

Academic Reconstruction of South Eastern Europe

Multimedia mathematics and computer science

Centres of Excellence established in South Eastern Europe

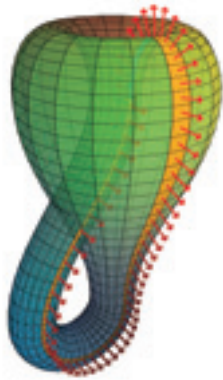


Figure: Konrad Polthier

Interactive surfaces with differential geometry

The continuing development of multimedia-based teaching and research in the field of mathematics and computer science is the goal pursued by the cooperation between Berlin (Zuse Institute, FU and TU) and the Centres of Excellence established in South Eastern Europe (Universities of Belgrade,

Niš, Sofia and Budapest). Interactive mathematics seminars are already on offer at the University of Belgrade, including in analytical geometry. Professor Neda Bokan's research team specially developed an electronic textbook for this by combining the interactive 3D geometry software "Javaview" from the Zuse Institute with database tools from the University of Belgrade. Interactive online learning modules integrated into the curricula are the result of this work. Further "e-books" on descriptive geometry and differential geometry are currently being drawn up in Belgrade and Sofia. Dr. Konrad Polthier from the Zuse Institute in Berlin praises the commitment on the part of professors, students and research assistants that serves to ensure that the multimedia technology is firmly and lastingly established at the Centres of Excellence. Other South Eastern European universities are invited to take part in the project, for example, at the project meeting being held in Belgrade from 10 to 12 November.

Info: www.zib.de/geom/projects/daad04

Fit in technical design

Agricultural machine engineering in Sarajevo

"Agricultural machines are made in Bosnia and Herzegovina, but no specialised training has been available yet," says Professor Peter Schulze Lammers from the University of Bonn. Working together with the University of Sarajevo, he developed a two-year postgraduate course in "Agricultural Machine Engineering", which can, as the transition to the Bologna model advances, be converted into a European Master's programme. University graduates have been able to enrol in the course since spring 2005. Students in the block courses learn about the technical design of farm machines, about safety questions and logistics as well as sustainable production. "The mechanisation of farming and agriculture plays a major role in Bosnia and Herzegovina, and this is why it is important to train advisers and consultants for manufacturers and farmers," explains Schulze Lammers.

Europeanising the law

4th Summer School in Croatia

21 students and four professors from South Eastern Europe discussed "Current Problems of European Integration" at this year's summer school for law students. It was already the fourth time that the Institute for Legal Harmonisation at the TU Dresden and the law faculties in Novi Sad, Zagreb, Budapest, Göttingen and Münster had invited participants to attend such a one-week workshop. "The summer courses keep the network alive and running, because this is where undergraduates, graduates and doctoral students from South Eastern Europe and from Germany can engage in extensive exchange among themselves and with professors," says Mathias Ulbrich from the TU Dresden. The students write a seminar paper which the participating universities recognise and give academic credits for.

Info: <http://gc.star-web.org/gon/privat/ceglas>



Editorial



Photo: Thomas Zettler

The university town of Sofia has much to offer

42 projects with meanwhile 175 partner faculties in South Eastern Europe form the "Academic Reconstruction of South Eastern Europe" network.

The areas in which intensive cooperation takes place today within the region and with German partners are varied and diverse and are of great importance to the region. This is clearly shown by the projects presented in the Newsletter at hand, for example, in the field of environmental and agricultural engineering, mathematics, and European law, as well as the newly created Bioethics Forum. We also present a special project in greater detail today: 88 students from South Eastern Europe are currently completing a full programme of studies in Sofia – instructed in German in degree courses that were jointly developed with German partner universities and that, in some cases, offer a German-Bulgarian double degree.

And last but not least, another piece of pleasing news: the most recent Tempus-JEP selection round saw German universities compete as successfully as never before in the CARDS area (i.e. the area responsible for SEE). 7 of the 29 successful proposals in this area involve a German contract partner! This, too, underlines the quality of the "Germany - South Eastern Europe Networks" that have been created – including many with help from the Stability Pact.

*Dorothea Fitterling
Head of the Northern Hemisphere Department at the DAAD*



Photo: Thomas Hoffmann

Important for success: academic exchange...



... and personal contacts

Out of Responsibility for Life

The "South Eastern Bioethics Forum" network aims to promote training, research and European cooperation in the field of bioethics. A Reference Centre for South Eastern Europe is to be established in Croatia.

Determining exactly when life begins and when it ends, research on embryonic stem cells, the pros and cons of cloning programmes, the benefits and drawbacks of genetically-modified crops – these are all topics related to bioethics. "Discussions on bioethical questions are already well advanced in some South Eastern European countries, such as in Croatia, while in other countries the process is just beginning," says Professor Thomas Sören Hoffmann from the Ruhr University Bochum. He is the project coordinator of the "South Eastern European Bioethics Forum", which the Universities of Sarajevo, Skopje, Tirana, Zagreb and Bochum founded this year with the support of the DAAD. The network has set itself the goal of firstly providing background scientific research to support social and political discussions and secondly addressing the related legal questions. In order to incorporate bioethics into all areas of society, the plan is to introduce or expand the subject at universities, both as a degree programme and as interdisciplinary research. Furthermore, the bioethicists want to promote school training in this field.

"Bioethics has a key role to play in many societal questions. A responsible state must bear this in mind."

The network was initiated by Professors Ante Čović from Zagreb and Walter Schweidler from Bochum. They had already launched a German Research Foundation (DFG) project on "Bioethics in Southern and South Eastern

Europe". Čović is active in the creation of a Reference Centre in Croatia where the bioethics discussions and legislative activities of the South Eastern European countries are to be documented. "Bioethics has a key role to play in many societal questions. A responsibly-structured state must bear this in mind," says the network's Croatian founder. Schweidler emphasises the training aspect in the Bioethics Forum: "Bioethics is not least about protecting human life from every form of instrumentalisation. This cannot be achieved by laws alone; rather, it represents a comprehensive educational task."

Legislators called upon

Often, there is not even any legislation to govern bioethical questions and to stop abuse and misuse. "In some cases, the new constitutions of the countries of South Eastern Europe are still unclear on where exactly the field of bioethics is to be placed in the legal culture. We are following this process with great interest," says Hoffmann. In Romania, for example, egg cells (ova) have been traded for many years, a practice that still finds itself in a legal grey zone. Due to financial need, Romanian women risk their lives by subjecting themselves to amateurish operations. The egg cells are sold to childless couples, for example, in the United States, Israel and in other rich countries, and researchers, too, such as in Britain, have already shown an interest in them.

In some cases, rules are obstructed by international interests. For example, a draft bill against cultivating genetically modified crops that is supported by the government and the people of Croatia has been on ice since 2002. The law is still

not in force today, since the Croatian government fears that the United States may take it before the World Trade Organisation (WTO) – with the resultant WTO penalties.

"Bioethical questions are also political questions," stated Croatia's President, Stjepan Mesić, in his welcoming address to the Inaugural Conference of the Bioethics Forum in June 2005. Experts from the network met with colleagues from Greece, Italy, Austria, Romania, Bulgaria and Slovenia at the specialist conference. The conference is a firm part of the network agenda and the plans are to hold it annually in the future. As from 2006, summer schools for young researchers and students will be added. In three years – estimates project coordinator Hoffmann – the international degree programme in Bioethics will be able to start.

The contents of the 2-year Master's programme are currently being discussed by representatives of the five universities: Zagreb, Sarajevo, Skopje, Tirana and Bochum. Philosophical ethics is on the agenda just as are law, political science, medical ethics and theology. And this incorporates both Christian denominations as well as Islam. "Answers to bioethical questions differ, depending on religious background and convictions. For example, Islam has a different view on the beginning of life and the end of life than Christian religions – we consider these differing perspectives in the degree programme," says Hoffmann. The summer schools are integrated into the degree programme and are equipped with ECTS points that can be transferred Europe-wide. "That makes it interesting for students from other countries to take part in the summer schools. We attach great importance to international exchange during the studies."

Positive image for the Balkans

DAAD scholarship holders from several South Eastern European countries study together in German-instructed degree programmes in Sofia. A new sense of community develops and at the same time students acquire the qualifications needed for leading positions.

"The history is known to all: the devastating Balkan wars not only destroyed the state of Yugoslavia, but also severed many relations and contacts in the region," said Dorothea Fitterling, Head of the Northern Hemisphere Department at the DAAD, at the opening of the first "Third Country Scholarship Holder Meeting" held in Sofia from 20 to 22 May. The severed ties have been revived over recent years and new contacts made – including in the form of students from South Eastern Europe studying together in the Bulgarian capital.

Thomas Zettler, responsible at the DAAD for the "Academic Reconstruction of South Eastern Europe" programme, states: "When we created the so-called Third Country Scholarships our intention was to establish and link up networks across the new and old borders of South Eastern Europe. I'm delighted to see that the scholarship holders are so open with each other and that a new common identity is forming among young people who, in just a few years, may perhaps hold leading positions in their home countries."

Bulgarian-German double degree

What makes the Third Country Scholarships special is that the young DAAD scholarship holders do not come to Germany, but study in Bulgaria in German. "Since German-instructed degree courses based on partnerships with German universities were already offered even before the fall of Yugoslavia, it seemed natural to choose the South Eastern European neighbour as the location for the scholarship programme," says Zettler. Students at the German Faculty (FDIBA) of the Technical University of Sofia can take courses in mechanical engineering, computer science or business administration (MBA) and at the University of Chemical Process Engineering and Metallurgy they can take the German-instructed degree programme in chemical process engineering." The close cooperation between the German Universities of Karlsruhe (mechanical engineering and computer science), Braunschweig (business administration), and Hamburg-Harburg (chemical process engineering) and the Bulgarian partners guarantees the delivery of high-level training. The German universities support the students in their search for internships and work placements in Germany and offer opportunities for completing part of their Diplom thesis in Germany. A Bulgarian-German double degree

has been conferred for several years now in mechanical engineering and business administration, while the other subjects are working to be able to confer this double degree as well in the future.

"At the start of their studies in Sofia, many only know very little about their neighbours on the Balkans and just as little about Bulgaria," observes the Bulgarian student of mechanical engineering Nikolay Angelov. But this changes very quickly, says the tutor, "The scholarship holders experience another country from their region. This experience helps them become more independent, provides them with social skills and makes them more tolerant. They notice that they are in fact related rather than strangers."

It is especially among the young generation that ethnic borders no longer seem to present insurmountable obstacles: Albanians sit next to Serbs, Croats next to Bosnians – they not only study together, but also party together. "My friends all come from Macedonia or Serbia. We often discuss our countries and traditions, that's what makes studying together here interesting," reports Alketa Merkaj from Albania. Her fellow student from Montenegro, Ana Radoman, agrees: "We go out together, to the disco or a café. We also learn together and prepare together for our exams."

Arton Preniqi belongs to the first generation of scholarship holders and has almost completed his studies at the FDIBA. The Kosovar hopes that the contacts will remain intact, even after graduation: "If we can preserve the good cooperation, then we DAAD scholarship holders can contribute towards creating a new positive image for the whole region – that's important for the economic and social upturn."

This winter semester saw the fifth generation of DAAD scholarship holders begin their studies



Studying together...



Photo: Elisabeth Lazarou

... forms the basis for cross-border friendships

in Sofia. In the future the universities plan to fill their degree programmes themselves by engaging in appropriate marketing. For the DAAD, this shows an emerging positive development. Thomas Zettler says: "The quality of the studies is convincing, that's proven by the self-paying students that we already find in the faculties today. If the universities advertise the programmes more proactively and continue to be supported by industry in terms of internships and work placements, then I'm sure that the German-instructed programmes offered by the two universities in Sofia will be able to establish themselves in South Eastern Europe."

Tutor Nikolay Angelov is also convinced by the graduates' specialist knowledge and draws attention to the fact that they have also gained experience in two foreign countries – studies in Bulgaria, internship and Diplom thesis in Germany: "Those are excellent prerequisites for leading positions in local and foreign companies."

Third Country Scholarships for Sofia

"Since 2000/2001 and as part of the "Academic Reconstruction of South Eastern Europe" programme, the DAAD has been awarding scholarships for studies at the Technical University of Sofia, and since 2001/2002 at the University of Chemical Process Engineering and Metallurgy.

- **Scholarship holders:** 88 in four degree programmes
- **Countries of origin:** Albania, Bosnia and Herzegovina, Macedonia, Serbia and Montenegro, Kosovo
- **Applicants 2005:** 68 for 20 places
- **Self-paying students:** 11



Photo: Private

Tracking Down Environmental Polluters

Modern analytical methods are the basis on which environmental protection is built. Summer schools organised by the university partners in Novi Sad, Belgrade, Sofia and Dortmund are providing students with practical training in these methods. The Head of the Institute of Environmental Research at the University of Dortmund, Prof. Dr. Michael Spittler, explains the effect that the summer schools have.

How environmentally aware is South Eastern European society?

There is an environmental awareness, above all among students. But, analysis equipment and technical know-how were lacking for a long time. When our university cooperation began five years ago, the DAAD donated a mass spectrometer. This device is also able to detect small amounts of toxic substances in soils and water. In terms of precision, it can be compared with modern doping analyses. In the near future we will also get an infrared spectrometer. Both devices are located at the University of Novi Sad, which is home to the South Eastern European Centre for Applied Spectroscopy. The devices can be jointly used for teaching and research by scientists from the centres in Novi Sad, Belgrade and Sofia.

How strongly is the environment polluted?

At some places still, regrettably, very much so, because of a lack of financial resources. For example, removing the oil-polluted soils around the refinery in Novi Sad would cost several million euros. But we don't have the international sponsors for this. In addition, some of the oil pipelines continue to leak. Meanwhile, however, the waterworks are able, with the help of the German Federal Agency for Technical Relief (THW), to keep the drinking

water so clean that it presents no immediate danger to the population.

How is your university cooperation contributing to this?

In the summer schools held in Belgrade, Novi Sad and Sofia we give students practical training in the most modern analytical methods so that they can independently identify and solve emerging environmental pollution problems.

The summer schools last just a week – do they really have a sustained effect?

Yes and in many ways. The Universities of Novi Sad, Belgrade and Sofia have integrated the contents of the practice-oriented (applied) summer schools into their curricula for chemical engineers. We see that as a success. We also have an impact in other countries: the summer schools are each attended by 15 to 20 students from throughout South Eastern Europe. When they return home, they take what they have learnt with them as impetus to their universities and so contribute to the changes taking place there. This is how I came to be in discussion with the Universities of Maribor, Banja Luka and Skopje, where the course contents and curricula are also to be brought into line with modern methods. Another point: many students continue to keep in contact with each other after the summer school and so form a network. And, last but not least, the graduates also improve their career prospects with the additional qualification they gain, even though the situation on the labour market continues to be very difficult.

How will the cooperation continue now?

We have initiated a process with our partner universities that will hopefully develop its own inherent impetus. We're already on the right path as far as content is concerned. And in terms of financing, the signs also give me reason to be positive. For example, the Serbian Ministry of Science and Environment Protection is also contributing towards keeping the South Eastern European Centre for Applied Spectroscopy running. And we will continue to work at our partner universities to introduce our students to scientific topics and to provide doctoral and postdoctoral students with continuing training and further qualifications.

Diary October - December 2005

2-8 Oct	4th SimLab Course on Parallel Numerical Simulation, in Bitola, TUM, Bungartz
3-6 Oct	Scientific Conference "Research Strategies in Dementia", in Zagreb, Riederer
6-8 Oct	European Doctoral Seminar TU Budapest, U Bamberg, Wenzel
8-14 Oct	Second Annual International Course "Computational Engineering – Thermo-Fluid-Dynamics", in Kopaonik/Serbia, University of Erlangen, Dinkelacker
16-17 Oct	ForeSTEP Symposium "Regional Forestry Research", U Pristina, FH Eberswalde, Mussong
18-21 Oct	Finance Seminar U Budapest, U Bamberg, Wenzel
21-22 Oct	Postgraduate Seminar Social Work and Education with Mentally Ill and Disabled People (Sociotherapy; Project Coaching)", in Skopje, EFH Nuremberg, Müller
24 Oct-2	Intensive Course "Applications of Algebra and Discrete Mathematics in Computer Science", in Blagoevgrad, UGH Duisburg, Gonska
27-29 Oct	Sarajevo Economics Conference GI Sarajevo, U Bamberg, Wenzel
27-29 Oct	4th Symposium on "Materials and their Applications" , in Tetovo, TU Freiberg, Oettel
1-30 Nov	European Economic Studies Master's Programme, "Advanced Microeconomics" Course, in Tirana, U Bamberg, Wenzel
4-5 Nov	Postgraduate Seminar "Social Work and Education with Groups and Families; Social Competence", in Skopje: EFH Nürnberg, Müller
10-12 Nov	5th Symposium on "Materials and their Applications" , in Tetovo, TU Freiberg, Oettel
20-23 Nov	DAAD Intensive Specialist Seminar "Flow and Combustion Computations", TU Sofia, University of Erlangen, Dinkelacker
1-31 Dec	European Economic Studies Master's Programme, "Advanced Macroeconomics" Course, in Tirana, U Bamberg, Wenzel

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