Skoltech

Skolkovo Institute of Science and Technology

FACULTY PROSPECTUS

JUNE 2014

Welcome letter

Edward Crawley
President

I'd like to introduce you to Skoltech — a new model for Russian higher education, bridging science and innovation to impact the world we live in. We are bringing together a fusion of exceptional Russian and international talent, creating key partnerships, and a world-class infrastructure to make of Skolkovo an institute capable of becoming an engine of economic growth. Our systematic approach for creating impact in society sets us apart. We directly engage with industry and society to understand their needs, then educate graduate students and conduct research to strategically improve standards of living and companies' global competitiveness.

In just two years, we have conducted a stakeholders analysis, developed a comprehensive research strategy, and founded six Centers for Research, Education and Innovation to address the needs of our stakeholders — businesses, government and society. Our faculty includes top researchers and educators from around the world, including Prof. Anton Berns, Prof. Victor Kotelianski and Nobel Laureate Sidney Altman. We have also created opportunities for talented Russians to return to Russia - a number of our professors are from the greater Russian Diaspora. We've launched educational programs in IT and Energy, matriculated students from 12 countries, and plan to inaugurate programs in Biomedicine, Nuclear Science and Space in 2014.

Our students have already demonstrated their unique potential by founding their own companies and placing in the Top 10 in international competitions such as the CleanTech Challenge and MIT's 100k Competition. We eagerly look forward to what they will achieve in their two years at Skolkovo.

Our list of partners and friends is growing with every year. Since fouding our key partnership with the Massachusetts Institute of Technology (MIT), we have formed ties with a number of the world's other leading universities. The Moscow Institute of Physics and Technology, St. Petersburg State University and the University of Groningen (the Netherlands) are just a few of the institutional pillars on which we are building our foundation.

We have a successful track record of collaboration on research and educational programs with industrial partners, such as United Aircraft Company, System Operator of the United Power System and CISCO. Despite our short history, we have grown rapidly in the last two years and laid the cornerstone for our future community of 200 professors, 300 postdocs, and 1,200 students. Please read on to understand why I am so confident in saying that at Skoltech, we are doing more than graduating leaders, we are preparing agents of change.

Credits

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Ilan Goren

GRAPHIC CONCEPT AND DESIGN
Denis Landin

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PLEASE NOTE

Every effort has been made to ensure the accuracy of information in this Faculty Prospectus at the time of going to print. However, changes and developments are part of the life at the university and research centers and alterations may occur to programs, staff and tracks described in the prospectus. Please refer to the Skoltech and Faculty websites for the most up-to-date information.

http://www.skoltech.ru/en/
http://faculty.skoltech.ru/

Skoltech Explained

The Skolkovo Institute of Science and Technology (Skoltech) is a unique university. To help you get started, let us explain the basics.

Established in 2011, Skoltech is a **PRIVATE GRADUATE RESEARCH UNIVERSITY** in Skolkovo, a suburb of Moscow, Russia, with English as the language of instruction

The **OPPORTUNITIES** we offer are based on what we call the "triple-helix model": a model that weaves **INNOVATION** seamlessly into **RESEARCH** and **EDUCATION**

We bring **IDEAS** to **IMPACT** society and business, while emphasizing **FUNDAMENTAL** research of high standards. We aim to solve real problems in Russia and the world. **PRACTICAL** use of science is key

The university and its Centers for Research, Education and Innovation (CREIs) address critical challenges in **5 MAJOR "TRACKS": INFORMATION, BIOMEDICINE, ENERGY, SPACE** and **NUCLEAR SCIENCE AND TECHNOLOGY** and **SCIENCE CUTTING ACROSS THESE AREAS**

Skoltech supports a **MULTIDISCIPLINARY APPROACH**. Cross-cutting and innovative collaboration are core to our mission

We believe that **CREATIVE PEOPLE** must have **INDEPENDENCE** of thought and academic **FREEDOM**

Skoltech is a **PARTNER OF MIT** (Massachusetts Institute of Technology). We work together on research, curriculum and planning, and innovation

Our **FACULTY**, many of whom are senior, **INTERNATIONALLY REPUTED ACADEMIC LEADERS**, hail from **VARIOUS COUNTRIES** and **BACKGROUNDS** — east and west, north and south, academia and industry

Skoltech is an indispensable part of the **SKOLKOVO ECOSYSTEM** that comprises a **COMPLETE HIGH-TECH CITY** with a number of **PRIVATE INTERNATIONAL R&D CENTERS** and **START-UP INCUBATORS**

A **CENTER OF ENTREPRENEURSHIP AND INNOVATION (CEI)** was established at Skoltech. Its main goal is to make Skoltech **AN ENGINE OF ECONOMIC GROWTH** by rapidly implementing ideas to create impact, by engaging students and faculty in E&I (entrepreneurship and innovation), and by accelerating research outcomes toward commercialization and broader social impact

HERZOG & DE MEURON

Building a research university from scratch is exciting and requires pioneers. With the help of our partner, the Skolkovo Foundation, a lot has been achieved since we broke the ground — now it is time to look ahead, to new challenges.

HERZOG & DE MEURON

IN 2015

a **NEW CAMPUS** building is planned to open its doors

By 2020 we aim to:

Establish all of our 15 Centers for Research Education and Innovation

Employ 200 professors

Host 300 postdoctoral associates

Educate 1200 students

IF YOU THINK that building a new, innovation-driven technological university from the ground up is a rare opportunity — **YOU ARE RIGHT.**

IF YOU CARE about your scientific independence, are passionate about cross-cutting research, want to make an impact on real-world issues and enjoy teaming up with global industries and researchers from top international universities and research institutions — **WE ARE RIGHT FOR YOU.**

IF YOU HAVE a pioneering spirit — **YOU ARE RIGHT FOR US.**

3 THINGS YOU MIGHT LIKE TO KNOW ABOUT US

1

ENGLISH is Skoltech's **WORKING LANGUAGE.** But in our labs, cafeterias and lecture halls you can also hear Swedish, Dutch, Italian, Hebrew, Urdu — and Russian.

2

Among our **INTERNATIONAL PARTNERS** are institutions such as MIT, Whitehead Institute, Groningen School of Medicine, Delft University of Technology, KU Leuven, Technical University of Berlin and others

3

We are **GROWING:** recruiting, devising new educational programs and expanding our CREIs

WE ARE RECRUITING FACULTY AT A RAPID PACE AND HOPE YOU WILL APPLY. DROP US A LINE AT JOBS@SKOLTECH.RU, CHECK THE INFORMATION ON APPLICATION ON PAGES 20-21 OR VISIT THE FOLLOWING LINKS

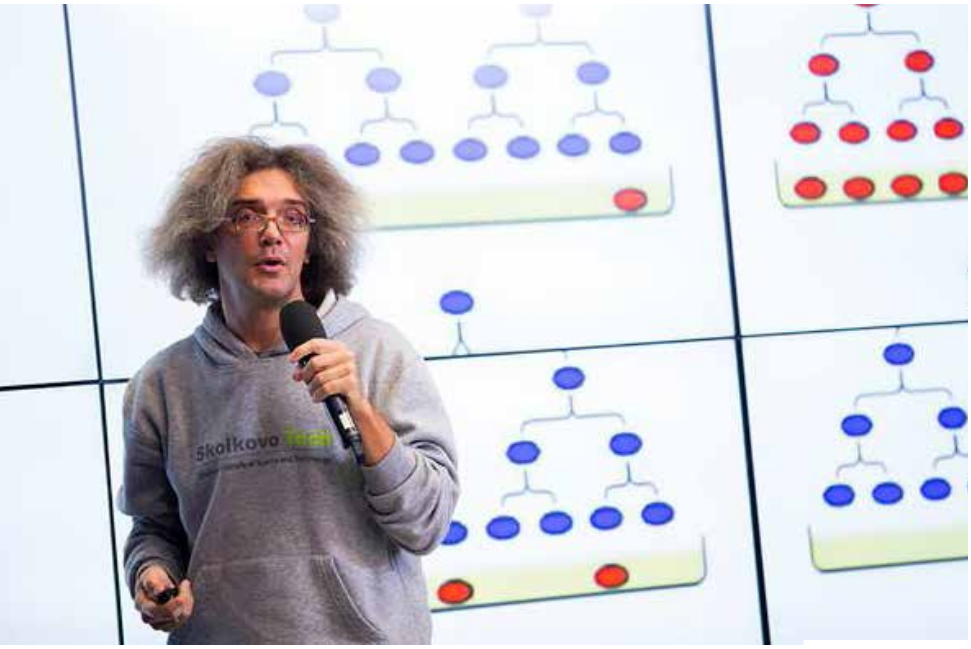
http://faculty.skoltech.ru/Positions/Listings

http://sktech-search.mit.edu/

http://sktech-postdoc.mit.edu/

Research

The major component of the Skoltech concept is the establishment of Centers for Research, Education and Innovation (CREIs). These are our major scientific growth engines.



Professor Konstantin Severinov, Associate Dean of Faculty, gives a presentation to students and faculty

Skoltech has defined five priority areas for its research efforts — Biomedicine, IT, Energy, Space, Nuclear, as well as science across these areas (e.g. materials). The **SKOLTECH CENTERS FOR RESEARCH, EDUCATION AND INNOVATION (CREIS)** are the key building blocks in the effort to develop a world-class graduate university that combines education, research and innovation seamlessly. Skoltech plans to form 15 CREIs in the five research priority areas.

The CREIs pursue **LEADING RESEARCH** in their fields, deliver **WORLD-CLASS GRADUATE EDUCATION PROGRAMS** and generate results that can form the basis for **INNOVATION AND ENTREPRENEURSHIP ACTIVITIES** at Skoltech and in Russian industry. Importantly, CREIs will build capacity of all kinds at Skoltech, and will be designed to have broad impact on Russia.

The establishment of CREIs in **CLOSE COOPERATION WITH ONE (OR MORE) INTERNATIONAL AND RUSSIAN ACADEMIC PARTNERS** is done because we believe this is the most efficient and fastest way to establish a new world-class graduate research university, complementing the existing research and educational system in Russia and **DEVELOPING A GATEWAY** between Russia and the rest of the world.

The Skoltech CREIs embody the increasingly important collaborative and multi-university research partnerships required for multidisciplinary advanced research. Each CREI has Skoltech as the lead university (reflecting the flow of funding) with major universities or research institutions as partners. Thus, Skoltech researchers are brought into collaboration with researchers from both international and Russian institutions. For example, Skoltech cooperated with the University of Groningen and Vavilov Institute of General Genetics to establish its first CREI.

Our first CREI, out of a total of fifteen, focuses on one of science's Holy Grails: Stem Cell Research. Headed by the leading Dutch researcher professor Anton Berns, the center's team of researchers tackle the most pressing questions related to these "magic cells" capable of transforming into expert cells, which could help treat currently incurable diseases — and save millions of lives.

Skoltech's biomedicine students attend classes at the center, located at University Medical Centre Groningen.

GUIDELINES FOR THE OPERATION AND ADMINISTRATION OF RESEARCH BY CREI PARTICIPANTS INCLUDE

Grant and contract administration

Expected or allowable research expenditures (faculty, student, postdoc, and researcher salaries; equipment; travel; materials and services, etc.)

Management of salary costs

Reporting requirements (technical, fiscal, equipment and property, intellectual property)

Financial review and control requirements

Professor Raj Rajagopalan, Provost (right) and professor Victor Kotelianski, Director, Skoltech Center for Infectious Diseases and Functional Genomics, chat during the *Toward Therapies of the Future conference*, May 2014

3 THINGS YOU NEED TO KNOW ABOUT OUR APPROACH TO RESEARCH

1. Skoltech supports a multidisciplinary approach. Cross-cutting and innovative collaboration are core to our mission.
2. We believe that scientists must have independence of thought and academic freedom.
3. The Skoltech Centers for Research, Education and Innovation (CREIs) support practical implementation of science in six major "Tracks": Information, Biomedicine, Energy, Space and Nuclear Science and Technology and Science cutting across these areas.

CHECK OUT THE VIDEO

http://vimeo.com/63611829

FOR MORE INFORMATION

http://faculty.skoltech.ru/Life-at-Skoltech/Research

http://www.skoltech.ru/en/crei/

Campus

If you build it, they will come, the visionary protagonist from the film "Field of Dreams" famously believed. So do we.

HERZOG & DE MEURON

We are building Skoltech's new campus from the ground up — and the professors and students are coming. Master's and PhD students, faculty members and postdoctoral researchers hailing from more than 10 countries, have already set base at the newly constructed Hypercube, our current hub. But in 2015, when the remarkable new main building opens, Skoltech's development program will reach a key milestone. Life and work here will become more streamlined, inspiring — and fun.

The gleaming white campus, located in western Moscow, was designed by world-renowned Swiss architects Herzog and de-Meuron. They envisioned a 60-hectare complex that will house an array of facilities specifically designed for the needs of students and faculty members. State-of-the-art lecture halls, top notch labs, user-centered public spaces and a library enveloped with tall windows and awash with natural light (yes, even in winter), all lay the ground for interdisciplinary research, academic programs and technological innovation.

With R&D centers operated by industry leaders such as Cisco, Microsoft, IBM and Intel only minutes away from the main building, reaching the business and startup community will be a matter of picking up a cappuccino at the cafeteria — and going for a stroll. Residential and shopping areas have already begun to rise from the ground and a high-speed rail link to Moscow is planned. When it opens, a cosmopolitan city buzzing with energy will be just a short train ride away from Skoltech's new home.

Our field of dreams is taking shape.

HERZOG & DE MEURON

WATCH THE VIDEO

http://www.youtube.com/watch?v=btQN2BX2IFg

3 THINGS YOU NEED TO KNOW ABOUT THE CAMPUS

1
Some of our professors take part in designing their own offices.

2
Internal spaces are designed for maximum overlap among the 5 core, science and technology "Tracks"– energy, biomedical, IT, space and nuclear science and technology.

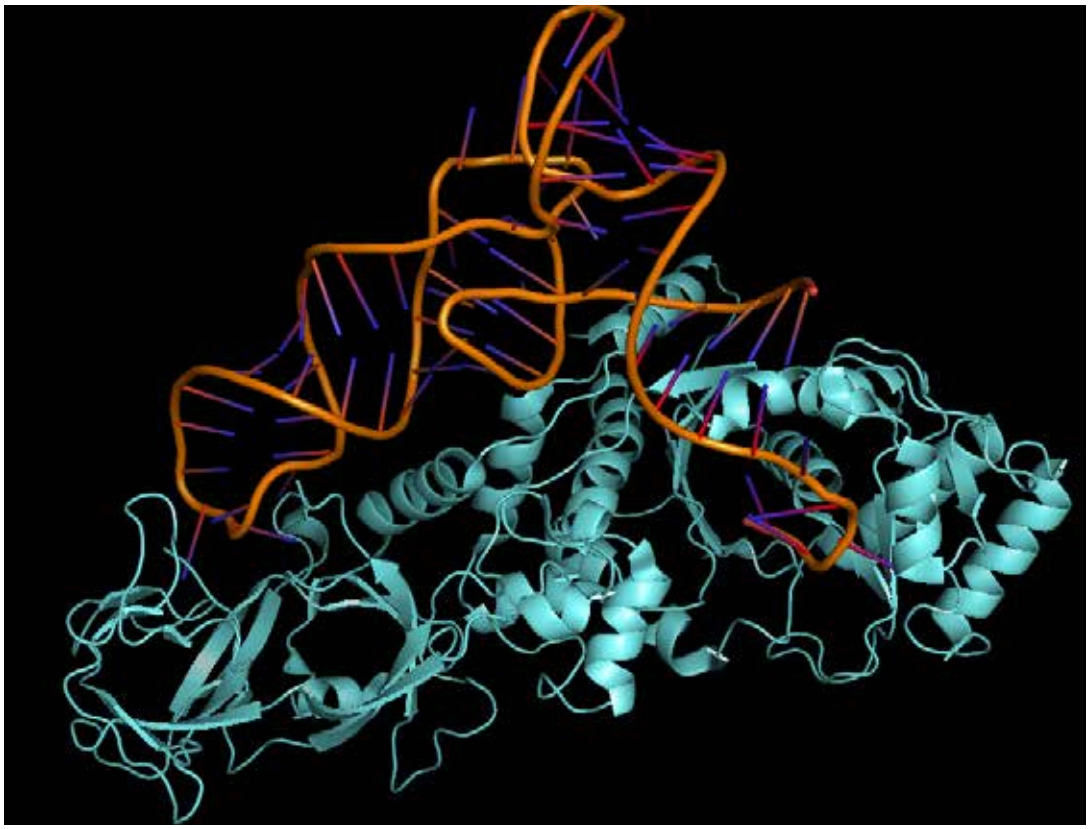
3
Architects have created a web of pedestrian links and quiet yards.
The vision: chance encounters made easy.

Meet Members of our Faculty

Professor Victor Kotelianski

Director, Skoltech Center for Infectious Diseases and Functional Genomics

If the human cell was a battlefield, Professor Victor Kotelianski would serve as a general of the revolutionary biomedicine army.



Over the years, his scientific work has focused on RNAi therapeutics that could help our bodies fight off invading viruses in completely new ways. RNA molecules are used to inhibit gene expression by causing the destruction of specific mRNA molecules which are crucial for viruses' advance on the body.

Now the seasoned researcher is in Skoltech, where he heads the Skoltech Center for Infectious Diseases and Functional Genomics. His austere office resembles a field HQ. The walls are bare. The air-conditioning is off.

The only evidence of the dramatic results Kotelianski is hoping for covers his desk. Flow charts, research proposals and post-it notes are laid out like on a commander's sandbox.

The Skoltech Center for Infectious Diseases and Functional Genomics will be a unique example of a multi-disciplinary effort to develop clinically suitable, safe and effective siRNA (small interfering RNA) delivery vehicles to a range of cells. In vivo biology will serve as an important research tool. "Nothing like this has ever been attempted in Russia", says Kotelianski.

"We are starting from scratch and there's a lot of hard work ahead of us," he says, cracking a weary smile — and goes back to pore over his charts.

THE SKOLTECH CENTER FOR INFECTIOUS DISEASES AND FUNCTIONAL GENOMICS AIMS TO:

Develop a robust collaborative effort focused on the development and application of RNA technology for medicine and biology, with specific emphasis towards medical conditions of importance to Russia.

Combine expertise in Drug Delivery, Chemistry, Biology and Medicine between experts at in the US and Russia, including the efforts of three Nobel Laureates.

Advance science, generate new therapeutics, strengthen Russian institutions, and educate a next generation of Russian scientists.

3 THINGS YOU NEED TO KNOW ABOUT HIM

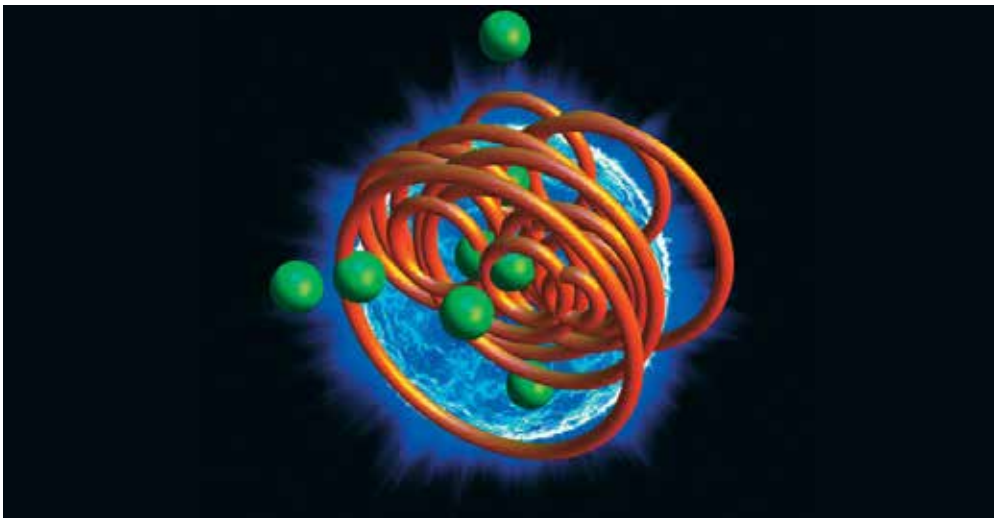
1. Professor Kotelianski worked as a VP for a French company for five years, but insists that "Russian is the most beautiful language in the world by far."
2. His work focuses on RNAi therapeutics including ALN-RSV01, ALN-VSP, ALN-PCS
3. The only visible pictures in his office are on his computer screen saver, where images taken by his daughter, a photographer, float by.

FOR MORE INFO, PUBLICATIONS AND AWARDS

http://faculty.skoltech.ru/Faculty/Victor-Kotelianski

Professor Natalia Berloff
Dean of Faculty

For someone who unleashed quantum tornadoes and then taught them how to dance in a fluid trapped on a semiconductor chip, Professor Natalia Berloff comes across as a composed and calm person.



Along with colleagues from Cambridge University the Russian born researcher created a new quantum particle called polariton and hundreds of twister-like vortexes, a technology which could be used to measure movements to astonishing precision. So perhaps it is no surprise that Skoltech's Dean of Faculty is unfazed by challenges. Even unprecedented ones.

"We would like to build a unique gateway to western tech science and skills. That's what sets Skoltech apart from other Russian academic institutions. When Russian industry will need western expertise we would be the go-to place", says the applied mathematician heading the Cambridge-Skoltech Quantum Fluids Laboratory (CSQF). She now plans to develop mirror labs — one in Moscow, the other in Cambridge.

Berloff seems to be constantly on the go. When we catch her for a short conversation she is in between trips — giving summer classes in Cuba, assessing PhD candidates in Finland and attending a conference in Germany. She splits the rest of her time between Cambridge and Moscow. But when asked about breaking travel records or centuries' old glass ceilings — Berloff was the first ever woman appointed Professor of Applied Mathematics at Cambridge in 800 years — she prefers to steer the conversation away from personal milestones.

> **"There are excellent schools in Russia but the fluidity and flexibility offered by Skoltech is a unique advantage. We don't have rigidly defined departments so students can fine-tune their own study program — starting, for example, in the energy track and then switching to IT."**

"As for faculty, our mission is to track and retain the best. We need people with background and education that do not exist in other places. And then we need to create a cross-cutting environment where they can prosper. Only then do you know you have succeeded. If you follow in someone else's footsteps nothing will happen".

NATALIA BERLOFF RESEARCH INTERESTS FOCUS ON

- Nonlinear waves
- Superfluidity
- Quantum fluids
- Bose-Einstein condensates
- Superfluid turbulence
- Coherence in non-equilibrium quantum systems
- Strong light-matter coupling in solid-state systems
- Finite temperature atomic condensates

3 THINGS YOU NEED TO KNOW ABOUT HER

1

Read her description of her famous "quantum tornadoes" research: "Being half-light and half-matter these particles are feather-light and move quickly around, sloshing and cascading like water in a mountain river." Now we can challenge anyone to say that mathematicians and physicists lack a sense of poetry.

2

She brought back her children from the UK to Moscow because: "It is a big vibrant city — it offers ice skating, theater, and an opportunity for my kids to have a stronger sense of self identity".

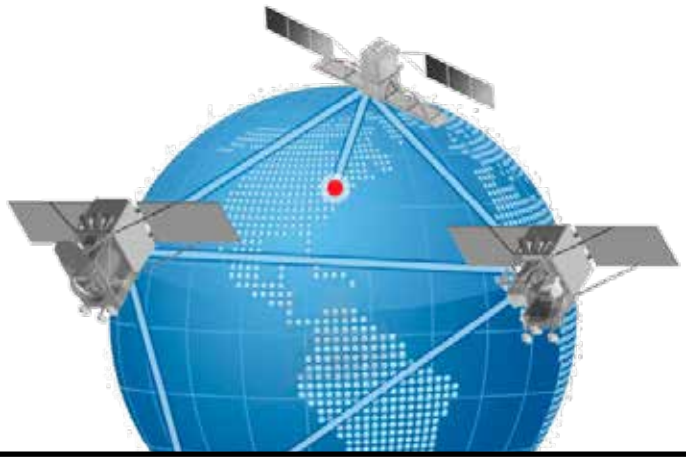
3

A word of advice to foreign faculty: "Once you get to know your way (around Moscow) a whole world will open up to you. There are lifelong friendships to be made."

FOR MORE INFO, PUBLICATIONS AND AWARDS

http://faculty.skoltech.ru/Faculty/Natalia-Berloff

Alessandro Golkar
Assistant Professor



ALESSANDRO GOLKAR'S WORK FOCUSES ON

Development of systems engineering tools and methodologies for architecting large engineering systems

Applications for robotic space exploration, human spaceflight, satellite systems and energy infrastructures.

Hardware development of small satellites for space exploration and terrestrial applications

When it comes to groundbreaking work, Alessandro Golkar can literally see the future. From his office window, the Italian researcher gazes at a vast field where tractors and builders buzz around an oval construction site, reminiscent of a mother spaceship. It is Skoltech's new campus.

"Building a university from scratch, that's probably something you get to do only once in your life", he says, his fingers tracing an architectural plan laid out on his table. "I helped design my new lab and office. Pretty cool and exciting."

But the budding buildings are not the only reason professor Golkar, who came to Skoltech from MIT's aerospace program, feels like a pioneer. "My students and I are working on a revolution in space", he smiles, "We are studying how to federate satellites to make them share unused resources and trade them, like in a smart grid. The goal is to achieve more with less."

"They say that the people who attend the first meeting, draw the initial plans, are always the ones who shape the future. Now I'm one of those people."

"We focus in our lab on concurrent engineering projects. Unlike traditional workgroups in which different teams work separately, developers and designers work together on satellite parts, spaceships or robots. The idea is to take complex multidisciplinary projects and create new concepts and new markets."

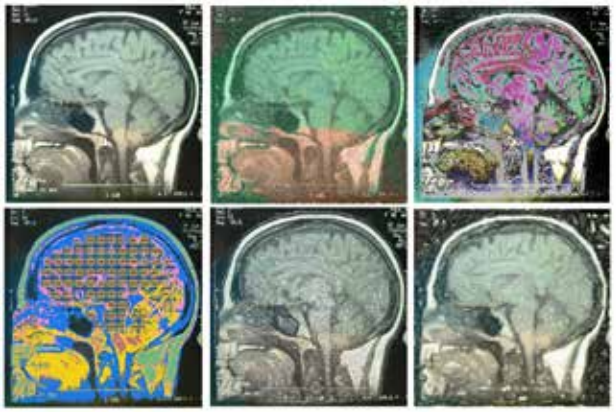
FOR MORE INFO, PUBLICATIONS AND AWARDS

http://faculty.skoltech.ru/Faculty/Alessandro-Golkar

3 THINGS YOU NEED TO KNOW ABOUT HIM

1. A licensed pilot, he flies a plane regularly. Next target: helicopter
2. First non-managerial faculty member at Skoltech
3. Loves the film "Gravity" but couldn't stand watching Sandra Bullock spacewalking with the help of a fire extinguisher.

Victor Lempitsky
Assistant Professor



PAULETTE BROWN

As head of Skoltech's computer vision group, Lempitsky deals with a tantalizing paradox: he must think beyond the box — in order to make the box smarter. Or not so dumb, as he sees it.

"Computers find it very difficult to extract information from the visual world, while human brains are excellent at that. If, for example, you want to know how many people cross a street a day, you could sit there and count. You'd probably do it perfectly. But it is so boring!" he smiles, "A computer that 'sees' is likely to miscalculate the number of people in a crowd by, say, 20%, but for most practical applications this can be just fine. One of my goals is to help computers perform the boring tasks that humans are so good at."

He then picks up a smartphone from his desk and flips it in his hand. "Smartphones are great tools for connecting the visual world with knowledge from the internet. They can be good at finding matches and the next challenge is to make them better at finding similarities. In this way, the computers can become good not only at recognizing buildings but also at telling apart species of dogs and flowers. Currently the game is about that."

"Another big challenge — and the one that I find really interesting — is to derive information from images that are not familiar to the human brain. Think for example of 3d images such as those produced by MRI scanners or some modern microscopes. That's one place where computer vision might outperform the human brain," he pauses, "even as of now, it is already very helpful."

So how close are we to the Terminator movie-like world, where robots are able to see?

"Not very close. Although the rate of the progress starts scaring me at times," he admits. "The scariest bit was when a friend of mine showed me an app that took photos and actually said what they were. The accuracy was impeccable and even complex and uncommon objects were recognized in a matter of seconds. It looked as if computer vision was finally solved. I was scared, although I must confess, not of Terminator but of the fact that I was out of job. Fortunately to me and my colleagues, the app description that we looked up on the Internet said that the pictures were sent to the Philippines, where some guys just typed in what they saw in the photos. It will still take a big effort to make a similar app that does not fake computer vision."

VICTOR LEMPITSKY'S WORK FOCUSES ON

Computer vision: Designing computer systems that extract, organize, and quantify information contained in images of various types and origin

Visual recognition: Developing robust and flexible machine learning and optimization techniques able to handle and adapt to the diversity of image data in the modern world

Biomedical image analysis

3 THINGS YOU NEED TO KNOW ABOUT HIM

1 Victor leads Skoltech's Computer Vision Group.

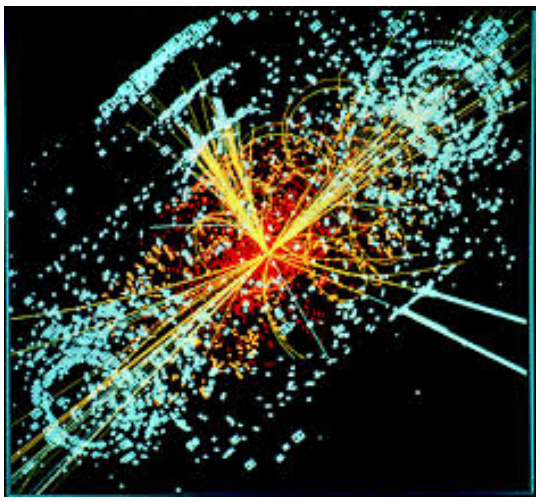
2 He has worked as a researcher at Russia's Internet search giant Yandex, the University of Oxford, and with Microsoft in Cambridge. He chose Skoltech because of "the independence I have here, and the chance to collaborate with biologists and researchers from other disciplines."

3 When this amiable researcher steps onto the soccer field, he is transformed into an unabashedly goal-oriented player. Some colleagues and students seem to be in awe of his predatory scoring instinct. Others just high-five him.

FOR MORE INFO, PUBLICATIONS AND AWARDS

http://faculty.skoltech.ru/Faculty/Victor-Lempitsky

Anatoly Dymarsky
Assistant Professor



ANATOLY DYMARSKY'S WORK FOCUSES ON

Strongly coupled systems, when the constituent parts of a complex system cannot be considered in isolation. Examples range from interacting elementary particles to electric power systems.

Anatoly Dymarsky's resume reads like a list of the best universities in the English-speaking world: a Ph.D. from Princeton, esearch positions at Stanford and the University of Cambridge, and a year as a visiting professor at MIT. "Skoltech faculty visit MIT to strengthen their professional skills in the areas most needed," he says "My experience was mainly academic and I had little exposure to entrepreneurship. As MIT is well-known for its entrepreneurial ecosystem, this is a chance for me to earn invaluable experience."

So after working and researching in centuries-old top institutions in America and the UK, why join Skoltech, a young, private Russian university?

"I was looking for a place without interdisciplinary boundaries, where cross-cutting research is encouraged. I'm a theoretical physicist. But I am also interested in areas that are not considered part of physics, like engineering or quantitative biology. I didn't want to make a choice."

Skoltech doesn't have academic divisions or departments. There are no restrictions when it comes to research. So I'm working with a computer scientist now applying machine learning to improve control of electric power systems."

"As a professor, my ultimate goal is to provide Skoltech students with knowledge that will enable them to thrive in the most competitive environments around the world. The point here is not to follow in someone's footsteps. We have to create our own way."

FOR MORE INFO, PUBLICATIONS AND AWARDS

http://faculty.skoltech.ru/Faculty/Anatoly-Dymarsky

3 THINGS YOU NEED TO KNOW ABOUT HIM

1. Before specializing in physics Anatoly worked as a TV journalist
2. He is an avid Alpine skier
3. Anatoly enjoys Boston but loves Moscow because: "It is such a vibrant cosmopolitan city."

Skoltech

MIT Skoltech Initiative

Partnership with MIT

"You know, I've just returned from MIT..." Queuing at the Skoltech cafeteria, you would probably notice the countless references to MIT by small — and big — talkers.

On October 26, 2011, the newly created Skoltech signed a trilateral agreement with the Massachusetts Institute of Technology (MIT) and the Skolkovo Foundation, and launched an invaluable partnership whose aim is to build capacity in education, research and entrepreneurship programs at Skoltech. The agreement has been extended to a period of four years.

The result is the MIT Skoltech Initiative, which serves as a portal connecting the two scientific communities. MIT acts as an advisor to Skoltech on programs, structure, and curriculum, while researchers at both institutes benefit from new opportunities for intellectual exchange, network building and shared research.

The flurry of activity is not only about here and now. The focus and purpose lies ahead, beyond the initial agreement. Leadership from both sides envision a core strategic partnership dedicated to further building and enhancing capacity at Skoltech, and to advancing Russian participation in the global innovation community.

Nobel Laureate Phillip Sharp (medicine) speaks at Skoltech's conference *Toward Therapies of the Future*, May 2014

4 THINGS YOU MIGHT WANT TO KNOW ABOUT THE SKOLTECH MIT PARTNERSHIP

1. Skoltech faculty visit MIT for a one year Leadership Program and gain hands-on experience in key areas: Patent registration, bootstrapping a start-up business and securing funding for research are all on the agenda.
2. MIT scholars and researchers, including Nobel laureates and leading scientists, make frequent journeys from Cambridge to Moscow. Some of them decide to stay and become part of the Skoltech faculty.
3. The MIT Russia Program matches MIT students with paid industrial internships and research opportunities in Russia. Participating students come from diverse backgrounds including engineering, architecture, science, and management.
4. MIT has a historical connection to Russia: it was partially modeled on the "Russian School" of engineering education, founded at the Moscow State Technical University in 1830

FOR MORE INFORMATION

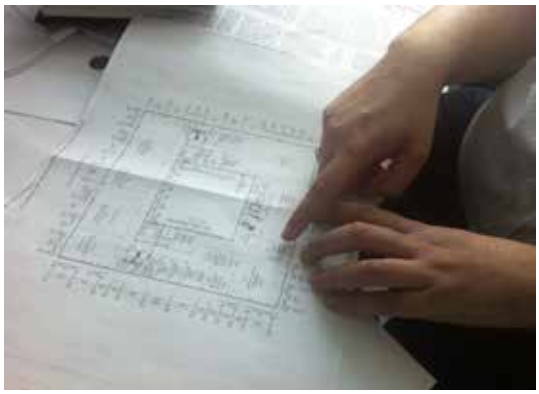
http://web.mit.edu/sktech/

http://www.skoltech.ru/en/about/mit/

Careers and Positions

Being a unique university is an exciting challenge. Accordingly, The Skolkovo Institute of Science and Technology (Skoltech) is recruiting talent in science and technology.

Professor Natalia Berloff, Dean of Faculty (2nd from left) and professor Dmitri Kharzeev (2nd from right) announce the winner of the 2014 Science Drive initiative at Startup Village



The Russian government has long seen it as a priority to lure Russian scientists back from abroad. But Skoltech has not only reached out to the **RUSSIAN-SPEAKING DIASPORA** in order to reverse the brain drain. It also serves as a portal and actively works to provide **LEADING PROFESSORS AND SCIENTISTS FROM AROUND THE WORLD** with unique research opportunities.

We seek candidates in **TENURED** and **TENURE-TRACK POSITIONS**. Skoltech has a tenure and promotion system modeled on US practice, with international peer review and three regular professorship levels: Assistant, Associate, and Full. There are also positions of Professor of the Practice, Visiting Professor, and Adjunct Professor.

We offer opportunities for both faculty and post docs in and across **FIVE TECHNICAL FOCUS TRACKS**, as well as in **CROSS-CUTTING AREAS** and in **INNOVATION AND ENTREPRENEURSHIP**.

SINCE OUR TOP PRIORITY IS TO GROW A COMMUNITY OF BRIGHT AND DRIVEN RESEARCHERS WE ARE OPEN TO APPLICATIONS FROM STRONG CANDIDATES IN ALL AREAS OF SCIENCE AND TECHNOLOGY RELATED TO OUR PRIORITY THEMES, LISTED BELOW.

INFORMATION SCIENCE AND TECHNOLOGY (PRIORITY AREAS): machine learning and artificial intelligence, systems and networks, big data-related areas, electronic materials and devices, quantum technology, photonics

BIOMEDICAL SCIENCE AND TECHNOLOGY (PRIORITY AREAS): computational and systems biology, immunology and infectious disease, gene- and nano-medicine, regenerative medicine, neuroscience, translational medicine

ENERGY SCIENCE AND TECHNOLOGY (PRIORITY AREAS): hydrocarbon fuel production and transportation, hydrocarbon processing, electric power systems generation and distribution, electrical energy storage, energy efficient systems, energy and the environment

SPACE SCIENCE AND TECHNOLOGY (PRIORITY AREAS): supporting humans in long term space exploration, design and construction of small satellites, utilization of space data for communications, positioning, and earth system information collection, lunar and planetary engineering and science, safety engineering, propulsion

NUCLEAR SCIENCE AND TECHNOLOGY (PRIORITY AREAS): nuclear energy safety, materials for extreme environments, non-energy applications of nuclear and radiation technologies, human and biological radiation effects

CROSS-CUTTING AREAS: advanced materials (in particular, composite materials), computational and data-intensive science and engineering, human factors engineering

ENTREPRENEURSHIP AND INNOVATION (including commercialization, product design/development, manufacturing, large scale systems)

FOR ADDITIONAL DETAILS, PLEASE SEE THE PAGES DEDICATED TO LISTINGS, FACULTY AND POSTDOCS

http://faculty.skoltech.ru/Positions/Listings

http://sktech-search.mit.edu/

http://sktech-postdoc.mit.edu/

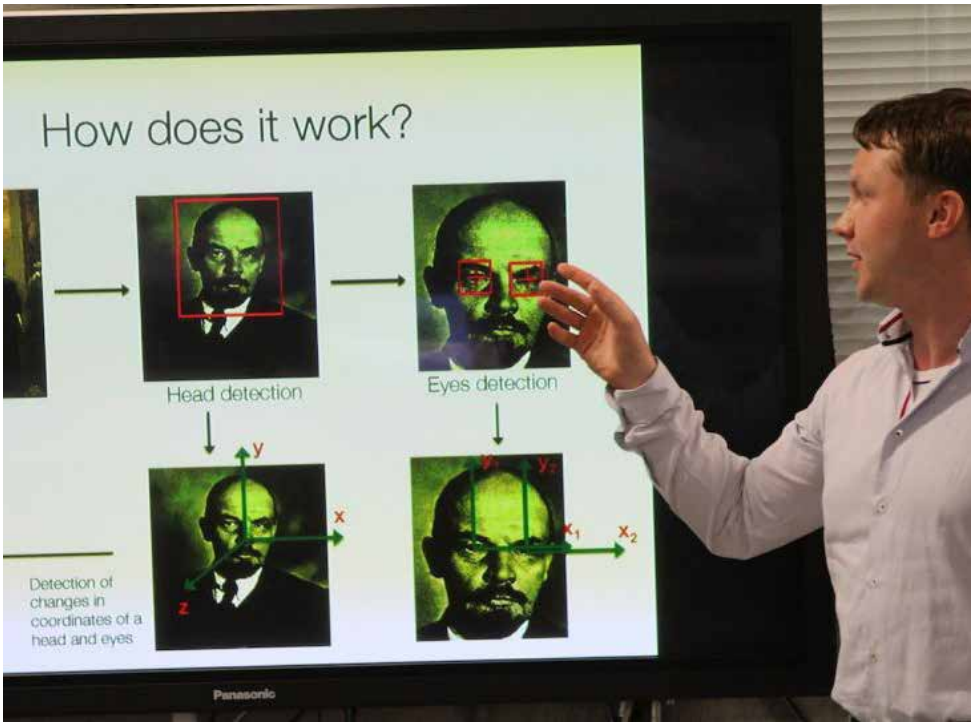
Funding

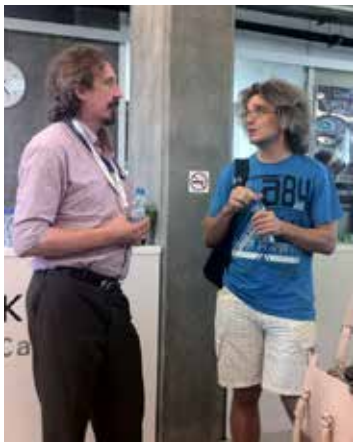
Each faculty member receives a generous start up package from Skoltech, designed to cover about 50% of research costs for the first four years. The other 50% of research funding is given directly by Skoltech through the CREIs for the foreseeable future.

The funding package includes post-doctoral associates, PhD students, MS students, technicians, visitors and equipment support. The number and amount depend on the need, type of research (theoretical, computational, or experimental) and rank of appointment. The package is **COMPETITIVE WITH TOP INTERNATIONAL UNIVERSITIES.**

CREIS PROVIDE SUPPORT comparable to or larger than the start-up packages and access to centralized facilities. CREIs also offer funding opportunities including matching **GRANTS** from external proposals and other incentive funding.

SALARIES at Skoltech are internationally competitive and benchmarked with US universities. They are also adjusted for the cost of living in Moscow.





5 THINGS YOU MIGHT WANT TO KNOW ABOUT OUR POSITIONS

1. Faculty will lead the development of a new curriculum and innovative research structure
2. Researchers will have the opportunity to spend their first year at MIT to develop classroom materials and launch new research collaborations
3. Teaching and research are carried out in the English language.
4. We know what it means to take a leap of faith. We offer internationally competitive salary and benefits, startup packages, and opportunities for substantial research funding.
5. Skoltech is committed to diversity and equality, and all are invited to apply without regard for gender, race or national origin.

FOR MORE INFORMATION

http://www.skoltech.ru/faculty

Skoltech Milestones

It might be true that even the longest road begin with the smallest step. Yet Skoltech has already covered quite a distance since 2009, when Russia announced its plans to create a contemporary technical center that will incorporate research, education and innovation.

Here are some of the milestones in Skoltech's journey so far:

2011

APRIL 25
Announcement of plans to found Skoltech

OCTOBER 26
A newly created Skoltech signs partnership agreement with the Massachusetts Institute of Technology (MIT)

DECEMBER 19
Skoltech launches campaign to raise $2 billion for endowment

2012

Beginning of 2012 First faculty hired and pilot group of M.Sc. students selected

JANUARY
The Center for Entrepreneurship and Innovation (CEI) announces its Innovation Support Program

JULY 9
The Skoltech Board of Trustees approves the first three CREIs — Centers for Research, Education and Innovation: Stem Cell, Infectious Diseases and Functional Genomics, and Energy Storage

AUGUST 9
President Edward Crawley rings a bell and launches Skoltech's first course, the Innovation Workshop

SEPTEMBER
M.Sc. students travel to four different international universities for one year abroad and begin programs in Energy Science and IT (Information Technology)

OCTOBER 28
M.Sc. students Vahe Taamazyan and Nikita Rodichenko win 1st place at the TAPPED Hackathon in Boston, Massachusetts

NOVEMBER 2
Skoltech signs a cooperation agreement in the fields of education, science and technological development with major international corporations operating in Russia, including Intel

2013

2013 Skoltech researchers begin to submit and publish in journals and Top-tier conferences.

FEBRUARY
M.Sc. student Anastasia Uryasheva gains Skolkovo Resident status for her start-up company Sadko Mobile

APRIL 8
Skoltech President Edward Crawley signs a three-sided agreement to create the first CREI — the Center for Stem Cell Research. The Vavilov Institute of General Genetics, Russia and University Medical Centre Groningen, the Netherlands, joined Skoltech as partners.

MAY
Skoltech students reach the 10 finalists at MIT's 100k Competition with an application for simplifying satellite photography.

MAY 28
Skoltech participates in Startup Village events, organizing seminars and supporting start-up companies

JUNE
Skoltech launches a double degree program along with the Moscow Institute of Physics and Technology (Phystech)

JUNE 20
Skoltech signs a five-year collaboration agreement with St Petersburg State University (SPbU).

SEPTEMBER 2
First day of Skoltech classes at the Skolkovo Innovation Center (Hypercube). M.Sc. students in Biomedical Science and Technology begin a pilot year abroad

SEPTEMBER 5
The Skoltech Colloquium kicked off its first seminar

OCTOBER 12
Groundbreaking ceremony of the new campus building.

2014

APRIL
Science Drive a program to select promising Russian physicists that will work in Manchester, UK under the guidance of Noble laureate Andre Geim.

MAY 27-28
International biomed conference attended by Nobel laureates in Medicine Philip A. Sharp and Shinya Yamanaka

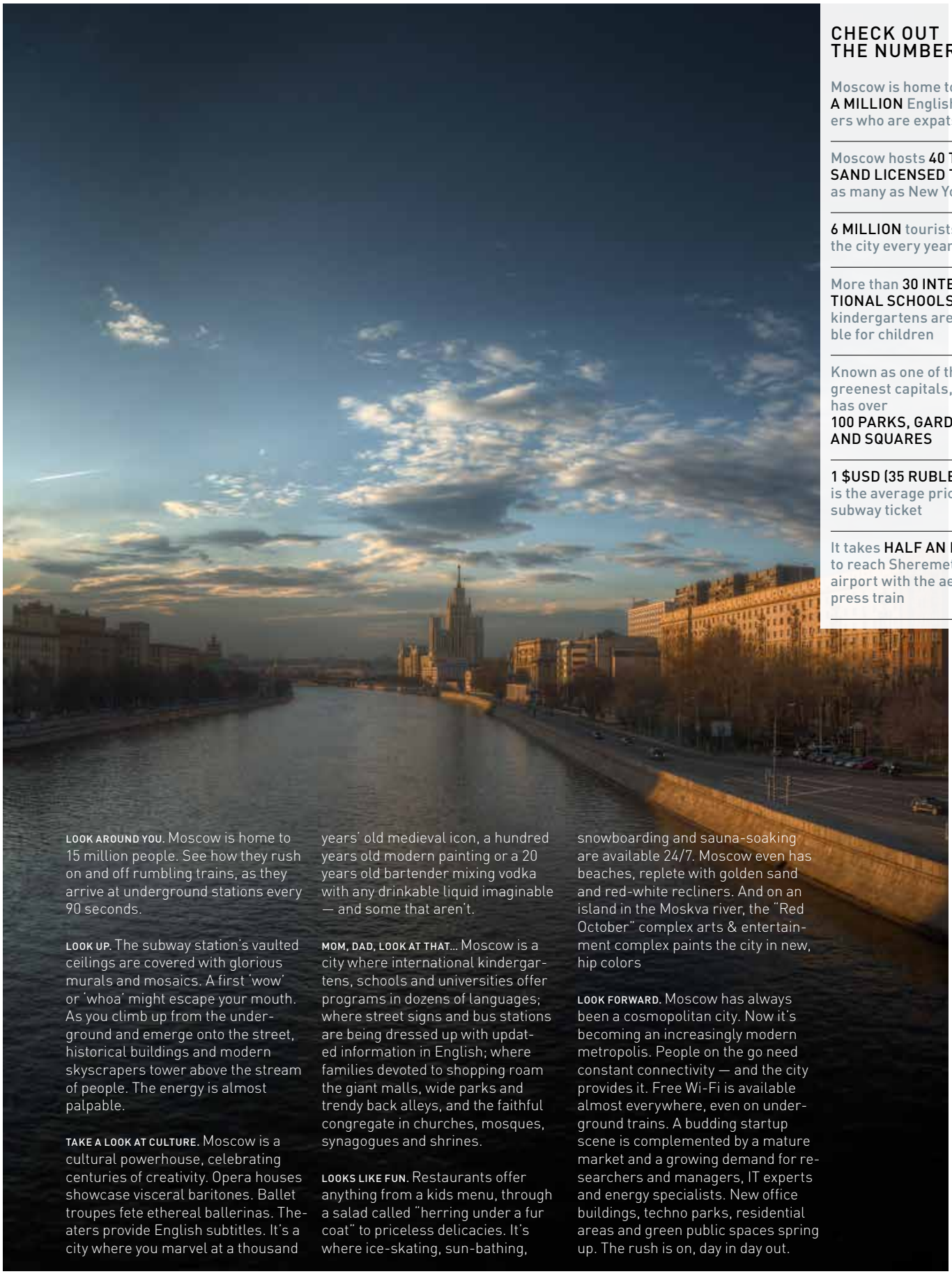
SEPTEMBER 2014
Skoltech begins educational programs in all five of its strategic areas: Biomedicine, Energy, IT, Nuclear, and Space.

By 2020

By 2020, Skoltech plans to have hired 200 professors, attained a class size of 1,200 M.Sc. and Ph.D. students and selected 300 postdocs to conduct research in its 15 Centers for Research, Education and Innovation (CREIs)

Nobel laureate Sidney Altman after giving a Skoltech seminar on antibiotics, May 2014

Life in Moscow



LOOK AROUND YOU. Moscow is home to 15 million people. See how they rush on and off rumbling trains, as they arrive at underground stations every 90 seconds.

LOOK UP. The subway station's vaulted ceilings are covered with glorious murals and mosaics. A first 'wow' or 'whoa' might escape your mouth. As you climb up from the underground and emerge onto the street, historical buildings and modern skyscrapers tower above the stream of people. The energy is almost palpable.

TAKE A LOOK AT CULTURE. Moscow is a cultural powerhouse, celebrating centuries of creativity. Opera houses showcase visceral baritones. Ballet troupes fete ethereal ballerinas. Theaters provide English subtitles. It's a city where you marvel at a thousand years' old medieval icon, a hundred years old modern painting or a 20 years old bartender mixing vodka with any drinkable liquid imaginable — and some that aren't.

MOM, DAD, LOOK AT THAT... Moscow is a city where international kindergartens, schools and universities offer programs in dozens of languages; where street signs and bus stations are being dressed up with updated information in English; where families devoted to shopping roam the giant malls, wide parks and trendy back alleys, and the faithful congregate in churches, mosques, synagogues and shrines.

LOOKS LIKE FUN. Restaurants offer anything from a kids menu, through a salad called "herring under a fur coat" to priceless delicacies. It's where ice-skating, sun-bathing, snowboarding and sauna-soaking are available 24/7. Moscow even has beaches, replete with golden sand and red-white recliners. And on an island in the Moskva river, the "Red October" complex arts & entertainment complex paints the city in new, hip colors

LOOK FORWARD. Moscow has always been a cosmopolitan city. Now it's becoming an increasingly modern metropolis. People on the go need constant connectivity — and the city provides it. Free Wi-Fi is available almost everywhere, even on underground trains. A budding startup scene is complemented by a mature market and a growing demand for researchers and managers, IT experts and energy specialists. New office buildings, techno parks, residential areas and green public spaces spring up. The rush is on, day in day out.

CHECK OUT THE NUMBERS

Moscow is home to a **HALF A MILLION** English speakers who are expats

Moscow hosts **40 THOUSAND LICENSED TAXIS** — as many as New York

6 MILLION tourists visit the city every year

More than **30 INTERNATIONAL SCHOOLS** and kindergartens are available for children

Known as one of the greenest capitals, the city has over **100 PARKS, GARDENS, AND SQUARES**

1 $USD (35 RUBLES) is the average price of a subway ticket

It takes **HALF AN HOUR** to reach Sheremetyevo airport with the aero-express train

Russian: Say it по-русски

Legend has it that Catherine the Great (a German princess before she became empress) managed to write the humble Russian word щи, meaning cabbage soup, with eight spelling mistakes: schtschi. Eight wrong letters in a two-letter-word. Not bad for a Tsaritsa. If you feel overwhelmed by this beautiful, profound and complex language, we're here to give you a push up the linguistic hill.

5 very useful expressions and words to know "Po-Russkie":

Skoltech's working language is English, so you can always revert to "howdy" and "wassup". But wouldn't you like to start your day with a thick, healthy Здравствуйте (*Zdrastvooyte*)? That means "hello".

Another way to greet people is by saying Привет! (*Preevyet*) which means 'Hi!' Better use that with people you know or are friends with.

Better be able to say 'thank you' (*Spaseeba*), 'please' (*Pozhaluysta*) and the occasional *Eezveeneete* (Sorry!) or *Prasteete* (Excuse me).

It's all in a name, right? So *Meenya zavoot* equals "My name is..."

Don't go! But if you do, then *Da sveedaneeya* means good-bye and *paka* is a friendly bye-bye.

DENNIS JARVIS, FLICKR

NICK SHERMAN, FLICKR

MAGALIE L'ABBE, FLICKR

4 BITS OF LANGUAGE TRIVIA YOU CAN SHOW OFF WITH (COURTESY BBC LANGUAGES)

About 10% of Russian words are internationalisms and bear a resemblance to English words, eg. ПРОБЛЕМА — problem, КОФЕ — coffee, or КАФЕ — café.

The main source of loan words for modern Russian is English so don't be surprised if you see words such as ФЛЭШ-КАРТА — flash card, or ХАКЕР —hacker.

There are plenty of loan words from Italian, French or German. Some of those made their way into the Russian language in the 18th and 19th centuries, such as the word ПАРИКМАХЕРСКАЯ (parikmacherskaya) — hair salon, from the German word for wig maker.

Can you read this?
«ЛЮБОВНЫЕ ПИСЬМА НУЖНО ЖЕЧЬ ВСЕНЕПРЕМЕННО. ИЗ ПРОШЛОГО ПОЛУЧАЕТСЯ БЛАГОРОДНОЕ ТОПЛИВО.»
It translates as 'Love letters have to be burned. The past provides the noblest fuel'. If the acclaimed Vladimir Nabokov, who acknowledged that Russian wasn't his first language, could pull off such stylish prose — there is always hope for the non-native speaker.

WANT TO TELL SOMEONE THAT YOU LOVE THEM IN RUSSIAN?

http://www.youtube.com/watch?v=tJMVHL-25H8

FEEL LIKE LEARNING THIS COMPLEX AND RICH LANGUAGE?

http://www.themoscowtimes.com/arts_n_ideas/article/shedding-light-on-moscows-russian-language-schools/479624.html

FOR MORE INFORMATION ABOUT SKOLTECH VISIT

WEB	www.skoltech.ru http://faculty.skoltech.ru/
TWITTER	@Skoltech @skoltech_ru
FACEBOOK	Skoltech
VKONTAKTE	Skoltech