Univerza *v Ljubljani*
Fakulteta *za farmacijo*

2018

POROČILO O DOSEŽKIH

PROGRESS REPORT

KAZALO / CONTENT

1 Predstavitev Fakultete za farmacijo
Presentation of the Faculty of Pharmacy

UVODNI POZDRAV

Spoštovani,

vsakoletno poročilo pripravljamo, da obeležimo dosežke fakultete in izrazimo priznanje njihovim snovalcem.

Dosežke sprejemamo kot plod ustvarjalnega in predanega dela posameznikov, ki pa lahko svojo izjemnost uresničijo le v inovativnem okolju in v interakciji s sodelavci in kolegi. Uspehe Fakultete za farmacijo tako soustvarjamo vsi zaposleni in študenti, ki s svojim delom skrbimo za kakovosten študij, doseganje izjemnih raziskovalnih rezultatov ali za povezovanje fakultete s strokovno in širšo javnostjo.

Leto 2018 je bilo za fakulteto zelo uspešno, kar dokazujemo s številom in obsegom pridobljenih raziskovalnih in razvojnih projektov, s povečanim številom zaposlenih, uspešnimi objavami v revijah z visokim faktorjem vpliva, uspešnimi inovacijami, povečanim vpisom na doktorski študij in ne nazadnje s podelitvijo 261 diplomskih, magistrskih in doktorskih listin. Zagotovo so znak naše uspešnosti tudi priznanja in nagrade, ki jih sodelavcem UL FFA podelijo zunanje institucije in združenja.

Prizadevanja UL FFA so usmerjena k organizaciji dela in oblikovanju kreativnega delovnega okolja, ki omogoča izpolnjevanje osnovnega poslanstva Fakultete za farmacijo, to je nuditi na znanstvenih osnovah temelječe izobraževalne programe. To poslanstvo lahko fakulteta izpolnjuje le, če ostaja na znanosti temelječa in v družbo odprta fakulteta z intenzivnim vključevanjem strokovnjakov iz prakse, ki sooblikujejo ustrezen kompetenčni model študija.

Na pedagoškem področju smo se tako osredotočili na izboljšanje kakovosti študija, izvedli smo poglobljeno samoevalvacijo vseh študijskih programov, posodobili učne načrte ter intenzivirali tutorstvo. Sistematično smo pristopili k uvajanju metod ter pedagoških praks z vključevanjem novih tehnologij ter vzpostavitvijo inovativnih didaktičnih pristopov. Fakulteta prepoznava pomen vključevanja študentov v realno delovno okolje, zato izredno ceni poglobljeno sodelovanje z lekarnami, kliničnimi ustanovami in industrijo. Še posebej se po uspešni prenovi in odprtju Lekarne Mirje veselimo poglobljenega sodelovanja z Lekarno Ljubljana. Ena od prvih skupnih aktivnosti je bila soorganizacija vseevropskega projekta Noč raziskovalcev, ko smo za obiskovalce poleg vrat fakultete odprli tudi vrata Lekarne Mirje.

Fakulteta za farmacijo je znanstvena ustanova. Raziskovalni in inovativni potencial posameznikov smo še naprej uresničevali v okviru programov in projektov, ki jih v največjem obsegu financira Agencija za raziskovalno delo, prav tako pa v okviru aplikativnih industrijskih projektov ter razpisov Strategije pametnih specializacij. Ponosni smo na pridobitev evropskega doktorskega projekta, tudi zato, ker je to prvič, da je članica Univerze v Ljubljani pridobila koordinatorstvo takega projekta.

Prav tako je bilo sodelovanje v industrijskih projektih v preteklem letu uspešno in je potekalo večplastno. Zelo smo ponosni na projekt razvoja kadrov, v okviru katerega izvajamo doktorske projekte in uresničujemo koncept temeljitejših povezovanj ter razvoja mentorjev v akademskem in industrijskem okolju.

Uspehi ne pridejo brez trdega dela, zato leto 2018 za Fakulteto ni bilo samo uspešno, pač pa tudi izredno zahtevno, in sicer predvsem s stališča uvajanja organizacijskih sprememb, v načinu poročanja, načrtovanja in samoevalvacije pedagoškega dela. Kot protiutež želim izpostaviti aktivno vlogo zaposlenih pri ustvarjenju prijaznega in ustvarjalnega delovnega in študijskega okolja, kar je pripomoglo h krepitvi pripadnosti fakulteti.

Pripadnost fakulteti želimo ohranjati tudi z nekdanjimi diplomanti v okviru aktivnosti Alumni kluba. Menim, da predstavljajo alumni vez med fakulteto in stroko in so hkrati naši ambasadorji in sodelavci. Vez sodelovanja so tudi vseživljenjska izobraževanja, kjer so alumni bodisi predavatelji ali slušatelji. Z vzpostavitvijo kluba želimo omogočiti čim bolj intenzivne kontakte med pedagogi, raziskovalci in strokovnjaki in tudi na ta način doprinesti k razvoju mladih strokovnjakov, ki bodo snovalci družbenih sprememb ter napredka družbe.

Fakulteta za farmacijo ostaja v svet odprta institucija. Profesorji in raziskovalci UL FFA se redno izpopolnjujejo tudi v obliki večmesečnih gostovanj na partnerskih fakultetah v tujini. Ponosni smo tudi na to, da pri nas gostuje vse več profesorjev s priznanih fakultet. Najintenzivnejši način odpiranja v mednarodni prostor vsekakor predstavljajo naši študenti. S ponosom sledimo njihovi mednarodni uveljavitvi na partnerskih fakultetah v Evropi in širom po svetu. Njihova sprejetost in uveljavitev sta potrdilo predhodne kakovostne priprave in temeljitega študija na domači fakulteti. Recipročno z odhodom naših študentov na partnerske institucije odpiramo vrata tudi tujim študentom. Tako postaja Aškerčeva 7 krožišče številnih mladih, ki z nami preživijo semester ali več. Tujim študentom omogočamo izbor omejenega števila predmetov, ki jih vzporedno izvajamo v angleščini, ter jim nudimo tudi dodatne individualne konzultacije. Internacionalizacija postaja način našega delovanja, to pa od nas zahteva vedno višje standarde in mednarodno konkurenčne rezultate. Ugotavljamo, da smo zelo omejeni v skromnih prostorskih razmerah, zato so naša prizadevanja usmerjena v pridobitev novih prostorov.

Fakulteta za farmacijo želi slediti globalnim trendom in biti nosilec razvoja in stroke, s tem želi postaviti izobraževalno okolje za vzgojo strokovnjakov nove generacije. Zato so naša prizadevanja usmerjena v pridobitev novih prostorov. V preteklem letu smo dokončali natečajno nalogo in izvedli javni projektni natečaj za izbiro strokovno najprimernejših rešitev in izbiro izdelovalcev dokumentacije za nove objekte na lokaciji Brdo. Zaključili smo tudi urbanistično fazo razpisa in dobili vpogled v rešitve prostorskega načrta in zasnovo novogradnje. Z optimizmom zremo v prihodnja leta in smo pripravljeni na izzive, ki jih prinaša novogradnja, saj se zavedamo, da bomo le tako lahko nadaljevali in nadgrajevali naše delo.

Fakulteta za farmacijo Univerze v Ljubljani je v svojih letih delovanja izobrazila vrhunske strokovnjake, ki so nosilci stroke in s svojim delovanjem neprecenljivo doprinašajo k dobrobiti družbe.

Naj nam bodo dosežki vir navdiha
in zaupanje gonilo napredka.

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

INTRO GREET

Dear Reader,

this annual report honors the achievements of the University of Ljubljana's Faculty of Pharmacy, and it acknowledges those behind them.

These achievements are the fruit of efforts by creative and committed individuals, who are able to achieve excellence in the context of an innovative and challenging working environment and alongside supportive colleagues. The achievements of the Faculty of Pharmacy are thus a joint accomplishment by employees and students who, through their work, excel in research, employ high educational standards, and create bridges connecting the faculty with the professional community and the broader public.

The year 2018 was very successful for the faculty, as evidenced by the high number of research and development projects granted, an increase in the number of employees, publications in journals with a high impact factor, successful innovations, increased enrollment of students in doctoral studies, and, last but not least, the conferral of 261 bachelor's, master's, and doctoral degrees. A hallmark of our success is also the awards and prizes granted to faculty members by other institutions and associations.

The faculty's efforts focus on organizing work to allow a creative working environment and make it possible to realize the Faculty of Pharmacy's fundamental mission—that is, to offer research-based educational programs. This mission can only be met if the faculty remains research-based and open to intensive cooperation with peer professionals who help create an appropriate skill-oriented model for its academic programs.

The focus of the previous year in the faculty's educational activities was on quality assurance of our academic programs. We therefore carried out in-depth self-evaluation of all programs, a curriculum update, and intensified peer mentoring of students. We have also systematically introduced the use of methods and teaching practice integrating new technologies and innovative instructional approaches. Problem-based learning and practical training are of paramount importance, and therefore we support cooperation with pharmacies, clinical departments, and industrial settings, which is of great benefit to our graduates. We are glad to have strengthened our cooperation with the pharmacy company Lekarna Ljubljana, especially after the successful renovation and opening of the Mirje Pharmacy. One of the first joint activities was holding the project European Researchers' Night, during which we welcomed visitors to the faculty and the Mirje Pharmacy.

The Faculty of Pharmacy is a research-based institution. The research and innovative potential of individuals continued to be realized as part of programs and projects financed by the Research Agency of Slovenia or through applied industrial projects, as well as calls for proposals from the Strategy of Smart Specializations. We are proud of acquiring a European doctoral project, also because this is the first time that a member institution of the University of Ljubljana has been able to coordinate such a project.

Furthermore, participation in industrial projects was multifaceted and successful. We are very proud of the career-development scheme based on industrial doctoral projects, allowing intensive cooperation and joint supervision of doctoral candidates by academic and industry-based advisors.

Successes do not come without hard work, and so 2018 was not only successful but also demanding for the faculty, especially from the viewpoint of introducing organizational changes, involving reporting, planning, and self-evaluation of teaching activities. As a counterweight, I would like to highlight the active role of employees in creating a friendly and creative working and study environment, which contributed to strengthening the faculty's affiliation.

We also seek to preserve the relationship with the faculty's graduates through the activities of the Alumni Club. I firmly believe that alumni are the bridge between the faculty and the profession, and at the same time they are our best ambassadors and partners. An example of cooperation is also lifelong learning events, involving alumni as either lecturers or participants. Inauguration of the club was also intended to strengthen links among professors, researchers, and professionals, thus contributing to the development of the young professionals who will create social changes and drive social progress.

The faculty remains an internationally integrated institution. Our staff is engaged in exchange programs, either as guest professors or guest researchers. The faculty is also hosting increasingly more professors from partner institutions. However, the exchange of students is major driver of internationalization. Our students prove themselves to be highly skilled and adaptive, which we take pride in. Reciprocally, with the departure of our students to partner institutions, we also open our doors to students from abroad. Thus, Aškerčeva 7 is becoming a hub for many who spend a semester or two with us. We offer international students a limited number of subjects taught in English, and we also offer them additional individual consultations.

Internationalization is becoming our way of work, which requires high standards and internationally competitive outputs. We are aware of the limitations of the modest premises of the Faculty of Pharmacy, and our efforts are therefore focused on acquiring new investment.

This will allow us to follow global trends and be leaders of development and the profession, providing an educational environment for a new generation of experts. For this purpose, in the past year we carried out a public tender for the technically most optimum solutions for our new facilities at Brdo. We have also concluded the urban planning phase of the tender and have gained insight into the solutions of the spatial plan and possible design of the new facilities. We look forward with optimism to the changes related to investments in new facilities, aware that this is a necessary prerequisite for building on and continuing our work.

The University of Ljubljana's Faculty of Pharmacy has trained top experts who are the leaders in their profession and whose activities make an invaluable contribution to the wellbeing of our society.

May such achievements be a source of inspiration to us
and may trust be the driver of our progress

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 UL 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.

ORGANIZATION

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

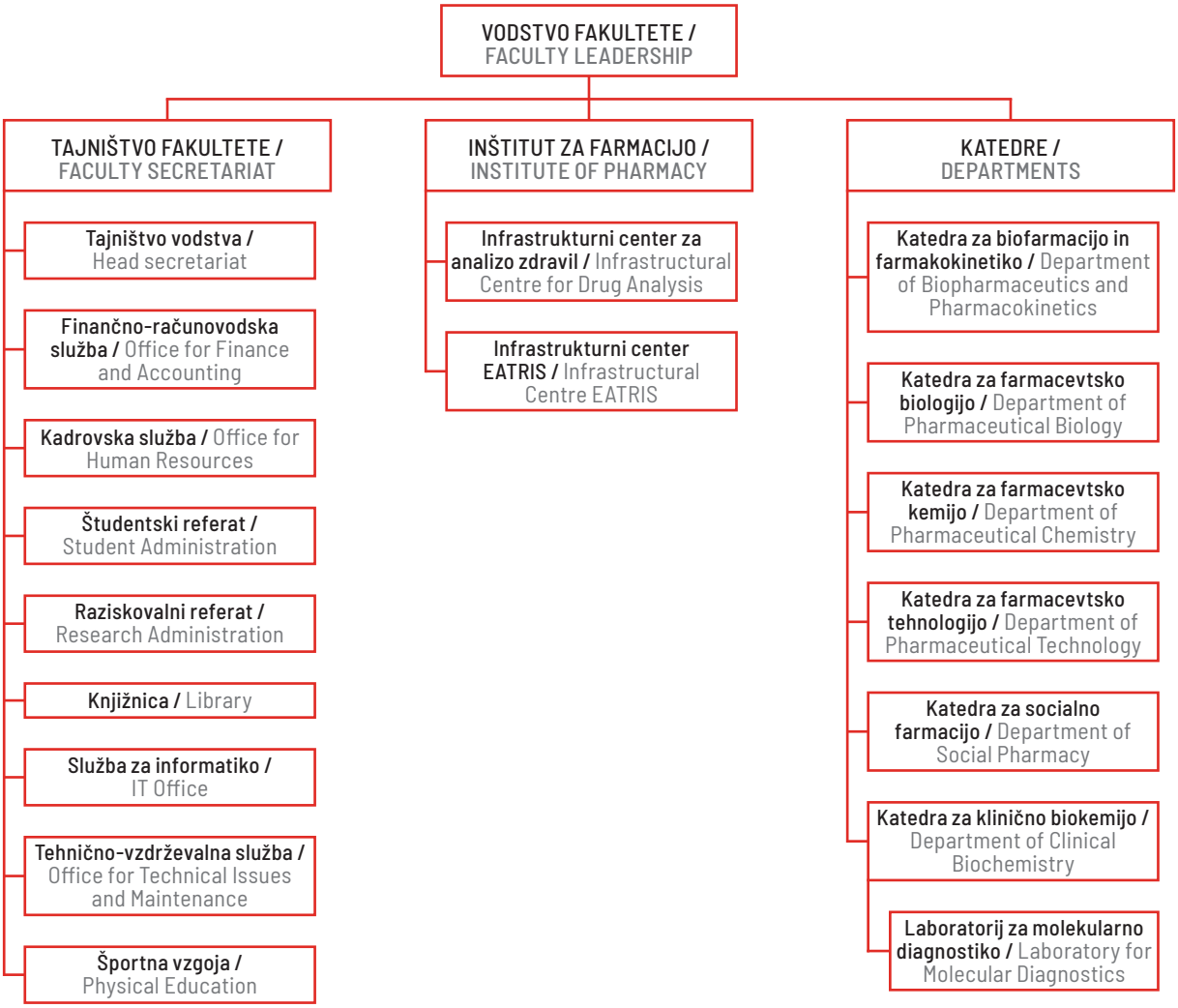
The faculty's basic tasks are creating, transmitting, and retaining knowledge. Therefore its priority, alongside innovation and research, is effective teaching and maintaining the profession-related historical memory. Its members' number of journal publications, number of citations, and number of projects rank the faculty at the very top of the University of Ljubljana's member institutions.

As part of the University of Ljubljana, the Faculty of Pharmacy builds its reputation, integrity, and development on excellence, effectiveness, 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 toward the future.

The faculty is a medium-sized pharmacy school that is a parent to the wider field of pharmacy, clinical biochemistry, and cosmetology. Each year, the faculty admits 150 students to the Pharmacy program, ninety to the Laboratory Biomedicine program (fifty undergraduate and forty graduate students), forty to the Cosmetology program, twenty-five to the Industrial Pharmacy program, and between twenty and thirty students to doctoral studies. In the past years, there have been about 1,500 students enrolled at the Faculty of Pharmacy.

The Faculty of Pharmacy's vision is to contribute to creating the future and to remain an accesible, responsive, and responsible academic educational and research institution, which by making and disseminating knowledge wishes to work for the welfare of the Slovenian people, contribute to general development, and thus strengthen 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)

PRODEKAN ZA ZNANSTVENO-RAZISKOVALNO PODROČJE / VICE-DEAN FOR SCIENTIFIC RESEARCH**:**
izr. prof. dr. Rok Dreu, mag. farm.

PRODEKAN ZA ŠTUDIJSKO PODROČJE / VICE-DEAN FOR EDUCATION: prof. dr. Marko Anderluh, mag. farm.

DEKANJA FAKULTETE / DEAN: prof. dr. Irena Mlinarič-Raščan, 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. Joško Osredkar, 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, mag. farm.

Akademski zbor
predsednica: prof. dr. Marija Sollner Dolenc, mag. farm.

Upravni odbor
predsednik: izr. prof. dr. Matjaž Jeras, mag. farm.

Študentski svet
predsednik: Anže Zidar

TAJNIŠTVO

Tajnik 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., PhD

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

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

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

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

Department of Clinical Biochemistry
Head: Assist. Prof. Nataša Karas Kuželički, M. Pharm., PhD
Head of the Laboratory for Molecular Diagnostics:
Prof. Joško Osredkar, M. Pharm., PhD, EuSpLM

INSTITUTE OF PHARMACY:

Head: Assoc. Prof. Rok Dreu, M. Pharm., PhD

FACULTY'S GOVERNING BODIES

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

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

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

Student Council
Chair: Dr. Anže Zidar

FACULTY SECRETARY'S OFFICE

Faculty Secretary's Office
Stanislava Menard, LLB

Head Secretary
Lidija Ribič, BS Econ.

Office for Finance and Accounting
Head: Aleš Kolenko, BS 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, mag. farm.

Komisija za raziskovalno in razvojno delo
predsednik: izr. prof. dr. Rok Dreu, mag. farm.

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

Habilitacijska komisija
predsednica: prof. dr. Marija Bogataj, mag. farm.

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

Komisija za študijsko področje
predsednik: prof. dr. Marko Anderluh, mag. farm.

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

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

Komisija za internacionalizacijo
predsednik: prof. dr. Iztok Grabnar, mag. farm.

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

Računalniška komisija
predsednica: Tanja Gregorič

Personnel Department:
Head: Zdenka Gantar, snr. admist. work.

Student Affairs Office:
Head: Tanja Kadunc, BSc (Tourism)

Research Office:
Judita Merjasec, BSc (Administrative Sciences)

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

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

Technical Maintenance Service / Physical Education
Dušan Videmšek Professor of sports education

COMMITTES

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

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

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

Commitee Commission
Chair: Prof. Marija Bogataj, M. Pharm., PhD

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

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

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

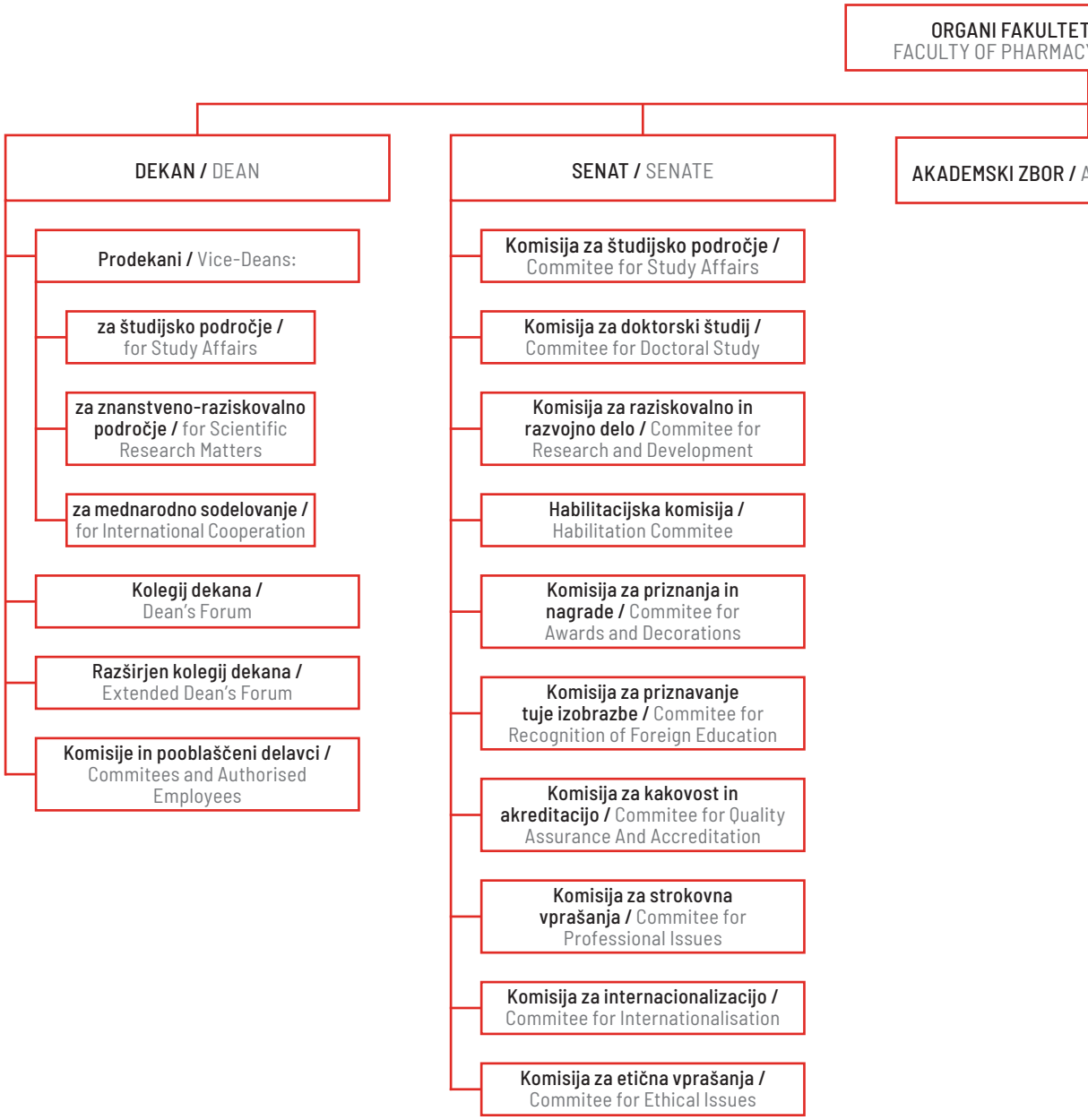
Commitee for Recognition of Foreign Education
Chair: Prof. Marko Anderluh, M. Pharm., PhD

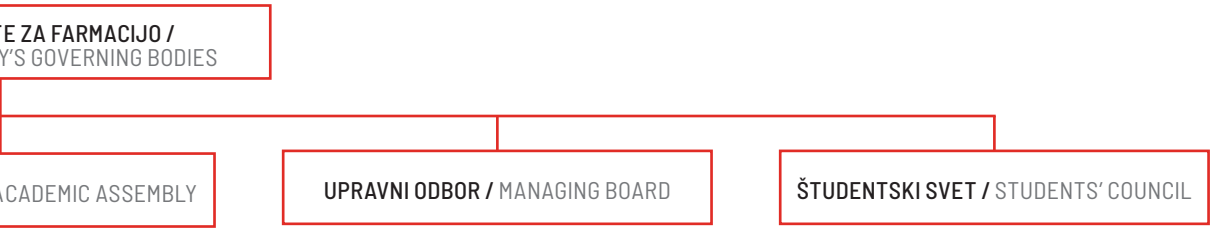
Commitee for Internationalization
Chair: Prof. Iztok Grabnar, M. Pharm., PhD

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

IT Commitee
Chair: Tanja Gregorič

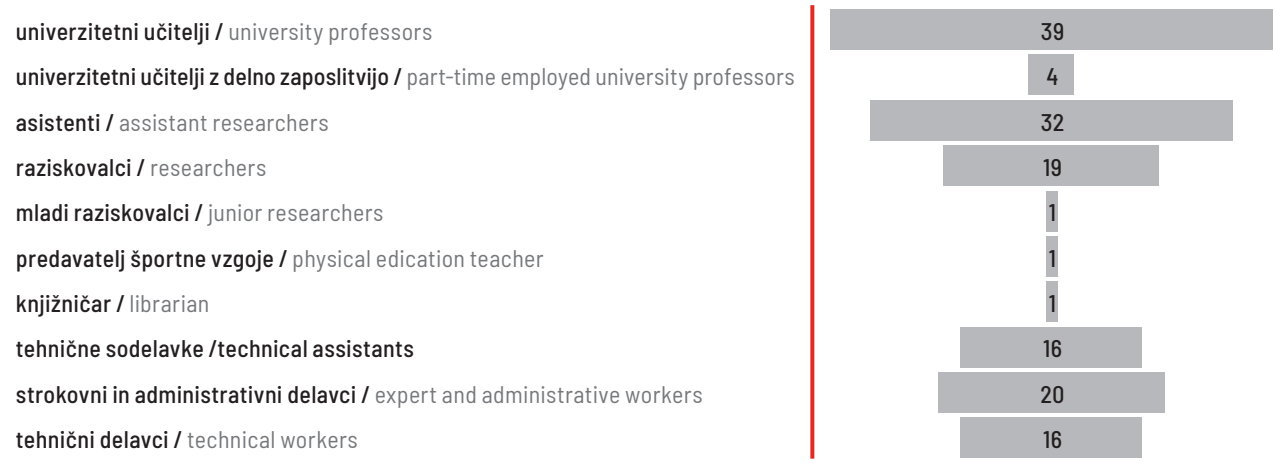
ORGANI UL FFA / FACULTY OF PHARMACY'S GOVERNING BODIES




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



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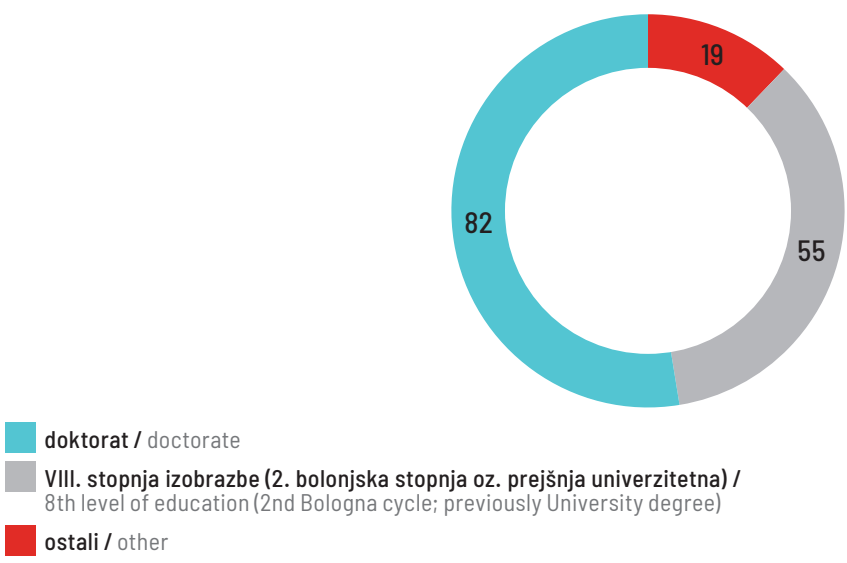


PREDSTAVITEV KATEDER

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 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 teaching, research, developmental, and professional work. They are also connecting elements for research work that takes place through the departments, as well as through research and program groups. These groups are not organizational units of the faculty in themselves, but are linked to the needs and abilities to acquire funds for research work in public tenders, and to demands to connect into interdisciplinary groups depending on the content of an individual research issue.

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, (farmako)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 (farmakogenomika, nutrigenomika, TDM). Katedra za klinično biokemijo je začetnica razvoja področja farmakogenomike na UL FFA, predvsem na področju onkologije.

Nedavno smo začeli razvijati področje dela z matičnimi celicami, kjer intenzivno sodelujemo s klinikami 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, the main focus is on developing laboratory medicine, with an emphasis on clinical biochemistry. Clinical biochemistry utilizes chemical, molecular, and cellular approaches to investigate and explain mechanisms of human health and illness. The members of the department are intensely involved in hematology, (pharmaco)genetics, and immunology, which are being developed through independent research and in cooperation with clinicians. Alongside clinical biochemistry, they also work on emerging fields of laboratory medicine such as toxicology, stem cell research, and tissue engineering.

One of the research interests of the department is identifying biomarkers for complex human traits and diseases such as osteoporosis, metabolic syndrome, chronic lymphocytic leukemia, congenital heart defects, orofacial clefts, atherosclerosis, and autoimmune diseases at the genomic, epigenetic, transcriptomic, proteomic, and metabolomic levels.

In addition, the department intensively deals with modern personalized approaches in medicine, which also include diagnostics (pharmacogenomics, nutrigenomics, and TDM). The Department of Clinical Biochemistry is a pioneer at the Faculty of Pharmacy in developing pharmacogenomics, especially in oncology.

It has recently started developing stem cell research, where there is intensive cooperation with clinicians in joint regenerative medicine.

In all of these fields, the department cooperates with professional societies, resulting in a high degree of transferability of its research findings into clinical practice.

V okviru katedre deluje tudi medicinski laboratorij z dovoljenjem za delo Ministrstva za zdravje RS (Laboratorij za molekularno diagnostiko LMD), ki je odličen primer prenosa znanstvenih dognanj v klinično prakso in se edini v Sloveniji ukvarja s farmakogenetiko in TDM tiopurinskih zdravil.

The Laboratory for Molecular Diagnostics (LMD), which is licensed by the Slovenian Ministry of Health, is also an important part of the department, and it is a great example of the transfer of research into clinic. It is also the only establishment in Slovenia working on the pharmacogenomics and TDM of thiopurine drugs.

Ključni dosežki v letu 2018

V sklopu mednarodnega sodelovanja smo objavili številne pomembne članke v revijah z visokim faktorjem vpliva. Raziskovalna skupina pod vodstvom prof. dr. Janje Marc je sodelovala pri raziskavi o odkritju novega genetskega lokusa, povezanega z zlomi vretenc (Ann Rheum Dis. 2018, 77: 378–385.), v ugledni reviji Scientific Reports pa so objavili epigenetsko študijo z novimi dognanji o dveh s starostjo povezanih boleznih, osteoporozi in osteoartrozi (Scientific reports, 2018, 8: 1–12.). Raziskovala skupina prof. dr. Irene Mlinarič-Raščan pa je naredila pomemben prispevek k odkritju endogenega substrata encima tiopurin-S metiltransferaze (TPMT) in njegove endogene vloge v človeškem telesu (Biochimica et biophysica acta (G). 2019, 1863 (1): 182–190).

V letu 2018 smo pridobili ARRS projekt CEA NOBIL – Novi biološki označevalci v levkemiji (prof. dr. Irena Mlinarič-Raščan) ter projekt COST EVBRES (prof. dr. Janja Marc). Prof. dr. Joško Osredkar je pridobil terciarni projekt UKC LJ na temo vloge mikrobioma pri nastanku avtizma.

Prof. dr. Janja Marc in asist. dr. Irena Prodan Žitnik sta organizirali CEEPUS poletno šolo v sklopu mreže mobilnosti SI-0611: Novel diagnostic and therapeutic approaches to complex genetic disorders.

Ob 40. obletnici Inštituta za klinično kemijo in biokemijo UKC Ljubljana je prof. dr. Joško Osredkar prejel priznanje za izjemen doprinos k razvoju KIKKB.

Key achievements in 2018

As part of international cooperation, the department's members have published several articles in high-impact-factor journals. A research group led by Prof. Janja Marc took part in identifying the new genetic locus associated with vertebral fractures (Ann Rheum Dis. 2018;77:378–85). They also published an epigenetic study on osteoporosis and osteoarthrosis in a distinguished journal (Sci Rep. 2018;8:1–12.). A research group led by Prof. Irena Mlinarič-Raščan made an important contribution toward identifying the endogenous substrate of thiopurine-S methyltransferase (TPMT) and the function of this enzyme in the human organism.

In 2018 the department won a Slovenian Research Agency grant for CEA NOBIL: New Biomarkers in Leukemia (Prof. Irena Mlinarič-Raščan) and a COST EVBRES grant (Prof. Janja Marc). Prof. Joško Osredkar has also acquired a tertiary project of the Ljubljana University Medical Center in microbiome and autism development (ASD).

Prof. Janja Marc and Dr. Irena Prodan Žitnik organized the CEEPUS summer school as a part of the SI-0611 mobility network: Novel Diagnostic and Therapeutic Approaches to Complex Genetic Disorders.

Prof. Joško Osredkar was the recipient of the University Medical Center award for his contribution to the development of the UKCLJ Institute for Clinical Chemistry and Biochemistry on the fortieth anniversary of Institute of Clinical Chemistry and Biochemistry (KIKKB).

Člani / Members

- **prof. dr. Borut Božič, prof. dr. Darko Darko, prof. dr. Janja Marc, prof. dr. Irena Mlinarič-Raščan, prof. dr. Joško Osredkar**
- **izr. prof. dr. Matjaž Jeras, izr. prof. dr. Barbara Ostanek**
- **doc. dr. Martina Gobec, doc. dr. Nataša Karas Kuželički**
- **Damjan Avsec, Manca Cedilnik, Klemen Čamernik, Petra Ferkov, Klemen Kodrič, dr. Tijana Markovič, Sanja Nabergoj, dr. Irena Prodan Žitnik, dr. Alenka Šmid, dr. Janja Zupan, dr. Marija Nika Lovšin, doc. dr. Urban Švajger, dr. Dunja Urbančič, Manja Cedilnik, Petra Ferkov, Majda Sirnik, Klemen Kodrič, Sanja Nabergoj**

KATEDRA ZA FARMACEVTSKO BIOLOGIJO

Katedra za farmacevtsko biologijo izvaja pedagoško, znanstvenoraziskovalno in strokovno delo na področju farmakognozije, molekularne biologije in farmacevtske biotehnologije. Odkrivamo, razvijamo in analiziramo zdravila naravnega izvora (tj. rastlinske in glivne sekundarne metabolite ter biotehnološke učinkovine) in raziskujemo molekularne mehanizme bolezenskih procesov.

Na področju farmakognozije razvijamo analizne metode za preverjanje istovetnosti 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 izražanjem (gliko)proteinskih učinkovin, pridobljenih s tehnikami genskega inženirstva, in vrednotenjem njihovih fizikalno-kemijskih in bioloških lastnosti. 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

The Department of Pharmaceutical Biology carries out teaching, research, and professional activities in pharmacognosy, molecular biology, and pharmaceutical biotechnology. Its members discover, develop, and analyze medicines of natural origin (i.e., plant and fungal secondary metabolites, and biotechnological active substances) and explore pathophysiological processes at the molecular level.

In pharmacognosy, the department develops analytical methods to examine the identity of and estimate the quality of medicinal plants. It isolates biologically active substances from fungi and plants (which are either traditionally used to treat illnesses or have not yet been used for such purposes) and analyzes their activities.

The department's staff clones and expresses recombinant (glyco)proteins and analyzes their physicochemical and biological properties. Using biological combinatorial libraries, they discover novel biologically active peptides (such as inhibitors of therapeutically important enzymes, ligands for affinity chromatography, and peptides that mimic the structures of allergens for immunotherapy).

In cellular and molecular biology, they explore the onset and progression mechanisms of cancer, anti-tumor immune response, and neurodegenerative and neurological diseases, with the aim of defining new therapeutic molecular targets and diagnostic markers.

Ključni dosežki v letu 2018

Identifikacija antigenskih determinant poglavitnega alergena čebeljega strupa Api m 1
V eminentni imunološki reviji *Journal of Allergy and Clinical Immunology* (Zahirović in sod., 2018) smo kot prvi poročali o razkritju antigenskih determinant poglavitnega alergena čebeljega strupa Api m 1, ki jih prepoznavajo imunoglobulini E. Peptidni mimetiki epitopov Api m 1 so izjemno obetavno izhodišče za načrtovanje usmerjene in varne imunoterapije.

Odkritje patofiziološke vloge cisteinske proteaze katepsina B pri Parkinsonovi bolezni
V raziskavi, objavljeni v reviji *Frontiers in Molecular Neuroscience* (Pišlar in sod., 2018), smo pokazali, da pri poškodbah dopaminergičnega sistema prihaja do povišane aktivnosti lizosomske proteaze katepsina X, kar utegne pomembno prispevati k napredovanju Parkinsonove bolezni. Zato predlagamo zaviranje izražanja ali aktivnosti katepsina X kot protektivno strategijo pri tej nevrodegenerativni bolezni.

Knjiga Modern Cosmetics, Ingredients of Natural Origin, A Scientific View, Volume 1
Izšel je prvi del angleškega prevoda *Sodobne kozmetike*, publikacije o kozmetičnih sestavinah naravnega izvora, katere urednika sta izr. prof. dr. Damjan Janeš in izr. prof. dr. Nina Kočevar Glavač.

Razvoj peptidnih ligandov za afinitetno čiščenje protiteles
S tehnologijo predstavitve na bakteriofagu smo razvili in optimizirali strukturno povsem nove peptidne ligande konstantne regije imunoglobulinov G. S prototipom afinitetne kromatografske kolone na osnovi peptidnega liganda smo iz kompleksnih zmesi učinkovito izolirali in prečistili človeška protitelesa. Izsledke raziskave smo objavili v reviji *Bioconjugate Chemistry* (Kruljec in sod., 2018). Štirje raziskovalci s Katedre za farmacevtsko biologijo (dr. Nika Kruljec, asist. dr. Peter Molek, izr. prof. dr. Mojca Lunder in izr. prof. doc. dr. Tomaž Bratkovič) so za odkritje prejeli 2. nagrado na natečaju za Rektorjevo naj inovacijo Univerze v Ljubljani za leto 2018.

Key achievements in 2018

Identification of major bee venom allergen Api m 1 epitopes
A publication in a prominent journal (Zahirović et al., J Allergy Clinic Immunol. 2018) for the first time disclosed the antigenic determinants of the major bee venom allergen Api m 1 recognized by class E immunoglobulins, and the structures of their cognate peptide mimetics. Such mimotopes are promising new candidates for the development of more precise and safer allergen immunotherapy.

Discovery of the cysteine protease cathepsin B's pathophysiological role in Parkinson's disease
An article published in *Frontiers in Molecular Neuroscience* (Pišlar et al., 2018) demonstrates that lysosomal protease cathepsin X is upregulated in the lesioned dopaminergic system, which might play a role as a pathogenic factor in Parkinson's disease. Furthermore, it is proposed that cathepsin X expression or activity inhibition may be a useful novel neuroprotective strategy.

Modern cosmetics, ingredients of natural origin, a scientific view, Volume 1
Volume 1 of *Modern Cosmetics*, the English translation of the Slovenian volume *Sodobna kozmetika*, has been published. This publication about cosmetic ingredients of natural origin is edited by Assoc. Prof. Damjan Janeš and Assoc. Prof. Nina Kočevar Glavač.

Development of peptide ligands for affinity purification of antibodies
Phage display technology was used to develop and optimize structurally novel peptide ligands of the immunoglobulin G constant region. An affinity chromatography column prototype was constructed based on the peptide ligand, and it was used for highly efficient isolation and purification of human antibodies from complex mixtures. The results were published in Bioconjugate Chemistry (Kruljec et al., 2018). For their invention, a team of four researchers from the Department of Pharmaceutical Biology (Dr. Nika Kruljec, Dr. Peter Molek, Assoc. Prof. Mojca Lunder, and Assoc. Prof. Tomaž Bratkovič) was awarded second prize in the Chancellor's Award for the Best Innovation in 2018.

Člani / Members

- prof. dr. Janko Kos, prof. dr. Samo Kreft, prof. dr. Borut Štrukelj
- izr. prof. dr. Nina Kočevar Glavač
- doc. dr. Tomaž Bratkovič, doc. dr. Bojan Doljak
- Nika Kruljec, dr. Peter Molek, dr. Meta Kokalj Ladan, dr. Urša Pečar Fonović, Nina Poljšak, dr. Matjaž Ravnikar, dr. Anja Pišlar, Abida Zahirović, Irena Klančnik Mavec, Maša Močnik Roner, Tanja Jakoš

KATEDRA ZA FARMACEVTSKO KEMIJO

Katedra za farmacevtsko kemijo 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 spojin kot potencialnih novih učinkovin ter razvoj novih molekulskih orodij za proučevanje interakcij z biološkimi makromolekulami. Glavni raziskovalni poudarki so na razvoju novih učinkovin za naslednje tarče: encimi, ki so udeleženi v sintezi bakterijske stene, encimi, udeleženi v biosintezi mikolnih kislin mikobakterij, encimi, ki so pomembni pri nastanku nevrodegenerativnih obolenj, 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 v okviru Programske skupine Farmacevtska kemija (2015–2020), del pa v povezavi z Medicinsko fakulteto, Kemijskim inštitutom in Inštitutom »Jožef Stefan« in v okviru domačih in mednarodnih projektov.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

The Department of Pharmaceutical Chemistry organizes and carries out teaching, research, and professional work in pharmaceutical chemistry, pharmaceutical analysis, and toxicology. The department's members perform various types of research for design, syntheses, and biological evaluation of new compounds to be used as potential new active ingredients, and they develop new molecular tools to study interactions with biological macromolecules. The main research focus is on the development of new drug candidates targeting enzymes involved in bacterial cell wall synthesis, enzymes involved in the biosynthesis of mycolic acids in mycobacteria, enzymes that are important for the development of neurodegenerative diseases, DC-SIGN and FimH lectin receptors, voltage-gated sodium channels, Toll-like receptors (TLR), NOD receptors, enzymes involved in blood coagulation, and vitronectin receptors. They develop new synthetic methods, new separation methods, and analytical methods for characterizing compounds, new methods for biologically evaluating synthesized compounds, new antioxidants, and new stable nitroxide and fluorescent markers. The majority of research takes place at the department, and the rest is carried out in cooperation with the Faculty of Medicine, National Institute of Chemistry, and Jožef Stefan Institute. The research is mostly funded by the Slovenian Research Agency (Pharmaceutical Chemistry Program Group 2015–2020), and by various other national and international projects.

Ključni dosežki v letu 2018

Člani Katedre za farmacevtsko kemijo smo bili udeleženi pri organizaciji največjega svetovnega kongresa na področju Farmacevtske kemije EFMC-ISMC 2018 International Symposium on Medicinal Chemistry, ki je potekal pod okriljem Evropske federacije za farmacevtsko komisijo od 2.9. do 6.9.2018 v Ljubljani. Prof. dr Marko Anderluh je bil predsednik mednarodnega organizacijskega komiteja, v lokalnem organizacijskem odboru pa so sodelovali še prof. dr. Lucija Peterlin Mašič, prof. dr. Danijel Kikelj, izr. prof. dr. Žiga Jakopin in izr. prof. dr. Janez Ilaš. Na kongresu je prof. dr. Stanislav Gobec predsedoval sekciji »Inflammatory and Autoimmune Diseases« ter izvedel uvodno sekcijsko predavanje. Temu simpoziju smo pridružili EFMC-YMCS 2018 5th EFMC Young Medicinal Chemist Symposium, ki je potekal od 6.-7.9.2018 v Ljubljani z izr. prof. dr. Tihomirjem Tomašičem kot predsednikom organizacijskega odbora in izr. prof. dr. Žigo Jakopinom kot članom organizacijskega odbora.

Med raziskovalnimi dosežki je potrebno izpostaviti prebojne in odmevne objave na področju farmacevtske kemije (Košak et al., Journal of Medicinal Chemistry 2018, 61, 119-139; Gobec M et al. Journal of Medicinal Chemistry 2018, 61, 2707-2724; Pisanu et al. Journal of Experimental & Clinical Cancer Research, 2018, 37, 1-17; Decuyper et al., Medicinal Research Reviews 2018, 38, 426-503) in toksikologije (Karrer et al. Environmental Health Perspectives 2018, 126, 077002-1-077002-17). Člani Katedre za farmacevtsko kemijo so tudi dobili podeljena dva evropska patenta (Košak et al. EP3256128; Sosič et al. EP3256120) in en ameriški patent (Košak et al. US10071964). Dr. Kaja Rožman je za svojo doktorsko disertacijo prejela veliko Krkino nagrado, dr. Boris Brus pa Zlati znak Jožefa Stefana.

Key achievements in 2018

Members of the Department of Pharmaceutical Chemistry participated in holding the largest world congress in pharmaceutical chemistry, the EFMC-ISMC 2018 International Symposium on Medicinal Chemistry, held under the auspices of the European Federation for the Medicinal Chemistry, from September 2nd to 6th, 2018 in Ljubljana. Prof. Marko Anderluh served as the chair of the international organizing committee, and the members of the local organizing committee were Prof. Lucija Peterlin Mašič, Prof. Danijel Kikelj, Assoc. Prof. Žiga Jakopin, and Assoc. Prof. Janez Ilaš. At the congress, prof. Stanislav Gobec chaired the section Inflammatory and Autoimmune Diseases and delivered an introductory keynote lecture. This symposium was joined by the EFMC-YMCS 2018 5th EFMC Young Medicinal Chemist Symposium, which was held from September 6th to 7th, 2018 in Ljubljana, with Assoc. Prof. Tihomir Tomašič as the chair of the organizing committee and Assoc. Prof. Žiga Jakopin as a member of the organizing committee.

Among the research achievements, important publications should be highlighted in medicinal chemistry (Košak et al., J Med Chem. 2018;61:119–39; Gobec et al., J Med Chem. 2018;61:2707–24; Gobec et al., J Exp Clin Cancer Res. 2018;37:1–17; Decuyper et al., Med Res Rev. 2018;38:426–503) and toxicology (Karrer et al., Environ Health Perspect. 2018;126:077002). Two European patents were also granted to the members of the Department of Pharmaceutical Chemistry (Košak et al., EP3256128, Sosič et al., EP3256120) as well as one US patent (Košak et al., US10071964). Dr. Kaja Rožman received the Krka Prize for her doctoral dissertation, and Dr. Boris Brus received the Jožef Stefan Institute Gold Medal.

Člani / Members

- **prof. dr. Marko Anderluh, prof. dr. Stanislav Gobec, prof. dr. Danijel Kikelj, prof. dr. Aleš Obreza, prof. dr. Lucija Peterlin Mašič, prof. dr. Marija Sollner Dolenc, prof. dr. Uroš Urleb**
- **izr. prof. dr. Janez Ilaš, izr. prof. dr. Žiga Jakopin, izr. prof. dr. Anamarija Zega**
- **Mihaela Barončokova, izr. prof. dr. Zdenko Časar, doc. dr. Rok Frlan, dr. Darja Gramec Skledar, Samo Guzelj, doc. dr. Martina Hrast, doc. dr. Marko Jukič, dr. Damijan Knez, dr. Urban Košak, Maria Loi Elena, izr. prof. dr. Janez Mravljak, dr. Eva Ogorevc, Katja Perc, doc. dr. Stane Pajk, Matic Proj, doc. dr. Matej Sova, doc. dr. Izidor Sosič, Nika Strašek, Martina Tekavec, izr. prof. dr. Tihomir Tomašič, Žan Toplak, Sjors Van Klaveren, Damjana Zalar, doc. dr. Nace Zidar, Taja Zore**

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 focuses on developing, creating, and evaluating standard pharmaceutical forms and advanced drug-delivery systems. It offers instruction in 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 excipient substances, patient-friendly drug-delivery systems (mini and (oro)dispersible pills, dermal microemulsions, and liquid crystals), solid pharmaceutical dosage forms (granules, pellets, pills, and microcasules), modified and targeted release, approaches to increase the 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. The department's laboratories use and develop specific technologies (vortex layer technology, high-shear granulation, melt granulation, coating, tableting (conventional and multi-layer), spray drying and spray congealing, high-pressure and ultrasonic homogenization, 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 characterizing nanomaterials and learning about the safety and toxicity of nanomedicine and other medicine delivery systems.

Ključni dosežki v letu 2018

Izr. prof. dr. Rok Dreu prejemnik Minarikovega priznanja

SFD je maja 2018 podelilo izr. prof. dr. Roku Dreu Minařikovo priznanje za njegove znanstvene, strokovne in organizacijske prispevke ter za dosežen napredek v razvoju farmacevtske tehnologije v Republiki Sloveniji. Rok Dreu je raziskovalno uspešen in mednarodno prepoznan strokovnjak po svojih odmevnih dosežkih na področju tehnologij s talinami, stiskanja delcev, oblaganja pelet in mini tablet ter eksperimentalne in simulacijske analize tehnoloških procesov. Uspešno sodeluje s farmacevtsko industrijo doma in v tujini; iz skupnih raziskovalnih projektov je izšlo pet podeljenih mednarodnih patentov. Svoje organizacijske sposobnosti in občutek za skupinsko delo udejanja kot prodekan in z delom v različnih odborih in komisijah na Fakulteti za farmacijo in v Sekciji farmacevtskih tehnologov pri SFD, ki jo je tudi vodil dva mandata.

Izjemna objava Janje Mirtič in sodelavcev v reviji Carbohydrate Polymers

V raziskavi, objavljeni v reviji Carbohydrate Polymers (Mirtič in sod. 2018), so raziskali polielektrolitno kompleksiranje linearnih alginatnih polianionov z različnimi vrstami premreževal z vidika načina formiranja nanodelcev, termodinamike procesa in karakteristik izdelanih kompleksov. Rezultati razkrivajo mehanizme samozdruževanja, ki so specifični za vsako premreževalo posebej. Ti so pomembni za razumevanje nastanka različnih vrst polielektrolitnih kompleksov in predstavljajo osnovo za razvoj nanodostavnih sistemov, ki omogočajo vgradnjo občutljivih bioloških učinkovin (proteini, DNA, siRNA) ali slabo topnih molekul, njihovo prirejeno sproščanje, zaščito pred razgradnjo in ciljano dostavo.

Asist. dr. Špela Zupančič, prejemnica velike Krkine nagrade 2018

Asist. dr. Špela Zupančič je prejela že drugo veliko Krkino nagrado za raziskovalno delo. Tokrat za doktorsko nalogo z naslovom Razvoj dvoslojnih nanovlaken za inovativno zdravljenje parodontalne bolezni, ki je bila opravljena na UL FFA pod mentorstvom prof. dr. Julijane Kristl. Odlična naloga predstavlja razvoj in vrednotenje eno- in dvoslojnih nanovlaken z vgrajeno protivnetno učinkovino, antibiotiki in potencialnimi probiotiki za lokalni vnos v obzobne žepe, kar omogoča možnost za izboljšanje zdravljenja parodontalne bolezni.

Key achievements in 2018

Assoc. Prof. Rok Dreu, recipient of the Minařik Award

In May 2018, the Slovenian Pharmaceutical Society (SFD) awarded Assoc. Prof. Rok Dreu the Minařik award, for his research, professional, and organizational contributions, and for progress in developing pharmaceutical technology in Slovenia. Dreu is a successful researcher and an expert internationally recognized for his outstanding achievements in hot melt technology, particulate compression, pellet and mini-tablet fluid bed coating, and simulation analysis of technological processes. He is actively involved with the Slovenian and international pharmaceutical industry, and his numerous joint research projects have culminated in five international patents granted. His organizational abilities and teamwork skills have allowed him to successfully serve as a vice dean and on various committees at the University of Ljubljana's Faculty of Pharmacy and in the Section of Pharmaceutical Technologists at the SFD, which he headed for two terms.

Exceptional publication by Janja Mirtič et al. in Carbohydrate Polymers

In a study published in Carbohydrate Polymers (Mirtič et al. 2018), the authors investigated the polyelectrolyte complexation of linear alginate polyanions with different types of crosslinkers regarding the formation of nanoparticles, thermodynamics of the process, and characteristics of the complexes. The results reveal self-assembly mechanisms that are specific to each crosslinker. They thus represent an understanding of the formation of polyelectrolyte complexes of different types and a platform for developing nanodelivery systems that allow the incorporation of biological active agents (proteins, DNA, and siRNAs) or poorly soluble molecules, their modified release, protection against degradation, and targeted delivery.

Špela Zupančič, recipient of the Krka Grand Prize

Špela Zupančič received the second Krka Grand Prize for Research for her dissertation Development of Core-Shell Nanofibers for Innovative Periodontal Disease Treatment, which was prepared at the University of Ljubljana's Faculty of Pharmacy under the supervision of Prof. Julijana Kristl PhD. This exceptional dissertation presents the development and evaluation of monolithic, blended, and core-shell nanofibers with incorporated immunomodulatory drug, antibiotics, and potential probiotics for local administration into periodontal pockets, which holds much promise for improving periodontal disease treatment.

Člani / Members

- prof. dr. Mirjana Gašperlin, prof. dr. Julijana Kristl, prof. dr. Odon Planinšek, prof. dr. Stanko Srčič, prof. dr. Franc Vrečer
- izr. prof. dr Rok. Dreu, izr. prof. dr. Petra Kocbek
- doc. dr. Pegi Ahlin Grabnar, doc. dr. Ilija German Ilić, doc. dr. Mirjam Gosenca Matjaž, doc. dr. Alenka Zvonar Pobirk
- dr. Katarina Bolko Seljak, dr. Zoran Lavrič, Mitja Pohlen, Tanja Potrč, dr. Barbara Zorec, dr. Špela Zupančič, Maja Bjelošević, Blaž Grilc, dr. Biljana Janković, Valerija Garb, Tatjana Hrovatič, Mojca Keržan, Janja Mirtič

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 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. Ker nas zanima tudi nadaljnja usoda zdravilnih učinkovin in njihovih metabolitev, raziskujemo pojavnost le-teh v okoljskih vzorcih odpadnih, površinskih in pitnih vod s pomočjo zelo občutljivih in selektivnih LC-MS/MS metod.

DEPARTMENT OF BIOPHARMACEUTICS AND PHARMACOKINETICS

The Department of Biopharmaceutics and Pharmacokinetics studies the processes taking place within the human body after the application of a medicine. These processes can be divided into several steps: the liberation of the active substance from the pharmaceutical form, absorption, distribution, metabolism, and excretion (the LADME system). To evaluate the pharmacokinetics of substances, we develop various chromatographic methods using UV/Vis, EC, fluorescent, and MS-MS detection. As part of preformulation studies, we assess physicochemical properties such as solubility, dissolution rate, stability, ionization, permeability, and metabolic conversion. On the basis of these parameters and in vitro release profiles, we can predict the in vivo properties of a pharmaceutical form. The information acquired allows to develop pharmacokinetic and pharmacodynamic models, which enable us to predict the clinical effects of medicines. Considering the characteristics of an individual patient's genotype and phenotype allows personalized dosing. Studies that are supported by these kinds of modern technologies contribute to more effective and safer treatment with the medicines.

The further fate of active pharmaceutical ingredients and their metabolism is studied by investigating their occurrence in environmental samples of waste, surface water, and drinking water using highly sensitive and selective LC-MS/MS methods.

Ključni dosežki v letu 2018

Z Arhelom, projektiranje in inženiring d. o. o. (Pustovrhova ulica 15, 1210 Ljubljana Šentvid) in s sodelujočimi organizacijami (Biotehniška fakulteta, Univerza v Ljubljani, Inštitut za mlekarstvo in probiotike (UL BF Oddelek za zootehniko); Katedra za biokemijo in kemijo živil (UL BF Oddelek za živilstvo); Univerza v Mariboru, Fakulteta za kemijo in kemijsko tehnologijo, Laboratorija za vodno biofiziko in membranske procese; Univerza v Ljubljani, Fakulteta za farmacijo, Katedra za biofarmacijo in farmakokinetiko, Katedra za farmacevtsko tehnologijo) smo v okviru Spodbujanje izvajanja raziskovalno-razvojnih projektov (TRL 3-6)' dobili projekt »Frakcioniranje in oplemenitenje sirotkinih proteinov ter izraba preostanka za oblikovanje novih funkcionalnih živil in prehranskih dopolnil (LAKTIKA)«. Začetek: 1. 7. 2018.

Nadzorovanje sproščanja zdravilnih učinkovin iz različnih trdnih farmacevtskih oblik, od takšnih za peroralno jemanje do tistih, namenjenih parenteralni aplikaciji v obliki vsadkov, po navadi temelji na nadzorovani difuziji učinkovine skozi polimerni film. Oblikovali in okarakterizirali smo nove filme iz asimetričnega poliamida 6, s katerimi smo s procesom izdelave lahko načrtovali hitrost difuzije zdravilnih učinkovin v »in vitro« pogojih. Za uporabnost tovrstnih filmov bi lahko bila pomembna dokaj presenetljiva ugotovitev, da je hitrost difuzije zelo različnih učinkovin (glede na fizikalno-kemijske lastnosti) skozi isti film zelo podobna.

Key achievements in 2018

Together with Arhel, Projektiranje in inženiring d.o.o., Pustovrhova ulica 15, 1210 Ljubljana Šentvid and participating organizations—Biotechnical Faculty, University of Ljubljana, Institute of Dairy Science and Probiotics (UL BF Department of Animal Science), Department of Biochemistry and Food Chemistry (UL BF Department of Food Science); University of Maribor, Faculty of Chemistry and Chemical Technology, Laboratory for Water Biophysics and Membrane Processes; University of Ljubljana, Faculty of Pharmacy, Department of Biopharmaceutics and Pharmacokinetics, Department of Pharmaceutical Technology—in the frame of the call for proposals "to support research and development projects (TRL 3-6)" we obtained the project Fractionation and Processing of Whey Proteins and Exploitation of the Residue for the Formation of New Functional Foods and Food Supplements (LAKTIKA). Start of the project: July 1st, 2018.

Papers in 1A1 were published; including: Aulova A, Cvenkel A, Žakelj S, Planinšek O, Kristl A, Emri I. Mechanical properties and drug permeability of the PA6 membranes prepared by immersion precipitation from PA6–formic acid–water system. J. Membr Sci. 2018;562:67–75.

The control of drug release from various solid dosage forms, from those for oral administration to parenteral implants, is usually based on controlled drug diffusion through a polymer film. We manufactured and characterized novel asymmetric polyamide 6 films. Through variation of the manufacturing procedure, we were able to control the rate of drug diffusion in in vitro conditions. It is of high relevance that the rate of diffusion through the same film is very similar for very different active pharmaceutical ingredients (regarding their physicochemical properties), which can greatly increase the usefulness of these films.

Člani / Members

- **prof. dr. Marija Bogataj, prof. dr. Iztok Grabnar, prof. dr. Albin Kristl**
- **izr. prof. dr. Mojca Kerec Kos, izr. prof. dr. Robert Roškar, izr. prof. dr. Tomaž Vovk, izr. prof. dr. Simon Žakelj**
- **doc. dr. Jurij Trontelj, Jurij Zdovc, Tjaša Felicijan, Timeja Planinšek Parfant, Margareta Cof, Mihaela Kolarev, Nevenka Lilik, Andrej Grobin, Katarina Rede, Žane Temova Rakuša**

KATEDRA ZA SOCIALNO FARMACIJO

Na Katedri za socialno farmacijo proučujemo vplive zdravil na sodobnega človeka in družbo v mednarodnem in domačem okolju. Ukvarjamo se predvsem z nadzorom zdravil po prihodu na trg oz. v roke bolnika. Pri svojem delu prepletamo naravoslovne in družboslovne metode raziskovanja.

V okviru farmakoepidemiologije spremljamo varnost in učinkovitost zdravil na ravni populacije, s farmakoekonomiko pa osvetlimo stroškovne vidike uporabe zdravil. Zanima nas tudi vrednotenje storitev farmacevta v lekarni, pri čemer posvečamo posebno pozornost raziskovanju vidika pacienta. S pomočjo rezultatov teh raziskav pripomoremo k nadgradnji farmacevtovih storitev, širše pa raziskujemo delovanje zdravstvenega sistema nasploh in vlogo pacienta v njem. V tem okviru proučujemo tudi storitve, ki jih prinaša sodoben način pristopa k pacientu v obliki eZdravja in mZdravja.

Poleg opisanega raziskujemo 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 modern individuals and society in an international and domestic setting. It mainly deals with the control of medicines after their arrival on the market—in other words, into the hands of patients. Its work combines natural and social science research methods.

As part of pharmacoepidemiology, it monitors medicines' safety and effectiveness at the population level, and in pharmacoeconomics it highlights the cost aspect of medicine use. The department is also interested in evaluating pharmacy services with special attention to the patient's perspective, which makes it possible to improve pharmacy services. In the broader perspective, it explores the functioning of the healthcare system and the patient's role in it. In this framework, it also studies modern services in the form of eHealth and mHealth.

The Department of Social Pharmacy also explores the properties of Slovenian and international regulations covering medicines and the pharmaceutical profession. In doing so, it actively contributes to creating new legislation and implementing the highest standards in everyday practice.

Ključni dosežki v letu 2018

Izpostavljamo mlado raziskovalko asist. Andrejo Detiček, ki je pod mentorstvom izr. prof. dr. Igorja Locatellija in izr. prof. dr. Mitje Kosa z raziskavo, objavljeno v reviji z visokim faktorjem vpliva, Value in Health, pokazala velike razlike v dostopnosti zdravil za zdravljenje redkih bolezni med posameznimi evropskimi državami. Ugotovila je, da imajo pacienti v Nemčiji, Veliki Britaniji, skandinavskih državah, Švici in Franciji dostop do širše skupine zdravil za zdravljenje redkih bolezni. Poleg tega je čas od pridobitve dovoljenja za promet do dostopa pacientov do zdravil za zdravljenje redkih bolezni v teh državah krajši. Slovenijo raziskava po številu zdravil in času od pridobitve dovoljenja za promet do dostopa pacientov do omenjenih zdravil umešča v sredino primerjanih držav.

Drugo ključno raziskavo je v sklopu svojega doktorskega dela izvedla mlada raziskovalka asist. Urška Nabergoj Makovec, in sicer randomizirano kontrolirano klinično raziskavo, ki je pokazala učinkovitost pregleda uporabe zdravil za izboljšanje sodelovanja pri zdravljenju bolnikov s slabim sodelovanjem. Raziskava kaže na smiselnost izvajanja pregleda uporabe zdravil v praksi in potrebo po presojanju oz. ustreznejši selekciji pacientov za omenjeno kognitivno storitev.

Kot pomembno je moč izpostaviti tudi mednarodno sodelovanje izr. prof. dr. Mitje Kosa in doc. dr. Nejca Horvata, ki sta v okviru Evropske mreže raziskovalcev s področja farmacevtske skrbi sodelovala pri oblikovanju mednarodne definicije pregleda zdravil (Medication review), objavljene v letu 2018 (https://link.springer.com/article/10.1007/s11096-018-0696-7).

Key achievements in 2018

Of note is a study performed by the junior researcher Andreja Detiček, advised by Assoc. Prof. Igor Locatelli and Assoc Prof. Mitja Kos. The study was published in Value in Health, a journal with a high impact factor, and it showed important differences among European countries in patient access to medicines for rare diseases. Patients in Germany, the Scandinavian countries, Switzerland, France, and the UK can access a larger number of medicines in a shorter time than in other European countries. Based on the number of medicines available and time to patient access to medicines for rare diseases, Slovenia was shown to be in the middle range of countries evaluated in this study.

In addition, the junior researcher Urška Nabergoj Makovec carried out a randomized controlled clinical trial that showed the effectiveness of the Medicines Use Review (MUR) in improving medication adherence in patients with poor adherence. The study shows the importance of implementing MUR in practice and the need for screening and targeting of patients for MUR.

Also noteworthy is an international collaboration: Assoc. Prof. Mitja Kos and Assist. Prof. Nejc Horvat collaborated in a working group of the Pharmaceutical Care Network Europe (PCNE), which established an internationally applicable definition of medication review. The definition was published in 2018 (https://link.springer.com/article/10.1007/s11096-018-0696-7).

Člani / Members

- **izr. prof. dr. Mitja Kos, izr. prof. dr. Igor Locatelli**
- **dr. Nanča Čebron Lipovec, dr. Andreja Čufar, dr. Nejc Horvat, Ana Janežič, Janja Jazbar, dr. Nika Marđetko, Urška Nabergoj Makovec, Špela Žerovnik, Janja Rižnar, Špela Žerovnik**

TAJNIŠTVO FAKULTETE

Tajništvo fakultete je organizacijska enota, ki skrbi za organizacijska, pravna, upravna vprašanja in postopke, za opravljanje strokovno-administrativnih del s finančnega, računovodskega, kadrovskega, študijskega in raziskovalnega področja, za področje informatike, za knjižnico ter za vzdrževanje nepremičnin, okolice in opreme pri izvajanju nacionalnega programa visokega šolstva in nacionalnega programa znanstvenoraziskovalne dejavnosti na UL FFA.

Tajništvo fakultete opravlja tudi upravno-administrativne in finančno gospodarske naloge v zvezi z izvajanjem tržne dejavnosti fakultete.

Delavci Tajništva fakultete pripravljajo strokovne podlage s svojega delovnega področja za odločitve vodstva in organov fakultete.

V to organizacijsko enoto sodi tudi učitelj športne vzgoje.

Tajništvo vodi tajnik fakultete.

FACULTY SECRETARY'S OFFICE

The faculty secretary's office is an organizational unit that takes care of organizational, legal, and administrative issues and procedures for performing professional and administrative work in financing, accounting, human resources, study and research, informatics, library work, and maintenance of facilities, surroundings, and equipment in carrying out the national higher education program and the national program of scientific and research activity.

The secretary of the faculty performs secretarial, administrative, and financial tasks related to carrying out the faculty's marketing activities.

The members of the faculty secretary's office prepare expert opinions related to their field of work to help the faculty management and its bodies in decision-making.

The physical education teacher is also a member of this organizational unit.

The secretary's office is headed by the secretary of the faculty.

Člani / Members

Zdenka Gantar, Tanja Gregorič, Rafael Hribar, Urban Jernejčič, Nataša Juvan, Tanja Kadunc, Aleš Kolenko, Tomaž Kuštrin, Judita Merjasec, Stanislava Menard, Marta Pogačar, Ivanka Radojičić, Lidija Ribič, Milenka Sojer, Polona Škulj, Darja Šviga, Boris Terobšič, Borut Toth, Dušan Videmšek, Bernarda Žagar

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:

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.

V okviru centra sta združeni ekspertiza in oprema, ki omogočata fizikalno-kemijsko analizo na vseh nivojih razvoja in spremljanja zdravila.

Center nudi analitsko podporo pri razvoju zdravil, pri identifikaciji in določanju fizikalno-kemijskih lastnosti učinkovin, pomožnih snovi in nečistot. V okviru centra potekajo razvoj, validacija in verifikacija analitskih metod, analitika učinkovin in metabolitov v bioloških sistemih ter analitika rastlinskih drog in njihovih pripravkov.

V 2017 je bil dobavljen in inštaliran UHPLC-HRMS tekočinski kromatograf ultra visoke zmogljivosti, sklopljen z masnim spektrometrom visoke ločljivosti (masni spektrometer visoke ločljivosti Exactive™ Plus Orbitrap in UHPLC Thermo Scientific UltiMate™ 3000). V 2018 smo sistematizirali delovno mesto operaterja za UHPLC-HMRS ter izvedli razpis za zaposlitev operaterja.

INSTITUTE OF PHARMACY

The Institute of Pharmacy is a connecting organizational 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 to follow initiatives in relation to the faculty's research fields and directions. Several research projects, applied professional projects, and international activities that go beyond the activities of 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.

Two infrastructural centers function as part of the Institute of Pharmacy:

The Infrastructural Center for Drug Analysis functions within the University of Ljubljana's Network of Research and Infrastructural Centers (MRIC UL) and is intended to support research and teaching in pharmacy. The center's activities are funded by the Slovenian Public Agency for Research Activity. The center offers primary expert and instrumental support to research programs and research groups at the Faculty of Pharmacy, as well as to other research and educational institutions within and outside the University of Ljubljana.

Within the center, expertise and equipment are combined, allowing physicochemical analysis at all levels of drug development and monitoring.

The center provides analytical support in developing medicines and in identifying and determining the physicochemical properties of active substances, excipients, and impurities. Within the center, activities are underway to develop, validate, and verify analytical methods, analyze active substances and metabolites in biological systems, and analyze plant-based drugs and their preparations.

In 2017, a UHPLC-HRMS ultra-high-performance liquid chromatograph coupled with a high-resolution mass spectrometer was delivered and installed (an Exactive™ Plus Orbitrap high-resolution mass spectrome-

EATRIS Slovenija je član konzorcija EATRIS.ERIC, velike evropske raziskovalne infrastrukture na področju translacijskih raziskav.

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.

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

11. in 12. 12. 2018 je v Ljubljani potekalo mednarodno srečanje Evropskega združenja infrastruktur za translacijske raziskave v biomedicini EATRIS z naslovom: MULTIMODAL APPROACHES IN TRANSLATIONAL MEDICINE.

Velika infrastruktura na področju biomedicinskih znanosti ni primerljiva z veliko infrastrukturo v drugih znanstvenih disciplinah npr. v fiziki, kar izhaja iz narave aplikativno usmerjenih biomedicinskih raziskav, imenovanih tudi prenosne oziroma translacijske raziskave.

EATRIS konzorcij je v letu 2018 pri MIZŠ prijavil projekt »Razvoj raziskovalne infrastrukture za mednarodno konkurenčnost slovenskega RRI prostora – RI-SI- EATRIS-TRI.si« za namen sodelovanja v ESFRI projektih.

V letu 2018 smo bili uspešni pri prijavi na ARRS razpis za sofinanciranje nakupov raziskovalne opreme – paket 17 in pridobili 40 % sofinanciranje dveh večjih kosov raziskovalne opreme (pretočni citometer s slikovno analizo in naprava za iztiskanje talin/kontinuirano granuliranje). S tovrstnimi investicijami želimo povečati dostopnost specifične raziskovalne opreme za raziskovalce različnih organizacijskih enot fakultete, drugih članic UL in zunanjih institucij.

Podprli smo sofinanciranje nakupa krio elektronskega

ter and Thermo Scientific UltiMate™ 3000 UHPLC). In 2018 we systematized the position of a UHPLC-HMRS operator and conducted a call for the operator's employment.

EATRIS Slovenia is a member of the EATRIS.ERIC consortium, a large European research infrastructure in translational research.

By connecting partners from the academic, research, medical, and business communities, we wish to achieve consistent implementation of translational research principles into practice, and thus ensure 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 biomedicine and pharmacy, which will be led strategically and will be included in and connected with the national and international research community, and will encourage innovation and the vision of seeking out new business opportunities in biomedical research, medicine development, and the optimization of medicine use.

On December 11th and 12th, 2018 an international meeting of the European Association of Translational Research in Biomedicine EATRIS took place in Ljubljana, entitled Multimodal Approaches and Translational Medicine.

Large infrastructure in biomedical science is not comparable to large infrastructure in other disciplines (e.g., in physics), which stems from the nature of applied biomedical research, also referred to as translational research.

In 2018, the EATRIS consortium applied for the project Development of Research Infrastructure for the International Competitiveness of the Slovenian RRI Space – RI-SI-EATRIS-TRI.si to participate in ESFRI projects.

In 2018, we were successful in applying for the ARRS call for co-financing the purchase of research equipment (Package 17), and we obtained 40% co-financing for two pieces of large research equipment (a flow cytometer with image analysis and melt extrusion / continuous granulation equipment). With such invest-

mikroskopa na Kemijskem inštitutu, saj s tem želimo omogočiti dostop do velike opreme in podpreti razvoj ekspertize na interdisciplinarnem področju aplikacij krio elektronske mikroskopije v Sloveniji.

ments, we seek to improve the availability of specific research equipment for researchers from various organizational units at the faculty, other UL members, and external institutions.

We have supported co-financing of the purchase of a cryogenic electron microscope at the Institute of Chemistry in order to enable access to such key research equipment and to support the development of expertise in the interdisciplinary field of applications of cryogenic electron microscopy in Slovenia.

Ključni dosežki v letu 2018

Organizacija nacionalnega strokovnega posveta s področja translacijskih raziskav v biomedicini in farmaciji
V sodelovanju z Znanstveno sekcijo SFD je bil 28. 5. 2018 organiziran nacionalni strokovni posvet s področja translacijskih raziskav v biomedicini in farmaciji: »Translational research – Collaboration and Experience Exchange among Academia, Research, Clinic and Pharmaceutical industry«. S predstavniki farmacevtske industrije, akademskih, raziskovalnih in zdravstvenih organizacij smo dobili pregled stanja tovrstnih raziskav v Sloveniji in ugotavljali, kako jih intenzivirati za hitrejši prenos raziskovalnih izsledkov v klinično rabo.

Soorganizacija delavnice »Best Practices in Biomedical Public-Private Research Collaborations«
Mednarodna iniciativa novih biomedicinskih raziskovalnih infrastruktur – CORBEL je v sodelovanju EATRIS.Slovenia dne 12. in 13. 12. 2018 organizirala delavnico »Best Practices in Biomedical Public-Private Research Collaborations«. Delavnica je naslovila problematiko razvoja raziskovalnih mrež, pravnega okvirja in upravljanja projektov na področju javno-zasebnega partnerstva.

Povezovanje z industrijo – začetek novega cikla projekta razvoja 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.

Key achievements in 2018

Holding a national expert forum in translation research in biomedicine and pharmacy
In cooperation with the SFD Section of Pharmaceutical Sciences, a national expert forum on translation studies in biomedicine and pharmacy was held on May 28th, 2018: Translational Research – Collaboration and Experience Exchange among the Academia, Research, Clinic, and Pharmaceutical Industry. Together with representatives of the pharmaceutical industry and academic, research, and health organizations, we gained an overview of the state of translational research in Slovenia and reflected on how to intensify it for faster transfer of research findings into clinical use.

Joint organization of the workshop Best Practices in Biomedical Public-Private Research Collaborations
On December 12th and 13th, 2018 the workshop Best Practices in Biomedical Public-Private Research Collaborations was co-organized by the international initiative of new biomedical research infrastructures CORBEL and EATRIS.Slovenia. The workshop addressed issues in the development of research networks, the legal framework, and the management of projects in public-private partnerships.

Links with industry: launching a new human resource development project cycle
By connecting premises, equipment, and personnel potentials of the faculty and businesses, we facilitate the inclusion of young experts in applied projects in new pharmaceutical product development, analytical methods, evaluation of (geno)toxicity of active ingredients, registration of new medicines, and regulation. Young experts entering such projects do so as part of their doctoral studies or a certificate that is a part of their postdoctoral education. The purpose of such cooperation is to create deeper and stronger connections between the academic and business worlds. Companies have the opportunity to orient young experts while they are still studying and focus them on real challenges that companies are facing.

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.

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

The DŠFS and ŠSSFD function as a single organization 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 organization carries out various public campaigns, humanitarian projects, Twitnet and SEP international exchanges, the International Pharmaceutical Summer Camp (IPSC), and professional training evenings. The organization also publishes the student newsletter Spatula three times a year.

Student Council of the Faculty of Pharmacy, University of Ljubljana (ŠSFFA)

The Student Council is one of the faculty's governing bodies. Its members, who are elected annually, are representatives of each year of their respective programs. The ŠSFFA represents Faculty of Pharmacy 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. The ŠSFFA mainly deals with the program at the Faculty of Pharmacy and defending students' rights at all levels of representation.

Student Organization of the Faculty of Pharmacy (ŠOFFA)

The ŠOFFA is one of the ŠOU's (the University of Ljubljana Student Organization) branches, which exists at each faculty at the University of Ljubljana. The ŠOFFA holds various educational and social events, such as the Christmas excursion, pharmaceutical picnic, pharmaceutical ski trip, and other activities. Social activities are necessary to connect younger and older students, which in turn allows exchange of knowledge and experience.

Kratice/Abbreviations

**EATRIS.Slovenia/European Advanced Translational Research InfraStructure in Medicine - Translational Research Innitiative.Slovenia)*
**UL FFA/Univerza v Ljubljani, Fakulteta za farmacijo*
**MIZŠ/Ministrstvo za izobraževanje, znanost in šport*
**UPLC-HRMS/ultra-performance liquid chromatography-high resolution mass spectrometry*

2 Poročilo o delu
Activity report

PREGLED POSLOVANJA

UL FFA je v letu 2018 poslovala uspešno in dosegla zastavljene cilje. Realizirani prihodki so znašali 9.480.171 EUR, odhodki pa 9.297.300 EUR. Ustvarjeni presežek prihodkov nad odhodki pred in po obračunu davka od dohodkov pravnih oseb (DDPO) je tako znašal 182.871 EUR, saj obveznosti iz naslova DDPO UL FFA ne izkazuje zaradi uveljavljanja davčnih olajšav za investicije.

V primerjavi z letom 2017 so se realizirani prihodki UL FFA v letu 2018 povečali za 540.727 EUR oz. 6,0 %, prav tako pa so bili višji odhodki za 459.462 EUR oz. 5,2 %, zaradi česar je bil ustvarjen poslovni izid v letu 2018 81.265 EUR oz. 80 % višji kot v letu 2017.

Največja absolutna rast prihodkov v letu 2018 v primerjavi z letom 2017 je bila dosežena pri financiranju osnovne dejavnosti s strani MIZŠ (za 292.759 EUR oz. 5,3 %) kot posledica višjega financiranja študijskih programov I. in II. stopnje. Relativno je bila največja rast dosežena v kategoriji »EU skladi in mednarodni projekti« (za 156.373 EUR oz. 74,4 %), predvsem zaradi pričetka izvajanja projekta PhD4GlycoDrug.

Uspešnost poslovanja v letu 2018 pa se verjetno najbolj kaže v višjih prihodkih od ARRS, ki so z 2.067.813 EUR za 208.858 EUR oz. 11,2 % višji kot leta 2017 ter v nekoliko višjih prihodkih na dejavnosti prodaje storitev na trgu, ki s 733.724 EUR predstavljajo 7,7 % delež v celotnih prihodkih fakultete in so glede na leto 2017 višji za 17.209 EUR oz. 2,4 %. Zaradi večjega obsega poslovanja so se povečale tudi vse kategorije stroškov.

BUSINESS OVERVIEW

In 2018, the University of Ljubljana's Faculty of Pharmacy was successful in its business performance and achieved most of the goals it set. Generated revenues amounted to €9,480,171, and expenses were in the amount of €9,297,300, resulting in an achieved excess of revenues over expenses in the amount of €182,871 before and after income tax. The faculty did not pay any income tax due to tax relief on investments.

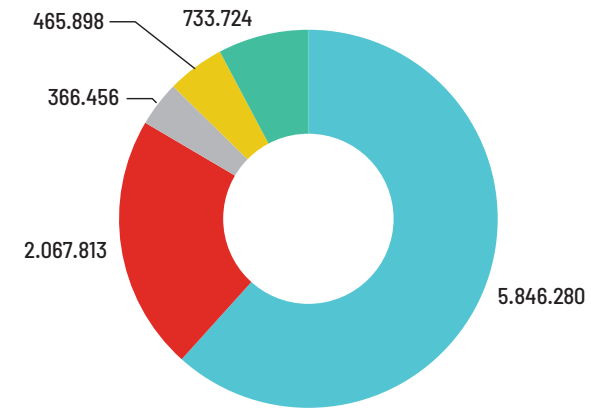
Compared to 2017, revenues increased by €540,727 or 6.0 % and expenses by €459,462 or 5.3 %, which led to a higher net income of €81,265 or 80 %.

The highest absolute revenue growth compared to 2017, in the amount of €292,759 or 5.3 %, was from financing undergraduate and graduate programs by the Ministry of Education, Science, and Sport. The highest relative revenue growth was recorded in the category of EU funds and international research projects, at €156,373 or 74.4 %, mostly due to the start of the H2020 PhD4GlycoDrug project. However, the most successful growth can be considered the increase in revenues from the Slovenian Research Agency, which amounted to €2,067,813 and were €208,858 or 11.2 % higher than in 2017, and somewhat higher revenues from cooperation with industry, which amounted to €733,724 (a €17,209 increase or 2.4 %) and represent a 7.7 % share of total revenues. The increase in business activities, which resulted in higher revenues, also led to higher expenses in all categories

Prihodki v EUR / Revenue, EUR	2018	2017	Struktura 2018 /Structure 2018	Indeks 18/17 /Index 18/17
Prihodki od MIZŠ / Ministry of Education, Science and Sport	5.846.280	5.553.521	61,7%	105,3
Prihodki od ARRS / Slovenian Research Agency	2.067.813	1.858.955	21,8%	111,2
EU skladi in mednarodni projekti / EU funds and international projects	366.456	210.083	3,9%	174,4
Druga javna služba / Other public services	465.898	600.370	4,9%	77,6
Prodaja blaga in storitev na trgu / Market sales of goods and services	733.724	716.515	7,7%	102,4
Skupaj prihodki	**9.480.171**	**8.939.444**	**100,00%**	**106**

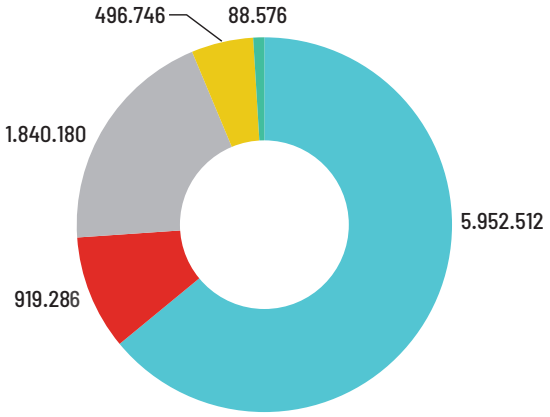
Odhodki v EUR / Expenses, EUR	2018	2017	Struktura 2018 /Structure 2018	Indeks 18/17 /Index 18/17
Stroški dela / Labour	5.952.512	5.747.545	64,0%	103,6
Stroški materiala / Material	919.286	874.721	9,9%	105,1
Stroški storitev / Services	1.840.180	1.733.001	19,8%	106,2
Stroški amortizacije / Depreciation	496.746	423.617	5,3%	117,3
Drugi stroški in odhodki / Other	88.576	58.954	1,0%	150,2
Skupaj odhodki	**9.297.300**	**8.837.838**	**100,00%**	**105,2**
Rezultat poslovanja / Economic outturn	**182.871**	**101.606**		

STRUKTURA PRIHODKOV V 2018, PO VIRU FINANCIRANJA V EUR
REVENUE STRUCTURE IN 2018, 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 projects
- Druga javna služba / Other public services
- Prodaja blaga in storitev na trgu / Market sales of goods and services

STRUKTURA PRIHODKOV V 2018, PO VIRU FINANCIRANJA V EUR
EXPENSES STRUCTURE IN 2018, IN EUR



- Stroški dela / Labor
- Stroški materiala / Material
- Stroški storitev / Services
- Stroški amortizacije / Depreciation
- Drugi stroški in odhodki / Other

ŠTUDIJSKO PODROČJE

PREDSTAVITEV ŠTUDIJSKIH PROGRAMOV

Značilnost študija na UL 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 UL FFA:

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

Podiplomski študijski programi UL FFA:

- Industrijska farmacija, magistrski študijski program (S2 INF)
- Laboratorijska biomedicina, magistrski študijski program (S2 LBM)
- Biomedicina, interdisciplinarni doktorski študijski program (smeri: Farmacija, Klinična biokemija in laboratorijska biomedicina ter Toksikologija)

Specialistični podiplomski študij, kjer UL FFA izvaja teoretične vsebine, nosilca študija sta 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
- Temeljne naravoslovne biomedicinske vsebine
- Splošne strokovne vsebine laboratorijske biomedicine

FIELD OF STUDY

PRESENTATION OF ACADEMIC PROGRAMS

Studying at the Faculty of Pharmacy involves a high level of interdisciplinary knowledge and the inclusion of students in research work in all levels of education, resulting in excellent and highly motivated graduates.

Academic programs:

Undergraduate programs:

- Pharmacy, single-cycle master's program (EM FAR)
- Cosmetology, bachelor's program (S1 KOZ)
- Laboratory Biomedicine, bachelor's program (S1 LBM)

Graduate programs:

- Industrial Pharmacy, master's program (S2 INF)
- Laboratory Biomedicine, master's program (S2 LBM)
- Biomedicine, interdisciplinary doctoral program (fields: pharmacy, clinical biochemistry and laboratory biomedicine, toxicology).

Graduate certificate programs, for which the faculty is responsible for theory, and the Slovene Chamber of Pharmacists 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 certificate,
- Laboratory Biomedicine: medical biochemistry

Lifelong education programs

National:

- Professional training for the master's in pharmacy,
- Laboratory Medicine: accredited parts of the S2 LBM program:
- Basic natural science aspects of biomedicine
- General professional aspects of laboratory biomedicine, and

- Usmerjene strokovne vsebine laboratorijske biomedicine

Mednarodna:

- Poletna šola CEEPUS: Vnetne bolezni

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.

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.

- Selected professional aspects of laboratory biomedicine.

International

- CEEPUS Summer School: Inflammatory Disease

SINGLE-CYCLE master's program in pharmacy

In accordance with European Directive 2006/36/ES, the pharmacy program educates students for the regulated profession of pharmacist and gives them the degree master of pharmacy, which is recognized by all EU member states. The program gives the students the skills to carry out professional work and tasks in pharmacy, including counselling patients, dispensing medicines, development and research, analysis, and controlling the quality of medicines. The program provides students with a firm basis to continue their education at the doctoral level, and it is open to ongoing lifelong professional training. The five-year program includes six months of mandatory practical training in pharmacies and the master's thesis research and defense.

BACHELOR'S and MASTER'S programs in laboratory biomedicine

After the first cycle of study (three years), a laboratory biomedicine student obtains the degree bachelor of laboratory biomedicine. After the second cycle (an additional two years), the student receives the degree master of laboratory biomedicine. After each of the two cycles, students can seek employment in various medical laboratories or in industry. At the end of the second cycle, students can also continue their education at the doctoral level or with a certificate in medical biochemistry.

BACHELOR'S program in cosmetology

This university program lasts for three years and gives its students the degree bachelor of cosmetology. Its main purpose is to provide experts with skills in cosmetic sciences. Alongside basic knowledge of the natural sciences, the program offers in-depth study of professional cosmetology sciences.

MASTER'S program in industrial pharmacy

This master's program (two years) provides students with the knowledge and skills needed to work in a phar-

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 UL je v veliki izbirnosti, ki bodočim doktorjem znanosti omogoča študij po meri in pridobivanje specifičnih kompetenc, ki jih težko pokriva le ena članica UL.

maceutical industrial environment, but not in the regulated pharmacist profession. The student receives the professional degree master of industrial pharmacy.

DOCTORAL program in biomedicine

The Faculty of Pharmacy is responsible for pharmacy, clinical biochemistry and laboratory biomedicine, and toxicology. The basic idea of the interdisciplinary program offered by multiple member institutions of the University of Ljubljana lies in the multiplicity of choices. In this way, future doctorate holders acquire specific skills that would be difficult to acquire at a single faculty.

ŠTUDENTI IN DIPLOMANTI 2017/2018 / 2017/18 STUDENTS AND GRADUATES

Število študentov

V študijskem letu 2017/2018 je bilo na vseh programih dodiplomskega in podiplomskega študija UL FFA vpisanih 1434 študentov.

V študijskem letu 2017/2018 je zaključilo študij:

- 252 diplomantov na 1. in 2. stopnji (134 EM FAR, 25 S1 KOZ, 29 S1 LBM, 28 S2 INF, 36 S2 LBM)
- 9 diplomantov na 3. stopnji

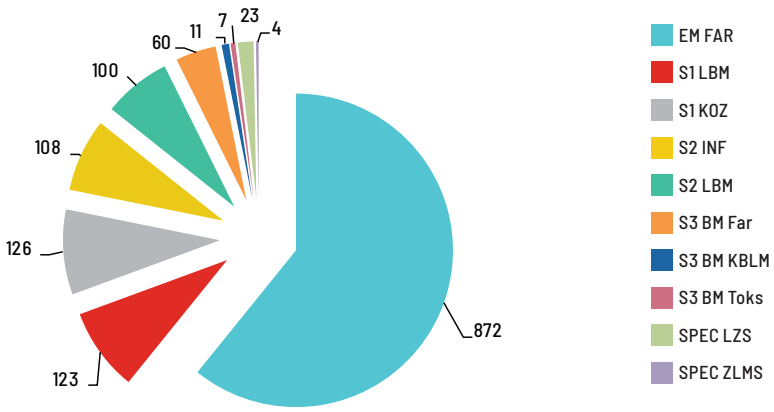
Number of students

In the 2017/2018 academic year, 1,434 students were enrolled in the undergraduate and graduate programs at the University of Ljubljana's Faculty of Pharmacy.

In the 2017/2018 academic year, there were:

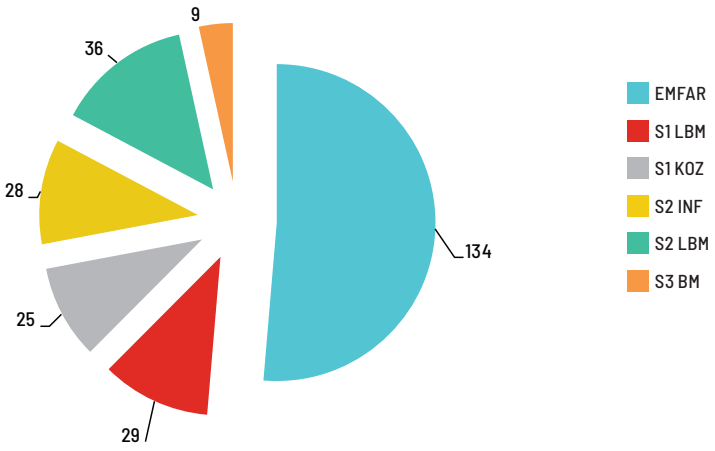
- 252 graduates in cycles 1 and 2 (134 EM FAR, 25 S1 KOZ, 29 S1 LBM, 28 S2 INF, 36 S2 LBM), and
- Nine graduates in cycle 3.

ŠTUDENTI PO ŠTUDIJSKIH PROGRAMIH V 2017/2018 / STUDENTS BY PROGRAM, 2017/2018



EM FAR – Farmacija (enoviti magistrski študij)/ Pharmacy (single-cycle master's degree); **S1 LBM – Laboratorijska biomedicina (1. stopnja)/** Laboratory biomedicine (bachelor's degree); **S1 KOZ – Kozmetologija (1. stopnja) /** Cosmetology (bachelor's degree); **S2 INF – Industrijska farmacija (2. stopnja) /** Industrial pharmacy (master's degree); **S2 LBM – Laboratorijska biomedicina (2. stopnja) /** Laboratory biomedicine (master's degree); **S3 BM – Biomedicina (3. stopnja): področja Farmacija, Klinična biokemija in laboratorijska biomedicine ter Toksikologija /** Biomedicine (doctorate) in 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 /** Certificate in collaboration with the Pharmacy Chamber of Slovenia in clinical pharmacy, community pharmacy, medicinal design, medicinal testing, and pharmacognosy, and in collaboration with the Laboratory Medicine Chamber of Slovenia in medical biochemistry

DIPLOMANTI PO ŠTUDIJSKIH PROGRAMIH V 2017/2018 / GRADUATES BY PROGRAM, 2017/2018



Podelitev diplom 2018 / Graduation ceremony 2018

Promocija doktorjev znanosti 2018 / Promotion ceremony 2018

ZNANSTVENA, RAZISKOVALNA IN STROKOVNA DEJAVNOST

V letu 2018 smo na področju raziskav in razvoja nadaljevali uspešno delo preteklih let. Na podlagi predhodnih raziskav in perspektivnih protimikrobnih spojin vodnic smo na UL FFA s strani ENABLE projektne skupine v okviru Innovative Medicines Initiative (IMI) platforme javno-zasebnega partnerstva prejeli povabilo k pridružitvi projektu ENABLE (European Gram Negative AntiBacterial Engine) ter aktivno tudi že začeli z usmerjenimi raziskavami.

Zaposleni UL FFA so v preteklem letu prejeli vidna priznanja: Novartisovo znanstveno priznanje za uglednega znanstvenika (»Distinguished Scientist Award«), Zlati znak Jožefa Stefana za leto 2018 in Minařikovo priznanje. Imeli smo oziroma bili del zmagovalnih ekip (1. in 2. mesto) na razpisu Rektorjeve nagrade za naj inovacijo Univerze v Ljubljani 2018. Dosegli smo nekaj pomembnih raziskovalnih dosežkov s področja naravoslovja in medicine, ki so jih raziskovalci UL FFA objavili v prestižnih revijah z visokimi faktorji vpliva.

Pri vseh ključnih kazalcih uspešnosti raziskovalnega dela (število objav, število citatov, število patentov in število FTE) smo v letu 2018 beležili pozitivno rast, kar kaže na to, da je UL FFA v trenutnih razmerah ustrezno raziskovalno organizirana.

S ciljem povečanja kakovosti raziskovalnega dela in namenom dodajanja novih komplementarnih vsebin v obliki specializiranih centrov smo v letu 2018 uspešno zaključili aktivnosti 1. faze javnega urbanistično-arhitekturnega natečaja za novi stavbi UL FFA in UL FS v novo nastajajočem univerzitetnem kampusu Brdo.

OBJAVE IN CITIRANOST DEL V LETU 2018

Raziskovalci na UL FFA so v letu 2018 objavili 164 znanstvenih člankov, od tega 144 v revijah s faktorjem vpliva (SCI), kar je največ po letu 2011. V revijah z SCI je bilo objavljenih 119 izvirnih in 23 preglednih

RESEARCH AND PROFESSIONAL ACTIVITIES

In 2018, we continued our successful research and development work of the past years. On the basis of previous research and promising antimicrobial compounds, we received an invitation to join the ENABLE project (European Gram Negative AntiBacterial Engine) by the ENABLE project team as part of the Innovative Medicines Initiative (IMI) of the Public-Private Partnership Platform and actively started targeted research.

Employees of the Faculty of Pharmacy won prominent awards in the past year: the Novartis Distinguished Researcher Award, the Jožef Stefan Institute Gold Medal for 2018, and the 2018 Minařik Award. We had or were part of the winning teams (first and second prize) in the Chancellor's Prize for Innovation in the University of Ljubljana call in 2018. We gained important research achievements in the natural sciences and medicine, which were published in prestigious journals with high impact factors.

All key indicators of the success of the research work (number of announcements, number of citations, number of patents, and amount of FTE) showed positive growth in 2018, which indicates that the Faculty of Pharmacy appropriately manages research with respect to current conditions.

In order to increase the quality of the research work and to add new complementary research content in the form of specialized centers, in 2018 we completed the activities of the first phase of the public urban and architectural competition for new buildings for the Faculty of Pharmacy and the Faculty of Mechanical Engineering at the newly emerging Brdo University Campus.

PUBLICATIONS AND CITATION OF WORKS IN 2018

In 2018, researchers at the Faculty of Pharmacy published 164 research articles, of which 144 were in jour-

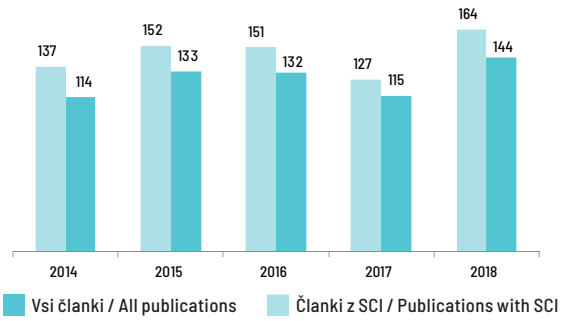
znanstvenih člankov ter 2 kratka znanstvena prispevka. V letu 2018 so objavljena dela UL FFA prejela 3941 čistih citatov, kar predstavlja konstantno rast (za 2,5 % več kot leto poprej).

Preglednica spodaj ponazarja vire financiranja raziskovalne dejavnosti in razmerje znanstvenih člankov glede na FTE, financiranih iz virov ARRS in EU. Faktor učinkovitosti števila znanstvenih objav z SCI glede na FTE (ARRS in EU) je bil v letu 2018 3,3 članke z SCI/FTE.

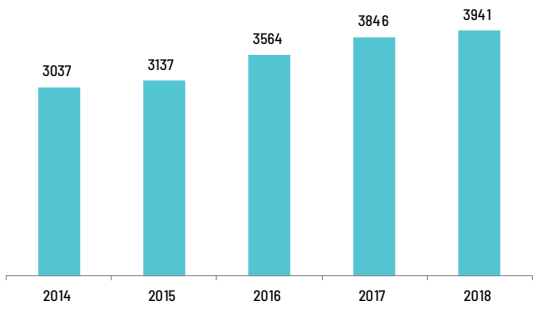
nals listed in the Science Citation Index (SCI), which is the highest output since 2011. Altogether, 119 original articles, twenty-three review articles, and two short research articles were published in SCI journals. In 2018, the published works of the Faculty of Pharmacy received 3,941 pure citations, which is a constant increase (2.5% more) from the year before.

The table below illustrates the sources of funding for research activities and the ratio of research articles in terms of FTE financed from ARRS and EU sources. In 2018, the effectiveness of the number of research publications with SCI in relation to FTE (ARRS and EU) was 3.3.

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				
2014	19,8	16,8	8,2	44,8	3,2	2,7
2015	19,06	13,8	5,5	38,36	4	3,5
2016	23,22	16,83	2,24	42,29	3,6	2,9
2017	21,49	15,1	1	37,59	3,4	3,1
2018	24,31	16,6	2,3	43,21	3,8	3,3

PROJEKTI IN PROGRAMI

Raziskovalno delo fakultete je potekalo pod okriljem štirih programskih skupin ter v okviru številnih projektov. V letu 2018 so bili nacionalni raziskovalni programi ARRS financirani v obsegu 12,63 FTE. UL FFA je izvajala še 21 temeljnih raziskovalnih projektov, 2 aplikativna raziskovalna projekta, 2 podoktorska projekta, 2 druga nacionalna projekta (MIZŠ), večje število razvojno-raziskovalnih projektov projektov z gospodarstvom, evropske projekte v obsegu 2,3 FTE ter več drugih mednarodnih in bilateralnih projektov.

V letu 2018 smo pridobili 5 novih mladih raziskovalcev. Z uspešnimi prijavami na programske in projektne razpise ARRS smo v 2018 uspeli povečati obseg financiranja za 3 FTE in ob sprejetju ustreznih organizacijskih aktov zaposlili dva raziskovalca za nedoločen čas.

NACIONALNI PROGRAMI IN PROJEKTI

RAZISKOVALNI PROGRAMI UL FFA

- Farmacevtska tehnologija: od dostavnih sistemov učinkovin do terapijskih izidov zdravil pri otrocih in starostnikih P1-0189
  (vodja prof. dr. Albin Kristl, obseg 3,88 FTE)
- Farmacevtska kemija: načrtovanje, sinteza in vrednotenje učinkovin P1-0208
  (vodja prof. dr. Danijel Kikelj, obseg: 6,10 FTE)
- Farmacevtska biotehnologija: znanost za zdravje P4-0127
  (vodja prof. dr. Janko Kos, obseg na UL FFA: 1,5 FTE)
- Klinična biokemija: 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 na UL FFA: 1,15 FTE)

PROJECTS AND PROGRAMS

The faculty's research work was carried out under the auspices of four program groups and in the framework of many projects. In 2018, ARRS's national research programs were financed to the extent of 12.63 FTE. The Faculty of Pharmacy also carried out twenty-one basic research projects, two applied research projects, two postdoctoral projects, two other national projects of the Ministry of Education, Science, and Sport, a large number of research development projects in cooperation with industry, European projects to the extent of 2.3 FTE, and several other international and bilateral projects.

In 2018 we acquired five new junior researchers. With successful applications to the ARRS program and project calls, we managed to increase the volume of financing by three FTEs in 2018. Two researchers were employed for an indefinite period of time after adopting appropriate organizational documents.

NATIONAL PROGRAMS AND PROJECTS

FACULTY OF PHARMACY RESEARCH PROGRAMS

- Pharmaceutical technology: From delivery systems for active ingredients to drugs' therapeutic results in children and older people – P1-0189
  (PI: Prof. Albin Kristl; extent: 3.88 FTE)
- Pharmaceutical chemistry: Planning, synthesis, and evaluation of active ingredients – P1-0208
  (PI: Prof. Danijel Kikelj; extent: 6.10 FTE)
- Pharmaceutical biotechnology: Science for health – P4-0127
  (PI: Prof. Janko Kos; extent: 1.50 FTE)
- Genes, hormonal and personality changes in metabolic disorders – P3-0298
  (PI: Prof. Andrej Janež from the Ljubljana University Medical Center; coordinator at the Faculty of Pharmacy: Prof. Janja Marc; extent: 1.15 FTE)

RAZISKOVALNI PROJEKTI UL FFA

Temeljni raziskovalni projekti ARRS

- 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 UL FFA: doc. dr. Petra Kocbek, nosilka: prof. dr. Mateja Erdani Kreft, UL MF)
- Receptorji za toksine rastlinskih patogenov
  (koordinator na UL FFA: prof. dr. Stanislav Gobec, nosilec: prof. dr. Gregor Anderluh, KI)
- Strukturni vpogled v metabolizem joda
  (koordinator na UL FFA: prof. dr. Stanislav Gobec, nosilec: prof. dr. Dušan Turk, IJS)
- Elektrostatska imobilizacija bakterij in vpliv na njihovo fiziologijo
  (koordinatorica na UL FFA: prof. dr. Julijana Kristl, nosilec: prof. dr. Aleš Lapanje, IMMT)
- Uporaba hmeljnih pripravkov za ekološko zatiranje varoje (Varroa destructor)
  (koordinator na UL 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 UL FFA: izr. prof. dr. Lucija Peterlin Mašič, nosilec: prof. dr. Miran Brvar, UL MF)
- Identifikacija nepetidnih inhibitorjev imunoproteasoma z metodami razvoja učinkovin na osnovi fragmentov
  (nosilec: prof. dr. Stanislav Gobec)
- Dinamični vidik vezave ligandov na proteine
  (koordinator na UL 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

FACULTY OF PHARMACY RESEARCH PROJECTS

ARRS basic research projects:

- Discovering new regulators of RANKL gene expression: key molecules not only in bone regeneration
  (PI: Prof. Janja Marc)
- Nanotheranostics based on magnetic responsive materials
  (PI: Assoc. Prof. Petra Kocbek)
- Tunneling membrane nanotubes for the innovative treatment of urethral bladder cancer
  (coordinator at the Faculty of Pharmacy: Assoc. Prof. Petra Kocbek; PI: Prof. Mateja Erdani Kreft, University of Ljubljana, Faculty of Medicine)
- Receptors for plant pathogenic toxins
  (coordinator at the Faculty of Pharmacy: Prof. Stanislav Gobec; PI: Prof. Gregor Anderluh, National Institute of Chemistry)
- Structural inspection of iodine metabolism
  (coordinator at the Faculty of Pharmacy: Prof. Stanislav Gobec; PI: Prof. Dušan Turk, Jožef Stefan Institute)
- Electrostatic immobilization of bacteria and the influence on their philosophy
  (coordinator at the Faculty of Pharmacy: Prof. Julijana Kristl; PI: Prof. Aleš Lapanje, Institute of Metagenomics and Microbial Technologies)
- Using hops concoctions for ecological pest control of Varroa destructor
  (coordinator at the Faculty of Pharmacy: Prof. Stanko Srčič; PI: Prof. Iztok Jože Košir, Slovenian Institute of Hop Research and Brewing)
- A system for discovering new psychoactive substances in Slovenia (SONDA)
  (coordinator at the Faculty of Pharmacy: Prof. Lucija Peterlin Mašič; PI: Prof. Miran Brvar, University of Ljubljana, Faculty of Medicine)
- Identification of non-peptide inhibitors of immuno-proteasomes with developing fragment-based active ingredient methods
  (PI: Prof. Stanislav Gobec)
- A dynamic perspective on ligand binding to proteins
  (coordinator at the Faculty of Pharmacy: Prof. Stan-

(koordinatorica na UL FFA: prof. dr. Marija Sollner Dolenc, nosilka: prof. dr. Metka Filipič, NIB)

- Inhibicija prenove celične stene Staphylococus aureus
  (koordinator na UL FFA: prof. dr. Marko Anderluh, nosilec: prof. dr. Dušan Turk, IJS)
- Novi izzivi folatne terapije v porodništvu in ginekologiji (koordinatorica na UL FFA: prof. dr. Irena Mlinarič-Raščan, nosilec: prof. dr. Ksenija Geršak, UKC LJ)
- Potencial nizkih, sub-terapevtskih odmerkov statinov in sartanov v primarni in sekundarni preventivi srčno-žilnih bolezni
  (koordinatorica na UL 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)
- Razvoj agonistov receptorja NOD2 ter dualnih NOD2/TLR7 agonističnih konjugatov kot novih adjuvansov za cepiva
  (nosilec: izr. prof. dr. Žiga Jakopin)
- Nove protitumorne učinkovine napetostno odvisnih kalijevih kanalov hEag1 in njihova validacija v limfomih
  (nosilka: prof. dr. Lucija Peterlin Mašič)
- Nanozdravila z antibiotiki in probiotiki za lokalno zdravljenje parodontalne bolezni
  (nosilka: prof. dr. Julijana Kristl)
- Zaviranje aktivnosti katepsina X kot nov pristop za zdravljenje Parkinsonove bolezni
  (nosilka: doc. dr. Anja Pišlar)
- Ciljanje, slikanje in zdravljenje kolorektalnega raka z varnimi teranostičnimi bakterijami
  (koordinator na UL FFA: prof. dr. Borut Štrukelj, nosilec: prof. dr. Aleš Berlec, IJS)
- Identifikacija nepeptidnih inhibitorjev imunoproteasoma z metodami razvoja učinkovin na osnovi fragmentov
  (nosilec: prof. dr. Stanislav Gobec)

islav Gobec; PI: Prof. Simona Golič Grdadolnik, National Institute of Chemistry)

- Endocrine and genotoxic potential of inhibitors of protein kinases: Significance for environmental and human health risks
  (coordinator at the Faculty of Pharmacy: Prof. Marija Sollner Dolenc; PI: Prof. Metka Filipič, National Institute of Biology)
- Inhibition of cell wall regeneration in Staphylococcus aureus
  (coordinator at the Faculty of Pharmacy: Prof. Marko Anderluh; PI: Prof. Dušan Turk, Jožef Stefan Institute)
- New challenges for the folate therapy in obstetrics and gynecology
  (coordinator at the Faculty of Pharmacy: Prof. Irena Mlinarič-Raščan; PI: Prof. Ksenija Geršak, Ljubljana University Medical Center)
- 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; PI: Prof. Mirza Šabovič, Ljubljana University Medical Center)
- Preventing the resistance of tumor cells to anti-protease therapy with inhibitors of cathepsin X
  (PI: Prof. Janko Kos)
- Development of NOD2 agonists and dual NOD2/TLR7 agonistic conjugates as novel vaccine adjuvants
  (PI: Prof. Žiga Jakopin)
- New anticancer leads for emerging cancer target potassium ion channels hEag1 and its validation in lymphoma tumors
  (PI: Prof. Lucija Peterlin Mašič)
- Nanomedicines with antibiotics and probiotics for local treatment of periodontal disease
  (PI: Prof. Julijana Kristl)
- Inhibition of cathepsin X activity as a novel strategy for the treatment of Parkinson's disease
  (PI: Assist. Prof. Anja Pišlar)
- Targeting, imaging, and treating of colorectal cancer with safe theranostic bacteria
  (coordinator at the Faculty of Pharmacy: Prof. Borut

Aplikativni raziskovalni projekti ARRS

- 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

- Zaviralci butirilholin-esteraze za lajšanje simptomov Alzheimerjeve bolezni
  (nosilec: asist. dr. Urban Košak)
- Razvoj novih zaviralcev encimov biosinteze peptidoglikana MurA in MurB
  (nosilec: doc. dr. Marko Jukič)

Drugi nacionalni projekti

- Spodbujanje izvajanja raziskovalno-razvojnih projektov (TRL 3-6): Ekstrakcija in oplemenitenje sirotkinih proteinov ter izraba preostanka za oblikovanje novih funkcionalnih živil in prehranskih dopolnil »LAKTIKA«. Koordinator projekta je ARHEL d. o. o., koordinator projekta na UL FFA: prof. dr. Albin Kristl, sodelujeta Katedra za biofarmacijo in farmakokinetiko ter Katedra za farmacevtsko tehnologijo.
- Raziskovalci na začetku kariere 2.0 (Validacija imunoproteasoma kot terapevtske tarče in razvoj inhibitorjev, prijaviteljica: dr. Eva Ogorevc)

Štrukelj, PI: Prof. Aleš Berlec, Jožef Stefan Institute)

- Identification of non-peptide inhibitors of immunoproteasomes with developing fragment-based active ingredient methods
  (PI: Prof. Stanislav Gobec)

ARRS's applied research projects

- Nano-structured fiber materials for a targeted deposition of active substances created by electro-spinning
  (coordinator at the Faculty of Pharmacy: Prof. Albin Kristl; PI: Prof. Igor Emri, University of Ljubljana, Faculty of Mechanical Engineering),
- Development of multifunctional active substances for the treatment of Alzheimer's disease
  (PI: Prof. Stanislav Gobec).

Post-doctoral research projects

- Butyrylcholinesterase inhibitors for alleviating symptoms of Alzheimer's disease
  (PI: Assist. Prof. Urban Košak)
- Developing new inhibitors of MurA and MurB enzymes for peptidoglycan biosynthesis
  (PI: Assist. Prof. Marko Jukič)

Other national projects:

- Promoting research and development projects (TRL 3-6): Extraction and enrichment of whey proteins and the use of the residuals for the design of new functional foods and dietary supplements (LAKTIKA).
  The PI of the project is ARHEL d.o.o., the coordinator at the Faculty of Pharmacy is Prof. Albin Kristl, and the participating chairs are the chair of biopharmaceutics and pharmacokinetics and the chair of pharmaceutical technology.
- Researchers at the beginning of career 2.0 (Validation of immunoproteasome as a therapeutic target and development of inhibitors; applicant: Dr. Eva Ogorevc)

MEDNARODNI RAZISKOVALNI PROJEKTI 2018

Projekti EU

- **PhD4GlycoDrug**
  Projekt H2020, Marie Skłodowska-Curie Innovative Training Networks, štiriletni projekt European Joint Doctorate z akronimom PhD4GlycoDrug
  (glavni koordinator projekta: 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: prof. dr. Danijel Kikelj)
- **CELSA (Central Europe Leuven Strategic Alliance)**
  Projekt pokriva celoten cikel zgodnjega odkrivanja novih učinkovin: molekulsko modeliranje, sintezo, testiranje na ionskih kanalih ter platformo za protitumorno vrednotenje novih učinkovin
  (Nosilka projekta na UL FFA: prof. dr. Lucija Peterlin Mašič)

CELSA
Central Europe Leuven Strategic Alliance

- **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: 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 strani UL FFA: prof. dr. Janja Marc)

INTERNATIONAL RESEARCH PROJECTS IN 2018

EU Projects:

- **PhD4GlycoDrug**
  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)
- **INTEGRATE (Interdisciplinary Training Network for Validation of Gram-Negative Antibacterial Targets)**
  Horizon 2020 project, Marie Skłodowska-Curie ETN. As part of the project, there is a doctoral student from abroad enrolled in the Faculty of Pharmacy.
  (The PI of the project at the Faculty of Pharmacy is Prof. Danijel Kikelj)
- **ARTE (Advanced Regenerative Therapies Ecosystem)**
  Program 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)
- **CELSA (Central Europe Leuven Strategic Alliance)**
  The project covers the entire cycle of early detection of new active substances: molecular modelling, synthesis, ion channel testing, and antitumor evaluation platform for new active substances
  (The PI of the project at the Faculty of Pharmacy is Prof. Lucija Peterlin Mašič)
- **Novel diagnostic and therapeutic approaches to complex genetic disorders (CIII-HR-0611)**
  A CEEPUS project, regional program. Encouraging the mobility of students and professors of partner countries: Albania, Austria, Bulgaria, Croatia, Czech Republic, Hungary, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia, and Slovenia.
  (The coordinator at the Faculty of Pharmacy is Prof. Janja Marc)

- **Evropska noč raziskovalcev Humanistika, to si ti!**
  Sodelovanje v aktivnostih projekta za popularizacijo znanosti
  (Koordinator na strani UL FFA: izr. prof. dr. Janez Mravljak)

Projekti ESS

- **Po kreativni poti do znanja 2017/2018**
  UL FFA je bila uspešna z dvema prijavama, in sicer:
  - Razvoj bioadhezivnih tablet s propolisom za aplikacijo na sluznice v ustih (v sodelovanju s podjetjem Medex, živilska industrija, d. o. o.)
    (koordinator: prof. dr. Stanko Srčič)
  - Razvoj, optimizacija in validacija analitskih metod za kontrolo kakovosti farmacevtskih učinkovin, pomožnih materialov in končnih izdelkov (v sodelovanju z gospodarsko družbo Lek, d. d.)
    (koordinatorica: izr. prof. dr. Anamarija Zega)
- **Študentski inovativni projekti za družbeno korist – ŠIPK**
  UL FFA je bila v letu 2018 uspešna s prijavo:
  - Vpeljevanje sistema zagotavljanja neprekinjene oskrbe z zdravili ob sprejemu v bolnišnico in po odpustu v domače okolje (v sodelovanju z Univerzitetnim kliničnim centrom Ljubljana)
    (koordinatorica: doc. dr. Tanja Gmeiner)

Krajša in daljša gostovanja tujih strokovnjakov in visokošolskih učiteljev na slovenskih visokošolskih zavodih

- V okviru javnega razpisa gostovanja tujih strokovnjakov in visokošolskih učiteljev je UL FFA v letu 2018 uspešno izvedla eno daljše gostovanje doc. dr. Marije Jovanović s Fakultete za farmacijo Univerze v Beogradu in dve krajši gostovanji dr. Teje Čelhar s Singapore Immunology Network (SIgN), A*STAR in dr. Eve Grmovšek z Univerze Uppsala na Švedskem.

- **European researchers' night, HUMANITIES ROCK!**
  Participation in project activities for the popularization of science
  (The PI of the project at the Faculty of Pharmacy is Assoc. Prof. Janez Mravljak)

European Social Fund (ESF) projects:

- **A creative path to knowledge, 2017/2018**
  Two Faculty of Pharmacy applications were successful:
  - Development of bioadhesive tablets with propolis for application to mucous membranes in the mouth (in cooperation with the company Medex d.o.o.).
    (Coordinator: Prof. Stanko Srčič)
  - Development, optimization, and validation of analytical methods for quality control of pharmaceutical active ingredients, auxiliary materials, and finished products (in cooperation with Lek Pharmaceuticals d.d.)
    (Coordinator: Assoc. Prof. Anamarija Zega)
- **Student innovative projects for social benefit**
  The Faculty of Pharmacy had the following successful application in 2018:
  - Launching a system for ensuring the continuous supply of medicines upon admission to the hospital and after release to the home environment (in cooperation with the Ljubljana University Medical Center)
    (Coordinator: Assist. Prof. Tanja Gmeiner)
- **Shorter and longer hosting of international experts and higher education instructors at Slovenian higher education institutions over the years**
  - As part of the public tender for hosting international experts and higher education instructors, in 2018 the Faculty of Pharmacy hosted Assist. Prof. Marija Jovanović from the Faculty of Pharmacy in Belgrade for an extended visit, and Dr. Teja Čelhar from the Singapore Immunology Network (SIgN), A*STAR and Dr. Eva Germovšek from the University of Uppsala, Sweden for two brief visits.

- **Mobilnost slovenskih visokošolskih učiteljev**
  - UL FFA je v okviru projekta izvedla trimesečni gostovanji: doc. dr. Pegi Ahlin Grabnar na Univerzi v Padovi (Department of Pharmaceutical and Pharmacological Sciences) in izr. prof. dr. Tomaž Vovk na Alma Mater Studiorum Univerze v Bologni.

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: 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 projekt na FFA: prof. dr. Borut Štrukelj)

- **COST** – sodelovanje v 17 projektih

Bilateralni projekti

UL FFA je imela v letu 2018 vzpostavljenih 18 bilateralnih projektov, kjer sodelujemo z akademskimi institucijami v naslednjih državah: Argentina, Črna gora, Francija, Hrvaška, Kitajska, Madžarska, Rusija, Srbija in Združene države Amerike.

- **Mobility of Slovenian higher education instructors**
  - As part of this project, the Faculty of Pharmacy carried out quarterly mobility for Assist. Prof. Pegi Ahlin Grabnar at the University of Padua (Department of Pharmaceutical and Pharmacological Sciences) and Assoc. Prof. Tomaž Vovk at the University of Bologna.

Other international projects:

- **The 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)

- **WADA**

  The 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)

- **COST**, cooperating in thirteen projects.

Bilateral projects

In 2018, the Faculty of Pharmacy was part of eighteen bilateral projects. We cooperated with academic institutions from Argentina, China, Croatia, France, Hungary, Montenegro, Russia, Serbia, and the United States.

PRENOS ZNANJA

V 2018 smo nadaljevali z dolgoletno usmeritvijo prenosa izkušenj in izsledkov lastnih raziskav v gospodarstvo, saj to po našem prepričanju predstavlja eno od osnovnih poslanstev javne univerze. Z uporabo inovativnih in sodobnih raziskovalnih in razvojnih pristopov smo pripomogli k doseganju raziskovalno-razvojnih ciljev slovenske industrije. Na trgu pridobljena sredstva vlagamo v razvoj UL FFA.

Gospodarski partnerji UL FFA V LETU 2018 so bili: Lek, d. d.; Krka, d. d., Novo mesto; Merel, d. o. o.; Apomedica, d. o. o.; Brinox, d. o. o.; Medis, d. o. o.; Merck Sharp & Dohme, d. o. o.; AstraZeneca, d. d.; Herbify, d. o. o.; X-Biotix Therapeutics Inc.; Širimo dobro besedo, d. o. o.; Abies Labs, d. o. o.; Patron, d. o. o.; Simbio, d. o. o.; Labena, d. o. o.; Vizera, d. o. o.; AS AN, d. o. o.; Vis Vitalis, d. o. o.; Klaria, d. o. o.; Pharmahemp, d. o. o.

IZUMI IN INOVACIJE

UL FFA že nekaj let zapored uspešno sodeluje s Pisarno za prenos znanja Univerze v Ljubljani (prej Univerzitetno službe za raziskave, razvoj in intelektualno lastnino) pri vlaganju patentnih prijav, izvedbi smiselnega predhodnega »International Search Report« ter strokovnega vodenja postopkov do podelitve patentov. To se kaže v visokem številu novih patentnih prijav (dve v letu 2018) in v zadnjem času tudi v številu podeljenih mednarodnih patentov (trije v letu 2018).

UL FFA je tudi v 2018 potrdila svojo inovativno naravnanost, saj je samostojno ali kot del interdisciplinarne skupine osvojila 1. in 2. Rektorjevo nagrado za naj inovacijo Univerze v Ljubljani 2018:

1. mesto: Novi načini varovanja najpomembnejših kulturnih rastlin,
2. mesto: ALi-mAb kromatografija.

KNOWLEDGE TRANSFER

In 2018, we continued the long-term orientation of transferring the experience and findings of our own research to industry, which in our opinion is one of the basic missions of a public university. By using innovative and modern research and development approaches, we helped achieve the research and development goals of Slovenian industry. Funds earned on the market are invested in developing the Faculty of Pharmacy.

In 2018, the Faculty of Pharmacy's economic partners included Lek, PLC; Krka, PLC; Merel, Ltd; Apomedica, GmbH; Brinox, Ltd; Medis, Ltd; Merck Sharp & Dohme, Ltd; AstraZeneca, PLC; Herbify, Ltd; X-Biotix Therapeutics Inc.; Širimo Dobro Besedo, Ltd; Abies Labs, GmbH; Patron, Ltd; Simbio, Ltd; Labena, Ltd; Vizera, Ltd; AS AN, Ltd; Vis Vitalis, Ltd; Klaria, Ltd; and Pharmahemp, Ltd.

INVENTIONS AND INNOVATIONS

For several years, the Faculty of Pharmacy has been successfully collaborating with the Ljubljana University Transfer Office (formerly the University Research, Development, and Intellectual Property Service) in patent applications, implementing a meaningful preliminary International Search Report, and the professional management of procedures to grant patents. This is reflected in the high number of new patent applications (two in 2018) and recently also in the number of international patents granted (three in 2018).

In 2018, the Faculty of Pharmacy also confirmed its innovative stance because we won first and second prize in the Chancellor's Prize for Innovation of the University of Ljubljana 2018 call, independently or as part of the interdisciplinary team.

First place: New ways to protect the most important crops

Second place: ALi-mAb chromatography.

Predstavitev Fakultete za farmacijo na PharmConnect Congress 2018, Budimpešta

13. in 14. marca 2018 je bil v Budimpešti 8. kongres PharmConnect. Kongres predstavlja največje in najpomembnejše poslovno srečanje farmacevtskih in biotehnoloških podjetij iz držav Centralne in Vzhodne Evrope, vključno s Skupnostjo neodvisnih držav (evroazijske države). Na kongresu je UL FFA v t. i. »Academic CEE Lounge« potencialnim gospodarskim partnerjem predstavila svoje raziskovalno-razvojne kapacitete.
Koordinacija in izvedba: izr. prof. dr. Rok Dreu in prof. dr. Stanko Srčič.

Presentation of the Faculty of Pharmacy at the 2018 PharmConnect Congress, Budapest

From March 13th to 14th, 2018, the eighth PharmConnect Congress was held in Budapest. The congress is the largest and most important business meeting of pharmaceutical and biotechnology companies from of central and eastern Europe, including the Commonwealth of Independent States (Eurasian countries). The Faculty of Pharmacy participated in the congress's Academic CEE Lounge and presented its research and development capacities to potential economic partners.
Coordination and implementation: Assoc. Prof. Rok Dreu and Prof. Stanko Srčič.

Koordinacija in izvedba / Coordination and implementation

ODPRTOST V DRUŽBO

UL FFA je v sodelovanju z Znanstveno sekcijo SFD organizirala strokovni posvet s področja translacijskih raziskav v biomedicini in farmaciji

UL FFA je dne 28. 5. 2018 v sodelovanju z Znanstveno sekcijo Slovenskega farmacevtskega društva v Ljubljani organizirala strokovni posvet s področja translacijskih raziskav v biomedicini in farmaciji, na katerem so sodelovali predstavniki farmacevtske industrije, akademskih, raziskovalnih in zdravstvenih organizacij: »Translational research – Collaboration and Experience Exchange among Academia, Research, Clinic and Pharmaceutical industry«.

UL FFA je skupaj s SFZ ter UL FKKT in Lekom, d. d. soorganizirala 24. slovenski festival znanosti z mednarodno udeležbo: Narava, človek in eksperimenti

Slovenska znanstvena fundacija že 23 let organizira večdnevni znanstveni festival. V letu 2018 je potekal že štiriindvajsetič. Festival je potekal od 25. do 27. septembra 2018 na lokacijah Fakultete za farmacijo in Fakultete za kemijo in kemijsko tehnologijo. Na Fakulteti za farmacijo smo v okviru festivala 26. 9. 2018 izvedli sekcijo z naslovom Z zdravili do zdravja. Pri tem smo javnosti ponudili širok spekter farmacevtskih tem v obliki 7 predavanj, 2 predavanj s praktično delavnico in treh delavnic. V okviru 24. slovenskega festivala znanosti je 27. 9. 2018, na Fakulteti za farmacijo Univerze v Ljubljani potekal 4. dan biomolekularnih znanosti – Biomolekularec.
Koordinacija: izr. prof. dr. Rok Dreu in doc. dr. Bojan Doljak.

Evropska noč raziskovalcev na Fakulteti za farmacijo

Fakulteta za farmacijo Univerze v Ljubljani je 28. septembra 2018 organizirala aktivnosti v okviru Evropske noči raziskovalcev 2018/2019 Humanistika, to si ti!
Aktivnosti so bile namenjene širši javnosti – predvsem pa mlajšim/mladim, ki jih zanima raziskovanje, delovanje znanosti in njen pomen za naša življenja. Dogodki so se odvijali v laboratorijih, predavalnici ter lekarni Mirje. Obiskali smo tudi Gimnazijo Celje Center.

IMPACT ON SOCIETY

In cooperation with the Section of Pharmaceutical Sciences at the Slovenian Pharmaceutical Society, the Faculty of Pharmacy held a professional conference on translational research in biomedicine and pharmacy

On May 28th, 2018, the Faculty of Pharmacy and the Section of Pharmaceutical Sciences at the Slovenian Pharmaceutical Society held a professional forum on translational research in biomedicine and pharmacy with participation of representatives from the pharmaceutical industry and from academic, research, and health organizations: Translational Research: Collaboration and Experience Exchange among the Academia, Research, Clinic, and Pharmaceutical Industry.

The Faculty of Pharmacy, Slovenian Science Foundation, Faculty of Chemistry and Chemical Technology, and Lek jointly held the twenty-fourth Slovenian Science Festival with international participation: Nature, Man, and Experiments.

The Slovenian Science Foundation has been holding a multiday research festival for twenty-three years. In 2018, it was already the twenty-fourth. The festival was held from September 25th to 27th, 2018 at the Faculty of Pharmacy and the Faculty of Chemistry and Chemical Technology. On September 26th, the Faculty of Pharmacy conducted a section titled With Drugs to Health. Within the section, a wide range of pharmaceutical topics were presented to the general public. Seven lectures, two lectures combined with a practical workshop, and three standalone workshops were available. Additionally, as part of the twenty-fourth Slovenian Science Festival, the fourth Biomolecular Sciences Day (Biomolekularec) was held on September 27th, 2018 at the Faculty of Pharmacy.
Coordinated by: Assoc. Prof. Rok Dreu and Assist. Prof. Bojan Doljak.

European Researchers' Night at the Faculty of Pharmacy

On 28 September 2018, the Faculty of Pharmacy held activities as part of the 2018-2019 European Researchers' Night: HUMANITIES ROCK! The activities

Nadebudna mladina / Auspicious youth

Obiskovalci Noči raziskovalcev so lahko sodelovali v zanimivih poskusih in krajših delavnicah:
Kako nastane zdravilo?, Izolacija DNA – molekule življenja iz sadja & Sladkorna bolezen & Krvne celice, Slončkova zobna pasta, Svetleča lava, Srebrovo zrcalo, Varnost in učinkovitost uporabe zdravil.
Ogledali so si laboratorije, se družili z raziskovalci in tako spoznali različne vidike zelo zanimivega poklica raziskovalca in znanstvenika, ki mladim odpira vrsto kariernih možnosti.
Koordinacija: izr. prof. dr. Janez Mravljak.

Soorganizacija mednarodne delavnice CORBEL-EATRIS

Mednarodna iniciativa novih biomedicinskih raziskovalnih infrastruktur CORBEL (Coordinated Research Infrastructures Building Enduring Life-science Services) je v sodelovanju s slovenskim nacionalnim vozliščem EATRIS (UL FFA) 12. in 13. 12. 2018 organizirala dvodnevno delavnico »Best Practices in Biomedical Public-Private Research Collaborations: Network Development, Legal Planning & Project Management«. Delavnica je potekala v prostorih Fakultete za farmacijo, Univerze v Ljubljani.
Koordinacija: doc. dr. Tanja Gmeiner in asist. dr. Tijana Markovič.

were aimed at the general public and especially young people interested in research, science, and its significance to our lives. Events took place in laboratories, a lecture room, and the Mirje pharmacy. We also visited Celje Central High School. Visitors to European Researchers' Night could participate in interesting experiments and short workshops: How Is Medicine Formed?, Isolation of DNA, Fruit Life Molecule & Diabetes & Blood Cells, Elephant Toothpaste, Glittering Lion, Silver Mirror, and Safety and Effectiveness of Drug Use. Participants visited the laboratories and met with the researchers to learn about the various aspects of a very interesting profession for researchers.
Coordinated by: Assoc. Prof. Janez Mravljak.

Joint organization of the CORBEL–EATRIS international workshop

Together with the Slovenian national node EATRIS. SLovenia (Faculty of Pharmacy), the international initiative of new biomedical research infrastructures CORBEL (Coordinated Research Infrastructures Building Enduring Life-Science Services) held a two-day workshop titled Best Practices in Biomedical Public-Private Research Collaborations: Network Development, Legal Planning & Project Management. The workshop was held on December 12th and 13th, 2018 at the Faculty of Pharmacy.
Coordinated by: Assist. Prof. Tanja Gmeiner and Dr. Tijana Markovič.

MEDNARODNA DEJAVNOST

Pretok znanja in prepoznavnost v mednarodnem okolju sta prednostni področji strategije Fakultete za farmacijo. Stremimo k povečani mobilnosti študentov in učnega osebja. Cilji mobilnosti študentov so izboljšanje učnih kompetenc, povečanje zaposljivosti in samoiniciativnost.

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.

PROGRAMI MOBILNOSTI

- Erasmus: sklenjenih 61 bilateralnih pogodb in dogovorjenih približno 160 mest za izmenjavo študentov ter 75 za izmenjavo učiteljev.
- CEEPUS: za izmenjavo študentov v centralni Evropi.
- Norveški finančni mehanizem: omogočene SMS in SMP izmenjave na Norveškem, Islandiji in v kneževini Lihtenštajn.
- 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 priority strategy areas of the Faculty of Pharmacy. We strive to increase the mobility of students and teaching staff. The goals of increasing students' mobility aim to improve their learning skills, thereby increasing their employability and self-initiative.

THE FACULTY OF PHARMACY'S INTERNATIONAL ACTIVITY GOALS

- To increase the number of guest lecturers and researchers with the purpose of achieving strategic partnerships.
- To increase interest among students from northern Europe in taking part in exchanges.
- To make high-quality mobility accessible to as many Faculty of Pharmacy students as possible, thus contributing to improving our graduates' general skills and increasing their competitiveness on the job market.
- To increase the number of student exchanges in Student Mobility for Studies (SMS) and Student Mobility for Placement (SMP) for the programs in cosmetology and laboratory biomedicine.

MOBILITY PROGRAMS

- Erasmus: Sixty-one bilateral interinstitutional agreements signed to support about 160 student (SMS) and seventy-five teaching (STA) mobilities.
- CEEPUS: Exchanges for students from central Europe.
- Norwegian financial mechanism: making possible SMS and SMP exchanges in Norway, Iceland, and Liechtenstein.
- International Pharmaceutical Students' Federation (IPSF) and European Pharmaceutical Students' Association (EPSA) programs.
- 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

- 50 študentov je opravilo študijske obveznosti na partnerskih inštitucijah v okviru programa Erasmus+.
- 42 študentov je opravilo krajšo mobilnost za praktično usposabljanje v trajanju do enega meseca (raziskovalno delo in delo v lekarni).

OUR STUDENTS AT INSTITUTIONS ABROAD

- Fifty students completed their academic obligations at partner institutions as part of the Erasmus+ program.
- Forty-two students completed a short-term mobility for traineeship with a duration of up to one month (research and pharmacy traineeships).
- Four students participated in CEEPUS summer schools.

GOSTUJOČI ŠTUDENTI NA UL FFA

- 52 tujih študentov je opravilo del svojih študijskih obveznosti na UL FFA v okviru programa Erasmus+ (40 Erasmus+ SMS, 12 Erasmus+ SMP).
- 62 tujih študentov je bilo na UL FFA v okviru programa CEEPUS (15 raziskovalno delo in 47 poletna šola).
- 19 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

- 49 tujih učiteljev in raziskovalcev je gostovalo na UL FFA (24 učiteljev in 25 raziskovalcev). Število se je v primerjavi s preteklim letom nekoliko povečalo (42) lani.
- 50 učiteljev in raziskovalcev UL FFA se je udeležilo aktivnosti v tujini, od tega 10 na daljših (3 mesecev ali več) gostovanjih in usposabljanjih na tujih inštitucijah. Več pa jih je sodelovalo tudi v okviru poletnih šol kot aktivni udeleženci. Število se je v primerjavi s preteklim letom prav tako povečalo lani (40).
- 4 študenti so se udeležili poletne šole CEEPUS.

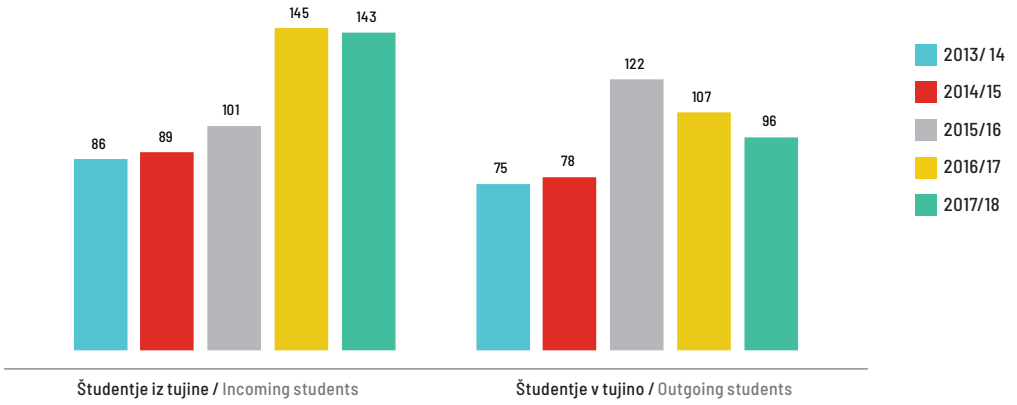
FACULTY OF PHARMACY GUEST STUDENTS

- Fifty-two foreign students completed part of their academic obligations at the Faculty of Pharmacy as part of the Erasmus+ program (40 Erasmus+ SMS, 12 Erasmus+ SMP).
- Sixty-two foreign students attended the faculty as part of the CEEPUS program (15 for research traineeships and 47 in the summer school).
- Nineteen international students took part in short exchanges to acquire skills; this was organized by students through IPSF–SEP internships.
- The peer mentorship system for foreign students facilitates student mobility.

EXCHANGES OF TEACHERS AND RESEARCHERS

- Forty-nine guest teachers and researchers from abroad were hosted by the Faculty of Pharmacy (24 teachers and 25 researchers). Their number slightly increased compared to the year before (42).
- Fifty of the faculty's instructors and researchers were hosted internationally, of whom ten were on extended stays (three months or longer) at institutions abroad. Several also actively participated in summer schools. Their number increased over the previous year (40) .

MOBILNOST ŠTUDENTOV / STUDENT MOBILITY



Število študentov UL FFA na izmenjavi v tujini in število tujih študentov na izmenjavi na UL FFA (zadnjih pet študijskih let). / The number of UL FFA students on exchange abroad, and the number of foreign students on exchange at UL FFA (data of the last five years).

MEDNARODNE POLETNE ŠOLE

Polenta šola CEEPUS

Poletna šola je potekala od 18. do 23. 7. 2018 v Portorožu. Osrednja tema so bile vnetne bolezni. Udeležba na poletni šoli je bila ovrednotena s 3 ECTS.
Poletne šole se je udeležilo 47 dodiplomskih in podiplomskih študentov laboratorijske biomedicine, medicinske biokemije, farmacije in medicine iz 7 držav (Republika Slovenija, Republika Hrvaška, Republika Avstrija, Republika Madžarska, Republika Bosna in Hercegovina, Republika Srbija, Češka republika).
V času poletne šole je bil organiziran tudi sestanek partnerjev v CEEPUS mreži CIII-SI-0611 „Novel diagnostic and therapeutic approaches to complex genetic disorders.
Koordinacija: prof. dr. Janja Marc.

INTERNATIONAL SUMMER SCHOOLS

CEEPUS Summer School

The summer school was held in Portorož from July 18th to 23rd, 2018. The central theme was inflammatory diseases. Participation in the summer school was worth 3 ECTS.
The summer school was attended by forty-seven undergraduate and graduate students in laboratory biomedicine, medical biochemistry, pharmacy, and medicine from seven countries (Slovenia, Croatia, Austria, Hungary, Bosnia and Herzegovina, Serbia, and the Czech Republic).
During the summer school, a meeting of partners in the CEEPUS network was held: CIII-SI-0611 "Novel diagnostics and therapeutic approaches to complex genetic disorders."
Coordination: Prof. Janja Marc.

OBŠTUDIJSKA DEJAVNOST

Študentje UL FFA 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.

Na UL FFA delujeta Društvo študentov farmacije Slovenije (DŠFS) in Študentska sekcija Slovenskega farmacevtskega društva (ŠSSFD). Skupaj s ŠS in ŠO zelo uspešno sodelujejo pri organizaciji strokovnih in družabnih projektov; Svetovanje bolnikom, Mala šola klinike, strokovna predavanja in okrogle mize. Nadaljevalo se bo izdajanje študentskega glasila Spatula, ki je dosegla 76. številko (do septembra 2018) in organizacija Mednarodnega poletnega farmacevtskega tabora. Preko ŠSSFD študentje tudi zelo uspešno in aktivno sodelujejo v svetovnem in evropskem okolju.

Spatula

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 2018 smo izdali 3 številke glasila - februarja, maja in oktobra.

Mednarodni poletni farmacevtski tabor

Tema dogodka je bila »Boost it up«—Stimulants. V času tabora smo uporabljali raznolike metode dela, kot so predavanja, delavnice, treningi mehkih veščin. Tabora se je udeležilo 49 udeležencev, od tega 6 tujcev, ki so z udeležbo izboljšali svoje znanje o stimulansih in se hkrati izobrazili o slovenski kulturi, medkulturnem in medosebnem sodelovanju.

EXTRACURRICULAR ACTIVITIES

Through their many activities, the students at the Faculty of Pharmacy significantly contribute to the higher quality of academic life and their own overall development. By taking part in projects in which they cooperate with the environment outside the university, they contribute to the profile of the faculty and the university, as well as to the wellbeing of society.

At the faculty, there is a Slovenian Pharmacy Students' Society (DŠFS), a student section of the Slovenian Pharmaceutical Society (ŠSSFD), the student council, and the student organization, all of which cooperate to carry out social and educational projects, such as the Consulting Patients project, the Clinical Pharmacy Mini-School, public campaigns, and professional evenings. In October 2018, issue 77 of the student newsletter Spatula was published. Students are also very active internationally: they organize the International Pharmaceutical Summer Camp and take part in various European and worldwide projects and congresses.

Spatula

Spatula is the newsletter of the student section of the Slovenian Pharmaceutical Society. The newsletter informs pharmacy students about current extracurricular activities and developments in the world of pharmacy at the local and international levels. It is a periodical with articles published in Slovenian, except for the articles by foreign authors, which are published in English. In 2018, three issues of Spatula were published in February, May, and October.

International Pharmaceutical Summer Camp (IPSC)

The theme of this event was "Boost It Up—Stimulants." During the camp, we used various working methods such as lectures, workshops, and panels, which were dedicated to active consideration of the pharmaceutical profession in marketing and regulation. The camp was attended by forty-nine participants, including six

4. Simpozij Študentske sekcije Slovenskega farmacevtskega društva: Zdravila za napredno zdravljenje

20. oktobra 2018 se je na simpoziju zvrstilo 8 predavanj strokovnjakov. Udeležencev je bilo okrog 300. Po predavanjih smo dan zaključili s poučno okroglo mizo. Tako s strani sodelujočih kot s strani poslušalcev smo prejeli zelo dobre odzive na vsebino in izvedbo simpozija.

Namen simpozija ŠSSFD je bil:

- Študentom Fakultete za farmacijo s predavanji različnih strokovnjakov razširiti znanje o zdravilih za napredno zdravljenje.
- Na enem mestu združiti zdravnike, klinične farmacevte, da si tudi med seboj izmenjajo informacije o vedno boljših kliničnih in humanističnih izidih.

Svetovanje pacientom

Projekt je prepoznan tako med študenti farmacije kot v širši farmacevtski javnosti.

Tema 2018 je bila Cepiva v pediatriji. Tekmovalci so se potegovali za mamljive nagrade, kot je udeležba na IPSF kongresu, ki je potekal v Mendozi, in Mednarodnem poletnem farmacevtskem taboru.

Zdravila po meri

Zdravila po meri je nov projekt v sklopu strokovnih tekmovanj, ki potekajo v organizaciji DŠFS. Projekt je sestavljen iz strokovnega predavanja in tekmovanja. 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 sladkorna bolezen.

Prostovoljstvo na UL FFA

Vključuje podporo ambulanti s posvetovalnico za osebe brez zdravstvenega zavarovanja. Poleg tega

from abroad, who improved their knowledge of stimulants and at the same time learned about Slovenian culture and intercultural and interpersonal cooperation.

Fourth symposium of the student section of the Slovenian Pharmaceutical Society: Advanced Medical Treatment

The purpose of this symposium was to use lectures by various experts to expand students' knowledge about advanced medical treatment. There were three hundred attendees.

Consulting Patients

This project is well known among pharmacy students as well as in the broader pharmaceutical society. The topic of the 2018 event was vaccines. The participants worked hard to win attractive prizes, such as attending the International Pharmaceutical Students' Federation (IPSF) World Congress, which took place in Mendoza, and the International Pharmaceutical Summer Camp.

Personalized Medicines

Personalized Medicines is a new project held by the Slovenian Pharmacy Students' Society. The participants' task is to prepare a patient-tailored medicine. Students were evaluated on the suitability and quality of the medicine prepared. The aim of the project is to learn about the challenges of tailored preparation and innovative medicines in the industry.

Clinical Pharmacy Mini-School

This is a project in which the participants take on the role of a clinical pharmacist and, in addition to counselling the patient when issuing the medicine, they have to fill out a patient-specific form and make appropriate comments on it. The topic was diabetes.

Volunteer work at the Faculty of Pharmacy

This includes offering support to a pro bono clinic, taking part in a humanitarian running event as part of Wings for Life, participating in the Santa for a Day project, participating in fundraising initiatives, and holding Christmas and spring bazaars.

smo na fakulteti zbirali plastične zamaške, ki smo jih podarili organizaciji Vesele nogice.

Od marca s študenti medicine sodelujemo pri projektu Medimedo, v okviru katerega otrokom v vrtcih skušamo pregnati strah pred belimi haljami.

Marca smo organizirali humanitarni žur, zbran denar pa smo podarili medicinski odpravi v Kenijo.

Decembra smo organizirali tradicionalni božični bazar. Ves zbran denar smo podarili družini v stiski. Decembra smo sodelovali tudi pri projektu Božiček za en dan.

Imeli smo še zbiralno akcijo za zavetišče za živali.

Javne kampanje:

- Boj proti raku.

  V okviru svetovnega dneva raka smo imeli stojnico na fakulteti, kjer smo osveščali dijake o pomembnosti zgodnjega odkrivanja in preventive raka. Delili smo tudi pentljice.
- InterAKCIJA: Namen same kampanje je bil ozavestiti dijake o varni in pravilni uporabi zdravil, ob sočasnem uživanju alkohola ali drugih substanc, kot so marihuana in morebitna zdravila za samozdravljenje (analgetiki in tudi zdravila na recept – antidepresivi).
- Na srednjih šolah smo izvedli 45-minutno predavanje, ki mu je sledil pogovor z dijaki, da smo jim odgovorili na morebitna vprašanja. Na delavnicah in predavanjih smo dosegli okoli 600 dijakov.
- Festival zdravja Evropski dan pravilne uporabe antibiotikov.
- Kam gredo moja zdravila? Akademski doping.

Motivacijski vikend DŠFS

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

Public campaigns

- Fighting Cancer
- InterAKCIJA (InterACTION)
- Health Festival
- European Day for Prudent Antibiotic Use
- World AIDS Day: Let's End It

Slovenian Pharmacy Students' Society motivational weekend

This is intended for beginners. Along with professional activities, the weekend offers also a broad social program that allows students the opportunity to get to know each other and attend training in soft skills.

International Pharmaceutical Students' Federation Student Exchange Program (IPSF SEP)

The IPSF SEP is a mobility program that offers pharmacy students opportunities for professional networking in ninety countries around the world. It is one of the IPSF's biggest projects. Between June and September 2017, twenty-eight international students did internships in Ljubljana, Kranj, Golnik, Maribor, Domžale, and Portorož. Forty-three Slovenian students did their professional practice in the Czech Republic, Poland, Slovakia, Portugal, Finland, Spain, Austria, Germany, Estonia, the United States, Egypt, Iran, Indonesia, Malaysia, Israel, Canada, Tanzania, Japan, El Salvador, Armenia, and Mexico.

European Pharmaceutical Students' Association (EPSA) Individual Mobility Project

The EPSA Individual Mobility Project (IMP) is a long-term project that offers pharmacy students, recently graduated pharmacists, and pharmaceutical science 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 the European pharmaceutical industry, institutions, and pharmacy students' organizations.

In 2017, a Faculty of Pharmacy student was accepted for an IMP internship at the Drug Information Association (DIA) in Basel, Switzerland.

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, v 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 2018

- **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, 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.

Other projects in 2018

- **Information days and Informativa:** in cooperation with the Faculty of Pharmacy, the students held a presentation of the faculty, its programs, and extracurricular activities.
- **Professional evenings** offer lectures on specific topics and are organized by the students themselves and in cooperation with the faculty and guest lecturers.
- **The picnic** is held in May and it is the last social event before the end of the year and the summer exam period.
- **Mobility Day** presents opportunities for studying, foreign exchanges, and internships (ERAS- MUS+, SEP, and IMP), alongside the functioning of international organizations, such as the EPSA and IPSF, and opportunities 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.

ŠPORTNI DOSEŽKI V ŠTUDIJSKEM LETU 2017/2018 / SPORTS ACHIEVEMENTS IN THE 2017/2018 ACADEMIC YEAR

UNIVERZITETNA LIGAŠKA TEKMOVANJA / UNIVERSITY LEAGUE COMPETITIONS

ODBOJKA (ŽENSKE): 3. MESTO / VOLLEYBALL (WOMEN): THIRD PLACE

(Mojca Novak, Sara Vidovič, Veronika Klančič, Anamarija Ahlin, Klara Tavčar, Maja Kovačič, Nina Pruš, Erma Nukič, Ema Sopčič, Zala Rus, Eva Kop, Izza Rozman, Ana Selinovič)

ODBOJKA (MOŠKI): 5. MESTO / VOLLEYBALL (MEN): FIFTH PLACE

(Aljaž Pisnik, Žan Rekar, Gašper Vrhunc, Leon Lombergar, Jan Hribernik, Davorin Levanič, Jure Kirbiš, Janko Stankič, May Žitnik, Samo Kuzmič)

KOŠARKA (ŽENSKE): 6. MESTO / BASKETBALL (WOMEN): SIXTH PLACE

(Urša Žibert, Maja Jakobčič, Neža Kugonič, Maša Dolenc, Maša Sterle, Neža Gregorčič, Manca Vetrih, Nika Pokorn, Sanja Martinovič, Ana Ambruš, Katarina Rede, Tina Krčmar)

KOŠARKA (MOŠKI): 17. MESTO / BASKETBALL (MEN): SEVENTEENTH PLACE

(Davorin Levanič, Klemen Vodopivec, Jaka Rotman, Jaka Dernovšek, Aljaž Abe, David Fartelj, Tilen Forina, Žiga Kemperle, Gašper Kemperle, Aleš Turšič, May Žitnik, Matjaž Weiss)

DVORANSKI NOGOMET (MOŠKI): 9. MESTO / FUTSAL (MEN): NINTH PLACE

(Klemen Mezgec, Nejc Ajlec, Timotej Grabar, Boris Markaja, Aljaž Bojnec, Aljaž Žurman, Žan Matijaševič, Anže Močnik, Adis Čošić, David Smodiš, Elvis Josufović, Luka Levač)

DRŽAVNO UNIVERZITETNO PRVENSTVO V ŠAHU 2017/18 / NATIONAL UNIVERSITY CHESS CHAMPIONSHIP, 2017/18

- Boris Markoja (moški): 1. mesto / Boris Markoja (men): first place

SVETOVNA UNIVERZITETNA LIGA V KOŠARKI 3 X 3 (KITAJSKA/XIAMEN) / 3×3 BASKETBALL WORLD UNIVERSITY LEAGUE (XIAMEN, CHINA)

- Ekipa Univerze v Ljubljani (ženske): 4. mesto (članica ekipe Maja Jakobčič/FFA) / University of Ljubljana team (women): fourth place (Maja Jakobčič, Faculty of Pharmacy)
- Met za tri točke (ženske): 1. mesto (Maja Jakobčič / FFA) / Three-point shots (women): first place (Maja Jakobčič, Faculty of Pharmacy)

VOLKSWAGEN 23. LJUBLJANSKI MARATON / TWENTY-THIRD VOLKSWAGEN LJUBLJANA MARATHON

- 10 km razdalja (ženske): 1. mesto (Maruša Mišmaš/ FFA) / ž 10 km run (women): first place (Maruša Mišmaš, Faculty of Pharmacy)
- Ekipa FFA (43 udeležencev na maratonu) / Faculty of Pharmacy team (forty-three marathon participants)

Ekipa odbojkaric UL FFA / Volleyball team UL FFA

POMEMBNEJŠI REZULTATI VRHUNSKIH ŠPORTNIC IN ŠPORTNIKOV ŠTUDENTOV FFA / IMPORTANT ACHIEVEMENTS BY TOP ATHLETES STUDYING AT THE FACULTY OF PHARMACY

- Neja Filipič (atletika/skok v daljino): pokal SLO 1. mesto; DP za članice 1. mesto; prvenstvo HR 1. mesto; mednarodni miting HUN 4. mesto. / Neja Filipič (athletics / long jump): Slovenian Cup: first place; national cup: first place; Croatian championship: first place, international competition (Hungary): fourth place.
- Jaka Vrevc Žlajpah (akrobatski rock`n roll/pari): DP SLO 3. mesto; svetovni pokal HR 6. mesto; svetovni pokal POL 11. mesto; svetovni pokal FRA 9. mesto; skupna uvrstitev 4. mesto. / Jaka Vrevc Žlajpah (acrobatic rock and roll / couples): Slovenian national championship: third place, world cup (Croatia): sixth place, world cup (Poland): eleventh place, world cup (France): ninth place; overall ranking: fourth place.
- Anja Mandeljc (smučarski tek): sprint/klasika SUI 10 km 2. mesto; prosto 5 km SUI 2. mesto; mladinsko svetovno prvenstvo 5 km klasika in prosto 13. mesto; DP 10 km prosto 1. mesto; DP 10 km klasično 1. mesto; DP 28 km klasika 1. mesto) / Anja Mandeljc (cross-country skiing: 10 km sprint / classic style, world championship: second place; 5 km freestyle, world championship: second place; 5 km classic and freestyle, Nordic Junior World Ski Championship: thirteenth place; 10 km freestyle, national cup: first place; 10 km classic style, national cup: first place, 28 km classic style, national cup: first place.

- Lara Meglen (Navijaško prvenstvo): DP Ljubljana 1. mesto; evropsko prvenstvo FIN 7. mesto. / Lara Meglen (cheerleading): national cup, Ljubljana: first place, European Cheerleading Championship (Finland): seventh place.
- Anja Štanger (judo): DP članice 1. mesto; Grand Prix-i (Zagreb 3. mesto, Tunis 3. mesto; Tbilisi 3. mesto; ANTALIJA 3. mesto; ZAGREB 7. mesto); EP 7. mesto; Mediteranske igre 5. mesto. / Anja Štanger (judo): national cup: first place; Grand Prix events (Zagreb: third place, Tunis: third place, Tbilisi: third place, Antalya: third place, Zagreb: seventh place); European Judo Championship: seventh place, Mediterranean Games: fifth place.
- Pia Ban (akrobatika/mala prožna ponjava/velika prožna ponjava): DP 1. mesto, pokal SLO 1. mesto; odprto prvenstvo SLO 1. mesto; mednarodno tekmovanje 2. mesto; DP akrobatika 1. mesto. / Pia Ban (acrobatics / trampoline and mini trampoline): national championship: first place, Slovenian Cup: first place, Slovenian Open Cup: first place, international competition: second place, acrobatics national cup: first place.
- Andraž Lamut (gimnastika): mednarodno tekmovanje UK/bradlja 4. mesto; pokal Ljubljane/bradlja 1. mesto; svetovni pokal Koper/bradlja 10. mesto; sredozemske igre/mnogoboj finale 20. mesto; svetovni pokal HUN/bradlja 24. mesto / Andraž Lamut (gymnastics): international competition (UK) / parallel bars: fourth place; Ljubljana Cup / parallel bars: first place; world cup (Koper) / parallel bars: tenth place; Mediterranean Games / all-around finals: twentieth place; world cup (Hungary) / parallel bars: twenty-fourth place.

Pred. Dušan Videmšek je izvedel raziskavo: Življenjski slog študentov Fakultete za farmacijo

Predstavil je raziskavo, v katero je bilo vabljeno 603 študentov (48,4 % moških in 51,6 % žensk) 13 fakultet Univerze v Ljubljani. Še posebej je analiziral življenjski slog 133 študentov prvega in drugega letnika Fakultete za farmacijo, ki obiskujejo vodene vadbe v okviru predmeta Športna vzgoja.

Dušan Videmšek conducted the study "The lifestyle of students at the Faculty of Pharmacy."

The study included 603 students (48.4% men and 51.6% women) from thirteen University of Ljubljana faculties, paying special attention to analyzing the lifestyle of 133 first- and second-year students at the Faculty of Pharmacy that attend group workout classes as part of physical education.

Kratice/Abbreviations

**ARRS/Javna agencija za raziskovalno dejavnost*
**UL FFA/Univerza v Ljubljani, Fakulteta za farmacijo*
**FFA/Fakulteta za farmacijo*
**S2 LBM/Druga stopnja laboratorijske biomedicine*
**FTE/Full-time equivalent/ekvivalent polne zaposlitve*
**UL MF/Univerza v Ljubljani, Medicinska fakulteta*
**KI/Kemijski inštitut*
**IJS/Inštitut Jožefa Stefana*
**IMMT/Inštitut za metagenomiko in mikrobne tehnologije*
**NIB/Nacionalni inštitut za biologijo*
**UKC LJ/Univerzitetni klinični center Ljubljana*
**UL FS/Univerza v Ljubljani Fakulteta za strojništvo*
**SFZ/ Slovenska znanstvena fundacija*
**UL FKKT/Univerza v Ljubljani, Fakulteta za kemijo in kemijsko tehnologijo*
**DPPO UL/Davek od dohodkov pravnih oseb Univerze v Ljubljani*
**CEEPUS/Central European Exchange Program for University Studies*
**IPSF/International Pharmaceutical Students Federation*
**EPSA/European Pharmaceutical Students' Association*
**IPSF-SEP/International Pharmaceutical Students Federation/Student Exchange Programme*

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

PONOSNI SMO – PRIZNANJA IN NAGRADE

Izr. prof. dr. Zdenko Časar je prejel najvišje Novartisovo znanstveno priznanje

Izr. prof. dr. Zdenko Časar, znanstveni sodelavec Fakultete za farmacijo Univerze Ljubljani, je prejel najvišje Novartisovo znanstveno priznanje za uglednega znanstvenika (Distinguished Scientist Award). Izr. prof. dr. Zdenko Časar je nagrado za uglednega znanstvenika prejel za izjemne znanstvene dosežke, ki so veliko pripomogli k Novartisovemu zmanjševanju stroškov z inovativno sintezo zdravilnih učinkovin in s procesnimi izboljšavami. Vodil je razvoj novih polimorfnih oblik zdravilnih učinkovin, pomembnih za Sandoz, in ustvaril intelektualno lastnino, ki je podlaga za 67 podeljenih patentnih zaščit v zadnjih petih letih.

Dr. Boris Brus je prejemnik Zlatega znaka Jožefa Stefana za leto 2018

Dr. Boris Brus je prejemnik Zlatega znaka Jožefa Stefana za odmevnost doktorskega dela »Strukturno-podprto načrtovanje in vrednotenje spojin s potencialnim imunomodulatornim in nevroprotektivnim delovanjem«. Doktorsko delo je opravil na UL FFA pod mentorstvom prof. dr. Stanislava Gobca.

Izr. prof. dr. Rok Dreu je prejel Minařikovo priznanje 2018

IO SFD je izr. prof. dr. Roku Dreuu podelil Minařikovo priznanje za njegove znanstvene, strokovne in organizacijske prispevke na področju farmacije, za ves trud, ki ga namenja razvoju farmacevtske tehnologije ter za zavzeto delo pri Slovenskem farmacevtskem društvu

1. in 2. Rektorjeva nagrada za naj inovacijo Univerze v Ljubljani 2018

UL FFA je tudi v 2018 potrdila svojo inovativno naravnanost, saj je samostojno ali kot del interdisciplinarne skupine osvojila:

- **1.mesto** - Novi načini varovanja najpomembnejših kulturnih rastlin: skupina z Biotehniške fakultete,

WE ARE PROUD OF: AWARDS AND PRIZES

Assoc. Prof. Zdenko Časar receives highest Novartis research award

Assoc. Prof. Zdenko Časar, a research associate at the University of Ljubljana's Faculty of Pharmacy, received the highest Novartis research award: the Distinguished Researcher Award. The award winner received this recognition for his exceptional research achievements, which greatly contributed to Novartis's cost savings through innovative synthesis of active substances and process improvements. He has led the development of new polymorphic forms of active substances important for Sandoz and created intellectual property, as demonstrated by sixty-seven patents granted in the last five years.

Dr. Boris Brus receives Jožef Stefan Gold Medal for 2018

Dr. Boris Brus received the Jožef Stefan Gold Medal for the high profile of his dissertation Structure-Based Design and Evaluation of Potential Immunomodulatory and Neuroprotective Agents. He completed his doctoral work at the faculty under the supervision of Prof. Stanislav Gobec

Assoc. Prof. Rok Dreu receives 2018 Minařik Award

The Executive Committee of the Slovenian Pharmaceutical Society awarded Assoc. Prof. Rok Dreu the Minařik Award for his research, professional, and organizational contributions in pharmacy, for all the efforts he has devoted to the development of pharmaceutical technology, and for his enthusiastic work in the Slovenian Pharmaceutical Society.

First and Second 2018 Chancellor's Prize for Innovation at University of Ljubljana

In 2018 the Faculty of Pharmacy again confirmed its innovative stance because it won the following prizes independently or as part of an interdisciplinary team:

- **First Prize:** New ways to protect the most important crops: a group from the Biotechnical Faculty, Faculty

Izr. prof. dr. Rok Dreu Prejemnik Minařikovega priznanja / Prof. Rok Dreu the Minařik Award

Nagrajenci Rektorjeve nagrade / Chancellor's Prize awards

Fakultete za farmacijo in Kemijskega inštituta, v kateri sodeluje doc. dr. Izidor Sosič, je razvila nov način varovanja ekonomsko najpomembnejših kulturnih rastlin z zaviranjem proteina NLP.

- **2.mesto** - ALi-mAb kromatografija: skupina s Katedre za farmacevtsko biologijo: asist. Nika Kruljec, asist. dr. Peter Molek, izr. prof. dr. Mojca Lunder ter doc. dr. Tomaž Bratkovič je razvila alternativno kromatografsko platformo Ali-MAb za izolacijo in čiščenje protiteles, osnovano na uporabi strukturno preprostih peptidov.

Krkine nagrade

Na 48. Krkinih nagradah (19. 10. 2018, Novo mesto) sta veliko Krkino nagrado za raziskovalno delo prejela:

- dr. Kaja Rožman, Strukturno podprto načrtovanje, sinteza in vrednotenje novih zaviralcev biosinteze peptidoglikana, mentor prof. dr. Stanislav Gobec, somentor doc. dr. Matej Sova;
- dr. Špela Zupančič, Razvoj dvoslojnih nanovlaken za inovativno zdravljenje parodontalne bolezni, mentorica prof. dr. Julijana Kristl.

Prejemniki Krkinih nagrad za dodiplomske in podiplomske raziskovalne naloge so bili še: dr. Anita Klančar, dr. Tijana Markovič, Ina Kosmač, Gregor Ratek, Jernej Štukelj in Janja Umnik.

Novartisov regionalni BioCamp 2018

Med zmagovalnimi posamezniki regijskega Biocampa 2018 je bila Emanuela Senjor s Fakultete za farmacijo, Univerze v Ljubljani.

of Pharmacy, and Chemical Institute, in which Assist. Prof. Izidor Sosič participated, developed a new way to protect the economically most important crops by inhibiting NLP protein.

- **Second Prize:** ALi-mAb chromatography: a group from the Department of Pharmaceutical Biology (Nika Kruljec, Dr. Peter Molek, Assoc. Prof. Mojca Lunder, and Assist. Prof. Tomaž Bratkovič) developed an alternative Ali-MAb chromatographic platform for isolating and purifying antibodies based on the use of structurally simple peptides.

Krka Awards

At the forty-eighth Krka Awards (on October 19, 2018 in Novo Mesto), the Krka grand prize for research work was awarded to:

- Dr. Kaja Rožman, Structure-based design, synthesis and evaluation of new inhibitors of peptidoglycan biosynthesis, supervisor: Prof. Stanislav Gobec, co-supervisor: Assist. Prof. Matej Sova;
- Dr. Špela Zupančič, Development of core-shell nanofibers for innovative periodontal disease treatment, supervisor: Prof. Julijana Kristl.

The recipients of the Krka prizes for undergraduate and graduate research works were: Dr. Anita Klančar, Dr. Tijana Markovič, Ina Kosmač, Gregor Ratek, Jernej Štukelj, and Janja Umnik.

2018 Novartis Regional BioCamp

Among the individual winners of the regional Biocamp 2018 was Emanuela Senjor from the University of Ljubljana's Faculty of Pharmacy.

SLAVIMO ZNANOST - RAZISKOVALNI DAN UL FFA

V Tednu Univerze smo dne 5. 12. 2018 na UL FFA tradicionalno organizirali Raziskovalni dan. Nagrade in priznanja UL FFA smo podelili na popoldanskem slavnostnem dogodku. Raziskovalni dan organiziramo že vrsto let z namenom počastiti dosežke svojih članov. Ti izjemni dosežki so 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 uspešno sodelovanje s fakulteto je prejela Jelka Dolinar, mag. farm.

V svojem več kot 30-letnem zavzetem delovanju v Slovenskem farmacevtskem društvu je vzpostavljala

WE CELEBRATE SCIENCE: FACULTY OF PHARMACY RESEARCH DAY

The Faculty of Pharmacy held Research Day on December 5th, 2018—an event traditionally held during University Week. Faculty awards and prizes were presented at the afternoon celebration event. We have been holding Research Day for many years to honor the achievements of our members. These outstanding achievements are the result of hard work by individuals in research and organization, their dedication to an unwavering desire for discovery and knowledge, and the desire to improve the profile and quality of the faculty's work.

Faculty of Pharmacy award for successful cooperation presented to Jelka Dolinar

In more than thirty years of committed work at the Slovenian Pharmaceutical Society, Jelka Dolinar es-

Nagrajenka ga. Jelka Dolinar / Mrs. Jelka Dolinar's reward

in negovala vezi med SFD in UL FFA. Skupaj s sodelavci UL FFA je sooblikovala dejavnosti društva v okviru nacionalnih in mednarodnih dogodkov SFD. Znatno je prispevala k temu, da je FFA tesno povezana s stroko preko društvenih aktivnosti. Dejavnost SFD in aktivna vključenost UL FFA namreč doprinašajo k promociji farmacevtske znanosti in stroke ter spodbujajo sodelovanje med strokovnjaki iz akademskega in industrijskega okolja, kakor tudi tistih iz regulatornih ustanov ter iz klinične in lekarniške prakse. Ga. Jelka Dolinar je v letih delovanja v SFD delovala povezovalno, strokovno in odgovorno.

Priznanje UL FFA za uspešno sodelovanje s fakulteto je prejel dr. Aleš Rotar, mag. farm.

Nagrajenec je večkrat vabljen predavatelj na magistrskem programu farmacija. Kot direktor Razvoja in proizvodnje zdravil, član uprave Krka d. d. ter oseba z mnogimi ekspertizami študentom predstavi delovanje farmacevtske tovarne na celosten način. S prenašanjem znanja in izkušenj iz realnega sveta farmacevtske

tablished and nurtured links between the Slovenian Pharmaceutical Society and the faculty. Together with the faculty's colleagues, she helped shape the activities of the society within national and international society events. She has significantly contributed to the fact that the faculty is closely related to the profession through society activities. The society's activity and the active involvement of the faculty contribute to the promotion of pharmaceutical science and the profession, and encourage cooperation between professionals from the academic and industrial environment, as well as those from regulatory institutions and from clinical and pharmacy practices. Dolinar has worked interconnectively, professionally, and responsibly during her years of activity in the society.

Faculty of Pharmacy Award for successful cooperation presented to Dr. Aleš Rotar

The winner was invited to lecture in the master's program in pharmacy on several occasions. As director for the Development and Production of Medicines, a

Nagrajenec dr. Aleš Rotar / Dr. Aleš Rotar's reward

industrije v akademsko okolje dviguje kakovost izobraževalnega procesa. Svoje znanje in izkušnje deli s študenti, sodelavci in kolegi v stroki na nesebičen, prijazen in akademskim krogom primeren način. S svojim kritičnim pristopom je prispeval h kakovosti študijskih programov UL FFA v fazi njihovega nastajanja in kasneje ob implementaciji oz. nadgradnjah. Pri tem je vodstvu UL FFA prenašal tudi izkušnje, ki jih je pridobil pri svojem delovanju v organih Nakvisa. Enako je pomemben prenos njegovih izkušenj projektnega vodenja na fakulteto, še posebej na področju aplikativnih projektov z gospodarstvom.

Priznanje UL FFA za izjemne rezultate pri delu je prejel doc. dr. Bojan Doljak, mag. farm.

Nagrajeni je kot vodja Komisije za kakovost in akreditacijo na Fakulteti za farmacijo vrsto let desna roka vodstva fakultete na področju kakovosti. Po sklepu Ministrstva za zdravje je bil kmalu po končanem doktorskem študiju imenovan tudi za člana Medresorske podkomisije za dobro laboratorijsko prakso (DLP).

member of the Krka Management Board, and a person with much expertise, he presents the functioning of the pharmaceutical factory and its specificities in a holistic manner. By transferring knowledge and experience from the real world of the pharmaceutical industry to the academic environment, the quality of the educational process is rising. He shares his knowledge and experience with students and colleagues in an unselfish, friendly, and academically appropriate manner. With his critical approach, he contributed to the quality of the faculty's programs when they were being set up, and later on when they were improved. In doing so, he passed on to the faculty's administration the experience he gained during his work with the Slovenian Quality Assurance Agency for Higher Education (NAKVIS) authorities. Equally important is the transfer of his experience in project management to the faculty, especially in applied projects with industry.

Faculty of Pharmacy Award for outstanding work achievement presented to Assist. Prof. Bojan Doljak

Nagrajenec doc. dr. Bojan Doljak / Assist. Prof. Bojan Doljak's reward

Izšolal se je za DLP ocenjevalca v Research Toxicology Centre (Rim, Italija) in Charles River Laboratories (Worcester, ZDA). Pridobljena znanja je v veliki meri prenesel na upravljanje s kakovostjo na Fakulteti za farmacijo pri pedagoškemu, raziskovalnemu in strokovnemu delu. Pomemben je zlasti njegov prispevek pri pridobitvi akreditacije FFA s strani ASIIN in akreditacije študijskih programov s strani NAKVIS. Dejavnost doc. dr. Bojana Doljaka in aktivna vključenost v upravljanje kakovosti pomembno doprinašata k razvoju UL FFA na pedagoškem, raziskovalnem in strokovnem področju.

Priznanje UL FFA za izjemne rezultate pri delu je prejel g. Rafael Hribar

Nagrajeni je bil kot tehnični vzdrževalec vrsto let zaposlen v OE Tajništvo, kjer sta sicer zaposlena dva vzdrževalca. Pred 4 leti je zaradi bolezni sodelavca za dolgo časa ostal edini zaposleni tehnični vzdrževalec fakultete. Postavljen je bil pred težko preizkušnjo izvajanja organizacijskih in operativnih nalog na vseh

The winner, Assist. Prof. Bojan Doljak, is the head of the Faculty of Pharmacy's Quality and Accreditation Committee and was for many years the right hand of the faculty administration for quality. Following a decision by the Ministry of Health, shortly after the completion of his doctoral studies, he was also appointed as a member of the Interdepartmental Subcommittee for Good Laboratory Practice (GLP). He studied to be the GLP assessor at the Research Toxicology Center (in Rome) and Charles River Laboratories (in Worcester, Massachusetts). The knowledge he acquired has to a great extent been transferred to quality management at the Faculty of Pharmacy in teaching, research, and professional work. Particularly important is his contribution to the faculty's accreditation by ASIIN and the accreditation of its programs by NAKVIS. Doljak's activities and his active involvement in quality management have had a significant impact on the development of the faculty in teaching, research, and professional activities.

Nagrajenec g. Rafael Hribar / Rafael Hribar's reward

področjih vzdrževanja in na vseh lokacijah, kjer je fakulteta opravljala dejavnost. Po tem, ko je fakulteta za pomoč angažirala honorarnega sodelavca, pa je bil tudi v vlogi njegovega uvajalca in nadzora pri delu. Poleg tega pa smo ga na fakulteti sčasoma pričeli uporabljati tudi kot hišnega fotografa na prireditvah. Vse navedene naloge je g. Hribar opravil mirno, zanesljivo in natančno. Pri svojem delu se je soočil tudi z napetimi situacijami, a so stavbe in naprave na koncu vedno delovale.

Priznanje UL FFA študentom za izjemne dosežke je prejel Tilen Huzjak

Tilen Huzjak, študent 5. letnika EM FAR, je že več let glavni koordinator študentskih tutorjev na UL FFA. Pod njegovim vodstvom je bil sistem študentskega tutorstva vpeljan in organiziran na zavidljivi ravni. Gre za obliko medštudentske pomoči. Postavljen sistem študentskega tutorstva v svoji zasnovi v predstavlja samoiniciativen, neformalen moment pri zagotavljanju kakovosti izvedbe študijskega procesa na UL FFA. Študentsko tutorstvo se od študijskega leta 2016/2017 na UL FFA izvaja v obliki osebnega in predmetnega tutorstva, ki študente na prijeten način uvedeta v študijsko življenje na UL FFA. S pomočjo glavnega koordinatorja študentskih tutorjev predmetni tutorji organizirajo reševanje nalog in utrjevanje snovi kot del priprav študentov na izpit oz. kolokvij. Dejavnosti nagrajenca tako pomembno prispevajo k razvoju UL FFA na pedagoškem področju.

Priznanje UL FFA študentom za izjemne dosežke je prejel Anže Zidar

Anže Zidar, študent 5. letnika EM FAR, je bil predsednik Študentskega sveta FFA v letih 2017 in 2018. V obdobju od 2016 do novembra 2018 je bil tudi aktivni član Komisije za študijsko področje UL FFA in član Senata UL FFA. S svojim delovanjem v okviru delovnih in vodstvenih teles UL FFA si je ves čas prizadeval ne le za dobro vseh študentov, temveč tudi za urejene in zgledne odnose med učitelji in študenti. V zadnjih dveh letih je tvorno pomagal pri organizaciji in izvedbi predstavitve fakultete na vsakoletnem Pozdravu brucem, sejmu Informativa ter na informativnih dnevih. Iz-

Faculty of Pharmacy Award for outstanding work achievement presented to Rafael Hribar

The winner, Rafael Hribar, was a technical maintenance engineer for many years in the Organizational Unit Secretary's Office, Maintenance Service, where two maintenance workers are employed. Four years ago, due to the illness of a colleague, he remained the only technical maintenance engineer at the faculty for a long time. He faced difficult organizational and operational tasks in all areas of maintenance and at all locations of the faculty. After the faculty hired a part-time technical maintenance worker, Hribar also introduced him to the work and supervised him. In addition, the faculty gradually started using Hribar as its photographer for events. Hribar performed all the tasks assigned to him steadily, reliably, and carefully. In his work, he also faced some tricky situations, but the buildings and equipment always operated smoothly in the end.

Faculty of Pharmacy Award for outstanding student achievement presented to Tilen Huzjak

Tilen Huzjak, a fifth-year student in the fast-track master's program in pharmacy, has been the main coordinator of student peer mentors at the Faculty of Pharmacy for many years. Under his leadership, the student mentoring system was introduced and organized at an enviable level. The student mentoring system is a form of inter-student assistance. The established system of student mentoring is fundamentally a self-initiated informal movement to ensure the quality of study at the faculty. Since the 2016/17 academic year, student mentoring has been conducted as personal and subject-specific peer mentoring, which introduces students to academic life at the faculty in a pleasant manner. With the help of the main student mentor coordinator, the subject mentors organize task solving and material consolidation meetings as a part of preparing students for final exams or midterms. The activities of the winner made a significant contribution to developing teaching at the faculty.

Faculty of Pharmacy Award for outstanding student achievement presented to Anže Zidar

Anže Zidar, a fifth-year student in the fast-track

postavimo lahko njegove organizacijske sposobnosti, saj je koordiniral različne dejavnosti v okviru Študentskega sveta ter Študentske sekcije Slovenskega farmacevtskega društva. Kot predstavnik za stike z IPSF (Mednarodno federacijo študentov farmacije) je vpet tudi v mednarodne dejavnosti naših študentov.

Aleš Kolenko: priznanje UL za strokovnega sodelavca

Univerza v Ljubljani je v okviru Tedna Univerze podelila priznanja 18 strokovnim sodelavcem, med njimi g. Alešu Kolenku.

G. Aleš Kolenko, vodja finančno-računovodske službe na UL FFA, je vrsto let kreativen in strokoven član vodstvene ekipe fakultete in desna roka tajnice fakultete. Vedno je pripravljen sodelovati pri reševanju strokovnih vprašanj tudi na ravni univerze. Je član UO UL FFA in drugih delovnih teles na fakulteti in tudi na UL. Pri delu je strokoven, natančen, sistematičen in zanesljiv ter zato odličen sodelavec.

Fakulteta za farmacijo: priznanje Slovenske znanstvene fundacije

UL FFA je za sodelovanje pri izvedbi slovenskega festivala znanosti v letih 2018 in 2017 prejela priznanje Odlično partnerstvo, ki ga podeljuje Slovenska znanstvena fundacija.

master's program in pharmacy, was president of the faculty's student council in 2017 and 2018. From 2016 to November 2018 he was also an active member of the Program Committee and a member of the faculty's senate. Through his contributions in the faculty's working and management bodies, he constantly strived not only for the good of all students, but also for orderly and exemplary relationships between teachers and students. In the last two years, he has helped organize and carry out of the faculty's presentation at the annual freshman orientation fair and the faculty's open-house days. His organizational skills also stand out because he has coordinated various activities within the student council and the Student Section of the Slovenian Pharmaceutical Society. As a representative for contacts at the IPSF (International Pharmaceutical Students' Federation), he has also been involved in the international activities of the faculty's students.

Aleš Kolenko: University of Ljubljana Staff Award

During University Week, the University of Ljubljana conferred awards on eighteen staff members, including Aleš Kolenko.

As head of finance and accounting at the University of Ljubljana's Faculty of Pharmacy, Kolenko has been a creative and skilled member of the faculty's management team and the faculty secretary's right hand for several years now. He is always ready to assist with professional issues, including at the level of the entire university. He is member of the Faculty of Pharmacy's management board and other working bodies at this faculty and the University of Ljubljana. He is very professional, accurate, systematic, and reliable, which makes him an excellent colleague.

Faculty of Pharmacy: Slovenian Science Foundation Award

The Slovenian Science Foundation recognized the University of Ljubljana's Faculty of Pharmacy with the Excellent Partnership Award for hosting the Slovenian Science Festival in 2017 and 2018.

NOVOIZVOLJENI REDNI PROFESORJI UL FFA V LETU 2018

Prof. dr. BORIS ROGELJ

se je rodil leta 1969 v Beogradu. Po končanem univerzitetnem študiju na Biotehniški fakulteti Univerze v Ljubljani leta 1995 se je na isti univerzi vpisal na doktorski študij na Medicinski fakulteti in 1999 uspešno zagovarjal doktorsko disertacijo.

Takoj po diplomi se je kot mladi raziskovalec zaposlil na Inštitutu Jožefa Stefana, Odseku za biokemijo, kjer je ostal še eno leto po doktoratu kot podoktorski sodelavec.

Leta 2000 je odšel v Veliko Britanijo, kjer je deloval najprej na University College London, nato pa kot raziskovalni sodelavec in kasneje višji raziskovalni sodelavec / predavatelj na Institute of Psychiatry, King's College London. Od leta 2008 dalje je bil oz. je še vedno tudi aktiven raziskovalec in sedaj vodja raziskovalne skupine na Biomedicinskem inštitutu BRIS v Ljubljani, raziskovalni sodelavec na Inštitutu Jožefa Stefana in visokošolski učitelj na Fakulteti za kemijo in kemijsko tehnologijo UL.

Poleg dolgoletnega dela na King's College in University College v Londonu je kot predavatelj gostoval še na ICGEB v Trstu, na Ludwig-Maximilians-University v Münchnu ter na Univerzi v Istanbulu.

Njegovo raziskovalno delovanje je tematsko zelo široko in pokriva več biomedicinskih tem, med drugim genetske vzroke in mehanizme bolezni amiotrofične lateralne skleroze (ALS), kjer je s sodelavci odkril nove mutacije, povezane z napredovano boleznijo ALS. Prav na tem področju ima prof. dr. Rogelj izredno kvalitetno bibliografijo, z visoko citiranimi članki (več kot 5800 citatov), objavljenimi v uglednih znanstvenih revijah.

Njegova najbolj odmevna publikacija, objavljena v reviji Science, ima 1498 citatov. Kot prvi avtor je svoje

NEWLY APPOINTED FULL PROFESSORS AT THE FACULTY OF PHARMACY IN 2018

BORIS ROGELJ

Boris Rogelj was born in 1969 in Belgrade. After graduating from the University of Ljubljana's Biotechnical Faculty in 1995, he enrolled in the doctoral program at the Ljubljana Faculty of Medicine, which he completed in 1999.

Immediately after earning his bachelor's degree, he started working as a junior researcher at the Biochemistry Department at the Jožef Stefan Institute in Ljubljana. After earning his doctorate, he continued to work there for a while longer as a postdoctoral associate.

In 2000, he left for the UK to work at University College London, after which he first served as a research associate and later as a senior research associate / lecturer at King's College London Institute of Psychiatry. Since 2008, he has been an active member—and is now also serving as head—of the research team at the BRIS Biomedical Institute in Ljubljana, a research associate at the Jožef Stefan Institute, and a professor at the University of Ljubljana's Faculty of Chemistry and Chemical Technology.

In addition to his many years of working at King's College London and University College London, Rogelj also served as a guest lecturer at the International Center for Genetic Engineering and Biotechnology in Trieste, the Ludwig Maximilian University of Munich, and the University of Istanbul.

His research covers a wide range of topics and disciplines, including the genetic causes of amyotrophic lateral sclerosis (ALS), where in cooperation with other researchers he discovered new mutations associated with advanced ALS. Rogelj has an impressive bibliography in this field, with highly cited research articles in prestigious journals. He has also done research on

ugotovitve objavil v 10 publikacijah, vključno s Science (1439 citatov) in Nature Neuroscience (518 citatov), ima pa tudi 21 vodilnih avtorstev v dobrih mednarodnih znanstvenih revijah z visokim dejavnikom vpliva.

Prof. dr. Rogelj je bil vodja sedmih raziskovalnih ARRS projektov in enega tujega (Foundation Thierry Latran).

Kot predavatelj je deloval na tutorialih biokemije na magistrskih študijih na King's College v Londonu, je sonosilec predmeta na magistrskem študiju na UL FKKT, zunanji sodelavec in predavatelj na UL MF in UL FFA. Bil je mentor pri 2 diplomah, 3 znanstvenih in 4 bolonjskih magisterijih ter 2 doktoratih. Izkazuje somentorstvo pri 2 diplomah in 1 znanstvenem magisteriju ter pri Krkini nagradi.

Njegovo strokovno delo je povezano z delom člana upravnega odbora Slovenskega nevro-znanstvenega društva SINAPSa, bil je vodja 3 bilaterialnih projektov s Srbijo in ZDA ter član programskih odborov mednarodnih konferenc od leta 2013 do 2018. Kot recenzent je aktiven v različnih znanstvenih periodičnih revijah.

Prof. dr. Rogelj je bil na Univerzi v Ljubljani leta 2013 izvoljen v naziv izrednega profesorja, 29. 5. 2018 pa v naziv rednega profesorja za področje farmacevtske biologije.

the characterization of mutated genes in ALS and disease-related functions of the C90RF72 mutation.

His first article, published in the journal Science, has been cited 1,036 times. He has published his findings as the lead author in Scientific Reports (eighty-two citations) and has appeared as the lead author of eleven articles in other high-quality international journals with a high impact factor.

Rogelj headed four research projects funded by the Slovenian Research Agency and one international project funded by the Thierry Latran Foundation.

He taught biochemistry tutorials in master's programs at King's College London, he is currently a joint coordinator of a master's course at the University of Ljubljana's Faculty of Chemistry and Chemical Technology, and he is an adjunct instructor and a lecturer at the University of Ljubljana's Faculty of Medicine and Faculty of Pharmacy. He has served as advisor for two bachelor's theses, three pre-Bologna and four Bologna master's theses, and two doctoral dissertations. He has been a co-advisor for two bachelor's theses, one pre-Bologna master's thesis, and one bachelor's student recipient of the Krka Award.

He is a member of the management board of the Slovenian neuroscience association SiNAPSA, he has headed three bilateral projects with Serbia and the US, and he served on the program committees of various international conferences from 2013 to 2018. He serves as a reviewer for various research journals.

The University of Ljubljana appointed Boris Rogelj an associate professor in 2013 and a full professor of pharmaceutical biology on May 29th, 2018.

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. Andreja Detiček za znanstveni članek: »Dostop pacientov do zdravil za zdravljenje redkih bolezni v evropskih državah« objavljen v reviji Value in health: the journal of the International Society for Pharmacoeconomics and Outcomes Research.
Mentor: izr. prof. dr. Igor Locatelli

asist. Martina Durcik za znanstveni: »Razvoja zaviralcev DNA-giraze B s protibakterijskim delovanjem« objavljen v reviji European Journal of Medicinal Chemistry.
Mentor: prof. dr. Lucija Peterlin Mašič

asist. dr. Damijan Knez za znanstveni članek: »Zaviralci butirilholin esteraze z nevroprotektivnim in antioksidativnim delovanjem kot večfunkcionalni ligandi za zdravljenje Alzheimerjeve bolezni« objavljen v reviji European Journal of Medicinal Chemistry.
Mentor: prof. dr. Stanislav Gobec

Anja Kolarič za znanstveni članek: »Razvoja selektivnih in/ali dualnih alosteričnih modulatorjev kemokinskih receptorjev CXCR3 in CXCR4«, objavljen v reviji European Journal of Medicinal Chemistry.
Mentor: znan. sod. dr. Nikola Minovski; Somentor: prof. dr. Marko Anderluh

asist. Nika Kruljec za znanstveni članek: »Razvoj peptidnih ligandov za afinitetno čiščenje protiteles«, objavljen v reviji Bioconjugate chemistry.
Mentor: doc. dr. Tomaž Bratkovič

DEAN'S AWARD WINNERS

The dean's awards are conferred upon students, researchers, or doctoral students at the Faculty of Pharmacy that, in the past period, as the first or leading author, have published work in a journal with a high impact factor or in a journal in the top ten percent of journals in a particular field, thereby contributing to the development of pharmaceutical sciences and the profession.

Andreja Detiček for the research article "Patient access to medicines for rare diseases in European countries," published in Value in Health.
Supervisor: Assoc. Prof. Igor Locatelli

Martina Durcik for the research article "New N-phenylpyrrolamide DNA gyrase B inhibitors: optimization of efficacy and antibacterial activity," published in European Journal of Medicinal Chemistry.
Supervisor: Prof. Lucija Peterlin Mašič

Dr. Damijan Knez for the research article "Multi-target-directed ligands for treating Alzheimer's disease: butyrylcholinesterase inhibitors displaying antioxidant and neuroprotective activities," published in European Journal of Medicinal Chemistry.
Supervisor: Prof. Stanislav Gobec

Anja Kolarič for the research article "Insight into structural requirements for selective and/or dual CXCR3 and CXCR4 allosteric modulators," published in European Journal of Medicinal Chemistry.
Supervisor: Dr. Nikola Minovski; Co-supervisor: Prof. Marko Anderluh

Nika Kruljec for the research article "Development and characterization of peptide ligands of immunoglobulin G Fc region," published in Bioconjugate Chemistry.
Supervisor: Assist. Prof. Tomaž Bratkovič

PREŠERNOVA NAGRADA UNIVERZE V LJUBLJANI

Damjan Avsec (mentorica: prof. dr. Irena Mlinarič-Raščan, somentorica: asist. dr. Tijana Markovič): SINERGISTIČNO DELOVANJE IBRUTINIBA IN IDELALISIBA Z AGONISTI RECEPTORJA EP4 NA CELICAH KRONIČNE LIMFOCITNE LEVKEMIJE

Martina Durcik (mentor: doc. dr. Nace Zidar): NAČRTOVANJE IN SINTEZA NOVIH N-FENILPIROLAMIDNIH ZAVIRALCEV DNA-GIRAZE B

Petra Kapš (mentorica: doc. dr. Saša Čučnik, somentorica: izr. prof. dr. Mojca Lunder): UPORABA PEPTIDNE KNJIŽNICE PRI DOLOČANJU VEZAVNIH ZNAČILNOSTI PROTITELES PROTI PROTROMBINU

Maša Rugel (mentor: prof. dr. Marko Anderluh): SINTEZA GVANIDINSKIH IMINOSLADKORJEV KOT PREKURZORJEV ZA NOVE SELEKTIVNE ZAVIRALCE β-GLUKOZIDAZE

Ana Temeljotov (mentorica: prof. dr. Irena Mlinarič-Raščan, somentorica: asist. dr. Tijana Markovič): VLOGA IMUNOPROTEASOMA V CELICAH KRONIČNE LIMFOCITNE LEVKEMIJE

PRIZNANJA FAKULTETE

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

FACULTY OF PHARMACY PREŠEREN AWARDS

Damjan Avsec (supervisor: Prof. Irena Mlinarič-Raščan, co-supervisor: Tijana Markovič): "Synergistic effects of ibrutinib and idelalisib with AP4 receptor agonists on chronic lymphocytic leukemia cells"

Martina Durcik (supervisor: Assist. Prof. Nace Zidar): "Design and synthesis of novel n-phenylpyrrolamides as DNA gyrase B"

Petra Kapš (supervisor: Assist. Prof. Saša Čučnik, co-supervisor: Assoc. Prof. Mojca Lunder): "Determination of binding characteristics of antibodies against prothrombin using peptide library"

Maša Rugel (supervisor: Prof. Marko Anderluh): "Synthesis of guanidinlated iminosugars as precursors for new selective beta-glucosidase inhibitors"

Ana Temeljotov (supervisor: Prof. Irena Mlinarič-Raščan, co-supervisor: Dr. Tijana Markovič): "The role of the immunoproteasome in chronic lymphocytic leukemia cells"

FACULTY OF PHARMACY RECOGNITIONS

Faculty of Pharmacy recognitions are received by graduates that have progressed steadily during the course of their studies and have achieved an average grade of 9.00 or more (out of 10) in all academic obligations (except their thesis) within one year after enrolling in the extra year of the program.

Enoviti magistrski študijski program Farmacija /
Fast-track master's program in pharmacy:

Benčina Lea
Dolenc Maša
Herlah Tjaša
Hribšek Rok
Jazbinšek Santina
Justin Benjamin
Kocmur Petra
Kočevar Marko
Kolar Manca
Kramberger Katja
Kuzmič Samo
Lačen Mojca
Lozar Janja
Osel Nika
Prešern Anja
Proj Matic
Sočan Vesna
Šmon Špela
Šopar Katja
Viler Tina
Zidar Anže

Magistrski študijski program Industrijska farmacija /
Master's program in industrial pharmacy:

Herlah Barbara
Jančič Valentina
Janežič Valerija
Jazbec Anja
Klanjšek Lidija
Konečnik Katja
Oven Monika
Plešec Anja

Magistrski študijski program Laboratorijska biomedicina /
Master's program in laboratory biomedicine:

Janev Aleksandar
Kozjek Eva
Matek Valentina

Univerzitetni študijski program Kozmetologija /
Bachelor's program in cosmetology:

Čebašek Sara
Končan Vesna
Pokovec Simona

Univerzitetni študijski program Laboratorijska biomedicina /
Bachelor's program in laboratory biomedicine:

Ogrin Ajda
Puščenik Lara
Smrdel Lara

Skupinska slika nagrajencev / Award winners

4 Seznam diplomantov
List of graduates

DIPLOMANTI NA FAKULTETI ZA FARMACIJO V LETU 2018
2018 GRADUATES AT THE FACULTY OF PHARMACY

UNIVERZITETNI ŠTUDIJSKI PROGRAM KOZMETOLOGIJA

UNIVERSITY STUDY PROGRAMME OF COSMETOLOGY

Bračič Pia
Čebašek Sara
Deu Janežič Petra
Filipović Marina
Gajšek Tea
Hriberšek Anja
Hudina Anita
Javornik Nastja
Klemenc Karmen
Kobe Nina
Končan Vesna
Koren Urška
Mervič Kristina
Müller Ana
Oblak Iza
Ovijač Kaja
Pikl Katja
Pokovec Simona

ENOVITI MAGISTRSKI ŠTUDIJSKI PROGRAM FARMACIJA

UNIFORM MASTER'S STUDY PROGRAMME OF PHARMACY

Barborič Tina
Birjukov Anja
Breskvar Tina
Brodnjak Simon
Colarič Lara
Češarek Urška
Ferjančič Tina
Janković Marko
Jerebic Nina
Kač Lidija
Klemenčič Katja
Kolenko Anže
Kotnik Dejan
Križman Maja
Lenarčič Kaja
Mihalič Zala Nikita
Mihelj Reščič Polona
Nagode Ana
Perko Tina
Pisnik Aljaž
Prikeržnik Barbara
Pucko Marko
Rižner Leon
Rotnik Veronika
Savšek Ula
Sikošek Mojca
Slivnik Matevž
Sokolovič Barbara
Steiner Tjaša
Škof Mateja
Šneljer Tina
Štekar Ana Carolina
Trpin Ela
Vitek Mercedes
Vozelj Katja
Zelko Sabina
Zupanc Manca
Žvegelj Gal Christian

MAGISTRSKI ŠTUDIJSKI PROGRAM INDUSTRIJSKA FARMACIJA

MASTER'S STUDY PROGRAMME OF INDUSTRIAL PHARMACY

Ahej Janja
Bavdek Anita
Borštnik Barbara
Brezovar Laura
Demšar Ajda
Ferkolj Maja
Gregorec Jan
Grgičevič Tia
Grujić Milijana
Hafner Špela
Herlah Barbara
Jazbec Anja
Kitić Milena
Klanjšek Lidija
Klemenčič Maruša
Ključevšek Marko
Kolenc Nastja Kristian
Krstova Ana
Logar Erika
Mihevc Eva
Novak Janja
Nusdorfer Nika
Oven Monika
Pečovnik Tea
Peinkiher Sara
Planinšek Parfant Timeja
Plešec Anja
Povše Urška
Repše Pia
Rožman Veronika
Smodiš David
Struna Alenka
Šega Kaja
Tajnšek Tia
Zagorc Maruša

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

Darja Gramec Skledar (mentorica prof. dr. Lucija Peterlin Mašič): In vitro preučevanje metabolizma ter endokrinih učinkov izbranih bisfenolov in novejših bromiranih zaviralcev gorenja.- In vitro study of metabolic and endocrine effects of selected bisphenols and novel brominated flame retardants, COBISS.SI-ID: 296871168.

Melita Hribar (mentor doc. dr. Jurij Trontelj): Razvoj in vrednotenje novih modelov za sproščanje zdravilnih učinkovin iz trdnih peroralnih farmacevtskih oblik s simulacijo peristaltike v želodcu in črevesju.- Development and evaluation of new models for drug dissolution from solid oral pharmaceutical formulations using the simulation of the peristalsis in human stomach and intestine, COBISS.SI-ID: 295486464.

Anita Klančar (mentor izr. prof. dr. Robert Roškar, somentor doc. dr. Jurij Trontelj): Ugotavljanje obremenitve pitnih, površinskih in odpadnih vod z zdravilnimi učinkovinami in njihovimi metaboliti v Sloveniji.- Determination of the pharmaceuticals and their metabolites burden in drinking, surface and wasta- waters in Slovenia, COBISS.SI-ID: 293956352.

Tijana Markovič (mentorica prof. dr. Irena Mlinarič- Raščan): Vrednotenje imunske modulacije in učinkovitosti agonista receptorja EP4 in monoklonskih protiteles in vitro.- Evaluation of immune modulation and efficacy of EP4 receptor agonist and monoclonal antibodies in vitro, COBISS.SI-ID: 295575552.

Kaja Rožman (mentor prof. dr. Stanislav Gobec, somentor doc. dr. Matej Sova): Strukturno-podprto načrtovanje, sinteza in vrednotenje novih zaviralcev biosinteze peptidoglikana.- Structure-based design synthesis and evaluation of new inhibitors of peptidoglycan biosynthesis, COBISS.SI-ID: 295287808.

Jure Zakrajšek (mentor prof. dr. Uroš Ureb): Razvoj in optimizacija analiznih metod z vgrajeno kakovostjo za določevanje benzalkonijevega klorida v različnih farmacevtskih pripravkih.- Development and optimization of analytical methods used for assay determination of benzalkonium chloride in complex pharmaceutical formulations using Quality-by-design principles, COBISS.SI-ID: 297324032.

Doktorati s področja Klinična biokemija in Laboratorijska biomedicina/
Doctors in the fields of Clinical Biochemistry and Laboratory Biomedicine

Petra Bajuk Franko (mentorica izr. prof. dr. Helena Podgornik, somentor prof. dr. Borut Božič): Vplivi visoko avidnih protiteles proti β2-glikoproteinu I in oksidativno spremenjenih naravnih protiteles na človeške endotelijske celice koronarne arterije gojene in vitro.- Prevalence of monoclonal B-cell lymphocytosis in healthy population of Lower Carniola, COBISS.SI-ID: 294313728.

Andraž Šmon (mentorica doc. dr. Katarina Trebušak Podkrajšek, somentorica prof. dr. Janja Marc): Opredelitev kriterijev za razširjeno presejanje novorojencev za vrojene bolezni presnove.- Definition criteria for expanded newborn screening for inborn errors of metabolism, COBISS.SI-ID: 293470464.

Dunja Urbančič (mentorica prof. dr. Irena Mlinarič-Raščan): Farmakogenomsko vrednotenje dovzetnosti na tiopurine.- Pharmacogenomic evaluation of susceptibility to thiopurines, COBISS.SI-ID: 4633969.

5 Znanstvene in strokovne publikacije
Scientific and professional publications

KATEDRA ZA BIOFARMACIJO IN FARMAKOKINETIKO

DEPARTMENT OF BIOPHARMACY AND PHARMACOKINETICS

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Felicijan Tjaša, Bogataj Marija: Biofarmacevtski vidiki interakcij med hrano in zdravili = Biopharmaceutical aspects of food-drug interactions.- Farm. Vestn., 2018, 69, 2, str. 75-80, COBISS.SI-ID: 4505969.

Gobec Martina, Tomašič Tihomir, Štimac Adela, Frkanec Ruža, Trontelj Jurij, Anderluh Marko, Mlinarič-Raščan Irena, Jakopin Žiga.: Discovery of nanomolar desmuramylpeptide agonists of the innate immune receptor nucleotide-binding oligomerization domain-containing protein 2 (NOD2) possessing immunostimulatory properties.- Journal of Medicinal Chemistry, 2018, 61, 6, str. 2707-2724, COBISS.SI-ID: 4483697.

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Košak Urban, Brus Boris, Knez Damijan, Žakelj Simon, Trontelj Jurij, Pišlar Anja, Šink Roman, Jukič Marko, Živin Marko, Podkowa Adrian, Nachon Florian, Brazzolotto Xavier, Stojan Jure, Kos Janko, Coquelle Nicolas, Sałat Kinga, Colletier Jacques-Philippe, Gobec Stanislav: The magic of crystal structure-based Inhibitor optimization: development of a butyrylcholinesterase inhibitor with picomolar affinity and In vivo activity.- Journal of Medicinal Chemistry, 2018, 61, 1, str. 119-139, COBISS.SI-ID: 4444017.

Temova Rakuša Žane, Roškar, Robert: Stabilnost terapevtskih proteinov = Stability of therapeutic proteins.- Farm. Vestn., 2018, 69, 3, str. 236-242, COBISS.SI-ID:4559473.

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DEPARTMENT OF PHARMACEUTICAL BIOLOGY

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Božič Mojca, Boc Vinko, Pečar Fonović Urša, Marc Janja, Blinc Aleš, Kos Janko, Černe Darko: Increased plasma cathepsin S at the time of percutaneous transluminal angioplasty is associated with 6-months' restenosis of the femoropopliteal artery.- Journal of Medical Biochemistry. 2018, 37, 1, str. 54-61, COBISS.SI-ID: 4065452.

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Gobec Stanislav: The magic of crystal structure-based Inhibitor optimization: development of a butyrylcholinesterase inhibitor with picomolar affinity and In vivo activity.- Journal of Medicinal Chemistry, 2018, 61, 1, str. 119-139., COBISS.SI-ID: 4444017.

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Panek Dawid, Więckowska Anna, Jończyk Jakub, Godyń Justyna, Bajda Marek, Wichur Tomasz, Pasieka Anna, Knez Damijan, Pišlar Anja, Korabecny Jan, Soukup Ondrej, Sepsova Vendula, Sabaté Raimon, Kos Janko, Gobec Stanislav, Malawska Barbara: Design, synthesis and biological evaluation of 1-benzylamino-2-hydroxyalkyl derivatives as new potential disease-modifying multifunctional anti-Alzheimer's agents.- ACS Chemical Neuroscience, 2018, 9, 5, str. 1074-1094, COBISS.SI-ID: 4465009.

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KATEDRA ZA FARMACEVTSKO KEMIJO

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

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Česen Marjeta, Lenarčič Kaja, Mislej Vesna, Levstek Meta, Kovačič Ana, Cimrmančič Bernardka, Uranjek Ževart Nataša, Kosjek Tina, Heath David John, Sollner Dolenc Marija, Heath Ester: The occurrence and source identification of bisphenol compounds in wastewaters.- Science of the Total Environment, 2018, 616-617, str. 744-752, COBISS.SI-ID: 30884135.

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