

RESEARCH

ISSUE 17, DECEMBER 2017



**NEWSLETTER OF THE RESEARCH ADMINISTRATION UNIT
OF THE OFFICE OF THE PROVOST**

 **NAZARBAYEV
UNIVERSITY**

CONTENTS

CONGRATULATIONS!

Page #

Prof. Neil Collins' paper is top ranked among the Web of Science journal articles 3

Prof. Vassilios Kovanis publishes a paper in atop ranked Physics journals 3

IN THE SPOTLIGHT

Interview with Mehdi Torkmahalleh, School of Engineering 4-8

RESEARCH NEWS

School of Science & Technology news 9

School of Engineering news 10

School of Medicine news 15

School of Humanities & Social Sciences news 16

GSPP & GSE news 17

USEFUL INFORMATION

Pure research management system: FAQs answered 18

NU's publications in Google Alerts 18

Horizon-2020 event presentations 18

Statistics on Horizon-2020 proposals 19

Research performance evaluation by SciVal 20

FUNDING OPPORTUNITIES

New funding opportunities 21-28

CONGRATULATIONS!

Prof. Neil Collins' paper is top ranked among the Web of Science journal articles



Recently, the Web of Science has indexed the paper of Prof. Neil Collins, Professor of Political Science in the School of Humanities and Social Sciences, entitled "Market Creation by Leninist Means: The Regulation of Financial Services in the People's Republic of China" in the category Area Studies and it was ranked 293 out of 10533 articles (published between 2010 to 2014).

Congratulations, Prof. Collins! We wish you every success in the future research endeavors!

Prof. Jozef Konings wins a research grant of \$250,000



Professor Joep Konings of the Department of Economics won a research grant of \$250k from the Belgian (Flemish) Science Fund, [FWO](#), to work on the project "Firm-level hubs and impact of granularity on the propagation of shocks and aggregate output fluctuations in a small open economy" for the period of 2018-2022. It is a joint project between KU Leuven and Ljubljana University. The abstract of the project can be read [here](#).

Congratulations, Prof. Konings! We wish you great success with your research project!

IN THE SPOTLIGHT

Interview with Dr. Mehdi Torkmahalleh, School of Engineering



Interviewed by Assel Narymbetova

Dr. Mehdi Amouei Torkmahalleh received his B.Sc. degree in Chemical Engineering from University of Tehran, Iran in 2005 and his M.Sc. in Biochemical Engineering from Amirkabir University of Technology, Iran in 2008. He was awarded a Ph.D. degree in chemical engineering from Clarkson University, USA in 2013. Mehdi Amouei Torkmahalleh was a research assistant at Center for Air Resources Engineering and Science of Clarkson University in 2008. After the completion of his PhD, he joined the Middle East Technical University Northern Cyprus Campus (METUNCC) as a visiting assistant professor in chemical engineering for two years. In August 2015, Professor Amouei Torkmahalleh moved to Kazakhstan as an Assistant Professor in Chemical Engineering at Nazarbayev University. He is head of Chemical and Aerosol Research Team (CART) where over 25 students are involved in conducting research in atmospheric and chemical engineering sciences. The research interest of

Professor Mehdi Amouei Torkmahalleh is in general on airborne particulate matter (PM), indoor/outdoor PM exposure, environmental sustainability, processes design and simulation. Particularly, he is interested in speciation of heavy metals in atmospheric PM as well as global transport of atmospheric pollutants.

Assel Narymbetova: Thank you for agreeing to be our guest in “Spotlight” column of Research Newsletter.

Mehdi Torkmahalleh: Thanks for inviting me and I’m happy to be here and share my research experience with NU Community.

AN: I know that you have quite substantial research experience in working with students in your research projects. Can you tell us more about it please?

MT: Sure. I started working at NU in 2015 and in November of that year I launched several projects for chemical engineering undergraduate students. We then formed a small research group consisted of 10 undergraduate students that received a title “Chemical and Aerosol Research Team” (hereinafter - CART). With the help of our first round of students we published 1 paper (“A new computer model for the simulation of particulate matter formation from heated cooking oils using Aspen Plus” *Building Simulation*). Currently we already have 27 undergraduate and graduate students inside CAART, who are working on different projects. As you see CART has been developed significantly in the last 2 years.

The team is very diverse - we have undergraduate and graduate students of different years starting from 1st year undergraduate program. These are kids from Civil, Electrical and Chemical Engineering as

(Continued on page 5)



(Continued from page 4)

well as students from School of Science and Technology (hereinafter – SST). Our projects are interdisciplinary and we highly welcome any additional collaboration with other faculty members. For example, we have a new project launched with Prof. Mohamad Mosadeghzad from SST and Prof. Naser Madani from School of Mining and Geoscience (We are aimed to design robots to enter mining zones and quantify dust and gases concentrations). We have also developed collaboration with School of Medicine, Master of Public Health Program through Prof. Byron Crape.

AN: This is very inspiring, but at the same time not that common for faculty members to spend so much time teaching and educating students in their free time and not only in the classroom. What is your main motivation and driving force to continue CAART project?

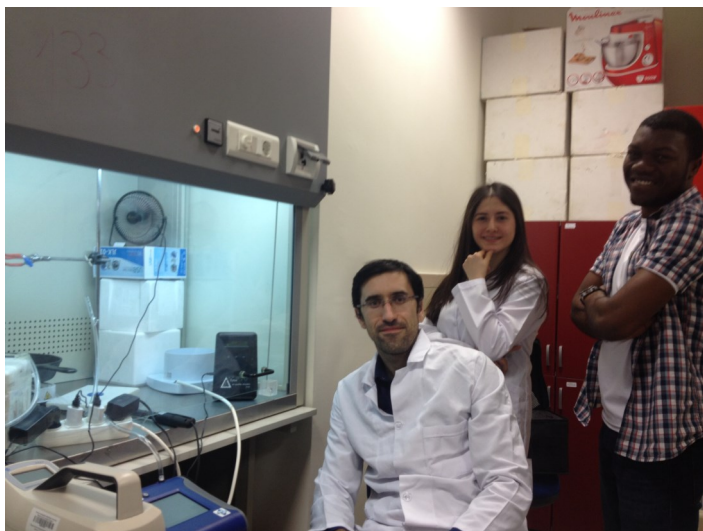
MT: There are a number of reasons for that. All parties in these activities benefit a lot. Students become more motivated to be successful in their studying process. One of the key requirements

to be involved in CART is to show progress on GPA. I will not accept a student with a decreasing GPA trend. Thus, this policy motivates them to progress on their courses. I also had a case when student was almost dismissed because of her low GPA, but after becoming part of the project team, her GPA rose significantly. The interesting part of CART is that it has involved students with a broad range of GPA ranging from 2 to over 3.5!

My role in this process is to make sure that by the end of the research the students will gain two things, some publications and certain skills. I also give direction and certain amount of flexibility to the students such that they take some leadership in the project.

This collaboration was very fruitful. Several student received grants for their projects that they started with CAART. For example, Ulmeken Kaibaldiyeva, a driven student of CART, who did , graduated in Spring 2017 in Chemical Engineering, school of Engineeirng, is currently a M.Sc. student in Chemical Engineering at

(Continued on page 6)



(Continued from page 5)

Johns Hopkins University. She was a very successful CART student who went for a conference in Netherlands, which was completely paid by the conference organizers. Another student Zhuldyz Darynova, (currently a senior chemical engineering student) had received a travel support from "Yessenov Foundation" through "Travel Grant competition" program to present her work at International Society of Exposure Science annual meeting which was held in October 2017, in Research Triangle Park, NC, USA. She did an oral presentation entitled "Analyzing NO₂ concentration variations from 2005 to 2016 over the atmosphere of Kazakhstan using satellite data". Zhuldyz is a mature and independent researcher who is currently mentoring the research projects of third and first year chemical engineering students. . Dinara Konakbayeva who was a CART researcher in her undergraduate years at NU is now doing her first year of M.Sc./PhD under Prof. Solmaz Tabatabaei at Howard University at United States. Dinara worked on the modeling of Cr speciation in atmospheric particulate matter and her paper has been submitted to Journal of Aerosol Science. She was a hardworking person who was admitted to Howard university after a strong recommendation made by CART to her advisor, Prof. Tabatabaei.

AN: These stories are very motivational. We have no doubt that CAART Project benefit to NU students a lot, but what is your benefit in this as

the researcher?

MT: It is simple, I spend time on them, train them and they give me back perfect outcomes. Well, It is not a secret that NU does not have currently a strong PhD Program. Thus, I would rather to invest on undergraduate students as current potential resources although it is a challenging task. My area of expertise needs certain background in things that we don't have here. By meeting these kids every week I am raising future generation of my collaborators. They are becoming more mature with every passing year. So far I have already published 10 papers with my students in 2017 and even more papers are under their way in 2018.

If we are talking about my career, it has many dimensions. There are certain fields where I am quite recognized, but there are new fields for me like satellites, where I am learning together with my students and expanding my network with every published paper. Thus, my students are assisting me to learn more things!

AN: I see, but what about the fact that these students will graduate at some point. How do you keep these projects going?

MT: You are right. It is highly important for CAART to have a strong cycle. Our 4-th year graduate students always train 3rd year and so on. We are trying to keep the cycle as steady as possible.

AN: You have quite an international background. It would be interesting to know what you think about Kazakhstani students. How do they differ from the students you had in another countries?

MT: Kazakh students are really hardworking and dedicated. I guess it is because of the fact that NU is one of the best universities in Kazakhstan and, therefore, only talented and hardworking students of the nation come here to study.

However, I noticed one peculiarity about them. They are always looking for some protocol and guideline from me. Some recipe that they need to follow in case some not standard situation in the project occurs. I tend to give them much more space to develop their critical thinking and problem solving skills. It benefits them more

(Continued on page 7)



(Continued from page 6)

than having standard protocol for any situation.

AN: Have you noticed any difference between girls and boys students? It is especially interesting since the current Kazakhstani working generations tend to have more male engineers than female.

MT: Not at all. Girls are as active as boys. Most of my students are females. Engineering program is quite all inclusive. We have a big number of females in all areas of engineering throughout all programs.

AN: Let's talk about your research field and research life in Kazakhstan.

MT: Main focus of my research is assessment of human exposure to indoor/outdoor aerosol. I believe it is a very relevant for Astana topic right now. Astana is a fast growing and constantly developing city. Construction is happening

everywhere and, as a result, many new industries are arising in different part of the city. If Astana doesn't want to become Beijing in terms of air pollution in the nearest future, then we need to start making preventive measures like monitoring and guide lining the air pollution process today. We need to perform routine measurement on the constant basis.

As a good international example we might use US Environmental Agency, which created criteria for measurement of NO₂, SO₂, PM, ozone, carbon monoxide (please correct me if I am wrong) and other top priority instances to monitor on the national level. Currently this information is not updated in Kazakhstan on the constant basis. The data on pollution of different economic sectors is also missing. Therefore, I believe one of our long-term goals is

(Continued on page 8)

(Continued from page 7)

to make air pollution measurement one of the national priorities.

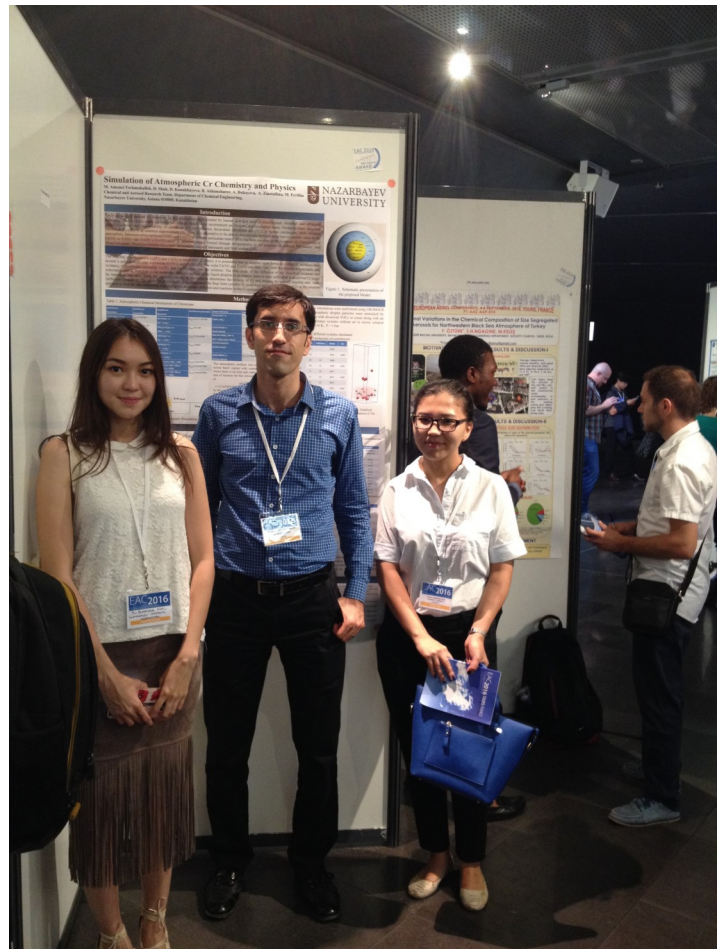
AN: What type of actions do you plan to implement regarding the measurement activities?

MT: In case we win MES and/or Small Grants Program we plan to establish monitoring stations like what we already started in Borovoe for continuous PM monitoring. In addition to the ground monitoring, we plan to use satellites observations over Kazakhstan. However, we do not see strong interests and investments from governmental and commercial sectors on air pollution research and technology. For example, in Kazakhstan environmental protection agency is under the department of energy, which limits its resources and funding to prevent environmental issues.

Another project that we plan to implement is “Balloon project”. In this highly interdisciplinary project, I am involved to do atmospheric measurements using some instruments equipped inside the balloon flying through the tropospheric and stratospheric layers of the atmosphere. The balloon project involves some professors and researchers from SEng and SST. Using ground based, satellite and balloon measurements together with atmospheric dispersion models we will be able to have fair understanding of the air pollution in Kazakhstan generated both locally or transported through other countries. CART is collaborating with Drexel University to implement GEOS-Chem Adjoint model for air pollution modeling in Kazakhstan. (

I believe these types of projects are highly beneficial for the University since they are triggering another set of projects like assessment of health risks, which can be performed, for example, in collaboration with NU School of Medicine.

Another big country problem is coal burning. Kazakhstan is the 2nd country in the world for residential coal burning per capita. Therefore, Kazakhstani officials need to pay attention to indoor pollution particularly in rural areas where coal and solid fuels are used for heating



and cooking.

AN: Thank you Prof. Torkmalleh. It was a very interesting discussion. Do you have anything you would like to address to our NU Research Community?

MT: First of all, thank you for inviting me to this interview. At the end, I would like to thank our NU administration particularly the Provost who has been working hard to revise research infrastructure at NU. I also would like to encourage NU research community to promote undergraduate research. Finally, I wish our NU community particularly CART students a new year full of happiness, good health and prosperity. Happy New Year!

RESEARCH NEWS

School of Science & Technology News

Prof. Vassilios Kovanis publishes a paper in a top ranked Physics journal

This quarter has been exceptionally fruitful in terms of the research output for Prof. Vassilios Kovanis. Recently the Department Chair of Physics has published the following articles:

- ♦ A Paradigm Shift in Non-Hermitian Photonics via Optical Meta Molecules ([link](#))
- ♦ Spectral signatures of exceptional points and bifurcations in the fundamental active photonic dimer ([link](#))
- ♦ Optical Meta-Molecules provide a Paradigm Shift in Non-Hermitian Photonics ([link](#)). This research is supported by two ORAU grants entitled “*Taming Chimeras to Achieve the Superradiant Emitter*” and “*Dissecting the Collective Dynamics of Arrays of Superconducting Circuits and Quantum Metamaterials*”, funded by Nazarbayev University.

An article entitled “**Controllable asymmetric phase-locked states of the fundamental active photonic dimer**” appeared in the flagship journal Physical Review A of the American Physical Society it has been co-authored by faculty at the School of Science and

technology **Tassos Bountis and Vassilios Kovanis** in collaboration with faculty from the National Technical Polytechnic in Athens. The authors dissect the existence and the stability of asymmetric phase-locked states of the fundamental active photonic dimer consisting of two coupled quantum well semiconductor lasers. They find that stable phase-locked states of arbitrary asymmetry exist for extended regions of the parameter space of the system and that their field amplitude ratio and phase difference can be dynamically controlled by appropriate current injection. Their model includes the important role of carrier density dynamics and shows that the phase-locked state asymmetry is related to operation conditions providing, respectively, gain and loss in the twin laser system. Interestingly, the **Plasmonics and Applied Quantum Optics Group** at the College of Optics and Photonics at the University of Central Florida in working forward to examine experimentally such findings on chip-scale photonic circuits. To see the full article, please click [here](#).

School of Engineering News

Public talk on 'Nano-composites research at Nazarbayev University and Ghalam for space satellite applications' at the 'Space Days' International Forum

Shared by Dr. Christos Spitas

On Thursday 18th of October 2017 Drs. Christos Spitas, Serik Khairaliyev and Soo Lee Teh (HOD) and their team from the Department of Mechanical Engineering of the School of Engineering, including a small delegation of students, represented Nazarbayev University at the 'Space Days' International Forum, held at the Wyndam Garden hotel in Astana on the 18th and 19th of October, where Prof. Spitas was invited to deliver a public talk titled 'Nano-composites research at Nazarbayev University and Ghalam for space satellite applications'.

The talk presented the work in progress by the research team and its partner Ghalam LLP, the joint venture company between the Kazakh Space Agency and Airbus Defense and Space that is responsible for the design, manufacturing and testing of the satellites for the Kazakh Space Program, in the running Nazarbayev-University-funded research projects NANOCAST and HYST, as well as projects executed and funded in collaboration with NURIS/ECL/ University of Berkeley (project GRBT) and TU Delft (project SHELLDCM) and the planned project WINBLADE. The talk also underlined the importance of the partnership with Ghalam and the planned acquisition and shared use of testing infrastructures for facilitating the R&D efforts of both partners.

The 'Space Days' international forum, which is organized by the Ministry of Defense and Aerospace Industry and held annually in Astana, is dedicated to bringing together all the national stakeholders and the major international partners of the Kazakh Space Program. This was the fifth iteration of the forum, with several hundreds of participants.

The invitation of Nazarbayev University to



participate at the 'Space Days' International Forum falls under a larger umbrella of collaborative actions between the Department of Mechanical Engineering and the Ministry of Defense and Aerospace Industry and its dependent organizations, including technology transfer, research training of top talent, and collaborative research and development in the currently running projects NANOCAST and HYST.

For more information, please click [here](#).

Keynote Speech at the 1st International Fire and Explosion Summit and the 2nd Oil and Gas Safety Academic Summit (Qingdao, China)



Prepared by Drs. Teh Soo Lee and Ming Yang

Drs. Teh Soo Lee and Ming Yang, both from School of Engineering, were invited as the keynote speakers at the 1st International Fire and Explosion Summit and the 2nd Oil and Gas Safety Academic Summit. The event organized by China University of Petroleum (Huadong) was held at Qingdao, Shandong, China from 17th to 19th November.

The summit invited experts and researchers from industry, academia, and government associations to share knowledge and discuss engineering design, national and international standards and guidelines, ongoing professional training, industrial applications, and challenges in Fire and Explosion Engineering. The summit was a biannual event and the organizer created a platform to enhance the understanding of fire engineering and further develop collaborations between researchers and industry engineers. It allowed the application of research results by providing innovative solutions.

Dr. Teh Soo Lee, Professor, Department Head of Mechanical Engineering, gave a presentation on

“High Speed Rail Fire and Safety”. Dr. Teh shared an insight on his 6-year experience as a Director in Taiwan High Speed Rail Cooperation. He presented some safety designs and optimizations on the train cabins, railway routes and tunnels which assist to prevent failures and fire accidents to ensure both assets and operation safety.

Dr. Ming Yang as the keynote speaker, from department of Chemical Engineering, spoke about “Best Practices in Process Safety: How to Prevent Fire and Explosion Accident?”. Dr. Yang was involved in several research projects in Canada funded by local and international industries. He emphasized that it’s important to strengthen our belief in this discipline “Safety and Risk Engineering” and especially take further steps to implement our research results into industry practices. Dr. Yang also proposed two research trends in his talk, which are dynamic safety and risk management and inherent safety design.

Keynote Speech at the 25th Kazakhstan International Technological Oil and Gas (KIOGE) Conference

Prepared by Dr. Ming Yang

The 25th Anniversary International Oil and Gas Exhibition and Conference (KIOGE) 2017 was held on 4-5 October in Almaty, Kazakhstan. Dr. Ming Yang, from department of Chemical Engineering, has been invited as the speaker (as NU representative) and panelist in one of the discussion session at the conference.

KIOGE is one of the largest events in oil and gas industry in Kazakhstan and it is officially supported by the Ministry of Energy of the Republic of Kazakhstan, the Local Administration of Almaty, National Company KazMunaygas JSC, the Association of Service Companies of Kazakhstan and is annually attended by the Chamber of Commerce of Kazakhstan and diplomatic missions of participating countries. It is a great opportunity to meet the key representatives of oil and gas industry, discuss and exchange their knowledge and experience.



This year more than 250 companies from 25 countries participated in this significant event and there are three themes focus on the current state of development of Kazakhstan's upstream sector, the technological achievements in Kazakhstan and major projects of the transportation of hydrocarbons in Kazakhstan. Dr. Yang gave a talk on “Risk assessment and management of oil and gas operations” at the technological achievement session.

Environmental Science & Technology Group News

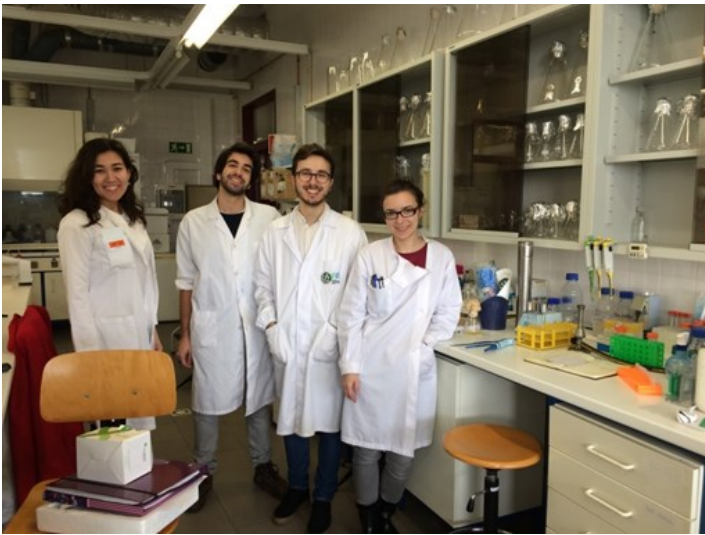
Prepared by Dr. Vassilis Inglezakis

1. Berkeley visit

Prof. Inglezakis visited the Molecular Foundry at Berkely lab, US (<http://foundry.lbl.gov/>) between 3-20 November in the framework of a research trip for expanding the collaboration with one of the top institutions in the world. The research trip was successful opening new opportunities for NU to establish stronger collaboration with one the world's best labs. Furthrmore, Prf. Inglezakis help a talk on 14 November on “Free and supported nanoparticles in environment and medical

(Continued on page 13)





(Continued from page 12)

applications”, attended by 15 Berkeley lab staff and students.

2. News on the European Union HORIZON 2020 project “Nanoporous and nanostructured materials for medical applications” (NanoMed).

ESTg researcher Mrs Gaukhar Baidildinova is on a research visit at the Universida de NOVA de Lisboa, Portugal for the period of 25.06.2017-24.07.2017. Mrs Baidildinova in collaboration with our Portugese partner is will work on the characterization of the porous structure of zeolites by using BET analysis size and distribution, pore volume, and the surface area were determined. Furthermore zeolite is tested towards its ability to remove strodium from aqueous solutions. The possible antimicrobial activity of the cryogel samples were tested against E. coli, a gram-negative, and St. aureus, a gram-positive bacteria, in the



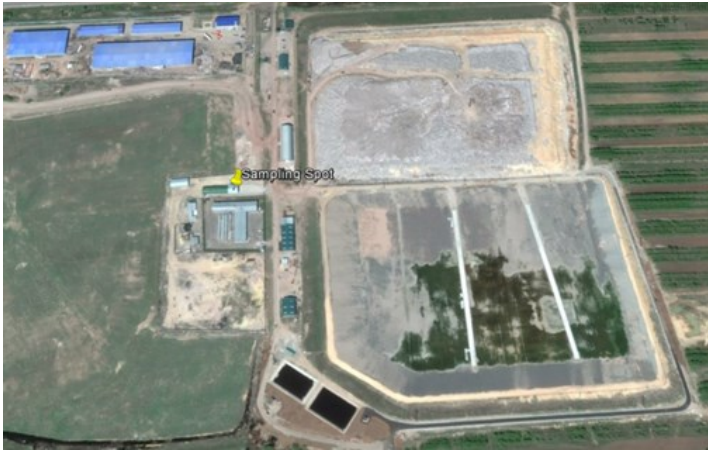
minimum inhibition concentration assay according to the standard protocol. Additionally, the cytotoxicity of selected sorbents in comparison with standard materials will be tested *in vitro* according to the International Standards directive for selection of tests for cytotoxicity.

3. News on the ORAU-funded project “Development of municipal solid waste combustion and incineration technology for Astana (Kazakhstan) and investigation of municipal solid waste blending effects on reactivity of coals in CFB combustion and gasification processes”

Main goal of this project is to develop a municipal solid waste (MSW) and coal co-gasification technology for further scale-up and replication in the Republic of Kazakhstan. The prime barrier towards that direction is the lack

(Continued on page 14)





Sampling site within the Astana Waste Polygon
(September 2017)

(Continued from page 13)

of information regarding waste quantities, composition and characteristics. For that reason a research program that also includes the present characterization campaign is currently under implementation by the Nazarbayev University. The first part of the characterization campaign included two sampling analysis during September and November 2017 and was implemented by the Nazarbayev University in cooperation with the company ICP Ingenieuresellschaft mbH from Germany (<http://icp-ing.de/stellenangebot-bauingenieur/>). The sampling site was located in the Astana Waste Polygon, where a roofed paved area was provided to the project team by the landfill operating authority.

In total ten samples ranging from 212 to 278 kg were analyzed in respect to their composition. The total amount of waste sorted was approximately 2.500 kg. The results will be published soon.

4. New publications

Georgios Kaisarlis, Efstratios Tsolakis, Georgios Vasileiou, Vasileios Spitas, Zhandos Tauanov, Vassilis Inglezakis, Grigorios Itskos, Christos Spitas, Efficient oscillating micro-grid mixing of CFA-aluminium composite melts, *Journal of Materials Processing Technology*, 254, 60–71 (2018), link: <https://www.sciencedirect.com/science/article/pii/S0924013617305344>

V. Inglezakis, A. Kudarova, D. Tarassov, A. Jetybayeva, Y. Myngtay and D. Zhalmuratova, Dastan Nurmukhambetov, Inhibitory effects of polar and non-polar organic substances on activated sludge activity, *Desalination and Water Treatment*, 91, 185-191 (2017), link: <http://deswater.com/searchindex.php>

Vadim Yapiyev, Zhanay Sagintayev, Vassilis J. Inglezakis, Kanat, Samarkhanov, Anne Verhoef, Essentials of endorheic basins and lakes for climate change and anthropogenic influence adaptation in Central Asia, *Water*, 9, 798 (2017), link: <http://www.mdpi.com/2073-4441/9/10/798>

Ualibek, O., Spitas, C., Inglezakis, V. and Itskos, G., 2017. Simulation of the Extensional Flow Mixing of Molten Aluminium and Fly Ash Nanoparticles. *World Academy of Science, Engineering and Technology, International Journal of Chemical, Molecular, Nuclear, Materials and Metallurgical Engineering*, 11(5), 358-362 (2017), link: <http://www.waset.org/publications/10007045>

Z. Tauanov, S. D. Shah, G. Itskos and V.J. Inglezakis, Coal fly ash derived synthetic zeolites for mercury removal from wastewater, *IOP Conf. Series: Materials Science and Engineering* 230 (2017) 012044, link: <http://iopscience.iop.org/article/10.1088/1757-899X/230/1/012044/meta>

Z. Tauanov, L. Abylgazina, D. Nurmukhambetov, A. Baimenov, C. Spitas, G. Itskos and V.J. Inglezakis, Mineralogical, microstructural and thermal characterization of coal fly ash produced from Kazakhstani power plants, Spain (Oral) - *IOP Conf. Series: Materials Science and Engineering* 230 012046, link: <http://iopscience.iop.org/article/10.1088/1757-899X/230/1/012046/meta>

School of Medicine News

Shared by Dr. Dieter Riethmacher

Below are the NUSOM research news for the 4th quarter of 2017.

Dr. Chee Kai Chan was an invited speaker at the 2nd International Conference "Autism-World of opportunities" organized by Assyl Miras on November 7-8, 2017 at The Ritz-Carlton Hotel, Astana. The presentation was entitled: Autism, genetics and nutrition.

Prim Singh published a paper in *Cell Reports – Mammalian HP1 Isoforms Have Specific Roles in Heterochromatin Structure and Organization*. Bosch-Presegué, L., Raurell-Vila, H., Thackray, J., González, J., Casal, C., Kane-Goldsmith, N., Vizoso, M., Brown, J., Gómez, A., Ausió, J., Zimmermann, T., Esteller, M., Schotta, G., Singh, P., Serrano, L., Vaquero, A., 2017 In : *Cell Reports*. 21, 8, p. 2048-2057. <http://www.sciencedirect.com/science/article/pii/S2211124717315723?via%3Dihub>

Dieter Riethmacher: a paper in *Journal of Immunology – Ultraviolet B-Induced Maturation of CD11b-Type Langerin(-) Dendritic Cells Controls the Expansion of Foxp3(+) Regulatory T Cells in the Skin*.

Yamazaki, S., Odanaka, M., Nishioka, A., Kasuya, S., Shime, H., Hemmi, H., Imai, M., Riethmacher, D., Kaisho, T., Ohkura, N., Sakaguchi, S., Morita, A., 2017 In : *Journal of Immunology*.online-ahead-of-print. <http://www.jimmunol.org/content/early/2017/11/19/jimmunol.1701056>

New Computer Laboratory at NUSOM

A new computer lab was established at NUSOM and inaugurated with three sessions held by Dr. Vangelista for the Biocomputing Course of the Master in Molecular Medicine (MMM). The computer lab is equipped with 30 computers installed with large high resolution monitors, two projectors and screens and one monitor. The computer lab can be used for a number of applications, including sessions for the two NUSOM masters (MMM and MPH) but also for other teaching activities (e.g., Moodle-based exams). Particularly interesting is the possibility to couple teaching and research in Biocomputing.

School of Humanities & Social Sciences News

Shared by Prof. Philippe Forêt

Appointed professor of environmental history at NU in September 2016, Prof. Philippe Forêt (Department of History, Philosophy and Religious Studies)'s first paper has been accepted by the best journal in the field. *Environmental History*, an Oxford Academic journal, will publish "Introduction to the Climate Records of Imperial China." This article surveys features of documents from imperial China, pays attention to data on key topics such as natural disasters, precipitation, and ecological conditions, and comments on the methods and techniques that earlier Chinese scholars used to extract information. Our understanding of climate change and its socio-economic consequences takes into account the cultural framework within which data was collected. This is why our analysis includes the Confucian dimension that climate history was given through the "Mandate of Heaven" concept. We believe that a wider understanding of China's documentation about its past climate may open new perspectives on global climate research, and result in a better appreciation of primary sources on East and Central Asia. The co-authors of this article are Qing Pei (Education University of Hong Kong) and Marcus Hall (University of Zurich). For more information on *Environmental History*: <https://academic.oup.com/envhis>.

On August 1, 2017, Prof. Philippe Forêt began his lifelong appointment at the Society of Fellows of the Rachel Carson Center for Society and the Environment:

<http://www.carsoncenter.uni-muenchen.de/index.html>. The Ludwig-Maximilians University and the Deutsches Museum founded the Center in 2009, with support from the German Federal Ministry of Education and Research. Its mission is to advance research on the relationship between humans and nature, to contribute to debates about past transformations and future

challenges, and to apply the methods and insights of the humanities to issues in technology, the economy, and public policy: <https://www.youtube.com/watch?v=fkDFMdwo2Gg>. For information on the vast resources of the Rachel Carson Center, please go to: http://www.carsoncenter.uni-muenchen.de/digital_project/index.html. Prof. Philippe Forêt's research in Munich has reviewed the literature on the discovery of climate change to answer fundamental questions on environment and society in ancient Central Asia. He is now writing a book for the University of Chicago Press on disciplinary consensus in Silk Road studies and the management of disruptive knowledge. A summary of his main argument can be found in: <http://rfiea.fr/articles/climate-change-challenge-geographers-colonial-asia>.

At the ceremony hosted by the Faculty of Oriental Studies of the University of Warsaw on November 24, 2017, the Executive Committee of the Canon Foundation in Europe has conferred to Prof. Philippe Forêt a certificate for fulfilling the requirements of his award at the Institute of Social Science of Tokyo University. Every year, the Canon Foundation, together with the European University Institute, grants up to 15 fellowships to highly-qualified scientists and scholars in all fields of knowledge. For more information on its programs, please go to: <https://www.canonfoundation.org/programmes/>. Prof. Philippe Forêt's research in Tokyo has led to major contributions to the "New Qing History" -- the rewriting of the historiography of imperial China to accommodate the perspectives of ethnic and religious minorities. For a survey of the current debate in China on this school of thought, please go to: <http://www.tandfonline.com/doi/full/10.1080/10971467.2016.1215094>.

Elliott Bowen, historian of medicine in SHSS, had published in the online journal *Southern Spaces*.

Here's an abstract of the paper, which is called "Before Tuskegee: Public Health and Venereal Disease in Hot Springs, Arkansas."

During the late nineteenth- and early twentieth-centuries, the American South was home to one of the world's most renowned centers for the treatment of syphilis. Throughout this era, tens of thousands of syphilitic men and women sought treatment for their illnesses by traveling to the central Arkansas city of Hot Springs, whose near-boiling waters were thought to possess a therapeutic power capable of restoring the venereally-afflicted to health. Seeking to tap into its reputation as the "Mecca of the American Syphilitic," in 1921 the United States Public Health Service (PHS) selected Hot Springs as the site of the country's first federally-operated VD clinic. Over the course of the next

two decades, more than 60,000 venereal health-seekers (black as well as white, male as well as female) received free treatment for syphilis and/or gonorrhea at this model PHS facility, and their experiences provide new insights into the class-based, racial, and gendered aspects of the federal government's early twentieth-century public health work. Opened ten years before the infamous Tuskegee Syphilis Study (1932-1972) began, the story of the Hot Springs clinic illustrates how forcefully eugenics pervaded the PHS' campaigns against syphilis and gonorrhea.

And here's a link to the article: <https://southernspaces.org/2017/tuskegee-public-health-and-venereal-disease-hot-springs-arkansas>

GSPP & GSE News

1. Dr. Saltanat Janenova, Assistant Professor at GSPP, and **Dr. Aliya Kuzhabekova**, Assistant Professor at GSE, and **Ainur Almukhambetova**, PhD student at GSE, published a paper on Female Leaders in Civil Service of Kazakhstan, [Analyzing the Experiences of Female Leaders in Civil Service in Kazakhstan: Trapped between Economic Pressure to Earn and Traditional Family Role Expectations](#), in *International Journal of Public Administration*.

The paper presents an analysis of the views of female managers on advantages and disadvantages of having women-leaders in civil service; on challenges and opportunities they are facing; on strategies they use to advance to and succeed in leadership positions. Female leaders in Kazakhstan are challenged with a clash of western, neo-liberal values and traditional expectations of women in the society.

2. GSPP faculty members Dr. Saltanat Janenova and Prof. Colin Knox published a joint paper on "Civil Service Reform in Kazakhstan: a Trajectory to the 30 most developed countries?" in *International Review of Administrative Sciences* (**impact factor 1.350**). This is a wonderful example of a fruitful research collaboration between a local and international faculty members on the NU campus.

USEFUL INFORMATION

Pure Research Management System: FAQs answered

Prepared by Aiman Uteyeva

Aiman Uteyeva, administrator of the Pure research management system, presented the answers to the frequently asked questions on the Deans Group meeting in December, 2017.

Please click on [this link](#) to see the presentation on the Pure system FAQs.

The step-by-step guideline on how to enter data and update your profiles can be downloaded by following [this link](#).

On the main page of the Pure website—www.research.nu.edu.kz — please watch a

5-minute video on the features of the Pure system.

Brief note:

Nazarbayev University has purchased the Pure research management solution to promote interdisciplinary research, facilitate and ease any research-related procedures: starting from providing information on any research works (articles, books, book chapters, working papers, conference proceedings, etc.) to internal grant and project management. To help us ease the research management procedures for you, please fill out all research-related data in your profiles.

NU's Publications in Google Alerts

Prepared by Assel Narymbetova

Google Alerts is one of Google's tools to keep track of trends, interesting topics, or anything really new that appears on the web. We would like to introduce you the recent alerts (October 12, 2017 – December 14, 2017) on the published papers by our colleagues so you can keep track on NU research successes. To view the recently published papers, please [click here](#).

Horizon-2020 event presentations

Please see below link to presentations from the Horizon 2020 Work Programme 2018 – 2020 event that was held in Ireland in October, 2017:

[link to H2020 WP 2018 - 2020 presentations](#)

Statistics on Horizon-2020 proposals

In this issue we would like to share with you the statistics on the Horizon 2020 applications and projects from Central Asia.

So far 4 projects (3 from Nazarbayev University and 1 from the Institute of Combustion Problems) have been participating in Horizon

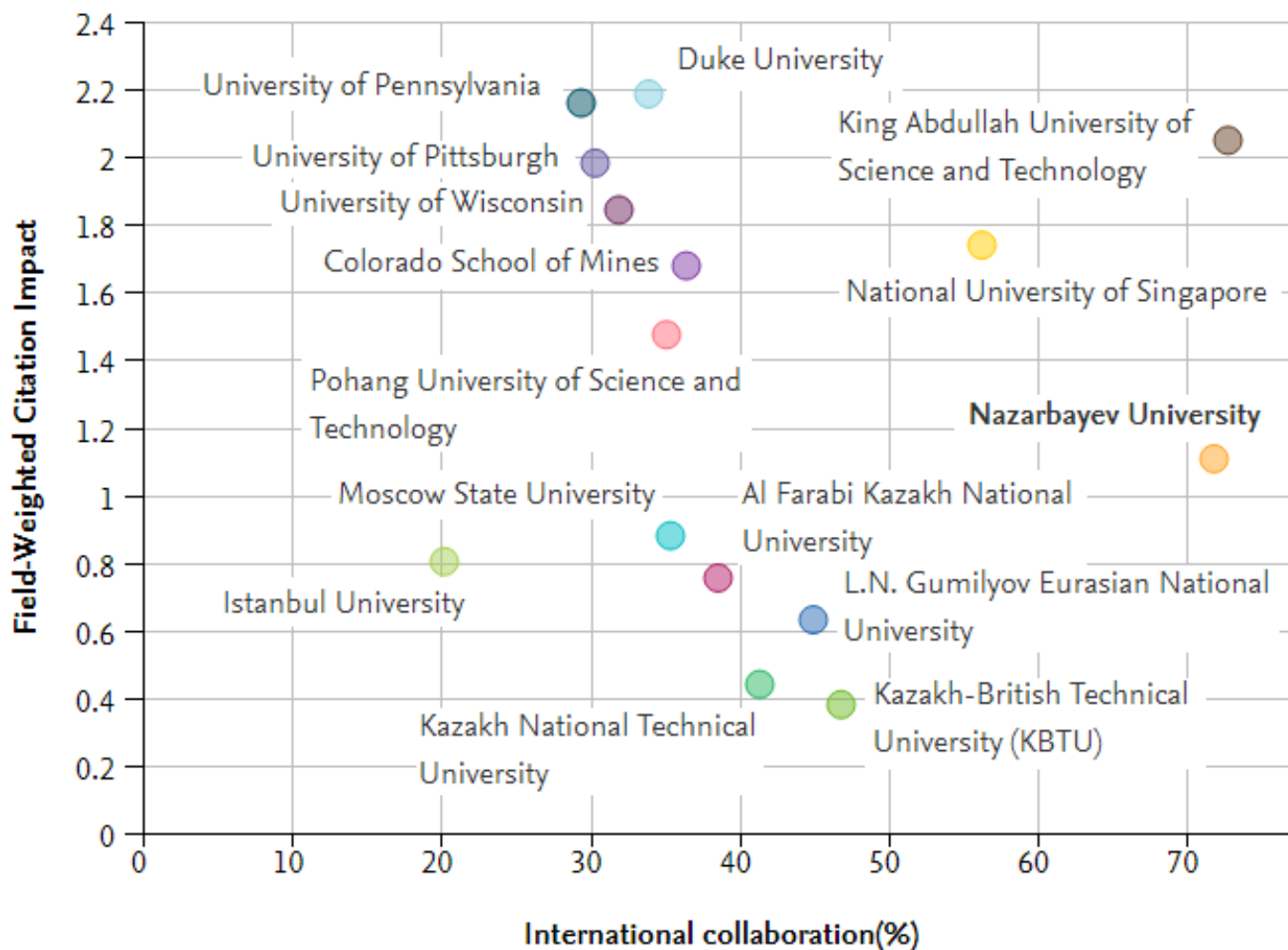
2020 projects together with the EU institutions. Out of these 4, only projects from Nazarbayev University have been awarded with the EU funding.

More information is available on the [Horizon 2020 website](#).

Country	Proposals Success Rates by Thematic Priority			
	Marie-Sklodowska-Curie Actions	Europe in a changing world	Health	Research Infrastructures
Kazakhstan	7%	17%	0%	N/A
Kyrgyzstan	18%	9%	25%	50%
Tajikistan	0%	11%	50%	N/A
Turkmenistan	0%	25%	N/A	N/A
Uzbekistan	40%	9%	0%	N/A

Country	Eligible Proposals	Retained Proposals	Requested EU Funding on Proposals	Project Participations	Requested EU Funding on Projects
Kazakhstan	60	4	12,746,569.00 €	4	125,000.00 €
Kyrgyzstan	31	5	3,178,381.00 €	2	266,938.00 €
Tajikistan	15	2	1,684,559.00 €	1	80,000.00 €
Turkmenistan	6	1	443,125.00 €	0	0.00 €
Uzbekistan	23	3	2,946,868.00 €	1	0.00 €

Research Performance Evaluation by SciVal



Benchmarking the research performance of Nazarbayev University, national and international institutions using Field-Weighted Citation Index and International Collaboration share of peer-reviewed publications from 2011 to 5 December 2017.

Prepared by Aiman Uteyeva

In this month’s issue, we are delighted to share an updated presentation on the research performance of Nazarbayev University using the SciVal research solution.

Since its inception in 2011, Nazarbayev University faculty and researchers have released **1,464 peer-reviewed publications indexed by Scopus, and have been cited 4,540 times** (source: Scopus, 5 December, 2017). The approximate number of citations per the peer-reviewed publication is 3.1.

In order to provide you with more comprehensive information on the NU’s research performance, we prepared a [presentation using SciVal research evaluation platform](#) that is based on Scopus.

If you have any questions regarding the provided information, please contact Aiman Uteyeva (email address: aiman.temirova@nu.edu.kz).

FUNDING OPPORTUNITIES

#	Title	Funding Organization	Award ceiling	Deadline	Direct Link
1.	Between Europe and the Orient – A Focus on Research and Higher Education in/on Central Asia and the Caucasus	Volkswagen Foundation	not-specified EUR	Ongoing	Link
2.	The Asia studies fellowship at the East-West Center in Washington, D.C.	East-West Center	Up to 5,000 USD	01.02.2018	Link
3.	Transregional research junior scholar fellowship: InterAsian contexts and connections	Social Science Research Council, Andrew W. Mellon Foundation	Up to 45,000 USD	21.09.2018	Link
4.	European Call on Rare Diseases	ERA-Net for Research Programs on Rare Diseases	N/A	06.02.2018	Link
5.	Seed investments for open source tech startups	UNICEF Innovation Fund	50-90,000 USD	N/A	Link
6.	Long-term International Fellowship	Conquer Cancer Foundation	Up to 115,000 USD	19.01.2018	Link
7.	TB Platforms for sustainable detection, care and treatment	USAID	Up to 2 M USD	03.01.2018	Link

#	Title	Funding Organization	Award ceiling	Deadline	Direct Link
8.	SkinCare for developing countries program	American Academy of Dermatology	Up to 5,000 USD	30.01.2018	Link
9.	ACI Charles Pankow student fellowship	American Concrete Institute	Up to 15,000 USD	N/A	Link
10.	Predictive analytics fellowship - CDER	Oak Ridge Associated Universities	N/A	N/A	Link
11.	Teaching English as a foreign language - Kazakhstan	Council for International Exchange of Scholars	Up to 7,360 USD	N/A	Link
12.	Supporting state maternal and child health policy innovation program	Health Resources and Services Administration	Up to 400,000 USD	16.02.2018	Link
13.	Transformative technology development for the human biomolecular Atlas program	National Institutes of Health	Up to 400,000 USD	01.02.2018	Link
14.	Synthetic psychoactive drugs and strategic approaches to counteract their deleterious effects	National Institutes of Health	Up to 100,000 USD	16.02.2018	Link

#	Title	Funding Organization	Award ceiling	Deadline	Direct Link
15.	Alzheimer's Clinical Trials Consortium (ACTC) clinical trials	National Institutes of Health	Total funding 10,000,000 USD	29.03.2018	Link
16.	Media grants program	US Department of State	N/A	01.08.2018	Link
17.	Biobehavioral and technological interventions to attenuate cognitive decline in individuals with cognitive impairment or dementia	National Institutes of Health	275,000 USD	16.02.2018	Link
18.	New frontiers in the understanding of pain and its management	Pfizer	Up to 2,000,000 USD	25.01.2018	Link
19.	FETOPEN-01-2018-2019-2020 : FET-Open challenging current thinking	European Commission	Total funding: 361 M EUR	16.05.2018	Link
20.	Division of Physics: Investigator-initiated research projects (PHY)	National Science Foundation	Total funding 90 M USD	31.10.2018	Link
21.	Division of Molecular and Cellular Biosciences: Investigator-initiated research projects (MCB)	National Science Foundation	Total funding 85 M USD	15.11.2018	Link

#	Title	Funding Organization	Award ceiling	Deadline	Direct Link
22.	MSCA-RISE-2018: Research and Innovation Staff Exchange	European Commission	Total funding 80 M EUR	21.03.2018	Link
23.	LC-SC3-SCC-1-2018-2019-2020 : Smart cities and communities	European Commission	Total funding 73 M EUR	05.04.2018	Link
24.	CE-SPIRE-04-2019: Efficient integrated downstream processes (IA)	European Commission	Total funding 65.8 M EUR	21.02.2019	Link
25.	Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR)	National Science Foundation	Total funding 73 M USD	01.10.2018	Link
26.	LC-NMBP-32-2019: Smart materials, systems and structures for energy harvesting (RIA)	European Commission	Total funding 65 M EUR	22.01.2019	Link
27.	LC-NMBP-27-2019: Strengthening EU materials technologies for non-automotive battery storage (RIA)	European Commission	Total funding 65 M EUR	22.01.2019	Link
28.	JTI-CS2-2017-CfPo7-LPA-01-39: Skin Friction measurements on a real aircraft and Fiber-optics based pressure measurements for aircraft applications	European Commission	Total funding 72 M EUR	27.02.2018	Link

#	Title	Funding Organization	Award ceiling	Deadline	Direct Link
29.	FETHPC-02-2019 : Extreme scale computing technologies, methods and algorithms for key applications and support to the HPC ecosystem	European Commission	Total funding 64 M EUR	24.09.2019	Link
30.	Division of Materials Research: Topical Materials Research Programs (DMR-TMRP)	National Science Foundation	Total funding 55 M USD	01.11.2018	Link
31.	LC-SFS-03-2018: Microbiome applications for sustainable food systems	European Commission	Total funding 42 M EUR	13.02.2018	Link
32.	LC-SC3-RES-17-2019: Demonstration of solutions based on renewable sources that provide flexibility to the energy system	European Commission	Total funding 40 M EUR	11.12.2018	Link
33.	ICT-10-2019-2020: Robotics core technology	European Commission	Total funding 42 M EUR	28.03.2019	Link
34.	Astronomy and Astrophysics Research Grants (AAG)	National Science Foundation	Total funding 35 M USD	15.11.2018	Link
35.	LC-SC3-JA-3-2019: European Pre-Commercial Procurement Programme for Wave Energy Research & Development	European Commission	Total funding 20 M EUR	27.08.2019	Link

#	Title	Funding Organization	Award ceiling	Deadline	Direct Link
36.	Petrology and geochemistry (CH)	National Science Foundation	Total funding 13.5 M USD	N/A	Link
37.	Partnership for International Research & Education (PIRE)	Science and Engineering Research Board	Total funding 12 M USD	N/A	Link
38.	Paleo Perspectives on Climate Change (P2C2)	National Science Foundation	Total funding 11 M USD	15.10.2018	Link
39.	Utilizing public - Private partnerships to advance tipping point technologies	NASA	Total funding 10 M USD	30.01.2018	Link
40.	Common mechanisms and interactions among neurodegenerative diseases	National Institutes of Health	Total funding 10 M USD	05.02.2018	Link
41.	Research interests of the Air Force Office of Scientific Research - Physical sciences (RTB1): Ultrashort pulse laser-matter interactions	US Department of Defense	Up to 7.5 M USD	N/A	Link
42.	Mathematical Sciences Research Institutes	National Science Foundation	Up to 5 M USD	14.12.2018	Link

#	Title	Funding Organization	Award ceiling	Deadline	Direct Link
43.	Joint health systems research initiative - Research grants	Wellcome Trust	Up to 4 M GBP	30.01.2018	Link
44.	Evidence for action: Investigator-initiated research to build a culture of health	Robert Wood Johnson Foundation	Up to 2.4 M USD	N/A	Link
45.	New frontiers data analysis	NASA	Total funding 1.5 M USD	08.02.2018	Link
46.	Croucher Innovation Awards	Croucher Foundation	Up to 1.5 HKD	30.04.2018	Link
47.	Humanities collections and reference resources	National Endowment for the Humanities	Up to 350,000 USD	19.07.2018	Link
48.	Research enrichment - Public engagement	Wellcome Trust	Up to 250,000 GBP	05.02.2018	Link
49.	Research Project Grants	Leverhulme Trust	Up to 500,000 GBP	N/A	Link
50.	Environmental sustainability	National Science Foundation	Up to 100,000 USD	20.10.2018	Link

To see the funding opportunities shared in previous issues of the Research Newsletter, please [click here](#).

The Marie Skłodowska-Curie Innovative Training Networks (ITN) has launched a call about funding opportunities for doctoral training and joint doctoral programs. Open to any research and innovation area, ITN supports joint research training and doctoral programs. Proposals for the funding or enlargement of new programs are selected through competition. They are implemented through partnerships, which can take the form of collaborative European Training Networks (ETN), European Industrial Doctorates (EID), or European Joint Doctorates (EJD).

The Marie Skłodowska-Curie Research and Innovation Staff Exchange (RISE) program funds exchanges of staff members. Organisations actively involved in research and innovation are now invited to propose joint projects. Support is provided for the development of partnerships in the form of joint research and innovation activities. The goal is to

develop sustainable collaborative projects and transfer of knowledge between participants. The RISE funding scheme is bottom-up, meaning there are no topics predefined by the European Commission. RISE projects are carried out within the framework of a consortium involving three or more partners.

The guidelines of the call are provided below:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/msca-itn-2018.html>

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/msca-rise-2018.html>