

ST. PETERSBURG STATE PEDIATRIC MEDICAL UNIVERSITY



Ruslan Nasyrov

Vice-Rector for Research

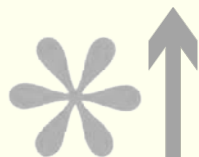




≈ 4 000

scientific publications per year
(including Scopus journals of the I quartile)

among all universities
and medical organizations
according to the Hirsch
index of the Russian
Science Citation Index



397 883

citations of
publications

1132

patents and
PC programs

4160

monographs
and
textbooks

Decrease of infant and child mortality is our mission since 1905



>100 000
patients annually

large educational
and scientific-
clinical center

>6 500
students and residents



>17%
international students

authors
of outstanding
scientific
discoveries,
developers of
unique technologies

Protecting health of mother and
her child from the first days of life
is the main priority
of the Pediatric University

KEY POINTS



42 897
142 534

doctors graduated

doctors took
advanced
training courses

during the years of work

98%

EMPLOYMENT
of graduates
according
to their specialty

Our graduates work

in 111

countries
around the
world

500+

graduates are honored doctors
of the Russian Federation

>16 mln patients

1,7+ mln

surgeries were performed;

1/3 of them were **high-tech** surgeries

during the years of work

FIRST IN RUSSIA

INTRAUTERINE LAPAROSCOPIC CORRECTION OF FETAL MALFORMATIONS

Kropp's surgery
in children

X-ray endovascular
biopsy of heart tumor
for a 6-month-old
infant

One-stage excision of a giant nevus of the back,
lumbar region and both buttocks with free skin
grafting of the wound defect

**GENETICALLY ENGINEERED
IMMUNOBIOLOGIC THERAPY**

RETROGRADE INTRARENAL SURGERY IN CHILDREN
WITH UROLITHIASIS USING A FLEXIBLE URETHROSCOPE

**HYBRID TECHNOLOGY FOR TRANSVENTRICULAR
CLOSURE OF INTERVENTRICULAR SEPTAL DEFECTS**



THE WORLD'S **FIRST HIGHER EDUCATIONAL INSTITUTION** FOR THE TRAINING OF PEDIATRICIANS

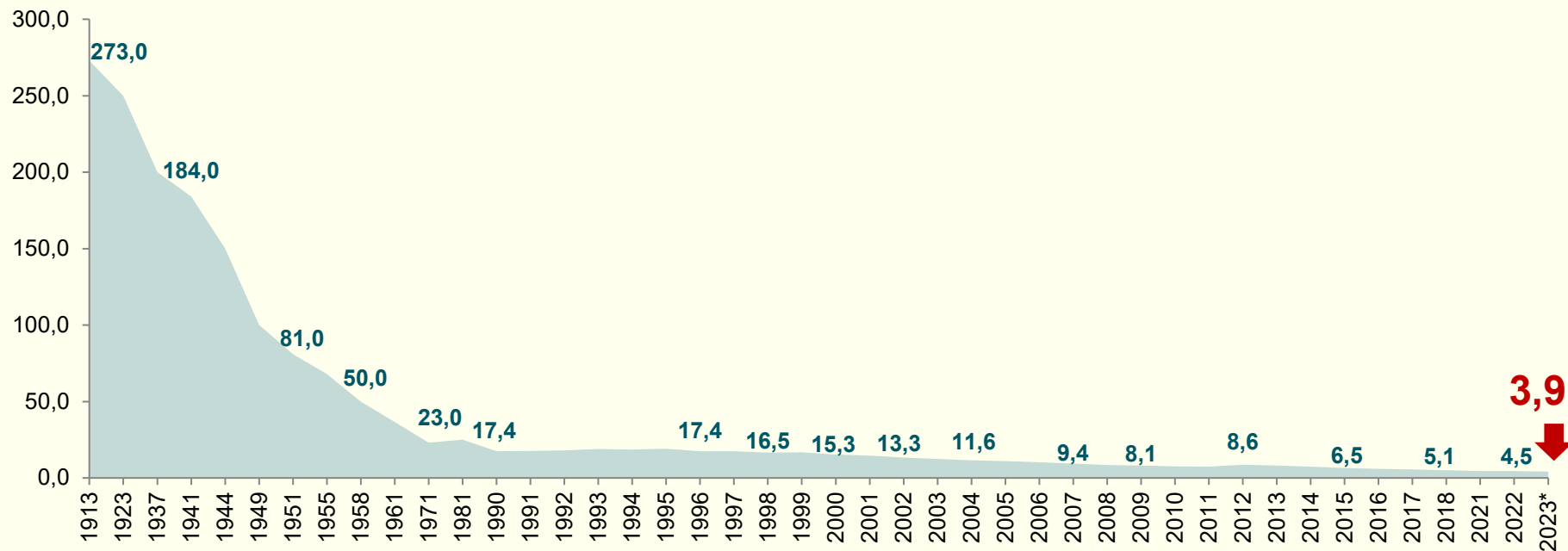
Pediatric University **was founded in 1925**

on the basis of Pediatric Hospital
on the Vyborg side built in 1905





Mortality of children under one year in Russia (%)



* WHO data 2023



Since 1965

the Pediatric University has been
included in the WHO
World List of Medical Schools

52

residency specialties

> 1 200

first-year students were
admitted in 2023



74%

of teachers have PhD and MD
degrees

6

faculties

63

departments



- ✓ Focus on professional development and training of highly qualified specialists of a narrow profile
- ✓ Advanced training courses for doctors are conducted in **84 specialties**
- ✓ 285 training modules are taught at the faculty, which train students from all regions of the Russian Federation and other countries
- ✓ Field cycles are conducted

> 6 000

people were trained according to postgraduate education programs in 2022



Training of students for entrance exams to the Pediatric University and other universities

Classes begin on October 1

Duration of training 1-2 years

Subjects:

✓ Russian language,

✓ Biology,

✓ Chemistry,

✓ Physics.





> 7 000

patients get high-tech medical
care every year

17 000

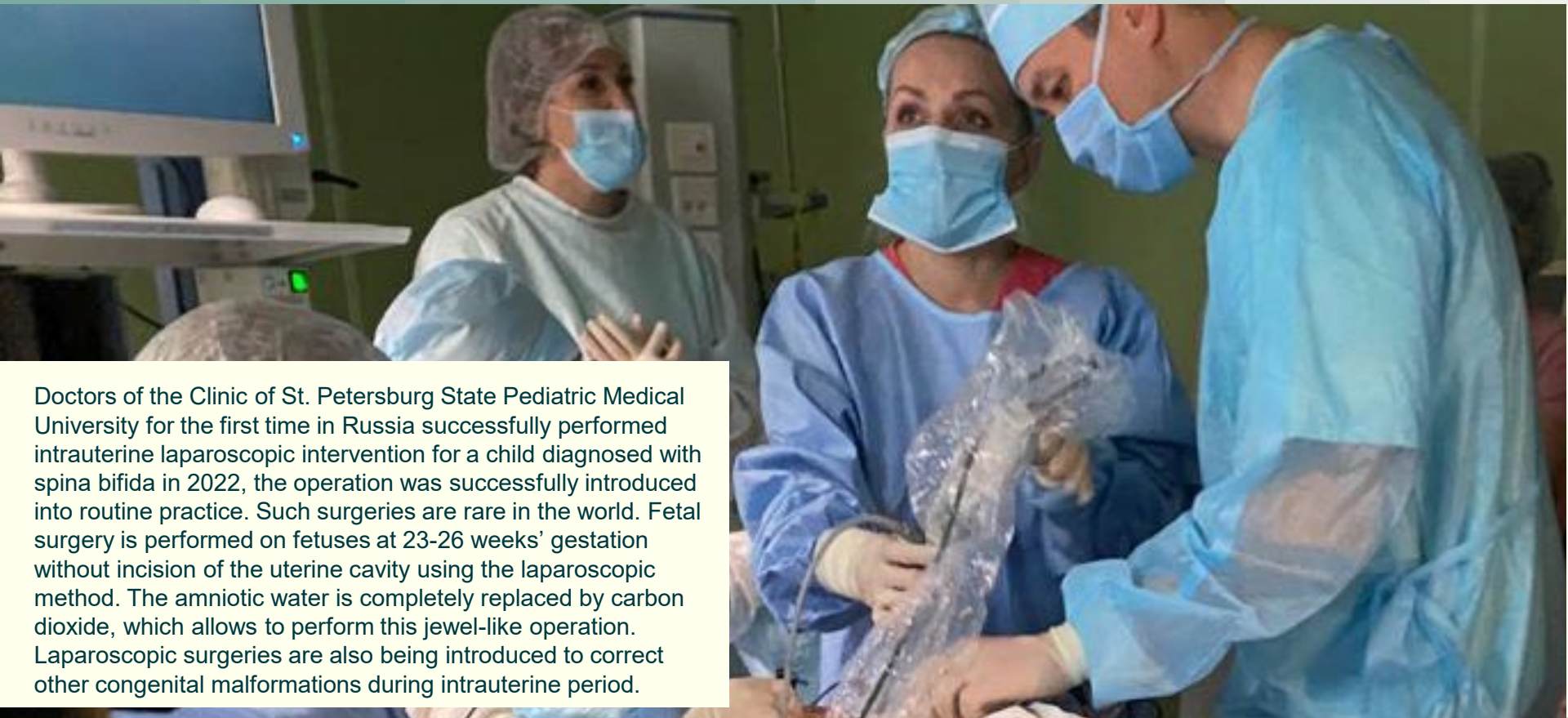
surgeries are performed annually

> 500

patients from
foreign countries

UNIQUE DIRECTIONS

- ✓ **Genetically engineered immunological anti-cytokine therapy** of multisystem inflammatory syndrome, including cases associated with COVID-19, chronic arthritis, systemic lupus erythematosus, etc.
- ✓ **Emergency round-the-clock angiomicrosurgical care for children**
- ✓ **Reconstructive surgery of the larynx and trachea in children**
- ✓ **Surgical urology in children**
- ✓ **Author's personalized rehabilitation programs** for children of all ages and pathologies
- ✓ **Joint replacement in children**
- ✓ **Surgical correction of congenital malformations**
- ✓ **Autotransplantation of ovarian tissue to preserve the reproductive function of cancer-affected women**
- ✓ **Fetal laparoscopic intervention in a child diagnosed with spina bifida**



Doctors of the Clinic of St. Petersburg State Pediatric Medical University for the first time in Russia successfully performed intrauterine laparoscopic intervention for a child diagnosed with spina bifida in 2022, the operation was successfully introduced into routine practice. Such surgeries are rare in the world. Fetal surgery is performed on fetuses at 23-26 weeks' gestation without incision of the uterine cavity using the laparoscopic method. The amniotic water is completely replaced by carbon dioxide, which allows to perform this jewel-like operation. Laparoscopic surgeries are also being introduced to correct other congenital malformations during intrauterine period.



Pediatric University is the only pediatric clinic in the the North-West Federal District, and its specialists know the technique of minimally invasive access for cardiac surgeries. Axillary thoracotomy makes it possible to avoid a chest incision in a number of surgical interventions and, consequently, to exclude many complications.

The Pediatric University Clinic has also performed more than 10 surgeries for children with cardiac oncopathologies. The University has all the conditions to successfully perform these unique surgical interventions even in newborn children due to an experienced team of surgeons, oncologists, cardiologists, neonatologists and intensive care specialists.





The Department of Microsurgery is the only center in St. Petersburg and the North-West Federal District providing emergency, round-the-clock, angiomicrosurgical care for children. Microsurgical autotransplantation of tissues is performed here: transplantation of intestine segment, bone segment, testicle, kidney, full-layer flaps, venous valves, joints and fingers. Interventional radiosurgery and angio-oncology surgery are used.

THE USE OF BALLOON AORTIC OCCLUSION IN CASE OF CESAREAN SECTION



Caesarean section in patients with placental ingrowth is always associated with the risk of extensive blood loss. In addition to a long recovery after the surgery, there is also a significant risk to the life of a woman preparing to get the happiness of motherhood. Doctors of the Perinatal Center of Pediatric University applied the balloon occlusion method, which is widely known in traumatology, for one of the women in labor, saving the young mother not only from unnecessary risks, but also from a malignant tumor.

According to the opinion of the University Rector Dmitry Ivanov, it was the first time in the world that this technique was used during the delivery of a patient with a tumor: "There are cases of application of this technique in traumatology, there are some cases in obstetrics, and in the situation faced by our colleagues, there is not a single case of aortic occlusion. This allows us to talk about the first operation of this character in the world".



- ✓ highly qualified specialists
- ✓ modern equipment
- ✓ modern methods of patient care
- ✓ experience accumulated for centuries
- ✓ prenatal and postpartum care for a woman
- ✓ highly professional methods of labor management
- ✓ comfortable conditions of hospitalization at the departments of the Perinatal Center
- ✓ nursing department for children with extremely low body weight (from 500 grams)
- ✓ more than 10,000 rescued babies and happy mothers
- ✓ Department of Assisted Reproductive Technologies – **every second IVF is successful!**





The main goal of research and innovation activities of the University is to obtain new fundamental knowledge, search for progressive principles of applied problems solutions, create original medical, pharmaceutical technologies, social and humanitarian practices, ensure a high scientific and technical level of personnel training, implementation of research and development results in medical practice.

The work on the study of genetic markers of multifactorial diseases, such as bronchial asthma, diabetes mellitus, adrenogenital syndrome, disorders of sexual development in children, etc., is indicative. There are also active investigations aimed at identifying genetic determinants of autoimmune and ethnically associated diseases in children. New methods of using cell technologies (stem cells) and nano-fiber coatings in the treatment of Hyssprung's disease, spinal cord injuries, burns, scalp wounds, etc. are being developed. Of particular interest is the research on the development of bioengineered trachea and aorta implants. These unique developments have been successfully tested using rodents and will soon be able to save the lives of thousands of children, as they solve the problems of immune tolerance in transplantology and the problems of donor organs for children (these transplants grow with the child).





Chasnyk V.G. et al. "The Population history of Northeastern Siberia since Pleistocene" (Nature)

Chasnyk V.G. et al. "Tofacitinib in juvenile idiopathic arthritis: a double-blind, placebo-controlled, withdrawal phase 3 randomised trial"(The Lancet)

Ivanov D., Polyakova V., Nasyrov R. et al. "Sudden infant death syndrome: Melatonin, serotonin and CD34 factor as possible diagnostic markers and profilactic targets" (PLoS ONE)

Gorkovaya I.A., Ivanov D.O. et al. "Dynamics of emotional reactions among Russian students during the COVID-19 pandemic" (European Psychiatry)

Nasyrov R.A. et al. "Morphological and Immunohistochemical Features of Placental Damage in Cases of Perinatal Death: Institutional Experience with Emphasis on Viral Etiology" (Annals of clinical and laboratory science)

Imyanitov E.N. et al. "Identification of recurrent pathogenic alleles using exome sequencing data: proof-of-concept study of Russian subjects" (European Journal of Medical Genetics)

NATURE THE LANCET
THE NEW ENGLAND JOURNAL OF MEDICINE
CELL
PLoS FRONTIERS IN PEDIATRICS
ONE HUMAN MUTATION

Suslov V.M., Suslova G.A., Lytaev S.A. "Clinical and mri markers of muscles damage in ambulant and non-ambulant dmd patients" (Archives of Physical Medicine and Rehabilitation)

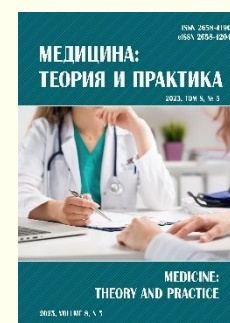
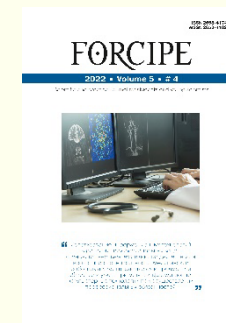
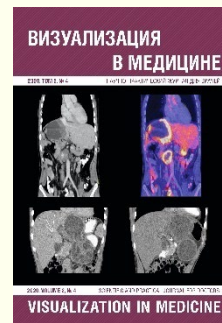
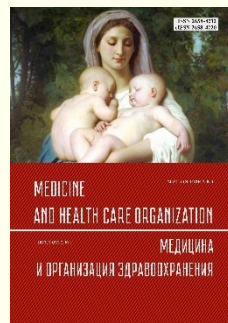
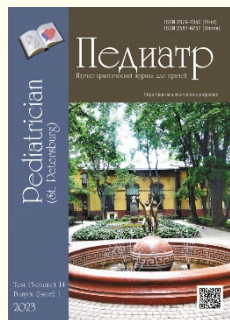
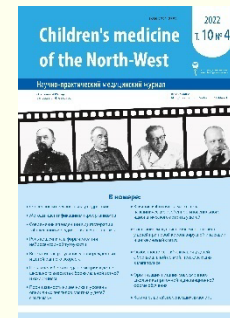
Kostik M.M. et al. "An unusual case of enterovirus infection with polymyositis and severe necrotizing retinovasculitis in a 10-year-old boy" (Rheumatology)

Imyanitov E.N. et al. "Changes in the concentration of egfr-mutated plasma dna in the first hours of targeted therapy allow the prediction of tumor response in patients with egfr-driven lung cancer" (International Journal of Clinical Oncology)

SCIENTIFIC JOURNALS OF THE PEDIATRIC UNIVERSITY



Pediatric University is the founder and publisher of 9 scientific journals: “Pediatrician”, “Children’s Medicine of the North-West”, “Russian Biomedical Research”, “Visualization in Medicine”, “Medicine and Health Care Organization”, “Medicine: Theory and Practice”, “Forcipe”, “University Therapeutic Journal” and “Eurasian Pediatrics Bulletin” (in cooperation with the Tashkent Pediatric Institute). All publications are available in the following databases: RSCI, DOAJ, Ulrich’s International Periodicals, EBSCO, GoogleScholar, Cyberlenninka, ICI World of Journals, CiteFactor and recommended by the Higher Attestation Commission of Russia.





The experimental operating room for students and young scientists allows you to get acquainted with surgeries, practice manual skills (vascular sutures, intestinal anastomoses, etc.), master the elements of endovideosurgery and microsurgery. Also, the University scientists conduct their surgical interventions using experimental animals to test new surgical ideas. The operating room is equipped with modern equipment: a Sectra visualization table, as well as a 3D printer.



- ✓ Tissue engineering of the trachea and aorta allows to get an individual immunologically neutral organ that does not cause complications during transplantation.
- ✓ This transplant can grow together with the child's body!
- ✓ The tests were successfully carried out using rats and rabbits. Clinical testing is planned.
- ✓ There are no any equivalents in Russia!

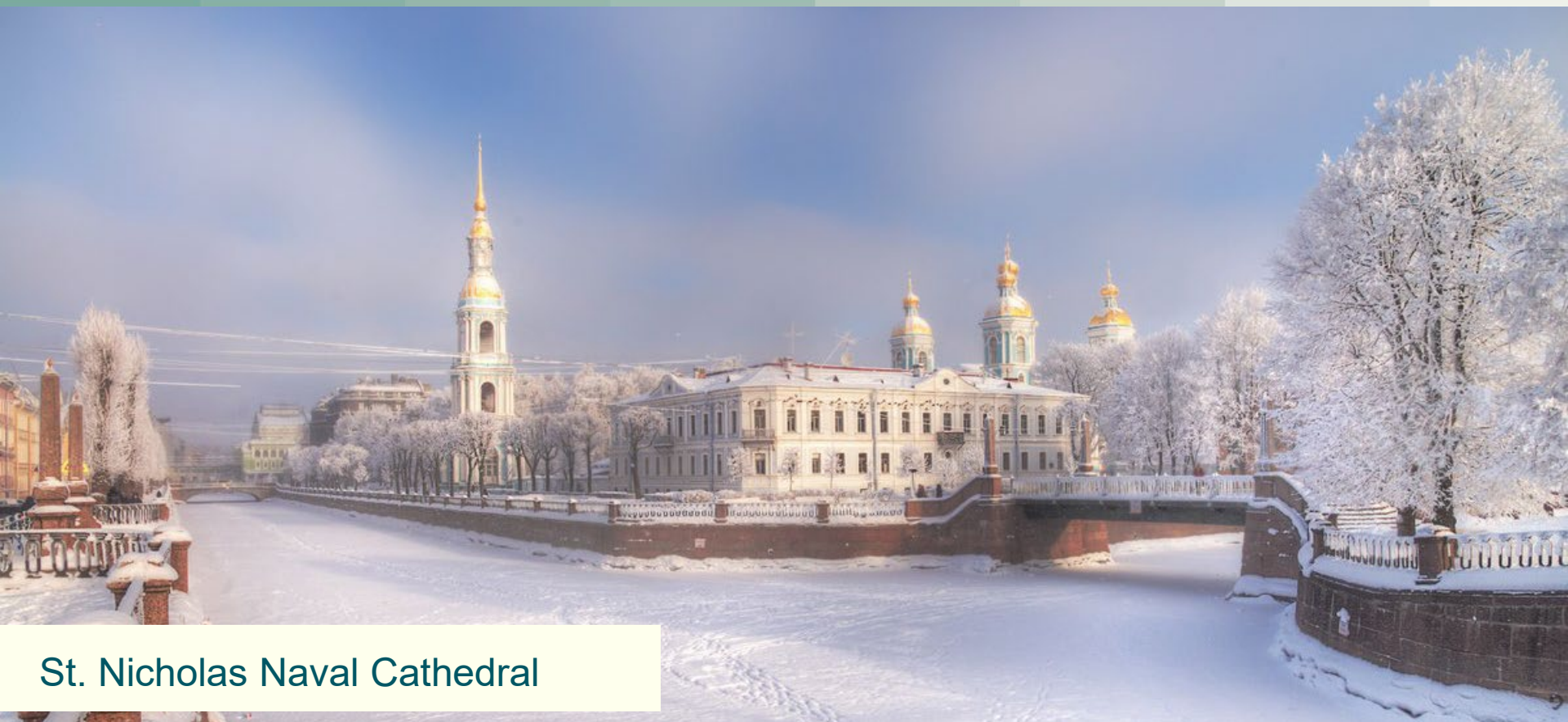




Strelka Vasilyevsky Island



Divorced Bridges White Night



St. Nicholas Naval Cathedral



Kazan Cathedral



PERINATAL CENTER
OF THE PEDIATRIC UNIVERSITY



PARK OF THE
PEDIATRIC UNIVERSITY



Thank you for your attention!



Pediatric University
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