



RESEARCH NEWSLETTER

OFFICE OF THE PROVOST - RESEARCH ADMINISTRATION
QUARTERLY NEWSLETTER

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School of Engineering News

UNDERGRADUATE RESEARCH EXCELLENCE

From the beginning of the year, the research team for [Metamaterials Modeling and Design](#), led by NU Associate Professor [Constantinos Valagiannopoulos](#), has accomplished significant achievements remarking the ability of NU to pursue research excellence, even at an undergraduate level. Three studies performed by exceptional NU undergraduates under the supervision of Prof. Valagiannopoulos, have been published at highly selective journals of [American Physical Society](#) (APS). It is remarkable that each of the papers has been written by a single student (plus the supervising Professor), while the entire research has been produced exclusively within NU (without external collaborators).



Prof. Constantinos
Valagiannopoulos

In particular: (A) The work entitled: “[Limits for Absorption and Scattering by Core-Shell Nanowires in the Visible Spectrum](#)” by NU Physics major Aivar Abrashuly has been published at Physical Review Applied. (B) The work entitled: “[Core-shell nanospheres under visible light: Optimal absorption, scattering, and cloaking](#)” by NU Physics major Arsen Sheverdin has been published at Physical Review B. (C) The work entitled: “[Robust polarization twist by pairs of multilayers with tilted optical axes](#)” by NU Physics major Adilkhan Sarsen has been published at Physical Review B. All the aforementioned NU students are planned to perform summer research internships at top Universities and Groups globally. More specifically:



Aivar Abrashuly is one winner of the prestigious [Yessenov Foundation Travel Grant](#) (the only 2nd-year undergraduate to win one of the ten Grants awarded across Republic of Kazakhstan and all scientific disciplines). He will visit [Swiss Federal Institute of Technology Lausanne](#) (EPFL), Lausanne, Switzerland to work on research projects related to Topological Insulators.



Arsen Sheverdin is another winner of Yessenov Travel Grant. He will visit [Cornell University](#), New York, USA to work on research projects within the broad area of Nanophotonics.



Adilkhan Sarsen with partial support from NU School of Science and Technology will visit [Advanced Science Research Center](#) (ASRC) by City University of New York (CUNY), New York, USA to perform research on Nonlinear Metasurfaces.

SHARED BY PROF. CONSTANTINOS VALAGIANNPOULOS

Prof. Mehdi Bagheri and his research team designed a new smart application



The Smart Application



Dr. Bagheri and his research team

Turning off the iron, regulating the apartment heating, switching on your kettle – all these daily chores can be done via your smartphone while sitting in the office. Professor Mehdi Bagheri and his students from Nazarbayev University have developed a mobile application for this.

The application has three versions, the latest of which is capable of controlling home appliances remotely.

According to the professor, in 2019 the project is expected to be completed. A huge number of interested local construction companies are already contacting the School of Engineering on this project since Kazakhstani housing and utility infrastructure digitization is one of the priority directions of the development. At the same time, the Irish company expressed its interest in the third version of the application designed in the School of Engineering. It's known that in Ireland households are equipped with smart meters, but the remote control system has not yet been implemented.

This application is one of the many innovative projects initiated by professors and students of the School of Engineering. As stated by Assylkhan Amankhan, a bachelor student at NU, the first two years students get necessary knowledge and skills in the subject area, then during their third and fourth years they can conduct their own projects, patent them and attract investments.

THE ARTICLE IS TAKEN AND TRANSLATED FROM ZAKON.KZ

Startup endeavor ReLive launched by Prof. Prashant Jamwal and SEng students invited by the United Nations

Context:

ReLive team was selected as one of the twenty best innovations of the world in the area of assistive devices for disabled children by the UNICEF, Geneva. Subsequently, the team was invited to participate in a special event entitled “The Role of Assistive Technology in Accelerating Learning and Participation of Children with Disabilities”, during 7-8 March 2019 at the Palais des Nations in Geneva, Switzerland.

Visitors:



This visit provided us a chance to showcase our innovations and the Nazarbayev University to the visitors including representatives from more than 160 permanent missions to United Nations in Geneva, international and non-governmental organizations, academic and research communities, disability persons’ organizations as well as industry partners and innovators from numerous countries.



Among other dignitaries visited us were the United Nations Director General, Mr. Michael Moeller, The High Commissioner for Human Rights, Ms. Michelle Bachelet, EU Commissioner on Digital Technology and Society, Ms. Mariya Gabriel, DDG Emergency Preparedness and response (WHO), Ms. Afshan Khan, UNICEF Regional Director for Europe and Central Asia, Ms. Deyana Kostadinova Ambassador, Permanent Representative of the Republic of Bulgaria, Health Minister of Kazakhstan, and representative of Kazakhstan Ambassador in Geneva.

Visitors also enquired about the Nazarbayev University and were impressed by the quality of our research at NU. We also could interact with participants from many other countries and exchanged our ideas. We used this international platform to publicize our university and the country well and we believe that we were successful in our mission.

NU startup ReLive research products displayed at UN exhibition at Geneva:

Soft robotic glove controlling grasp of hand-impaired patients:

Subsequent to proof-of-concept prototyping and experimental testing, a soft robotic glove has been developed which may help people suffering from loss of hand motor control to perform some of their daily activities. Charcot–Marie–Tooth disease (CMT), one of the hereditary motor and sensory neuropathies, characterized by progressive loss of muscle tissue and touch sensation affects about one in 2,500 people. Currently incurable, this disease is the most commonly inherited neurological disorder. The soft glove can help children suffering from CMT apart from other neurological disorders to write alphanumeric letters with convenient gripping. Later, a machine learning supported application evaluates the writing and gives feedback on how the subject is learning and improving.

Robot-Assisted Upper Limb Rehabilitation:

Stroke survivors need specific therapy to regain their lost motions and strengths. Robot-assisted physiotherapy is being actively researched these days since it helps therapists in attending many patients simultaneously beside offering personalized treatment, enhanced subject participation, and evidence-based treatment. Active involvement and voluntary participation of neurologically impaired subjects in the robotic gait training process may enhance the outcomes of such therapy. An upper limb rehabilitation robot has been designed and developed which works on an assist-as-needed (AAN) control scheme for the robotic training. The robot using AAN control scheme scaffolds and helps in moving limbs only when the subject fails to do himself/herself. Thereby the new approach encourages active participation of the subject which is important for fast recovery.

Auditory-Oral Education:

Many hard-of-hearing children (who have the ability to speak and are not physically mute) are termed as postlingually hearing impaired. Speech pathologists work with them to help improve their speech. Unfortunately, some children may choose not to talk because it is difficult for them to regulate the volume, pitch, or sound of their voices in a way that most people can understand. Our simple mobile application can help such children in regulating their voice and speak normally.

PREPARED BY DR. PRASHANT JAMWAL

An algorithm to shape our future...



Dr. Prashant Jamwal

It is not impossible to challenge an established and popular algorithm; all it requires is brainstorming and rigorous testing to prove its viability and preeminence.

School of Engineering Professor Dr. Prashant Jamwal, who is familiar with the strenuous process of developing algorithms, has invented a new method for Many-Objective programming called the Equitable Fuzzy Sorting Genetic Algorithm (EFSGA), which contested well-established algorithms NSGA-II and III.

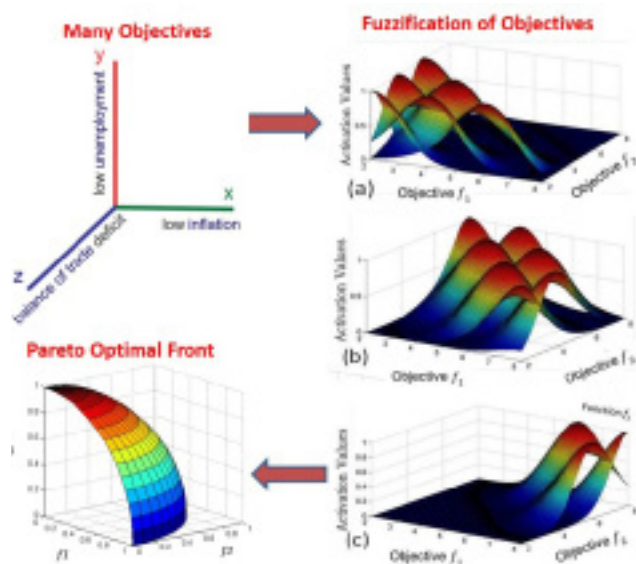
A many-objective optimization is a decision-making tool that resolves mathematical optimization problems with three or more objectives.

Extant NSGA-II and III algorithms proposed by Prof. Kalyanomoy Deb of Michigan State University have bagged over 18,300 times on Scopus and more than 29,500 times on Google Scholar, making it a highly-recognized Many-objective evolutionary algorithm.

Development of EFSGA is a result of some fundamental flaws diagnosed in NSGA-II and III algorithms by Dr. Jamwal who later started working on an alternative algorithm with his Ph.D. student Beibit Abdikenov and today his efforts have paid off.

The proposed new algorithm has been tested against many expandable benchmark optimization problems and it has been proven to be performing extremely well compared to other existing methods.

Dr. Prashant recently published a paper titled "[Evolutionary Optimization Using Equitable Fuzzy Sorting Genetic Algorithm \(EFSGA\)](#)" in IEEE journal, with well-grounded evidence that the algorithm can be used on many objective programming across disciplines providing solutions to multiple tasks in engineering and other scientific fields.



WRITTEN BY DR. PRASHANT JAMWAL

Department of Chemical and Materials Engineering faculty member represented Nazarbayev University during Horizon



Dr. Cevat Eriskan

In a panel meeting to select award winners from a pool of proposals from the European Countries to share €30 billion, Associate Professor Cevat Eriskan served as an expert evaluator and rapporteur in the topic NMBP-22-2018: Osteoarticular tissues regeneration. The evaluation is related to “Nanotechnologies, Advanced Materials, Biotechnology and Advanced



Manufacturing and Processing”. Dr. Eriskan has been working in the

field of tissue regeneration particularly in tissue-tissue interface regeneration since his award winning PhD work titled as “Functionally graded scaffolds for the engineering of interface tissues using hybrid twin screw extrusion/electrospinning technology”. He then continued working on this field with an ultimate goal of bone-to-cartilage (osteoarticular) interface regeneration. Osteoarticular interface exhibits a hierarchical structure with graded changes of properties and composition. Deterioration of this structure initiates a common joint disease, osteoarthritis, which is characterized by articular cartilage degeneration that eventually leads to loss of joint motion. This condition currently affects over 27 million Americans, with an estimated societal cost of approximately \$100 billion. Since cartilage has a limited capacity for self-repair, and current surgical procedures have limitations including donor-site morbidity, poor graft integration and

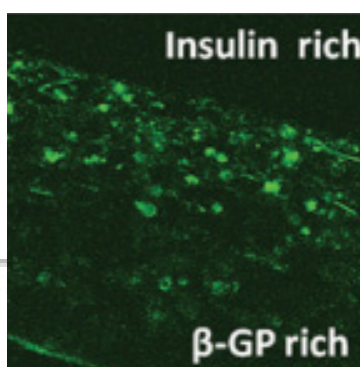
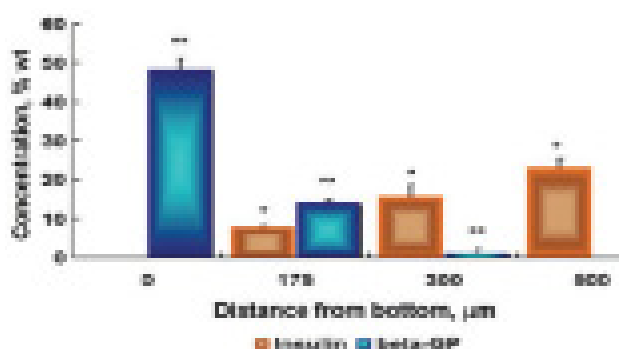


Figure 1. Graded distribution of insulin and β -GP across the thickness of a nanofiber based polycaprolactone scaffold (bar graph) and the resultant differentiation of ADMSCs into chondrocytic lineage as indicated by increased FGFR3 intensity towards insulin rich side (immunostained image).

formation of physiologically and mechanically inferior tissue, regenerative engineering seems to be an optimal approach for solving this clinical

problem. In one of the studies, Dr. Eriskan generated a structure with gradients of insulin and beta-glycerophosphate (B-GP) and demonstrated that adipose derived mesenchymal stem cells (ADMSCs) can be directed to differentiate into chondrocytes in a location dependent manner, which mimics the chondrocyte distribution in the native osteoarticular interface. His current research revolves around soft-to-hard tissue regeneration including cartilage-bone, tendon-bone, and ligament-bone; design and fabrication of polymer based and extracellular matrix based scaffolds; and controlled release of therapeutics from polymer based delivery systems. He is currently working on an ORAU Project aiming at tendon-bone regeneration (Grant No 090118FD5325, Fibrochondrogenic differentiation of mesenchymal stem cells through chemical stimulation) and Social Policy Grant targeting ligament-bone regeneration (SPG, Investigation of collagen fiber diameter in cow/bovine Anterior Cruciate Ligament).

WRITTEN BY DR. ERISKEN

Project AGILE granted

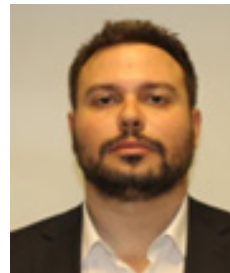
The project proposal “Development of tunable-frequency lasers for range-finding, 3-d mapping and telecommunications and supporting systems for attitude control, aiming and vibration suppression (AGILE).”, submitted by the Space Technology Research Group (Space, Industry and Transportation Cluster) of Nazarbayev University was recently granted by the Ministry of Defence, for the full requested amount of 240 million KZT.

The project will run during the period 2019-2021 and will develop a laser-based high resolution remote sensing and telecommunications technology for national security and reconnaissance, based on a tunable-frequency intra-red optical parametric oscillator with very low atmospheric attenuation (water vapour, dust and smoke particles) for military remote sensing and telecommunications. This will be supported by the development of piezoelectrically-actuated optics with vibration compensation for ultra-high-resolution tracking and high-speed scanning of ground targets and active vibration isolation of the optical subsystem from on-board vibrations, as well as the development of compact 2-DOF differential piezomotor-driven Control Moment Gyroscope for agile and precise attitude control of the carrier pod or satellite system. This project addresses identified technology needs of partners Ghulam and Tynys.

The research will be conducted at the Space, Industry and Transportation Cluster facilities at C4 and the Concurrent Design Facility at B3ext.



The research team is comprised of Profs. Christos Spitas (PI), Vassilios Kovanis (Co-PI), Konstantinos Valagiannopoulos, Anastasios Bountis, Prashant Jamwal, Mehdi Bagheri, Refik Kizilirmak as well as several members of their research groups.



The research team (in the order mentioned)

SHARED BY PROF. CHRISTOS SPITAS

NU Power Electronics Researchers Collaborate with Colleagues from the University of Bologna



Dr. Ruderman

The University of Bologna, also considered as “Alma Mater” of studies, is the oldest university in continuous operation (founded in 1088), as well as one of the leading academic institutions in Italy and Europe. NU Power Electronics Research Lab (PERL, under the supervision of Prof. Alexander Ruderman) has established a fruitful collaboration relationship with the SolarTronic Lab (ST-Lab, supervised by Prof. Gabriele Grandi), “Guglielmo



Prof. Gabriele Grandi

Marconi” Department of Electrical, Electronic and Information Engineering, in the field of power converters for renewable energy applications and quality of power supplied to a grid. In the past, this collaboration resulted in publishing 3 joint journal papers:

1. [Simple Time Averaging Current Quality Evaluation of a Single-Phase Multilevel PWM Inverter](#)
2. [Time-Domain Minimization of Voltage and Current Total Harmonic Distortion for a Single-Phase Multilevel Inverter with a Staircase Modulation](#)
3. [Simultaneous Selective Harmonic Elimination and THD Minimization for a Single-Phase Multilevel Inverter with Staircase Modulation](#)



Aidar Zhetessov

NU student Aidar Zhetessov that co-authored the 3rd paper is now finishing his MSc studies at ETHZ, Zurich, Switzerland, one of the world top universities known for its graduates Albert Einstein (1896), John von Neumann (1923) and many others.

At the beginning of 2019, the PERL and ST-Lab researchers published 2 more joint papers about Pulse Width Modulation (PWM) for multilevel power converters in solar (PhotoVoltaic - PV) energy conversion context:

1. [Three-Phase Three-Level Flying Capacitor PV Generation System with Embedded Ripple Correlation Control MPPT Algorithm.](#)
2. [On PWM Strategies and Current THD for Single- and Three-Phase Cascade H-Bridge Inverters with Non-Equal DC Sources](#)



Zhansen Akhmetov

NU 3rd year undergraduate student Zhansen Akhmetov, the last paper co-author, was invited for 2019 summer internship by Zhejiang University National Specialty Laboratory for Power Electronics (Director Prof. Xiangning He). [Prof. Xiangning He](#) is an internationally recognized power electronics expert, IEEE and IET Fellow.

Zhejiang University is one of the five most reputed Chinese universities noted for its research achievements. It is ranked 39th in the world in Electrical and Electronic Engineering.

WRITTEN BY DR. ALEXANDER RUDERMAN

Sponsorship of student internships at one of the world's



Bekassyl Battalgazy, a BEng in Chemical Engineering student, will be participating in a 3-month internship at The Molecular Foundry, Lawrence Berkeley National Lab, starting in May 2019.

[The Molecular Foundry](#) is a US Department of Energy-funded nanoscience research facility that provides users from around the world with access to cutting-edge expertise and instrumentation in a collaborative, multidisciplinary environment. The internship position, which is sponsored by Dr Vasileios Inglezakis in the Chemical Engineering Department at Nazarbayev University, will be hosted by

Dr. Tevye Kuykendall, a Senior Scientific Engineer at The Molecular Foundry.

The research project will focus on the synthesis of 2D transition metal dichalcogenides (TMDs). TMDs have received a lot of attention recently, stemming from the discovery of emergent properties when reduced from bulk crystals to 2D layers, such as their transition to direct band gap, emerging charge density waves, high mobility, and valley polarization. Recently we have developed a new technique for synthesizing 2D TMDs through conversion of metal-oxide thin films deposited by atomic layer deposition (ALD). To improve on this, we will explore different precursor compositions and the effect of substrate epitaxy using substrates such as BN or GaN. The research aims to develop a synthetic process, through successive experiments and characterization, to control crystallinity, the extent of conversion, and other properties producing high-quality TMD materials. The materials will be characterized by means of optical microscopy, scanning electron microscopy, Raman spectroscopy, and other techniques.

It is important to note that it is the 4th year that we have a student at one of the world's best labs!

Participation in the 2nd NANOMED workshop in Budapest

Our ESTg member, 3rd year PhD candidate Alzhan Baimenov has attended 2nd NANOMED workshop "ADSORBENTS FOR REMOVAL OF HEAVY METALS. CHARACTERISATION, PERSONAL CARE AND WATER TREATMENT" in the framework of HORIZON 2020 Program Nanoporous and Nanostructured Materials for Medical Applications (NanoMed) project at the Budapest University of Technology and Economics, Hungary. On the first day of the workshop, a round table was organized where the reports of the research performed by the project partners were evaluated and the work plan for the next year was discussed. On the second day, a mini-conference was held, where results of the conducted research were presented by both senior scientists and young researchers. Alzhan made an oral presentation entitled "Macroporous cryogel composites for removal of heavy metals from aqueous and biological media".



Congratulations on the approval of the funding of the new projects!

(new)

PROJECT COMING SOON

We are pleased to congratulate our Professors with the new projects, which were approved for funding 2019-2021!

The following projects will be funded by ORAU:

- Noble metals nanocomposites hyper-activity in heterogeneous non-catalytic and catalytic reactions (2019-2021)
- Co-firing of coal and biomass under air and oxy-fuel environments in fluidized bed rig: Experiments with process model development (2019-2021)
- Development of a Novel Technology for Production of High Quality Reclaimed Water: Track Etch Membrane Bioreactor (2019-2021)

We wish further success and excellent results to investigators and to all researchers!

Participation in the 2nd NANOMED workshop in Budapest

We are glad to inform you that Prof. Vassilis Inglezakis is invited as an independent expert in the assessment of the proposals to be received under the 2019 call for proposals for Erasmus+ Capacity Building in the Field of Higher Education by European Commission.



For reference:

The European Union's Erasmus+ programme is a funding scheme to support activities in the fields of Education, Training, Youth and Sport.

Erasmus+ also supports teaching, research, networking and policy debate on EU topics. Erasmus+ supports the Euridice network, which describes education systems in Europe and offers a comparative analysis of national systems and policies from early childhood to adult education.

SHARED BY AKNUR BAIBATYROVA



School of Mining and Geosciences News

First journal paper of SMG student published in Minerals



A research paper by SMG MSc student of Mining Engineering, Yerniyaz Abildin under the supervision of a faculty member of SMG, Dr. Nasser Madani, entitled "[A Hybrid Approach for Joint Simulation of Geometallurgical Variables with Inequality Constraint](#)" is published in an international peer-reviewed journal Minerals for the first time. The impact factor of this journal is 1.835, which is classified as Q2 in the category of MINING & MINERAL PROCESSING based on Web of Science report. This paper belongs to the Special Issue Geometallurgy. The main idea of this paper is related to introduce a geostatistical approach for defining the geometallurgical domains in copper deposits that are applicable in mine planning and mineral processing.

A research paper by Mining Engineering student published in Natural Resources Research journal



The School of Mining and Geosciences student, Nurassyl Battalgazy under the supervision of Dr. Nasser Madani, faculty member of this school, published a paper in a peer-reviewed scientific journal Natural Resources Research. The title of this research is "[Categorization of Mineral Resources based on Different Geostatistical Simulation Algorithms: a Case Study from an Iron Ore Deposit](#)". This paper discusses an industrial crucial issue about mineral resource classification of iron ore deposits based on international standards (JORC code), and recommends a simulation algorithm to a better quantify the required tonnages for long-term mine planning. The findings of this research are useful to mining companies and provide a best practice for mineral resource classification and reporting based on international standards. The journal Natural Resources Research is a good quality journal in Geostatistics and mineral resource modeling and belongs to the International Association for Mathematical Geosciences (IAMG). The journal is classified as Q2 in the Geosciences category and Q1 in category "Environmental Science" with a high impact factor of 3.094.

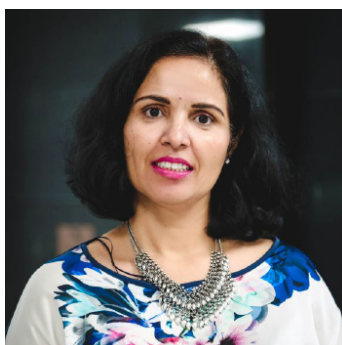
SHARED BY GULNAZ ABISHEVA



Graduate School of Education News

Gender and schooling in Kazakhstan: A mixed method study

We are delighted to announce that a project on Gender and Schooling in Kazakhstan, proposed by the Graduate School of Education was successful in winning funding from the Nazarbayev University Competitive Faculty Grant (Grant Number 110119FD4522). The 3-year research project (Jan 2019 - Dec 2021) aims to investigate the relationship between education and gender in secondary schools in Kazakhstan. As the first study of its kind in the context of Kazakhstan, this research aims to fill in a glaring gap in the educational research literature and offers immense opportunities for generating useful policy and practice implications, as well as recommendations for different units of education including curriculum and textbooks, teacher education, teachers and school leadership. Implications and recommendations would be useful in identifying strategies for improving the participation of females in STEM disciplines by revealing the gendered processes in play in secondary schools that potentially prevent girls from studying STEM in tertiary/ higher education. These goals directly address the Kazakhstani Government's gender equality targets in subject disciplines and career choices. A literature review and textbook analysis are currently undertaken to further refine the mixed methods design of the study. This will lead to qualitative case studies of gender perspectives and practices in schools and culminating into questionnaires for students, teachers and school administrators. The research team includes Professor Naureen Durrani (PI; naureen.durrani@nu.edu.kz), Dr. Anna CohenMiller (Co-PI) and Dr. Zumrad Kataeva (Co-PI). This progress of the research process can be followed on [ResearchGate](#) , such as updates in international presentations, roundtables, articles and book publications. For any questions on this research you may contact the authors.



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PREPARED BY DR. ZUMRAD KATAEVA

The Consortium of Gender Scholars (GenCon) is pleased to share two research projects developed to address issues of equity in higher education organizations. The following briefly describes each project. For more information, please contact the Directors of GenCon, Dr. Anna CohenMiller (anna.cohenmiller@nu.edu.kz) and Dr. Jenifer Lewis (jlewis@nu.edu.kz), or join the [GenCon mailing list](#) for updates.

Gender Audit of Formal Curriculum

In this study, the PIs, Dr. Anna CohenMiller and Dr. Jenifer Lewis, examined the gender-related practices evident within one key part of the formal curriculum--course syllabi. The results of the study provide a first step toward informing gender policy at the university as well as providing sample guidelines for other organizations in the region interested in examining their own policies as they move towards greater gender equality.

points used to assess the curriculum including a

SAMPLE UNIVERSITY RESOLUTIONS FOR GENDER AUDIT AS PROCESS & METHOD

SHORT TERM RESOLUTIONS

- Using readings written by female authors.
- Incorporating gendered topics or sets of readings, cases, assignments related to gendered themes

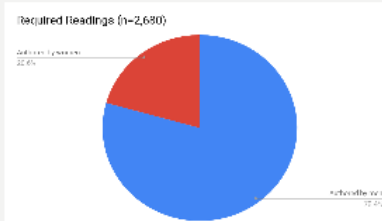
LONG TERM RESOLUTIONS

- Raise awareness of gender in the organization.
- Implementation of hiring practices with direct goals relating to gender equality (e.g., training for implicit bias)

(CohenMiller & Lewis, forthcoming)

DATA COLLECTION DECISIONS: DATA POINTS ACROSS THE CURRICULUM

- Course overview
- Course content
- Readings
- Instructor
- Teaching assistant
- Non-discriminatory statement



COHENMILLER & LEWIS, 2019

sample finding showing that across all readings (n=2,680), 79.4% were authored by men. Such findings led to the development of short term and long term resolutions.

This study has been presented at the University Teaching and Learning Committee and will be presented at the University Senate. Publication of this study will soon be available in *Advances in Gender Research*.

The following shows the data collection data

Graduate Student Parents in Kazakhstan

In this study, the research team (PI: Dr. Anna CohenMiller, Dr. Aray Saniyazova, and Zhanar Saniyazova) addresses issues of recruitment, retention, and equity for graduate students in universities of higher education. The first study of its kind in Kazakhstan, this study investigated the experiences of graduate students who are also parents to examine their unique experiences and uncover the necessary structural and organizational resources to facilitate matriculation.

For graduate students with children, the challenges are unique and potentially problematic, such as for women who traditionally act as primary caretakers. Through a country-wide survey distributed amongst the largest universities in Kazakhstan and in follow-up semi-structured interviews, preliminary findings suggest similar finding to international studies in the academic pipeline, demonstrating the multilayered challenges faced by mothers in academia, which are not present for fathers in academia.

This research study will be presented at the Comparative & International Education Society (CIES) in April 2019. To learn more about this study, please contact Aray Saniyazova, asaniyazova@nu.edu.kz

SHARED BY DR. ANNA COHENMILLER

Conference Acceptance MA Multilingual Education 2017- 2019, Graduate School of Education



This year is fruitful for international conferences and over 15 second-year master's students were accepted to attend with NUGSE funding. First, the conference trip got off to a good start with the active participation of 11 students participated in the conference entitled "International Conference on Multilingualism and Multilingual Education (ICMME)" in Bielefeld, Germany on 21-22 March 2019. Other four students are planning to attend two conferences: "Educating the Global Citizen - International Perspectives on Foreign Language Teaching in the Digital Age" 25-28, March, in Munich, Germany and "Conference on Translanguaging in the Individual, at School and in Society" 11-12, April, in Växjö, Sweden.

"This high number of student applications and acceptances is unprecedented, but is clearly the direction the MA in Multilingual Education is moving in" said Program Director Bridget Goodman. "Last year we had 7 students and alumni present coursework or thesis work at a conference hosted by the University of Oslo in Norway. Acceptance to these international conferences is an indicator that the field of multilingual education is curious about the nature of multilingualism in Kazakhstan. Moreover, it means that the work our students are doing and the conceptual frames they are using are in conversation with key scholars and themes in the field of multilingual education research."

PREPARED BY MOLDIR MAKENOVA AND DR. BRIDGET GOODMAN

Small Grant Presentations



At the Academy of Law Enforcement Agencies, Akmola. Left to Right: Bayan Ibrayeva of “Boloshak” Academy, Bridget Goodman, Andrey Chsherbakov, and Valeriya Burmistrova of Karaganda Medical University.

A team of faculty, student, and alumni researchers from GSE have organized presentations of preliminary results of their NU Faculty Competitive Development Grant project at one local and two international conferences in February and March. Dr. Bridget Goodman and Mr. Andrey Chsherbakov presented and discussed research and preliminary recommendations at the roundtable “Current Issues in the Implementation of Trilingual Education in Postgraduate Education” [Rus: «АКТУАЛЬНЫЕ ВОПРОСЫ РЕАЛИЗАЦИИ ТРЕХЪЯЗЫЧНОГО ОБУЧЕНИЯ В ПОСЛЕВУЗОВСКОМ ОБРАЗОВАНИИ» Kaz: «ЖОҒАРЫ ОҚУ ОРНЫНАН КЕЙІНГІ БІЛІМДЕГІ ҮШ ТІЛДІ БІЛІМ БЕРУДІ ІСКЕ АСЫРУДЫҢ ӨЗЕКТІ МӘСЕЛЕЛЕРІ»] at the Academy of Law Enforcement Agencies in Akmola on February 22. Dr. Goodman also gave presentations at a roundtable at the American Association of Applied Linguistics conference

on March 11, and as an invited speaker at an interest section academic session at the TESOL (Teaching English to Speakers of Other Languages) convention on March 15.

The project, “Development of students’ multilingual competence in EMI postgraduate research programs in Kazakhstan” (090118FD5305) was awarded funding in January 2018. The team consists of the following faculty and staff from GSE: Assistant Professor Bridget Goodman (Principal Investigator); Associate Professor and Vice Dean Jason Sparks; Associate Professor Sulushash Kerimkulova; PhD Candidate Assel Kambatyrova, MA in Multilingual Education alum and research assistant Andrey Chsherbakov; and PhD candidate Altynay Mustafina.



Academic Session Panelists and Moderators at the TESOL Convention. Left to Right: J. Andrés Ramírez, Florida Atlantic University; Alsu Gilmetdinova, Kazan National Technical University (Moderator); Mayra Daniel, Northern Illinois University; Maria Brisk, Boston College; Bridget Goodman; and David and Yvonne Freeman, University of Texas Rio Grande Valley.

PREPARED BY ASSEL KAMBATYROVA



NU School of Medicine News

Main highlights

We have now established our cell and molecular laboratories in the NUSOM, that are used by our students, faculty and research collaborators from other schools. NUSOM has now ten research projects funded internally or externally (Ministry of Science and Education of the Republic of Kazakhstan and NATO). This section is not meant to be comprehensive and just describes some of the highlights over the last few months.

Dr. Dieter Riethmacher, Vice Dean for Research and Graduate Studies, Professor of Neuroscience has recently published an article in Nature (January 2019) titled "[A defined commensal consortium elicits CD8 T cells and anti-cancer immunity](#)". The article describes an international collaborative research project on the importance of the microbiome in enhancing the immune response to bacterial infections and cancer. The study showed how 11 commensal strains act together and mediate the induction of specific subsets of T-cells to enhance both host resistance against *Listeria monocytogenes* infection and the therapeutic efficacy of immune checkpoint inhibitors in syngeneic tumor models. Dr. Riethmacher has developed a unique mouse model used in this study.



Dr. Dieter Riethmacher

Dr. Eugene Tulchinsky, who recently joined NUSOM as Full Professor in the Department of Biomedical Sciences and Dr. Marina Kriajevska, who will join us as Associate Professor in August 2019 have recently published an article "ZEB1 and IL-6/11-STAT3 signalling cooperate to define invasive potential of pancreatic cancer cells via differential regulation of the expression of S100 proteins" in the British Journal of Cancer on a key signaling pathway controlling the invasive mechanisms of pancreatic cancer. These findings may be exploited to develop novel molecular therapeutic approaches to treat pancreatic cancer, which has a very poor prognosis (less than 10% 5-year survival).

Dr. Luca Vangelista, Associate Professor and Program Director of the Master in Molecular Medicine, has recently joined the Editorial Board of the [World Allergy Organization Journal](#). He also authored a [Position Paper](#) from the AllergoOncology Task Force of the European Academy of Allergy and Clinical Immunology (EAACI), accepted in December 2018 and now in press in Allergy.



Dr. Luca Vangelista

Recently, Dr. Vangelista was awarded a prestigious multiyear grant from the Science for Peace and Security (SPS) Program of the North Atlantic Treaty Organization (NATO). The grant is a network of three countries: Italy (NATO Country), Albania (NATO Country) and Kazakhstan (NATO Partner Country) and Dr. Vangelista is the Director for Kazakhstan. The project deals with the development of a fiber-optic-based portable device for the “Early detection and diagnosis of emerging biological threats”, and it will be conducted at NUSOM and, in tight conjunction with Dr. Daniele Tosi and his group, at NUSEng and NLA.



Dr. Matthew Naanlep Tanko

Dr. Matthew Naanlep Tanko, Associate Professor, participated in a conference in November 2018 in Astana organized by the Ministry of Health. During this conference called Astana-Gastro-2018 he chaired

several session and gave a state-of-the-art lecture on the “Pathological diagnosis of HP-associated gastric lesions: current situation and progress”.



Dr. Toleubekova

Dr. Lyazzat Toleubekova, (Instructor) together with students from the MD class 2022 organized an event on 11th March 2019 on “The Role of the Healthcare Professional” in Domestic Violence, particularly to alert health care professionals in identifying and dealing

with such cases.



Dr Dmitry Viderman

Dr. Viderman had published two publications describing novel approaches to pain management in kidney transplantation and severe brain tumor-associated headache:

“[Erector Spinae Plane Block in Management of Pain After Kidney Transplantation](#)” and “[Intravenous lidocaine in the management of severe brain tumor-associated headache](#)”.



Dr. Dimitri Poddighe

Dr Dmitry Viderman (Instructor) together with Dr. Dimitri Poddighe (Assistant Professor) and Yekaterina Khamzina (4th year Medical Student) published [an article in the Journal of Global Antimicrobial Resistance](#)

describing the experience of bacterial resistance in the Intensive Care Unit of one of the UMC hospitals.



Prof. Philip La Fleur

Dr. Viderman and Prof. Philip La Fleur (Assistant Professor) also published an article describing a prospective pilot study on the use of hemofiltration for neuroprotection in acute ischemic stroke. The title is [Hemofiltration for neuroprotection in acute ischemic stroke: A prospective, pilot study](#).

hemofiltration for neuroprotection in acute ischemic stroke. The title is [Hemofiltration for neuroprotection in acute ischemic stroke: A prospective, pilot study](#).

SHARED BY DR. DIETER RIETHMACHER



School of Humanities & Social Sciences News

SHSS faculty's papers are accepted to prestigious journals

Dr. Sergey Kondyan's paper "The Effect of Foreign Direct Investment on Economic Growth" joint with Karine Yenokyan has been accepted for publication at Eastern Economic Journal.

The paper develops a theoretical model that studies the effects of foreign direct investment (FDI) on economic growth in the long-run and along transitional adjustment to the balanced growth path.

The authors focus on the capital accumulation role of FDI and isolate it from the spillover channel through which the positive growth effects of foreign investment usually operate.

Dr. Kondyan and Dr. Yenokyan show that FDI can affect growth through capital accumulation only in the presence of technological differences across countries. They also argue that disentangling the capital accumulation effects of FDI from positive spillover effects helps explain the absence of consistent empirical evidence on the subject.

The transitional dynamics in the presence of FDI are described by the interdependence of variables between the source and recipient countries. The authors study the multidimensional dynamic system using model calibration techniques.

The other paper "Cross-Country Knowledge Spillovers and Innovations in Less Developed Countries in the Context of the Schumpeterian Growth Model" also joint with Karine Yenokyan has been accepted for publication in Journal of Industry, Competition and Trade.

The authors study the effect of international knowledge spillovers on the evolution of R&D in less developed countries (LDC) using the structure of a second-generation endogenous growth model without scale effect.

There is a substantial evidence showing increasing "propensity" of LDC to produce "sophisticated goods". By introducing international knowledge spillovers they traced the feedback mechanism between spillovers, R&D innovations, market structure and economic growth, thus contributing to the understanding of the processes leading to the evolution of vertical and horizontal innovations in LDC.

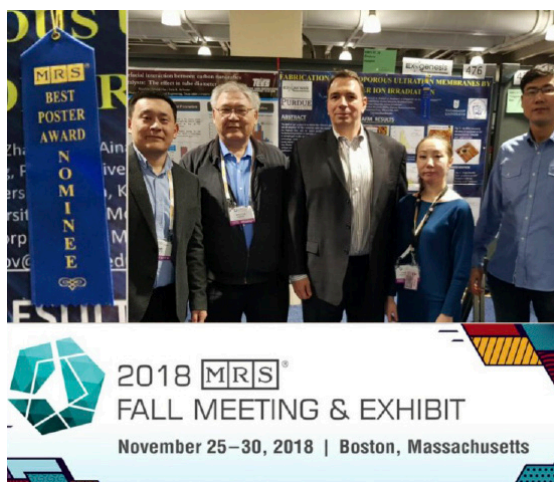


Dr. Sergey Kondyan

SHARED BY DR. KONDIAN

News from the Office of the Provost

The Anchor project members of the Office of the Provost had participated in Materials Research Society Fall Meeting & Exhibit, 2018



On November 24-30, 2018, a team from Anchor Project of World Science Stars under the Office of the Provost NU lead by Prof. Z. Insepov had participated in 2018 Materials Research Society (MRS) Fall Meeting & Exhibit which was held in Boston, Massachusetts, U.S. During this event, the Anchor project members, consisting of the researchers: Z. Ramazanova, N. Zhakiyev, Zh. Balgin and Z. Insepov had successfully presented five posters and shared their research findings. One of the posters titled “Fabrication of nanoporous ultrathin membranes by cluster ion irradiation” was recognized as the best poster nominee and hit top five best posters from total 667 research works in the framework of the symposium NM01 “Carbon Nanotubes, Graphenes and Related Nanostructures”. MRS & Exhibit participants expressed high interest in this work, and many questions were debated. All team members have received a membership of the MRS community for 2019, which gives a free access to research databases and journals of US MRS. During the event, team members have held a meeting with representatives of the MRS journals, such as Frontiers in Materials, MRS Advances, MRSMRS Bulletin, etc. All five abstracts were published in the proceedings of the MRS Fall meeting Program & Abstracts. In the future, the team from Nazarbayev University is planning to submit papers to the US MRS journals with high IF.



Zeke Insepov

**Best Poster Award Nominee
for**

Control ID Number: 30353402

Title: Fabrication of nanoporous ultrathin membranes by cluster ion irradiation



Diane Rosenbaum, Meetings Manager

SHARED BY ZAMART RAMAZANOVA



NAZARBAYEV UNIVERSITY LIBRARY

6th International Conference of Asian Special Libraries (ICoASL 2019)



Parallel session: Case studies of library disaster management and services in a digital era

The first ICoASL was held in India in 2008 and since then, the conference rotates in Asian countries every two years (except for the first and second one with a gap of three years). This year's conference theme is "Libraries and Librarianship in Digital Plus Era." In order for libraries to progress, it should be able to address the demands, trends, and issues in digital and mobile librarianship.

Joseph Yap and Tolkyn Jangulova, presented their study entitled, "Kazakhstan Develops Smart Cities: Institutional Repositories as Backbones of Digital Kazakhstan". The chair of the session is Dr. Rajeev Vij and the invited speaker during this panel is Dr. Hee-Yon Choi from Korea Institute of Science and Technology Information where she talked about issues in predatory publishing. We received positive feedback from our paper and we plan to continue this study and involve the university and the ministries to talk about the role of libraries in building a smart nation.



Tolkyn Jangulova, Rabiab Sangchantr from Chulalongkorn University Library, and Joseph Yap

The conference attracted 350 participants all over India and around the world. There were six technical sessions spread over two days. Before the conference proper, a pre-conference happened in the Institute of Economic Growth for the elected board of SLA Asia for 2019 on 13 February 2019. I am the elected Secretary for 2019. On the last day of the conference, there was a study tour in Agra to witness the history and beauty of Taj Mahal.

During the conference, I met a lot of information professionals and was able to exchange knowledge with them. The 7th ICoASL will be held in Daejeon, South Korea in 2021.

WRITTEN BY JOSEPH YAP

New articles and conference proceedings

- A.V. Korobeinyk, R. D.L. Whitby, S.V. Mikhailovsky and V.J. Inglezakis, "In situ production of high purity noble metal nanoparticles on fumed silica and catalytic activity towards 2-nitrophenol reduction", *Journal of Physics and Chemistry of Solids*
- Abildin, Y., Madani, N., Topal, E. (2019). "A Hybrid Approach for Joint Simulation of Geometallurgical Variables with Inequality Constraint". *Minerals* 9(1), 24.
- Abilkas, V. Dashkova, D. Malashenkov, A. Zhantaykova, A. Baishulakova, A. Yagofarova, V.J. Inglezakis, I.A. Vorobjev, N. S. Barteneva, Biomonitoring of phytoplankton communities changes following heavy metals fluctuations in lake Balkhash ecosystem, SETAC Europe 29th Annual Meeting in Helsinki, Finland, 26 – 30 May, 2019 (Poster), Link: <https://helsinki.setac.org/>
- Abrashuly, A. and Valagiannopoulos, C. (2019). Limits for Absorption and Scattering by Core-Shell Nanowires in the Visible Spectrum. *Physical Review Applied*, [online] 11(1). Available at: <https://doi.org/10.1103/PhysRevApplied.11.014051> [Accessed 28 Mar. 2019].
- Akhmetov, Z., Hammami, M., Grandi, G. and Ruderman, A. (2019). On PWM Strategies and Current THD for Single- and Three-Phase Cascade H-Bridge Inverters with Non-Equal DC Sources. *Energies*, [online] 12(3), p.441. Available at: <https://www.mdpi.com/1996-1073/12/3/441>.
- Battalgazy, N. and Madani, N. (2019). Categorization of Mineral Resources Based on Different Geostatistical Simulation Algorithms: A Case Study from an Iron Ore Deposit. *Natural Resources Research*. [online] Available at: <https://link.springer.com/article/10.1007/s11053-019-09474-9> [Accessed 28 Mar. 2019].
- Bexultan Abylkhan, Berik Aiyymbetov, Almira Yagofarova, Christos Venetis, Yerbol Sarbassov, Vassilis Inglezakis, Antonis Zorpas, "Compositional and microsampling analysis of MSW of Astana city and application of a predictive Waste Generation Artificial Neural Network Model", HERAKLION 2019 7th International Conference on Sustainable Solid Waste Management, Link: <http://www.heraklion2019.uest.gr/>
- Elizabeth Arkhangelsky, Stavros G. Pouloupoulos, Ardak Makhatova, Bakzhan Yergali, Jong Kim, Yerbol Sarbassov, Vassilis J. Inglezakis, "Municipal Solid Waste Landfill Leachate: Treatment Technologies and Challenges", The 1st International Symposium on Electronic Waste, Link: <http://isee.or.kr/>
- Hammami, M., Ricco, M., Ruderman, A. and Grandi, G. (2019). Three-Phase Three-Level Flying Capacitor PV Generation System with an Embedded Ripple Correlation Control MPPT Algorithm. *Electronics*, [online] 8(2), p.118. Available at: <https://www.mdpi.com/2079-9292/8/2/118>.
- Jamwal, P., Abdikenov, B. and Hussain, S. (2019). Evolutionary Optimization Using Equitable Fuzzy Sorting Genetic Algorithm (EFSGA). *IEEE Access*, [online] 7, pp.8111-8126. Available at: <https://ieeexplore.ieee.org/document/8598717> [Accessed 28 Mar. 2019].
- Obid Tursunov, Diyar Tokmurzin, Botagoz Kuspangalieva, Vassileios J Inglezakis, Yerbol Sarbassov, "Study on Characterization of Tar Generated from the Mixture of MSW and Coal Pyrolysis at 800°C", The 6th International Conference on Energy and Environment Research (ICEER 2019), The University of Aveiro, Portugal, (Submitted). Link: <http://www.iceer.net/>
- Qais Al-Ismaeel, Christopher P. Neal, Hanaa Al-Mahmoodi, Zamzam Almutairi, Ibtihal Al-Shamarti, Kees Straatman, Nabil Jaunbocus, Andrew Irvine, Eyad Issa, Catherine Moreman, Ashley R. Dennison, A. Emre Sayan, Jonathan McDearmid, Peter Greaves, Eugene Tulchinsky and Marina Kriajevska. 2019. "ZEB1 and IL-6/11-STAT3 signalling cooperate to define invasive potential of pancreatic cancer cells via differential regulation of the expression of S100 proteins". *British Journal of Cancer* (accepted)
- S. Azat, A.V. Korobeinyk, K. Moustakas, V.J. Inglezakis, "Sustainable production of pure silica from rice husk waste in Kazakhstan", *Journal of Cleaner Production*
- S. Azat, V. Inglezakis, A. Zorpas, "Synthesis of biosourced silica-Ag nanocomposites and hyperstoichiometric amalgamation reaction with mercury in aqueous solutions", Seventh International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE 2019) and SECOTOX Conference in Mykonos island, Greece, from May 19 to 24, 2019. Link: <http://cemepe7.civil.auth.gr/>
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- Sheverdin, A. and Valagiannopoulos, C. (2019). Core-shell nanospheres under visible light: Optimal absorption, scattering, and cloaking. *Physical Review B*, [online] 99(7). Available at: <https://doi.org/10.1103/PhysRevB.99.075305> [Accessed 28 Mar. 2019].
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- Tynyshtykbayev, K., Ainabayev, A., Kononenko, O., Chichkov, M., Ramazanova, Z., & Zulkharnai, R. et al. (2019). Low temperature synthesis of graphene nanocomposites using surface passivation of porous silicon nanocrystallites with carbon atoms. *Diamond And Related Materials*, 92, 53-60. doi: 10.1016/j.diamond.2018.12.012
- Untersmayr, E., Bax, H., Bergmann, C., Bianchini, R., Cozen, W., & Gould, H. et al. (2019). AllergoOn-cology: Microbiota in allergy and cancer-A European Academy for Allergy and Clinical Immunology position paper. *Allergy*. doi: 10.1111/all.13718
- V.J.Inglezakis, M.M.Fyrillas, J.Park, "Variable diffusivity homogeneous surface diffusion model and analysis of merits and fallacies of simplified adsorption kinetics equations", *Journal of Hazardous Materials*
- Viderman, D., Brotfain, E., Khamzina, Y., Kapanova, G., Zhumadilov, A., & Poddighe, D. (2019). Bacterial resistance in the intensive care unit of developing countries: Report from a tertiary hospital in Kazakhstan. *Journal Of Global Antimicrobial Resistance*, 17, 35-38. doi: 10.1016/j.jgar.2018.11.010
- Viderman, D., la Fleur, P., Bilotta, F., & Zhumadilov, A. (2018). Hemofiltration for neuroprotection in acute ischemic stroke: a prospective, pilot study. *Acta Neurologica Scandinavica*. doi: 10.1111/ane.13060
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- W.Z. Khan, V. Inglezakis, S. Ishtiaque, K. Moustakas, "Assessment of municipal solid waste management practices in Karachi city, Pakistan", *Journal of Environment and Waste Management*
- Yerbol Sarbassov, Diyar Tokmurzin, Berik Aiymbetov, Vassilis Inglezakis, Kalkaman Suleymenov, "Combustion Behavior of High Ash Bituminous Coal in a Pilot Scale Circulating Fluidized Bed Rig, Fluidization XVI conference in Guilin, China on May 26-31, 2019, Link: <https://www.aische.org/conferences/fluidization/2019>

Funding Opportunities

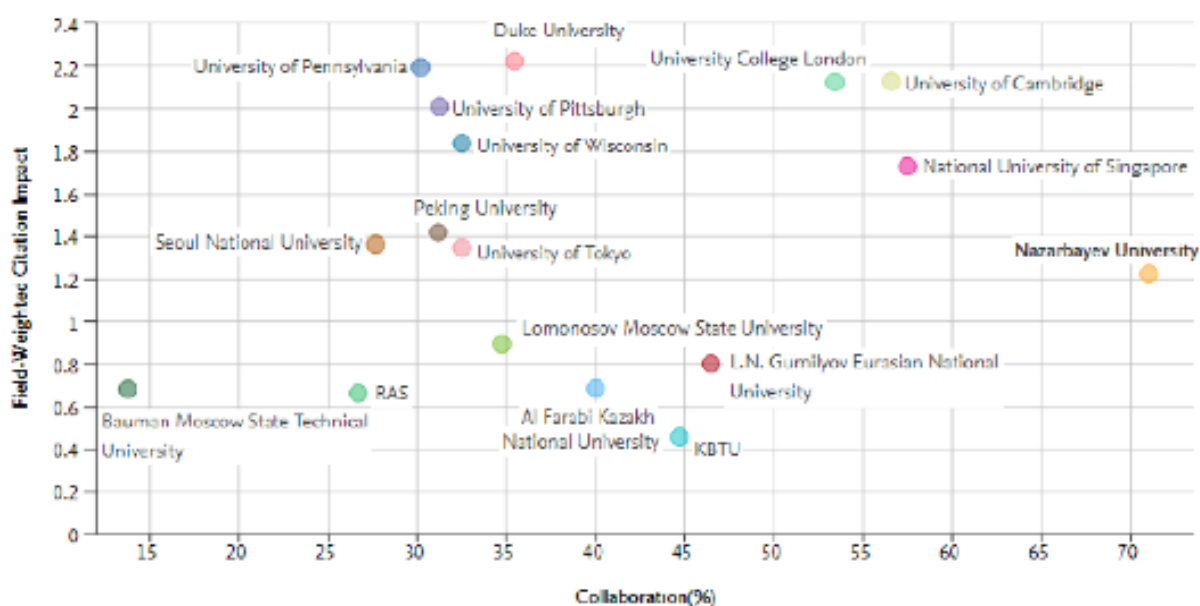
To see the funding opportunities shared in our previous issue, please click [here](#)

#	Program	Funder	Award ceiling	Deadline	URL
1	National Research Programmes: Healthy ageing	Lietuvos Mokslo Taryba	Not specified	Not specified	link
2	Discovery and validation of novel targets for safe and effective pain treatment (R01 Clinical trial not allowed)	National Institutes of Health	Not specified	2019-07-11	link
3	SAEMF Research large project grant	Society for Academic Emergency Medicine	\$150,000 over a two-year period (\$75,000 per year)	2019-08-01	link
4	Research grant	Pittsburgh Emergency Medicine Foundation	Not specified	Not specified	link
5	Discovery and validation of novel targets for safe and effective pain treatment (R21 clinical trial not allowed)	National Institutes of Health	Up to 275,000 USD	2019-07-11	link
6	Edward J. Stemmler Medical education research fund	National Board of Medical Examiners	Up to 150,000 USD	2019-07-31	link
7	Medical educational grants - General medicine	Bayer	Not specified	2019-10-01	link
8	Change of grantee organization (Type 7 parent clinical trial optional)	National Institutes of Health	Not specified	Not specified	link
9	Minor use minor species development of drugs (R01)	U.S. Food and Drug Administration	Up to 150,000 USD with total funding of 500,000 USD	2019-08-16	link
10	Educational grant from CSL Behring	CSL Behring	Not specified	Not specified	link
11	Biophotonics	National Science Foundation	Up to 200,000 USD	2019-08-15	link
12	Educational grants - Advanced prostate cancer	Bayer	Not specified	Not specified	link
13	National cooperative highway research program	Transportation Research Board	Not specified	Not specified	link
14	Analytical and/or clinical validation of a candidate biomarker for pain (R61/R33 clinical trial optional)	National Institutes of Health	Not specified	2019-11-25	link

#	Program	Funder	Award ceiling	Deadline	URL
15	Discovery of biomarkers, biomarker signatures, and endpoints for pain (R61/R33 clinical trial optional)	National Institutes of Health	Not specified	2019-11-25	link
16	Lotte and John Hecht Memorial Foundation grant	Lotte and John Hecht Memorial Foundation	Not specified	Not specified	link
17	Dementia consortium	Dementia Consortium	Not specified	Not specified	link
18	Imaging and neurophysiological studies for alcohol use disorder research	National Institute on Alcohol Abuse and Alcoholism	Not specified	Not specified	link
19	Janette Hamilton MND research grant	Motor Neurone Disease Research Institute of Australia	Not specified	2019-08-30	link
20	Gross Foundation MND research grant	Motor Neurone Disease Research Institute of Australia	Not specified	2019-08-30	link
21	Fat Rabbit MND research grant	Motor Neurone Disease Research Institute of Australia	Not specified	2019-08-30	link
22	Dr Paul Brock MND NSW research grant	Motor Neurone Disease Research Institute of Australia	Not specified	2019-08-30	link
23	Col Bambrick MND research grant	Motor Neurone Disease Research Institute of Australia	Not specified	2019-08-30	link
24	Benalla Act to d'feet MND research grant	Motor Neurone Disease Research Institute of Australia	Not specified	2019-08-30	link
25	Andrew Butcher MND research grant	Motor Neurone Disease Research Institute of Australia	Not specified	2019-08-30	link
26	Multinational research projects on translational biomarkers in brain disorders	ERA-LEARN 2020	Not specified	2019-06-27	link
27	Cognitive Neuroscience (CogNeuro)	National Science Foundation	Up to 175,000 USD	2019-08-13	link
28	Basic neurodevelopmental biology of brain circuits and behavior (R21 Clinical trial not allowed)	National Institutes of Health	Up to 275,000 USD	Not specified	link
29	Therapeutic pipeline program: Disease-modifying strategies	Michael J. Fox Foundation for Parkinson's Research	Up to 2,000,000 USD	Not specified	link
30	Therapeutic pipeline program: Symptomatic strategies	Michael J. Fox Foundation for Parkinson's Research	Up to 1,200,000 USD	Not specified	link

#	Program	Funder	Award ceiling	Deadline	URL
31	Improved biomarkers and clinical outcome measures program: Imaging studies	Michael J. Fox Foundation for Parkinson's Research	Up to 750,000 USD	Not specified	link
32	SUDEP Challenge initiative - Milestone 3	Epilepsy Foundation	Up to 800,000 USD	2020-10-10	link
33	Bridge to independence award	Simons Foundation	Up to 495,000 USD	Not specified	link
34	Clinical Research Grant in Memory of Haim and Regina Rabinowitz	National Institute for Psychobiology in Israel, Hebrew University of Jerusalem	Not specified	2019-12-31	link
35	Rapid response: Ireland, Netherlands, UK 2020 (Fluid biomarkers)	Weston Brain Institute	Up to 180,000 GBP	Not specified	link
36	Incubator grants	Association of Migraine Disorders	Up to 50,000 USD	2019-07-31	link
37	Computationally-defined behaviors in psychiatry (R21 clinical trial optional)	National Institutes of Health	Up to 275,000 USD with total funding of 2,000,000 USD	2019-11-20	link
38	BRAIN Initiative: Theories, models and methods for analysis of complex data from the brain (R01 Clinical trial not allowed)	National Institutes of Health	Up to 250,000 USD with total funding of 6,000,000 USD	2019-09-03	link
39	Mechanisms of cellular death in NeuroDegeneration (MCDN)	Alzheimer's Association	Up to 1,250,000 USD	Not specified	link
40	Extracellular vesicles and substance use disorders (R21)	National Institutes of Health	Up to 275,000 USD	2019-11-03	link
41	BRAIN Initiative: Research on the ethical implications of advancements in neurotechnology and brain science (R01 Clinical trial optional)	National Institutes of Health	Up to 300,000 USD with total funding of 3,000,000 USD	2019-10-09	link
42	Eurasian Regional Language Program (ERLP)	American Councils	Up to 2,500 USD	2019-10-15	link
43	South and Central Asia Regional Research Program	Council for International Exchange of Scholars	Up to 14,550 USD with total funding of 20,370 USD	2019-09-16	link
44	Advanced Russian Language and Area Studies Program (RLASP)	American Councils	Not specified	2019-10-15	link
45	Annual Program Statement for cultural affairs	U.S. Department of State	Up to 50,000 USD	Not specified	link

Overall Research Performance by SciVal



In this issue, we are delighted to present you an overview of research activities conducted under the auspices of Nazarbayev University.

Since its inception in 2011, Nazarbayev University faculty members and researchers have released 2,510 peer-reviewed publications indexed by Scopus, and have been cited 10,273 times (Source: SciVal, April 1). The approximate number of citations per peer-reviewed publication is 4.1.

For getting more comprehensive information on the research performance at NU, please have a look at the following [presentation](#) prepared using SciVal research evaluation platform.

If you have any questions regarding the provided information, please contact Saule Sadykova (ssadykova@nu.edu.kz).