

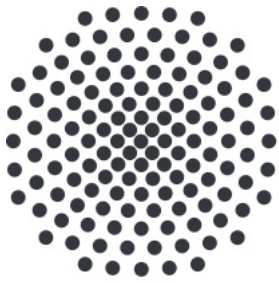
## Best friends: University of Stuttgart

Friends have a special place in our lives. We share similar interests, we grow up together, share our sorrows and joys. Friends will always support you. And among all your friends there are those who we value more than the others. We can even call them brothers or sisters - these are the best friends. The [Polytechnic University](#) also has the soul mates - the strategic partners of our university. These include the top 13 universities in the world that contribute to world higher education policies and are engaged in breakthrough research. Cooperation with the leaders of world education allows being at the forefront of science and learning from each other and sharing best practices. The Media Center launches a special project - a series of publications on strategic partners of Polytech, which will tell about joint projects, results achieved and plans for the future.



One of Politech's best friends is the [University of Stuttgart](#) (Germany), headed by Professor Wolfram Ressel. Despite the fact that the document on strategic partnership was signed only in 2013, fruitful cooperation with this university has been conducted for more than 25 years.

**Following the example of the best**



# University of Stuttgart Germany

The University of Stuttgart is Polytech's older brother; it was founded in 1829 as the United School of Arts, Sciences and Crafts. In 1967 it became the classical university of Baden-Württemberg, with the capital in Stuttgart.

Now the University of Stuttgart is one of the best technical universities in Germany and it is ranked the 263rd in the prestigious QS world universities ranking. Over 30 thousand students are studying to get a high-class education at the university, 20% of them are international students. The university is famous for the close links between engineering and natural science profiles, the connection of the educational process with practical manufacturing experience. Stuttgart is the industrial heart of Germany, such transnational corporations as Bosch, Porsche, IBM, HP, Festo, Ritter Sport, and many others are located in the region. Investments in the research activities of the university amount to millions of euros: public and private corporations finance the development of advanced manufacturing technologies and aeronautics, the development of new materials and the introduction of innovations in energy technologies.

## **Stable foundation**

In 1990, the Institute of Civil Engineering (ICE) of SPbPU and the University of Stuttgart signed a Cooperation Agreement – this was the first step in developing partnership relations between both universities. Later, in 1993, the partners started interaction in the field of computer design technologies. As well, the supercomputer center HLRS (High Performance Computing Center) of the University of Stuttgart supported and contributed a lot to establishing and equipping the Center for Cluster Technologies at the Polytech under the supervision the head of the Chair “Computer technologies in mechanical engineering” of the Institute of Metallurgy, Mechanical Engineering and Transport Professor Shabrov.



In 2005 our universities signed an agreement on student exchange, in 2011 this agreement was extended for another 6 years. This year it is planned to sign an updated agreement. Since 2009 library complexes of both universities has been successfully cooperating. The universities closely cooperate in the following thematic fields: hydro engineering and ecology, computer design technologies, modeling and visualization, engineering and transport, and others.

A wide range of research areas, active academic mobility of faculty and students, development and implementation of international educational programs - the large-scale activities of the University of Stuttgart and Polytech served as a background for signing a Strategic Partnership Agreement in 2013. "Having signed the agreement on strategic partnership, we have created a stable basis for our work. I will be very glad to contribute to the development of our relations", commented the Rector of the University of Stuttgart Wolfram Ressel.



Since then, many meetings have been held both at SPbPU and in Germany to discuss specific areas of interaction. At the conference, dedicated to summing up the results of the first year of university cooperation in the status of strategic partners SPbPU Rector, Academician of the Russian Academy of Sciences, Andrey Rudskoy underlined the success of joint activities and expressed hope for its further fruitful development: "History is written not only by politicians, but also by you and me. And if we lay a strong foundation in our relations, nobody will be able to destroy it". Today we can confidently say that the laid foundation is strong and serves a fruitful interaction between the Polytechnic University and the University of Stuttgart.

### **Personal Contribution**

A personal example is always significant for cooperation. Administration of both universities pays much attention to joint projects, academic mobility, educational and scientific processes. A mandatory item in the program of the visit of the Rector of the University of Stuttgart Wolfram Ressel in SPbPU is a lecture for students. Professor, Doctor of Technical Sciences talks about the construction and design features of the highways. And the lecture, which Professor Ressel delivered in June this year, was devoted to the peculiarities of constructing rural roads.

For special contribution to the sustainable development of the Polytechnic and strengthening ties with foreign universities, the Academic Council of the Polytechnic University took the initiative of awarding the title of Honorary Doctor of SPbPU to Wolfram Ressel. This happened in June 2015 in commemoration of the 25th anniversary of cooperation between universities. "Our universities responded to the demands of globalization and two years ago started a strategic partnership based on long-term cooperation experience," commented Wolfram Russell at the time. But the key point in this interaction, according to the Rector of the University of Stuttgart, are people who "due to science links develop confidence and mutual understanding." For example, the adviser of the Rector on international activities, Professor Wolfgang Holtkamp, delivers lectures at our university in the field of Regional Studies.



### **From mechatronics to library innovations**

Over a long period of interaction, a range of joint scientific interests has extended. For 15 years scientists of the Polytech and the University of Stuttgart have been working in the field of microprocessor technology and computer control. In this direction cooperation is carried out with leading industrial manufactures of Russia and Germany. This interaction resulted in the opening of the Educational and Scientific Center "SPbPU - FESTO" Synergy ". Polytech has been cooperating with the largest manufacturer of industrial equipment and automation systems in Baden-Württemberg FESTO for over 10 years in the network project "Synergy" (SPbPU is

training specialists using automation elements of the concern).



During the previous visit to SPbPU in June 2017, the Rector of the University of Stuttgart Wolfram Ressel visited the production site of SPbPU partner company – “Baltic Industrial Company”. At the enterprise the university Chair is created. Within the framework of this Chair the education process and joint projects on various scientific directions are conducted and implemented. Representatives of the company and the Director of the Institute of Metallurgy, Mechanical Engineering and Transport, Anatoly Popovich organized a tour for Wolfram Ressel including a visit to the company's laboratories and production departments. At the Polytech the Rector visited the laboratory “Functional Materials” of the Institute of Metallurgy, Mechanical Engineering and Transport, noting that “the industrial laboratory on the territory of the university is the way to creating excellent engineering solutions.” After discussing the specifics of the interaction between industry and science with colleagues Wolfram Russell concluded: “Some moments in your industry are unusual for Germany, in some ways you can learn from us, and we can learn from you. With constant interaction, exchange of opinions and ideas our strategic cooperation is developing, which is of a great value for us ”.

For over 10 years, the Polytechnic University and the Supercomputer Center HLRS of the University of Stuttgart have been developing a runtime environment for parallel applications on supercomputers. SPbPU scientists at the invitation of the HLRS Director, Professor Michael Resh, visited the Supercomputer Center in

Stuttgart and discussed the prospects for cooperation in the field of applications of high-performance petaflop computing systems. It should be noted that the work in this direction is conducted jointly with the Institute of Applied Mathematics (IAM) of the Russian Academy of Sciences - the leader in the development of algorithms and large software systems for high-performance computing systems in Russia. At the invitation of the Director of IPM RAS, Academician of the Russian Academy of Sciences B.N. Chetvertushkin scientists from SPbPU made presentations at the Russian-German seminar on supercomputer technologies in solving fundamental and applied problems. Collaboration with the supercomputer center of Stuttgart is also carried out in the field of computer 3D-technology design in machine building.



Via scientific events and partnership agreements, the Information and Library Complex of SPbPU and the University Library of Stuttgart also carry out joint activities. Thus, within the framework of the strategic partnership agreement at the conference “Corporate Library Systems: Technologies and Innovations”, in both universities, issues of reorganizing traditional forms of ensuring availability of resources for library users were discussed. The following year, Helge Steinweg, Director of the University Library of Stuttgart, took part in the same conference at SPbPU.

**Let's sing together!**

“I consider the interaction between our universities to be very outstanding,” Rector Wolfram Russell said in an interview. “It is carried out not only in the scientific, but also in the cultural field.” Indeed, not every university can demonstrate cultural exchanges. In the spring of 2015, the Academic Choir of SPbPU “Polygymnia” came to Germany with a tour and gave a concert at the University of Stuttgart. “When I was listening to the performance of our students and saw the enthusiastic response of German colleagues at the University of Stuttgart, I was overwhelmed with a sense of pride for our university, for our city, for our country,” - underlined SPbPU Rector Andrey Rudskoy



A year later the academic choir and orchestra of the University of Stuttgart - a team of more than 120 musicians - performed on the stage of the White Hall of SPbPU. The main musical component of the concert was folk choral music. For the performance, young musicians from Germany chose not quite folk, but traditionally German work by Karl Orff "Carmina Burana". “This program we began to prepare after the visit of the choir” Polyhymnia “, which performed Russian folk songs”, - commented the Head of the performance team Veronika Schterzenbach. The joint concert final song was the famous "Kalinka" performed by Russian and German students together. The hall sang together with the choir, which once again showed the unifying power of music. It is in the cultural interaction that Wolfram Ressel sees the future, and universities should create a positive example.

**What is next?**



Universities do not plan to stop at the achieved success. In 2017, a joint application was submitted for the EU program ERASMUS +, aimed at supporting cooperation in the field of education and professional development. Students' exchange programs will continue to develop, both short-term (within the framework of summer schools) and long-term (participation in master's programs of SPbPU). The universities will also support the academic mobility of faculty.



In the field of research, it is planned to hold seminars, schools, conferences, as well as the filing of joint applications for international scientific grants. Scientists of both universities will continue research in the field of computer technology and mechatronics. "We are proud that the University of Stuttgart is our strategic partner," underlined SPbPU Rector Andrey Rudskoy. - This university is close to us in spirit, which is reflected in our joint educational activities, scientific research as well as cultural exchange. A few years ago we celebrated 25 years of cooperation, I am sure this is not the limit - we are full of strength and ideas for the implementation of new projects. "

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