

Academic Reconstruction in South Eastern Europe

University collaboration in Teaching, Study and Research



DAAD Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

www.daad.de/stabilitaetspakt

Environmental technologies in science and research

Practice-based: CAS summer schools

The Centre for Applied Spectroscopy (CAS) is successfully strengthening collaboration between scientists and students.

Experimental environmental research is regarded as an important field in South Eastern Europe. "The Centre for Applied Spectroscopy" (CAS) bundles the analytical/chemical capacities of the Universities of Belgrade, Novi Sad, Skopje, Sofia and Maribor in this field. The most important element of the CAS project are the summer schools which impart sound knowledge to young academics and researchers. "The improved equipment through mass spectrometry, UV and IR spectrometry provided from DAAD funds after the wars led to attractive, practice-related themes being offered", explains Professor Spiteller of the University of Dortmund. These are, for example,

analyses of oil-contaminated soil or also technological methods in the foodstuffs industry. "The test reports are standardised so that they have now found their way into the student curriculum". Around 160 students from 13 countries and from 24 different universities have visited the summer schools so far. Excellent preconditions, therefore, for being able to pass master's and doctoral examinations. And this remains sufficiently important, especially as long as potential young academics and researchers leave the region during their training. The CAS partners observe a pleasing different tendency: further participants (for example from Poland, the Czech Republic and Turkey) take part in the courses, which gives the project a new international and financial perspective.

Information: www.summerschool-cas.org

Editorial



Currently, 17 specialist networks sponsored by the DAAD are strengthening and internationalising scientific teaching at South Eastern European universities. The greatest challenge remains creating perspectives for young academics and researchers not only from but also within the region. The field of degree study is already showing successes. It is now a matter of enabling the best graduates to pursue a scientific career.

Network partners report on this, how they build up master's and doctoral degrees together and promote their young scientists through targeted German, third party country and sur-place scholarships. A further realisation: promoting research potentials in the MA, PhD and post-doctoral field is becoming ever more relevant for creating perspectives locally.

In addition, we would like to introduce especially sustainable co-operation formats: project partners link up scientists from South Eastern Europe who have established themselves within the German scientific system with the region again via their network.

Finally, a promising link-up of regional DAAD and GIZ initiatives in the field of jurisprudence is starting up. The aim is to contribute together to the European integration of the Western Balkan states.

Dr. Anne Rörig
Stability Pact for South Eastern Europe

Internationally competitive

A project of the University of Hanover promotes knowledge and research in the specialist field of environmentally friendly energy technology.

The basis for developing environmentally friendly energy technology which can also provide a better quality of life in South Eastern Europe is being laid with experimental and digital methods in air conditioning and heating technology. Professor Friedrich Dinkelacker of the Institute for Technical Combustion at the University of Hanover is working closely here with the University of Sofia (Bulgaria) and the universities of Niš (Serbia) and Skopje (Macedonia). "The current DAAD project introduces students to the topic of research, promotes doctoral students and improves contact to colleagues and also to regional companies and authorities", explains the professor. What is important is the setting up of an internationally competitive research network with more PhD



Photo: private

Full of energy: students in Macedonia.

students. "In the partner countries we can hold three courses a year for students and doctoral students". Through the varied specialist impulses, local "centres of excellence" have formed at the locations involved at which local grant holders find outstanding working opportunities.

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Study and research collaborations on equal terms



Photos: Haldor Zaake-Hertling (Foto links), Witri Wahyu Lestari

Ass. Prof. Dr. Vlamdimir Ivanovski from Skopje with doctoral student Martyna Madalska in Leipzig (left); poster presentation in Cluj-Napoca with participants from Skopje, Tetovo and Leipzig.

Network catalysers for South Eastern Europe

For around six years, the Master and Postgraduate Programme in Materials Science and Catalysis – “MatCatNet” for short – has been promoting study and research conditions for young academics and researchers in chemistry.

It began with a meeting of the former ambassador of the Republic of Macedonia, Professor Goran Rafajlovski, with scientists at the University of Leipzig. It already laid the basis for a transnational network in 2004 – Professor Evamarie Hey-Hawkins of the Leipzig Faculty for Chemistry and Mineralogy initiated collaborations with colleagues from the Institute of Chemistry at Ss. Cyril and Methodius University in Skopje as well as the “Babeş-Bolyai” University Cluj-Napoca in Romania. The result: MatCatNet, a network project, which the DAAD has been promoting since 2005. The State University of Tetovo in Macedonia joined in 2008, and three further faculties of the universities of “Goce Delčev” Štip (Macedonia), Niš (Serbia) as well as Prishtina (Kosovo) were

integrated into the network in 2011. Research work on modern catalytic processes has great significance in the pharmaceutical and chemical industries. In practice, new, more active and selective catalysers serve to improve environmental conditions, for example by means of exhaust and waste water cleaning processes. Amongst other things, young scientists from Leipzig, Skopje and Cluj-Napoca are researching immobilised ferrocenyl phosphine derivatives.

“The promotion of research in fields of catalysis which correspond to the state of the art is very important for South Eastern European countries,” says Evamarie Hey-Hawkins. After all, it is important to keep up with scientific and technological

progress in European industrial nations. “Industry is very interested in innovative processes”, adds Dr. Alexandra Hildebrand, who competently supports Professor Hey-Hawkins as scientific co-ordinator.

For this reason, companies have invested large amounts of money in recent years – such as the British market leader Johnson Matthey, who manufactures car catalysers and has built a plant in Macedonia. “Such investments entail a large requirement for qualified researchers”, says Dr. Hildebrand. Furthermore, young scientists become familiar with the theoretical methods of applied industrial research and can better qualify themselves for corresponding posts on the job market.

In demand: young scientists in MatCatNet



“We can work together internationally as well as in more modern and better equipped laboratories.”

Natalja Atanasovska,
Ss. Cyril and Methodius
University, Skopje



“The research and the course have a positive effect on your career, world view and self-confidence.”

Ivana Jevtovikj,
Ss. Cyril and Methodius
University, Skopje and the
University of Leipzig



“The network is the decisive thing to create a solid basis for profound research.”

Tomče Runčevski,
Ss. Cyril and Methodius
University, Skopje



“We can further our training with post-graduate measures within sandwich programmes.”

Hristina Zdravkovska,
Ss. Cyril and Methodius
University, Skopje

Photos: private

Sustainable collaboration formats

A practical example of how MatCatNet itself works as a catalyser in the region, so to speak. "It is important to purposefully extend network formation between the universities involved and to promote the placement of excellent scientists, explains Evamarie Hey-Hawkins. This should help to cover the rising demand for highly-trained chemists and to improve the transfer of knowledge and expertise. And ultimately it is also about getting young academic specialists to stay in South Eastern Europe.

One main focus of MatCatNet is the internationalised and structurally improved training as part of the partner institutions' master's and graduate courses. Here it is important to make possible modern, international chemistry degree courses in South Eastern Europe which are comparable with those of other universities in Europe. Mobility and scientific collaboration must be improved for this. MatCatNet comprises many targeted measures which permit the exchange of master's degree students, doctoral students, guest lecturers and also common doctoral examination procedures. Research stays by German, Romanian and South Eastern European master's degree and doctoral students at partner institutions plus intensive courses and special lectures or poster presentations are also included amongst the tools. Lecturers integrated into the network are above all young scientists. They are partly DAAD or Alexander von Humboldt alumni and very motivated to promote the development of the network.

"Above all, experimental training gets a rough deal due to the laboratory equipment", points out Evamarie Hey-Hawkins. For this reason, students have the opportunity to undertake a placement and also a research or semester stay at the University of Leipzig or the "Babeş-Bolyai" University in Cluj-Napocca. This is beneficial for their scientific career and increases motivation. "The network is decisive for creating a solid basis for profound research", thinks young scientist Tomče Runčevski. Ivana Jevtovikj, who is currently working at the University of Leipzig, is enthusiastic: "Research and study have a positive effect on your career, world view and self-confidence." The active integration of the three new partner institutions in Štip, Niš and Prishtina is due to happen in the next period according to Professor Hey-Hawkins. Furthermore, the future configuration of mutual master modules in English is also being discussed. The success of MatCatNet so far has also shown that financial support as part of the DAAD programme is important for scientific collaboration – but equally so for the further positive development of relations between South Eastern European countries and the various ethnic groups involved.

Information: www.uni-leipzig.de/chemie/hh/soe; hey@rz.uni-leipzig.de

Micro-electronics for the future

The Brandenburg University of Technology in Cottbus is promoting the transfer of knowledge and research in embedded system design in practice-related collaborations.

Telecommunications, medicine or industrial process control – embedded system design plays an important role in many areas of future technologies. A BTU Cottbus project with the faculties of electrical and electronic engineering at the universities of Niš, Skopje and East Sarajevo is ensuring that valuable expertise and highly qualified research opportunities are established in South Eastern Europe. "We want to promote young talent and are therefore making access to expertise and technologies possible", says Dr.-Ing. Miloš Krstić, who works with Professor Rolf Kraemer at both the BTU Cottbus and the Leibniz Institute IHP in Frankfurt/Oder. Effective knowledge trans-

fer and the improvement of technical knowledge are just as much part of the programme as structural measures. The MA and PhD curricula are to be improved and adapted in this way. Those responsible also wish to improve the research potential of young scientists. Study stays in Germany are part of the plan to achieve this. "The projects performed there have already been the basis for master's theses", adds Miloš Krstić. The next steps are clear: "The main aim is to realise our mutual PhD mentoring plan. And **sur-place scholarships**, summer schools and conferences are planned in addition to study visits".

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Scientists from Professor Kraemer's project.

Photo: private

Center of Excellence for Applications of Mathematics

Driving force for innovative technology

A series of success factors contribute to the promotion of applied mathematics. Functional integration is an important component.

"Mathematics in Industry" is the name of one of the five regional intensive courses for students and scientists which the Centre of Excellence for Applications of Mathematics is running in 2011. Professor Gonska of the University of Duisburg-Essen is leading a study and research network with partners in 15 cities in South Eastern Europe. Professional emphases lie in the mathematical modelling of non-linear phenomena, including interconnections to other physical and engineering sciences and also to art and

music. The networked university lecturers have developed the principle of "functional integration". Professors from South Eastern Europe, who are now established at German universities, are getting involved in the region. "They are systematically integrated into the day-to-day running of their former institutions, bring about knowledge transfer to South Eastern Europe and thus contribute to increasing scientific interrelations", according to Professor Gonska. One of the results is the founding of the Mathematical Society of South Eastern Europe with the significant involvement of the Bulgarian and Serbian project co-ordinators. **Information:** www.uni-due.de/mathematik/daad/

A good start: Nutritional medicine project of the TU of Munich

The metabolic syndrome is also spreading across South Eastern Europe. The cause of the chronic illness is often supernutrition. Professor Hans Hauner from the Technical University of Munich is therefore starting a project with the universities in Banja Luka, Belgrad, Novi Sad and Podgorica to create a sustainable, transnational network. A doctoral student's seminar is about to start in Banja Luka and a summer school in Podgorica. Its training block, "Specialised clinical pharmacology and nutritional medicine" is to become a fixed part of the curriculum. The vision: "the development of a mutual Erasmus or Tempus project", according to Professor Hauner. **Information: www.em-tum.de**

Dates

May – September 2011

- 04/ – 10/06 International Course**
for PhD students and young researchers Computational Engineering and Energy Efficiency, Pamporovo/BG
Prof. Dinkelacker (U Hanover)
- 20/ – 25/06 Intensive Course**
Software engineering for students taking the Master's degree in Computer Engineering, Novi Sad/RS
Prof. Bothe (Humboldt U, Berlin)
- 04/ – 08/07 Summer School**
Embedded System Design, Skopje/MK
Prof. Kraemer (BTU Cottbus)
- 17/ – 21/08 International Summer School**
Financing of Social Institutions and Projects in the Field of Mental Health, Ohrid/MK
Prof. Müller (EFH Nuremberg)
- 22/ – 27/08 Intensive Course**
Sparse Eigenvalue Problems, Sarajevo/BiH
Prof. Gonska (U of Duisburg-Essen)
- 05/ – 16/09 Summer School**
Metal and Construction Material Joining and Connecting Technology Tetovo/MK
Prof. Bier (TU of Freiburg)
- 08/ – 11/09 Workshop**
Current Methods in Neurosciences, Kotor/MN
Prof. RübSamen (U of Leipzig)
- 15/ – 18/09 5th Alumni Reunion**
Novi Sad/RS
Prof. Spitteller (U of Dortmund)
- 26/ – 30/09 Intensive Course**
Mathematics in Industry, Sofia/BG
Prof. Gonska (U of Duisburg-Essen)
- 29/ – 30/09 International Scientific Colloquium**
Maribor/SL
Prof. Spitteller (U of Dortmund)

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Interview with

Professor Povlakić and Dr. Thomas Meyer



Professor Meliha Povlakić,
Law Faculty of the University
of Sarajevo



Dr. Thomas Meyer,
Sector Fund Manager, GIZ,
Sarajevo

Legal professionals in the integration process

Jurisprudence plays a central role within the academic reconstruction process in South Eastern Europe. The linking up of the DAAD and GIZ initiatives in this field is intended to intensify and bring on important processes at South Eastern European law faculties.

What significance do regional collaborations such as SEELS have?

Dr. Meyer: A new form of regional collaboration has been performed since 2007 with the "Open Regional Fund for South Eastern Europe – Legal Reform". On the initiative of the University of Skopje, a master's/postgraduate degree course on European economic law was built up together with ten further universities. The idea of linking the universities in the region over and above the teaching content stems from this – the South East European Law School Network (SEELS) was finally founded in Skopje on 25th March.

Prof. Povlakić: Regional initiatives such as SEELS make a contribution to institutions or academics coming closer together, potential being better used and young scientists encouraged.

Dr. Meyer: SEELS is an important step, not just within South Eastern Europe but also in Europe's and also Germany's relationship to the South Eastern European states. The peacemaking effect of our partners' aspired accession to the EU becomes directly experiential here.

Where are the challenges?

Prof. Povlakić: In a new integration of the region. All countries in the region would like to be part of the European Higher Education Area. Regional co-operation helps with this. The strengthening of mobility, comparability and quality assurance and checking at a regional level is important for this reason.

Dr. Meyer: The law faculties are at very different stages of development. Some still have to do a lot of groundwork, others are already queuing to take their place amongst the best European faculties. With the advent of private universities, there is also competitive pressure. In general, collaboration within the SEELS network is seen as an opportunity to bundle resources and to use them to the benefit of the faculties involved. Regional integration and the integration of the region into international collaboration promote

professionalism and increase transparency.

What impact does collaboration have?

Prof. Povlakić: Our regional master's degree should be mentioned here; which permits students of the faculties involved to attend lectures by selected experts from their own country, the region and the EU.

Dr. Meyer: There are many examples: Albania has become a member of the Convention on the International Sale of Goods and Serbia is a Model Law country in the field of arbitration. There are now notaries in Bosnia and Montenegro and scientists from the region are working in workgroups on the security interests of the Deutsche Pfandkreditbank, etc, etc....

What are the next stages?

Dr. Meyer: In the coming months, concrete activities will be defined and planned in order to be able to participate in the European and national programmes for promoting university education. Here, we are engaged in mutual planning with the DAAD. In addition, fora are being formed which define common research specialisms. And with a regional Law Journal a high-quality specialist magazine will come into being which should contribute to European integration.

What significance does the co-operation with the DAAD have?

Dr. Meyer: It holds many benefits for all those involved. On the one hand, SEELS creates a model for co-ordinating German collaboration in this field. Since GIZ is represented on the SEELS management board and the DAAD is represented as a guest in the Advisory Council, relevant fields of legal reform can be combined with study and student promotion programmes. Both organisations can together precisely support the involved faculties in the region and thus also recognise developments early in order to react to them.