA IN STROKOVNA DEJAVNOST

V letu 2017 smo dosegli nekaj odličnih uspehov na področju raziskav in razvoja. Pridobili smo projekt Marie Skłodowska-Curie Innovative Training Networks European Joint Doctorate z akronimom PhD4GlycoDrug. UL FFA je koordinatorica projekta.

Naši kolegi so prejeli prestižna priznanja: častni doktorat Univerze v Ljubljani, zlato plaketo, Preglovo nagrado za izjemne dosežke na področju farmacevtske kemije in Lapanjetovo priznanje za vrhunske dosežke na področju biokemijskih znanosti. Osvojili smo drugo mesto za naj inovacijo Univerze v Ljubljani za leto 2017. Tudi v tem letu smo svoje raziskovalne dosežke objavljali v prestižnih publikacijah s področja naravoslovja in medicine in pri tem dosegli tudi znatno družbeno odmevnost.

Uspešno smo instalirali in v delovno okolje vpeljali novo večjo raziskovalno opremo (UHPLC-HRMS) ter uredili kakovosten namenski laboratorij kot del Infrastrukturnega centra za analizo zdravil. Analizni aparat in prostor predstavljajo dobro osnovo za nadaljevanje kontinuiranega razvoja ekspertize na področju analitike metabolizma učinkovin, toksikologije, okolijskih študij in sinteze učinkovin. Investicija odraža našo skrb za ustvarjanje konkurenčnega okolja, saj lahko kompetentne strokovnjake vzgajamo in izobražujemo le v učnih okoljih z najsodobnejšo opremo in z dostopom do najsodobnejših tehnologij.

S ciljem nadaljevanja izvajanja kakovostnega in evropsko prepoznavnega pedagoškega in raziskovalnega dela smo nadaljevali aktivnosti pri projektu novogradnje UL FFA.

OBJAVE IN CITIRANOST DEL V 2017

Ob siceršnjem pedagoškemu in strokovnem delu so raziskovalci FFA v letu 2017 objavili 127 znanstvenih člankov, od tega 115 v revijah s faktorjem vpliva (SCI). 27 objav je bilo v revijah s faktorjev vpliva med 3 in 4, 28 objav pa v revijah s faktorjem vpliva 4 in več. V letu 2017 so objavljena dela UL FFA prejela 5846 citatov.

SCIENTIFIC, RESEARCH, AND PROFESSIONAL ACTIVITIES

A number of great achievements in the field of research and development had been accomplished. We have gained Marie Skłodowska-Curie Innovative Training Networks - European Joint Doctorate programme called PhD4GlycoDrug. The Faculty of Pharmacy is the project coordinator.

Our colleagues have received prestigious decorations: University of Ljubljana's Honorary Doctorate, the Golden plaque award, the Pregl Award for outstanding achievements in the field of pharmaceutical chemistry, and the Lapanje award for outstanding achievements in the field of Biochemical sciences. We have also won the second place at the innovation competition of the University of Ljubljana. Our research achievements were published in prestigious publications in the fields of natural sciences and medicine, raising considerable publicity.

We have successfully installed and activated a new research equipment (UHPLC-HRMS), for which we have also set up a high-quality laboratory within the framework of the Infrastructural Centre for Drug Analysis. Both the equipment and the laboratory give us a good base to further continue with the development of expertise in the fields of active ingredient metabolism analysis, toxicology, environmental studies, and synthesis of active ingredients. The investment reflects our desire to create a competitive environment, since we believe that competent experts can only be raised and educated in learning environments with the most modern equipment and access to state-of-the-art technologies.

With the goal to ensure that pedagogical and research work remains of high quality and is recognised in Europe also in the future, we have continued working on the project dedicated to the construction of the Faculty of Pharmacy's new premises.

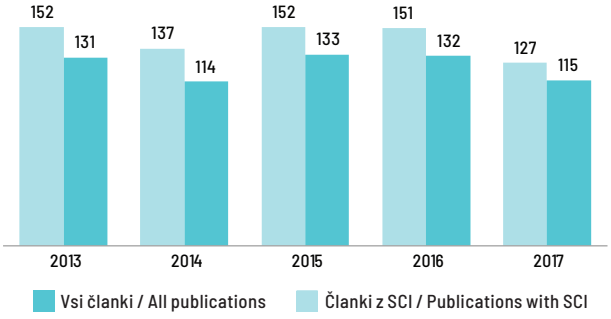
PUBLICATIONS AND CITATIONS IN 2017

Besides their usual pedagogical and professional work, the Faculty of Pharmacy's researchers have published 127 scientific articles, 115 of which were published in journals with the Science Citation Index (SCI), on which the impact factor is based. 27 articles were published in journals with SCI between 3 and 4, while 28 articles were published in journals with the impact factor of 4 or more. In 2017, Faculty of Pharmacy's publications received 5846 citations.

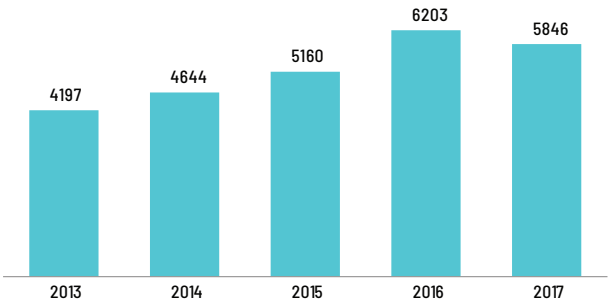
The table below displays financing sources for the Faculty's research activity and the ratio between scientific articles and FTEs that were financed by either the EU or the Slovenian Research Agency (ARRS). The efficiency factor – the number of SCI publications divided by FTE (from ARRS or EU) – was 3.1 in 2017.

Preglednica spodaj ponazarja vire financiranja raziskovalne dejavnosti in razmerje znanstvenih člankov glede na FTE, financirane iz virov ARRS in EU. Faktor učinkovitosti števila znanstvenih objav z SCI glede na FTE (ARRS in EU) je bil v letu 2017 3,1 članke z SCI/FTE.

ŠTEVILO ZNANSTVENIH OBJAV
NUMBER OF SCIENTIFIC PUBLICATIONS



ŠTEVILO CITATOV
NUMBER OF CITATIONS



Razmerje objavljenih znanstvenih člankov raziskovalcev in višina financiranja iz virov ARRS in EU / Ratio between scientific articles and FTE researchers financed by EU/ARRS

Leto / Year	Sredstva za raziskovalce (FTE) / Funds for researches (FTE)				Št. vseh znanstvenih člankov/FTE / Number of all scientific publications/ FTE	Št. člankov v revijah z SCI/ FTE / Number of publications with SCI/FTE
	ARRS	ARRS	EU	Skupaj / Total		
	Projekti in programi / Projects and prgrammes	MR				
2013	18,0	18,3	8,2	44,4	3,4	3, 0
2014	19,8	16,8	8,2	44,8	3,2	2,7
2015	19,1	13,8	5,5	38,4	4,0	3,5
2016	23,2	16,8	2,2	42,3	3,6	2,9
2017	21,5	15,1	1,0	37,6	3,4	3,1

PROJEKTI IN PROGRAMI

Raziskovalno delo fakultete je potekalo pod okriljem štirih programskih skupin ter v okviru številnih projektov. V letu 2017 so bili nacionalni raziskovalni programi ARRS financirani v obsegu 11,88 FTE. UL FFA je izvajala še 20 temeljnih raziskovalnih projektov, 3 aplikativne raziskovalne projekte, 2 podoktorska projekta, večje število razvojnoraziskovalnih projektov z gospodarstvom, evropske projekte v obsegu 1 FTE in več bilateralnih projektov. V letu 2017 smo pridobili 4 nove mlade raziskovalce.

NACIONALNI PROGRAMI IN PROJEKTI

RAZISKOVALNI PROGRAMI FFA

- Farmacevtska tehnologija: od dostavnih sistemov učinkovin do terapijskih izidov zdravil pri otrocih in starostnikih - P1-0189 (vodja: prof. dr. Albin Kristl, obseg: 3,8 FTE)
- Farmacevtska kemija: načrtovanje, sinteza in vrednotenje učinkovin - P1-0208 (vodja: prof. dr. Danijel Kikelj, obseg: 5,43 FTE)
- Farmacevtska biotehnologija: znanost za zdravje - P4-0127 (vodja: prof. dr. Janko Kos, obseg: 4,64 FTE)
- Geni, hormonske in osebnostne spremembe pri metabolnih motnjah - P3-0298 (vodja: prof. dr. Andrej Janež, UKC Ljubljana; koordinatorica na FFA: prof. dr. Janja Marc, obseg: 2,3 FTE)

RAZISKOVALNI PROJEKTI FFA

<u>Temeljni raziskovalni projekti ARRS</u>

- TRANS TIO Translacijske farmakogenomske raziskave tiopurinske terapije (nosilka: prof. dr. Irena Mlinarič-Raščan)
- Nanozdravila za zdravljenje parodontalne bolezni s ciljanim vnosom v obzobne žepe (nosilka: prof. dr. Julijana Kristl)
- Razvoj računalniških orodij za modeliranje farmacevtsko zanimivih molekul (koordinator na FFA:

PROJECTS AND PROGRAMMES

The Faculty's research work was carried out under the auspice of four programme groups and in the framework of many projects. In 2017, ARRS's national research programmes were financed to the extent of 11.9 FTE. FFA also carried out 20 fundamental research projects, 3 applied research projects, 2 post-doctoral projects, a large number of research-development projects in cooperation with the industry, European projects with 1 FTE, and more bilateral projects. In 2017, we have acquired four new young researchers.

NATIONAL PROGRAMMES AND PROJECTS

FACULTY OF PHARMACY'S RESEARCH PROGRAMMES

- Pharmaceutical Technology: From delivery systems for active ingredients to drugs' therapeutic results in children and older people – P1-0189 (PI: Prof. Albin Kristl, M. Pharm., Ph.D.; extent: 3.8 FTE)
- Pharmaceutical Chemistry: Planning, synthesis, and evaluation of active ingredients – P1-0208 (PI: Prof. Danijel Kikelj, M. Pharm., Ph.D.; extent: 5.43 FTE)
- Pharmaceutical Biotechnology: Science for health – P4-0127 (PI: Prof. Janko Kos, M. Pharm., Ph.D.; extent: 4.64 FTE)
- Genes, hormonal and personality changes in metabolic disorders – P3-0298 (PI: Prof. Andrej Janež, MD, Ph.D. from University Medical Centre Ljubljana; coordinator at Faculty of Pharmacy: Prof. Janja Marc, M. Pharm., Ph.D., EuSpLM; extent: 2.3 FTE)

FACULTY OF PHARMACY'S RESEARCH PROJECTS

<u>ARRS's fundamental research projects:</u>

- TRANS TIO Pharmacogenomic translational research of thiopurine therapy (PI: Prof. Irena Mlinarič-Raščan, M. Pharm., Ph.D.),
- Nanomedicine for the treatment of a periodontal disease by targeted insertion into periodontal pockets (PI: Prof. Julijana Kristl, M. Pharm., Ph.D.),

prof. dr. Stanislav Gobec, nosilka: prof. dr. Dušanka Janežič, UP FAMNIT)

- Vloga inhibitorjev cisteinskih proteaz v citotoksičnem delovanju naravnih celic ubijalk na tumorske celice (koordinator na FFA: prof. dr. Janko Kos, nosilec: prof. dr. Janko Kos, IJS)
- Razvoj polimerov z molekularnimi odtisi in njihova uporaba na področju okoljske in bioanalitike (koordinator na FFA: prof. dr. Albin Kristl, nosilka: dr. Tina Kosjek, IJS)
- Odkrivanje novih regulatorjev izražanja RANKL, ključne molekule ne samo v kostni prenovi (nosilka: prof. dr. Janja Marc)
- Nanoteranostiki na osnovi magnetno odzivnih materialov (nosilka: doc. dr. Petra Kocbek)
- Tunelske membranske nanocevke za inovativno zdravljenje raka sečnega mehurja (koordinatorica na FFA: doc. dr. Petra Kocbek, nosilka: prof. dr. Mateja Erdani Kreft, UL MF)
- Receptorji za toksine rastlinskih patogenov (koordinator na FFA: prof. dr. Stanislav Gobec, nosilec: prof. dr. Gregor Anderluh, KI)
- Strukturni vpogled v metabolizem joda (koordinator na FFA: prof. dr. Stanislav Gobec, nosilec: prof. dr. Dušan Turk, IJS)
- Elektrostatska imobilizacija bakterij in vpliv na njihovo filozofijo (koordinatorica na FFA: prof. dr. Julijana Kristl, nosilec: prof. dr. Aleš Lapanje, IMMT)
- Uporaba hmeljnih pripravkov za ekološko zatiranje varoje (Varroa destructor) (koordinator na FFA: prof. dr. Stanko Srčič, nosilec: prof. dr. Iztok Jože Košir, Inštitut za hmeljarstvo in pivovarstvo Slovenije)
- Sistem odkrivanja novih psihoaktivnih snovi v Sloveniji (akronim SONDA) (koordinatorica na FFA: izr. prof. dr. Lucija Peterlin Mašič, nosilec: prof. dr. Miran Brvar, UL MF)
- Identifikacija nepeptidnih inhibitorjev imunoproteasoma z metodami razvoja učinkovin na osnovi fragmentov (nosilec: prof. dr. Stanislav Gobec)
- Dinamični vidik vezave ligandov na proteine (koordi-

- Development of computer tools for modelling molecules of pharmaceutical interest (coordinator at the Faculty of Pharmacy: Prof. Stanislav Gobec, M. Pharm., Ph.D.; PI: Prof. Dušanka Janežič, Ph.D., UP FAMNIT),
- Role of inhibitors of cysteine proteases in the cytotoxic activity of natural killer cells when met with tumour cells (coordinator at Faculty of Pharmacy: Prof. Janko Kos, M. Pharm., Ph.D.; PI: Prof. Janko Kos, M. Pharm., Ph.D., Jožef Stefan Institute),
- Development of polymers with molecular imprints and their use in the environmental and bioanalytical fields (coordinator at Faculty of Pharmacy: Prof. Albin Kristl, M. Pharm., Ph.D.; PI: Tina Kosjek, Ph.D., Jožef Stefan Institute),
- Discovering new regulators of RANKL gene expression; key molecules not only in bone regeneration (PI: Prof. Janja Marc, M. Pharm., Ph.D., EuSpLM),
- Nanotheranostics based on magnetic responsive materials (PI: Assoc. prof. Petra Kocbek, M. Pharm., Ph.D.),
- Tunnelling membrane nanotubes for the innovative treatment of urethral bladder cancer (coordinator at Faculty of Pharmacy: Assoc. prof. Petra Kocbek, M. Pharm., Ph.D.; PI: Prof. Mateja Erdani Kreft, MD, Ph.D., University of Ljubljana, Faculty of Medicine),
- Receptors for plant pathogenic toxins (coordinator at Faculty of Pharmacy: Prof. Stanislav Gobec, M. Pharm., Ph.D.; PI: Prof. Gregor Anderluh, Ph.D., National Institute of Chemistry),
- Structural inspection of iodine metabolism (coordinator at Faculty of Pharmacy: Prof. Stanislav Gobec, M. Pharm., Ph.D.; PI: Prof. Dušan Turk, Ph.D., Jožef Stefan Institute),
- Electrostatic immobilisation of bacteria and the influence on their philosophy (coordinator at Faculty of Pharmacy: Prof. Julijana Kristl, M. Pharm., Ph.D.; PI: Prof. Aleš Lapanje, Ph.D., Institute of Metagenomics and Microbial Technologies),
- Using hops concoctions for ecological pest control of the Varroa destructor (coordinator at Faculty of

nator na FFA: prof. dr. Stanislav Gobec, nosilka: prof. dr. Simona Golič Grdadolnik, KI)

- Endokrini in genotoksični potencial inhibitorjev proteinskih kinaz: pomen za tveganja za okolje in zdravje ljudi (koordinatorica na FFA: prof. dr. Marija Sollner Dolenc, nosilka: prof. dr. Metka Filipič, NIB)
- Inhibicija prenove celične stene Staphylococus aureus (koordinator na FFA: prof. dr. Marko Anderluh, nosilec: prof. dr. Dušan Turk, IJS)
- Novi izzivi folatne terapije v porodništvu in ginekologiji (koordinatorica na FFA: prof. dr. Irena Mlinarič-Raščan, nosilec: prof. dr. Ksenija Geršak, UKC LJ)
- Potencial nizkih, subterapevtskih odmerkov statinov in sartanov v primarni in sekundarni preventivi srčno-žilnih bolezni (koordinatorica na FFA: prof. dr. Janja Marc, nosilec: prof. dr. Mirza Šabovič, UKC LJ)
- Preprečevanje rezistence tumorskih celic na antiproteazno terapijo z inhibitorji katepsina X (nosilec: prof. dr. Janko Kos)

Aplikativni raziskovalni projekti ARRS

- Boj proti bakterijski rezistenci: optimizacija zaviralcev biosinteze bakterijske stene (nosilec: prof. dr. Stanislav Gobec)
- Nanostrukturirani vlaknasti materiali za ciljno depozicijo zdravilnih učinkovin, izdelani z electrospinningom (koordinator na FFA: prof. dr. Albin Kristl, nosilec: prof. dr. Igor Emri, UL FS)
- Razvoj multifunkcionalnih učinkovin za zdravljenje Alzheimerjeve bolezni (nosilec: prof. dr. Stanislav Gobec)

Podoktorski raziskovalni projekti

- Strukturno podprta optimizacija na nitroksolinu osnovanih zaviralcev katepsina B kot potencialnih zdravil za zdravljenje raka (nosilec: doc. dr. Izidor Sosič)
- Razvoj novih zaviralcev encimov biosinteze peptidoglikana MurA in MurB (nosilec: asist. dr. Marko Jukič)

Pharmacy: Prof. Dr.h.c. Stanko Srčič, MSc Pharm; PI: Prof. Iztok Jože Košir, Ph.D., Slovenian Institute of Hop Research and Brewing),

- System for discovering new psychoactive substances in Slovenia (SONDA) (coordinator at Faculty of Pharmacy: Prof. Lucija Peterlin Mašič, M. Pharm., Ph.D.; PI: Prof. Miran Brvar, MD, Ph.D., University of Ljubljana, Faculty of Medicine),
- Identification of non-peptide inhibitors of immunoproteasomes with developing fragment-based active ingredients methods (PI: Prof. Stanislav Gobec, M. Pharm., Ph.D.)
- A dynamic perspective on ligands binding to proteins (coordinator at Faculty of Pharmacy: Prof. Stanislav Gobec, M. Pharm., Ph.D.; PI: Prof. Simona Golič Grdadolnik, Ph.D., National Institute of Chemistry),
- Endocrine and genotoxic potential of inhibitors of protein kinases: Significance for environmental and human-health risks (coordinator at Faculty of Pharmacy: Prof. Marija Sollner Dolenc, M. Pharm., Ph.D.; PI: Prof. Metka Filipič, Ph.D., National Institute of Biology),
- Inhibition of cell wall regeneration in Staphylococcus aureus (coordinator at Faculty of Pharmacy: Prof. Marko Anderluh, M. Pharm., Ph.D.; PI: Prof. Dušan Turk, Ph.D., Jožef Stefan Institute)
- New challenges for the folate therapy in obstetrics and gynaecology (coordinator at Faculty of Pharmacy: Prof. Irena Mlinarič-Raščan, M. Pharm., Ph.D.; PI: Prof. Ksenija Geršak, MD, Ph.D., University Medical Centre Ljubljana),
- Potential of low, sub-therapeutic doses of statins and sartans in the primary and secondary prevention of cardiovascular diseases (coordinator at Faculty of Pharmacy: Prof. Janja Marc, M. Pharm., Ph.D., EuSpLM; PI: Prof. Mirza Šabovič, MD, Ph.D., University Medical Centre Ljubljana),
- Preventing the resistance of tumour cells to antiprotease therapy with inhibitors of cathepsin X (PI: Prof. Janko Kos, M. Pharm., Ph.D.).

Drugi nacionalni projekti

- Internacionalizacije slovenskega visokega šolstva
- Raziskovalci na začetku kariere 2.0 (Validacija imunoproteasoma kot terapevtske tarče in razvoj inhibitorjev, prijaviteljica: dr. Eva Ogorevc)
- Spodbujanje zaposlovanja mladih doktorjev znanosti (FFA je na podlagi razpisa zaposlila dva mlada doktorja znanosti).

ARRS's applied research projects

- Battling the resistance of bacteria: Optimisation of inhibitors of bacterial cell wall biosynthesis (PI: Prof. Stanislav Gobec, M. Pharm., Ph.D.),
- Nano-structured fibre materials for a targeted deposition of active substances created by electrospinning (coordinator at Faculty of Pharmacy: Prof. Albin Kristl, M. Pharm., Ph.D.; PI: Prof. Igor Emri, Ph.D., University of Ljubljana, Faculty Of Mechanical Engineering),
- Development of multifunctional active substances for the treatment of Alzheimer's disease (PI: Prof. Stanislav Gobec, M. Pharm., Ph.D.).

Post-doctoral research projects

- Structurally supported optimisation of the nitroxoline-based inhibitors of cathepsin X as potential cures for cancer (PI: Assist. prof. Izidor Sosič, M. Pharm., Ph.D.),
- Developing new inhibitors of MurA and MurB enzymes for peptidoglycan biosynthesis (PI: Assist. prof. Marko Jukič, M. Pharm., Ph.D.).

Other national projects

- Internationalisation of Slovenian higher education,
- Researchers at the beginning of career 2.0 (Validation of immunoproteasome as a therapeutic target and development of inhibitors; applicant: Assist. Eva Ogorevc, Ph.D.),
- Encouraging the employment of young Doctors of Science (on the basis of the call for applications, the Faculty of Pharmacy has hired two young Doctors of Science).

MEDNARODNI RAZISKOVALNI PROJEKTI 2017

Projekti EU

- **PhD4GlycoDrug**

  Projekt H2020, Marie Skłodowska-Curie Innovative Training Networks, štiriletni projekt European Joint Doctorate z akronimom PhD4GlycoDrug, glavni koordinator projekta je prof. dr. Marko Anderluh.

- **INTEGRATE (Interdisciplinary Training Network for Validation of Gram-Negative Antibacterial Targets)**

  Projekt H2020, Marie Skłodowska-Curie ETN. V okviru projekta se na UL FFA izobražuje tuja doktorska študentka. Nosilec projekta na UL FFA je prof. dr. Danijel Kikelj.

- **ARTE (Advanced Regenerative Therapies Ecosystem)**

  Program Interreg V-A Italija-Slovenija 2014-2020; Razvoj lokalnega ekosistema za inovativne terapije in regenerativno medicino. Nosilka projekta na UL FFA je prof. dr. Janja Marc.

- **Novel diagnostic and therapeutic approaches to complex genetic disorders (CIII-HR-0611)**

  CEEPUS projekt, regionalni program. Spodbujanje mobilnosti študentov in profesorjev držav partneric (Avstrija, Bolgarija, Češka, Hrvaška, Madžarska, Poljska, Romunija, Slovaška, Slovenija, Srbija, Albanija, Makedonija in Črna Gora). Koordinatorica na UL FFA je prof. dr. Janja Marc.

INTERNATIONAL RESEARCH PROJECTS 2017

EU projects

- **PhD4GlycoDrug**

  Horizon 2020 project, Marie Skłodowska-Curie Innovative Training Networks, four-year European Joint Doctorate project (abbreviation PhD4GlycoDrug); main coordinator of the project: Prof. Marko Anderluh, M. Pharm., Ph.D.,

- **INTEGRATE (Interdisciplinary Training Network for Validation of Gram-Negative Antibacterial Targets)**

  Horizon 2020 project, Marie Skłodowska-Curie ETN. In the framework of the project, there is a foreign doctoral student enrolled in the Faculty of Pharmacy. The PI of the project at the Faculty of Pharmacy is Prof. Danijel Kikelj, M. Pharm., Ph.D.,

- **ARTE (Advanced Regenerative Therapies Ecosystem)**

  Programme Interreg V-A Italy-Slovenia 2014-2020; Development of the local ecosystem for innovative therapies and regenerative medicine. The PI of the project at the Faculty of Pharmacy is Prof. Janja Marc, M. Pharm., Ph.D., EuSpLM.,

- **Novel diagnostic and therapeutic approaches to complex genetic disorders (CIII-HR-0611)**

  A CEEPUS project, regional programme. Encouraging the mobility of students and professors of partner states: Austria, Bulgaria, Czech Republic, Croatia, Hungary, Poland, Romania, Slovakia, Slovenia, Serbia, Albania, FYROM, and Montenegro. The coordinator at the Faculty of Pharmacy is Prof. Janja Marc, M. Pharm., Ph.D., EuSpLM.

European Social Fund (ESF) projects

- **A creative path to knowledge 2016/17**

  Two Faculty of Pharmacy's applications were successful:

  - Establishing a biobank to search for biological markers for the optimisation of systemic treatment of psoriasis patients (in cooperation with

Projekti ESS

- **Po kreativni poti do znanja 2016/2017**

  UL FFA je bila uspešna z dvema prijavama, in sicer:

  - Vzpostavitev biobanke za iskanje bioloških označevalcev za optimizacijo sistemskega zdravljenja bolnikov z luskavico (v sodelovanju s podjetjem GENI.SI in UKC Maribor). Koordinatorica: asist. dr. Alenka Šmid.
  - Razvoj in validacija analitskih metod za določanje farmacevtskih učinkovin in procesnih nečistot (v sodelovanju z gospodarsko družbo Lek, d. d.). Koordinatorica: izr. prof. dr. Anamarija Zega.

Drugi mednarodni projekti

- **Ameriški projekt »RNA targets of SNORD116« (Foundation for Prader-Willi Research)**

  »Vezavni RNA-partnerji majhne nukleolarne RNA SNORD116«. Koordinator projekta na UL FFA je doc. dr. Tomaž Bratkovič.
- **WADA**

  Projekt svetovne protidopinške organizacije: Razvoj prototipa splošne platforme na osnovi detekcije neznanih peptidov, proteinov ali peptidomimetikov za dokazovanje prepovedanih snovi v športu. Vodja projekta na FFA je prof. dr. Borut Štrukelj.
- **COST – sodelovanje v 13 projektih.**

Bilateralni projekti

- UL FFA je imela v 2017 vzpostavljenih 17 bilateralnih projektov, kjer sodelujemo z akademskimi institucijami v naslednjih državah: Argentina, BIH, Francija, Kitajska, Madžarska, Rusija, Srbija in ZDA.

the company GENI.SI and Maribor University Medical Centre). Coordinator: Assist. Alenka Šmid, M. Pharm, Ph.D.,

- Developing and validating analytical methods to determine pharmaceutical active ingredients and process-related impurities (in cooperation with Lek Pharmaceuticals d.d.). Coordinator: Assoc. prof. Anamarija Zega, M. Pharm., Ph.D.

Other international projects

- **American project "RNA targets of SNORD116" (Foundation for Prader-Willi Research)**

  "Binding RNA partners of small nucleolar RNA SNORD116"; The coordinator of the project at the Faculty of Pharmacy is Assist. prof. Tomaž Bratkovič, M. Pharm., Ph.D.,
- **WADA**

  World Anti-Doping Agency's project; Developing a general platform prototype on the basis of detection of unknown peptides, proteins, and peptidomimetics to find illegal substances in sport; The leader of the project at the Faculty of Pharmacy is Prof. Borut Štrukelj, M. Pharm., Ph.D.,
- **COST – cooperating in 13 projects.**

Bilateral projects

- In 2017, the Faculty of Pharmacy was part of 17 bilateral projects. It cooperated with academic institutions from Argentina, Bosnia and Herzegovina, France, China, Hungary, Russia, Serbia, and the USA.

PRENOS ZNANJA

Tudi v letu 2017 se je nadaljeval trend povečanega sodelovanja s farmacevtskimi in sorodnimi podjetji. Ključnega pomena pri tem je prenos znanja v industrijo in hkrati bogatitev zaposlenih z dragocenimi strokovnimi izkušnjami na področju realnih izzivov iz prakse. Na trgu pridobljena sredstva vlagamo v sodobno infrastrukturo in pogoje dela fakultete.

Gospodarski partnerji UL FFA v letu 2017 so bili: Krka, Lek, OPH OKTAL PHARMA, Širimo dobro besedo, Klaria Pharma, Abies Labs AbbVie, Medis, AstraZeneca, Amgen zdravila, Vizera, Pfeizer, Patron, Siemens, Novartis Pharma in ostali.

IZUMI IN INOVACIJE

Fakulteta za farmacijo je na Univerzi v Ljubljani med vidnejšimi članicami na področju izumiteljskega in inovacijskega delovanja.

V letu 2017 so sodelavci FFA pri nacionalnem patentnem uradu vložili eno patentno prijavo, na Evropskem patentnem uradu (EPO) pa so status patenta podelili dvema patentnima prijavama UL FFA.

Sodelavci FFA so v sodelovanju z drugimi institucijami vložili eno patentno prijavo in na Evropskem patentnem uradu (EPO) dobili podeljen patent.

KNOWLEDGE TRANSFER

The trend of increased cooperation with pharmaceutical and related companies was also observed in 2017. The key benefit of this cooperation is the transfer of knowledge into industry and the enrichment of our employees with valuable professional experience from solving real challenges happening in practice. We invest the money that we earn in the market into modern infrastructure and into improvement of working conditions at the Faculty.

In 2017, the Faculty of Pharmacy's economic partners were: Krka, Lek, OPH OKTAL PHARMA, Širimo dobro besedo, Klaria Pharma, Abies Labs AbbVie, Medis, AstraZeneca, Amgen zdravila, Vizera, Pfeizer, Patron, Siemens, Novartis Pharma, and others.

INVENTIONS AND INNOVATIONS

The Faculty of Pharmacy is one of the most visible members of the University of Ljubljana as far as inventions and innovations is concerned.

In 2017, the Faculty of Pharmacy in cooperation with other institution has applied for one patent at the national patent office, while the European Patent Office (EPO) has granted patent status to 2 patent application from the Faculty.

MEDNARODNA DEJAVNOST

Pretok znanja in prepoznavnost v mednarodnem okolju je eno od prednostnih področij strategije Fakultete za farmacijo. Stremimo k povečani mobilnosti študentov in učnega osebja. Cilji mobilnosti študentov so izboljšanje učnih kompetenc, povečanje zaposljivosti in samoiniciativnosti.

CILJI MEDNARODNE DEJAVNOSTI UL FFA

- Povečati število gostujočih predavateljev in raziskovalcev z namenom doseganja strateških partnerstev.
- Povečati interes študentov tudi iz severnega dela Evrope, da bi se udeleževali izmenjav.
- Omogočiti kakovostno mobilnost čim večjemu številu študentov UL FFA in na tak način prispevati k izboljšanim splošnim kompetencam diplomantov – povečati konkurenčnost naših diplomantov pri iskanju zaposlitev.
- Povečati število študijskih izmenjav (SMS) in praktičnih izmenjav (SMP) za programe Kozmetologije ter Laboratorijske biomedicine (vsako leto 1 nova bilateralna pogodba v naslednjih 6 letih).

PROGRAMI MOBILNOSTI

- Erasmus: sklenjenih 57 bilateralnih pogodb in dogovorjenih približno 140 mest za izmenjavo študentov ter 70 za izmenjavo učiteljev.
- CEEPUS: za izmenjavo študentov v centralni Evropi.
- Norveški finančni mehanizem: omogočene SMS in SMP izmenjave na Norveškem, Islandiji in v Lihtenštajnu.
- Programa svetovnega (IPSF) in evropskega (EPSA) združenja študentov farmacije.
- Druge vrste mobilnosti – krajši intenzivni tečaji in poletne šole.

INTERNATIONAL ACTIVITY

The transfer of knowledge and international recognition are two strategy priority areas of the Faculty of Pharmacy. We strive for increasing the mobility of students and teaching staff. The goals of increasing students' mobility aims at improving their learning competencies, increasing employability, and self-initiative.

FACULTY OF PHARMACY'S INTERNATIONAL ACTIVITY GOALS

- Increasing the number of guest lecturers and researchers with the purpose of achieving strategic partnerships.
- Increasing the interest of students from the northern part of Europe to take part in exchanges.
- Making high-standard mobility be accessible to as many Faculty of Pharmacy's students as possible, and therefore contributing to the improvement of our graduates' general competencies, and theirs increased competitiveness.
- Increasing the number of student exchanges in Student Mobility Studies (SMS) and Student Mobility of Placement (SMP) for the study programmes of Cosmetology and Laboratory Biomedicine (for the next six years, there will be a new bilateral contract each year).

MOBILITY PROGRAMMES

- Erasmus: 57 bilateral contracts signed and about 140-student and 70-teacher exchanges arranged.
- CEEPUS: Exchanges for Central European students.
- Norwegian financial mechanism: making possible the SMS and SMP exchanges in Norway, Iceland, and Liechtenstein.
- International Pharmaceutical Students Federation (IPSF) and European Pharmaceutical Students' Association (EPSA) programmes.
- Other types of mobility – shorter intensive courses and summer schools.

Partnerske fakultete, s katerimi UL FFA sodeluje v programu ERASMUS+ / FFA's partner faculties in the ERASMUS+ programme

NAŠI ŠTUDENTI NA TUJIH INŠTITUCIJAH

- 42 študentov je opravilo študijske obveznosti na partnerskih inštitucijah.
- 23 študentov je opravilo Erasmus prakso v tujini v dolžini od 2 do 8 mesecev. Praktičnega usposabljanja v okviru Erasmus+ so se udeležili študentje vseh študijskih programov UL FFA.
- 40 študentov je opravilo raziskovalno delo v obliki praks in v lekarnah v dolžini do 1 meseca.

OUR STUDENTS AT FOREIGN INSTITUTIONS

- 42 students completed their study obligations at partner institutions.
- 23 students completed their Erasmus internship abroad, which lasted between 2 and 8 months. Students of all study programmes at the Faculty of Pharmacy took part in the Erasmus+ practical training.
- 40 students completed their research work during up to 1-month long practice at pharmacies.

GOSTUJOČI ŠTUDENTI NA UL FFA

- 54 tujih študentov je opravilo del svojih študijskih obveznosti na UL FFA (48 Erasmus+, 6 CEEPUS).
- 6 tujih študentov je v okviru Erasmus+ izmenjav pridobivalo praktične izkušnje z delom v laboratoriju (3–5 mesecev).
- 28 tujih študentov je bilo na krajših izmenjavah z namenom pridobivanja veščin – to organizirajo študentje preko IPSF–SEP praks.
- Tutorski sistem za tuje študente bistveno olajša študij.

IZMENJAVE UČITELJEV IN RAZISKOVALCEV

- 42 tujih učiteljev in raziskovalcev je gostovalo na UL FFA (23 učiteljev in 19 raziskovalcev). Število se je v primerjavi s preteklim letom povečalo (35).
- 40 učiteljev in raziskovalcev UL FFA se je udeležilo aktivnosti v tujini. Več pa jih je sodelovalo tudi v okviru poletnih šol kot aktivni udeleženci. Število se je v primerjavi s preteklim letom bistveno povečalo (21).

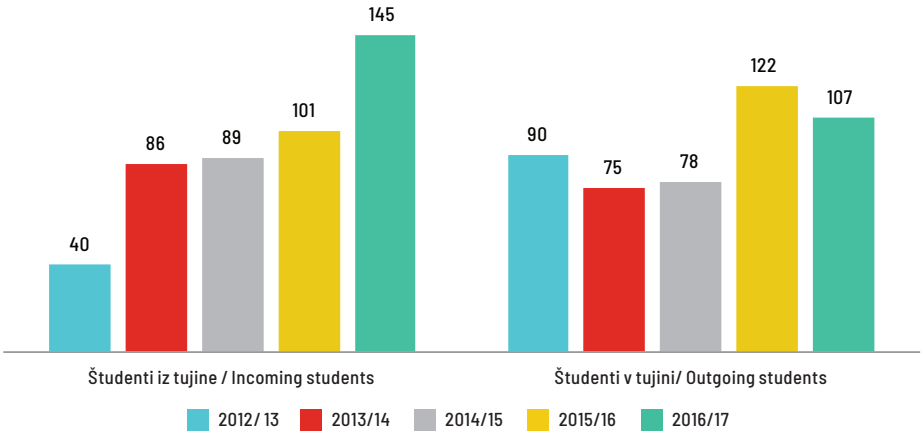
FACULTY OF PHARMACY'S GUEST STUDENTS

- 54 foreign students completed part of their study obligations at the Faculty of Pharmacy (48 Erasmus+, 6 CEEPUS).
- In the framework of Erasmus+ exchanges, 6 foreign students gained practical experience by working in a laboratory (3-5 months).
- 28 foreign students took part in short exchanges with the purpose of acquiring skills – this is organised by students through IPSF–SEP internships.
- Tutor system for foreign students makes studying much easier.

EXCHANGES OF TEACHERS AND RESEARCHERS

- We hosted 42 foreign teachers and researchers at the Faculty of Pharmacy (23 teachers and 19 researchers). Compared to the previous year (35), the number increased.

MOBILNOST ŠTUDENTOV / STUDENT MOBILITY



Število vseh sklenjenih bilateralnih sporazumov za izmenjavo, število študentov UL FFA na izmenjavi v tujini in število tujih študentov na izmenjavi na UL FFA (zadnjih šest študijskih let). / The number of all bilateral exchange agreements, the number of UL FFA students on exchange abroad, and the number of foreign students on exchange at UL FFA (data of the last six years).

SODELOVANJE Z DRUGIMI FAKULTETAMI

- **Organizacija Mednarodnega dne UL FFA**

  Drugi Mednarodni dan Fakultete za farmacijo smo povezali z obiskom 56 študentov in 2 učiteljev iz Univerze v Antwerpnu, Belgija. Eden od poglavitnih ciljev Mednarodnega dne je bila predstavitev raziskovalnega in pedagoškega dela na UL FFA partnerskim univerzam.

  Koordinacija: izr. prof. dr. Iztok Grabnar, UL FFA.

- **Sodelovanje s Farmacevtsko-biokemijsko fakulteto Univerze v Zagrebu**

  UL FFA že dolga leta sodeluje s Farmacevtsko-biokemijsko fakulteto Univerze v Zagrebu, za kar je v letu 2017 prejela tudi priznanje. Na svečani akademiji ob 135. obletnici študija farmacije na Univerzi v Zagrebu septembra 2017 je v imenu regijskih fakultet za farmacijo udeležence pozdravila tudi dekanja UL FFA prof. dr. Irena Mlinarič-Raščan.

- **Sodelovanje in pomoč pri razvoju Fakultete za farmacijo Univerze sv. Cirila in Metoda v Skopju**

  Na akademiji ob 40. obletnici Fakultete za farmacijo Univerze sv. Cirila in Metoda v Skopju aprila 2017 je UL FFA prejela plaketo v zahvalo za dolgoletno sodelovanje in pomoč pri razvoju skopske farmacevtske fakultete.

- 40 teachers and researchers from the Faculty of Pharmacy took part in activities abroad. There were even more taking part as active participants in summer schools. Compared to the previous year (21), the number increased significantly.

COOPERATION WITH OTHER FACULTIES

- **Organisation of the Faculty of Pharmacy's International Day**

  The Faculty of Pharmacy's second International Day was connected with the visit of 56 students and 2 teachers from the University of Antwerp, Belgium. One of the main goals of the event was to present the Faculty of Pharmacy's research and pedagogical work to partner Universities.

  Coordinator: Prof. Iztok Grabnar, M. Pharm., Ph.D.

- **Cooperation with the Faculty of Pharmacy and Biochemistry of the University of Zagreb, Croatia**

  UL FFA has for many years cooperated with the Faculty of Pharmacy and Biochemistry of the University of Zagreb, for which it was given a recognition award in 2017. In September 2017, at the solemn ceremony of the 135th anniversary of teaching Pharmacy at the University of Zagreb, The Faculty of Pharmacy's Dean Prof. Irena Mlinarič-Raščan, M. Pharm., Ph.D. greeted among the others the ceremony attendants on behalf of the regional faculties of pharmacy.

- **Cooperation and assistance in the development of the Faculty of Pharmacy of Ss. Cyril and Methodius University in Skopje**

  In April 2017, at the celebration ceremony of the 40th anniversary of the Faculty of Pharmacy of Ss. Cyril and Methodius University in Skopje, UL FFA was given a plaque as a sign of gratitude for the longstanding cooperation and assistance in the development of Skopje's Faculty of Pharmacy.

OBŠTUDIJSKA DEJAVNOST

Študentje Fakultete za farmacijo s svojimi številnimi aktivnostmi pomembno prispevajo k višji kakovosti izvedbe študija in svojemu celovitemu razvoju. Z delovanjem na projektih sodelovanja z okoljem doprinašajo k prepoznavnosti Fakultete in Univerze v Ljubljani ter hkrati k dobrobiti družbe. Med številnimi aktivnostmi je še prav posebej prepoznana organizacija 40. kongresa Zveze evropskih študentov farmacije (EPSA), ki je v letu 2017 privabil v Slovenijo 300 študentov farmacije iz držav članic.

Dogodek je imel strokovni in družabni program. Srečanje predstavlja priložnost za navezovanje stikov in udeležbo pri strokovnem delu programa in pridobivanje novih veščin vodenja in mednarodnega sodelovanja.

Spatula

je glasilo Društva študentske sekcije Slovenskega farmacevtskega društva, s katerim seznanjamo študente farmacije o aktualnih obštudijskih dogodkih in novostih v svetu farmacije na lokalnem in mednarodnem področju. Je periodična publikacija, prispevke objavljamo v slovenskem jeziku, razen člankov tujih avtorjev, ki jih objavljamo v angleškem jeziku.

Leta 2017 smo izdali 4 številke glasila, in sicer tri redne – februarja, maja in oktobra, ter eno jubilejno, ki je izšla v novembru in je obeleževala 20. obletnico DŠFS.

Mednarodni poletni farmacevtski tabor

Tema dogodka je bila »Keeping up with the Cannabinoids«. V času tabora smo uporabljali raznolike metode dela, kot so predavanja, delavnice in okrogle mize, na katerih smo aktivno razmišljali o poklicu farmacevta na področju marketinga in regulative.
Tabora se je udeležilo 59 udeležencev, od tega 9 tujcev, ki so z udeležbo izboljšali svoje znanje o kanabinoidih in se hkrati izobrazili o slovenski kulturi, medkulturnem in medosebnem sodelovanju.

EXTRA-CURRICULAR ACTIVITIES

With their numerous activities, the students of the Faculty of Pharmacy significantly contribute to a higher quality of study execution and their own overall development. By taking part in projects where they cooperate with external environment, they contribute to the Faculty's and the University's recognition, as well as to the well-being of our society. Among the Faculty's numerous activities, there was one that was especially visible – the organisation of the 40th European Pharmaceutical Students' Association (EPSA) Annual Congress, which attracted to Slovenia 300 pharmacy students from the EU member states in 2017.

The programme at the event was of both of professional and social nature. The meeting was an opportunity to network, to acquire new managerial skills, and skills for international cooperation.

Spatula

is the bulletin of Students' section of Slovenian Pharmaceutical Society. The bulletin informs pharmacy students of the current extra-curricular activities and novelties in the world of pharmacy at the local and international levels. It is a periodical publication in which the articles are published in the Slovenian language, except for the articles of foreign authors, which are published in English.
In 2017, we published 4 issues of Spatula – 3 regular (in February, May, and October) and a jubilee issue that was published in November on the occasion of the 20th anniversary of the Slovenian Pharmacy Students' Society (DŠFS).

International Pharmaceutical Summer Camp (IPSC)

The theme of the event was "Keeping up with the Cannabinoids." During the Camp, we used various working methods, such as lectures, workshops, and panels, which were dedicated to active consideration about the pharmaceutical profession in the fields of marketing and regulation.

3. Simpozij Študentske sekcije Slovenskega farmacevtskega društva: Hrana = (?) Zdravilo

Namen simpozija je bil študentom farmacije s predavanji različnih strokovnjakov razširiti znanje in pogled o pomenu prehrane pri celostni obravnavi bolnika, na enem mestu združiti zdravnike, klinične farmacevte in predstavnike bolnikov, da si tudi med seboj izmenjajo informacije o boljših kliničnih in humanističnih izidih. Udeležencev je bilo 300.

Svetovanje pacientom

Projekt je prepoznan tako med študenti farmacije kot v širši farmacevtski javnosti.
Tema 2017 je bila nespečnost. Tekmovalci so se potegovali za mamljive nagrade, kot sta udeležba na IPSF kongresu, ki je potekal v Zimbabveju, in na mednarodnem poletnem farmacevtskem taboru.

Zdravila po meri

Zdravila po meri je nov projekt v sklopu strokovnih tekmovanj, ki potekajo v organizaciji DŠFS. Naloga tekmovalcev je, da pripravijo pacientu prilagojeno zdravilo (magistralni pripravek). Ocenjevali sta se tako kakovost pripravljenega zdravila kot ustreznost rešitve tekmovalnega problema. Namen projekta je, da se študentje bolje spoznajo z izzivi magistralne izdelave zdravil oziroma inovativnih pripravkov v industriji.

Mala šola klinike

Projekt, kjer se tekmovalci prelevijo v vlogo kliničnega farmacevta in poleg svetovanja ob izdaji izpolnijo tudi poseben obrazec o pacientu ter ga ustrezno komentirajo. Tema je bila anemija.

Prostovoljstvo na UL FFA

Vključuje podporo ambulanti s posvetovalnico za osebe brez zdravstvenega zavarovanja, udeležbo na humanitarnem teku v okviru Wings for life, sodelovanje pri projektu Božiček za en dan in zbiralnih akcijah, organizacijo božičnega in spomladanskega bazarja.

Javne kampanje:

- Boj proti raku
- InterAKCIJA

The camp was attended by 59 participants, including 9 foreigners, who improved their knowledge on cannabinoids and at the same time learned about Slovenian culture, as well as intercultural and interpersonal cooperation.

3rd symposium of Students' Section of Slovenian Pharmaceutical Society: Food=(?)Medicine

The purpose of the symposium was to expand through the lectures of various experts the students' knowledge about the importance of nutrition within holistic approach of patient management. The event brought together medical doctors, clinical pharmacists, and patients, and allowed the exchange of information about better clinical and humanistic treatment outcomes. There were 300 attendants.

Consulting patients

The project is well known among pharmacy students as well as in the broader pharmaceutical society.
The topic of the 2017 event was insomnia. The participants worked hard to win tempting prizes, such as attending the International Pharmaceutical Students' Federation's (IPSF) World Congress, which took place in Zimbabwe, and in the International Pharmaceutical Summer Camp.

Personalised medicines

Personalised medicines is a project where participants' task is to prepare a patient-tailored medicine. Students were evaluated for the adequacy and the quality of the prepared medicine. The aim of the project is to learn about the challenges of magistral preparation and innovative medicines in the industry.

Little school of clinical pharmacy

This is a project in which the participants take on the role of a clinical pharmacist and besides counselling the patient when issuing the medicine, they have to fill out a patient specific formulary and appropriately comment on it. The topic was anaemia.

Volunteer work at the Faculty of Pharmacy

It includes offering support to a pro bono clinic, taking part in a humanitarian running event in the framework

- Festival zdravja
- Evropski dan pravilne uporabe antibiotikov
- Svetovni dan boja proti aidsu: Let's end it

Motivacijski vikend DŠFS

je namenjen študentom nižjih letnikov in študentom, ki se želijo pobližje spoznati z društvom, njegovimi projekti in se vanj aktivno vključiti. Ob strokovnem delu je bogat tudi družabni program s spoznavanjem drugih študentov in trenerjev mehkih veščin.

IPSF SEP (Students Exchange Programme)

je program mobilnosti, ki študentom farmacije ponuja priložnost za spoznavanje farmacevtske stroke v več kot 90 državah sveta. Je eden od večjih projektov Svetovne organizacije študentov farmacije (IPSF). V letu 2017 (med junijem in septembrom) je prakso opravljalo 28 tujih študentov (v Ljubljani, Kranju, na Golniku, v Mariboru, Domžalah in Portorožu), 43 slovenskih študentov je odšlo na prakso na Češko, Poljsko, Slovaško, Portugalsko, Finsko, Španijo, v Avstrijo, Nemčijo, Estonijo, ZDA, Egipt, Iran, Indonezijo, Malezijo, Izrael, Kanado, Tanzanijo, Japonsko, El Salvador, Armenijo, Mehiko.

EPSA Individual Mobility Project

EPSA Individual Mobility Project (IMP) je dolgoročen projekt, ki študentom farmacije in nedavno diplomiranim farmacevtom in diplomantom farmacevtskih znanosti ponuja možnost za pridobitev delovnih in raziskovalnih izkušenj na vseh področjih farmacevtske stroke. IMP je bil ustvarjen z željo medsebojnega povezovanja evropske farmacevtske industrije, institucij in organizacij študentov farmacije.
V letu 2017 je bila študentka UL FFA sprejeta na IMP prakso pri DIA v Baslu.

Ostali projekti v letu 2017

- **Informativni dnevi in Informativa** – v sodelovanju s Fakulteto za farmacijo smo študenti organizirali predstavitev fakultete, študijskih programov in obštudijskih dejavnosti.
- **Strokovni večeri** – strokovni večeri so predavanja na določeno temo, ki jih organiziramo študenti sami,

of Wings for Life, cooperating in the "Santa for a day" project, cooperating in fundraising initiatives, and organising Christmas and Spring bazaars.

Public campaigns

- Fighting cancer
- InterAKCIJA (InterACTION)
- Festival of health
- European Day for the Prudent Use of Antibiotics
- World AIDS Day: Let's end it

DŠFS motivational weekend

It is intended for beginners. Along with professional activities, the weekend offers also a broad social programme which allows students getting to know other and attend a training in soft skills.

International Pharmaceutical Students' Federation's Student Exchange Programme (IPSF SEP)

IPSF SEP is a mobility programme, which offers pharmacy students an opportunity to professional networking in 90 countries around the world. It is one of the IPSF's biggest projects. Between June and September of 2017, there were 28 foreign students doing their internship in Ljubljana, Kranj, Golnik, Maribor, Domžale, and Portorož. 43 Slovenian students went to do their professional practice in the Czech Republic, Poland, Slovakia, Portugal, Finland, Spain, Austria, Germany, Estonia, USA, Egypt, Iran, Indonesia, Malaysia, Israel, Canada, Tanzania, Japan, El Salvador, Armenia, and Mexico.

European Pharmaceutical Students' Association's (EPSA) Individual Mobility Project

EPSA Individual Mobility Project (IMP) is a long-term project that offers pharmacy students, recently-graduated pharmacists, and pharmaceutical sciences graduates an opportunity to acquire work and research experience in all fields of the pharmaceutical profession. The IMP was created with the desire to interconnect European pharmaceutical industry, institutions and pharmacy students' organisations.
In 2017, a Faculty of Pharmacy student was accepted

tako v sodelovanju s predavatelji naše fakultete kot z gostujočimi.

- **Piknik** – organiziran v maju je zadnje druženje pred zaključkom leta in poletnim izpitnim obdobjem.
- **Mobility day** – predstavitev možnosti študija, izmenjav in praks v tujini (ERASMUS+ izmenjave, SEP in IMP prakse), in delovanje mednarodnih organizacij, kot sta EPSA in IPSF ter možnost udeležbe na njihovih mednarodnih kongresih.
- **Strokovno-zabavna ekskurzija v Sarajevo** – z organiziranim strokovnim in družabnim programom. Udeležilo se je je približno 50 študentov Fakultete za farmacijo.

to do an IMP internship at the Drug Information Association (DIA) in Basel, Switzerland.

Other projects in 2017

- **Information days and Informativa** - in cooperation with the Faculty of Pharmacy, the students organised a presentation of the Faculty, its study programmes, and extra-curricular activities.
- **Professional evenings** offer lectures on specific topics and are organised by the students themselves and in cooperation both with the Faculty's as well as with the guest lecturers.
- **Picnic** is organised in May and is the last social event before the end of the year and the summer exam period.
- **Mobility Day** is aimed to presenting possibilities to study, foreign exchanges and internships (ERASMUS+, SEP and IMP), and the functioning of international organisations, such as the EPSA and IPSF, as well as the possibilities to participate in their international congresses.
- **Professional and social excursion to Sarajevo** includes a professional and social programme. It was attended by about 50 students from the Faculty of Pharmacy.

ODPRTOST V DRUŽBO

Evropsko podiplomsko izobraževanje iz radiofarmacije

V sodelovanju s Kliniko za nuklearno medicino Univerzitetnega kliničnega centra Ljubljana in švicarsko univerzo ETH Zurich smo že devetič izvedli podiplomsko izobraževanje iz radiofarmacije, ki je del evropske sheme podiplomskega izobraževanja. Izobraževanja so se udeležili strokovnjaki iz Evrope, Bližnjega vzhoda in Južnoafriške republike.

Sodelovanje z ETH Zurich in mednarodna zasedba udeležencev je veliko strokovno priznanje Fakultetiza farmacijo ter pripomore k boljši prepoznavnosti Univerze v Ljubljani.
Koordinacija: doc. dr. Tanja Gmeiner Stopar.

Meduniverzitetno evropsko podiplomsko izobraževanje iz razvoja zdravil

V sodelovanju s strokovnjaki iz farmacevtske industrije in regulatornih teles smo organizirali 2. modul meduniverzitetnega evropskega podiplomskega izobraževanja z naslovom Non-clinical pharmaceutical and early clinical development, ki je del harmoniziranega programa Pharma train.

Izobraževanja so se udeležili strokovnjaki iz Slovenije, Madžarske, Hrvaške in Velike Britanije.

Koordinacija: prof. dr. Irena Mlinarič-Raščan

Evropska noč raziskovalcev na Fakulteti za farmacijo je bila organizirana z namenom popularizirati znanost med osnovnošolci. Organizirali smo krajše delavnice, demonstracijske poskuse in predstavili delovanje Fakultete za farmacijo.

IMPACT ON SOCIETY

Postgraduate European Radiopharmacy Course – PERC

In cooperation with the Department of Nuclear Medicine of the University Medical Centre Ljubljana and the Swiss University ETH Zurich, we have, for the ninth time, carried out the post-graduate radiopharmacy course, which is a part of the European post-graduate educational scheme. Experts from Europe, the Middle East, and the Republic of South Africa took part in the course.
Cooperation with ETH Zurich and international course attendants is a great professional recognition of the Faculty of Pharmacy, which in its turn contributes to a better visibility of the University of Ljubljana.
Coordinator: Assist. Prof. Tanja Gmeiner Stopar, Ph.D.

Cooperative European Medicines Development Course – CEMDC)

In cooperation with professionals in the fields of pharmaceutical industry and regulatory bodies, we organised the second module of European interuniversity post-graduate Non-clinical pharmaceutical and early clinical development course. This is part of the harmonised programme PharmaTrain.

The educational event was attended by professionals from Slovenia, Hungary, Croatia, and United Kingdom.
Coordinator: Prof. Irena Mlinarič-Raščan, M. Pharm., Ph.D.

European Researchers' Night at the Faculty of Pharmacy was organised with the purpose to popularise science among the primary-school children. We organised short workshops and demonstration experiments and in this way introduce the Faculty of Pharmacy.

DOSEŽKI NA PODROČJU ŠPORTA

Študenti in študentke Fakultete za farmacijo so v študijskem letu 2016/17 ponovno nanizali nekaj izjemnih uspehov na tekmovanjih Univerze v Ljubljani. Za največje presenečenje so poskrbele košarkarice, ki so se uvrstile v finale univerzitetne lige, prav tako so odbojkarice zasluženo usvojile bron.

Uvrstitve športnikov in športnic UL FFA v letošnjem študijskem letu:

SPORTS ACHIEVEMENTS

In the 2016/17 academic year, the Faculty of Pharmacy's athletes have once again achieved some great results in the University of Ljubljana's competitions. The most pleasantly surprising was the female basketball team, which got to the University league finals. The female volleyball team deservedly won the bronze.

Results of Faculty of Pharmacy's athletes in the 2016/17 academic year:

UNIV. KOŠARKARSKA LIGA / UNIVERSITY BASKETBALL LEAGUE

študentke, 2. mesto: MVP – Urša Žibert / female team, 2nd place: MVP – Urša Žibert

Urša Žibert, Maja Jakobčič, Sanja Martinovič, Nuša Pernat, Anja Mihelčič, Maša Dolenc, Ana Ambruš, Nika Pokorn, Neža Kugonič, Maša Strle, Tina Kerčmar, Katarina Rede

UNIV. ODBOJKARSKA LIGA / UNIVERSITY VOLLEYBALL LEAGUE

študentke, 3. mesto / female team, 3rd place:

Mojca Novak, Anja Pavlovič, Mima Pruš, Klara Tavčar, Ana Marija Ahlin, Tanja Podvršnik, Sara Vidovič, Erma Nukić, Katarina Mehli, Tia Grgičevič, Veronika Klančič, Tjaša Kovačič, Enita Skenderovič, Špela Prijo, Urša Pratneker

OSTALE UVRSTITVE ŠPORTNIKOV IN ŠPORTNIC UL FFA / OTHER RESULTS OF THE FACULTY OF PHARMACY'S ATHLETES

UNIV. ODBOJKARSKA LIGA / UNIVERSITY VOLLEYBALL LEAGUE

študenti, 4. mesto / male team, 4th place

UNIV. FUTSAL LIGA / UNIVERSITY FUTSAL LEAGUE

študenti, 9. do 20. mesto / male team, places 9-20

UNIV. KOŠARKARSKA LIGA / UNIVERSITY BASKETBALL LEAGUE

študenti, 19. mesto / male team, 19th place

ROKOMET / HANDBALL

študenti, 5–8. mesto / male team, places 5-8

ODBOJKA NA MIVKI / BEACH VOLLEYBALL

1. in 3. mesto / 1st place and 3rd place

NAMIZNI TENIS / TABLE TENNIS

1. in 4. mesto ter 2. mesto pari / 1st and 4th place; 2nd place in pairs

CURLING / CURLING

3. mesto / 3rd place

DRUŽABNI PLES / SOCIAL DANCE

2. mesto / 2nd place

ŠAH / CHESS

3. in 4. mesto: ekipno UL FFA / 3rd and 4th place: Faculty of Pharmacy's team

ATLETIKA / ATHLETICS

1. mesto: tek na 100 m / 1st place: 100-metre dash
1. mesto: tek na 400 m / 1st place: 400-metre dash
1. mesto: tek na 800 m / 1st place: 800-metre run

STRELSTVO / SHOOTING

3. mesto / 3rd place

ŠTAFETNI TEK UL / UNIVERSITY OF LJUBLJANA RELAY RACE

3. mesto / 3rd place

3 Ponosni smo – priznanja in nagrade
We are proud of – awards and prizes

PONOSNI SMO – PRIZNANJA IN NAGRADE

Prof. dr. Hans-Uwe Simon, častni doktor Univerze v Ljubljani

Naziv častni doktor Univerze v Ljubljani (doctor honoris causa Universitatis Labacensis) podeljuje Univerza odličnim slovenskim in tujim posameznikom iz sveta znanosti in umetnosti za izjemne dosežke. V letu 2017 je UL podelila 2 takšna naziva.

Prof. dr. Hans-Uwe Simon, dr. med., je profesor farmakologije in dekan Medicinske fakultete Univerze v Bernu ter direktor Inštituta za farmakologijo na Inselspital v Bernu. Priznan je kot vodilni strokovnjak na področju celične smrti, apoptoze in avtofagije eozinofilcev in s tem povezanih patologij. Rezultate svojih raziskav objavlja v najprestižnejših revijah, tudi v Nature in Science. Zaradi izjemnih rezultatov je bil sprejet v znanstveni akademiji, in sicer v German National Academy of Sciences Leopoldina in Swiss Academy of Medical Sciences.

WE ARE PROUD OF - AWARDS AND PRIZES

Prof. Dr. Hans-Uwe Simon, MD, Ph.D., Dr. h. c., the Honorary Doctor.

The title Doctor honoris causa Universitatis Labacensis is awarded to excellent Slovenian and foreign individuals from the world of science and art for their outstanding achievements. In 2017, the University of Ljubljana awarded two such titles.

Prof. Dr. Hans-Uwe Simon, is a Professor of Pharmacology and the Dean of the Faculty of Medicine of the University of Bern, Switzerland, and the Director of the Institute of Pharmacology at Inselspital in Bern. He is the leading expert in the fields of cell death, apoptosis, and eosinophil autophagy and the pathologies related to it. The results of his research have been published in the most prestigious journals, including Nature and Science groups. For his outstanding achievements, he was accepted into two science academies, namely the German National Academy of Sciences Leopoldina and the Swiss Academy of Medical Sciences.

Prof. dr. Hans-Uwe Simon

Prof. dr. Stanislav Gobec je dobitnik Preglove nagrade

Nagrada, ki je poimenovana po kemiku in Nobelovem nagrajencu slovenskega rodu Frideriku Preglu (1869–1930), predstavlja priznanje za vrhunske dosežke na področju kemije in sorodnih ved.

Prof. dr. Danijel Kikelj je prejemnik zlate plakete UL

Zlato plaketo, ki jo na Univerzi v Ljubljani podeljujejo za izjemne zasluge pri razvijanju znanstvenega, pedagoškega ali umetniškega ustvarjanja in za krepitev ugleda univerze, je letos prejelo 16 profesorjev Univerze v Ljubljani.

Doc. dr. Izidor Sosič je prejemnik svečane listine mladim visokošolskim učiteljem in sodelavcem UL

Univerza v Ljubljani je podelila osem svečanih listin za izjemne pedagoške in raziskovalne dosežke mladim visokošolskim učiteljem in sodelavcem.

Rektorjeva nagrada za leto 2017, 2. mesto: Mikro oblagalnik delcev (μFBD) – granul, pelet in mini tablet

Fakulteta za farmacijo je vnovič potrdila svojo inovativno naravnanost in je del zmagovalnih inovacij.

V projektni ekipi iz UL FFA sodelujejo: izr. prof. dr. Rok Dreu, dr. Rok Šibanc, Gregor Ratek in prof. dr. Stanko Srčič.

Krkine nagrade

Na podelitvi 47. Krkinih nagrad sta veliko Krkino nagrado za raziskovalno delo prejela dr. Damijan Knez in dr. Jernej Luzar. Študentje UL FFA so prejeli še 11 Krkinih nagrad za dodiplomske in podiplomske raziskovalne naloge.

Novartisov regionalni BioCamp

Mitja Pohlen s Katedre za farmacevtsko tehnologijo, UL FFA, je postal eden izmed treh individualnih zmagovalcev, medtem ko sta bila Katja Olenik in Andrej Šterman del zmagovalne ekipe.

Prof. Stanislav Gobec, M. Pharm., Ph.D. was given the Pregl Award

The Award named after a chemist and Nobel Prize winner of Slovenian origins, Friderik Pregl (1869 – 1930), is a recognition of outstanding achievements in the fields of basic and applied research in chemistry and related sciences.

Prof. Danijel Kikelj, M. Pharm., Ph.D. was awarded the University of Ljubljana's Golden Plaque

In 2017, 16 Professors of the University of Ljubljana received the Golden Plaque, which is awarded by the University of Ljubljana for exceptional merits in the development of scientific, pedagogical, and artistic work and for strengthening the University's reputation.

Assist. Prof. Izidor Sosič, M. Pharm., Ph.D. was awarded the solemn charter for young higher-education teachers and University of Ljubljana's co-workers

The University of Ljubljana awarded eight solemn charters for outstanding pedagogical and research achievements to young higher-education teachers and its co-workers.

The 2017 Rector's Award; 2nd place: Micro Coating Machine for particles – granules, pellets, and mini pills

The Faculty of Pharmacy once more proved its innovation-oriented approach by developing one of the winning innovations. Assoc. Prof. Rok Dreu, Rok Šibanc, Ph.D., Gregor Ratek, and Prof. Stanko Srčič, M. Pharm., Ph.D. were representing UL FFA.

Krka Awards

At the 47th Krka Awards ceremony Assist. Damijan Knez, M. Pharm, Ph.D. and Jernej Luzar, M. Pharm., Ph.D. were given the Krka Award for their research work. FFA students were given 11 additional Krka Awards for their undergraduate and postgraduate research work.

Novartis regional BioCamp

Mitja Pohlen of the Department of Pharmaceutical Technology, UL FFA, was one of the three individual winners, while Katja Olenik and Andrej Šterman were part of the winning team.

NOVOIZVOLJENI REDNI PROFESORJI UL FFA V LETU 2017

Prof. dr. MARKO ANDERLUH – redni profesor za področje farmacevtska kemija

Raziskovalno delovanje prof. dr. Marka Anderluha je tematsko zelo široko in pokriva znanstvena področja farmacevtske kemije, molekulskega modeliranja, organske sinteze, analize zdravil in načrtovanja in izvedbe bioloških testov *in vitro*. Ožja področja, ki jih proučuje, so: načrtovanje in sinteza molekulskih prob in glikomimetičnih spojin z delovanjem na različne biološke tarče, racionalno načrtovanje in sinteza novih biološko aktivnih spojin z zaviralnim delovanjem na različne encime in modulatornim delovanjem na različne receptorje. Svoje raziskovalno delo dobro izkorišča tudi pri vodenju projektov, financiranih s strani EU, ARRS, Ministrstva za izobraževanje, znanost in šport ter industrije. Močno je vpleten tudi v organizacijo mednarodnih ter domačih simpozijev.

Prof. dr. IZTOK GRABNAR – redni profesor za področje biofarmacija in farmakokinetika

Raziskovalno delo prof. dr. Iztok Grabnarja je povezano s farmakometriko, predvsem z matematičnim modeliranjem in simulacijo biomedicinskih sistemov in biostatistiko ter aplikacijo teh metod v raziskave na področju farmakokinetike, biofarmacije, klinične farmakologije in farmacevtske tehnologije. Področje raziskovalnega dela je analiza procesov absorpcije, distribucije, metabolizma in eliminacije zdravil in razvoj farmakokinetično-farmakodinamičnih modelov za analizo predkliničnih in kliničnih raziskav zdravil. Ti omogočajo napovedovanje terapevtskih in toksičnih učinkov zdravil, iskanje vzrokov za njihovo variabilnost in predstavljajo osnovo tako za načrtovanje individualnih režimov farmakoterapije kot tudi razvoj novih zdravil. V zadnjem času se ukvarja predvsem z nelinearnimi modeli mešanih učinkov in razvojem popula-

NEWLY-ELECTED FULL PROFESSORS AT THE FACULTY OF PHARMACY IN 2017

Prof. MARKO ANDERLUH, M. Pharm., Ph. D. – Full Professor for the field of Pharmaceutical Chemistry

Thematically, the research activities of Prof. Marko Anderluh, M. Pharm., Ph.D. are very wide and cover the scientific areas of Pharmaceutical Chemistry, molecular modelling, organic synthesis, drug analysis, and planning and execution of *in vitro* biological tests. Narrower fields of his studies are: planning and synthesising molecular probes and glycomimetic compounds that act on various biological targets, and rational planning and synthesising new, biologically-active compounds that inhibit various enzymes and modulate various receptors. He also makes a good use of his research work while leading projects that are financed by either the EU, Slovenian Research Agency (ARRS), Slovenian Ministry of Education, Science and Sport, or the industry. He is also very much involved in the organisation of international and domestic symposiums.

Prof. IZTOK GRABNAR, M. Pharm., Ph.D. – Full Professor for the field of Biopharmacy and Pharmacokinetics

The research work of Prof. Iztok Grabnar, M. Pharm., Ph.D. is connected to pharmacometrics, especially to mathematical modelling and simulating biomedical systems and biostatics, and the application of these methods into research in the fields of pharmacokinetics, biopharmacy, clinical pharmacology, and pharmaceutical technology. The areas of his research work are the absorption process analysis, distribution, metabolism, and elimination of medicines, and the development of pharmacokinetic-pharmacodynamic models for the analysis of pre-clinical and clinical research of medicines. The results of his research enable predictions of therapeutic and toxic effects of medicines, the search for reasons for their variability,

cijskih farmakokinetičnih modelov. Na tem področju se je izobraževal na različnih inštitucijah v ZDA, Franciji in Nemčiji. Svoje raziskovalno delo dobro izkorišča tudi pri vodenju bilateralnih in industrijskih projektov, sodeluje pa tudi pri organizaciji znanstvenih srečanj.

Prof. dr. LUCIJA PETERLIN MAŠIČ – redna profesorica za področje farmacevtska kemija

Prof. dr. Lucija Peterlin Mašič je aktivna na dveh raziskovalnih področjih, farmacevtski kemiji in toksikološki kemiji. Na prvem raziskuje, kako zaobiti rezistenco bakterijskih in rakavih celic, odkriva nove protibakterijske učinkovine, ki bi delovale na nove tarče, z osredotočanjem na načrtovanje in sintezo novih zaviralcev encima DNA giraze B, raziskuje nove modulatorje oz. antagoniste receptorja PXR. Na področju toksikološke kemije se ukvarja z napovedovanjem toksičnosti, nastanka reaktivnih metabolitov ter vpeljavo teh orodij v začetne stopnje razvoja novih učinkovin. Poleg tega raziskuje mehanizme toksičnega delovanja hormonskih motilcev, z različnimi *in vitro* metodami preučuje in raziskuje mehanizme toksičnega delovanja analogov bisfenola A in novejših bromiranih zaviralcev gorenja ter vpliv metabolitov hormonskih motilcev na estrogeno, androgeno glukokortikoidno in tiroidno delovanje. Svoje raziskovalno delo dobro izkorišča tudi za delo v industrijskem okolju, tako v tujini kot doma, ter vodenju, koordiniranju in sodelovanju v evropskih projektih. Pomembno vlogo ima pri organizaciji mednarodnih kongresov, delu v različnih komisijah, vodstvenih funkcijah in članstvih v mednarodnih združenjih.

and present a basis for planning individual pharmacotherapeutic regimens, as well as for development of new medicines. Lately, he has been mostly dealing with non-linear mixed-effects models and development of population pharmacokinetic models, which are the areas he has studied at various institutions in the USA, France, and Germany. He also makes a good use of his research work while leading bilateral and industrial projects; he also cooperates in the organisation of scientific meetings.

Prof. LUCIJA PETERLIN MAŠIČ, M. Pharm, Ph.D. – Full Professor for the field of Pharmaceutical Chemistry

Prof. Lucija Peterlin Mašič, M. Pharm., Ph.D. is active in two research fields of research – pharmaceutical chemistry and toxicological chemistry. In the field of pharmaceutical chemistry, she is investigating the ways to bypass the resistance of bacterial and cancer cells, discovering new anti-bacterial agents to act on new targets by focusing on planning and synthesising new inhibitors of the DNA gyrase B enzyme, and researching new modulators or antagonists of the PXR receptor. In the field of toxicological chemistry, she deals with predicting the toxicity and creation of reactive metabolites, and the introduction of these tools into the initial stages of new active ingredients development. She also researches the toxic mechanisms of endocrine disruptors. Through various *in vitro* methods, she studies and researches the toxic mechanisms of bisphenol A analogues and newer brominated flame retardants, and also the effects of endocrine disruptor metabolites on the estrogenic, androgynous glucocorticoid, and thyroid functions. She also makes a good use of her research work in the industrial environment both at home and abroad and while leading, coordinating, and cooperates in European projects. She has an important role in organising international congresses and working in various commissions, leading functions and international associations.

SLAVIMO ZNANOST – RAZISKOVALNI DAN UL FFA

Nagrade UL FFA smo podelili na slavnostnem dogodku. Raziskovalni dan organiziramo že vrsto let z namenom počastiti dosežke svojih članov. Ti izjemni dosežki so seveda plod trdega dela posameznika, raziskovalnega ali organizacijskega, njegove predanosti, neusahljive želje po odkrivanju in znanju ter želje po izboljšanju prepoznavnosti in kakovosti delovanja fakultete.

Priznanje UL FFA za življenjsko delo je prejela prof. dr. Julijana Kristl

Prof. dr. Julijana Kristl je redna profesorica za področje farmacevtske tehnologije in biofarmacije. Bila je dolgoletna predstojnica Katedre za farmacevtsko tehnologijo, dekanja Fakultete za farmacijo in prorektorica za izobraževalno dejavnost na Univerzi v Ljubljani, predsednica upravnega odbora fakultete in Krke d. d., članica Sveta za znanost in tehnologijo, Zdravstvenega sveta in članica številnih strokovnih teles. S svojimi idejami in delom je pripomogla k razvoju študijskih programov in kulture kakovosti. Raziskovalno delo prof. dr. Julijane Kristl je usmerjeno v proučevanje sodobnih nanodostavnih sistemov, nanozdravil in proučevanje njihovega vpliva na biološke sisteme. S svojo močno vpetostjo v slovenski in evropski znanstveni in strokovni prostor širi ugled Univerze v Ljubljani in Fakultete za farmacijo.

Priznanje UL FFA za življenjsko delo je prejela gospa Stanislava Menard

Gospa Stanislava Menard, univerzitetna diplomirana pravnica, tajnica Fakultete za farmacijo, je s svojim doslednim delovanjem znatno prispevala k temu, da je fakulteta ena od najbolj organizacijsko in prostorsko urejenih članic Univerze v Ljubljani, ter vzpostavila sistem za oblikovanje strateške kadrovske politike. Kot članica ožjega vodstvenega tima dekanov in organov

WE CELEBRATE SCIENCE – FACULTY OF PHARMACY'S RESEARCH DAY

The Faculty of Pharmacy Awards were presented at a celebration event. We have organised the Research Day for nuber of times, to honour the achievements of our coworkers, partners and students in order to celebrate their devotion, desire for discovery and knowledge, and their contribution to increase the Faculty's recognition.

The Faculty of Pharmacy Lifetime Achievement Award was presented to Prof. Julijana Kristl, M. Pharm., Ph.D.

Prof. Julijana Kristl, is a full Professor of Pharmaceutical Technology and Biopharmacy. For many years, she had been the Head of the Department of Pharmaceutical Technology, Dean of the Faculty of Pharmacy, Deputy Rector for education of the University of Ljubljana, President of the Faculty's Managing Board, member of Krka d.d. Board of Governors, member of the Slovenian Council for Science and Technology, member of the Slovenian Health Council, and member of other expert bodies. Her work and ideas contributed to the development of study programmes and the culture of quality assurance. Her research work is focused on studying modern nanodelivery systems and nanomedicines, and their influence on biological systems. Her strong integration into Slovenian and European scientific and professional areas is strengthening the reputation of the University of Ljubljana as well as the Faculty of Pharmacy.

The Faculty of Pharmacy Lifetime Achievement Award was presented to Ms. Stanislava Menard, L.L.B.

With her consistent activities, Ms. Stanislava Menard, L.L.B., Secretary of Faculty of Pharmacy has significantly contributed to the Faculty being one of the most organised members of the University of Ljubljana. She has also established a system for strategic human-resource policy making. As a member of the Dean's forum and Faculty's Organisational Bodies, she continually ensured quality professional support by her own work,and by coordinating the work of staff

Prof. dr. Julijana Kristl

Ga. Stanislava Menard

fakultete kontinuirano zagotavlja kvalitetno strokovno podporo tako z lastnim delom kot tudi z delom služb znotraj tajništva, ki ga vodi. Pri presoji odločitev in ukrepanju je pozorna na legalnost, na legitimnost kot tudi na racionalnost, ob tem pa hkrati tudi na socialne pravice zaposlenih. Pri implementaciji dogovorjenih načrtov je vztrajna in prepričljiva, kar se odraža v urejenem in dobrem delovanju fakultete.

Priznanje UL FFA za življenjsko delo je prejel prof. dr. Aleš Mrhar

Prof. dr. Aleš Mrhar je redni profesor za področje farmacevtske tehnologije in biofarmacije, prvi dekan samostojne Fakultete za farmacijo, dolgoletni predstojnik Katedre za biofarmacijo in farmakokinetiko. Je mednarodno priznan strokovnjak, izredno pronicljiv znanstvenik na področjih biofarmacije, farmakokinetike in klinične farmacije. Prof. dr. Aleš Mrhar ima izredne zasluge in uspehe pri vzgojno-izobraževalnem in mentorskem delu. Fakulteti za farmacijo je dodal nov in izviren prispevek ter zagotavljal avtonomen razvoj farmacevtskih znanosti na Univerzi v Ljubljani.

within the Secretariat. When making important decisions and taking actions, she pays attention to legality, legitimacy, rationality, as well as to the social rights of the employees. When implementing the agreed-upon plans, she is persistent and persuasive, which then reflects in the organised and high quality work.

The Faculty of Pharmacy Lifetime Achievement Award was presented to Prof. Aleš Mrhar, M. Pharm., Ph.D.

Prof. Aleš Mrhar, is a full Professor for the field of Pharmaceutical Technology and Biopharmacy, first Dean of the independent Faculty of Pharmacy, the long-standing head of the Department of Biopharmacy and Pharmacokinetics, and an internationally renowned expert. He is an insightful scientist in the fields of Biopharmacy, Pharmacokinetics, and Clinical Pharmacy. Prof. Aleš Mrhar, has achieved distinguished results in educational, pedagogical and mentor work. He gave a new original contribution to the Faculty of Pharmacy and has always worked towards ensuring an autonomous development of pharmaceutical sciences at the University of Ljubljana.

Prof. dr. Aleš Mrhar

Asist. dr. Janja Zupan

Priznanje UL FFA za izjemne rezultate pri delu je prejela asist. dr. Janja Zupan

Asist. dr. Janja Zupan je asistentka za področje klinične biokemije in laboratorijske biomedicine. V času podoktorskega izobraževanja na Univerzi v Aberdeenu je v raziskovalni skupini prof. dr. De Barija dosegla izvrstne uspehe. V deljenem prvem soavtorstvu je objavila znanstveni članek v prestižni reviji Nature Communications. Poroča o identifikaciji nove populacije mezenhimskih matičnih celic iz sinovijske ovojnice s sposobnostjo regeneracije hrustanca in sklepnih struktur. Odkritje je bilo deležno široke medijske pozornosti najprej v Veliki Britaniji, pozneje pa tudi v Sloveniji. Z nastopi v medijih in podajanjem rezultatov bazičnih raziskav širši javnosti je asist. dr. Janja Zupan promovirala tudi matično Fakulteto za farmacijo, kjer nadaljuje z raziskovalnim delom.

The Faculty of Pharmacy Award for outstanding achievements was presented to Assist. Janja Zupan, M. Pharm., Ph.D.

Assist. Janja Zupan, M. Pharm., Ph.D. is an assistant in the field of Biochemistry and Laboratory Biomedicine. During her post-doctoral study at the University of Aberdeen, she achieved outstanding results in the research group led by Prof. Dr. De Bari, MD, Ph.D. She was a co-author of a scientific article published in the prestigious journal Nature Communications. It reports on the identification of a new population of synovial mesenchymal stem cells with the ability to regenerate cartilage and joint structures. British, and later Slovenian, media paid a lot of attention to the discovery. By appearing in media and by sharing the results of basic research to the wider public, Assist. Janja Zupan, M. Pharm., Ph.D. has also promoted her parent Faculty of Pharmacy, where she is carrying on with her research work.

Prof. dr. Borut Božič

Dr. Darja Ferčej Temeljotov

Priznanje UL FFA za izjemne rezultate pri delu je prejel prof. dr. Borut Božič

Prof. dr. Borut Božič je redni profesor za področje klinične biokemije in laboratorijske biomedicine. V preteklih letih je bil prodekan in dekan Fakultete za farmacijo, trenutno je predsednik upravnega odbora Univerze v Ljubljani. Začetek njegovega mandata dekanovanja je sovpadal z gospodarsko, politično in finančno krizo, na kar je znal odgovoriti s sprejetjem ne vedno priljubljenih, a uspešnih ukrepov. V času dekanovanja je s sistematičnim in predanim delom skrbel za ugled, zakonito poslovanje in dobre odnose na Fakulteti za farmacijo. Kot dober gospodar je uspešno reševal izzive, povezane s prostorsko problematiko. Na raziskovalnem področju je spodbujal interdisciplinarne pristope, mednarodno usmerjenost raziskovalcev in študentov in sodelovanje z gospodarstvom.

The Faculty of Pharmacy Award for outstanding work achievements was presented to Prof. Borut Božič, M. Pharm., Ph.D., EuSpLM

Prof. Borut Božič, M. Pharm., Ph.D., EuSpLM is a full Professor in the field of Clinical Biochemistry and Laboratory Biomedicine. In the past years, he was a Vice-Dean and the Dean of the Faculty of Pharmacy. He is the President of University of Ljubljana's Management Board. The beginning of his term as Dean coincided with the economic, political, and financial crises, to which he was able to respond with measures that were not always popular, but successful nevertheless. During his Deanship, he was systematic and devoted to his work, which helped the Faculty to build the reputation, and sucessful business conduct, aswell as to maintain its good relations among the students and employees. Being a good manager, he successfully tackled challenges related to premises. In the area of research, he encouraged interdisciplinary approaches, international orientation of researchers and students, and cooperation with the industry.

Priznanje UL FFA za uspešno sodelovanje s fakulteto je prejela dr. Darja Ferčej Temeljotov

Dr. Darja Ferčej Temeljotov je doktorirala s področja farmacevtske kemije in je zaposlena v Leku d. d. Deluje kot promotorka iskanja novih rešitev povezovanja akademske sfere in farmacevtske industrije. Je vabljena predavateljica in predsednica organizacijskega odbora regijskega BioCampa. Delovanje dr. Ferčej Temeljotov je pustilo močan pečat na mednarodno vpetost Fakultete za farmacijo, saj se je že kot študentka vključila v evropsko in svetovno združenje študentov farmacije ter omogočila generacijam študentov, da so delo nadgrajevali in v mednarodnem prostoru oblikovali podobo študenta in diplomanta Fakultete za farmacijo.

The Faculty of Pharmacy Award for successful co-operation was presented to Darja Ferčej Temeljotov, M. Pharm., Ph.D.

Darja Ferčej Temeljotov, M. Pharm., Ph.D. earned her Doctoral degree in the field of Pharmaceutical Chemistry and currently works at Lek d.d. She promotes new solutions for colaboration of academic area with the pharmaceutical industry. She is the guest lecturer and the President of the regional BioCamp's Organisational Board. Darja Ferčej Temeljotov's work has made a great impact on the Faculty of Pharmacy's international integration. By joining the European Pharmaceutical Students' Association (EPSA) and International Pharmaceutical Students' Federation (IPSF) while a student, she has made it possible for generations of students to build upon the previous work and shape the image of Faculty of Pharmacy's students and graduates.

PREJEMNIKI DEKANOVIH NAGRAD

Dekanove nagrade se podelijo študentom, raziskovalcem ali doktorandom Fakultete za farmacijo, ki so v preteklem obdobju kot prvi ali vodilni avtor objavili delo v reviji z visokim faktorjem vpliva ali v reviji, ki sodi v zgornjih 10 odstotkov revij s posameznega področja in s tem doprinesli k razvoju farmacevtske znanosti in stroke.

Asist. dr. Marko Jukič za znanstveni članek z naslovom: »Načrtovanje zaviralcev DNA giraze B s piperazinskim, piperidinskim in ciklohesilnim osnovnim skeletom«, objavljen v reviji European Journal of Medicinal Chemistry. Mentor: prof. dr. Marko Anderluh

Dr. Ivana Klopčič za znanstveni članek z naslovom: »Hormonska aktivnost izbranih kozmetičnih sestavin in njihovih mešanic«, objavljen v reviji Toxicological sciences. Mentorica: prof. dr. Marija Sollner Dolenc

Asist. dr. Urban Košak za znanstveni članek z naslovom: »Razvoj reverzibilnega zaviralca butirilholin-esteraze s farmakološkim delovanjem *in vivo*«, objavljen v reviji Scientific reports. Mentor: prof. dr. Stanislav Gobec

Asist. Janja Mirtič za znanstveni članek z naslovom: »Raziskovanje nastanka polielektrolitnih nanodelcev na primeru kompleksiranja alginata z različnimi vrstami premreževal«, objavljen v reviji Carbohydrate polymers. Mentorica: prof. dr. Julijana Kristl

Doc. dr. Urša Pečar Fonović za znanstveni članek z naslovom: »Novi inhibitorji katepsina X v raziskavah rakavih in nevrodegenerativnih bolezni«, objavljen v reviji Scientific reports. Mentor: prof. dr. Janko Kos

DEAN'S AWARD WINNERS

The Dean's Award is given to those Faculty of Pharmacy's students, researchers, and Doctors, who have in the recent period authored or co-authored a publication in a high-impact journal, or in a journal that belongs to the top 10% of journals in its respective field. By doing so, the awardees contribute to the development of the Pharmaceutical science and profession.

Assist. Prof. Marko Jukič, M. Pharm., Ph.D., for the scientific article "Planning DNA gyrase B inhibitors with piperazine, piperidine, and cyclohexyl structures," published in European Journal of Medicinal Chemistry. Mentor: Prof. Marko Anderluh, M. Pharm., Ph.D.

Ivana Klopčič, M. Pharm, Ph.D., for the scientific article "Endocrine Activity of AVB, 2MR, BHA, and Their Mixtures" published in Toxicological Sciences. Mentor: Prof. Marija Sollner Dolenc, M. Pharm., Ph.D.

Assist. Urban Košak, M. Pharm., Ph.D., for the scientific article "Development of an in-vivo active reversible butyrylcholinesterase inhibitor" published in Scientific Reports. Mentor: Prof. Stanislav Gobec, M. Pharm., Ph.D.

Assist. Janja Mirtič, M. Pharm., for the scientific article "Influence of different classes of crosslinkers on alginate polyelectrolyte nanoparticle formation, thermodynamics and characteristics" published in Carbohydrate Polymers. Mentor: Prof. Julijana Kristl, M. Pharm., Ph.D.

Assist. Prof. Urša Pečar Fonović, M. Pharm., Ph.D., for the scientific article "Identification and characterization of the novel reversible and selective cathepsin X inhibitors" published in Scientific Reports. Mentor: Prof. Janko Kos, M. Pharm., Ph.D.

PREŠERNOVA NAGRADA UNIVERZE V LJUBLJANI

Anita Kotar (mentor: Marko Anderluh, somentor: Janez Plavec): Študij interakcij ligandov receptorja DC-SIGN

FAKULTETNE PREŠERNOVE NAGRADE

Rok Barle (mentor Tomaž Vovk, somentor Matej Dobravc Verbič): Urejenost s kemoterapijo povzročene slabosti in bruhanja pri bolnikih z gastrointestinalnimi tumorji

Katarina Nemec (mentorica: prof. dr. Irena Mlinarič-Raščan, somentorica: Alenka Šmid): Preučevanja vloge prostaglandinskega receptorja EP4 pri bolnikih s kronično limfocitno levkemijo

Nastja Novak (mentorica Petra Kocbek, somentor Aleš Lapanje): Izolacija in karakterizacija bakterij z antimikrobnim učinkom proti bakteriji Aggregatibacter actinomycetemcomitans

Eva Srečnik (mentor Robert Roškar): Vrednotenje vsebnosti in stabilnosti lipofilnih vitaminov in koencima Q10 v zdravilih in prehranskih dopolnilih z metodo tekočinske kromatografije visoke ločljivosti

Matic Zakotnik (mentor Robert Roškar): Razvoj novega pristopa za ekstrakcijo izbranih zdravilnih učinkovin iz vodnih vzorcev na osnovi sorptivnega mehanizma

UNIVERSITY OF LJUBLJANA'S PREŠEREN AWARDS

Anita Kotar, M. Pharm. (Mentor: Prof. Marko Anderluh, M. Pharm., Ph.D.; Co-mentor: Prof. Janez Plavec, M. Sc., Ph.D.): STD NMR and molecular modelling insights into interaction of novel mannose-based ligands with DC-SIGN

FACULTY OF PHARMACY'S PREŠEREN AWARDS

Rok Barle, M. Pharm. (Mentor: Assoc. Prof. Tomaž Vovk, M. Pharm., Ph.D.; Co-mentor: Matej Dobravc Verbič, M. Pharm, Ph.D.): Control of chemotherapy-induced nausea and vomiting in patients with gastrointestinal tumours

Katarina Nemec, M. Pharm. (Mentor: Prof. Irena Mlinarič-Raščan, M. Pharm., Ph.D.; Co-mentor: Assist. Alenka Šmid, M. Pharm, Ph.D.): The role of the prostaglandin EP4 receptor in patients with chronic lymphocytic leukemia

Nastja Novak, M. Pharm. (Mentor: Assoc. Prof. Petra Kocbek, M. Pharm., Ph.D.; Co-mentor: Prof. Aleš Lapanje, Ph.D.): Isolation and characterization of bacteria with antimicrobial effect against bacteria Aggregatibacter actinomycetemcomitans

Eva Srečnik, M. Pharm. (Mentor: Assoc. Prof. Robert Roškar, M. Pharm., Ph.D.): Evaluation of the content and stability of lipophilic vitamins and coenzyme Q10 in medicines and nutrition supplements by high performance liquid chromatography

Matic Zakotnik, M. Pharm. (Mentor: Assoc. Prof. Robert Roškar, M. Pharm., Ph.D.): Development of a new stir-bar sorptive extraction approach for extraction of pharmaceutical compounds from water samples

PRIZNANJA FAKULTETE

Priznanja fakultete prejmejo absolventi, ki so v času študija tekoče napredovali ter pri vseh študijskih obveznostih (razen diplome), opravljenih najkasneje v obdobju enega leta od vpisa absolventskega staža, dosegli povprečno oceno 9,00 ali več.

Enoviti magistrski študij Farmacija

Neža Alič
Damjan Avsec
Andrej Grobin
Karmen Hajšek
Petra Kapš
Doroteja Novak
Tina Vida Plavec
Emanuela Senjor
Andrej Šterman
Ana Temeljotov
Danijel Videc
Matej Zore
Maja Zupančič

Magistrski študijski program Industrijska farmacija

Timeja Planinšek Parfant

Magistrski študijski program Laboratorijska biomedicina

Marjetka Glavič
Tomaž Kajtna
Tjaša Pavlin

Univerzitetni študijski program Kozmetologija

Anja Hriberšek
Blažka Kolenc
Tonja Petrovič Fras
Katja Schoss

Univerzitetni študijski program Laboratorijska biomedicina

Klementina Črepinšek
Maruša Koderman
Blaž Mencinger

FACULTY OF PHARMACY AWARDS

Faculty of Pharmacy Awards are given to those graduates who have shown significant progress and completed all their study obligations (except graduation) with an average mark of 9.00 (or more) within one year after enrolling into the extra year of studying.

Uniform Master's study programme of Pharmacy:

Neža Alič
Damjan Avsec
Andrej Grobin
Karmen Hajšek
Petra Kapš
Doroteja Novak
Tina Vida Plavec
Emanuela Senjor
Andrej Šterman
Ana Temeljotov
Danijel Videc
Matej Zore
Maja Zupančič

Master's study programme of Industrial Pharmacy:

Timeja Planinšek Parfant

Master's study programme of Laboratory Biomedicine:

Marjetka Glavič
Tomaž Kajtna
Tjaša Pavlin

University study programme of Cosmetology:

Anja Hriberšek
Blažka Kolenc
Tonja Petrovič Fras
Katja Schoss

University study programme of Laboratory Biomedicine:

Klementina Črepinšek
Maruša Koderman
Blaž Mencinger

4 Seznam diplomantov
List of graduates

DIPLOMANTI NA FAKULTETI ZA FARMACIJO V LETU 2017
2017 GRADUATES AT THE FACULTY OF PHARMACY

UNIVERZITETNI ŠTUDIJSKI PROGRAM KOZMETOLOGIJA

UNIVERSITY STUDY PROGRAMME OF COSMETOLOGY

Bahun Nina
Balažic Martina
Bobnar Aleksandra
Buchmeister Julija
Čelhar Ana
Hrvatin Katarina
Jeknić Nina
Jeras Sandra
Jus Amadeja
Kalčič Špela
Kastelic Irena
Kolenc Blažka
Koltai Selina
Koren Špela
Kovačič Ana
Kramer Nataša
Lunar Nastja
Mervič Kristina
Minova Jasmina
Pečarič Strnad Tina
Perhavec Ema
Petrovič Kristina
Petrovič Fras Tonja
Pintarič Eva
Pistotnik Anja
Požek Kity
Požun Tina
Racman Urška
Rijavec Anja
Rozina Edita
Rusjan Petra
Schoss Katja
Skubic Tadeja
Tatić Maša
Triler Karin Veronika

ENOVITI MAGISTRSKI ŠTUDIJSKI PROGRAM FARMACIJA

UNIFORM MASTER'S STUDY PROGRAMME OF PHARMACY

Avbelj Maja
Bratović Nika
Breznikar Jan
Brezovec Neža
Brunec Sara
Bučar Maruša
Bulc Janez Žan
Bunjevac Katarina
Cizej Matjaž
Čačilo Tina
Červek Miha
Deronjić Slađana
Dolinar Patricija
Dolinšek Bojan
Dolšak Ana
Donko Tadeja
Durcik Martina
Flisar Tanja
Frelih Tjaša
Gajšek Lucija
Gantar Kaja
Gorenc Katja
Gotar Nina
Grabrijan Katarina
Grosek Martin
Grutschreiber Peter
Guzelj Samo
Hrastar Janja
Hren Vita
Hribernik Nives
Islamovič Sara
Jamšek Anja
Jereb Rebeka
Jeromel Aljaž
Jošt Saša
Jug Vesna
Jug Špela
Jurkaš Vesna
Jursinovič Nastja
Kajtna Jacqueline
Kapus Nana
Keršmanc Nina Evelina
Keuschler Jan
Kitanović Tina
Klobučar Simona
Kojc Petra
Konda Tanja
Korat Špela
Kosmač Anita
Kosmač Ina

Kranjčec Suzana
Kresnik Anja
Krznarić Kristina
Kustec Leon
Lampret Ana
Landekar Nina
Lončarič Jernej
Majcen Mateja
Malec Katja
Malešič Nina
Markoja Uroš
Markovič Sara
Merc Natalija
Meško Marcela
Miklavec Nino
Miljević Dajana
Mirt Matic
Nartnik Aleš
Natek Tomaž
Nemec Katarina
Nikolić Nataša
Novak Tjaša
Novak Doroteja
Orehek Nina
Ozimič Nina
Peulić Aleksandra
Pisanec Gašper
Plavec Tina Vida
Plut Karin
Podgoršek Katja
Podlesek Simona
Povšič Lucija
Prah Alja
Pratneker Urša
Prodanović Tanja
Pucelj Ana
Puškar Emina
Račič Alja
Rakar Jure
Ratek Gregor
Ratek Odineja
Rede Katarina
Regner Žiga
Repas Jernej
Retuznik Eva
Rihter Jakob
Rožič Lucija
Rudež Sara
Rugel Maša
Sajko Kaja
Sajovic Ema Valentina
Selič Alja
Skok Diana
Slevec Peternel Neža
Srečnik Eva
Starič Maja
Starič Sabina
Stopinšek Mateja
Straus Janka
Šega Tjaša
Šenica Matevž
Šerčić Maja
Šrajner Luka
Šrot Luka
Štaus Matej
Štolfa Tjaša
Štukelj Jernej
Šušteršič Lucija
Tešić Sanja
Tonejc Monika
Trogar Urška
Ule Mojca
Urankar Metka
Urnaut Urška
Valenta Marina
Valter Maja
Varl Jerneja
Vasle Anže
Vene Kaja
Venišnik Katjuša
Vičič Špela
Vidic Linda
Vidmar Špela
Vouk Anja
Vrbanac Helena
Weingerl Samo
Weiss Matjaž
Zag Ági
Zajec Špela
Zavec Safran Tina
Zgaga Amadeja
Zrimšek Maša
Zupančič Maja
Žavbi Andrej
Žganc David
Žigart Nina
Županc Kaja
Žvanut Timotej

MAGISTRSKI ŠTUDIJSKI PROGRAM INDUSTRIJSKA FARMACIJA

MASTER'S STUDY PROGRAMME OF INDUSTRIAL PHARMACY

Avbelj Maja
Bukovec Mitja
Cemič Simona
Črešnik Maja
Gobec Petra
Kozoderc Klementina
Matjaž Domen
Mejač Anja
Mestnik Anja
Mežnar Mateja
Mustar Teja
Novak Nastja
Pečko Valerija
Pečovnik Barbara
Pirnat Vesna
Strnad Maja Ana
Štabuc Anže
Testen Mateja
Toporiš Janja

MAGISTRSKI ŠTUDIJSKI PROGRAM LABORATORIJSKA BIOMEDICINA

MASTER'S STUDY PROGRAMME OF LABORATORY BIOMEDICINE

Bizjan Marjeta
Bratuša Marsel
Čadež Ines
Čuk Vanja
Domajnko Valerija
Dravinec Špela
Kambič Maja
Kljun Tina
Kogovšek Rok
Kosmatin Katja
Kovačič Iva
Krašovec Vesna
Leskovar Janja
Lorbek Sara
Majcen Aupič Iris
Mekinda Urška
Metelko Daniela
Milojević Marko
Mitrović Sanja
Murkovič Maja
Potarić Natalija
Pušnik Žan
Rošker Patrik
Slabajna Nuša
Starič Katja
Škapin Ana
Šturm Andrej
Ukmar Matic
Vaupotič Mihaela
Zupanc Klavdija
Zupančič Meta
Žugec Maja
Žvikart Darja

DOKTORSKI ŠTUDIJSKI PROGRAM BIOMEDICINA

DOCTORAL STUDY PROGRAMME OF BIOMEDICINE

Doktorati s podorčja farmacevtskih zanosti / Doctors of Pharmaceutical Sciences

Janžič Andrej (mentor Mitja Kos): Zdravstveno ekonomsko vrednotenje antikoagulacijskega zdravljenja, Health economic evaluation of anticoagulant therapy, COBISS.SI-ID: 290765824.

Knez Damijan (mentor Stanislav Gobec): Načrtovanje, sinteza in vrednotenje potencialnih učinkovin za zdravljenje Alzheimerjeve bolezni z multiplim mehanizmom delovanja, Design, synthesis and evaluation of potential drugs for treatment of Alzheimer's disease with multiple mechanisms of action, COBISS.SI-ID: 289975040.

Košir Darjan (mentor Franc Vrečer): Kritični parametri sproščanja modelne zdravilne učinkovine iz hidrofilnih ogrodnih tablet na osnovi hipromeloze, Evaluation of critical parameters on model drug release from hydrophilic matrix tablets based on hypromellose, COBISS.SI-ID: 292800768.

Krese Ana (mentorica Marija Bogataj): Vpliv hidrodinamsko-mehanskih dogodkov in sestavin hrane na sproščanje učinkovine iz ogrodnih tablet, Effects of hydrodynamic-mechanic events and food components on drug release from matrix tablets, COBISS.SI-ID: 290003200.

Lešnik Samo (mentor Janez Konc, somentor Stanislav Gobec): Razvoj računalniške baze bioizosternih zamenjav in programa za virtualno rešetanje na osnovi liganda, Development of bioisostere database and a program for ligand-based virtual screening, COBISS.SI-ID: 289655296.

Lumpert Mateja (mentor Samo Kreft, somentorica Nina Kočevar Glavač): Etnofarmakološke raziskave uporabe rastlin in gliv na območju Krasa in Dolenjske s primeri fitokemijske karakterizacije, Etnopharmacological research of plant and fungi usage in Karst and Dolenjska region with examples of phytochemical characterisation, COBISS.SI-ID: 290345216.

Marđetko Nika (mentor Mitja Kos): Ovrednotenje upravljanja javnih izdatkov za zdravila z raziskavami zdravstvenih izidov, Health outcomes assessment of public expenditure management for medicines, COBISS.SI-ID: 4363377.

Marković Snežana (mentor Janez Kerč): Uporaba NIR spektroskopije za študij ključnih fizikalno-kemijskih parametrov nekaterih farmacevtskih oblik, Use of NIR spectroscopy for study of key physico-chemical attributes of selected pharmaceutical dosage forms, COBISS.SI-ID: 290019584.

Premuš Marušič Alenka (mentor Aleš Mrhar, somentor Danijel Petrovič): Pojavnost pljučne embolije in globoke venske tromboze v povezavi s farmakoterapijo hospitaliziranih kirurških bolnikov v Pomurju, The incidence of pulmonary embolism and deep vein thrombosis in conjunction with pharmacotherapy in hospitalized surgical patients in Pomurje, COBISS.SI-ID: 4302961.

Saboti Denis (mentor Odon Planinšek, somentor Hak-Kim Chan): Uporaba mikrofulidnega [!] reaktorja za izdelavo nosilnih delcev zdravilne učinkovine v praških za inhaliranje, The use of microfluidics for production of particles in dry powder inhalation systems, COBISS.SI-ID: 293101056.

Zorec Barbara (mentorica Nataša Pavšelj, somentorica Julijana Kristl): Proučevanje fizikalnih metod in dostavnih sistemov za povečanje dermalnega vnosa učinkovin, Delineation of physical methods and carriers for dermal drug delivery enhancement, COBISS.SI-ID: 4285553.

Zupančič Špela (mentorica Julijana Kristl): Razvoj dvoslojnih nanovlaken za inovativno zdravljenje parodontalne bolezni, Development of core-shell nanofibers for innovative periodontal disease treatment, COBISS.SI-ID: 292859648.

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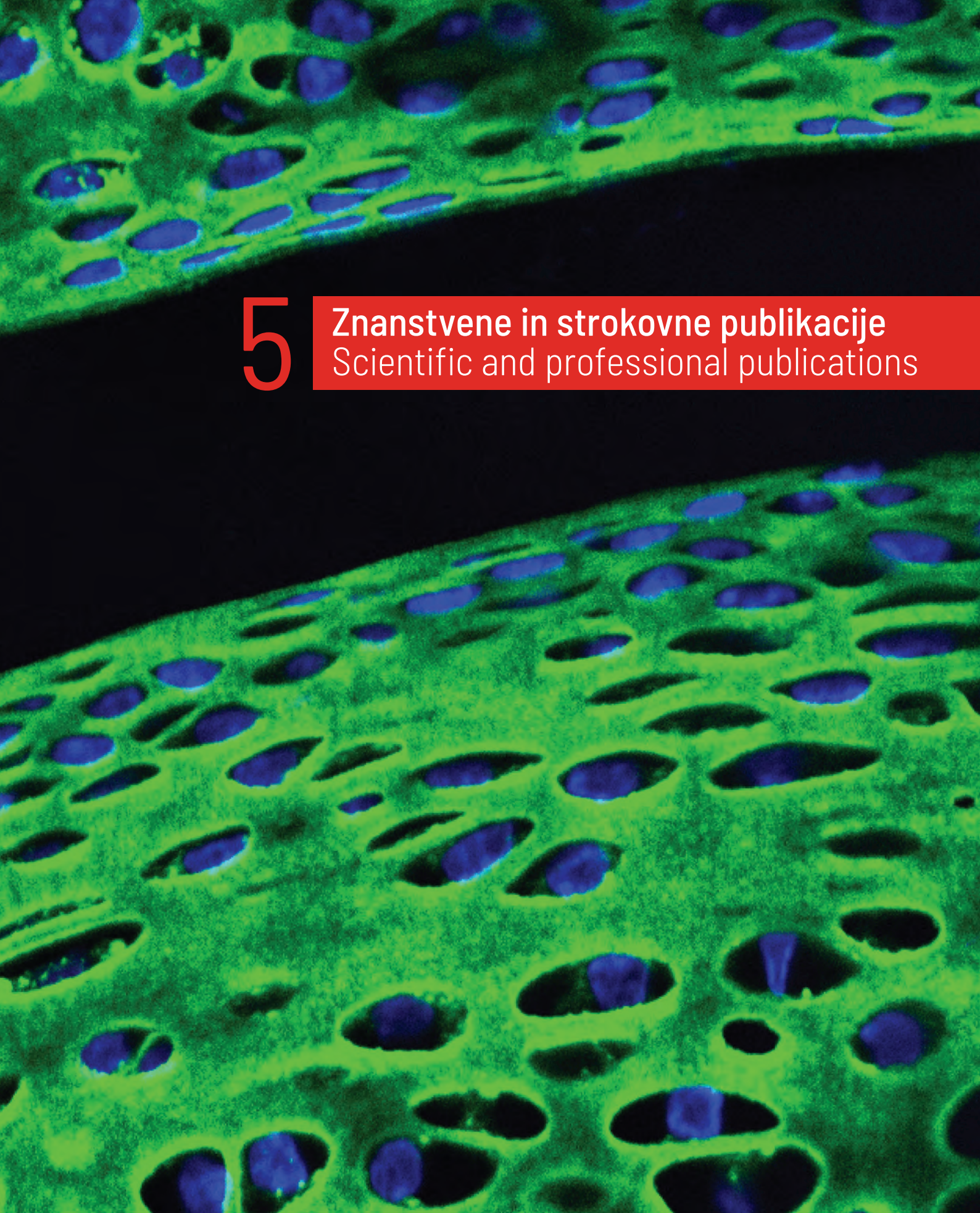
Krošelj Marko (mentorica Tanja Gmeiner, somentorica Irena Mlinarič-Raščan): Načrtovanje, sinteza in vrednotenje radiooznačenih ligandov za somatostatinske in holecistokininski-2 receptor, Design, synthesis and evaluation of radiolabeled ligands for targeting of somatostatin and cholecistokinin-2 receptor, COBISS.SI-ID: 290731776.

Mitrović Ana (mentor Janko Kos): Vloga cisteinskih katepsinov B in X in njunih inhibitorjev pri epitelno-mezenhimskem prehodu tumorskih celic, Role of cysteine cathepsins B and X and their inhibitors in epithelial-mesenchymal transition of tumor cells, COBISS.SI-ID: 290063872.

Mosa Fathy Osama (mentor Milan Skitek, somentor Aleš Jerin): Vloga proteinov Klotho in CYR61 pri zgodnjem odkrivanju akutne poškodbe ledvic po operaciji srca, The role of Klotho and CYR61 proteins in early diagnosis of acute kidney injury after cardiac surgery, COBISS.SI-ID: 287149824.



5 Znanstvene in strokovne publikacije
Scientific and professional publications

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POROČILO O DOSEŽKIH 2017

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