



3rd INTERNATIONAL CONFERENCE ON PERSONALIZED MEDICINE & GLOBAL HEALTH

**Theme: Paving the way of Personalized medicine in
Kazakhstan in the era of innovative technologies**

September 15, 2017

Astana, Kazakhstan



Dear Friends and Colleagues,

It is my pleasure and honor to welcome you to the 3rd International Scientific Conference on “Personalized Medicine & Global Health”. Nazarbayev University in collaboration with NLA continues its tradition of hosting the international scientific community in Astana, Kazakhstan.

The Conferences held during the previous years, brought together exceptional researchers and scientists to discuss the emerging trends in personalized medicine. I am excited that this 3rd International Conference, will among others, showcase research initiatives undertaken by Kazakhstan’s younger generation of scientists. The conference is structured around plenary sessions, keynote lectures, and poster presentations, thus providing a multidisciplinary forum for researchers, clinical doctors, policy makers, and representatives of healthcare systems.

I welcome you to Nazarbayev University and hope that the scholarly deliberations during the conference will inspire you to identify new scientific directions and inquiries. Please take advantage of this opportunity and enjoy being a part of this important dialogue.

Sincerely Yours,

Ilesanmi Adesida

Provost of Nazarbayev University

Astana, Kazakhstan



Dear Friends and Colleagues!

On behalf of the Organizing Committee, it is my great pleasure to welcome you to Astana and to the 3th International Scientific Conference on “Personalized Medicine & Global Health” hosted by the Center for Life Sciences of National Laboratory Astana at Nazarbayev University, Astana, Kazakhstan.

The conference aims to promote international cooperation in the field of biomedicine and global health, to generate ideal conditions to transform achievements from multi-omics technologies, bioinformatics and systems biology in a new medical platform for preventive and precision medicine in society.

Through this conference, we would like to engage with all of you in an open and constructive dialogue about the innovative advances in genomic medicine, the creation of scientific foundations of healthy aging, the development of international cooperation in innovative research directions in the field of biomedicine.

We hope that you will enjoy the Conference and that your interaction with your colleagues from different institutes will stimulate a creative exchange of ideas and will be personally rewarding.

Sincerely Yours,

Zhaxybay Zhumadilov

Director-General of National Laboratory Astana, Nazarbayev University

Astana, Kazakhstan



THE 3 rd INTERNATIONAL SCIENTIFIC CONFERENCE ON “PERSONALIZED MEDICINE & GLOBAL HEALTH”	
Organizer	Center for Life Sciences, National Laboratory Astana, Nazarbayev University
Date	September 15, 2017
Venue	Nazarbayev University
Website	http://nla.nu.edu.kz
Organizing Committee	<p>Chairman: Ilesanmi Adesida, Provost, Nazarbayev University</p> <p>Co-chair: Zhaxybay Zhumadilov, Director General, National Laboratory Astana, Nazarbayev University</p>
Members of organizing committee	<p>Ainur Akilzhanova</p> <p>Ulykbek Kairov</p> <p>Ainur Akhmetova</p> <p>Ulan Kozhamkulov</p> <p>Saule Rakhimova</p> <p>Dauren Yerezhepov</p> <p>Zhannur Abilova</p> <p>Askhat Molkenov</p> <p>Maxat Zhabagin</p> <p>Almagul Kushugulova</p> <p>Samat Kozhakhmetov</p>
Coordinators	<p>Members of the Council of Young Researchers:</p> <p>Ainur Akhmetova:</p> <p>Tel: +7 (7172) 70 93 18 Email: ainur.akhmetova2@nu.edu.kz</p> <p>Maxat Zhabagin:</p> <p>Tel: +7 (7172) 70 92 89 Email: maxat.zhabagin@nu.edu.kz</p>

Friday 15 th September, 2017		
8.00-9.00	Registration	Venue: Nazarbayev University, 1st floor Foyer, Block C3
9.00-9.10	OPENING SESSION	Venue: Nazarbayev University, Conference Hall 1022, Block C3 Moderator: Zhaxybay Zhumadilov, MD, PhD, D.M.Sci, Professor, Director General of National Laboratory Astana
9:00 – 9:05	Welcome & Introduction by Zhaxybay Zhumadilov	
9:05 – 9:10	Welcome note by Ilesanmi Adesida, Provost of Nazarbayev University	
SESSION 1 –Envisioning the Future of medicine		
<i>Moderators: Almaz Sharman, Richard Barker, Ilia Stambler</i>		
9.10-9.50	Richard Barker <i>MD, PhD, Professor. Oxford University, Oxford, United Kingdom</i>	Keynote speech: 1. Translating precision medicine into a longer healthier lifespan (opening speech, 20 min) 2. GHI - a unique programme to catapult Kazakhstan into the era of precision medicine (20 min)
9.50-9.55	<i>Question & Answer from the audience</i>	
9.55-10.15	Ilia Stambler <i>PhD, Chief Science Officer of “Vetek” (Seniority) Association – The Senior Citizens Movement (Israel). Chair of the Israeli Longevity Alliance and executive committee member of the International Society on Aging and Disease. Rishon Lezion, Israel</i>	Keynote speech: Addressing degenerative aging as a medical condition – a national priority
10.15-10.20	<i>Question & Answer from the audience</i>	
10.20-10.35	Valery Benberin <i>D.M.Sci, Professor. Corresponding Member of National Academy of Sciences of Kazakhstan, Head of the Medical Center of the President’s Affairs Administration of Kazakhstan, Astana, Kazakhstan</i>	Keynote speech: Solutions for medical and social problems of active longevity of the population of Kazakhstan

10.35-11.00	Coffee Break/ Poster presentation	<i>Venue: Nazarbayev University, Hall, Block C3</i>
11.00-11.20	Almaz Sharman <i>MD, PhD, Professor.</i> <i>The President of the Academy of Preventive Medicine of Kazakhstan and the co-founder of HealthCity network of clinics, Almaty, Kazakhstan</i>	Keynote speech: Artificial Intelligence and Healthcare: COPD Case
11.20-11.25	<i>Question & Answer from the audience</i>	
11.25-11.45	Massimo Pignatelli <i>MD, PhD, Professor. Dean of School of Medicine, Nazarbayev University, Astana, Kazakhstan</i>	Keynote speech: Precision Medicine in Cancer: molecular profiling and targeted treatment
11.45-11.50	<i>Question & Answer from the audience</i>	
11.50-12.00	Group photo of conference participants	
PRESS CONFERENCE/ROUND TABLE		
<i>Moderator: Zhaxybay Zhumadilov</i>		<i>Venue: Nazarbayev University, Room1011, Block C3</i>
12:00–12:30	Translational engine of biomedical science into clinical practice	
12:30–14:00	Lunch / Poster presentation	<i>Venue: Nazarbayev University, Hall, Block C3</i>
SESSION 2 – Innovative technologies in precision medicine		
<i>Moderators: Massimo Pignatelli, Ainur Akilzhanova</i>		
14:00 – 14:10	Gulnara Svyatova <i>MD, D.M.Sci, Professor. Head of the Republican Medical Genetic Consultation, Scientific Center of Obstetrics, Gynecology and Perinatology of the Ministry of Health of Kazakhstan, Almaty, Kazakhstan</i>	Fetal genome increases the risk of pre-eclampsia in pregnancy, results of the InterPregGen study of EC 7FP “Genetic study of pre-eclampsia in Central Asian and European populations”
14:10 – 14:15	<i>Question & Answer from the audience</i>	
14:15– 14:25	Ainur Akilzhanova <i>MD, PhD, D.M.Sci, Associate Professor.</i> <i>Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan</i>	Metabolomic analysis reveal potential metabolites and biological pathways involved in aging and obesity in Kazakh population
14:25 – 14:30	<i>Question & Answer from the audience</i>	
14:30 – 14:40	Yergali Miyyerbekov	Prognostic value of TNF α gene 308G>A

	<i>D.M.Sci, Professor. National Scientific Center of Surgery after A.N. Syzganov, Almaty, Kazakhstan</i>	polymorphism in patients with sepsis
14:40 – 14:45	<i>Question & Answer from the audience</i>	
14:45 – 14:55	Asylkhan Rakhymzhan <i>PhD. German Rheumatism Research Center, Berlin, Germany</i>	Intravital two-photon microscopy: application to the immune system
14:55 – 15:00	<i>Question & Answer from the audience</i>	
15:00 – 15:10	Bibigul Ilyassova <i>MD, PhD, Associate Professor. National Scientific Center of Surgery after A.N. Syzganov, Almaty, Kazakhstan</i>	The impact of the results of the morphological study of the liver in the posttransplant period on the tactics of immunosuppressive therapy
15:10 – 15:15	<i>Question & Answer from the audience</i>	
15:15 – 15:25	Saule Rakhimova <i>MD, C.B.Sci. Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan</i>	Genetic variants of CYP2C9 and VKORC1 in LVAD patients
15:25 – 15:30	<i>Question & Answer from the audience</i>	
15:30 – 15:40	Yingqiu Xie <i>PhD, Assistant Professor. School of Science and Technology, Nazarbayev University, Astana, Kazakhstan</i>	PTEN/ARF as molecular markers of personalized cancer treatment
15:40 – 15:45	<i>Question & Answer from the audience</i>	
15:45 – 16:10	Coffee Break/ Poster presentation <i>Venue: Nazarbayev University, Hall Block C3</i>	
SESSION 3 – Bioinformatics and Multiomics data analysis		
<i>Moderators: Ulykbek Kairov, Amin Zollanvari</i>		
16.10-16.20	Ulykbek Kairov <i>PhD. Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan</i>	A novel approach for determining the optimal number of independent components for reproducible cancer transcriptomes data analysis
16.20-16.25	<i>Question & Answer from the audience</i>	
16.25-16.35	Amin Zollanvari <i>PhD, Assistant Professor. School of Engineering, Nazarbayev University, Astana, Kazakhstan</i>	An Analytical Perspective on Challenges and Future Trends in Genomic Data Analysis

16.35-16.40	<i>Question & Answer from the audience</i>	
16.40-16.50	Ulan Kozhamkulov <i>MD, C.M.Sci. Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan</i>	Whole genome sequencing of Kazakhstani M. tuberculosis strains with different drug susceptibility
16.50-16.55	<i>Question & Answer from the audience</i>	
16.55-17.05	Yuliya Mironova <i>C.B.Sci. Perkin Elmer, Moscow, Russia</i>	Modern solutions from Perkin Elmer for Next-generation sequencing
17.05-17.10	<i>Question & Answer from the audience</i>	
SESSION 4 – Microbiome Research and Global Health		
<i>Moderators: Almagul Kushugulova, Adil Supiyev</i>		
17.10-17.20	Luca Vangelista <i>PhD, Associate Professor. School of Medicine, Nazarbayev University, Astana, Kazakhstan</i>	Engineering human microbiota for disease prevention and therapy
17.20-17.25	<i>Question & Answer from the audience</i>	
17.25-17.35	Samat Kozhakhmetov <i>C.B.Sci. Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan</i>	The gut microbial diversity of Kazakhstan centenarians
17.35-17.40	<i>Question & Answer from the audience</i>	
17.40-17.50	Adil Supiyev <i>MD, MPH, PhD. Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan</i>	Determinants of acute coronary syndrome and stroke in Kazakhstan: case-control study
17.50-17.55	<i>Question & Answer from the audience</i>	
17:55 – 18:05	Azliyati Azizan <i>Ph.D, Associate Professor. School of Medicine, Nazarbayev University, Astana, Kazakhstan</i>	Extremophiles from unique ecosystems of Kazakhstan as potential producers of novel antibiotics
18.05-18.10	<i>Question & Answer from the audience</i>	
18.10-18.20	Summary / Comments	
18.20-18.30	Chairs Closing Comments	<i>Zhaxybay Zhumadilov</i>
19.00-21.00	Dinner	



**All poster presenters are required to be next to their posters during poster session!*

List of poster presentations			
Poster №.	Full Name	Title	Affiliation
1	Abilova Zhannur	Association between HRYSR2 mutations with ventricular tachycardia in Kazakh population	National Laboratory Astana, Astana, Kazakhstan
2	Adilbayeva Altynai	Collagen triple helix repeat containing-1 (CTHRC1) regulates the cell migration via focal adhesions in rheumatoid arthritis	School of Science and Technology, Nazarbayev University, Astana, Kazakhstan
3	Adilgozhina Gulsim	Cytoprotective effect of bee keeping products	National Laboratory Astana, Astana, Kazakhstan
4	Akhmetova Ainur	Preparation of HALOPLEX cardiogenetic panel for targeted sequencing of heart rhythm disorders	National Laboratory Astana, Astana, Kazakhstan
5	Akilzhanov Kenes	New method of noninvasive surgical treatment of patellofemoral arthritis	Semey State Medical University, Semey, Kazakhstan
6	Alikeyeva Elmira	Risk factors for unfavorable outcomes of TB in HIV-infected patients	National Research Center of Phthisiopulmonology, Almaty, Kazakhstan
7	Babenko Dmitriy	Tendency of lab methods used in colorectal cancer research during last 20 year: Text-mining approach	Karaganda State Medical University, Karaganda, Kazakhstan
8	Bekbayev Sultan	Analysis of microtubule targeting drugs and mitotic slippage	School of Science and Technology, Nazarbayev University, Astana, Kazakhstan
9	Bulanin Denis	Identification of therapeutic targets for chemotherapy-resistant colon cancer stem cells	School of Medicine, Nazarbayev University, Astana, Kazakhstan
10	Cainelli Francesca	Personalized diagnosis of Gaucher disease in Kazakhstan	School of Medicine, Nazarbayev University, Astana, Kazakhstan
11	Kairov Ulykbek	Laboratory of Bioinformatics and Computational Systems Biology at Center for Life Sciences, National Laboratory Astana, Nazarbayev University	National Laboratory Astana, Astana, Kazakhstan

12	Karabekova Aizhan	Determination the main gene mutation of orphan neurological diseases in children	Atchabarov Research Institute of Applied and Fundamental Medicine, Asfendiyarov Kazakh National Medical University, Almaty, Kazakhstan
13	Li Yelena	Recovery of neurological function of ischemic stroke by administration of conditioned medium from adipose-derived perivascular stem cells	National Center for Biotechnology, Astana, Kazakhstan
14	Mach Yana	Identification of Hrb27C as a novel regulator of the Hippo pathway using a <i>Drosophila</i> genetic screen	School of Science and Technology, Nazarbayev University, Astana, Kazakhstan
15	Madiyarova Meruyert	Bio-impedance analysis results in residents of the Esil district of Astana	University Medical Center, Astana, Kazakhstan
16	Mansurova Dzhamilya	Polymorphism of CYP2C19 gene in patients with CHD	Semey State Medical University, Semey, Kazakhstan
17	Molkenov Askhat	New High Performance Computing platform for Bioinformatics Research	National Laboratory Astana, Astana, Kazakhstan
18	Mussina Dariga	Estimation of the state of screening program on early detection of prostate cancer within the framework of the National screening program in Pavlodar region	Semey State Medical University, Semey, Kazakhstan
19	Nurmoldin Shalkar	Molecular fingerprinting of metabolom for various diseases	Atchabarov Research Institute of Applied and Fundamental Medicine, Asfendiyarov Kazakh National Medical University, Almaty, Kazakhstan

20	Salimbayeva Damilya	The spectrum of mutation in PAH gene among Kazakhs with phenylketonuria	Republican Medical Genetic Consultation, Scientific Center of Obstetrics, Gynecology and Perinatology, Almaty, Kazakhstan
21	Sarsenova Madina	The study of the therapeutic effect of growth factors and synovium-derived mesenchymal stem cells encapsulated in heparin-conjugated fibrin hydrogel on osteochondral defects in rabbits	National Center for Biotechnology, Astana, Kazakhstan
22	Supiyev Rakhim	Current numerical techniques for prediction of blood hemolysis	School of Engineering, Nazarbayev University, Astana, Kazakhstan
23	Toishibekov Yerzhan	Embryo development of handmade cloned Kazakh argali (ovis ammon collium) embryo using frozen-thawed fibroblast cells	Institute of Experimental Biology, Almaty, Kazakhstan
24	Toleubekova Lyazzat	Challenges in management of patients with amyotrophic lateral sclerosis (als)	School of Medicine, Nazarbayev University, Astana, Kazakhstan
25	Tursynbek Nurislam	Identifying a 229-gene signature to discriminate anaplastic astrocytoma from glioblastoma using meta-analysis of multiple microarray datasets	School of Science and Technology, Nazarbayev University, Astana, Kazakhstan
26	Umbayev Baurzhan	Biocompatibility of new thermoreversible poloxamer 407-based hydrogels	National Laboratory Astana, Astana, Kazakhstan
27	Yerezhepov Dauren	Metabolic profile of breast cancer patients in Kazakhstan	National Laboratory Astana, Astana, Kazakhstan
28	Zhalgas Aidana	The role of biosensors for tuberculosis detection	School of Engineering, Nazarbayev University, Astana, Kazakhstan
29	Zhanzak Zhuldyz	Thalidomide affects macrophage activation and leishmania major survival	School of Science and Technology, Nazarbayev University, Astana, Kazakhstan

SPEAKERS

Richard Barker, MD, PhD, Professor.
Oxford University, Oxford, United Kingdom



Richard is an internationally respected leader in healthcare and life sciences.

He is Founding Director of New Medicine Partners, a global firm assisting public and private sector organisations to accelerate the development and adoption of precision medicine. He also founded the Oxford-UCL Centre for the Advancement of Sustainable Medical Innovation (CASMI), a major UK academic initiative aimed at bringing biomedical advances more rapidly and affordably to patients. He is chairman of the South London Health Innovation Network and of the corresponding Genomic Medicine Centre. He also chairs Image Analysis, a UK company using MRI to quantify the impact of therapy on disease and is a board member of Celgene, a major US-based bio-therapeutics company.

His 30-year business career in healthcare has spanned biopharmaceuticals, diagnostics and medical informatics – both in the USA and Europe. The senior roles he has held include: Director General of the Association of the British Pharmaceutical Industry, General Manager of Healthcare Solutions for IBM, Chief Executive of Chiron Diagnostics and head of McKinsey's European healthcare practice.

His book on the future of healthcare '*2030 - The Future of Medicine: Avoiding a Medical Meltdown*' and his second book '*Bioscience – lost in translation?*' are published by Oxford University Press.

Ilia Stambler, PhD.

Chief Science Officer of “Vetek” (Seniority) Association – The Senior Citizens Movement (Israel). Chair of the Israeli Longevity Alliance and executive committee member of the International Society on Aging and Disease. Rishon Lezion, Israel.



Ilia Stambler, PhD, is Chief Science Officer of “Vetek” (Seniority) Association – The Senior Citizens Movement (Israel). He received his PhD at the Department of Science, Technology and Society, Bar Ilan University, Israel. His research has focused on the historical and social implications of aging and life extension research. He is also involved in mathematical modeling of aging and aging-related diseases (https://ec.europa.eu/eip/ageing/commitments-tracker/a3/quantified-longevity-guide-qlg_en). He is the author of *A History of Life-extensionism in the Twentieth Century* and *Longevity Promotion: Multidisciplinary Perspectives* (www.longevityhistory.com). He is actively involved in advocacy for aging and longevity research (www.longevityforall.org), and is Chair of the Israeli Longevity Alliance (<http://www.longevityisrael.org/>) and Executive committee member of the International Society on Aging and Disease (<http://www.isoand.org/>). His papers have appeared in *Progress in Neurobiology*, *Aging and Disease*, *Cancer Detection and Prevention*, *Rejuvenation Research*, *Current Aging Science*, *Global Aging*, *Mechanisms of Ageing and Development*, *Frontiers in Genetics*, *Geroscience*, and other journals.

Valery Benberin, D.M.Sci, Professor.

Corresponding Member of National Academy of Sciences of Kazakhstan, Head of the Medical Center of the President's Affairs Administration of Kazakhstan, Astana, Kazakhstan.



Professor Valery Benberin currently works as a Head of the Medical Center of the President's Affairs Administration of the Republic of Kazakhstan. He is the President of Eurasian Association of Gerontology, Geriatrics and Anti-Aging Medicine as well as the President of Gerontology and Geriatrics Society of Kazakhstan.

He received his MD from Almaty State Medical Institute (Kazakhstan) in 1978. He started his career as a cardiologist at the Kazakh Cardiology Research Institute. In 1988 he completed PhD at the Institute of Clinical Cardiology of the Academy of Medical Sciences of the USSR in Moscow. He got his Doctor of Medical Sciences degree in 2005. He has been working at the Presidential Medical Service for more than 20 years. He has published over 200 papers.

Research interests: Gerontology, Personalized medicine, Anti-aging medicine, Genomics and metabolomics, Pharmacogenetics, Cardiology, Immunology.

Almaz Sharman, MD, PhD, Professor.

The President of the Academy of Preventive Medicine of Kazakhstan and the co-founder of HealthCity network of clinics, Almaty, Kazakhstan.



Native of Kazakhstan and a citizen of the United States, Dr. Sharman has 30 years experience in the fields of biomedical science, clinical research, and healthcare management. As a researcher Dr. Sharman designed a methodology for integrated population-based HIV testing which was implemented in several developing countries and has become a standard methodology for the international demographic and health surveys. HIV testing data generated by using this methodology was recently used by UNAIDS to lower the estimate of the number of people afflicted by HIV in the world by 7 million cases. A multinational study of the anemia prevalence among women and children implemented under his leadership has led to successful anemia control and prevention and reproductive health programs in several countries. In the United States, Dr. Sharman was involved in university teaching as Associate at the Johns Hopkins University's Bloomberg School of Public Health.

During the last several years, Dr. Sharman concentrated on healthcare management and academic medicine. He was founding CEO of the National Medical Holding (NMH), a pioneering project initiated in Kazakhstan's capital city of Astana with six state-of-the-art hospitals. His initiatives to introduce international standards of quality care and advanced technologies at NMH have led to the Joint Commission accreditation and successful implantations of heart ventricular assistance device, heart transplantation and other innovative technologies. Since 2010, Dr. Sharman's primary focus has been on establishments of Academic Healthcare System at Nazarbayev University with the goal of integration of patient care with biomedical research and education.

Dr. Sharman is current member of the American Public Health Association and President of Kazakhstan Academy of Preventive Medicine, a non-governmental organization serving as a platform for advocacy and collective action in addressing public health challenges and opportunities in Kazakhstan. He also co-founded HealthCity, a network of private centers for personal medicine.

Dr. Sharman designed symptomaster.com, a technology product that helps patients to assess more than 100 symptoms and to make informed decisions about their health. He also developed zdrav.kz, an extensive medical database of more than 1000 diseases and conditions. He also participated in the development of medintel.kz, an interactive decision support tool for doctors allowing to expand a differential diagnosis using artificial intelligence technology.

Massimo Pignatelli, MD, PhD, Professor.

Dean of School of Medicine, Nazarbayev University, Astana, Kazakhstan.



Massimo Pignatelli earned his MD summa cum laude from the University of Bologna, Italy, and his PhD from University College, London. He spent most of his academic career in UK as Senior Lecturer and Reader at Imperial College London and at the University of Bristol, where he was Professor of Pathology and Head of Clinical Sciences.

In 2011 Massimo moved to the University of Glasgow School of Medicine, where he served as Head of the School of Medicine (which includes Medicine, Dentistry, and Nursing). He also held the St. Mungo-Notman Chair of Pathology. He is a noted and well-published physician-scientist whose research focuses on epithelial adhesion molecules and particularly on their exploitation as biomarkers for tissue diagnosis, prognosis, and response to treatment.

Since November 2013 he is the Founding Dean of Nazarbayev University School of Medicine in Astana (Kazakhstan).

Gulnara Svyatova, MD, D.M.Sci, Professor.

Head of the Republican Medical Genetic Consultation, Scientific Center of Obstetrics, Gynecology and Perinatology of the Ministry of Health of Kazakhstan, Almaty, Kazakhstan.



The Professor of medicine; Head of Republican medical genetics Departments, Scientific Center of Obstetrics, Gynecology and Perinatology; the Chief specialist in medical genetics of Ministry of Public Health, President of Republican Association of medical geneticists of Kazakhstan.

The scientific and practical interests: Medical-genetics consulting, prenatal and neonatal screening, prenatal diagnostics, molecular genetics, populations genetic.

The Initiator of prenatal and neonatal screening in Kazakhstan, Author of informatics System “National Genetic Register of Republic of Kazakhstan” for monitoring of congenital malformations, National coordinator of InterPregGen Project the European Union Seventh Framework Programme “Genetic studies of Pre-eclampsia in Central Asian and European populations” , Head of “Miras” Biobank of DNA in Kazakh population.

Author of 450 scientific publications, 6 Monographs.

Married, have 2 children, 2 grandchildren.

Ainur Akilzhanova, MD, PhD, D.M.Sci, Associate Professor.

Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan.



MD, PhD, DMSci, Associate Professor (Medicine), Chief research scientist, Head of Laboratory of Genomic and Personalized Medicine, Center for Life Sciences, National Laboratory Astana, Nazarbayev University.

Ainur Akilzhanova is a medical doctor (internal medicine), graduated Semipalatinsk State Medical Academy (SSMA), Kazakhstan in 2000 (Honorary Diploma). She made her Ph.D. (Candidate of Medical sciences, 2004) in cardiology and worked as Assistant in the Department of Therapy of SSMA during 2001-2006. In 2006-2009 years she trained and worked in Department of Molecular Pathology, Division of Tumor and Diagnostic pathology, Atomic Bomb Disease Institute, Graduate School of Biomedical Sciences, Nagasaki University, Japan as a Research Scientist, then as postdoctoral fellow. After coming back to Kazakhstan she defended degree of Doctor of Medical Sciences (2010, Genetics and Public Health). Since 2009 Dr. Akilzhanova worked as Leading research scientist in National Center for Biotechnology of Republic of Kazakhstan and from August 2011 she has been invited to Center for Life Sciences, Nazarbayev University, Astana, as Chief research scientist, Director Department for Organization and Development of Genomic and Personalized Medicine.

Dr. Akilzhanova made her PhD (Medical Sciences) at Nagasaki University, Japan in 2009-2014 and awarded by PhD degree and medal for successful completion of JSPS RONPAKU PhD Program in 2014.

Research interests: genomic research in biomedicine, molecular, genomic and personalized medicine, public health and health care, methods of next generation sequencing and basics of bioinformatics and analysis of sequence data. Studies in recent years devoted to developing ways to translate the results of genetic and genomic research for human health, application of sequencing technologies in clinical research.

Ainur Akilzhanova is supervisor and PI (principal investigator) in many projects in the field of biomedicine. Total number of publications more than 300 articles and abstracts, 4 books, 4 patents. Impact factor summary- 97,939 (year of publishing), 100,947 (2012) Citations: 150, Cited Publications: 23. H-Index: 5/4, i10-index- 3.

Ainur Akilzhanova awarded by President of Kazakhstan Nursultan Nazarbayev Scholarship, 1998-1999; by The First Semipalatinsk Nagasaki Medical Award, August 29, 1999 (Nagasaki University School of Medicine); by the Grant of Ministry of Education, Culture, Sports, Science and Techniques of JAPAN - JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE - JSPS RONPAKU (Dissertation PhD) Program 2010-2014, PhD defense was in 2014; Grant of Austrian Academy of Science, Joint Excellence in Science and Humanities JESH program, June-August 2016; by two certificates of Ministry of Education and Science of Kazakhstan “Құрмет грамотасы” in 2016 and 2017.

Yergali Miyerbekov, D.M.Sci, Professor.

National Scientific Center of Surgery after A.N. Syzganov, Almaty, Kazakhstan.



Yergali Miyerbekov, MD, D.M.Sci., Professor, anesthesiologist. He obtained doctoral degree after research and training in Union Scientific Center of Surgery (Moscow). Currently he works in National Scientific Center of Surgery after A.N. Syzganov. Also he is a Head of Department of Anesthesiology&Reanimatology in Kazakhstan-Russian Medical University and President of NGO “Federation of Anesthesiologists&Intensive Care Specialists”. He is the author of over 250 scientific works and 2 monographs.

Scientific interests include the study of genetic factors of venous thrombosis predisposing and prognostic value of gene polymorphism in patients with septic complications.

Asylkhan Rakhymzhan, PhD.

German Rheumatism Research Center, Berlin, Germany



Dr. Rakhymzhan earned his BSc/MSc in Chemical and Biological Physics from Novosibirsk State University (NSU) (Novosibirsk, Russia) and his PhD from NSU in close collaboration with TU Braunschweig (Germany). In 2011-2013 he worked as a Junior Research Associate in the Institute of Chemical Kinetics and Combustion, Russian Academy of Sciences, Novosibirsk, Russia. Since 2013 he is a Postdoctoral Fellow of German Rheumatism Research Center (DRFZ), Berlin, Germany.

Grants and Awards: President's Award for Excellence at CYTO 2017, Boston, USA; Grant for Young Scientists 2012 (Russian Foundation for Basic Research); DAAD (German Academic Exchange Service) PhD student Scholarship, 2009-2010; Schlumberger Company Scholarship, 2011; Scholarship for Young Scientists ICK&C, Novosibirsk, Russia, 2011.

Bibigul Ilyassova, MD, PhD, Associate Professor.

National Scientific Center of Surgery after A.N. Syzganov, Almaty, Kazakhstan.



Bibigul Ilyassova- gastroenterologist-hepatologist, clinical pharmacologist, Associate Professor, PhD, currently is Head researcher of Kazakh National Scientific Center of Surgery named after A.N. Syzganov, gastroenterologist-hepatologist of Center of Hepatopancreatobiliar surgery and Liver Transplantation and Professor of Clinical Pharmacology Faculty of Kazakh Medical University of Continuous Education. Bibigul was born in Pavlodar, Kazakhstan on 15th of August 1968. She graduated from Semey State Medical University in 1992 as a doctor and got Clinical Ordinatura “Clinical Allergology And Immunology” in 1994 from Almaty State Medical University, also she had an 3 months of Clinical Immunology with course of Hepatology and Good Clinical Practice in NHO Nagasaki Medical Center in 2008 and 1 month Internship in Berlin, Germany. Has 23 years of working experience in a medical and scientific sphere.

She was a speaker of Asian-Pacific Association of Study of Liver Conference in 2010,2011,2012 in Bangkok , Thailand and Taipei, Taiwan, German and European Association of Hepatologist Conference in 2010 in Bonn, Germany, Asian-Pacific Association of Experts of hepatocellular carcinoma in Busan, South Korea in 2013, Central-Asia gastro week in Almaty, Kazakhstan 2010,2011, 1th Congress of Hepatologists of Kazakhstan, Astana 2012, Community of Endoscopic surgeons of Kazakhstan Conference, Astana 2014, “Human and Medicine. Kazakhstan” Conference in Shymkent, Aktobe and Karaganda in 2012, 2015.

Bibigul in a recent 3 years was an author of 22 articles,1 monographies and 4 methodical recommendations, such as: “The effect of the short course of the recombinant interleukin-2 (rIL2) in patients with liver cirrhosis causes by HBV and HCV infection” and “The Effect of Autologous Hematopoietic Stem Cells (AHSCT) in Patients with Primary Biliary Cirrhosis (PBC) resistant to the Drug Treatment” in 2012. Also she is a member of Kazakh Association of Study Of Liver from 2010, Manager of research of Clinical Effectiveness of BIO-C- Immun+ in 2011, Expert of “F36” drug testing, Researcher of Multicenter randomize postregistered research of “Essenciale” drug in 2015 and Manager of Research of “Hepanorm” drug. Married, has who sons.

Saule Rakhimova, MD, C.B.Sci.

Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan



Leading Researcher, Department of Genomic and personalized Medicine, Center for Life Science, PI “National Laboratory Astana”.

She graduated Akmola State Medical Academy, Astana in 2000 Internal Medicine, and in 2001 Internship – therapist (physician). Since 2004 S. Rakhimova finished a few training programs: Genomic medicine and Bioinformatics: Application to clinical practice (Schneider Children’s Medical Center, Tel-Aviv, Israel), Next Generation sequencing on Illumina platform (Seoul National University, GMI, Seoul, Republic of Korea), Genetics of endocrine disorders in children (SUNY Downstate University, NY, USA).

Major projects: Genome-guided personalized anti-thrombotic therapy for patients at high risk of thrombosis and bleeding; Genomic and transcriptomic profiles of esophageal cancer.; Mapping of eco-social and genetic factors determining susceptibility of tuberculosis of the population of the Republic of Kazakhstan; Genetic architecture of Kazakhs etc. Her scientific interests: Pathogenetic aspects in oncology, monogenic diseases, new methods for detection of single nucleotide polymorphism, application of sequencing technologies in clinical research and genomic and personalized medicine. Publications: more than 30 publications, methodical guidelines, 2 certificate of state registration to objects of copyright (copyright certificates). H-Index: 3/2, i10-index: 2.

Yingqiu Xie, PhD, Assistant Professor.

School of Science and Technology, Nazarbayev University, Astana, Kazakhstan



Yingqiu Xie obtained his doctoral degree from Chinese Academy of Sciences, Beijing, China through Molecular Genetics research. After his postdoctoral training University of Maryland School of Medicine and Wadsworth Center, New York Dept. of Health he held research appointments in genetics at University of Miami School of Medicine. Currently he is Assistant Professor, Department of Biology School of Science and Technology, Nazarbayev University. His present research activities at NU include genetics of cancer.

Ulykbek Kairov, PhD.

Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan



Ulykbek Kairov is head of Bioinformatics and Systems Biology lab at the Center for Life Sciences, National Laboratory Astana, Nazarbayev University. His research work over the last 10 years has focused on bioinformatics and systems biology approaches and methodologies for analysis and interpretation of multidimensional biomedical data from the high-throughput genomic platforms such as microarrays and next-generation sequencing as well as developing of new bioinformatics techniques and methods. He is a leading researcher and PI's of several research projects in cancer transcriptomics, Kazakh genomics, bacterial genomics and development of new bioinformatics methodologies.



Research interests: cancer biology, genomics, transcriptomics, bioinformatics, systems biology, computational biology.

Amin Zollanvari, PhD, Assistant Professor.

School of Engineering, Nazarbayev University, Astana, Kazakhstan.



Dr. Zollanvari received Ph.D. in Electrical Engineering from Texas A&M University, College Station TX, in 2010. He held a postdoctoral position in Harvard Medical School and Brigham and Women's Hospital, Boston MA (2010-2012) and then joined the Department of Statistics at Texas A&M University as an Assistant Research Scientist (2012-2014). He is currently an Assistant Professor in the Department of Electrical and Computer Engineering at Nazarbayev University. He has 10 years of experience in genomic signal processing and has authored numerous articles in prestigious journals such as Bioinformatics, BMC Bioinformatics, BMC Systems Biology, IEEE TSP, IEEE TIT, IEEE SPL, etc. Dr. Zollanvari has served as reviewer for 10+ international journals focused on signal processing and/or bioinformatics and is currently serving as the lead guest editor for a special issue of Cancer Informatics on "Signal Processing Applications in Genomics". His research interest includes bioinformatics, high-dimensional signal processing and machine learning.

Ulan Kozhamkulov, MD, C.M.Sci.

Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan



Ulan Kozhamkulov is Leading Research Scientist of the Laboratory of Genomic and Personalized Medicine, Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan. He graduated from Kazakh State Medical University in Almaty, Kazakhstan, 1992-1998.

He obtained his scientific degree in phthisiology (TB) at the National TB Center Republic of Kazakhstan in 2006. In 1999-2006 he participated in scientific programs: "Drug resistance of *M.tuberculosis*" and collaboration work with Institute of chemical science "Development of new active, non-toxic anti- TB drugs based on new β -aminopropioamidoxime derivatives".

In 2007-20011 years he worked at National Center for biotechnology, Astana, Kazakhstan as a senior researcher. He participated in projects for estimation of drug resistance and biodiversity of *M. tuberculosis* in Kazakhstan based on DNA sequencing of genes associated with drug resistance and MIRU-VNTR genotyping method. He also gained experience in Clinical Microbiology department of Hebrew University (Jerusalem, Israel) within collaboration project 2007-2008.

In 2012-2014 he trained and worked in Mycobacteriology Lab of Wadsworth Center, New York State Department of Health, USA as a Postdoctoral Fellow within Fogarty fellowship program. In 2014 Ulan Kozhamkulov joined the Center for Life Sciences at Nazarbayev University as a leading researcher of the Department of Genomic and Personalized medicine.

Research interests: Phthisiology (Tuberculosis), clinical and laboratory diagnostics aspects of tuberculosis (TB), molecular mechanisms of drug resistance of *Mycobacterium tuberculosis*, development improved assay for Pyrazinamide Drug Susceptibility testing, molecular epidemiology, molecular biology in medicine, methods of next generation sequencing.

Publications: more than 100 national and international articles and abstracts in conferences, 7 inventions, 3 guidelines for TB laboratory diagnostics.



Yuliya Mironova, C.B.Sci.
PerkinElmer, Moscow, Russia.



PhD, Biophysics, Lomonosov Moscow State University.

Position: Product Manager at "Pribori Oy" Company with 10 years of experience in the company.

"Pribori Oy" is an official distributor of PerkinElmer Company for Life Sciences and Genetic screening product portfolio. Headquarters of "Pribori Oy" is in Finland with offices in Russia and Kazakhstan.

Main responsibilities and interest: scientific support, marketing development and sales of PerkinElmer product line in fields of molecular biology, molecular genetics and molecular cytogenetics, automated workflow solutions for NGS sample preparation and general labs applications, biotechnology, cell technologies and molecular imaging for Academia, Research Centers, Pharma, Biotech Companies, Molecular diagnostics labs.



Luca Vangelista, PhD, Associate Professor.

School of Medicine, Nazarbayev University, Astana, Kazakhstan



Dr. Vangelista obtained his PhD in Molecular Biology (awarded by the University of Heidelberg) at the European Molecular Biology Laboratory (EMBL), Heidelberg, Germany in 1998. In 1998-2002 he was a Postdoctoral Fellow at the International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy. He later joined the San Raffaele Scientific Institute and University of Milan, Milan, Italy as a Senior Scientist (2003-2007), then a Group Leader (Protein Engineering and Therapeutics) (2008-2014). Since 2015 he is Associate Professor of Nazarbayev University School of Medicine in Astana (Kazakhstan).

Dr. Vangelista has extensive experience in molecular, structural and cellular biology, biochemistry, microbiology, immunology, virology, biocomputing, protein design and engineering and expression strategies. He has coordinated worldwide research networks for a number of years with success attested by 43 peer-reviewed publications, 2 patents and 3 book chapters, several research grants awarded and numerous international congress communications.

Samat Kozhakhmetov, C.B.Sci.

Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan



Samat Kozhakhmetov graduated from Kazakh State Agro-technical University with B.Sc. degree in Biotechnology in 2005. Later, in 2008 Samat has defended his thesis on Biological properties and bacteriocins production of Bifidobacteria at the National Center for Biotechnology, Astana, Kazakhstan. In 2011 Samat Kozhakhmetov was appointed as the Head of the Laboratory of Genetics and Biochemistry of Microorganisms at the National Center for Biotechnology. In 2012 Samat Kozhakhmetov joined the National Laboratory Astana (Center for Life Sciences) at Nazarbayev University as a senior researcher of the Human Microbiome Lab. As seen in many of his publications, his major research interests cover many aspects including metagenomic research and microbiology.

Samat Kozhakhmetov is a full member of the Kazakhstan Association of Human Microbiome Research.

Adil Supiyev, MD, MPH, PhD.

Center for Life Sciences, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan.



Adil Supiev specializes in the area of epidemiology and public health. He acquired his medical degree at First Pavlov State Medical University, Saint Petersburg, Russia; Ph.D. from Institute of Bioregulation & Gerontology, NW Branch of Russian Academy of Medical Sciences, Saint Petersburg, Russia and received MPH degree from Emory University, Atlanta, GA. His main research interests focus on social determinants of health, non-communicable diseases, markers and biomarkers of ageing and adolescents' health.

Azliyati Azizan, Ph.D, Associate Professor.

School of Medicine, Nazarbayev University, Astana, Kazakhstan.



Dr. Azizan obtained her MSc in Microbiology in 1987 and PhD in Biochemistry and Molecular Biology at the University of Tennessee, USA in 1995. She later joined the Shriners Hospital on the campus of the University of Florida (USF) in Tampa, Florida, USA as a Research Fellow Bioscientist. Dr. Azizan's first academic appointment started when she joined the USF College of Public Health (COPH) in 2001 as an Assistant Professor with the Department of Global Health conducting research on Infectious Disease topics and teaching several courses for the Masters of Public Health (MPH) program. At USF, Dr. Azizan mentored many doctoral (Ph.D.) and masters level students and served as Academic Advisor for many MPH (Masters of Public Health) students. Dr. Azizan joined the Nazarbayev University School of Medicine (NUSOM) as an Associate Professor in January 2015, and lectures in several courses in the Medical Degree (MD) program and is the co-Course Lead for the Medical Microbiology course and the Block Lead for Basic Science Block. For the MPH program at NUSOM, Dr. Azizan teaches several courses and is the co-Director of this new MPH program. Apart from serving as a member on several NUSOM and NU committees, Dr. Azizan also is an Academic and Research Advisor for several students from the MD and MPH programs. Dr. Azizan is a member of the American Society for Microbiology, the American Public Health Association and the International Papillomavirus Society (IPVS).

Research Interests and projects. Dr. Azizan is currently involved in research related to natural product drug discovery and the current project involves characterization of novel antibiotic as treatment options for multidrug resistant bacterial pathogens including MRSA. This project involves active collaboration with Dr. Lyudmila Trenzchnikova and Dr. Vladimir Berezin from the Institute of Microbiology and Virology (IMV) in Almaty, Kazakhstan. Currently funded from two sources for a total of over \$150,000 (from NU and from the International Science and Technology Center (ISTC)), this project which started from over ten years ago continues to be developed, and also includes characterization of extremophile extracts with anticancer activity in collaboration with Dr. John Beutler at the National Cancer Institute of NIH in the USA.