

# COMPENDIUM OF PROJECTS

**SCHOLARSHIP PROGRAMME  
IN THE CZECH REPUBLIC – EEA  
AND NORWAY GRANTS (CZ07)**



# Did you know that...?

## Norway

As a consequence of environmental issues, Norwegians have recently tended towards owning only one car per household. In cities, increasing numbers of people choose to subscribe to car sharing services instead of owning their own car.

[www.studyinnorway.no](http://www.studyinnorway.no)

## Czech Republic

The railway network density in the Czech Republic is one of the best in Europe. Trains are operated by Czech Railways. The railway network crosses the border of the Czech Republic at 30 crossings, which shows that the country is well connected to the European rail network. Trains run between most European cities and Prague every day, including first- and second-class carriages as well as carriages with couchettes or beds. For example, the journey from Paris to Prague takes about 15 and a half hours, Prague - Berlin, four hours and 40 minutes, Prague - Vienna, five and a half hours, and Prague - Warsaw, nine and a half hours.

[www.czech.cz/en/Life-Work/How-things-work-here/Transport/By-train](http://www.czech.cz/en/Life-Work/How-things-work-here/Transport/By-train)

## Iceland

As opposed to the vast majority of European countries, there is no train network in Iceland.

[www.lonelyplanet.com/iceland/transport/getting-around/train](http://www.lonelyplanet.com/iceland/transport/getting-around/train)



## ABOUT THE PROGRAMME

The EEA and Norway grants have been represented in the Czech Republic since 2004, when the Czech Republic joined the EU. The beginning of the funds, however, dates back to 1994, when European Economic Area – EEA (in English EEA – European Economic Area) was established. Over the period 2004–2009, which was the first in the Czech Republic, the Czech Republic received support of 83 million euros. Norway, in addition to contributing to EEA grants, established also Norway funds. The primary objective of EEA and Norway grants is reducing socio-economic disparities in Europe and strengthening bilateral relations between the Czech Republic and donor states (Iceland, Liechtenstein and Norway).

In the second period, identified as 2009–2014, the Czech Republic received totally 132 million euros. The newcomer states to the EU in 2007 and 2013 joined the funds in this period as well.

In May 2016, an agreement was signed for the third period, ie. 2014–2021. For the Czech Republic, there is prepared 185 million euros from EEA grants.

Bilateral Scholarship Programme (CZ07) was in the second period (2009–2014) one of the 15 implemented EEA and Norway grants programmes in the Czech Republic. Its main objective is to strengthen bilateral relations between Czech educational institutions and educational institutions in the three donor states. Overall, the cooperation of schools earmarked more than 4 million euros. During the two years of project implementation (2014–2016) there was 77 projects and 243 individual mobilities implemented.



## CZ07 ACADEMIC FIELD

### Humanities

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History  
Philosophy  
Religion  
Languages and linguistics  
Literature  
Visual arts  
Architecture, design and applied arts  
Performing arts

### Social Sciences

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Anthropology  
Archaeology  
Area studies  
Cultural studies and ethnic studies  
Economics  
Gender and sexuality studies  
Geography  
Political science  
Psychology  
Sociology

### Natural Sciences

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Chemistry  
Earth sciences  
Life sciences (including biology)  
Physics  
Space sciences

### Formal Sciences

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Computer sciences  
Mathematics  
Systems science

### Professions and Applied Sciences

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Agriculture  
Business  
Education (including teacher training/education)  
Engineering  
Environmental studies and Forestry  
Family and consumer science  
Health sciences (medicine, nursing, dentistry, etc.)  
Journalism, media and communication  
Law  
Library and museum studies  
Military sciences  
Public affairs  
Theology  
Social work  
Transportation

## PROJECTS IN APPLIED SCIENCES AND PROFESSIONS

Project number	Beneficiary	Contact person	Name of the project	Partner institution
NF-CZ07-ICP-1-014-2014	Charles University, Environment Centre	Jiří Dlouhý	Community Innovative Entrepreneurship Study Course	The Norwegian University College for Agriculture and Rural Development, Faculty of Rural Development
NF-CZ07-ICP-1-039-2014	Metropolitan University Prague	Luboš Janák	The transition of physically handicapped graduates to the labour market	Norwegian University of Science and Technology
NF-CZ07-ICP-1-031-2014	University of Economics Prague	Hana Lorencová	Development and Creation of Teaching Methods in Lifelong Learning Programmes	Sogn og Fjordane University College
NF-CZ07-ICP-1-030-2014	Technical university of Liberec	Karel Frana	Education collaboration in mechanical engineering	Ostfold University College
NF-CZ07-ICP-2-089-2014	Institute for Nanomaterials, Advanced Technologies and Innovation	Darina Myšáková	Collaboration in the execution of doctoral study programmes focusing on engineering, materials and mechatronics	University of Stavanger
EHP-CZ07-ICP-2-133-2015	Gymnázium, Teplice	Ilona Kuboňová	TIME – Technologies in Modern Education	Menntaskólinn í Kópavogi
EHP-CZ07-ICP-2-173-2015	Technical University of Ostrava	Richard Sladký	Institutional cooperation of VSB – Technical University of Ostrava and Icelandic universities	Reykjavik University
NF-CZ07-ICP-3-169-2015	Palacky University Olomouc	Alena Vavrdová	Promotion of cooperation and sharing of experience in early childhood education	Queen Maud University College of Early Childhood Education
NF-CZ07-ICP-3-189-2015	Masaryk University/ Faculty of Social Studies	Bohuslav Binka	Cooperation on Curricular Innovation of Environmental Studies (COCIES)	Lillehammer University College
NF-CZ07-ICP-3-197-2015	J. E. Purkyně University in Ústí nad Labem	Jitka Ježková	Know-How Transfer for Bilateral Institutional Knowledge-Base Improvement	Volda University College
NF-CZ07-ICP-3-224-2015	Czech Technical University in Prague	Jan Roháč	Enhanced Navigation Algorithms in Joint Research and Education	Norwegian University of Science and Technology
NF-CZ07-ICP-3-225-2015	Masaryk University/ Faculty of Arts	Bohumíra Lazarová	Better Learning in schools: Reflecting Teams as a Resource in School Development	Ostfold University College/ Faculty of Education
NF-CZ07-ICP-3-185-2015	The University of South Bohemia in České Budějovice	Andrea Vlačihová	Increased collaboration in research and education of PhD students	Norwegian University of Life Sciences
NF-CZ07-ICP-4-325-2016	Charles University, Faculty of Arts	Vít Sisler	Virtual Memories: Representation of History and War in Digital Games	UiT – The Arctic University of Norway, Faculty for Humanities, Social Sciences, and Education
NF-CZ07-ICP-4-341-2016	Masaryk University	Ladislava Zbiejczuk Suchá	LIBDESIGN: Design Thinking in Libraries	University of Oslo
NF-CZ07-ICP-4-293-2015	Charles University, Environment Center	Jiří Dlouhý	Sustaining Community Development: Taking Innovative Community Enterprise to the next level in the Czech Republic	The Norwegian University College for Agriculture and Rural Development
NF-CZ07-ICP-4-282-2015	Metropolitan University	Luboš Janák	Innovation of Media Studies Program at Metropolitan University Prague: Norwegian Inspiration	Oslo and Akershus University College of Applied Sciences
NF-CZ07-ICP-4-332-2016	Masaryk University	Bohuslav Binka	Implementation of Curricular Innovation of Environmental Studies (IOCIES)	Lillehammer University College
NF-CZ07-ICP-4-317-2016	Third Faculty of Medicine, Charles University	Kamila Řasová	Scientific workshops “DIFFERENT APPROACHES IN NEUROREHABILITATION”	University of Oslo, Sunnaas Rehabilitation Hospital

Project number	Beneficiary	Contact person	Name of the project	Partner institution
NF-CZ07-ICP-4-290-2015	Department of Histology and Embryology, Charles University – Faculty of Medicine in Hradec Králové	David Kunke	Utilization of cellular reprogramming technology in current medicine research and drug screening.	Institute of Basic Medical Sciences, Faculty of Medicine, University of Oslo
NF-CZ07-ICP-4-272-2015	Faculty of Business and Economics, Mendel university in Brno	Sylvie Formánková	Institutional Cooperation in Responsible and Sustainable Education	Faculty of Business Administration (FBA), Hedmark university college (HUC)
EHP-CZ07-ICP-3-275-2015	Gymnázium, Teplice	Ilona Kuboňová	POinTS – Progressive Options in Technology and Science	Numedal videregående skole
NF-CZ07-MOP-4-284-2015	University of Hradec Králové	Petra Králová	Increasing scientific research competencies of the young academic staff of the Faculty of Education	The University of Oslo, Norwegian School of Sport Sciences
NF-CZ07-MOP-1-024-2014	Faculty of Business and Economics, Mendel university in Brno	Sylvie Formánková	Czech – Norwegian Mobility Partnership	Faculty of Business Administration , Hedmark university college
NF-CZ07-MOP-1-042-2014	Institute of Public Health and Medical Law, 1st Faculty of Medicine, Charles University in Prague	Elena Tulupova	Health determinants and health inequalities in the Czech Republic and Norway: lessons, challenges and perspectives of cooperation	Bergen University College
NF-CZ07-MOP-2-077-2014	Charles University / Faculty of Education	Marie Hronzová	Outdoor Learning and Health Physical Education in Cross-curricular Education	The University of Stavanger, The Faculty of Arts and Education
EHP-CZ07-MOP-2-120-2015	Střední zdravotnická škola a Vyšší odborná škola zdravotnická	Dana Metelcová	Teachers on the move	Breidholt college
NF-CZ07-MOP-3-170-2015	The University of South Bohemia in České Budějovice, Faculty of Education	Jan Petr	Improving of the Quality of Biology Didactics and their Role in Teacher Education.	Norwegian university of science and technology/NTNU's Resource Centre for Mathematics, Science and Technology Education
EHP-CZ07-MOP-2-219-2015	Charles University	Kvačková Helena	Sharing Good Practice in European Science and Research Projects	University of Iceland
NF-CZ07-MOP-3-154-2015	Czech University of Life Sciences, Institute of Education and Communication	Jitka Jirsáková	BEGIN: Broadening experience with guidance in vocational education	Norwegian University of Life Sciences/Section for Learning and Teacher Education
NF-CZ07-MOP-3-179-2015	Masaryk University/ Faculty of Economics and Administration	Eva Slezáková	Analysis of e-learning methodology for prison education at university level	Norwegian school of Theology
NF-CZ07-MOP-3-200-2015	University of Hradec Králové	Jan Kříž	Summer School of Interdisciplinary Studies	Lillehammer University College
NF-CZ07-MOP-3-230-2015	Masaryk University – Teiresiás Center	Petr Peňáz	Desktop publishing in sign languages	Statped/Avdeling for læringsressurser og teknologiutvikling
NF-CZ07-MOP-4-283-2015	University of Hradec Králové	Olga Sovová	Increasing scientific research competencies of Multi-disciplinary Scientific Research Team in Intercultural Dialogue.	University of Stavanger, Lillehammer University College,
NF-CZ07-MOP-4-285-2015	University of Hradec Králové	Jan Kříž	Summer School of Interdisciplinary Studies II.	Sor-Trondelag University College (HiST)
NF-CZ07-MOP-4-254-2015	Department of Clinical Microbiology, Charles University – Faculty of Medicine in Hradec Králové	Helena Zemličková	Specific methods for detection of antibiotic resistance mechanisms in the clinical microbiology laboratory	University of Tromsø – Faculty of Health Sciences

## PROJECTS IN NATURAL AND FORMAL SCIENCES

Project number	Beneficiary	Contact person	Name of the project	Partner institution
NF-CZ07-ICP-1-040-2014	Brno university of technology	Jana Drbohlavova	Formation of research surrounding for young researchers in the field of advanced materials for catalysis and bioapplications	Norwegian University of Science and Technology
NF-CZ07-ICP-1-029-2014	University of South Bohemia in České Budějovice	Jan Kavan	Polar ecology course – bio sciences	University Centre in Svalbard
NF-CZ07-ICP-1-032-2014	Masaryk University	Láska Kamil	Polar ecology course – geosciences	University Centre in Svalbard
EHP-CZ07-ICP-1-083-2014	Czech Technical university in Prague/ Faculty of Mechanical Engeneering	Jan Hrdlička	Czech-Icelandic Clean Energy Cooperation	Reykjavik University
EHP-CZ07-ICP-2-140-2015	Environment Center, Charles University	Jiří Dlouhý	Potential for sustainable tourism in ecologically sensitive regions	University of Iceland
NF-CZ07-ICP-3-104-2015	Masaryk University	Alica Košuthová	DNA barcoding of cryptogams, including biosystematic studies of selected groups	Norwegian University of Science and Technology
NF-CZ07-ICP-3-180-2015	University of Chemistry and Technology Prague/ Faculty of Food and Biochemical Technology	Milena Zachariasova	Establishing of Institutional Cooperation between UiT The Arctic University of Norway and University of Chemistry and Technology in Prague in education in the field of food quality and biotechnology	UiT The Arctic University of Norway/The Faculty of Biosciences, Fisheries and Economics
NF-CZ07-ICP-3-193-2015	Charles University	Jana Kulichová	Community structure of freshwater microbenthos	University of Oslo
NF-CZ07-ICP-3-199-2015	Brno university of Technology	Petr Šesták	Research and education in ab initio calculations of mechanical properties of materials: applications to hydrogen embrittlement in metals and strength of polymer-metal interfaces	Norwegian University of Science and Technology/Faculty of Engineering Science and Technology
NF-CZ07-ICP-3-201-2015	Brno university of Technology	Josef Rebenda	Mathematical Education Through Modeling Authentic Situations – METMAS	University of Agder
NF-CZ07-ICP-3-237-2015	Technical University of Ostrava	Jan Kotůlek	Interdisciplinary education of junior historians of mathematics	University of Agder/Department of Mathematical Sciences Masaryk University
NF-CZ07-ICP-3-242-2015	Masaryk University	Feixová Barbora	Young researchers – educate, discover, prove and apply in environmental sciences	Norwegian University of Life Sciences
NF-CZ07-ICP-4-339-2016	Masaryk University	María Králová	Mathematics and Statistics Support Centre (MSSC)	University of Agder
NF-CZ07-ICP-4-316-2016	University of South Bohemia in České Budějovice	Josef Elster	Polar ecology course II – bio sciences	University Centre in Svalbard
NF-CZ07-ICP-4-324-2016	Brno university of Technology	Josef Rebenda	Personality, learning approaches and teaching styles in undergraduate mathematics – PLATSUM	University of Agder
NF-CZ07-ICP-4-292-2015	University of South Bohemia in České Budějovice	Jan Kavan	Polar Hydrology Field Course	University Centre in Svalbard

Project number	Beneficiary	Contact person	Name of the project	Partner institution
NF-CZ07-ICP-4-318-2016	University of South Bohemia in České Budějovice	Petr Doležal	A common platform for sharing experiences and education of students in the field of forest entomology	Norwegian University of Life Sciences (NMBU)
NF-CZ07-MOP-4-256-2015	Czech Technical University in Prague	Jaroslav Bielčík	Advanced analysis of experimental data in nuclear and particle physics	Department of Physics and Technology, University of Bergen
EHP-CZ07-MOP-1-094-2015	Masaryk University / Central European Institute of Technology	Martin Lysák	Establishing Czech-Icelandic collaboration in plant cytogenomics	University of Iceland
NF-CZ07-MOP-2-086-2014	Masaryk University/ Faculty of informatics	Barbora Kozlíková	Mobility of students and education staff leading to the integration of the interactive visual analysis with analysis and visualization of protein structures and their ensembles	University of Bergen
NF-CZ07-MOP-3-139-2015	University of Pardubice	Monika Vejchodová	Mobility for Development of Universities (MODUS)	Norwegian University of Science and Technology, Campus in Gjøvik
EHP-CZ07-MOP-2-253-2015	University of South Bohemia	Andrea Vlačihová	Knowledge transfer on Fin-fish boosting sustainable aquaculture	Hólar University College University of Iceland
NF-CZ07-MOP-3-202-2015	Brno University of Technology	Pavína Slovákova	Interdisciplinary Experience in Applied Physics and Applied Computer Science	NTNU - Norwegian University of Science and Technology/ Department of Physics
NF-CZ07-MOP-3-245-2015	Masaryk University/ Central European Institute of Technology	Jan Novotný	Development of Paramagnetic NMR Spectroscopy of Metallodrugs	University of Tromsø – The Arctic University of Norway Center of Theoretical and Computational Chemistry (CTCC)
NF-CZ07-MOP-3-238-2015	Department of mathematics and descriptive geometry, VSB-TU Ostrava	Jan Kotůlek	Enhancing bilateral contacts in history of mathematics (Kristiansand-Ostrava)	Universitetet i Agder/Department of Mathematical Sciences
NF-CZ07-MOP-3-184-2015	University of South Bohemia	Andrea Vlačihová	Increasing scientific competence and establishing bilateral research collaboration between USB and NMBU	Norwegian University of Life Sciences
NF-CZ07-MOP-4-323-2016	Brno university of Technology	Josef Rebenda	Brno University of Technology - Mobility of Academic Staff (BUT-MAS)	University of Agder

## PROJECTS IN HUMANITIES

Project number	Beneficiary	Contact person	Name of the project	Partner institution
EHP-CZ07-ICP-2-144-2015	Academy of Performing Arts	Ladislav Paluska	MIDPOINT/ Iceland – Midnight Sun Script Development Workshop	Icelandic Film School
EHP-CZ07-ICP-1-073-2014	Brno university of Technology	Monika Šimková	Art-Research Bridge	University of Iceland
NF-CZ07-ICP-3-145-2015	Academy of Performing Arts	Ladislav Paluska	MIDPOINT/Norway – Script Development Programme	The Norwegian Film School
NF-CZ07-ICP-3-229-2015	Masaryk University – Teiresiás Center	Petr Peňáz	Sign languages in higher education	Oslo and Akershus University College of Applied Sciences
NF-CZ07-ICP-4-334-2016	Charles University, Protestant Theological Faculty	Timothy Noble	The Churches' Response of Welcome to the Migrant Other	School of Mission and Theology (MHS)
NF-CZ07-ICP-4-342-2016	Technical University of Liberec	Zdeňka Němcová – Zedníčková	Systemic Approach to Architectural Performance	Oslo School of Architecture and Design
NF-CZ07-ICP-4-330-2016	Masaryk University, Faculty of Arts	Miluše Juříčková	Language acquisition in the context of traditional and contemporary culture in Norway	Telemark University College
NF-CZ07-MOP-4-329-2016	Masaryk University, Faculty of Arts	Juříčková Miluše	Norwegian Literature: Location experience and European perspectives	Telemark University College
EHP-CZ07-MOP-2-098-2015	ART & DESIGN INSTITUT, s.r.o.	Anna Vaněčková	Marketing of Galleries and Trade of Artworks in the Czech Republic and Iceland	Bifröst University

## PROJECTS IN SOCIAL SCIENCES

Project number	Beneficiary	Contact person	Name of the project	Partner institution
EHP-CZ07-ICP-2-150-2015	Faculty of Business Administration, University of Economics, Prague	Emil Velinov	Universities approaches in tackling the changing job markets for graduates	Bifrost University
NF-CZ07-ICP-3-149-2015	Department of Management, Faculty of Business Administration	Emil Velinov	New Public Management Reforms and Accounting Practices in Municipalities of the Czech Republic and Norway	Buskerud and Vestfold University College
NF-CZ07-ICP-3-155-2015	Faculty of Arts, Charles University	Vendula Vlková Hingarová	Transnational and national migration: experiences from Czech Republic and Norway	University of Tromso The Arctic University of Norway/ Department of Culture and Literature
NF-CZ07-ICP-4-345-2016	Tomas Bata University in Zlín	Dušan Hrabec	Optimization modeling and statistical processing for demand based problems – marketing decision-making support	Molde University College
NF-CZ07-ICP-4-338-2016	Tomas Bata University in Zlín	Zuzana Tučková	Building a research team in the field of social economy as sources of sustainable economic growth of post-industrial European regions	Molde University College

# Did you know that...?

## Norway

Norwegian students often supplement their student loan with a part-time job, and then look for relevant work experience before they start working.

[www.studyinnorway.no](http://www.studyinnorway.no)

## Czech Republic

Every year Czech universities – whether they public or private – expand their offer of study opportunities and improve the quality of their study courses not only for Czech students, but also for foreign students who can study selected fields in English or another foreign language.

Foreigners, the same as Czechs, do not have to pay any school fees for studies at a public university in Czech. The situation is different in fields that are taught in English or another foreign language. The school may require a fee for these studies.

[www.czech.cz/en/Life-Work/Czech/General-information/Czech-universities-continue-to-improve-the-quality](http://www.czech.cz/en/Life-Work/Czech/General-information/Czech-universities-continue-to-improve-the-quality)

## Iceland

The Icelandic higher educational system dates back to the foundation of University of Iceland in 1911. The University of Iceland remains the principal institution of higher learning in Iceland, but over the last three decades, new institutions of higher education have emerged, and there are currently seven institutions of higher education operating in Iceland.

[www.studyiniceland.is/page/IcelandicEducationalSystem](http://www.studyiniceland.is/page/IcelandicEducationalSystem)

**PROJECTS IN APPLIED**

**SCIENCES AND PROFESSIONS**





# A COMMUNITY INNOVATIVE ENTREPRENEURSHIP STUDY COURSE

## TYPE OF ACTIVITY:

**Institutional cooperation project**

## CONTACT PERSON:

**Lucie Švecová**

## CZECH INSTITUTION:

**The Environment Centre, Charles University in Prague**  
<http://www.czp.cuni.cz/czp/index.php/en/>

## FOREIGN INSTITUTION:

**Hogskulen for landbruk og bygdeutvikling**  
<http://www.hlb.no>

## FINAL GRANT:

**1 041 903 Kč / 39 317 €**

## PROJECT NUMBER:

**NF-CZ07-ICP-1-014-2014**

## ANNOTATION:

The overall objective of the project was to make a positive contribution to the social and economic health of rural regions in both partner countries. This was done by the joint creation of a course in Innovative Community Entrepreneurship in the Czech Republic. This course became a resource for those rural communities facing the challenges of changing agricultural practices and those people who need to make their own professional transitions from farm labourer to rural entrepreneur. It also became a resource for both partner institutions as they learn from each other and further develop their competence.

By working together, both partners (Norwegian and Czech) will learn from each other, increasing the competences in both institutions. Successful completion of this project led to the partners seeking to work together on other rural community development projects, funded from EEA funds, and also from EU funding sources. Members from each partner also co-authored several academic outputs, and from this, they collaborated again on other, similar projects.

The Demografie/No 1/2014 Report by the CZSO claims that the economic level of activity in rural areas is much lower compared to towns and cities (2013). The Czech Republic seeks to support

diverse agriculture and other rural economic activities in order to increase the number of available job opportunities. Unfortunately, these efforts have so far failed to bring any positive results. Nevertheless, the economic potential of Czech rural areas is significant. Rural areas can take advantage of their unique resources, such as their clean environment, attractive tourist destinations, local and healthy products, etc., and use these advantages for effective and sustainable development. It is well known that there are many challenges to businesses starting up in rural areas. However, with good management, relevant education, availability of information and goal-oriented motivation, rural areas can be, without doubt, economically competitive with larger cities and municipalities.

The course that was the output of this project became a resource which contributes to the endogenous development of rural areas in both countries, a contribution which helped to improve their rural economies and to keep people who would otherwise have to move to the urban centres in the communities. Another contribution was also more than just economic; it contributed to the growth of local pride, to the social capital development of local groups and to the overall vitality of rural areas. Furthermore, by supporting endogenous rural economic activities, this project contributed towards reducing economic and social disparities within the EEA.

## SUMMARY:

Rural communities in the Czech Republic need to increase their economic opportunities. However, a lack of information, low motivation and other obstacles prevent rural entrepreneurs, as well as local governments, from doing so. Hence, HLB in cooperation with CUEC, developed the "Community Entrepreneurship Training for Innovation" course. This was an effective intervention aimed at improving the economy of rural areas. It delivered inspiration and a detailed understanding of the innovation process to those engaged in creating innovative new businesses and solutions in Czech rural areas. The course was delivered in the study facilities of Cesky Krumlov Castle, located in the rural environment of South Bohemia. The course was available for university master's program students, members of governments, and rural entrepreneurs. This course was delivered by both Norwegian and Czech lecturers and became the basis of a strong and long-term relationship between both institutions.

## THE TRANSITION OF PHYSICALLY HANDICAPPED GRADUATES TO THE LABOUR MARKET

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Luboš Janák**

CZECH INSTITUTION:

**Metropolitan University in Prague, <http://www.mup.cz>**

FOREIGN INSTITUTION:

**The Norwegian University of Science and Technology  
<http://www.ntnu.no>**

FINAL GRANT:

**332 319,60 Kč / 12 540 €**

PROJECT NUMBER:

**NF-CZ07-ICP-1-039-2014**

### ANNOTATION:

The main overall objective of the project was to create functional networks with the project partners. The project was strongly focused on program and call priorities. The focus was aimed at decreasing social and economic disparities by strengthening the role of handicapped people in civil society. With this statement came the idea of supporting human resources by employing handicapped graduates ourselves and helping them to enter the labour market (with another employer).

### SUMMARY:

This project built on the past cooperation between Metropolitan University Prague (MUP) and Norges teknisk-naturvitenskapelige universitet Trondheim (NTNU) that occurred in 2008, which was also financed by EEA/Norway Grants. The universities organized a Czech-Norwegian conference about supporting the special needs of handicapped students.

The main topic of the project was focused on sharing handicapped graduates' experience in transitioning to the labour market and discussing the present situation in this area. Both universities have vast experience in this field.

At the beginning of project, a team of specialists from both universities was set up as an implementation team for the pro-

ject. Its job was to determine the topic of the project. During the following activity, NTNU organized a topical workshop. The main part of project was an international conference held in Prague (UNIs, Ministries, etc.). During the final activity, a comprehensive publication about the project's conclusions was published.

## THE DEVELOPMENT AND CREATION OF TEACHING METHODS IN LIFELONG LEARNING PROGRAMS

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Eva Jarošová**

CZECH INSTITUTION:

**The University of Economics Prague  
<http://www.vse.cz/english/>**

FOREIGN INSTITUTION:

**Sogn og Fjordane University College  
<http://www.hisf.no/en/home>**

FINAL GRANT:

**677 845 Kč / 25 579 €**

PROJECT NUMBER:

**NF-CZ07-ICP-1-031-2014**

### ANNOTATION:

The main goal of the project was to share and to create new learning materials for managerial and lifelong learning (LLP) courses run at both partner institutions. Particularly:

1) The sharing of best practices in teaching approaches and techniques from both the Czech and Norwegian perspectives in MBA courses and other lifelong learning (LLP) courses (especially focused on leadership and managerial skills), including examples of specific methods used in these courses.

2) Creating the syllabus for the Scientific Writing Skills Course for MBA students and students of other lifelong learning (LLP)

courses and creating learning materials for this course (in the form of PowerPoint presentations or prepared written materials for on-line courses).

#### The goals' reasoning:

Goal 1) There were LLP courses at both institutions focused on the development of managerial competences. This was especially true for MBA programs whose participants were managers from different organizational levels and it was necessary to use practical based interactive teaching methods embodied in the newest theoretical concepts. Another demand on teaching methods and materials was to maintain the principles of modern pedagogy and andragogy (pedagogical constructivism and experimental learning). The sharing of best practices and creation of innovative teaching methods contributed to developing human resource management by developing managers' (participants of LLP courses) leadership skills and thus developing their followers' potential by strengthening the competences of the academics involved in this project.

Goal 2) The experience with LLP courses at both partner institutions proved that people in MBA and other LLP courses often lack competences needed for writing essays, terms and final papers. Thus, a need for creating a syllabus and learning materials for the Scientific Writing Skills Course for these students was identified.

The project strengthened the direct bilateral cooperation between the Czech Republic and Norway as a donor state in all its goals. Both partners were involved in goal fulfilling activities.

The organizational results depend on the competences of the people who manage them. One of the target groups is managers and administrators. The outputs of the project can thus positively influence the quality of management and through this, organizational efficiency, which can later help to lower economic and social disparities within the EEA.

The project was linked to strategical documents from the applicant institution, mainly to the Long-term intent of VŠE 2011-2015 (<http://strategie.vse.cz/dlouhodoby-zamer/dlouhodoby-zamer-vse-na-obdobi-2011-2015/>) and its update for 2014. Both documents show the intent of increasing LLP and managerial education courses at the university.

#### SUMMARY:

The project was focused on Czech-Norway institutional cooperation in the field of lifelong learning, creating innovations in education and implementing a joint research survey for alumni of managerial education or specific managerial courses focused on transferring gained knowledge into practice. The survey also asked them about their views on the effectiveness of various teaching methods in managerial education. In the field of lifelong learning, the Czech and Norwegian partners shared best practices and teaching materials that were mainly focused on the development of managerial and leadership skills of the par-

ticipants of the lifelong learning programs at both universities. As an innovation, the partners created a joint syllabus and learning materials for a new Scientific Writing Skills Course (for the participants of the lifelong learning programs), which is now missing at both universities.

## EDUCATION COLLABORATION IN MECHANICAL ENGINEERING

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Karel Frana**

CZECH INSTITUTION:

**The Technical University of Liberec, <http://www.fs.tul.cz>**

FOREIGN INSTITUTION:

**Ostfold University College, <http://www.hiof.no/english>**

FINAL GRANT:

**474 066 Kč / 17 889 €**

PROJECT NUMBER:

**NF-CZ07-ICP-1-030-2014**

#### ANNOTATION:

The overall objective of the project was to start intensive collaboration and create conditions for Ph.D. student, bachelor's student (Ostfold University College) and academic staff exchanges. The project provided financial support for short-term visits. During the students', Ph.D. candidates' and academics' stays, educational methodologies were introduced. Individual personal contacts were created, which can be beneficial later in different kinds of joint projects. Similar contacts were created between leaders of both partner institutions. The project envisioned mutual short term visits and several meetings (workshop) between institution leaders. At these meetings and workshops, existing conditions for long-term collaboration in research and education were discussed. Based on the specific requirements, some changes in the partner's institution were considered in order to maintain contacts and active institution collaboration after the end of this project. During the meetings and mutual short-term

visits, experience in education and research could be exchanged, which increased the effectiveness of the education and made the competitiveness in research greater at both partners. Specifically, this could be due to educational methodologies, educational materials, international collaboration and experience. Furthermore, the formed individual personal contacts provided access to experimental research equipment and techniques. It could also be a significant step towards reaching a higher publication rate in the future and towards sharing equipment in education and research.

#### SUMMARY:

The proposed project involved activities which led to intensive collaboration between the Faculty of Mechanical Engineering of TUL and Ostfold University College through long-term collaboration. The project facilitated the start of collaboration and via faculty leader meetings, the rules and conditions of the mobility agreements were established. Simultaneously, both parties could present possibilities regarding education, study programs, international collaboration, teaching methods, domestic rules and laws, etc. Furthermore, the project provided the possibility to exchange students (Ph.D. or normal students) and academic staff for a short time in order to introduce research and educational activities on both sides. Therefore, individual personal contacts were created, which will help to sustain cooperation in the future. In addition, a desired goal was joint research and educational projects between (institutions') departments.



## COLLABORATION IN THE EXECUTION OF DOCTORAL STUDY PROGRAMS FOCUSING ON ENGINEERING, MATERIALS AND MECHATRONICS

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Petr Tůma**

CZECH INSTITUTION:

**The Institute for Nanomaterials, Advanced Technology and Innovation, Technical University of Liberec, [www.tul.cz](http://www.tul.cz)**

FOREIGN INSTITUTION:

**The University of Stavanger, [www.uis.no](http://www.uis.no)**

FINAL GRANT:

**944 611,20 Kč / 35 646 €**

PROJECT NUMBER:

**NF-CZ07-ICP-2-089-2014**

#### ANNOTATION:

The mutual information obtained by Ph.D. students, their lecturers and other responsible academic staff during the project helped provide both project partners with more attractive and better quality Ph.D. programs in selected technological fields. Students presented their solutions to various issues in foreign languages and learned about the themes of Ph.D. work undertaken at the partner universities. Ph.D. lecturers from both sides presented their traditional and preferred directions of basic and applied research, which created new space for future interdisciplinary Ph.D. work with high potential synergistic effects. Other academic and administrative staff became mutually acquainted with the organization of doctoral studies on both sides of the collaboration. A SWOT analysis led to proposals for measures to improve the doctoral level of education. A very useful (and for students, attractive) objective was the introduction of a system for obtaining "double degree diplomas". The project included a survey on the possibility of achieving this objective in the near future.

A number of prominent academics from both universities contributed to the project. This created an environment in which these researchers met each other and presented their expert fields of interest in both education and research. The mutual awareness that the project also brought had the potential to develop other forms of collaboration in education and research and to increase the chances of both universities to gain further bilateral or European projects for the support of university education and research in various disciplines and interdisciplinary directions.

To establish sustainable collaboration between TUL and UIS, the project made use of several main activities and several additional supporting activities.

**The main activities included:**

1. Short-time mobilities of academic and administrative staff at the partner university.
2. Workshops for Ph.D. students and their lecturers.
3. Summer school.

**Additional project activities included:**

1. A manual written in English at both universities that provides constructive guidance on how to begin Ph.D. studies in the given country.
2. Documentation of selected doctoral programs was reviewed and where necessary updated in both English and the national language. This formed the basis for analysing the possibilities for harmonizing related programs in order to prepare agreements on “double degree diplomas”

The submitters of the project expected that these efforts will lead in the future to increased interest in Ph.D. studies in technical fields at TUL, especially by talented graduates of technical faculties at TUL with the potential to become future key R&D workers. Other benefits of the project, which were fully in line with the objectives of the program, can be summarized in the following tasks:

- Increase and strengthen institutional collaboration in the tertiary education sector between the Czech Republic and Norway;
- Analyse the possibilities of harmonizing related programs to prepare agreements on “double degree diplomas”;
- Attract talented young researchers in technical fields, particularly in engineering, materials and mechatronics;
- Increase the number of students in technical fields, which will provide better prospects for future employment of the supported specialists;
- Gain and exchange experience from studying at a foreign university;
- Increase the value of human capital of the Czech Republic to help the employability of Ph.D. graduates on the international labour market;

- Retain and educate talented individuals and support further involvement in scientific research teams, leading to an improvement in teaching.

The project and its activities significantly contributed to reducing social and economic disparities in the European Economic Area and to strengthening relations between the Czech Republic and Norway.

**SUMMARY:**

The aim of the project was to establish sustainable collaboration in the execution of Ph.D. study programs focusing on engineering, materials and mechatronics between the Technical University of Liberec (TUL) and the University of Stavanger (UIS).

To establish sustainable collaboration between TUL and UIS, the project made use of several activities, which were as follows:

1. Individual visits by academic and administrative staff at the partner university.
2. Workshops for Ph.D. students and their lecturers.
3. Summer school.
4. A manual written in English at both universities that provided constructive guidance on how to begin doctoral studies in the given country.
5. Documentation of selected doctoral programs was reviewed and where necessary updated in both English and the national language. This formed the basis for analysing the possibilities for harmonizing related programs in order to prepare agreements on “double degree diplomas”.



## TIME – TECHNOLOGIES IN MODERN EDUCATION

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Iлона Kuboňová**

CZECH INSTITUTION:

**Teplice Gymnasium, [www.gymtce.cz](http://www.gymtce.cz)**

FOREIGN INSTITUTION:

**Menntaskólinn í Kópavogi,  
The Institute of Compulsory Education, [www.mk.is](http://www.mk.is)**

FINAL GRANT:

**494 955 Kč / 18 678 €**

PROJECT NUMBER:

**EHP-CZ07-ICP-2-133-2015**

### ANNOTATION:

The main objective of the project was institutional cooperation between Czech and Icelandic teachers in the field of natural science and ICT tools. The use of ICT in this project and the corresponding improvement in the competences of teachers that goes along with that enabled teachers to better accommodate students of differing abilities within their lessons. The project was trying to make natural science subjects more attractive and more easily understood by students. Many students feel that science is an abstract and overly theoretical subject that bears little relation to their lives and the world around them. There is a strong indication that computer based teaching is beneficial for all students. It makes students more motivated and involved. It is individualized and gives them a chance to increase their confidence, responsibility and cooperation with others.

### SUMMARY:

TIME = Technologies in Modern Education was an Institutional cooperation project in which teachers and students from Gymnasium Teplice in the Czech Republic and Menntaskólinn í Kópavogi in Iceland used different ICT tools in solving applied science problems together and then compare their findings. ICT tools and an e-learning platform were used to facilitate the collaboration. The target of the project was to create five learning modules in natural science subjects as a part of optional seminars for students

about 18 years of age. It helped motivate and challenge students to improve their science knowledge whilst also preparing them for further studies in the third level of education. The exchange of views among the participants also gave rise to the possibility of all participants getting to know others' school systems and cultures. The participants gained insight into different science issues and cultures and developed teamwork skills and fostered a sense of responsibility towards others.

## INSTITUTIONAL COOPERATION BETWEEN VSB – THE TECHNICAL UNIVERSITY OF OSTRAVA AND ICELANDIC UNIVERSITIES

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Richard Sladký**

CZECH INSTITUTION:

**Technical University of Ostrava, [www.vsb.cz](http://www.vsb.cz)**

FOREIGN INSTITUTIONS:

**Reykjavik University, [www.ru.is](http://www.ru.is)  
The University of Iceland, [www.hi.is](http://www.hi.is)**

FINAL GRANT:

**475 707,60 / 17 951 €**

PROJECT NUMBER:

**EHP-CZ07-ICP-2-173-2015**

### ANNOTATION:

The overall objective of the submitted project was to formally establish and intensify the cooperation between VSB-TUO and Icelandic universities in the field of R&D and the mobility of teachers and students, which was fully in compliance with the "Increased and strengthened institutional cooperation at all levels of the education sector" program aim. This objective was also in compliance with the strategic documents of all involved universities - aiming for larger internationalization of universities through in-

ternational cooperation on R&D projects and supporting the mobility of students and teachers.

The project directly aimed at enhancing bilateral cooperation between the Czech Republic and the donor state - Iceland. The benefits were in the form of newly established contacts between the academic communities of all involved partner universities, new project ideas and consortia preparing new R&D project proposals, the mobility of students and teaching staff, etc. The new contacts between the Czech and Icelandic partners also brought a "new impulse" into their communities, as the Icelandic partners are traditionally linked to Scandinavian countries, and the Czech universities mostly cooperate with Central and Eastern Europe partners.

#### SUMMARY:

The project followed up on already established contacts between VSB- The Technical University of Ostrava and the two most prominent universities in Iceland - the University of Iceland and Reykjavik University. The aim of the project was to facilitate contact between the academic and research staff of all involved universities in order to prepare joint proposals for international research projects (in particular, for Horizon2020).

Project activities comprised visits by representatives of Icelandic partners to Ostrava within the framework of the "Icelandic Week in Ostrava", establishing direct contacts between research groups focusing on common topics and establishing consortia for preparing joint project proposals. Other activities included formalization of the partnership among the partner universities in the form of Cooperation Agreements in order to facilitate student exchanges and the mobility of academic staff, and a follow-up visit by the Czech academic staff to Iceland.



## THE PROMOTION OF COOPERATION AND SHARING OF EXPERIENCE IN EARLY CHILDHOOD EDUCATION

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Alena Vavrdová**

CZECH INSTITUTION:

**Palacký University Olomouc, [www.upol.cz](http://www.upol.cz)**

FOREIGN INSTITUTION:

**Queen Maud University College of Early Childhood Education  
[www.dmmh.no](http://www.dmmh.no)**

FINAL GRANT:

**593 735Kč / 22 405 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-169-2015**

#### ANNOTATION:

The objective of the project was to analyse and compare relevant documents and to develop a joint study module for the students of preschool education, special preschool education and kindergarten teacher training (Educational strategies for sustainable development of the Czech Republic 2008-2015. Praha: MŠMT, 2008, 20p., <http://www.msmt.cz/dokumenty/ostatni-dokumenty>; National program for the development of education in the Czech Republic – White Paper.2001. Praha: Institute for Information in Education – Taurus, 2001, 98 p., ISBN 80-211-0372-8). The expected results were improved student communication in English, experiential learning and the development of study competences of the students from both partner institutions and an increase in their interest in the field of study. Through observations and training programs in kindergartens in both countries, we increased the quality of teaching practice, and increased the number of hours for students to spend in kindergarten training. We systematically and actively involved students in order to increase their motivation for studying. The permeability of international study – acknowledgement of study and using ECTS credits. Another value concerned gender equality and the equality of all

socially and ethnically diverse persons and how this contributes to inclusive education – in all of these areas there are considerable reserves in the Czech Republic, whereas Norway served as a good example. We also expected more extensive scientific cooperation between both institutions, especially in the area of research. The project reacted with the trends of the current educational policy and the requirement to improve the quality of university training of kindergarten teachers and to improve their employability (see White Paper 2001, Educational strategies for sustainable development of the Czech Republic 2008, Framework educational program for preschool education 2004). The Department of Primary and Pre-primary education, Faculty of Education, Palacký University, Olomouc has, for several years, closely collaborated with Queen Maud University College in Norway under the Erasmus program. Teacher and student mobilities were a means of learning not only about the institutions and their functioning, but primarily served as inspiration for working with the students of kindergarten teacher training, preschool education and special preschool education. We believed that deepening our collaboration in the above specified fields of study provides the opportunity to submit a project application under the Norway Grants scheme. In this way, we aimed to explore and explain the differences and similarities in pre-primary education in the context of both countries and compared those aspects with European educational trends, all of which were reflected in a jointly designed study module.

#### **SUMMARY:**

The fundamentals of the project were the cooperation of both schools in pre-primary education focusing on long-term relationships and on education in the study field.

The project's aim was to analyse the existing study programs in both countries, and compare and create common modules. Another aim was to research and explain the different and similar aspects of pre-primary education in the context of changes in both countries with EU education trends. The project responded to current educational policy trends and to the requirement of improving the university education of pre-primary teachers and increasing their success on the job market.

Another aim was to extend the scientific and innovative cooperation between the Czech and Norwegian educational institutions represented by Palacký University in Olomouc in the Czech Republic and Queen Maud University College in Trondheim in Norway.

## **COOPERATION ON CURRICULAR INNOVATION OF ENVIRONMENTAL STUDIES (COCIES)**

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Bohuslav Binka**

CZECH INSTITUTION:

**Masaryk University, [www.muni.cz](http://www.muni.cz)**

FOREIGN INSTITUTION:

**Høgskolen i Lillehammer (HIL) (Norwegian) / Lillehammer University College (LUC – English), [www.hil.no](http://www.hil.no)**

FINAL GRANT:

**1 063 125,90 Kč / 40 118 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-189-2015**

#### **ANNOTATION:**

Main objective of the project was to develop a renewed structure of study at both the bachelor's and master's level at the Department of Environmental Studies, as well as to introduce practical innovations into courses taught at HIL, Norway. Both these organizations cooperated on curricular development to improve the quality of the needed outcomes.

The project was designed to incorporate innovative teaching and learning methods that are developed at HIL, Norway into the context of the Czech Republic at Masaryk University. The proposed curricular scheme respected the growing need of social cohesion and sustainability, as well as the demands of the labour market. Fields of ecopsychology and sustainable economy were being internationally developed as a response to the issues and problems of the coming decades. Thus, the project also contributed to reducing economic and social disparities, as it contributed to creating a generalized study in which students were given perspective and develop an economic approach.

The project's structure and focus was based on recommendations given by the Strategy for Sustainable Development of the Czech Republic ([http://www.mzp.cz/cz/strategie\\_udrzitelneho\\_](http://www.mzp.cz/cz/strategie_udrzitelneho_)

rozvoje), Climate Protection Policy of the Czech Republic ([http://www.mzp.cz/C1257458002FoDC7/cz/news\\_tz090507pok/\\$FILE/POK\\_final.pdf](http://www.mzp.cz/C1257458002FoDC7/cz/news_tz090507pok/$FILE/POK_final.pdf)) and the Strategy for Environmental Education in the South Moravian Region (<http://www.kr-jihomoravsky.cz/Default.aspx?PubID=154184&TypeID=7>).

We offered a renewed curriculum for a master's degree in Environmental Studies, a renewed curriculum for a bachelor's degree in Environmental Studies, 8 innovated courses, and 2 new courses. All these curricular changes were structured in three interlinked parts – study modules.

The first study module was "Methodology". This module incorporated "Academic Reading and Writing" and "Introduction to Methodology" courses at the bachelor's level of study. On the master's level, it included "Quantitative Research in Environmentalism", "Qualitative Research in Environmentalism", "Essential Environmental Texts", "Environmental Sociology" and "Scientific Writing".

The second study module was "Ecological Economics". This module integrated "Ecological Economics" and "Socially Sustainable De-growth" at the bachelor's level. At the master's level, it was created from "Economics and the Environment I and II" and "Ethical and Local Economy".

The third study module was "Environmental Sociology and Ecopsychology". At the bachelor's level, it included "Environmental Education" and "Town and Landscape" courses. At the master's level were "Ecopsychology I and II", "Environmental Programs" and "Facilitation of Environmental Communication Processes".

At HIL, Norway, a new concept concerning courses related to ecopsychology was introduced. As a reaction to the growing need to offer courses in English, two courses were innovated at HIL which were taught in English. This change contributed to student mobility programs and mutual cooperation with the Czech Republic.

A proposed curricular change was being introduced on the basis of the needs and propositions formulated in the Erasmus Charter for Higher Education, The European Recognition Manual For Higher Education Institutions (<http://eurorecognition.eu/Manual/EAR%20HEI.pdf>) and in the HESA Report on course development ([https://www.hesa.ac.uk/dox/publications/The\\_Course\\_Report.pdf](https://www.hesa.ac.uk/dox/publications/The_Course_Report.pdf)).

The cooperation between Lillehammer University College and Masaryk University was rather close throughout the whole project period, including the co-creation of the curricula and a conference. Continual cooperation between the project partners began in 2008. This provided certainty that mutual cooperation on the project will be beneficial for both parties. The overall impact of project cooperation on curricular changes (Work Package 3) was triggered by dissemination activities (Work Package 4), including an international conference and a Special Issue of the Journal, which were described as a secondary objective of the project.

#### SUMMARY:

The COCIES Project was based on the mutual, cooperative curricular innovation of the bachelor's and master's program at the Department of Environmental Studies, Masaryk University and Faculty of Health and Social Studies, Lillehammer University College.

Based on the common preparation process of both long-term cooperating universities, three study modules consisting of 17 courses on the bachelor's and master's degree level were developed: (a) Methodology, (b) Ecological Economics and (c) Environmental Sociology and Ecopsychology. During the visits in Norway and the Czech Republic, we innovated 10 courses and created 2 completely new courses. Experts from the partner universities also taught courses and participated at the summarizing international conference in Brno, where the curricular changes were presented and introduced. Special English issues of Social Studies and Human Affairs journals reflected the innovative fields, contributing with 12+ peer-reviewed articles.

## KNOW-HOW TRANSFER FOR BILATERAL INSTITUTIONAL KNOWLEDGE-BASED IMPROVEMENT

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Jitka Ježková**

CZECH INSTITUTION:

**Jan Evangelista Purkyně University in Ústí nad Labem**  
[www.ujep.cz](http://www.ujep.cz)

FOREIGN INSTITUTION:

**Volda University College, [www.hivolda.no/english](http://www.hivolda.no/english)**

FINAL GRANT:

**1 073 349,90 Kč / 40 504 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-197-2015**

**ANNOTATION:**

The overall objective of the project was to strengthen the institutional cooperation between both partners and to establish long-term cooperation in the field of mutual participation on educational activities. Representatives from both partner institutions have been in personal contact for a long time during which a preparatory visit by Czech representatives in Volda occurred at which the conditions for subsequent projects were contracted. One of the main research and education areas of both Jan Evangelista Purkyně University in Ústí nad Labem and Volda University College is regional development and public administration. This topic is widely applicable for graduates in structurally affected regions such as Ústí nad Labem, in which the UJEP operates. The involvement of regional universities in international scientific and educational activities is one of the most essential elements to strengthen the competitiveness of the regional schools in the education market. At the same time, this fact will significantly help to increase the competitiveness of their graduates in the labour market, especially in economically weak regions such as the Ústí Region. Both universities operate outside the educational, economic, and political centre of their countries and the mutual cooperation and mutual exchange of experience in the field of regional development and public administration can serve as a source of inspiration for the economic development of the EEA countries and for the reduction of economic and social disparities within the EEA. The project was aimed at strengthening or rather creating long-term cooperation in the framework of educational activities for both partners and thus both countries. In the future, both partners would like to collaborate on joint summer schools or other forms of Extra-semester courses and joint publication activities, and possibly implement a joint educational or scientific project and strengthen the skills / competences of workers in education.

**SUMMARY:**

The aim of the project was to strengthen the institutional cooperation between both partners in the field of educational activities within their important education and research areas - regional development and public administration. Mutual cooperation in educational and research activities, more intensive internalization of the curriculum, and knowledge transfer helped to increase the competitiveness of graduates from both partners and helped to reduce socio-economic disparities within the regions of EEA states. The exchange of information and research outputs in the areas of regional development and public administration was a source of inspiration for economic development in regions in both Norway and the Czech Republic. Therefore, four activities occurred within the project- the placement of 10 Czech students and 5 education sector staff for one week at Volda University, a common workshop focused on knowledge and experience transfer and the development of common modules.

## ENHANCED NAVIGATION ALGORITHMS IN JOINT RESEARCH AND EDUCATION

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Jan Roháč**

CZECH INSTITUTION:

**The Czech Technical University in Prague, [www.cvut.cz](http://www.cvut.cz)**

FOREIGN INSTITUTION:

**The Norwegian University of Science and Technology  
[www.ntnu.edu](http://www.ntnu.edu)**

FINAL GRANT:

**1 234 624,50 Kč / 46 590 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-224-2015****ANNOTATION:**

The overall objective of the project was to establish research cooperation between the Czech Republic and Norway in the field of navigation with applications in aerial and marine technology.

**Introduction of the NavLIS group at CTU in Prague**

Over the last 15 years, the NavLIS research group from the Czech Technical University (CTU) has established a good understanding, knowledge, and practice in the R&D of navigation systems and solutions. NavLIS is primarily focused on aerial and terrestrial applications where data fusion is extended by data validation techniques providing all-conditioned navigation even in harsh environments. Data fusion is mainly done via complimentary filtering and/or extended Kalman filtering. There have been several navigation systems developed in the category range of low-cost up to navigation grade with different algorithms applied. Moreover, The NavLIS is focused on the R&D of calibration systems and related methodologies, data fusion and validation approaches, the use of alternative aids for navigation, and anomaly detection. R&D activities have been supported by 2 national grants and 4 internal CTU grants.

### Introduction of the AMOS group at NTNU

AMOS is a Norwegian Centre of Excellence (CoE) at NTNU. The research at AMOS focuses on autonomous systems for marine operations. This includes intelligent, robust, and fault-tolerant guidance, navigation and control (GNC) systems for unmanned vehicles operating subsea, on the surface of the Earth and in the air. The research group operates a fleet of underwater vehicles (AUVs and ROVs) and unmanned aerial vehicles (UAVs). The research on navigation systems targets low-cost strapdown inertial navigation systems using MEMS sensors and embedded systems. The group has published several algorithms based on nonlinear observer theory for integrated navigation systems from 2012–2015, which are computationally more effective than the traditional Kalman filter algorithms used in navigation systems.

The project focused on merging the applied research of two scientific research groups with one common aim to improve the performance of navigation systems. At the same time, the project strengthened collaboration between two institutional research organizations, thus meeting other goals in the form of strengthening these centres of excellence via a mutual exchange and enhancement of knowledge in the field of aerial and marine navigation aids and thus it accelerated the transfer of research results into practice.

Through this project, the NavLIS group, and in broader respect the Czech Republic, had a unique opportunity to initiate collaboration with a world leading research group and centre of excellence, AMOS in Norway. This eventually provided benefits, firstly, by broadening the knowledge and understanding of different navigation related algorithms, data validation, position estimation, etc. Secondly, this collaboration helped the Czech Republic gain valuable experience with respect to real marine vehicles and their navigation. Such marine vehicles might be autonomous underwater vehicles (AUV), research vessels in the North Sea, etc. In addition, the Czech Republic as a whole is not involved in core marine research due to the obvious reason of not having a coastal border, thus this opportunity provided the ideal platform to explore the research field within marine technology.

### SUMMARY:

The project aimed to establish cooperation between the Norwegian University of Science and Technology (NTNU) and the Czech Technical University in Prague (CTU), namely between the Centre of Autonomous Marine Operations and Systems (AMOS) group at NTNU and the Navigation Group of the Laboratory of Aircraft Instrumentation (NavLIS) at CTU. The project was focused on merging the applied research of two research groups with one common aim to improve the performance of navigation systems. Accurate navigation systems are crucial in applications where precise positioning of manned or unmanned vehicles is required. Thus, the “know-how” exchange enabled a comparison of used

methodologies and approaches. The main goal was to exchange the best practice in the field of education and R&D. It enhanced the current state-of-the-art level in navigation systems and education practices, which are closely connected with R&D activities performed at both institutions.

## BETTER LEARNING IN SCHOOLS: REFLECTIVE TEAMS AS A RESOURCE IN SCHOOL DEVELOPMENT

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Bohumíra Lazarová**

CZECH INSTITUTION:

**Masaryk University, [www.muni.cz](http://www.muni.cz)**

FOREIGN INSTITUTION:

**Ostfold University College, [www.hiof.no](http://www.hiof.no)**

FINAL GRANT:

**1223894,70 Kč / 46 185 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-225-2015**

### ANNOTATION:

One main topic the project aimed to address was the usage of reflecting teams as a measure to improve processes of learning support at schools. Working in a reflecting team was an exciting and demanding way of strengthening teachers in their daily work and helping them to solve exceptional problems for themselves and their pupils.

The main objective of the project was to create and publish a joint Czech-Norwegian monograph that will be focused on the processes of learning support (not only) of adults at schools and in particular on supporting agents of learning processes and their relationship to the development of a school. The phrase “not only” symbolizes the belief on which the partners base their

assumption that all the support of adult learning at schools (of teachers) should always have a clear impact on the quality of teaching and thus the learning processes of pupils.

Seventy-five percent of the publication were developed by the Norwegian partner because we intended to devote more space to examples of good practice with which the Norwegian partner has more experience and can offer their own outputs of practical research carried out in recent years.

The publication – monography – should serve teachers, mentors, academic staff, and students of teaching. We plan to issue it in three languages – Czech, Norwegian, and English so that it would be available to a wide range of interested persons.

There were 3 topics to be reflected in the publication, namely learning processes in a school as an organization (i.e. organizational learning, learning organization, mentoring, peer consultation, reflective groups, supervision) and specific ways to promote reflection in practice (e.g. the reflecting teams of Tom Andersen).

Both teams share an interest in the topic of the support of learning processes using specific methods supporting reflection on practice, which is often used by teachers, mentors, and other external consultants working in a school context. The partners have therefore agreed that they will jointly develop these methods of work and use the reflecting teams of the Norwegian author Tom Andersen in the area of educating teachers and mentors.

Both teams have had experience in the support of learning processes at schools as organizations and intend not only to continue to share this experience, but also to offer it in the form of publications to schools. The preparation of the project was preceded by a preparatory visit by the applicant to Ostfold University College.

#### **SUMMARY:**

The main objective of the project was to create and publish a joint Czech-Norwegian monograph that will be focused on the processes of learning support (not only) of adults at schools, which lead to the development of a school. Other objectives were to develop cooperation and to deepen the experience of the partner institutions to use the practices that promote the reflection of practice (T. Andersens reflecting teams) and mentoring within a school environment. The main output of the project is the monograph titled “Support for Learning in Schools” in three language versions. The experience was shared through meetings and workshops held both in Norway and the Czech Republic.

## **INCREASED COLLABORATION IN RESEARCH AND THE EDUCATION OF PH.D. STUDENTS**

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Andrea Kamenová**

CZECH INSTITUTION:

**The University of South Bohemia, [www.frov.jcu.cz](http://www.frov.jcu.cz)**

FOREIGN INSTITUTION:

**The Norwegian University of Life Sciences, [www.nmbu.no](http://www.nmbu.no)**

FINAL GRANT:

**898 482,60 Kč / 33 905 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-185-2015**

#### **ANNOTATION:**

We planned a one year project which included visits to each other's institutes that involved the organization of two one-week long workshops with one facilities visitations in Norway and one in the Czech Republic. During the visits, the partners observed each other's facilities and methods, became familiar with the institutes and discussed work on a joint research project entitled: Evaluating oxidative stress in the process of oocyte aging. We applied for additional funding for this project in a national call of the Grant Agency of the Czech Republic. Part of this work was solved in our laboratories in the Czech Republic and part in Norway. Subsequently, we wrote a joint publication. Positive results of this pilot study will then facilitate future synergistic research applications on an international level.

The first goal of the proposed project was to establish cooperation on a research based level and establish the exchange of Ph.D. students for shorter visits and internships at the respective institutes. In the planned research project, we cooperated and exchanged knowledge in the field as well as learned new methods from each other. This fulfilled our second focus on exchanging knowledge, especially in the field of analytical methods, future collaboration and joint scientific publications. An outcome here was to arrange a joint seminar on the established techniques.

The reason for applying within this call was that our goal,

namely establishing a solid base for future cooperation between our institutes and the Norwegian University of Life Sciences (UMB) fitted perfectly within the aim of the call enhancing the relationship between Czech Republic and Norway as well as supporting the field of tertiary education and contributing to the development of human capital and knowledge base in the Czech Republic. We believed that the innovative idea and one of the great benefits of our project is that we will try to establish cooperation on two levels: on the basis of a common scientific interest, namely oxidative processes and their relation to oocytes, which was an important topic for Aquaculture and therefore important for both involved partners, and on the instant exchange of students and researchers, which led to increased knowledge and experience on both sides. International collaboration and collaboration especially within the EU always benefits all partners as many research calls nowadays require international cooperation between several countries. Thus, for both institutes, this cooperation was beneficial for the future research applications, which could subsequently result in an economic benefit due to the increased possibility for joint research projects. We also discussed the possibility that students from UMB can participate in our annual summer school in the future and ways to promote this possibility at UMB.

#### **SUMMARY:**

During the project, 7 bilateral mobility actions between NMBU and USB occurred and 5 of these participants were researchers and academic staff, 1 participant was a Ph.D. student and 1 participant was an administrative staff member. Bilateral cooperation was established during these visits and meetings that introduced the research facilities, laboratories and equipment to the partners were held. In addition, but current and future research projects were presented. With the support of this project, it was also possible to publish one scientific article entitled "In vitro storage of unfertilized eggs of the Eurasian perch and its effect on egg viability rates and the occurrence of larval malformations" by A. M. Samarin et al.

The cooperation continued through the commenting on scientific articles and theses, sharing knowledge and results of research, searching for and planning new cooperation in research, and exchanging students (waiting for an opening of a relevant call for projects).

## **VIRTUAL MEMORIES: A REPRESENTATION OF HISTORY AND WAR IN DIGITAL GAMES**

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Vit Sisler**

CZECH INSTITUTION:

**Charles University in Prague (CU), [www.ff.cuni.cz](http://www.ff.cuni.cz)**

FOREIGN INSTITUTION:

**UiT - The Arctic University of Norway, Faculty for Humanities, Social Sciences, and Education, [www.uit.no](http://www.uit.no)**

FINAL GRANT:

**1 225 426,5 Kč / 46 243 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-325-2016**

#### **ANNOTATION:**

The primary aim of this project was to strengthen and further develop the existing collaboration between New Media Studies at the Faculty of Arts of CU and Media – and Documentation Studies at the UiT Tromsø. The project has established an effective transfer of knowledge between these two departments related to education and research, including collaboration on educational materials, teaching methods, and digital teaching tools.

#### **SUMMARY:**

The primary aim was reached by three different, yet entangled, key activities within the project:

(1) Collaboration on syllabi and educational materials. We collaborated on the creation and/or enhancement of the syllabi and educational materials for the courses which share common knowledge domains. At CU, these courses are "AISE00022: Video Games as a Sociocultural Phenomenon" and "AISExxxxx Contemporary Issues in Game Studies." The first course was already taught at CU and was open to New Media Studies Czech students and foreign Erasmus students. The other was opened in winter semester 2016/2017 in accordance with the new accreditation of New Media Studies. Both courses were taught by Vit Sisler. Given the relative novelty of the field, there existed no established

teaching or research methods or guidelines for students. Thus, while creating and enhancing the syllabi of these two courses, CU faculty could significantly benefit from the experience of Holger Pötzsch and his team at UiT. Pötzsch's field of research includes an audio-visual war culture (in particular the war film and war games), film and cultural memory, new media, and computer games.

(2) Translation of digital simulation Czechoslovakia 38-89: Assassination. The already existing digital simulation, Czechoslovakia 38-89: Assassination, was translated into English and implemented as a shared research- and teaching tool both at CU and UiT. The simulation was developed at CU and the Academy of Sciences of the Czech Republic. It presents key events from Czechoslovakia's contemporary history and enables players to "experience" these events from different perspectives. The simulation includes the perspectives of previously marginalized groups (e.g. Roma, Sudeten Germans, etc.). The simulation aims to develop abilities to comprehend and analyse sources of facts and create critical judgments. It won first place at Games Learning Society Showcase & Awards in Madison, WI, USA, in July 2015. We translated the simulation and its complete content into English and implemented it as a shared teaching and research tool at CU and UiT. At CU, it will be used in course "AISE00022: Video Games as a Sociocultural Phenomenon", at UiT it will be used in the newly established MA-course "MDV-3xxx: Social Media and Digital Games" taught by Holger Pötzsch. We plan to develop a shared methodology for a meaningful integration of the simulation into university education, with emphasis on a critical reflection of different and/or contradicting memories of the past and an understanding of different historical perspectives of marginalized groups. By utilizing the English version of the simulation in class at CU and by active collaboration with the UiT faculty and students, we enabled the enhancement of language skills of the Czech students', of their scientific competences and higher cognitive skills, including critical evaluation and discussion.

(3) A workshop for teachers and researchers. We organized an intensive 3-day workshop for teachers, researchers and Ph.D. candidates of both institutions in Prague, where we shared knowledge and methods related to teaching and researching digital games as cultural artefacts. The workshop served as the initial platform for the two activities mentioned above.

The overall objective of the project was to increase and strengthen institutional cooperation between CU and UiT and to enhance human capital and the knowledge base at CU.

## LIBDESIGN: DESIGN THINKING IN LIBRARIES

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Ladislava Zbiejczuk Suchá**

CZECH INSTITUTION:

**Masaryk University, [www.muni.cz](http://www.muni.cz)**

FOREIGN INSTITUTION:

**The University of Oslo, [www.uio.no](http://www.uio.no)**

FINAL GRANT:

**1 071 841,50 Kč / 40 447 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-341-2016**

### ANNOTATION:

The main output of the project was a joint methodology for the use of design thinking in libraries that will serve scholars and academic librarians in the Czech Republic and Norway, as well as in other countries. The methodology consisted of a set of tools for design thinking and specialized books with case studies. The second important output was the development of a joint methodology for or engaging students in innovation projects in libraries.

The methodologies will be used both by the academic staff and students of the Department of Information and Library Studies at Masaryk University and by the staff and students of the Department of Informatics at the University of Oslo. In addition, the methodologies will directly serve the needs of academic libraries that are interested in improving their services.

Academic libraries provide space and tools for further work with specialized information. Libraries currently also strive to provide education to their users, and thus represent an integral part of higher education. They provide their services in a rapidly changing environment – new technologies and trends, such as e-books, open access, professional social networks, 3D printing and augmented reality, transform not only the teaching methods and methods of providing information resources, but also very quickly affect users' expectations. Hence, academic libraries must dramatically change the way they provide their services. This will also require a considerable change in the way innovations in services are managed.

The methodologies will be used to introduce the design process leading to the innovation of library services, the methods for their application in libraries and case studies. Case studies of the successful application of design thinking into library practice constitute an element that is largely missing in current research. Therefore, the project will also endeavour to map, document and support their development in the Czech as well as in the Norwegian context.

**The main objectives of the project were thus:**

1. Present a methodology for enhancing library services and a methodology for or engaging students in innovation projects in libraries
2. Map examples of good practices in the implementation of design thinking in service innovation in libraries in the Czech Republic and Norway;
3. Strengthen cooperation between the Division of Information and Library Studies at Masaryk University and the Department of Informatics at the University of Oslo.

**SUMMARY:**

Design thinking, service design, participatory design, HCI design – these are all concepts that are growing in importance. Design has become a crucial contributor where established innovation processes have struggled and it is recognized as a tool for improving public services (see for example <http://designforeurope.eu>). One of the possible areas for design thinking is the development of new services in libraries. The main outputs of the project was a joint methodology for the use of design thinking in libraries and the methodology for or engaging students in innovation projects in libraries.

The methodologies will be used both by the academic staff and students of the Department of Information and Library Studies at Masaryk University and by the staff and students of the Department of Informatics at the University of Oslo. In addition, the methodologies will directly serve the needs of academic libraries that are interested in improving their services.



## SUSTAINING COMMUNITY DEVELOPMENT: TAKING INNOVATIVE COMMUNITY ENTERPRISES TO THE NEXT LEVEL IN THE CZECH REPUBLIC

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Jiří Dlouhý**

CZECH INSTITUTION:

**The Environment Center, Charles University in Prague**  
<http://www.czp.cuni.cz/czp/index.php/en/>

FOREIGN INSTITUTION:

**The Norwegian University College for Agriculture and Rural Development, <http://www.hlb.no>**

FINAL GRANT:

**1 054 417,50 Kč / 39 789 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-293-2015**

**ANNOTATION:**

The overall objective of the project was for the two institutions to develop and share knowledge on supporting vocational changes for residents of rural areas who are facing developmental and demographic challenges. The project delivered innovative new ways of supporting rural economic development, through network building, contributing to the social sustainability of the rural regions the two institutions serve, as well as by creating a further basis for ongoing cooperation between them. It strengthened the human capital and knowledge base not only for the two institutions, but also for the communities they serve, thereby helping rural residents to create a thriving local rural economy which retains its young people and offers new and innovative opportunities for them to realize their dreams.

This project consolidated the inter-institutional cooperation begun in the first EEA-Czech project.

**SUMMARY:**

Just as rural development is a process, so too is the cooperation between the two institutions through which together they increased their competence to support vocational changes and innovative entrepreneurship skills in their respective rural regions. Previous collaboration generated student feedback which suggests that there is a demand for further support in the form of a network. Existing networks of rural entrepreneurs have focused only on specific regions or on existing businesses. Therefore, this project focused on non-existent or early-stage start-up businesses and has a national scope, as identified by existing participants in the sector. Therefore, the two institutions worked together to understand and create the necessary infrastructure and informational needs of rural entrepreneurs. This served both the institutions themselves, and the rural communities which need that support.

## INNOVATION OF MEDIA STUDIES PROGRAM AT METROPOLITAN UNIVERSITY PRAGUE: NORWEGIAN INSPIRATION

## TYPE OF ACTIVITY:

**Institutional cooperation project**

## CONTACT PERSON:

**Luboš Janák**

## CZECH INSTITUTION:

**Metropolitan University Prague, [www.mup.cz](http://www.mup.cz)**

## FOREIGN INSTITUTION:

**The Oslo and Akershus University College of Applied Sciences, [www.hioa.no](http://www.hioa.no)**

## FINAL GRANT:

**357 408,90 Kč / 13 487 €**

## PROJECT NUMBER:

**NF-CZ07-ICP-4-282-2015**

**ANNOTATION:**

The project aimed to upgrade the study program of Media Studies at Metropolitan University in Prague (bachelor's and master's degree) on the basis of Norwegian inspiration and of the subsequent expansion of courses taught in English at MUP. Emphasis was placed on increasing the knowledge in courses focused on the cultural dimension of media communication as applied to media studies and to the development of general journalistic skills.

Emphasis placed on developing critical thinking skills associated with the media and on good preparation for becoming a journalist guaranteed the development of an open society, strengthened democratic principles in both countries and the same time reduced social and economic disparities, e.g. in accordance with the "Recommendations of the European Community Commission dated 20 August 2009 on media literacy in the digital environment for a more competitive audiovisual and content industry and for a more open knowledge society". (In this document it is stated, among other things, that "Democracy depends on the active participation of citizens in the life of their communities and media literacy can provide the skills necessary to make sense out of the daily flow of information disseminated through new communication technologies." - <http://eur-lex.europa.eu/legal-content/CS/TXT/PDF/?uri=CELEX:32009H0625&from=CS>)

**SUMMARY:**

The main topic of this project was focused on upgrading Media Studies program at Metropolitan University in Prague (MUP) in bachelor's and master's degree programs. The project had 4 activities and all were fulfilled within the sense of the grant application.

Activity 1: A preparatory meeting between research teams was held on 22.2.2016 at MUP. The Czech members of the project along with the main Norwegian researcher, K. Orgeret, discussed the structure of the study programs at both institutions. In addition, there was a discussion about the stay of the Czech team at the Norwegian partner's institution and about the timing, organization, and content of the international workshop. At the end of the preparatory meeting, a questionnaire focused on Metropolitan university students' opinions on the possibility of innovating the bachelor's and master's degree programs of Media Studies was developed. The main benefit - results of the questionnaire were used for upgrading some courses and will be used in the forthcoming accreditation.

Activity 2: An expert meeting and workshop in Oslo (4-7 April 2016) - the Czech project team visited the Norwegian institution in order to gain new experience with the style of teaching, course content, etc. The main benefit was sharing experience in teaching at the partner's institution and the opportunity to make a video of selected courses.

Activity 3: A team meeting and international workshop was

held on 27 April 2016. Experts from Oslo, media specialists from MUP, and members of the Faculty of Social Sciences focused on research and new trends in media trials met with students from MUP and the professional and general public. The afternoon also contained a roundtable discussion on “The Future of Media Studies”, where the narrow expert circle discussed the future of media studies.

Activity 4: Creating the project’s outputs – a short video, 8 courses taught at MUP were innovated, new syllabi were created, Czech team members conducted 4 demonstration lessons in which innovative features acquired during the project were incorporated.

## THE IMPLEMENTATION OF CURRICULAR INNOVATION OF ENVIRONMENTAL STUDIES (IOCIES)

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Bohuslav Binka**

### CZECH INSTITUTION:

**Masaryk University, [www.muni.cz](http://www.muni.cz)**

### FOREIGN INSTITUTION:

**Høgskolen i Lillehammer (HIL) (Norwegian) / Lillehammer University College (LUC – English), [www.hil.no](http://www.hil.no)**

### FINAL GRANT:

**1 048 500,90 Kč / 39 566 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-4-332-2016**

### ANNOTATION:

The main objective of the IOCIES project was to utilize and fully implement the developments from the previous COCIES project and upgrade the current structure of study at the Department of Environmental Studies. Within the IOCIES project, three new

study specializations at the bachelor’s level and four at the master’s level at the Department of Environmental Studies were tested and based on the expertise and experience of the team from Lillehammer University College. Both these organizations cooperated on the implementation of curricular development to improve the quality of the structure of study at DES.

The project was designed to introduce innovative teaching and learning methods that are developed at HIL, Norway to the context of the Czech Republic at Masaryk University. The curricular scheme respected the growing need of social cohesion and sustainability, as well as the demands of the labor market. Thus, the project contributed also to reducing economic and social disparities and students will be acknowledged with perspectives of innovative approaches towards the economics and financial sector.

The project structure and focus was based on recommendations given by the Strategy for Sustainable Development of the Czech Republic, the Climate Protection Policy of the Czech Republic and the Strategy for Environmental Education in the South Moravian Region.

The main project output was related to Work Package C – “Implementation of New Curriculum”. First, we summarized decisions about curriculum and perform Implementation Workshops (WPC-A1), where progress reached during the COCIES and CASE projects were presented. We were focused on the implementation of modules prepared in the COCIES project (WPC-A2 – Ecological Economics and WPC-A3 – Environmental Sociology and Ecopsychology). As a completely innovative part, the IOCIES project delivered a “testing season” of new 3 bachelor’s study and 4 master’s study curricular specializations (WPC-A4 Implemented a renewed curriculum for bachelor’s and master’s degrees).

At the bachelor’s level, the “testing season” of “Cultural Environmentalism”, “Socially-Ecological Enterprise” and “Public Engagement and Public Administration” specializations were provided. At the master’s level, “Social Science Reflection of Environmental Problems”, “Public Sphere and Politics”, “City, Province, Landscape” and “Ecological Economics” specializations were presented. The coherence of these specializations have been critically assessed and documents of needed further changes were developed. The overall output of the project was a “New Structure of Study for all courses taught at DES” (WPC-A5) prepared in close cooperation with Lillehammer University College.

At HIL, Norway, a new concept of courses was prepared within the scope of the COCIES project. The IOCIES project was to ensure the implementation of changes prepared in the COCIES project: at HIL, two courses were implemented and taught in English. This change will contribute to student mobility programs and mutual cooperation with the Czech Republic. Proposed curricular changes are introduced on the basis of the needs and propositions formulated in the Erasmus Charter for Higher Education, The European Recognition Manual for Higher Education Institutions (<http://eurorecognition.eu/Manual/EAR%20HEI.pdf>) and in HESA Report



on course development ([https://www.hesa.ac.uk/dox/publications/The\\_Course\\_Report.pdf](https://www.hesa.ac.uk/dox/publications/The_Course_Report.pdf)).

There was close cooperation between Lillehammer University College and Masaryk University throughout the whole project period, including the co-creation of the curricula and attendance at student conferences. The overall impact of project cooperation on curricular changes (Work Package C) was triggered by dissemination activities (Work Package F), including a student panel at international conferences and other activities, which are described as a secondary objective of the project.

#### SUMMARY:

The project expands and fully implements study modules developed within the CASE and COCIES projects into three novel study profiles at the bachelor's level and four profiles at the master's level. At the bachelor's level, the testing of "Cultural Environmentalist", "Socially-ecological Enterprise" and "Public Engagement and Public Administration" study profiles occurred. At the master's level, the "Social Science Reflection of Environmental Problems", "Public Sphere and Politics", "City, Province, Landscape" and "Ecological Economics" study profiles were scrutinized. Tested study profiles occurred with the cooperation of Lillehammer University College (Norway), which evaluated and modified them to ensure their maximal benefit for the employability of absolvents. Students were also given extended participation at an international conference and this motivated them to more closely cooperate with academics both from the Czech Republic and Norway. Numerous other supportive and dissemination activities, e.g. the Landscape of Environmental Studies and Educational Trails publications were prepared and published, educational excursions were taken, curriculum changes were made, etc.



## SCIENTIFIC WORKSHOPS "DIFFERENT APPROACHES IN NEUROREHABILITATION"

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Kamila Řasová**

CZECH INSTITUTION:

**The Third Faculty of Medicine, Charles University**  
<http://www.lf3.cuni.cz/>

FOREIGN INSTITUTION:

**The University of Oslo, Sunnaas Rehabilitation Hospital**  
[www.med.uio.no/klinmed/english](http://www.med.uio.no/klinmed/english)

FINAL GRANT:

**1 232 364,6 Kč / 46 504 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-317-2016**

#### ANNOTATION:

The project outcomes brought significant advancements in neurorehabilitation at the European level.

The partnership between the Czech and Norwegian institutions will provide a future opportunity to carry out research in cooperation with excellent researchers at institutions that form part of the European network of scientists involved in the investigation of neurological diseases.

The project brought innovation in the following aspects:

- 1) medical – legal, i.e. elaboration of health concepts and their application into clinical practice.
- 2) socio-economic – potential conceptual changes that could improve the quality of life of neurological patients, and reduce the overall costs of their treatment.

#### SUMMARY:

Two scientific workshops on the topic of neurorehabilitation were organized in the project (the first one was guaranteed by the Third Medical Faculty, Charles University in Prague, Czech Republic; the second one was guaranteed by the University of Oslo, Norway). The workshops had the following aims:

1. To improve the education of experts.

2. To establish new research contacts between scientists from both countries in order to prepare future scientific research collaboration.

3. To bring together various specialists from multi-disciplinary approaches for an open academic discussion on new therapeutic possibilities in the comprehensive treatment of neurological diseases.

4. To support the involvement of young researchers and Ph.D. students.

5. To prepare study materials for participants of the workshop and for the professional public.

## THE UTILIZATION OF CELLULAR REPROGRAMMING TECHNOLOGY IN CURRENT MEDICAL RESEARCH AND DRUG SCREENING

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**David Kunke**

### CZECH INSTITUTION:

**The Department of Histology and Embryology,  
Charles University - Faculty of Medicine in Hradec Králové  
[www.lfhk.cuni.cz](http://www.lfhk.cuni.cz)**

### FOREIGN INSTITUTION:

**The Institute of Basic Medical Sciences, Faculty of Medicine,  
the University of Oslo, <http://garethsullivan.com>**

### FINAL GRANT:

**817 351,20 Kč / 30 843 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-4-290-2015**

### ANNOTATION:

The project facilitated cooperation between participating institu-

tions at the level of biomedical education, stem cell biology, regenerative medicine, personalized medicine and related subjects and established successful partnerships based on newly established interactions involving student and academic staff mobility, the exchange of knowledge, the sharing of resources and participation in student education. Experience gained from abroad was incorporated in HK to enable the effective generation of in-house iPSCs, utilizing non-integrating cell reprogramming methods. In addition, iPSCs propagation, characterization and directed differentiation toward desired cell types, and the formation of organoids in vitro are routinely managed by the Norwegian partner (NP). Moreover, the infrastructure for 3D bioprinting is in place at the NP facility and was demonstrated. This represents another source of inspiration and further prospective cooperation in the field. The procedure of cellular reprogramming to pluripotency is concomitant with the expression of multiple gene classes, and representative genes of this process were included on a PCR array facilitating simultaneous analysis: these included representative somatic genes, ectopically expressed transcription factors, markers of iPSCs, and markers of the 3 germ layers, ectoderm, endoderm, and mesoderm. Based on mutual cooperation, the Czech partner (CP) optimized the PCR array card for testing individual patient-specific iPSCs clones generated in the NP lab and also process 3D organoids for histology analysis. Mutual discussion followed the usage of iPSCs and array cards in compound screening, drug discovery, tests of therapeutic interventions, predictive diagnostics, human disease modelling and tissue development. This way, both participating partners improved their professional and personal skills and provided new opportunities to broaden their mutual cooperation.

### SUMMARY:

Cooperation was focused on biomedical education and stem cell biology; it aimed at deepening the bilateral relationship by promoting and intensifying contacts and mobility between both participating partners. Interactions involved practical training in the labs, extending the knowledge and practice in cell reprogramming, cell manipulation, characterization, directed differentiation, formation of 3D organoids, and mutual discussions. We carried out the optimization of array cards for gene expression in iPSCs and performed an analysis of isolated cell clones, including making a histological examination of generated organoids. Partner teams included academic workers, pre-graduate, and post-graduate students. Seminars and lectures were organized to involve a broader spectrum of investigators from related disciplines to establish further future cooperation and give students the opportunity to obtain detailed information directly from prominent experts and have discussions with them.

## INSTITUTIONAL COOPERATION IN RESPONSIBLE AND SUSTAINABLE EDUCATION

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Sylvie Formánková**

CZECH INSTITUTION:

**Faculty of Business and Economics,  
Mendel University in Brno, [www.pef.mendelu.cz](http://www.pef.mendelu.cz)**

FOREIGN INSTITUTION:

**Faculty of Business Administration (FBA),  
Hedmark University College (HUC), [www.eng.hihm.no](http://www.eng.hihm.no)**

FINAL GRANT:

**870 468,30 Kč / 32 848 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-272-2015**

### ANNOTATION:

The aim of this project was to develop and strengthen institutional cooperation between Mendel University in Brno, Faculty of Business and Economics and Hedmark University College, Faculty of Business Administration. The cooperation was based on joint research and publication in the field of responsible and sustainable education. The research included a comparison of both institutions with the aim of benchlearning - obtaining new knowledge and inspiration for the future existence and improvement of these universities in terms of social responsibility. The research was conducted in four stages: the creation of a questionnaire based on a modified version of the ISO 26000 draft (it could be downloaded here: <http://www.iso.org/iso/home/standards/iso26000.htm?archive=all>), the distribution of the questionnaire and personal interviews with appropriate representatives from the university, the evaluation of the questionnaire and finally a comparison of the results in three main areas – economic, social and environmental. Outputs leading to a possible suggestion of improvements were published as a monograph (book). This monograph could be used as the starting point for social responsibility implementation at the tertiary level of education at all institutions that want to do more for their students, employees,

and community. Such institutions will be oriented on the quality of their education, services for employees, disabled students/employees, transparency of their actions, and cooperation with the community and non-profit sector, which will help them to keep sustainability for future generations. A special term for these universities could be created – universities of a “new generation”.

### SUMMARY:

The aim of this project was to develop cooperation between Mendel University in Brno and Hedmark University College. The cooperation was based on joint research and publications in the field of responsible and sustainable education. The research included a comparison of both institutions with the aim of benchlearning – finding new knowledge and inspiration for the future existence of these universities in terms of social responsibility. The research was based on the principle of social responsibility specified in the norm was ISO 26000. The research was conducted by the project partners Sylvie Formánková, Kristin Stevik and Renata Kučerová. The results of the research were published by also in the monograph „Responsibility and Sustainability of Higher Education Institutions“ by the Publisher Pearson in Great Britain. The cooperation continues after the project termination. Currently the issue is being researched from the point of view of the stakeholders – students and staff of the university. The other part of the project consisted in strengthening of the social responsibility and sustainability of higher education. In this respect the application of the measures is being conducted currently, as the both institutions are launching innovation in order to achieve the goal set (building of advisory groups for social responsibility of the universities, etc.).

## POINTS – PROGRESSIVE OPTIONS IN TECHNOLOGY AND SCIENCE

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Ilona Kuboňová**

CZECH INSTITUTION:

**Teplice Gymnasium, [www.gymtce.cz](http://www.gymtce.cz)**

FOREIGN INSTITUTION:

**Numedal videregaende skole, [www.numedal.vgs.no](http://www.numedal.vgs.no)**

FINAL GRANT:

**380 517 Kč / 14 359 €**

PROJECT NUMBER:

**EHP-CZ07-ICP-3-275-2015**

### ANNOTATION:

The main objective of the POinTS project was the mutual cooperation among the teachers and students of both schools - Gymnázium Teplice and Numedal Videregaende skole- related to natural science and the use of ICT tools. The aim was to present natural science subjects as attractive and useful disciplines whose knowledge is applied in everyday situations and is thus of high importance.

The intention was to remove the existing prejudice against natural science among students by implementing ICT tools and English language as motivating factors in the learning process. The use of ICT tools eliminates the learning obstacles that students might face during frontal teaching and therefore increase their confidence and enthusiasm for learning. With the help of challenging and experience-based tasks, it was possible to show natural science as a dynamic and progressive discipline whose outputs are highly appreciated in developed societies.

### SUMMARY:

POinTS = Progressive Options in Technology and Science was a mutual cooperation project between Gymnázium Teplice from the Czech Republic and Numedal Videregaende skole from Norway, in which teachers and students from both countries searched for connections between current scientific knowledge

and its development in historical context. They used a wide range of ICT tools and an e-learning platform in order to deal with challenging tasks from different fields of science and technology. Another aim was to point out that scientific knowledge, as we perceive it nowadays, is related to revolutionary findings from the past, and therefore we should understand science and technology as branches continuously in progress. Project goals were focused on both teachers and students through five learning modules related to natural science and history and were designed for the target group of children aged 15 - 17 years. The participants gained knowledge in various science issues based on teamwork activities.

## INCREASING THE SCIENTIFIC RESEARCH COMPETENCES OF THE YOUNG ACADEMIC STAFF FROM THE FACULTY OF EDUCATION

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Petra Králová**

CZECH INSTITUTION:

**The University of Hradec Králové – Faculty of Education**  
<https://www.uhk.cz/cs-CZ/PDF>

FOREIGN INSTITUTIONS:

**The Norwegian School of Sport Sciences, <http://www.nih.no/en>**  
**The University of Oslo, <http://www.uio.no/english/about/>**

FINAL GRANT:

**186 745 CZK / 7 047 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-4-284-2015**

### ANNOTATION

The overall objective of the project was to support young ac-

ademic staff and their research. The project provided opportunities to increase the research competences of young academic staff. The main objective of the project is the development of the existing bilateral cooperation between institutions of tertiary education in the Czech Republic and Norway, specifically between the University of Hradec Králové (UHK) and the University of Oslo.

**The project and its concept fulfils two main outputs that were formulated on the program level:**

- enhanced mobility of university academic staff between the receiving states and EHP states;
- more intensive cooperation between institutions in the area of university education between the receiving states and EHP states.

**These objectives were achieved through:**

- new inter-university and faculty agreements (including mobility);
- promotional events (at the program and project levels);
- the preparation of joint outputs and services (methodical handbooks of proven methods and guidelines);
- follow-up cooperation (planned or implemented).

**SUMMARY:**

The Faculty of Education prepared this project concerning 3 staff mobilities at the University of Oslo and NSSS in Norway. The aim of our project were research visits at partner institutions in Norway and the shadowing of colleagues. The research stay is a unique opportunity for young talents to explore their skills in a new, inspiring environment and to identify valuable collaboration partners for the future. The aim of this project was to support short-term research stays and thus promote the exchange of experience and networking amongst colleagues in their research areas. The main mission of this internship (the first activity at UiO) is to shadow Professor Thomas Hylland Eriksen. The aim of the second activity was a research visit at NSSS.

## CZECH – NORWEGIAN MOBILITY PARTNERSHIP

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Sylvie Formánková**

CZECH INSTITUTION:

**Faculty of Business and Economics, Mendel University in Brno, <http://www.pef.mendelu.cz>**

FOREIGN INSTITUTION:

**Faculty of Business Administration (FBA), Hedmark University College (HUC) <http://www.hihm.no/content/view/full/12762>**

FINAL GRANT:

**902 685 CZK / 34 064 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-1-024-2014**

**ANNOTATION:**

The objective of this project was to sustain and strengthen the relationship of the Faculty of Business and Economics, Mendel University in Brno (Mendelu) and the Faculty of Business Administration, Hedmark University College (HUC). The attainment of this objective was based on the mobility of students and teachers, on their knowledge and experience they shared with the partner institution. Both institutions are compatible, so there were no barriers of students'/teachers' exchange. The mobility was targeted primarily on the students from both institutions. They came for one semester to study at the partner's institution. They were able to compare the subjects taught at both selected partner institutions, see different approaches and methods of teaching, and study new subjects that were not included in the program at their home faculty. It led to an improvement of their language skills and increased competitiveness in the national and international labour markets. The secondary target group were teachers that came for one week to teach at the partner institutions. The teachers share their experience with the teaching methods of a certain subject. They gained new knowledge in this area and found new perspectives and solutions. They improved their pedagogical skills and developed academic contacts. The students and teachers were selected according to the criteria



agreed to by both partner institutions. The selection process has been done according to the rules set in the project documentation with respect of all rights of the participants and no discrimination, including the equality of women and men. The project took responsibility to all stakeholders that were affected by the project's activities and decisions. The whole procedure was based on good governance and transparency of all activities. To ensure the sustainability of the project, partial objective was set. The partial objective of the project was to find a way of possibly cooperating in the future in terms of study and teaching mobility and common research. To achieve these aims, common areas of research, new ideas of teaching methods, and the establishment of new study subjects were identified. Both institutions are using mainly classical methods of teaching – lectures, seminars, and exercises. In addition, HUC streams lectures for courses that are offered through distance learning programs. One of the aims of this project was to find new ways of teaching that would be supportive for those students that are working or due to any kind of disability or family issues are not able to regularly attend classes, and as a supplement to the classical method of teaching, to enhance the students' learning outcomes. This aim was focused on e-learning methods. Regarding new subjects, the Faculty of Business and Economics (Mendelu in Brno) is newly offering a Corporate Social Responsibility (CSR) subject for the students at the bachelor's level (in English too) and is trying to be active in CSR. HUC incorporates CSR in its curriculum in its Bachelor in Business Administration program and is planning to introduce a master's CSR course. It is an important regional competence institution, collaborates actively with community life in Hedmark and the Inland Region and is involved in the studies. Both institutions share their theoretical and practical knowledge from this field and found ways of possible cooperation in the future. It contributed to the continuous improvement of both institutions and so ensured their stability and future prospect to be able to educate future generations.

#### **SUMMARY:**

The competition in the labour market is high and each competitive advantage such as tertiary level of education, the ability to speak other languages, and to work in a different environment, could be beneficial. All these advantages could be obtained when participating in mobility projects. The objective of this project as to sustain and strengthen the relationship of the Czech Faculty of Business and Economics, Mendel University in Brno (Mendelu) and the Norwegian Faculty of Business Administration, Hedmark University College (HUC). The attainment of this objective was based on the mobility of students and teachers, on their knowledge and experience they share with the partner institutions. Both institutions share their theoretical and practical knowledge from this field and will find ways of possible cooperation in the future. It contribute to the continuous improvement of both insti-

tutions and ensured their stability and future prospect to be able to educate future generations.

## **HEALTH DETERMINANTS AND HEALTH INEQUALITIES IN THE CZECH REPUBLIC AND NORWAY: LESSONS, CHALLENGES AND PERSPECTIVES OF COOPERATION**

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Elena Tulupova**

CZECH INSTITUTION:

**Charles University in Prague, 1st Faculty of Medicine,  
The Institute of Public Health and Medical Law**  
<http://usm.lf1.cuni.cz/~ppetri/index.html>

FOREIGN INSTITUTION:

**Bergen University College**  
<http://www.hib.no/english/default.asp>

FINAL GRANT:

**620 691 CZK / 23 422 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-1-042-2014**

#### **ANNOTATION:**

The main objective of the project was to increase the bilateral mobility of academic and educational staff between Czech and Norwegian partners dedicated to sharing best practices, creating common scientific and popular publications, and participating in workshops and seminars in the Czech Republic and Norway organized by the project partners. The realization of the project led to substantial benefits for all participants and that this project became the background for the development of long-term cooperation in the field of public health policy, education, and research, with multi-institutional and multi-disciplinary approaches

and wide perspectives for the further development of cooperation between the Czech Republic and Norway. The main project outcomes included mobility activities (two seminars and two workshops in Bergen and Prague) where participants had the opportunity to develop their competences and skills and jointly prepare publications for peer-reviewed scientific journals in English as well as popular publications in national languages.

Activities within the project were primarily dedicated to topics of health determinants and health inequalities in the Czech Republic and Norway. This issue is of high relevance in both partner countries. However, there are significant differences in the political approaches to these issues. Over the past few decades, the Czech Republic has undergone a general political and economic transformation that has led to the destruction of a totalitarian system and resulted in a standard democracy. However, aside from the undoubtful positive aspects of this major social change (including the improvement of the health status of the Czech population and of the quality of health care), this process is now accompanied by negative phenomena (unemployment, poverty, homelessness) due to growing social inequalities. Health inequalities are mentioned among the strategic objectives of Health 2020/ National Health Strategy 2014 ([http://www.mzcr.cz/Verejne/dokumenty/zdravi-2020-narodni-strategie-ochrany-a-podpor-y-zdravi-a-prevence-nemoci\\_8690\\_3016\\_5.html](http://www.mzcr.cz/Verejne/dokumenty/zdravi-2020-narodni-strategie-ochrany-a-podpor-y-zdravi-a-prevence-nemoci_8690_3016_5.html)). The Czech Strategy for Social Inclusion 2014 – 2020 ([http://www.mpsv.cz/files/clanky/17082/strategie\\_soc\\_zaclenovani\\_2014-20.pdf](http://www.mpsv.cz/files/clanky/17082/strategie_soc_zaclenovani_2014-20.pdf)) includes the obligation to improve the education of health professionals concerning socially excluded and vulnerable social groups and taking a non-discriminatory approach in health care. However, the topic is currently underestimated by Czech policymakers (for example, the Czech Republic has one of the most liberal policies in tobacco and alcohol trade and consumption).

Health inequalities are high on the agenda of the Norwegian government (White Paper on Public Health Policies, 2003; National Strategy to Reduce Social Inequalities in Health, 2007). The current policy responses have a broad scope and are oriented on the social determinants of health and their distribution across society. In general, Norway is among the countries with significantly better health outcomes than the Czech Republic.

Thus, the Czech project participants and the Czech institution substantially benefitted from the possibility to obtain knowledge about the Norwegian experience from the historical perspective. On the other side, the Norwegian participants are interested in Czech health policy since Norway is considering to liberalize some of its policies in this field. Sharing best practices was of mutual benefit. Another important benefit of the project – the project outcomes, in particular, the best practices collected and published during the project, were disseminated to a wide spectrum of policy makers, experts, and the general public and could provide inspiration for conceptual documents in health policy dedicated to eliminating social and health disparities in European countries.

#### SUMMARY:

The main objective of the project was to increase the bilateral mobility of academic and educational staff between the Institute of Public Health and Medical Law, 1st Faculty of Medicine, Charles University in Prague and Bergen University College. Project outcomes include mobility activities (two seminars and two workshops in Bergen and Prague), and the preparation of a common manuscript for submission to a peer-reviewed scientific journal as well as popular publications in national media. Within these activities, the participants from both sides had the opportunity to increase their skills and competences, to share best practices with colleagues and different stakeholders and to get inspiration for future cooperation. The project became the background for the development of a long-term partnership in the field of health education and research with wide perspectives for further cooperation between the Czech Republic and Norway.

## OUTDOOR LEARNING AND HEALTH PHYSICAL EDUCATION IN CROSS-CURRICULAR EDUCATION

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Marie Hronzová**

CZECH INSTITUTION:

**Charles University in Prague, <http://www.pedf.cuni.cz>**

FOREIGN INSTITUTION:

**The University of Stavanger, Norway, The Faculty of Arts and Education, <http://www.uis.no/frontpage>**

FINAL GRANT:

**474 504 CZK / 17 906 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-2-077-2014**

**ANNOTATION:**

The main aim of the project was to reduce the educational disparities between the Czech Republic and educationally developed European countries (Norway). Other goals were to strengthen bilateral relationships between Norway and the Czech Republic and to expand the pool of student mobility.

The program was aimed at strengthening the knowledge and skills of teachers and students in the field of outdoor learning education in the Czech Republic and promote cooperation between the Czech educational institutions and educational institutions in Norway. The activities covered in the project were in full compliance with these goals.

Thanks to this project, cooperation between Charles University and the University of Stavanger was facilitated. The cooperation included the sharing of best practices: Outdoor Learning (Norway) and Health Physical Education (Czech Republic) that could be a source of inspiration and development in both countries. Teachers and students had the opportunity to broaden their knowledge and to improve their professional and personal skills and to gain experience abroad.

The university staff transferred the experience gained in Norway (The University of Stavanger) at their home university (Charles University) and that the project contribute to the modernization and innovation of the Framework Educational Program (MSMT-2647/2013-210) in the Czech National Program of Education. It will also allowed for the implementation of proven and progressive methods and procedures from the Norwegian educational system into Czech educational programs. The project was designed in accordance with the current teaching schedule and syllabi of the courses taught at the Faculty of Education of Charles University: Outdoor motor games and exercises OEB2320018, Outdoor summer course OEB2320012, Physical Education and Health OEM20001 (<https://is.cuni.cz/studium/>). The course and results of the project were coordinated with the "Development of Fields of Science at Charles University" (PRVOUK), whose goal was to ensure that institutional funding under the new mechanism lead not only to maintaining the existing scientific output and quality, but mainly to improve them, both in national and international aspects.

**SUMMARY:**

The mobility supported and developed inter-institutional cooperation in the field of education. The Czech partner provided knowledge, skills, and methods in Health Physical Education, and the Norwegian partner in Outdoor Learning. The exchange of information, student mobility, job-shadowing, and model lessons helped in the subsequent retraining process of teaching and learning and in the innovation of teaching methods. It contributed to the development of educational programs. Common courses provided a platform for creating common modules, new teaching tools and methods, and for integrating Health Physical

Education and Outdoor Learning into the curriculum of both countries. Students and teachers observed, demonstrated, compared, and evaluated the proposed procedures in Health Physical Education and Outdoor Learning in educational process and assess cross-curricular integration.

**TEACHERS ON THE MOVE**

## TYPE OF ACTIVITY:

**Mobility project**

## CONTACT PERSON:

**Dana Metelcová**

## CZECH INSTITUTION:

**The Secondary Nursing School and Nursing College, Liberec**

## FOREIGN INSTITUTION:

**Fjölbrautaskólinn í Breiðholti, [www.fb.is](http://www.fb.is)**

## FINAL GRANT:

**429 228 Kč / 16 197 €**

## PROJECT NUMBER:

**EHP-CZ07-MOP-2-120-2015****ANNOTATION:**

The main objective was the mobility of persons dealing with nursing education so that they can share their experience and to obtain new inputs for their work. The goal was to facilitate their professional development and provide new information about issues concerning ways of nursing care - active care and follow-up care. The next goal was to learn about methods of care standardization, about safety and security codes, about facilities and equipment at the partner school and about the possibilities of further education and career development. The goal was to gain good practices.

This shadowing and good practices helped us to enhance our skills and our competences and we were able to share new findings and knowledge with other teachers. We believe that shared knowledge helped to enrich not only the participants but, eventually, other colleagues as well.

**SUMMARY:**

The basis of this project was job shadowing organized for nurs-

ing teachers, for international coordinators and for management (preferably heads) of both schools. Four Czech teachers went to the partner school in Reykjavik to shadow their Icelandic colleagues in April 2016, and 4 Icelandic teachers came to Liberec to shadow their Czech partners in November 2015. Nursing teachers shadowed their colleagues during theoretical and practical nursing lessons in a school environment and also in nursing institutions and organizations, for example in hospitals and Integrated Rescue System facilities. International coordinators focused on the possibilities of future cooperation between the schools and they discussed opportunities for students to gain experience abroad. The managers of both schools concentrated on school management, on school curricula and on ways of overcoming obstacles.

## IMPROVING THE QUALITY OF BIOLOGY DIDACTICS AND THEIR ROLE IN TEACHER EDUCATION

TYPE OF ACTIVITY:

**Mobility projects**

CONTACT PERSON:

**Jan Petr**

CZECH INSTITUTION:

**The University of South Bohemia, [www.jcu.cz](http://www.jcu.cz)**

FOREIGN INSTITUTION:

**The Norwegian University of Science and Technology  
<http://www.ntnu.edu/plu>**

FINAL GRANT:

**291 230 CZK / 10 990 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-170-2015**

### ANNOTATION:

The implementation of current teaching methods is needed and collaboration on the European level is necessary because some essential problems in biology education can be solved on the international level. Because the partners have published a new

monography about biology didactics this year, we expected that collaboration with the partner will improve teacher education on the basis of the exchange of experience.

The main benefits:

1. The opportunity to visit the partner's institution and learn about techniques used in biology didactics.
2. The opportunity to compare essential problems of biology didactics.
3. Maintaining collaboration begun in the previous project.

### SUMMARY:

This project was aimed on improving the quality of teacher education via the exchange of experience within the domain of biology didactics and comparing educational approaches in the Czech Republic and Norway. The project was implemented through mobility i.e. short (one-week) educational stays by four Czech teacher educators in Norway (NTNU) and a short stay of one university teacher from Norway in the Czech Republic (The University of South Bohemia).

The collaboration was based on previous contact within the framework of the European S-TEAM project aimed at the implementation of inquiry principles in education.

This project helped to tackle the main problems in biology education that are reflected in biology didactics e.g. a lack of interest in science (biology), lots of information in individual biology branches, the use of inquiry principles, etc.

## SHARING GOOD PRACTICES IN EUROPEAN SCIENCE AND RESEARCH PROJECTS

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Helena Kvačková**

CZECH INSTITUTION:

**Charles University, [www.cuni.cz](http://www.cuni.cz)**

FOREIGN INSTITUTION:

**The University of Iceland, [www.hi.is](http://www.hi.is)**

FINAL GRANT:

**298 626 Kč / 11 269 €**

PROJECT NUMBER:

**EHP-CZ07-MOP-2-219-2015**

### ANNOTATION:

The aim of the project was to job shadow colleagues in the project centres at the University of Iceland and at Charles University. Acquiring new knowledge enhanced the competencies of the staff and over the long run, it increased the number of project proposals that are administered in contest programs such as ERC (European Research Council grants), MSCA (Marie Skłodowska-Curie Actions) and other subcategories of Horizon 2020 and Erasmus+. This helped to improve the internationalization of Charles University and the University of Iceland and to increase their positions in world university rankings. The role of both partners was to formally promote the competitiveness of project proposals as well as to inform researchers and ensure that projects were adequate in respect of their ethics, impact, data protection, dissemination of results, etc. We believe that the formal aspects of such projects played an important and integral role in addition to their scientific role.

### SUMMARY:

The European Centre at Charles University and the Centre for Research in the Humanities/Division of Science and Innovation/Office for International Education at the University of Iceland aimed to develop an opportunity to exchange good practices, experience and knowledge of administering European research

and exchange programmes in order to create bonds between the two universities and to increase the volume of mutual academic exchange. The particular activity - job shadowing - was done with emphasis on the administration of European research/exchange programs, the evaluation of performance in humanities, activities carried out within international associations such as the European University Association, the OECD, etc., and measures of scientific excellence. Those are factors that both universities were interested in and wanted to learn more about.

## BEGIN: BROADENING EXPERIENCE WITH GUIDANCE IN VOCATIONAL EDUCATION

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Jitka Jirsáková**

CZECH INSTITUTION:

**The Czech University of Life Sciences Prague, [www.ivp.czu.cz](http://www.ivp.czu.cz)**

FOREIGN INSTITUTION:

**The Norwegian University of Life Sciences  
<https://www.nmbu.no/en/about-nmbu/faculties/miljotek/departments/imt>**

FINAL GRANT:

**357 866 CZK / 13 504 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-154-2015**

### ANNOTATION:

The core idea behind this proposition was to improve the connection between vocational education and training (VET) and vocational guidance. Both VET and guidance approaches are not separable. In order to balance the supply and demand on the labour market and to help future professionals to effectively acquire competences and qualifications, it is necessary to be more knowledgeable in the area of different types of guidance and counselling methods.

We expected the project to contribute to the fulfilment the overall objective of the program, e. g. to enhance human capital and knowledge, skills and experience through the exchange of experience and students and staff mobility between the Czech Republic and EEA countries. This outcome could be reached in two directions. First, all participants (students and academic staff) are or will one day become educators and counsellors. The better professionals they are or they will be, the more effective could be the VET system itself (teacher / counsellor is understood as an agent of change, innovator and driver of reforms). Secondly, the mobility could help persons with their professional career development, including their entrance into and promotion within the labour market.

**This general level of project intent could be summarized as follows:**

- The main aim of the future project was to allow students and academics to learn more about vocational education and vocational guidance and counselling in Norway and to implement new knowledge in teaching and counselling practices in the Czech Republic (and vice versa)
- The visiting persons became familiar with different types of counselling institutions (at one university, as a part of a vocational school, provided by other institutions), where they got in touch with professionals and methods that are common there; because Czech visiting students belonged to the Guidance study program and counselling in vocational education, we expected they will be able to specify narrower topics and goals for their mobility (for example, in career guidance, in study counselling, in personal professional development, etc.)
- New knowledge has been developed in accordance with practice; specific attention was paid to peer-to-peer experience (students help their colleagues) and with experiential learning. This allowed the participants to establish new professional contacts and in the future, it could enhance the employability of the participants
- Both students and teachers shared new experience after finishing the mobility period; we expected this could become a part of the curricula as innovation or inspiration for the further development of study programs
- The mobility allowed academic staff to make progress in internationalization (language skills, international research collaboration, etc.) and it could start new future project activities
- The results were presented and shared to let other students use the project outcomes. The students applied and shared their vocational knowledge as well as general competences (language, international cooperation, conducting their own research).

**SUMMARY:**

The main aim of the project was to implement two student mobilities between both partner institutions. This plan complemented

the exchange of academic staff. The participants acquired and shared knowledge and understanding of the current systems of vocational education and training (VET) in both countries, especially with regard to the role of guidance and counselling methodologies as a part of VET. In the short-term perspective, the project enhanced the professional skills of students, especially those skills that could be applied in vocational education and guidance. In the long-term perspective, we assume that the outcomes should improve the quality of initial training of both vocational teachers and counsellors. An important benefit of the project will be further cooperation between partners in the field of research and innovation.

## AN ANALYSIS OF E-LEARNING METHODOLOGIES FOR PRISON EDUCATION AT THE UNIVERSITY LEVEL

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Eva Slezáková**

CZECH INSTITUTION:

**Masaryk University – Faculty of Economics and Administration, [www.econ.muni.cz](http://www.econ.muni.cz)**

FOREIGN INSTITUTION:

**The Norwegian School of Theology, <http://www.mf.no/en>**

FINAL GRANT:

**210 662 CZK / 7 950 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-179-2015**

**ANNOTATION:**

The main objective of this project was to obtain detailed knowledge about the Norwegian e-learning platform that is used by universities for providing education in prisons. Based on a study visit by a group of experts from Masaryk University, a document

about possibly implementing specific e-learning methodologies was formed and presented to interested subjects (different departments of Masaryk University and representatives from the Czech Prison Service). This document was an important milestone for creating a complex e-learning platform for prison education at the university level in the Czech environment.

Moreover, this project could have a strong impact on developing the long-term human capital of inmates in prison (current and also future), who have limited possibilities to increase their qualifications.

The project contributed to the development of bilateral cooperation between the Czech Republic and Norway. It started a regular discussion about the possibilities of e-learning development for socially excluded groups.

#### **SUMMARY:**

The focus of the project was on analyzing e-learning methodologies that are being used in Norway as an educational platform for prison education at the university level. The project itself consists of two main parts.

The first one is a short-term visit (in Oslo, Norway) by a small group of ICT and organizational experts from Masaryk University (including meetings with users of e-learning systems at universities and in prisons and also with system-creators from the Norwegian Prison Service). During the second part of project (in Brno, Czech Republic), the group of experts prepared a document that will be the basis for implementing an e-learning methodology for prison university education in the Czech Republic.



## SUMMER SCHOOL OF INTERDISCIPLINARY STUDIES

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Monika Žumárová**

CZECH INSTITUTION:

**The University of Hradec Králové, [www.uhk.cz](http://www.uhk.cz)**

FOREIGN INSTITUTION:

**Lillehammer University College, <http://www.hil.no/eng>**

FINAL GRANT:

**143 847 CZK / 5 428 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-200-2015**

#### **ANNOTATION:**

The main objective of the project was the development of the existing bilateral cooperation between institutions of tertiary education in the Czech Republic and Norway, specifically between the University of Hradec Králové and Lillehammer University College. An innovative tool for the international exchange was the concept and realization of the Summer School of Interdisciplinary Studies (SSIS) at the University of Hradec Králové, which offered students a four-week long intensive module system of classes. The summer school, as an innovative tool of education, was offered to both students of the tertiary sector in Norway and to students in the Czech Republic. Owing to the offered modules, the students in Norway had the opportunity to learn about current economic, social, cultural, and historical topics, and the conditions that influenced their formation. Each day, the students were allowed to choose from between two parallel modules. Another objective of the project was to develop students' individual abilities and to strengthen their professional and personal skills, as well as other knowledge and language competence. A pilot year of the summer school with international exchange was realized within this mobility project. However, we expect its implementation in the coming years as well.

**The project and its concept fulfils two main outputs, which were formulated on the program level:**

- enhanced mobility of university students and teachers be-

tween the receiving states and EHP states;

- more intensive cooperation between institutions in the area of university education between the receiving states and EHP states

**These objectives were achieved through:**

- mobility within the ECTS credit system;
- new inter-university and faculty agreements (including mobility);
- promotional events (at the program and project levels);
- the preparation of joint outputs and services (joint summer schools, methodical handbooks of proven methods and guidelines);
- follow-up cooperation (planned or implemented)

**SUMMARY:**

The main objective of the project was the creation of the concept and the realization of the Summer School of Interdisciplinary Studies (SSIS) at the University of Hradec Králové, which offered students a four-week long intensive modular system of classes. As an innovative tool of education, the summer school was offered to both students of the tertiary sector from Norway and to students from the Czech Republic. From the offered modules, the students from Norway had the opportunity to learn about current economic, social, cultural, and historical topics and the conditions that influenced their formation. This concept also continued to develop the existing international cooperation with the Norwegian universities and increase the mobility of university students.



## DESKTOP PUBLISHING IN SIGN LANGUAGES

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Ondřej Válka**

CZECH INSTITUTION:

**The Teiresias Centre of Masaryk University**  
[www.teiresias.muni.cz](http://www.teiresias.muni.cz)

FOREIGN INSTITUTION:

**Statped, [www.statped.no](http://www.statped.no)**

FINAL GRANT:

**663 096,3 CZK / 25 023 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-230-2015**

**ANNOTATION:**

The overall aim of the project was the general improvement of sign language usage in both Norwegian and Czech educational systems. Benefitting on the one hand from the fact that Masaryk University was able to include nearly one-half of the Czech university students (which means about 50 sign language users among the students and teaching staff of Masaryk University) in its study programs, and on the other from the uninterrupted Norwegian tradition of teaching through sign language and teaching the language itself, it was possible to develop the strengths of both partners. Czech and Norwegian sign language users and specialists in desktop publication, both hearing and deaf, joined together to create and share their experience in creating publications in sign languages. This was achieved through: (1) research stays at both Statped in Heidal and the Teiresias Centre in Brno, (2) comparing the existing tools, (3) job shadowing of key activities at both institutions.

**SUMMARY:**

The users of Czech sign language and Norwegian sign language, together with experts in desktop publishing, met to share their experience and know-how in the field of publishing information in sign languages for the purposes of higher education and professional careers of the deaf. They compared the existing technical tools for that purpose (shorter video documents, video books

in sign languages, sign dictionaries, instant video communication clients). Good practices were assessed within a more general framework of universal learning design and hybrid books containing more layers (text, audio, video) and guidelines for such publishing, as well as a strategy for using them in both secondary and tertiary education was proposed.

## INCREASING THE SCIENTIFIC RESEARCH COMPETENCES OF A MULTI-DISCIPLINARY SCIENTIFIC RESEARCH TEAM IN INTERCULTURAL DIALOGUE

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Olga Sovová**

CZECH INSTITUTION:

**The University of Hradec Králové – Institute of Social Work**  
<https://www.uhk.cz/en-GB/USP>

FOREIGN INSTITUTION:

**Lillehammer University College**, <http://www.hil.no/eng>  
**The University of Stavanger**, <http://www.uis.no>

FINAL GRANT:

**450 296 CZK / 16 992 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-4-283-2015**

### ANNOTATION:

The main objective of the mobilities was to continue and to deepen the cooperation between the University of Stavanger, Lillehammer University College and the University of Hradec Králové – especially the Institute of Social Work.

Over the past three years, the Institute of Social Work has created a multi-disciplinary scientific research team whose staff has been primarily focused on researching the contemporary fam-

ily – as the central research topic of an international project in which both above mentioned Norwegian universities were also involved.

Thanks to the mobilities, the members of the research team had the opportunity to enhance their skills and knowledge in other research areas (apart from the contemporary family). The mobilities especially focused on the following research topics (based on the research specialization of the team members):

Intercultural Dialogue: Growing ethnic and cultural diversity combined with inclusive democratic participation leads to the questioning of cultural givens; Contemporary Welfare State Modernization Processes; Child protection; Religion; Migrants; The legal framework of health care services in relation to human rights protection; The responsibility of medical professionals and providers of health care services: dual loyalty in helping professions – medical and social workers; Immigration policies and their impact on human rights.

Thanks to the mobilities, the research team members had the opportunity to increase their scientific research competences, to continue successful cooperation with Norwegian partners and possibly to define common scientific and research topics as a subject for future joint projects.

### The project and its concept fulfilled two main outputs that were formulated on the program level:

- enhanced mobility of the university academic staff between the receiving states and EHP states;
- more intensive cooperation between institutions in the area of university education between the receiving states and EHP states

### These objectives were achieved through:

- new inter-university and faculty agreements (including mobility);
- promotional events (at the program and project levels);
- the preparation of joint outputs and services (methodical handbooks of proven methods and guidelines);
- follow-up cooperation (planned or implemented).

### SUMMARY:

Over the past three years, the Institute of Social Work has created a multi-disciplinary scientific research team whose staff has been primarily focused on researching the contemporary family – as the central research topic of an international project in which both above mentioned Norwegian universities were also involved. Thanks to the mobilities, the members of the research team had the opportunity to enhance their skills and knowledge in other research areas (apart from the contemporary family). The mobilities were especially focused on the following research topics (based on the research specialization of the team members): Intercultural Dialogue. Thanks to the mobilities, the

research team members had the opportunity to increase their scientific research competences, to continue successful cooperation with Norwegian partners and possibly to define common scientific and research topics as a subject for future joint projects.

## SUMMER SCHOOL OF INTERDISCIPLINARY STUDIES II

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Monika Žumárová**

CZECH INSTITUTION:

**The University of Hradec Králové, [www.uhk.cz](http://www.uhk.cz)**

FOREIGN INSTITUTION:

**The Norwegian University of Science and Technology (NTNU)  
<http://hist.no/english/>**

FINAL GRANT:

**567 865 CZK / 21 429 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-4-285-2015**

### ANNOTATION:

The main objective of the project was the development of the existing bilateral cooperation between the institutions of tertiary education in the Czech Republic and Norway, specifically between the University of Hradec Králové (UHK) and the Sor-Trondelag University College (HiST). An innovative tool for the international exchange was the concept and realization of the Summer School of Interdisciplinary Studies (SSIS) at the University of Hradec Králové, which offers the students a four-week long intensive module system of classes. The summer school, as an innovative tool of education, was offered to both students from the tertiary sector in Norway and to students in the Czech Republic. Owing to the offered modules, the students in Norway had the opportunity to learn about current economic, social, cultural, and historical topics, and the conditions that influenced their formation. Each day, the students were allowed to choose from between two parallel modules. Another objective

of the project was to develop students' individual abilities, and to strengthen their professional and personal skills, and other knowledge and language competences. A pilot year of the summer school with international exchange was realized within this mobility project. However, we expect its implementation in the coming years as well.

### The project and its concept fulfilled two main outputs that were formulated on the program level:

- enhanced mobility of university students and teachers between the receiving states and EHP states;
- more intensive cooperation between the institutions in the area of university education between the receiving states and EHP states.

### These objectives were achieved through:

- mobility within the ECTS credit system;
- new inter-university and faculty agreements (including mobility);
- promotional events (at the program and project levels);
- the preparation of joint outputs and services (joint summer schools, methodical handbooks of proven methods and guidelines);
- follow-up cooperation (planned or implemented).

### SUMMARY:

The main objective of the project was expanding of the concept of the SSIS I (our partner - Lillehammer University College) with other partners - especially the Sor-Trondelag University College. We created the concept of the Summer School of Interdisciplinary Studies (SSIS) at the University of Hradec Králové and we implemented SSIS I in June 2016. SSIS offered students a four-week long intensive modular system of classes. This concept will also continue to develop the existing international cooperation with the Norwegian universities and increase the mobility of university students.

## SPECIFIC METHODS FOR THE DETECTION OF ANTIBIOTIC RESISTANCE MECHANISMS IN A CLINICAL MICROBIOLOGY LABORATORY

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Helena Žemličková**

CZECH INSTITUTION:

**The Department of Clinical Microbiology,  
Charles University - Faculty of Medicine in Hradec Králové**  
<https://www.lfhk.cuni.cz/>

FOREIGN INSTITUTION:

**The University of Tromsø - Faculty of Health Sciences**  
[https://en.uit.no/om/enhet/forsiden?p\\_dimension\\_id=88108](https://en.uit.no/om/enhet/forsiden?p_dimension_id=88108)

FINAL GRANT:

**243 160 CZK / 9 176 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-4-254-2015**

### ANNOTATION:

The overall objective of the project was to increase the teaching and scientific skills of the academic staff. The project aimed at improved teaching proficiency in tertiary institutions by comparing and implementing transferred strategies and methodologies. We had the possibility to learn a part of the complex methodology surrounding the molecular analysis of antibiotic resistance. The increased ability of our staff on molecular epidemiology will be reflected in future research topics in cooperation with our Norway partner. Two of the 4 Czech participants in the staff mobility project were young faculty employees (under 35 years of age) and two staff members were women (including the project leader).

### SUMMARY:

The departmental visit at a respected host institution gave us

the opportunity to meet several of the senior staff members and discuss areas of potential research collaboration. The staff was trained to perform specific laboratory methods/diagnostic practices and increase their ability to routinely perform subsequent molecular epidemiological analyses of isolates. The second part of the visit was devoted to partner activities in the field of medical microbiology teaching. A one-week stay was sufficient for our staff to gain an overview in ongoing research projects and discuss probable future collaboration on topics of mutual interest.



# Did you know that...?

## Norway

Informality is widespread in Norwegian society. Formal titles and social position normally do not mean that a person should be addressed any differently than the man in the street. In other words, you are perfectly within 'normal' standards of behaviour if you call your professor by the first name.

[www.studyinnorway.no](http://www.studyinnorway.no)

## Iceland

Icelanders have a rather liberal outlook on life, similar to other Nordic countries. The level of gender equality is high and Icelandic people are known for being rather tolerant regarding sexuality and religion.

[www.studyiniceland.is/page/WhyIceland](http://www.studyiniceland.is/page/WhyIceland)

## Czech Republic

Did you know about Tomáš Baťa, the Czech famous innovator in the shoemaking industry? Tomáš Baťa, a Czechoslovak born in Zlín (the region of Moravia), is considered to be one of the world's greatest businessmen of his time. He and his family have built a footwear empire operating on international scale that has changed this branch forever. Besides shoemaking, he also left a mark on the face of Czechoslovak education and regional politics, in which he took part as well.

[www.czech.cz/en/About-CZ/Facts-about-the-Czech-Republic/Famous-historical-figures/Tomas-Bata](http://www.czech.cz/en/About-CZ/Facts-about-the-Czech-Republic/Famous-historical-figures/Tomas-Bata)

# PROJECTS IN NATURAL AND FORMAL SCIENCES





# THE FORMATION OF RESEARCH SURROUNDING YOUNG RESEARCHERS IN THE FIELD OF ADVANCED MATERIALS FOR CATALYSIS AND BIOAPPLICATIONS

## TYPE OF ACTIVITY:

**Institutional cooperation project**

## CONTACT PERSON:

**Jana Drbohlavová**

## CZECH INSTITUTION:

**The Brno University of Technology, <http://www.vutbr.cz>**

## FOREIGN INSTITUTION:

**The Norwegian University of Science and Technology  
<http://www.ntnu.edu/nt>**

## FINAL GRANT:

**797 061,60 Kč / 30 078 €**

## PROJECT NUMBER:

**NF-CZ07-ICP-1-040-2014**

## ANNOTATION:

The overall objective of the project was to develop bilateral cooperation between the Czech Republic (CEITEC) and Norway (NTNU) on several levels including (a) increasing professional and personal skills and competencies of education sector staff by gaining experience abroad, (b) the preparation of intensive courses for bachelor's, master's and Ph.D. students, (c) the preparation of new teaching methodologies and materials (including a presentation for e-learning), (d) the production of joint scientific publications (in highly impacted journals and conferences with acknowledgment of Norway Grants), (e) organizing an international summer school, (f) joint supervision of Ph.D. theses, and (g) making development plans in which environmental and sustainability issues were integrated.

In particular, the mobility placement was as follows: 2 outgoing junior researchers, 1 outgoing senior researcher, 2 outgoing Ph.D. students, 2 incoming senior researchers and 2 incoming students

from a master's study program. Each student or education sector staff stayed for a period of 2 weeks, while following or giving previously prepared short courses in the field of advanced nanomaterials for catalysis and bioapplications, respectively. The placement of 9 persons brought a significant benefit to both organizations from the educational point of view. We proposed to consecutively prepare 2 intensive programs that was supported by our own experience from both current and previous research. The result of such courses was new teaching materials in the form of presentations that is also available for e-learning.

An international summer school planned for 5 days was another smart form of education for young researchers and it was also an excellent event that helped to promote Norway Grants. The lectures reviewed current trends and knowledge in the fields of advanced nanomaterials for catalysis and bioapplications in general and in the main application area, i.e. the development of highly efficient photocatalysts for the decomposition of persistent organic pollutants in water. Furthermore, state-of-the-art techniques, as well as a demonstration tour in laboratory facilities for developing and characterizing nanoscale materials were also included.

Co-guidance of Ph.D. students at CEITEC-BUT and NTNU was another appropriate form of sustainable and long-term collaboration.

## SUMMARY:

The bilateral cooperation between the Brno University of Technology and the Norwegian University of Science and Technology was based on training young researchers and post-doc fellows for new scientific teams and centres supported by mutual exchange internships and strengthening further collaboration at the new international project level (both within and outside the EU).

Both project partners were involved in the education of bachelor's, master's and Ph.D. students in the field of biomaterials, biologically and photocatalytically active surfaces, and in the characterization of their morphology and hierarchical structure. The cooperation was also result in the development of new teaching tools about novel materials and led to the innovation of technologies. The activities within this project were supported by the partners' experience from research, management and social aspects related to the project (young women in science, women returning after maternity leave, gender balance).

## POLAR ECOLOGY COURSE – BIO SCIENCES

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Josef Elster**

CZECH INSTITUTION:

**The University of South Bohemia, <http://www.jcu.cz>**

FOREIGN INSTITUTION:

**The University Centre in Svalbard, [www.unis.no](http://www.unis.no)**

FINAL GRANT:

**1 013 701,50 Kč / 38 253 €**

PROJECT NUMBER:

**NF-CZ07-ICP-1-029-2014**

### ANNOTATION:

Clearly, both institutions have had extensive experience and a long tradition in preparing courses in selected fields in the high arctic and elsewhere. This is documented, for example, in final reports from the recent national-level courses entitled ([http://polar.prf.jcu.cz/data/Polar\\_ecology\\_course\\_2013.pdf](http://polar.prf.jcu.cz/data/Polar_ecology_course_2013.pdf) and ([http://www.unis.no/10\\_STUDIES/1020\\_Courses/Arctic\\_Biology/arctic\\_biology\\_courses.htm](http://www.unis.no/10_STUDIES/1020_Courses/Arctic_Biology/arctic_biology_courses.htm)). Hence, the main goal of the project, i.e. the creation of a joint education course in polar life science, represented a logical step in the development and improvement of teaching approaches at both institutions. Such joint activity provided 1) a platform for educational innovation in highly specialized topics covered to a different extent at both universities, e.g. parasitology, entomology and microbial ecology, and 2) great potential for knowledge exchange and cooperation strengthening in more general fields covered similarly by both universities, for example, plant ecology and general zoology.

Tutors and students were inherent parts of the course. Both groups benefitted from this novel international community, which increased, most probably, their competitiveness. Knowledge exchange operated not only among individuals handling one specific topic (e.g. plant ecology), but thanks to the multidisciplinary of the proposed course, the exchange ranged across investigated fields.

Although this international knowledge sharing among students and tutors represented the main benefit from the joint field

course, it would be largely impossible without a proper planning and material background. This also shows how complementary the cooperation between the two institutions is: while the Czech part is composed of a field station and laboratory in the central part of Svalbard, the Norwegian partner has fully equipped laboratories and lecture rooms at their university campus. We were convinced that these facilities are crucial for the course's success.

The proposed course served as a serious basis for greater cooperation between Czech and Norwegian scientists studying high arctic biota; and furthermore, that this cooperation emerged between the two most relevant institutions: UNIS – a university located directly in the Svalbard archipelago, and USB and its Centre for Polar Ecology, which manages Czech Arctic Research Infrastructure. The Centre for Polar Ecology is a specialized department which is dedicated to Arctic research and educational activities in the Arctic. Bilateral cooperation, here we were taking about either tutor-tutor or tutor-student interaction, was developed within the respective counterparts participating in the preparation or preformation of various course sections, which might eventually lead to long-term research cooperation. Nonetheless, the interaction between and among students was certainly one of the most important benefits of the course, which reduced the current disparities in EEA, while providing an important seeding of the equal chance idea directly into young generations. In addition, the proposed course became part of a larger teaching block merging life sciences (this proposal) with geographical sciences (the course proposed between UNIS and Charles University in Prague), which in fact resulted in trilateral cooperation that further strengthened Czech-Norwegian interconnection and knowledge exchange.

### SUMMARY:

The proposed project was focused on organizing common fieldwork in the respective fields of life science in polar ecology: microbial ecology, phycology, botany, plant physiology, zoology, and parasitology. This proposal from the University of South Bohemia (USB) and the University Centre in Svalbard (UNIS) was focused on life science. A separate proposal connecting life and geographical science was being submitted by Charles University in Prague. Both these parts were common components of polar ecology education and students shared the theoretical part of course. The project was intended to start intensive university education collaboration using the field logistics capacities of the USB and the laboratory equipment of UNIS, together with joining the scientific teams from both institutions. The most important benefit was the possibility for Czech and Norwegian students to work together and enhance their chances for further continuous cooperation in their scientific carriers.

## A POLAR ECOLOGY COURSE – GEOSCIENCES

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Kamil Láška**

### CZECH INSTITUTION:

**Masaryk University, Brno, <http://www.muni.cz/>**

### FOREIGN INSTITUTION:

**The University Centre in Svalbard, [www.unis.no](http://www.unis.no)**

### FINAL GRANT:

**1 076 053,50 Kč / 40 606 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-1-032-2014**

### ANNOTATION:

Clearly, both institutions have enough experience and a long tradition in preparing courses in selected field both in the Arctic Circle and elsewhere. This has been recently documented in final reports from the following national-level courses: ([http://polar.prf.jcu.cz/data/Polar\\_ecology\\_course\\_2013.pdf](http://polar.prf.jcu.cz/data/Polar_ecology_course_2013.pdf) and/or [http://www.unis.no/10\\_STUDIES/1020\\_Courses/Arctic\\_Geology/arctic\\_geology\\_courses.htm](http://www.unis.no/10_STUDIES/1020_Courses/Arctic_Geology/arctic_geology_courses.htm)) Hence, the main goal of the project, i.e. the creation of joint education courses in polar geosciences, represented a logical step in the development and improvement of teaching approaches at both institutions. This joint activity provided 1) a platform for educational innovation in highly specialized topics covered to a different extent at both universities, e.g. glaciology, geomorphology, or limnology, and 2) enormous potential for exchanging knowledge and strengthening cooperation in more general fields covered similarly by both universities, for example geology or meteorology. Tutors and students were inherent parts of the course. Both groups benefitted from the novel international community, which eventually increased their competitiveness. The exchange of knowledge occurred not only between individuals handling one specific topic (e.g. glacier changes), but thanks to the multidisciplinary of the proposed course, the exchange happened across investigated fields. Although international knowledge sharing among students and tutors was the main benefit from the joint field course, it would be largely impossible without a proper logistical and material background.

This also showed how complementary the cooperation between the two institutions is: while the Czech part collaborates with the University of South Bohemia in České Budějovice with a field station and laboratory in the central part of Svalbard, Norwegian partner has fully equipped laboratories and lecture rooms at their campus at the university in Longyearbyen. We were convinced that these facilities are crucial for the course's success.

The proposed course served as the basis for greater cooperation between Czech and Norwegian scientists studying high Arctic geosciences. Furthermore, this cooperation was happening between the two most relevant institutions: UNIS – a university located directly in the Svalbard archipelago, and MU, which has an experienced team working with the unique research infrastructure of the Czech J.G. Mendel Antarctic Station at James Ross Island near the Antarctic Peninsula, which is owned by Masaryk University in Brno and is managed by the Department of Geography of this university. The Department of Geography, Faculty of Science of Masaryk University is focused on the study of Polar Regions with vast experience both in field research and education in Polar Geography and Ecology. The bilateral cooperation, both tutor-tutor and tutor-student interaction, developed within those people participating in the preparation and performance of various course sections, which might eventually lead to long-term research collaboration. Nonetheless, the interaction between and among students is certainly one of the most important benefits of the course and will help to reduce current disparities in the EEA. It will also help to plant the seeds of the equal chance idea directly into the minds of younger generations. In addition, the proposed course is a part of a larger teaching block that merges geosciences (this proposal) with life sciences (the course proposed between UNIS and University of South Bohemia in České Budějovice), which in fact will result in trilateral cooperation that further strengthens Czech-Norwegian interconnection and knowledge exchange.

### SUMMARY:

The proposed project aimed to organize common fieldwork in various fields of Polar geosciences. This proposal by Masaryk University (MU) and the University Centre in Svalbard (UNIS) was focused on geology, geomorphology, glaciology, meteorology, climatology, hydrology and limnology. A separate proposal connecting geosciences and life sciences was simultaneously being presented by the University of South Bohemia in České Budějovice. Both these parts were common components of polar ecology and geosciences education and students shared the theoretical part of the course. The project was intended to start intensive university education collaboration using the field logistics capacities of MU and the laboratory equipment of UNIS, while joining the scientific teams from both institutions. The most important benefit was the possibility for common work to be shared among Czech and Norwegian students and this enhanced their chances for further continuous collaboration in their scientific careers.

## CZECH-ICELANDIC CLEAN ENERGY COOPERATION

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Pavel Koudelák**

CZECH INSTITUTION:

**The Czech Technical University in Prague, [www.cvut.cz](http://www.cvut.cz)**

FOREIGN INSTITUTION:

**Háskólinn í Reykjavík, The Institute of Tertiary Education  
[www.ru.is](http://www.ru.is)**

FINAL GRANT:

**363 683,21 Kč / 13 724 €**

PROJECT NUMBER:

**EHP-CZ07-ICP-1-083-2014**

### ANNOTATION:

The overall objective of the project was clearly stated in the description of the activities and in the initial status and motivation. The core objective was the transfer of knowledge in the field of sustainable energy production, involving renewable energy sources and low carbon/zero emission utilization of fossil energy. The key point were the significant differences between the partner countries in energy production and these were the starting point of the knowledge transfer. Workshops were the main elements for facilitating this knowledge transfer. The workshop was attended by research/teaching staff as well as Ph.D. students from both institutions. Outcomes were used for innovating and improving study courses at the institutions of both partners. The benefit was innovated study courses designed for students from both institutions that included the most recent state-of-the-art energy production technologies. Throughout the duration of the project, documents for introducing a double-degree for the master's course were prepared. The project was also important for developing bilateral cooperation between the Czech Republic and Iceland in research and development activities.

### SUMMARY:

The project was focused on establishing closer cooperation between the Czech Technical University in Prague in the Czech Republic and Reykjavík University in Iceland. The main purpose of

the cooperation was to facilitate the exchange of knowledge and experience concerning clean and environmentally friendly energy production technologies, particularly those from renewable energy sources and those with low carbon utilization of fossil sources. The established cooperation was a first essential step for following common research activities and for running individual projects for Ph.D. students. As planned, the project organized 2 technical workshops (1 in the Czech Republic, 1 in Iceland) and a doctoral double degree program agreement was signed. Two individual projects were also prepared, with one already gaining the interest of a Ph.D. student. The main benefit of the project was, in addition to the double degree agreement, knowledge and know-how sharing, an established partnership between the institutions for future projects and new individual relationships between researchers.

## POTENTIAL FOR SUSTAINABLE TOURISM IN ECOLOGICALLY SENSITIVE REGIONS

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Jiří Dlouhý**

CZECH INSTITUTION:

**Charles University Prague, The Centre for Environmental Questions, [www.czp.cuni.cz](http://www.czp.cuni.cz)**

FOREIGN INSTITUTION:

**The University of Iceland, [http://english.hi.is/von/faculty\\_of\\_life\\_and\\_environmental\\_sciences/main\\_menu/home](http://english.hi.is/von/faculty_of_life_and_environmental_sciences/main_menu/home)**

FINAL GRANT:

**481 094,28 Kč / 18 155 €**

PROJECT NUMBER:

**EHP-CZ07-ICP-2-140-2015**

### ANNOTATION:

The aims of the project were institutional cooperation, the development of a joint research program, and cooperation in teach-

ing. The two institutions have not previously cooperated on this project and various links were established within this project. In terms of outcomes, a shared research methodology was developed and applied in the CR, where data were collected and used for developing a case study. The combined experience of both partners was efficiently used: the Icelandic partner has a long-standing tradition in sustainability research focused on social aspects and applies a participatory qualitative system analysis and uses geographical information systems within the sustainable tourism theme, for which stakeholder choice and invitation is crucial. At UI, the development of sustainability indicators has been based on such methods, in addition to Delphi surveys. The Czech partner develops actor analysis methods to explore negotiation and decision making processes and is building an extensive Czech database of regional development case studies which are consequently analysed from the sustainability point of view. Moreover, the Czech institution is concerned with sustainability indicators with regards to e.g. social learning. Within this project, jointly selected indicators of sustainable tourism were tested to assess the potential for tourism in the concerned region. The exchange of experience and know-how was perceived as being beneficial for both sides: for Iceland, which has unique but very vulnerable environmental conditions, and where demand for tourism is growing enormously; and for the CR, which has long tradition in tourism, but a short tradition of academic discussions pertaining to sustainable tourism. In both countries, transitioning to sustainable tourism in practice still poses a challenge. Both countries thus benefitted from the project – higher education institutions developed a joint research program on sustainable tourism that concentrated on its social aspects; both were involved in the international teaching program that used the produced case study; relevant regions from both countries received sustainability expertise; communication with stakeholders took place on the Czech side (the experience from Iceland was thus transferred). The research resulted in a research report; due to the capacity building character of the project proposal, it was used for publishing a joint peer-reviewed article beyond the scope of the project (the publication process took approx. one year).

Tourism has been adapted as a strategy to cope with geographic and demographic vulnerability, but the tourism industry is dependent on the carrying capacity of the local ecosystems; and has various direct and indirect impacts on stakeholders. Hence, the tourism stakeholders' point of view is important when assessing the potential of sustainable tourism in any given region. The current research is lacking the following: descriptions of the perspectives, experience and knowledge about what sustainable development and sustainable tourism development means in the context of a given community; what the social impacts of tourism are; how to evaluate sustainability in tourism development. This need is critical in peripheral areas where relatively unspoiled

nature (with especially fragile ecosystems) and low population density attracts numerous tourists. Because of this, the sustainable use of natural resources in these communities is becoming a necessity to be able to make a living and maintain a good quality of life. Research in tourism development should thus include local variables of community development where all tourism stakeholders are taken into account. The project also addressed the lack of relevant resources for education: in the universities in the CR, tourism related programs are studied mainly in faculties with an economics orientation or with regards to language skills (43 specializations); no sustainable tourism related specializations have been found among almost 10 000 specializations accredited in the CR (the MSMT CR database, 2015).

#### **SUMMARY:**

The project established institutional cooperation, developed a joint research program, and built capacities for cooperation in teaching. The partners signed an Agreement of Understanding; jointly developed a methodology to assess the potential for sustainable tourism and used it in Sumava National Park in the CR. This region was explored, local stakeholders were contacted and interviewed, data analysed and a case study was written which I served for making comparisons with similar cases in Iceland. A research report was produced (the basis for a joint article published beyond the scope of the project); a case study was incorporated into the teaching case and used in an international online course which was taught in WS 2016. The project outcomes and gained expertise were presented to local stakeholders who became more informed about sustainable tourism and its benefits and who were introduced to the means to achieve this sustainable path. The theme of the project was innovation in the CR in the sphere of research and higher education.

# DNA BARCODING OF CRYPTOGRAMS, INCLUDING BIOSYSTEMATIC STUDIES OF SELECTED GROUPS

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Alica Košuthová**

CZECH INSTITUTION:

**Masaryk University, Brno, [www.muni.cz/sci](http://www.muni.cz/sci)**

FOREIGN INSTITUTION:

**The Norwegian University of Science and Technology  
[www.ntnu.edu](http://www.ntnu.edu)**

FINAL GRANT:

**1 199 365,14 Kč / 45 259 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-104-2015**

## ANNOTATION:

Through our overall and secondary objectives and their respective activities as described in the following, our project complied well with the priorities of the program and the call: the main objective was international research collaboration that extended beyond the project period; mobility activities at least twice during the project period, at which knowledge- and technology transfer were the main motivation and focus; and, knowledge-sharing and awareness of the respective educational systems and approaches.

The overall objective of this project was (1) to initiate collaborative biosystematic studies and DNA-barcoding, and (2) to set the stage for continued cooperation between the beneficiary and the partner.

(1) About an equal number of lichenologists and bryologist were involved in this project. Three lichen systematics studies were initiated, all buildt or ongoing or published studies (Solenopsora, Cladonia and Pacynthium) and involved researchers from additional institutions (apart from the beneficiary and the partner). Only a single bryophyte project was planned: population genetics and phylogeography of *Sphagnum warnstorffii*.

This project was larger in terms of time and money invested, and was tightly linked to the transfer of knowledge about, and the implementation at the beneficiary of the RADseq technology. The project also produced at least 100 new species barcodes for lichen and bryophyte species, and as such contributed to the NorBOL goal of barcoding 20 000 species before 2018 (<http://www.norbol.org/>). Good species barcodes couldn't be detached from systematic research on cryptogams, as yet unrecognized diversity seemed to be common (Lücking et al., 2014).

(2) The project included several activities that strengthened continued cooperation between the beneficiary and the partner. The most obvious were collaborative systematic studies (see above and in Project activities below). Most of these extended beyond the project period and hopefully become important pilot studies for more comprehensive Czech-Norway research projects in the coming years. However, the most important activity for accomplishing continued cooperation (and everything else), were face-to-face meetings. The kick-off workshop in August of 2015 in Norway, in connection with the NLS excursion, was crucial for getting the project members engaged and targeted at an early stage in the project. The meeting involved both activities in the field as well as in the university-lab. The project plan was highlighted and an action plan agreed upon and signed (largely based on the Project activities detailed below). Additional face-to-face meetings included visits to NTNU in relation to genomics work and the final workshop in the Czech Republic. The main target of the final meeting was to establish an action plan for continued cooperation between the beneficiary and the partner.

Expected benefits: our planned work made an important contribution to various strategic documents such as Biodiversity mapping, Conservation and the NATURA 2000 network.

## SUMMARY:

This project has established collaboration between Masaryk University (Brno, Czech Republic) and the Norwegian University of Science and Technology (NTNU, Trondheim, Norway). Some additional selected taxonomic experts from other institutions have been associated. The project's aims have been fulfilled and we have successfully DNA-barcoded approximately 100 taxa of bryophytes and lichens, and established a permanent workstation for DNA-barcoding at Masaryk University. Barcode sequences have been used to study species delimitation in the lichen genera *Cladonia*, *Placynthium*, and *Solenopsora*, and the bryophyte genus *Sphagnum*. This project was the first attempt to DNA-barcode bryophytes and lichens in the Czech Republic. Additional DNA-regions were produced for performing multi-locus phylogenetic analyses of the selected lichen genera while future collaboration has also been established. Moreover, we have been studying the circumarctic, boreal and temperate populations of *Sphagnum warnstorffii* using restriction site associated DNA markers (RADseq). The RADseq data was produced through mobilities at

the NTNU University Museum, under the supervision of the local experts. The implementation of this NGS approach at Masaryk University was done and knowledge was shared successfully and will continue in the future. This project has increased the level of competence of students and staff of Masaryk University when it comes to DNA barcoding and NGS approaches to biosystematics. It has formed the basis for further collaboration in the future.

## ESTABLISHING INSTITUTIONAL COOPERATION BETWEEN UiT THE ARCTIC UNIVERSITY OF NORWAY AND THE UNIVERSITY OF CHEMISTRY AND TECHNOLOGY IN PRAGUE IN EDUCATION IN THE FIELD OF FOOD QUALITY AND BIOTECHNOLOGY

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Milena Zachariasova**

### CZECH INSTITUTION:

**Faculty of Food and Biochemical Technology; The University of Chemistry and Technology, Prague, [www.vscht.cz](http://www.vscht.cz)**

### FOREIGN INSTITUTION:

**The Faculty of Biosciences, Fisheries and Economics; UiT The Arctic University of Norway, <http://en.uit.no/>**

### FINAL GRANT:

**1 101 263,4 Kč / 41 557 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-3-180-2015**

### ANNOTATION:

The overall objective of the project was the transfer of competence, techniques and technology between the two institutions.

The UCT Prague gained valuable experience in the field of drug discovery, the development of industrial materials based on new types of biological matrices, health supplements, and nutraceuticals and biofuels and bioenergy. The experience of UiT Tromsø in the field of “high throughput” bioprospecting and toxicity testing was extremely important, because at UCT Prague, a new platform for testing the bioactivities and toxicities of unknown organisms and food matrices was purchased in August 2015 (UCT Prague received funding from the Prague operational program for competitiveness for purchasing the high throughput robotic device). On the other hand, UCT Prague could offer students and researchers cooperation in the field of advanced analytical chemistry, mainly methods based on high resolution mass spectrometry to identify new biologically active compounds. The analytical background and mass spectrometric equipment is among the top in Europe / the world.

The mutual cooperation between the UiT Tromsø and UCT Prague brought new possibilities in the education of students. Support of educational cooperation was stressed, i.e. mainly the preparation of webinars, and the development of new teaching tools and methods. New types of “interactive teaching” was developed and implemented. By using special electronic “voting devices” that enable anonymous voting for the solution of particular problematics, students identified the most suitable solution, followed by an interactive discussion. This completely new approach helped to attract the attention of students, gained their immediate feedback and interactively adjusted the lesson so that it “fits the audience”, thus bringing benefits resulting in increased knowledge and a higher level of education.

The cooperation also established new collaborating research teams which followed the present research and led to new developments in both countries, especially in the field of biotechnologies and health food products. The project enabled equal opportunities for exchanging staff and students between the donor and recipient countries.

The project supported the future extension of the collaboration to include research projects focusing on bioprospecting and bioactive compounds, characterization, modes of action studies and exploitation. It was also interesting to implement future mobility projects for master’s students within biotechnology and seafood sciences.

### SUMMARY:

The proposed project aimed to establish institutional cooperation between the UCT Prague and UiT Tromsø. The main objective of the project was the strengthening and improvement of education in the field of bioprospecting, biotechnologies, and food safety. Within the project, both young scientists (Ph.D. students),

and experienced academics and professors travelled to their partner university to take part in intensive educational courses and observe classes. The obtained knowledge and experience were implemented in their own subjects, teaching plans, and research activities. New educational tools and study materials were prepared and implemented at both universities. In addition, joint seminars and workshops were organized to support the creation of new research groups, ensuring further research sustainability.

## THE COMMUNITY STRUCTURE OF FRESHWATER MICROBENTHOS

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Jana Kulichová**

CZECH INSTITUTION:

**Charles University Prague, [www.cuni.cz](http://www.cuni.cz)**

FOREIGN INSTITUTION:

**The University of Oslo, [www.uio.no/english/](http://www.uio.no/english/)**

FINAL GRANT:

**178 103,70 Kč / 6 721 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-193-2015**

project was expected to provide considerable and accurate insight into the ecology of freshwater microphytobenthos. Therefore, it is believed that the results of the project were beneficial for both basic research, as well as for applied fields such as biomonitoring, since the finding could substantially increase the efficiency of sampling for biomonitoring purposes.

### SUMMARY:

The main aim of the project was to establish scientific cooperation between Charles University in Prague and the University of Oslo. Three researchers and three students with different abilities and experience built a team in order to collect data worth publishing. Two students visited the university in Oslo to consult statistic methods with Professor Ugland and to collect samples from freshwater benthic habitats in nearby localities. Together with Professor Ugland, the team prepared two datasets on microalgal communities for publication in ISI-listed journals. The results of the project are available as publications in impact journals for anybody interested. Moreover, a project web page and summary reports for different institutions have been published.

### ANNOTATION:

Through this project, we wanted to establish highly successful and beneficial inter-institutional cooperation between the Department of Botany at Charles University in Prague and the University of Oslo, which would lead to other mutual research and encourage Czech students to participate in international projects in the future.

The combination of both approaches, Professor Ugland's innovative method and the more traditional approach carried out by the Department of Botany at Charles University in Prague, was highly beneficial for both partners. Firstly, the project helped to improve the gambin model in terms of its extended utilization and better understanding of the outcomes. And secondly, the

# RESEARCH AND EDUCATION IN AB INITIO CALCULATIONS OF MECHANICAL PROPERTIES OF MATERIALS: APPLICATIONS TO HYDROGEN EMBRITTLEMENT IN METALS AND THE STRENGTH OF POLYMER-METAL INTERFACES

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Petr Šesták**

CZECH INSTITUTION:

**The Brno University of Technology, [www.vutbr.cz](http://www.vutbr.cz)**

FOREIGN INSTITUTION:

**The Norwegian University of Science and Technology  
[www.ntnu.edu](http://www.ntnu.edu)**

FINAL GRANT:

**1 101 950,10 Kč / 41 583 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-199-2015**

## ANNOTATION:

The primary objective was to join two researchers from BUT with two ongoing research projects at the Nanomechanical lab., NTNU (HIPP and the ENMP) and to develop complex models for the theoretical study of mechanical properties (elasticity and strength). The objective of the HIPP project was the development of a model framework that describes and couples environment-assisted hydrogen degradation mechanisms at different length and time scales towards a predictive mechanism-based integrity assessment approach for oil and gas steel infrastructure. The second project was focused on the mechanical properties and thermal expansion of the nanoscale polymer-metal particles used as isotropic conductive adhesives in electronics devices. Thus, the overall objective of the planned cooperation with both projects was joining the complementary expertise at

BUT (ab-initio calculations) and NTNU (Molecular-Dynamics simulations - MD and continuum modelling) to develop the building blocks of a multiscale modelling methodology for the theoretical study of mechanical properties (elasticity and strength) of the mentioned materials. The researchers from BUT built ab initio models of a selected grain boundary with segregated hydrogen (HIPP) and models describing the metal-polymer interface (ENMP). After that, the mechanical properties of the modelled systems were determined using the Vienna Ab initio Simulation Package (VASP). The studied mechanical properties comprised elastic properties (elastic constants and Young's moduli) and ultimate strength. The obtained results were compared with those computed by the MD at NML. This comparison allowed for checking the interatomic potentials used in MD simulations (MD simulations require fitted input interatomic potentials while the ab initio methods do not), developing and researching more complex structures of studied materials in the MD and the investigation of the effect of temperature. The obtained data were also summarized in a manuscript that was submitted to an international scientific journal shortly after the end of the project.

This collaboration also improved the research quality of both research groups because the knowledge and experience of the used methods (the ab initio and the MD) transferred between the involved institutions. The ab initio simulations occurred at the Norwegian Metacenter for Computational Science ([www.notur.no](http://www.notur.no)) and partially also at the "Mark2" computational cluster consisting of thirty computational nodes, which was located at the applicant's institution. However, the nodes in the Mark2cluster were connected only via a 1Gbit network. Hence, the purchase of a high speed Infiniband switch was necessary to increase the effectiveness of simulations running on this cluster.

## SUMMARY:

The aim of this project was a one-year collaborative work between the group of Advanced Metallic Materials and Metal Based Composites at CEITEC – the Brno University of Technology (BUT), CZ on the one side and the Nanomechanical laboratory at the Norwegian University of Science and Technology (NTNU), NO on the other side. During the project, the ab initio methods that are standardly used by the group of BUT, were successfully integrated into the ongoing research of both hydrogen embrittlement and the engineering of nanoscale metal-polymer interfaces at NTNU. Emphasis was also placed on a collaborative work in a high quality scientific publication that contains the research data obtained during the collaboration. This manuscript is focused on the hydrogen embrittlement in nickel and was submitted to selected international highly impacted journals by the end of 2016. Moreover, selected Ph.D. students at the Nanomechanical lab obtained fundamental skills in ab initio calculations while researchers at BUT received essential skills in molecular dynamic simulations. The acquired MD skills are now commonly used for the research



of mechanical properties of materials and also shared with other people (employees and students) at BUT. Beyond the planned cooperation, both groups also implemented the first principles of molecular dynamics simulations implemented in the VASP program. Thus, the main benefits of this cooperation can be summarized in these outcomes: (1) substantially extended cooperation between the research groups in BUT and NTNU, (2) joint work on the research projects at NTNU and (3) the exchange of education knowledge and experience.

## MATHEMATICAL EDUCATION THROUGH MODELING AUTHENTIC SITUATIONS – METMAS

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Josef Rebenda**

CZECH INSTITUTION:

**The Brno University of Technology, [www.vutbr.cz](http://www.vutbr.cz)**

FOREIGN INSTITUTION:

**The University of Agder, [www.uia.no](http://www.uia.no)**

FINAL GRANT:

**1 225 978,20 Kč / 46 263 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-201-2015**

### ANNOTATION:

The overall objective of the project was to develop bilateral cooperation between the Czech Republic (BUT) and Norway (UiA) on several levels including (a) mutual experience exchange in all areas of teaching mathematics (teaching methodology, teaching materials, preparation for lectures, lecturing, group exercises, exams, assessment, etc.) (b) the production of joint scientific publications (papers in high impact journals and conference proceedings with the acknowledgment of Norway Grants) prioritiz-

ing environmental and sustainability issues whenever possible (c) organizing joint events (seminars, workshops, symposia).

Bilateral cooperation brought significant benefits to partner institutions from both the educational and scientific points of view.

For the benefit of education, we proposed to organize at least four joint events to enhance experience exchange in mathematics education. The lectures given by renowned experts and presentations by participants from both institutions, national and international experts reviewed current trends and knowledge in mathematical education, while group sessions opened stimulating discussions on important aspects in mathematics research and education that require particular attention today.

For the benefit of science, joint research brought new contacts and resulted in joint publications, which opened the possibilities for applying for further financial support for joint research. This contributed to the sustainability of collaboration.

### SUMMARY:

Bilateral cooperation between the Brno University of Technology (BUT) and the University of Agder (UiA) was based on joint activities such as organizing academic events (seminars, workshops), participation at international conferences and the preparation of further project applications and publications. The cooperation resulted in the organization of 4 joint events, 1 joint participation at an international conference, 2 further successful project applications and 2 submitted publications with the acknowledgment of Norway Grants. Moreover, all participants from the Czech Republic wrote a final participant report.

Presentations from the events and participant reports are freely available on the project's website. <https://www.ceitec.eu/norskfondymetmas/> Other materials are attached to the report.



# THE INTERDISCIPLINARY EDUCATION OF JUNIOR HISTORIANS OF MATHEMATICS

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Jan Kotůlek**

CZECH INSTITUTION:

**The Department of Mathematics and Descriptive Geometry,  
VSB-TU Ostrava, [www.vsb.cz/714](http://www.vsb.cz/714)**

FOREIGN INSTITUTION:

**Universitetet i Agder, [www.uia.no](http://www.uia.no)**

FINAL GRANT:

**668 421 Kč / 25 223 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-237-2015**

## ANNOTATION:

The history of mathematics is a typical interdisciplinary field. Research of topics of joint interest provides a perfect platform to further development and strengthen the contacts between Czech and Norwegian researchers on the institutional basis. Within this platform, we strived for cultivation of the community of historians of mathematics in the Czech Republic.

The aim of the project is to support different approaches to the history of mathematics. Mathematics is to be seen as an inseparable part of our culture, especially to those people traditionally interested in the history of mathematics in its popular. In a broader scope, we dealt with the influence of mathematics on society, i.e. the research of the influence of mathematics on the everyday life of "ordinary people". At the micro level, we focused on the life and work of Czech actuarial mathematician Emil Schoenbaum (1882-1967), who was the key personality in creating the social security system not only in the first Czechoslovak Republic, but also in Greece and later in many countries of Latin America. As an editor of the Journal *Aktuárské vědy*, he was a leading figure in Czech actuarial science between the World Wars and at the same time, e.g. thanks to his broad international contacts in the International Labour Organization (ILO) and on the editorial board of the *Skandinavisk Aktuarietidskrift*, one of the world's leading

experts in actuarial mathematics.

Being a full professor for applied and actuarial mathematics at Charles University in Prague, he also succeeded in establishing his own school and actuarial mathematics as a study and research branch. His pupils held important positions in the Czechoslovak civil service (The Ministry of Labour, The General Institute of Pensions, The Central Health Office, etc.), but also in the ILO.

On the Czech side, we learned from the experience of Norwegian historians of mathematics. In the Czech Republic, where no post-doctoral positions/training in history of mathematics is available, the research under the auspices of internationally respected experts is necessary to cultivate the field of history of mathematics. Also, the Ph.D. studies offered in Brno and Prague do not offer enough international cooperation: students are not exposed to lectures by leading international experts, nor to any direct comparison with their peers abroad. A winter-school with foreign attendance is a first necessary step to improve the situation.

This invokes a whole bunch of new research questions, some of which are of interest for general historians, economics and social historians, politicians, etc. The manifold of available points of view is the ideal opportunity to present the history of mathematics in the full interdisciplinary scope.

## Based on this topic, the overall objectives of the project were

- To promote the careers of our Ph.D. students and post-graduate researchers in the history of mathematics.
- To reinforce the cooperation between the Czech and Norwegian partners on research topics of common interest.
- To disseminate our findings through scientific meetings and joint scientific publications.
- To enhance our understanding of the way the Czech actuarial school generally influenced actuarial science internationally and in particular, how it influenced the development of social insurance systems in Latin America through the activities of Emil Schoenbaum in exile.

## SUMMARY:

The cooperation between the Czech and Norwegian partners on research topics of common interest has been reinforced. From the previous remarks, it is clear that through bilateral cooperation between institutions in the donor country and the Czech Republic, we have significantly enhanced our knowledge in our research topic. Both institutions have greatly benefited from this project of truly international interdisciplinary research, which diminishes the inherent dangers of relying on a single source.

International cooperation also contributed to the institutionalization and emancipation of the history of mathematics in the Czech Republic and increased the reputation of participating scholars in the mathematical community.

## YOUNG RESEARCHERS – EDUCATE, DISCOVER, PROVE, AND APPLY IN ENVIRONMENTAL SCIENCES

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSONS:

**Barbora Feixová, Šárka Dvořáková**

### CZECH INSTITUTION:

**Masaryk University, [www.muni.cz](http://www.muni.cz)**

### FOREIGN INSTITUTION:

**The Norwegian University of Life Sciences, [www.nmbu.no](http://www.nmbu.no)**

### FINAL GRANT:

**1 009 298,70 Kč / 38 087 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-3-242-2015**

### ANNOTATION:

The partners, Masaryk University and the Norwegian University of Life Sciences, are clearly complementary in a number of areas related to the broad fields of environmental chemistry, ecotoxicology, environmental data interpretation, and modelling. The project allowed for exchange stays, seminars held by invited guests, (experts in the topic, colleagues from related disciplines, risk assessors, decision makers from Norway) and also the transfer of expertise.

NMBU/IKBM has considerable experience in method development and optimization for the trace analytical quantification of anthropogenic pollution. In addition, they focused on the development of new strategies for non-target analyses in environmental matrices. This included the quantitative and qualitative identification of emerging pollutants and biotoxins, as well as their potential transformation products. Here, RECETOX has complementary interests and expertise. Findings were followed up with theoretical and experimental studies on environmental risk evaluation, source apportionment, and structure elucidation.

In the field of environmental chemistry, RECETOX has a long-standing tradition in analysing and managing persistent organic pollutants (POPs). RECETOX scientists are also becom-

ing more experienced in the area of “emerging pollutants” with a special focus e.g. on polybrominated and perfluorinated compounds. More skills were gained from the collaboration with the Norwegian partner, where advanced expertise exists in the field of polar compounds. These include e.g. pharmaceuticals and personal care products (PPCP), pesticides and their metabolites, and transformation products. Long-term expertise exists there in this field (for example non-target analyses, accurate mass spectroscopy, etc.), which was shared with the Czech partners. On the other hand, passive sampling expertise (development, optimization, global utilization) is strongly established at RECETOX, and the existing experience was planned to be shared with the experts in Norway. Other joint collaborative projects (based on the international exchanges of staff) included the transfer of know-how in the prioritization of chemical pollutants and bioindicator utilization with respect to the EU Water Framework Directive. Vice-versa, RECETOX has established laboratories promoting 3R principles in toxicology and ecotoxicology, including e.g. the use of stem-cell models, high-throughput screening (HTS) techniques and the investigation of newly identified risks of eutrophications (EDCs in water blooms). Expertise was shared with partners from Norway, which was contributed by the utilization of standardized ecotoxicological bioassays and ecophysiological endpoints.

### SUMMARY:

The project aimed to enable short term visits by young researchers at the partner university because they have a lack of opportunities to submit grant proposals and apply for funding aimed at further career development. The motivation was to develop the potential of young researchers and to strengthen cooperation between Masaryk University (MU) and the Norwegian University of Life Sciences (NMBU) in the fields of environmental chemistry and ecotoxicology. Moreover, Masaryk University has provided the infrastructure at the Research Centre for Toxic Compounds in the Environment (RECETOX) to the visiting young researchers. The collaboration brought learning outcomes, valuable social and scientific experiences, new ideas for master’s projects and Ph.D. theses, new contacts, and networks.

Short term visits by young researchers from Masaryk University and the Norwegian University of Life Sciences occurred during spring 2016. Within the framework of the project, 4 Czech and 4 Norwegian young researchers were supported.

A second important activity from the project was organizing invited presentations given by Norwegian experts in environmental sciences. Masaryk University, through the Research Centre for Toxic Compounds in the Environment, invited three Norwegian experts who held educational seminars during their short-term visits. These experts were invited from prestigious Norwegian research institutes such as the Norwegian Institute for Water research (NIVA) and the Norwegian Institute of Public Health (NIPH).

The most important benefit was the possibility for common work between Czech and Norwegian young researchers and enhanced chances for further collaboration in their scientific careers. Similarly, the visits by Norwegian experts were very important not only for young researchers and students, but for the whole research centre and its future research collaboration.

## THE MATHEMATICS AND STATISTICS SUPPORT CENTRE (MSSC)

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Maria Králová**

### CZECH INSTITUTION:

**Faculty of Economics and Administration,  
Masaryk University (FEAMU), Brno**

### FOREIGN INSTITUTION:

**The University of Agder (UiA), <https://www.uia.no/en>**

### FINAL GRANT:

**1 155 076,20 Kč / 43 588 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-4-339-2016**

### ANNOTATION:

Collaboration between FEAMU and UiA will be put into practice by establishing and running a pilot operation of the mathematics and statistics support centre in a “drop in” mode at FEAMU. The newly established FEAMU support centre together with both UiA support centres are based on the knowledge and expertise of MATRIC (The Centre for Research, Innovation and Coordination of Mathematics Teaching, <http://www.matric.no/>).

Mathematics Support Centres in both countries also addressed strategic issues from national perspectives. National concerns about mathematics education are well-known and long-standing in both countries. National and international tests reveal disappointing levels of performance of students in both countries as

they transfer from school to higher education. (Nortvedt, 2012; PISA CZ 2012).

The Support Centre should provide distinctive and high quality mathematics and statistics support to any student needing help. It brings students the opportunity for one-to-one interaction with a tutor who is expected to spend time with them, going as far back as necessary, to enable them to build on what they know and thereby to grow their confidence as well as their understanding. The tutors approach is supposed to be non-judgmental, supportive, and with “No question is too basic” stance.

The main benefit of the project was that students will be able to achieve their full potential in their chosen discipline with developed confidence, knowledge, skills, and understanding in relation to mathematics and statistics. Such students appreciate the relevance of mathematics; understand fundamental mathematical ideas so that they can apply relevant mathematics to resolve non-routine problem situations; have procedural fluency and reliability in routine operations and calculations, and possess competencies in the application of mathematics in the problems encountered in the work place and applied research situations.

Another benefit lied in the extension of the collaboration between both Czech and Norwegian partners to the Sigma network for excellence in mathematics and statistics support, UK (<http://www.sigma-network.ac.uk/>). The next benefit was associated with on-line study materials. Selected leaflets, videos, and animations are expected to be translated into both Norwegian and Czech from the same source – English materials provided by the Mathcentre and Sigma network, UK (<http://www.mathcentre.ac.uk/about/>). These resources were publicly available via the Internet and were be aimed at the target group of students.

Yet another significant benefit was the transfer of mathematics and statistics knowledge to other disciplinary areas, especially within the students’ chosen study programs.

### SUMMARY:

The project was focused on establishing collaboration between Masaryk University, Faculty of Economics and Administration (FEAMU) and the University of Agder (UiA) represented by MATRIC in running Mathematics and Statistics Support Centres (MSSC). The aim of the project was the transfer from the expertise of MATRIC to the newly established MSSC at MU. Both countries are struggling with a serious decline in students’ mastery of basic mathematical skills and levels of preparation for mathematics-based courses. As mathematics underpins many university subjects and quantitative methods are becoming increasingly essential in all disciplines (economics, engineering, biology), mathematics and statistics poses a barrier to successful study for many students. The key role of MSSC was to enable all students to achieve their full potential. There was no tradition in running MSSC in the Czech Republic, whereas MATRIC is leading innovation, research, and excellence in mathematics teaching.

## POLAR ECOLOGY COURSE II – BIO SCIENCES

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Josef Elster**

### CZECH INSTITUTION:

**The University of South Bohemia in České Budějovice**  
[www.jcu.cz](http://www.jcu.cz)

### FOREIGN INSTITUTION:

**The University Centre in Svalbard, [www.unis.no](http://www.unis.no)**

### FINAL GRANT:

**953 678,70 Kč / 35 988 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-4-316-2016**

### ANNOTATION:

The joint summer field course brought benefits to both Czech and Norwegian students as well as helped teachers or institutions to organize complementarities of the topics and also developed geographical background for general ecological processes. Both groups benefited from this novel international collaboration, which increased their competitiveness. Knowledge exchange operated not only between individuals handling one specific topic (e.g. plant ecology), but thanks to the multidisciplinary of the proposed course, the exchange occurred across investigated fields. Although this international knowledge sharing among students and tutors was the main benefit from the joint field course, it would be largely impossible without the proper organizational and material background. This also shows how the cooperation between the two institutions works: while the Czech part possesses a field station and laboratory in the central part of Svalbard, the Norwegian partner provides fully equipped laboratories and lecture rooms at their university. Proposed course served as the basis for greater cooperation between Czech and Norwegian scientists studying high arctic biota; and furthermore, this cooperation happened between the two most relevant institutions: UNIS – a university located directly in the Svalbard archipelago, and USB and its Centre for Polar ecology, which manages Czech Arctic Research Infrastructure. The Centre for Polar Ecology is a specialized department that is dedicated to Arctic research

and educational activities in the Arctic. The bilateral cooperation, both tutor-tutor and tutor-student interaction, developed within the respective people who were preparing and performing various course sections, and this might eventually lead to long-term research cooperation. Nonetheless, the interaction between and among students is certainly one of the most important benefits of the course in helping to reduce current disparities in the EEA, while at the same planting the seeds of the equal chance idea directly into the minds of younger generations. An inherent benefit from the joint course was communication among the students and teachers from two countries, which bridged the gaps between our different nationalities. A major presupposition in the field course's organization was that similar activities are held at both institutions. Both partners were already very experienced in this field, and were ready for to make significant improvements towards the multinational and multilingual course's organization.

### SUMMARY:

The project was focused on organizing common field-work in polar ecology. This proposal by the University of South Bohemia and the University Centre in Svalbard was focused on extending the regular education of life science in an arctic environment. This was preparation for accreditation of arctic life science courses in the university education system in the Czech Republic, and in addition it was a preparatory phase in establishing a common university education provided in collaboration with the above-mentioned universities. This field work continued the previously organized education offered by the Centre for Polar Ecology, the University of South Bohemia. The project intensified university education by using the field coordination capacities of the USB and the laboratory equipment of UNIS together with joint scientific teams from both institutions. The most important benefit was mutual collaboration between Czech and Norwegian students and establishing opportunities for long term research cooperation.



# PERSONALITIES, LEARNING APPROACHES AND TEACHING STYLES IN UNDERGRADUATE MATHEMATICS – PLATSUM

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Josef Rebenda**

CZECH INSTITUTION:

**The Brno University of Technology, [www.vutbr.cz](http://www.vutbr.cz)**

FOREIGN INSTITUTION:

**The University of Agder, [www.uia.no](http://www.uia.no)**

FINAL GRANT:

**1 179 842,40 Kč / 44 522 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-324-2016**

## ANNOTATION:

The overall objective of the project was to extend the bilateral cooperation between the Czech Republic (BUT) and Norway (UiA) on several levels with a focus on research in mathematics education. Developments in bilateral cooperation were achieved by the joint participation of both partner institutions in all activities of the proposed project.

One of the most important partners in this collaboration was the Centre for Research, Innovation and Coordination of Mathematics Teaching (MatRIC), a centre of excellence in education at the University of Agder (UiA). Its activities are focused on mathematics teaching and learning within study programs such as engineering, natural sciences, economics, and teacher education. Since MatRIC is a national centre of excellence joining experts in mathematics education from across Norway, it was the ideal partner to conduct an investigation of the roots of the “Mathematics Problem” issue.

The first step in the project was the usage of the expertise and contacts of colleagues involved in MatRIC to design a questionnaire and prepare questions for the survey. The questions were prepared in such a way that it was possible to obtain variables suitable not only for analysis, but also for validation of the results

of the analysis. E.g., possible influences of variables like teaching approach should be taken into account. The initial questionnaire was prepared in English and then translated into Czech and Norwegian.

The second step was to collect enough data for analysis. The questionnaires were filled-in by student-volunteers at both partner institutions.

After collecting the data, it was stored in a database and prepared for analysis and validation.

A subsequent data analysis and statistical modelling was performed at both institutions separately. The outcomes of the analyses were summarized and conclusions were formulated about the relevance of the hypotheses that students’ study results and their personality types are correlated.

In the end of the project, all outcomes and results were prepared for presentation to an academic audience, on the one hand at academic events like conferences, seminars and workshops, on the other hand in the form of a joint scientific publication.

Consultations with experts outside the partner institutions were conducted in all steps of the project. These experts brought sufficient knowledge to achieve expected project results. Such consultations were essential since they will supplied specific theory not frequently used by the project partners’ researchers, including (but not limited to) modern psychological and statistical methods.

The main expected benefit of the project was the opportunity to gain insight into the “Mathematical Problem” issue. A better understanding of mathematics will result in growing interest in mathematics among the students, which will lead to a reduction of the economic and social disparities within the European Economic Area.

Another important project outcome was the scientific benefit. Joint research brought new contacts and resulted in joint publications, which opened the possibilities for applying for further financial support for joint research. This contributed to the sustainability of the collaboration.

## SUMMARY:

The aim of the project was to strengthen collaboration between the Czech Republic and Norway by continuing the current collaboration of mathematics educators and researchers from the Brno University of Technology (BUT) and the University of Agder (UiA). The collaboration between BUT and UiA was based on the exchange of knowledge and experience in education, research, management, and social aspects of academia.

The institutions involved in the project focused on research based on a proposal by the Norwegian colleagues studying correlations between study results and personality types of students.

This institutional cooperation project resulted in the submission of joint research papers to reputable international journals and in a joint presentation of the project and its outcomes at academ-

ic events like symposia, workshops, seminars, and conferences. Special attention was paid to important social aspects, including the promotion of social and economic sustainability in education and science.

## A POLAR HYDROLOGY FIELD COURSE

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Jan Kavan**

CZECH INSTITUTION:

**The University of South Bohemia in České Budějovice**  
[www.jcu.cz](http://www.jcu.cz)

FOREIGN INSTITUTION:

**The University Centre in Svalbard, [www.unis.no](http://www.unis.no)**

FINAL GRANT:

**858 216,60 Kč / 32 386 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-292-2015**

### ANNOTATION:

The main objective of the project was to organize a common field course and therefore enable both USB and UNIS students to benefit from such international cooperation. Not only students, but also instructors profited from such a cooperative approach. In addition to organizing a field course, a workshop was also organized in Ceske Budejovice. This provided all students (USB and UNIS) a great opportunity to share their knowledge with students and researchers from other countries and institutions. They also had a chance to present their work in front of the scientific community and encourage them in their future scientific careers. Apart from the educational point of view, there was also an opportunity to meet other scientists, which was greatly appreciated. On that basis, future cooperation on more specific scientific topics is possible. That is true for both instructors and students.

The objectives were especially: 1/ to enable participants to gain new knowledge and experience in hydrology (both students

and instructors) 2/ networking and sharing of knowledge and experience 3/ enhancing chances in future scientific careers for all participants and 4/ to enhance the possibilities of joint educational and scientific activities between the two institutions and promoting a chance of further cooperation in other fields

The long-term experience of both partners in organizing such courses provided a reasonable presupposition for the complete fulfilling of the objectives. A successful pilot one day joint field training course that occurred in 2015 proves the feasibility of the whole idea.

### SUMMARY:

The project was focused on organizing a common field course in Polar Hydrology directly in the Arctic. This was based on previous experience with similar projects and also on this year's pilot field course. Students from both countries shared their field experience and work on common projects. In addition, a workshop/conference was organized in the Czech Republic to also brought students from Norway to meet the students here in the Czech Republic. Other workshop/conference guests attended so that the results of the field course could be presented in front of the wide international scientific society. It is believed that this would strongly enforce future cooperation leading to both further student mobilities and joint research projects.

## A COMMON PLATFORM FOR SHARING THE EXPERIENCE AND EDUCATION OF STUDENTS IN THE FIELD OF FOREST ENTOMOLOGY

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Petr Doležal**

CZECH INSTITUTION:

**The University of South Bohemia in České Budějovice**  
[www.jcu.cz](http://www.jcu.cz)

FOREIGN INSTITUTION:

**The Norwegian University of Life Sciences (NMBU)**  
[www.nmbu.no](http://www.nmbu.no)

FINAL GRANT:

**437 886,90 Kč / 16 524 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-318-2016**

### ANNOTATION:

The main goal of the project was the exchange of Ph.D. students, education sector staff and knowledge especially in the field of forest entomology and ecology. Both partners have been in contact via email for several years and the proposed bilateral mobilities can improve and strengthen the partnership between the University of South Bohemia and the Norwegian University of Life Sciences as well as the Norwegian Forest and Landscape Institute. Both partners study similar topics and joint research can bring increased skills to all members of the project team. Participants benefited by gaining experience abroad and improving their professional skills. Moreover, close contact between the students and research staff lead to the unification of methodological approaches on both sides, which is crucial for the comparability of relevant results in the near future. The training of young experts in both Czech and Norwegian institutions increased their competences in conducting high quality research.

### SUMMARY:

The aim of the project was to enhance the cooperation between the partner organizations through the exchange of experience, common field studies, and education of post-graduate students in the field of forest entomology and ecology. Both partners, the University of South Bohemia and the Norwegian University of Life Sciences, as well as the Norwegian Forest and Landscape Institute, have been conducting long-term research in their respective fields and benefited from common research and educational activities. The benefits included the education of experts from both research staff and Ph.D. students and broadening the spectra of methodological approaches. Last but not least, studying the differences between Central European and Scandinavian populations of insects related to their latitudinal origin and response to the globally changing climate improved our understanding of insect seasonal life cycles and outbreaks.

## ADVANCED ANALYSIS OF EXPERIMENTAL DATA IN NUCLEAR AND PARTICLE PHYSICS

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Jaroslav Bielcik**

CZECH INSTITUTION:

**The Czech Technical University in Prague, [www.cvut.cz](http://www.cvut.cz)**

FOREIGN INSTITUTION:

**The Department of Physics and Technology,  
University of Bergen, <http://www.uib.no/>**

FINAL GRANT:

**522 418 CZK / 19 714 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-4-256-2015**

**ANNOTATION:**

The primary objective of the project was to educate and to give practical training to young nuclear and particle physics researchers in using the most modern available tools for performing statistical data analyses and large-scale computing. The knowledge and skills that were to be developed and strengthened are necessary for scientists involved in large multinational experiments such as those conducted at the Relativistic Heavy Ion Collider ([www.bnl.gov/RHIC](http://www.bnl.gov/RHIC)) and the European Laboratory for Particle Physics ([home.web.cern.ch](http://home.web.cern.ch)) to carry out successful research. Moreover, these skills are important for the efficient utilization of available resources. This effectiveness is twofold. Firstly, it means the effective use of a large amount of data collected by the experiments using modern statistical tools (ROOT: [root.cern.ch](http://root.cern.ch)) and methods (machine learning, multivariate analyses, and others). Secondly, it means the effective use of costly computing resources such as hardware and computing time. The computing in modern particles has reached the era of large-scale distributed computing, which puts high demand not only on the administrators, but also on the users of such technology.

The paramount importance of computing and the development of new computing technologies for experimental particle physics was clearly stated in the plan for The European Strategy for Particle Physics: <https://council.web.cern.ch/council/en/European-Strategy/ESParticlePhysics.html> and described the Strategic Plan for a Scientific Cloud Computing infrastructure for Europe

<https://cdsweb.cern.ch/record/1374172/files/CERN-OPEN-2011-036.pdf>.

Since the University of Bergen has the appropriate knowledge and experience (Wagner et.al. ISBN: 978-82-321-0365-2) and the CTU is one of the local leaders in particle research at RHIC and LHC, the proposed project of exchanging know-how and training was beneficial for both institutions. We believe, considering how fast the field of computing in high energy physics is evolving, that this project can start long term cooperation in the field of high-energy physics computing and training. This claim can be further supported by the fact that the heavy-ion group at CTU is also carrying out research in computing at the STAR ([www.star.bnl.gov](http://www.star.bnl.gov)) at RHIC and has already awarded one Ph.D. in computing. This project will be the start of close cooperation between the groups in CTU Prague and UiB in advanced data analysis.

**SUMMARY:**

The main goal of the proposed project was to facilitate the transfer of knowledge in the field of nuclear and high energy physics between two leading research institutes. In the project, young researchers acquired knowledge of current state-of-the-art statistical and computing methods, both theoretical and practical, which are applied in the analyses of particle physics experiments. The field of high energy particle physics, as it is carried out in ex-

periments at Brookhaven National Laboratory and CERN, pushes the boundaries of computing and statistical data mining. The scale of these activities, defined by the hundreds of petabytes of data, requires the utilization of large distributing computing infrastructures and the efficient use of available resources. The knowledge of modern and efficient techniques is paramount for being able to successfully carry out this data intensive research. Moreover, the targeted skills are highly sought after in applied science and industry.

## ESTABLISHING CZECH- ICELANDIC COLLABORATION IN PLANT CYTOGENOMICS

TYPE OF ACTIVITY:

**Mobility projects**

CONTACT PERSON:

**Martin Lysák**

CZECH INSTITUTION:

**The Central European Institute of Technology,  
Masaryk University, [www.ceitec.eu](http://www.ceitec.eu)**

FOREIGN INSTITUTION:

**The University of Iceland, [www.hi.is](http://www.hi.is)**

FINAL GRANT:

**437 187 Kč / 16 498 €**

PROJECT NUMBER:

**EHP-CZ07-MOP-1-094-2015**

**ANNOTATION:**

The main project aim was coincident with one of the primary program tasks, i.e. establishing successful partnerships at the bilateral level between institutions involved in the educational sphere in the Czech Republic and the Donor States, namely Iceland. The collaborative project initiated a long-term collaboration between the Czech and Icelandic teams, i.e. between Masaryk University and the University of Iceland. The collaboration was based on joint research activities in the field of plant cytogenomics as well as teaching and training activities.

Icelandic species of the mustard family (crucifers) have been neglected thus far and virtually nothing is known about the genome evolution of Icelandic crucifer species. The project aimed to elucidate the genome structure and evolution in selected Icelandic crucifer plant groups (Cardamine, Draba and Subularia) by reconstructing their comparative karyotypes. The involvement of Icelandic colleagues ensured that the planned research would become feasible through accessing plant materials of the investigated crucifer species.

The long-term interests of the Jónsson lab are species relationships between European and Icelandic birch (*Betula*) species. The Icelandic laboratory is studying the mechanisms and impacts of hybridization among birch species in Iceland. Here, genome composition and the extent of introgression were analysed by GISH and FISH in both laboratories. Consequently, advanced methods and protocols of comparative cytogenomics were introduced to the Icelandic laboratory. The joint research also served as the basis for a follow-up project employing next-generation sequencing.

The mobility expanded the expertise and skills of involved students and researchers through conducted research, lectures and practical courses, and also facilitated meetings between both teams and planning follow-up projects. The Icelandic team became acquainted with state-of-the-art cytogenomic techniques, whereas the Czech team learned about the distribution, ecology and reproduction biology of Icelandic crucifers. All three participating teachers taught theoretical and practical courses in the field of evolutionary cytogenomics, cytogenetics, genetics and phylogeography at partner universities.

The benefits of the project included (i) progress in the investigated topics, (ii) establishing close professional links and long-term collaboration between the partner laboratories, (iii) education of students, academics and researchers, (iv) introducing and implementing state-of-the-art techniques in partner laboratories, and (v) creating a basis for future collaboration and follow-up research projects. The Czech team benefited from access to Icelandic members of the mustard family mediated by botany professionals. Comparative cytogenetic analyses furthered our understanding of genome evolution in at least three larger groups of crucifers. These results are potentially usable in the plant breeding industry in terms of understanding evolutionary mechanisms applicable in genome engineering. The Icelandic team benefited from learning and getting hands-on experience with new techniques of cytogenetic analysis, and from the planned genomic analyses of birch species. This activity was beneficial for the ongoing research being carried out in the Icelandic laboratory as well as for the Ph.D. project of B. Leduc. Students and academics at both universities benefited from new lectures and courses. These educational activities also positively impacted the frequency of mutual contacts between both universities. Both teams benefited from being in a good position to apply for other international projects. The mobility participants got insight into

the project partners' culture and expanded their ability to work in international and multicultural environments.

#### SUMMARY:

The Czech-Icelandic collaborative project had multiple aims. It initiated long-term collaboration between the Czech and Icelandic teams (i.e. between Masaryk University and the University of Iceland) in the field of plant cytogenomics. The mobility expanded the expertise and skills of involved students and researchers through lectures and practical courses, and facilitated meetings between both teams and planning follow-up projects. Icelandic species of the mustard family (crucifers) have been neglected thus far, partly due to the lacking expertise and technical infrastructure, and the remoteness of the island. In this project, genome analysis of selected Icelandic crucifer species were carried out. This way it was possible to obtain novel data on the genome evolution of the unique Icelandic crucifer flora. The Icelandic team carried out cytogenetic studies of Icelandic and European birch species (*Betula*) through state-of-the-art techniques implemented in collaboration with the Czech team.





## THE MOBILITY OF STUDENTS AND ACADEMIC STAFF LEADING TO THE INTEGRATION OF AN INTERACTIVE VISUAL ANALYSIS WITH THE ANALYSIS AND VISUALIZATION OF PROTEIN STRUCTURES AND THEIR ENSEMBLES

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Mikuláš Bek**

CZECH INSTITUTION:

**Masaryk University, [www.muni.cz](http://www.muni.cz)**

FOREIGN INSTITUTION:

**The University of Bergen, [www.uib.no](http://www.uib.no)**

FINAL GRANT:

**605 604 CZK / 22 853 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-2-086-2014**

### ANNOTATION:

This project proposal aimed to show that the outcomes of the cooperation established within this project will have an impact on the members of the partner groups as well as on their institutions on the research and education levels.

The expected benefits of our mutual cooperation were the following: Our project primarily focused on Ph.D. students and on increasing their level of knowledge and research activities leading to the completion and successful defense of their Ph.D. theses at a high quality and with a research impact. This was achieved by long-term stays at the partner institution where the students focused on attending selected seminars and working on agreed to research topics. These topics were selected in correlation with our aim to join our current research activities in a common field

of interest. So, the selection of Ph.D. students participating in this project was related to their previous research activities and their relation to molecular analysis, visualization, and visual analytics. The other benefits coming from student participation in common research led to increased publication activity for both partner groups in the given research field.

As students in general were in our primary focus, our next aim was to use this opportunity to discuss the topics related to education as well. By sharing our experience in teaching subjects related to computer graphics, we were able to update the content of the lectures accordingly. As a consequence, this had a positive impact on the students enrolled in these courses and their related activities.

### SUMMARY:

The objective of this project was to establish a cooperative platform between the visualization groups at the University of Bergen and Masaryk University. This platform formed the basis for joining closely related research and education activities currently ongoing in both groups. The student and academic staff mobility between the project participants enabled us to gain new experience and insight to our activities. Ph.D. students had the opportunity to increase their knowledge base and experience by studying and participating in research at the foreign university. Along with the research and academic staff participating in this project, the efforts led to joint publication activities and improved study materials and lectures related to visualization subjects. As a consequence, these activities helped to increase the ranking of the partner group at Masaryk University, thanks to the cooperation with the strong and highly ranked visualization team in Bergen.

# MOBILITY FOR THE DEVELOPMENT OF UNIVERSITIES (MODUS)

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Monika Vejchodová**

CZECH INSTITUTION:

**The University of Pardubice, [www.upce.cz](http://www.upce.cz)**

FOREIGN INSTITUTION:

**Norwegian University of Science and Technology, Campus in Gjøvik, [www.ntnu.no/gjovik](http://www.ntnu.no/gjovik)**

FINAL GRANT:

**653 891,85 CZK / 24 675 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-139-2015**

## ANNOTATION:

The overall objective of the project was to establish and develop a successful partnership on the bilateral level between GUC and UPa. The establishment and development of the successful partnership was achieved by staff mobility of 28 employees, the exchange of 14 people from each side covering both educational and administrative staff. The exchange contributed to the reduction of socio-economic disparities and strengthening the relationship between GUC and UPa. There were two lengths of mobility available: 8 mobility units for 10 days and 6 mobility units for 7 days (incl. travel days) for each partner.

The overall objective of the project responded to the priorities set up by the program and the call.

Benefits for both institutions were as follows: the exchange of skills, knowledge and experience in the field of university/faculty administration and management (for example, the promotion of exchange programs and mobility, both incoming and outgoing), international cooperation, the development of study programs and study courses taught in English, the opportunity to prepare and give lectures in English, possible research cooperation in the future, the improvement of communication in English, the establishment of new personal contacts, and the opportunity to be introduced to and learn the cultural and academic customs of a for-

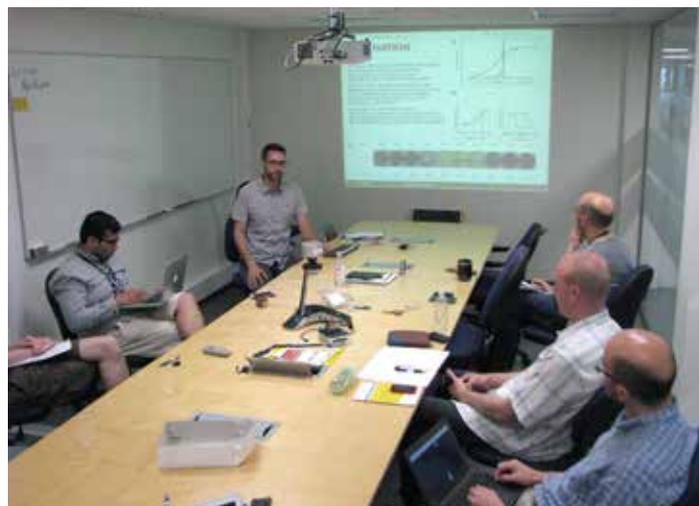
ign country. There were more benefits for UPa: the opportunity to experience and follow the openness and positive approach to students, an easy and smart way of administrating and managing university affairs - the way that is typical for GUC.

The project enabled the exchange of university staff, the creation of new ideas and possible ways of cooperation in different fields (IT, color research, economics and sustainable development, health studies, university management and administration), increasing skills and competences, and the production of joint publications and education materials.

## SUMMARY:

The project was focused on the exchange of educational sector staff members from two higher education institutions – Gjøvik University College (Norway) and the University of Pardubice (Czech Republic).

The main aim of the project was to reduce socio-economic disparities in Europe, to develop bilateral cooperation between the above-mentioned institutions and to strengthen the human capital (employees) and know-how for the mutual benefit of both institutions. The project enabled both the institutions to organize various types of mobility for their employees.



## KNOWLEDGE TRANSFER ON FIN-FISH BOOSTING SUSTAINABLE AQUACULTURE

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Andrea Kamenová**

CZECH INSTITUTION:

**The University of South Bohemia, České Budějovice**  
[www.frov.jcu.cz](http://www.frov.jcu.cz)

FOREIGN INSTITUTIONS:

**Hólar University College, [www.holar.is](http://www.holar.is)**  
**The University of Iceland, [www.hi.is](http://www.hi.is)**

FINAL GRANT:

**187 297 CZK / € 7 068**

PROJECT NUMBER:

**EHP-CZ07-MOP-2-253-2015**

### ANNOTATION

A common benefit was presenting of the collaborating institutions' long term objectives of R&D, technology transfer and education at all three institutions. One of the outputs was a list of potential fields of cooperation and project proposals that were based on the inventory of needs created by all partners. The project contributed to the development of bilateral cooperation between the Czech Republic and Iceland leading to new possibilities of institutional cooperation that will result in creating new contacts, preparing new projects and executing bilateral mobility agreements.

### SUMMARY

The main results were bilateral mobility actions which brought new contacts and bilateral knowledge about the fish farming methods and problems in aquaculture in both countries. The results of these knowledge were formulated in document „Inventory of needs“ that will be developed and used for planning new research cooperation (scientific project) and mobility actions of students and education sector staff on bilateral level. Eight presentations are also published at project websites and they are available for free in full versions. During the project were also

established several new contacts with managers of private fish farms and food processing companies and these contacts are very valuable for future cooperation in joint European research projects.

## INTERDISCIPLINARY EXPERIENCE IN APPLIED PHYSICS AND APPLIED COMPUTER SCIENCE

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Radomil Matoušek**

CZECH INSTITUTION:

**The Brno University of Technology, [www.vutbr.cz](http://www.vutbr.cz)**

FOREIGN INSTITUTION:

**The Norwegian University of Science and Technology**  
<http://www.ntnu.edu/>

FINAL GRANT:

**521 695 CZK / 19 687 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-202-2015**

### ANNOTATION

The main objective of the project was to utilize and share the unique combination of knowledge of all involved partners. We intended to integrate and enhance separately studied fields to improve the reached achievements in the preparation of a unified theoretical methodology with the perspective of the future development of subsequent tools that may help to solve selected problems of considered application areas using suitable models. The discussed principles presented by the project participants and related to applied computer science included advanced parallel algorithms, computer simulations, applied statistics, Hamiltonian physics, and the implementation of multi-precision fast Fourier transforms and related discrete transforms, which can be

included in wider application challenges. The existence of such collaboration has been proven by measurable deliverables and outputs of the project – project preparation, presentations, publications, and face-to-face events (conferences, workshops, seminars, and lectures). One concrete event was a special session at the MENDEL conference in July 2015 in Brno. Colleagues from other Norway universities (specially from Trondheim and Molde) were invited.

The project builds on ongoing cooperation between the Norwegian University of Science and Technology and the Brno University of Technology. Our universities cooperated in the Leonardo da Vinci program, which consisted of teachers from the Department of Applied Computer Science visiting NTNU. The project was meant to deepen the cooperation with this Norwegian university and for the continuity of a long tradition of mutual cooperation. The proposed cooperation was built on the current results, particularly in the implementation of multi-precision fast Fourier transforms, and related discrete transforms.

The project outputs were unambiguously publications in scientific magazines or conference proceedings with a Scopus indexation. The benefit of the project was inclusion of the results into education.

#### SUMMARY

The main idea of the mobility project was to provide an advanced platform for sharing the extensive experience and knowledge of the involved parties in the development of simulation models for developing effective solutions to some physical problems. In particular, the aim was to discuss and present advanced methods of programming, simulation, statistics, and optimization for given applied physics problems.

The project took advantage of the combination of the deep knowledge and practical competence of the Czech and Norwegian partners in the areas of applied computer science and physics. The result of the cooperation was a significant enhancement of existing long-lasting collaboration among the partner organizations, with an intensive transfer of knowledge and a high integration of know-how. A significant aim of the project was the effort to prepare a preliminary concept for a joint international project.

## THE DEVELOPMENT OF PARAMAGNETIC NMR SPECTROSCOPY OF METALLODRUGS

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Jan Novotný**

CZECH INSTITUTION:

**Masaryk University, The Central European Institute  
of Technology, [www.ceitec.eu](http://www.ceitec.eu)**

FOREIGN INSTITUTION:

**The University of Tromsø – The Arctic University of Norway  
[www.uit.no](http://www.uit.no)**

FINAL GRANT:

**551 494,60 CZK / 20 811 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-245-2015**

#### ANNOTATION:

The funding of travelling expenses will lead to the strengthening of the collaboration between research teams at CEITEC MU and CTCC UiT through the following:

- 1) Innovation lectures held in Brno that were open to students interested in relativistic effects in the framework of quantum-mechanical calculations.
- 2) Practical courses focused on the calculation of experimental parameters using the ReSpect program given by developers from UiT.
- 3) Short-term stays of Ph.D. students and PostDocs from the Brno group in Tromsø.
- 4) The calibration of fully relativistic methodologies in ReSpect based on drugs experimentally developed by the applicant's team.
- 5) Lectures held in Tromsø dealing with the experimental characterization of metallodrugs and their complexes with cavitands.

#### SUMMARY

This project aimed to reinforce and further develop the collaboration between Masaryk University and UiT- The Arctic University of Norway in the field of the paramagnetic NMR spectroscopy of transition metal complexes with potential anticancer activi-

ty. The realized mobilities extended the expertise and skills of involved students and researchers through lectures and practical courses, and facilitated meetings between both teams and the planning of follow-up projects. The Norwegian team provided practical courses and tutorials dealing with the calculation of NMR/EPR parameters using software developed by the group of Prof. Ruud. The contribution of the Czech team included experimental methods (i.e., NMR and X-ray), calibration studies, and comparative analyses with respect to other available computational approaches. This project generates synergies between experimental (MU) and theoretical (UiT) chemists in developing novel antitumor agents.

The scientific results were presented in three conferences, namely the Smash Conference (poster, Italy, 09/2015), Modern Methods in Quantum Chemistry (lecture, Austria, 02/16) and the Central European NMR Meeting (lecture, the Czech Republic, 04/16) and were published in two research papers (journals - Royal Society of Chemistry, PCCP and Journal of American Chemical Society). The project activities were published on the CEITEC website ([www.ceitec.eu](http://www.ceitec.eu), [www.ceitec.cz](http://www.ceitec.cz)) and the CTCC website ([www.ctcc.no](http://www.ctcc.no)). Publicity of the project was arranged via announcements in Masaryk University's newspaper and CEITEC's newsletter. In conclusion, we accomplished all promised activities and a bit more.



## ENHANCING BILATERAL CONTACTS IN THE HISTORY OF MATHEMATICS (KRISTIANSAND-OSTRAVA)

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Jan Kotůlek**

CZECH INSTITUTION:

**The Department of Mathematics and Descriptive Geometry,  
VSB-TU Ostrava, [www.vsb.cz/714](http://www.vsb.cz/714)**

FOREIGN INSTITUTION:

**Universitetet i Agder, [www.uia.no](http://www.uia.no)**

FINAL GRANT:

**128 927 CZK / 4 865 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-238-2015**

### ANNOTATION:

The goal of the proposed project was to understand the process of emigration from the perspective of the eminent algebraist and functional analyst Henry Lowig (a.k.a. Heinrich Löwig, a.k.a. Jindřich Löwig), a German-speaking mathematician born in Bohemia, who – as a half-Jew – survived Nazi imprisonment in a concentration camp, only to be ostracized after the war for being regarded as German. His recent biography by Martina Bečvářová et al. is mainly based on material from the family archive, but we acquired access to a substantial amount of archival material which was unavailable to Bečvářová and her co-authors, and which casts new light on Löwig's activities before, during and directly after the Second World War. His case is unique, as it enables us to compare his two emigration attempts, the first one from 1938–39 which remained unfinished despite positive credentials from many eminent mathematicians, with his later attempts to get a position in either Germany or the United Kingdom. Thanks to emphatic recommendations by one of the most renowned mathematicians, John von Neumann, Löwig was appointed to a position at the University of Tasmania in Hobart in 1948.

Rolf Nossum and Reinhard Siegmund-Schultze have found

new material in the archives of the Society for the Protection of Science and Learning in Great Britain. On the Czech side, there is a thick folder on Löwig in the archives of the regional school administration of Moravia in Brno. The reason there are files on Löwig in Brno is that the high school at which Löwig held his last position was in Nový Jičín (Neutitschein) in Moravia. Additional previously unused material was found in the archives of Palacký University in Olomouc and Ernst-Moritz-Arndt-Universität Greifswald, where Löwig was trying to get a position after WW2.

#### SUMMARY:

All participants benefited greatly from this international interdisciplinary research, which diminished the inherent dangers of relying on a single source. We prepared a preprint of a joint paper for publication in one of the scientific journals focused on the field and presented outputs of the project at two international conferences.

## INCREASING SCIENTIFIC COMPETENCE AND ESTABLISHING BILATERAL RESEARCH COLLABORATION BETWEEN USB AND NMBU

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Andrea Vlačihová**

CZECH INSTITUTION:

**The University of South Bohemia, [www.frov.jcu.cz](http://www.frov.jcu.cz)**

FOREIGN INSTITUTION:

**The Norwegian University of Life Sciences, [www.nmbu.no](http://www.nmbu.no)**

FINAL GRANT:

**914 922 CZK / 34 525 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-3-184-2015**

#### ANNOTATION:

The first and main goal of the planned project was to realize four mobilities: one researcher and two Ph.D. students from USB stayed at IHA and Nofima and one junior researcher from NMBU stayed at USB for two months.

The researcher and Ph.D. student from USB stayed at the partner's laboratories for two months to learn new molecular techniques, especially q-PCR with a focus on markers and indicators for oxidation and oxidative stress in order to be applied and implemented at our laboratories in the Czech Republic. These methods are widely used in various fields in science, but need sound and good experience to be correctly applied. We will use these techniques in the future in order to evaluate changes in gene and protein expressions of markers for oxidation as well as for lipid synthesis and metabolism. Till now, we have had to rely on services or partner laboratories to perform these analyses for us, however, in order to really understand the mechanisms behind the found results, it is crucial to be able to execute the analyses by ourselves in order to identify possible sources of error. The instrumentation for the analyses was available at our institute, however there was no experience with the target genes and markers we aimed to analyze.

A second Ph.D. student from USB was also sent to Nofima for a 3-month stay in order to learn about different aspects related to fish quality with a focus on salmon. He has also learned techniques related to taking quality measurements related to texture, color, sensory and other similar characteristics.

The outcome of these activities was that we increased our expertise with the in-field analysis of oxidation, oxidative stress, lipid synthesis and lipid metabolism, as well as in methods for taking fish quality measurements. The second outcome was that we can use the already existing equipment at the faculty more effectively and we were able to work more economically since we have lowered our service costs.

It has facilitated more independent work by our researchers by increasing their competences. This has subsequently resulted in increased scientific activity and quality and subsequently in the output of high quality publications in high impact factor journals. This in return will decrease scientific, social, and economic disparities between our countries.

In return, one junior researcher from Norway came for a two-month stay to the Czech Republic and learn about the various techniques applied in a Czech pond aquaculture of carp.

As mentioned before, working together always generates a fruitful atmosphere for scientific discussion and ideas. So in addition, we used the time of the mobilities to discuss and plan new cooperation projects where both our expertise can help to solve actual problems in the field of aquaculture and fish as food. Working together also always creates personal bonds between people and this almost always facilitates future collaboration. So, we also hope that this mobility will enable us to start a longer

lasting sustainable cooperation of exchange of researchers and students.

#### **SUMMARY:**

The proposed project helped to establish bilateral cooperation on scientific research activities. The research topic was: "Fish oocyte ageing and its effect on egg quality" as fish are model animals and the topic is quite young for higher vertebrates as well. For this purpose, scientists from both countries and Ph.D. students from the Czech Republic visited each other to exchange their knowledge on the field, learn new molecular biology techniques and perform planned research work. The results of the experiments were presented at international conferences and published as a joint research product in scientific peer reviewed journals with IF. New topics were identified for future planned joint research work and projects.

## **THE BRNO UNIVERSITY OF TECHNOLOGY – MOBILITY OF ACADEMIC STAFF (BUT-MAS)**

TYPE OF ACTIVITY:

**Mobility project**

CONTACT PERSON:

**Josef Rebenda**

CZECH INSTITUTION:

**The Brno University of Technology, [www.vutbr.cz](http://www.vutbr.cz)**

FOREIGN INSTITUTION:

**The University of Agder, [www.uia.no](http://www.uia.no)**

FINAL GRANT:

**719 226 CZK / 27 141 EUR**

PROJECT NUMBER:

**NF-CZ07-MOP-4-323-2016**

#### **ANNOTATION**

The overall objective was to strengthen collaboration between the Czech Republic and Norway by extending the current collaboration of mathematics educators and other researchers from

the Brno University of Technology (BUT) and the University of Agder (UiA). Collaboration between BUT and UiA is based on the exchange of knowledge and experience in the education, research, management, and social aspects of academia.

#### **SUMMARY:**

One part of the project was the support of the professional development of members of staff working in research, education, and management in the early stages of their careers by participating in a long-term educational internship at the partner institution. This experience enabled them to acquire the abilities, knowledge, and skills necessary for enhancing their personal development and employment. Participants of long-term internships have also improved their foreign language skills, encounter. They have encountered specific features of a foreign country and its culture, get involved in a network of international associates, and grasped the meaning of European citizenship and European identity. Another benefit was the possibility to apply teaching experience acquired at lectures attended during the internship. Last but not least, the acquired experience helped participants in preparing their own grant applications.

The second part of the project was a short-term visit by BUT staff at the partner institution focused on joint participation at academic events. The expected benefit for both partners was the opportunity to meet internationally recognized experts, which will significantly contribute to establishing joint links to the international academic community.

# Did you know that...?

## Norway

Norway has a paternity leave quota, so that fathers have to take a certain number of weeks of parental leave, but can also take more time off to be with their children. This has helped make it much easier to combine careers and family.

[www.studyinnorway.no](http://www.studyinnorway.no)

## Czech Republic

The Czech invention, which enables ten times higher production of nanofibre in a laboratory environment than the most common commercially provided industrial technology, saw great success at the Nanofibre 2012 symposium in Japan. The company Contipro Bitech, in whose laboratories the patented jet was developed, presented its invention on the occasion of the Czech-Japanese Science and Technology Days.

[www.czech.cz/en/Life-Work/Science-and-research/Czech-scientific-successes/Czech-patent-for-producing-nanofibre-scored-in-jap](http://www.czech.cz/en/Life-Work/Science-and-research/Czech-scientific-successes/Czech-patent-for-producing-nanofibre-scored-in-jap)

## Liechtenstein

As a modern economy, Liechtenstein stands for innovation, development, security and stability.

[www.uni.li/en/liechtenstein/living/discover-liechtenstein](http://www.uni.li/en/liechtenstein/living/discover-liechtenstein)

**PROJECTS**

**IN HUMANITIES**





## MIDPOINT / ICELAND – MIDNIGHT SUN SCRIPT DEVELOPMENT WORKSHOP

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Ladislav Paluska**

### CZECH INSTITUTION:

**The Academy of Performing Arts in Prague**  
[www.amu.cz](http://www.amu.cz)

### FOREIGN INSTITUTION:

**The Icelandic Film School, [www.kvikmyndaskoli.is](http://www.kvikmyndaskoli.is)**

### FINAL GRANT:

**448 043,4 Kč / 16 907 €**

### PROJECT NUMBER:

**EHP-CZ07-ICP-2-144-2015**

### ANNOTATION:

The overall objective of the project was to increase and strengthen institutional cooperation between Icelandic and Czech educational institutions that provide training in the field of film education.

#### The particular objectives were

- To support the Icelandic domestic industry by providing training in filmmaking that would supplement the currently missing higher learning opportunities in film education.
- To enable students and pedagogues from both schools to familiarize themselves with the educational, professional and also social background of the subject field in each country
- To introduce Icelandic students and pedagogues (and possibly young professionals) to FAMU's MIDPOINT program with the opportunity to join the program's activities and its network-consortium of partners.
- To strengthen the mobility of film students, trainers and professionals between Iceland and the Czech Republic.

The main tool of this bilateral cooperation was the training program called MIDPOINT, which was established by the Academy of Performing Arts (AMU) and based at FAMU in 2010. MIDPOINT

started as an initial training program designed to promote and teach script development, to provide support for writers and training for directors and producers to enable them to constructively and creatively participate in the development process. MIDPOINT's focus on development is crucial. MIDPOINT targets not only the education of writers and directors, but also training of producers in their competency to search for good quality projects and to assess their potential on their own and to work on it in close cooperation with the writer and director through successful realization.

Via the MIDPOINT activities, FAMU intends to offer professional support for advanced students at national schools, as well as vocational training for graduates and young professionals from the institutions that belong to the MIDPOINT network. The Czech-Icelandic cooperation that has already started (see above in part 4.1.) corresponds to MIDPOINT's aim to establish collaboration with other institutions beyond Central South-Eastern Europe and to have a stable network of national schools as well as European and international film-schools.

The main aim of the project was to hold a joint script development workshop for Icelandic and Czech students. The workshop focused on script development for feature-length and short films. The partners also strengthened their cooperation by providing each other with master's classes taught by guest lecturers from both countries.

#### The expected benefits were:

- To develop an important relationship with one of the world's top film schools and evolving schools in different regions (Central and Northern Europe)
- To provide the opportunity to develop students' work with renowned lecturers (international feedback, different perspectives)
- To share experiences and networking (developing industry ties, possible cooperation at the professional level in the future)
- To provide exposure to the Czech and Icelandic film industries, their practices and potential (new shooting locations, etc.)
- To share educational practices and pedagogy
- To build a new recruiting base for the MIDPOINT slate of training programs

This project contributed to reducing social differences by enabling the participation of students from different social backgrounds and improving their professional and personal skills. Moreover, it reduced economic disparities by giving emerging Icelandic film talent access to a level of training that will grow the domestic industry and provide newfound opportunities abroad.

#### SUMMARY:

The MIDPOINT project / Iceland - Midnight Sun Script Development Workshop was an adequate response to the need in Ice-

land for partnerships that develop training opportunities in film education, as well as create opportunities for emerging Icelandic film talent abroad.

The project partnerships consisted of the Film and TV School (FAMU) from the Czech Republic and the Icelandic Film School from Iceland. The main aim was to organize a joint workshop on script development and master's classes, to strengthen human capital and know-how there.

Through the joint workshop for Czech and Icelandic students, the project supported the mobility of film students, teachers and professionals between Iceland and the Czech Republic.

The final result of the project is a functional Czech-Icelandic network within the film industry and a new bilateral cooperation agreement which established fruitful cooperation and which will be beneficial for students from both schools in the future.

## ART-RESEARCH BRIDGE

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Monika Šimková**

### CZECH INSTITUTION:

**The Brno University of Technology, Faculty of Fine Arts BUT**  
[www.vutbr.cz](http://www.vutbr.cz)

### FOREIGN INSTITUTION:

**The University of Iceland, Faculty of Icelandic and Comparative Cultural Studies, <http://english.hi.is/>**

### FINAL GRANT:

**435 226,50 Kč / 16 424 €**

### PROJECT NUMBER:

**EHP-CZ07-ICP-1-073-2014**

### ANNOTATION:

The overall objective of the project was to ensure the mobility and participation of students and pedagogues from the Czech Republic and Iceland who are focused on Digital and Media Studies and ensured their participation in high quality conferences which will be made up of professionals in the field. Documentation, archiving and the presentation of new media art and their access to

vocational schools (<http://www.ssum.cz>, <http://www.ssudbrno.cz>), the academic and the general public, including minority and disadvantaged groups, was a key component. Media literacy has become increasingly important since the media's presence and ubiquity in society. The project aimed to:

- Promote interdisciplinary projects in the arts of new technologies
- Support research by young scholars, artists, theorists and curators
- Organize creative workshops, conferences and seminars on the border between art, film, new media art and performativity, with common outputs in each of the partner countries

Through these activities, the project partners aimed towards establishing long-term cooperation between partner institutions.

### SUMMARY:

The aim of the Art-Research Bridge cooperation project between FFA BUT Brno and The School of Humanities of the University of Iceland was to coordinate artistic and theoretical research conducted by teachers and students working on topics related to Media Art and Digital Culture, which interconnects the scientific and humanities fields of both universities. The project aimed to continue with the previously established cooperation between the National Gallery of Reykjavik, their newly opened research laboratory, the Vasulka Chamber and the evolving Vasulka Kitchen project at FFA BUT, which was established within the framework of the faculty's expanding media archive. The project proposed to support academic participation at conferences and meetings planned in both cities. The conference in Reykjavik took place at the Vasulka Chamber, a department of the National Gallery, attended by academic participants. In Brno, the conference was guaranteed by FFA BUT and the Media Archive.



## MIDPOINT/NORWAY – SCRIPT DEVELOPMENT PROGRAMME

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Ladislav Paluska**

### CZECH INSTITUTION:

**The Academy of Performing Arts in Prague**  
<https://www.amu.cz/cs>

### FOREIGN INSTITUTION:

**Den norske filmskolen/ The Norwegian Film School**  
[www.filmiskolen.no](http://www.filmiskolen.no)

### FINAL GRANT:

**958 083,30 Kč / 36 154 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-3-145-2015**

### ANNOTATION

The overall objective of the project was to increase and strengthen institutional cooperation between the Film and TV School (FAMU) in Prague, the Czech Republic and Den norske filmskolen (DNF) in Lillehammer, Norway.

#### The particular objectives were :

- To enable students and pedagogues from both schools to familiarize themselves with the educational, professional and also social background of the subject field in each country
- To give students the chance to get to know each other with the aim of networking and possible cooperation at the professional level in the future
- To facilitate Norwegian students and pedagogues (and possibly young professionals) from FAMU's MIDPOINT program with the opportunity to join the program's activities and its network – consortium of partners.
- To strengthen the mobility of both schools' students and staff between the Czech Republic and Norway.

The main tool of this bilateral venture was the training program called MIDPOINT, which was established by AMU and based at FAMU in 2010. MIDPOINT started as an initial training program designed to promote and teach script development, to provide

support for writers and training for directors and producers, to enable them to constructively and creatively participate in the development process. MIDPOINT's focus on development is crucial. MIDPOINT targets not only the education of writers and directors, but also aims to train producers in the competency to search for excellent quality projects, to assess the potential of such projects independently and to work on the potential in close cooperation with the writer and director up to successful realization.

Via the MIDPOINT activities, FAMU intended to offer professional support for advanced students of national schools, as well as vocational training to graduates and young professionals from the institutions that belong to the MIDPOINT network. The Czech-Norwegian cooperation between FAMU and DNF corresponded to MIDPOINT's aim to establish collaboration with other institutions beyond Central South-Eastern Europe and to have a stable network of European and international film schools.

The main aim of the project was to put on joint script development workshops for students of both schools. The workshops focused on the script development of feature-length films and TV series and on training the members of the creative team in film development. The innovative part of the workshops was intended to include more specified tutoring and training for producers in development. We also engaged creative producers to introduce students to the film industry and the opportunities it presents. The second workshop included additional expert training in pitching and presenting for all participants and the best 2 projects were selected for the pitching forum in Prague. FAMU and DNF also strengthened their cooperation by providing each other with master's classes taught by guest tutors from both schools.

#### The expected benefits were :

- To develop an important relationship with one of the world's top film schools from a different region (linking Central and Northern Europe)
- To provide the opportunity to develop students' work with renowned tutors (international feedback, different perspectives)
- To share experience and networking (developing industry ties)
- To provide exposure to the Czech and Norwegian film industries and explore their potential
- To share educational practices and pedagogy
- To build a new recruiting base for the MIDPOINT slate of training programs.

This project contributed to reducing social differences by enabling the participation of students from different social backgrounds and also contributed to reducing economic disparities by improving their professional and personal skills, allowing them to gain experience as well as useful professional contacts abroad and thus fostering their competitiveness in an international working environment and network.

**PROJECT SUMMARY:**

The objective of the project MIDPOINT/Norway - Script Development Program was to institutionalize and strengthen cooperation between the Film and TV School (FAMU) from the Czech Republic and Den norske filmskolen (DNF) from Norway. As a main output, a new bilateral partnership agreement was concluded between both schools. Pedagogues and other academic staff prepared joint workshops for students as the main target group of the project. Students from both schools participated in workshops, which took place in Lillehammer and Prague. They gained new perspectives on their work, networking possibilities and a new approach from their cooperation with Norwegian and Czech tutors. Within the project, new opportunities were created for future cooperation between students from both schools beyond the end of all project activities.

## SIGN LANGUAGES IN HIGHER EDUCATION

## TYPE OF ACTIVITY:

**Institutional cooperation project**

## CONTACT PERSON:

**Ondřej Válka**

## CZECH INSTITUTION:

**The Teiresiás Center of Masaryk University**

## FOREIGN INSTITUTION:

**Høgskolen i Oslo og Akershus**  
<http://www.hioa.no/Om-HiOA/>

## FINAL GRANT:

**1 186 884,90 Kč / 44 788 €**

## PROJECT NUMBER:

**NF-CZ07-ICP-3-229-2015**

**ANNOTATION:**

The overall aim of the project was the general improvement of sign language in both the Norwegian and Czech systems of higher education. Benefitting on the one hand from the fact that Masaryk University was able to concentrate nearly one-half of the Czech university students (which means about 50 sign lan-

guage users among the students and teaching staff of Masaryk University) in its study programs, and on the other from the Norwegian tradition of teaching through sign language and teaching the language itself, it was possible to develop the strengths of both partners. Czech and Norwegian experts in sign language linguistics and deaf studies, both hearing and deaf, joined together to create a think tank based on two different cultural frameworks and shared their experience and know-how in studying, analysing, describing, and teaching Czech and Norwegian sign languages as communication tools used in higher education and professional careers. They proceeded in three ways: (1) comparing the existing lexicographic tools and grammar descriptions of Czech and Norwegian sign languages, eliciting common signs and developing terminology needed for scientific purposes, (2) assessing the role of the International Sign system for European communication and mobility of the deaf and publishing descriptions of basic vocabulary recommended for the International Sign system, (3) training programs for sign language interpreters and translators was thoroughly discussed, compared with other existing ones, and good practice items transferred into the Czech curriculum.

**SUMMARY:**

Czech and Norwegian experts in sign language linguistics and deaf studies, both hearing and deaf, joined together to create a think tank based on two different cultural frameworks and shared their experience and know-how in studying, analysing, describing, and teaching Czech and Norwegian sign languages as communication tools used in higher education and professional careers. They compared the existing lexicographic tools and grammar descriptions of Czech and Norwegian sign languages, eliciting common signs and developing terminology needed for scientific purposes, assessed the role of the International Sign system for European communication and mobility of the deaf, and published descriptions of basic vocabulary recommended for the International Sign system. Training programs for sign language interpreters and translators was thoroughly discussed, compared to other existing ones, and good practices was transferred into the Czech curriculum.

## THE CHURCHES' RESPONSE OF WELCOME OF THE MIGRANT OTHER

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Timothy Noble**

### CZECH INSTITUTION:

**The Protestant Theological Faculty,  
Charles University of Prague, [www.etf.cuni.cz](http://www.etf.cuni.cz)**

### FOREIGN INSTITUTION:

**The School of Mission and Theology (MHS), [www.mhs.no](http://www.mhs.no)**

### FINAL GRANT:

**616 616,10 Kč / 23 269 €**

### PROJECT NUMBER:

**NF-CZ07-ICP-4-334-2016**

### ANNOTATION:

This project contributed to four areas that are highlighted in the memorandum of understanding between the Kingdom of Norway and the Czech Republic. These are research and scholarship; human and social development; justice and home affairs; promotion of decent work and tripartite dialogue. The first is clear, owing to the nature of the project, which is research-based, with projected scholarly outcomes, including articles and conference presentations. However, beyond this, it included bilateral cooperation in the area of theology, so that religion, perceived by some as part of the problem of division, can be seen to be actively involved in promoting cooperation. The project also contributed by offering examples of best practice to other projects in different disciplines.

Secondly, through its concentration on the issue of migrants and the contribution of the churches in overcoming negative stereotypes in the wider population, it could have a significant impact on human and social development, starting with the anticipated effect on the researchers themselves, moving through the impact in more narrowly academic settings to the effect on wider society through access to media sources and other forms of dissemination of research results (for example, through social media). As part of the aim of the project was to move towards

a decategorisation of the other, it is not possible to claim a priori that it had a positive effect on migrants themselves, but obviously, this would have been a desired outcome.

Thirdly, by focusing on questions of welcome and hospitality and the conflicting needs experienced in societies such as the Czech Republic and Norway the project contributed to both greater justice and to a more balanced and informed picture in respect of home affairs. Although legal questions as such were beyond the remit of a project in theology, nevertheless, philosophico-legal elements featured, especially in terms of a state's duty to those who are not its citizens.

Fourthly, it promoted decent work and tripartite dialogue. The first was demonstrated in the way in which the work is conducted, in which ethical concerns were given a high priority, both in any eventual contact with migrants themselves, and in discussing the issues involved. The striving for a fair representation of the fears and hopes of all sides were paramount, without allowing these fears (whether justified or not) to have undue bearing on any recommendations and proposals that may issue from the research. In this sense, the methodology mirrored the title, with the other in all manifestations (including those with which the researchers may fundamentally disagree) have been treated with respect, and as subject rather than object. Through the research opportunities for dialogue was enabled, which was not only between the Norwegian and Czech partner institutions (thus a bilateral dialogue) but between different groups within and across the two societies, especially church, academy, society and migrants. Thus, potentially a four-way dialogue can be initiated.

By arguing for and demonstrating the possibility of welcoming the other in their otherness, the project have also had important repercussions in terms of promoting greater social cohesion, both within and across the two countries. It has encouraged the churches in their attempts to reduce social tension and further the integration of the other in a way that does not deny them their identity but allows them to expand it to include the identity of their new host nations.

### SUMMARY:

The outcomes of the project have been met. Continuing bilateral cooperation between the Czech and Norwegian partners has been institutionalized with the signing of an Erasmus agreement. Three conference presentations were given, which have been submitted or are in the process of being submitted for publication. These presentations also allowed for the presentation of the program, and the program was also presented at conferences and meetings in the Czech Republic, Norway, Finland, the Netherlands and Bulgaria. A conference was organized in the Czech Republic with participation of both academics (Czech and foreign, from fifteen different countries) and civil society representatives. Norwegian partners participated in this conference and a visit was made to the partner institution, resulting among other

things in the preparation of an Erasmus contract, and invitations to cooperate in future grant projects. The overlapping interests of our respective institutions, especially with the transformation of the Norwegian partner institution into part of the VID Specialized University, has opened up many possibilities of future cooperation, which both partners are keen to pursue.

In terms of dissemination, the project has carried out a number of important tasks. We have produced a brochure on migration and the churches to be sent to church communities around the country, and have contributed heavily to an online encyclopedia of migration that aims at informing the public on issues connected with migration, including theological questions. Radio broadcasts have also enabled the wider sharing of the themes of the project. These contributions aim at increasing dialogue and social justice, especially given the continued resistance to the presence of migrants in the Czech Republic. Thus, the project has worked at both the academic level and the level of civil society to promote greater integration in Czech society.

## SYSTEMIC APPROACH TO ARCHITECTURAL PERFORMANCE

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Zdeňka Němcová-Zedníčková**

CZECH INSTITUTION:

**The Technical University in Liberec, [www.tul.cz](http://www.tul.cz)**

FOREIGN INSTITUTION:

**The Oslo School of Architecture and Design, [www.aho.no](http://www.aho.no)**

FINAL GRANT:

**449 196,30 Kč / 16 951 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-342-2016**

### ANNOTATION:

Our focus of the project was to develop the concept of Performance Oriented Architecture (POA: <http://www.performance-orienteddesign.net/>) forward through the method of Systems

Oriented Design (SOD: <http://www.systemsorienteddesign.net/>) to reach the future of a sustainable build environment (this applies to both of the Sustainable development and Environmental sustainability horizontal themes). From this project, we expected to develop a case study of a Ph.D. project: Wood as a Primary Medium for Architectural Performance. Advising and opposing on it will strengthen the relationships between the institutions and bring a better quality of results. The visit by female Ph.D. students with supervisor Milos Florian at Systems Oriented Design presentations and the Summer Show of the Oslo School of Architecture and Design contributed to increased competitiveness of women in the Czech academy. Today, the academy in the Czech Republic is mainly represented by men. By creating new connections and distributing the knowledge, the project aimed to support equal opportunities for women in the Czech academy for the future (this applies to the Equality of Opportunities horizontal theme as well as the call's goal reduction of economic and social disparities within the EEA).

Through joint visits, consultations, authorships of publications, workshops, and lectures, we could learn from each other and share the knowledge of the academic staff and Ph.D. students. This cooperation will lead to developing the research field further and also spreading knowledge to locations where it would not otherwise reach. The beginning of the cooperation between the Czech Republic and Norway enriched the field of Performance Oriented Architecture and Systems Oriented Design with data from different locations, both ecologically and socio-culturally (this applies to the Social Sustainability horizontal theme). It is our belief that both of the institutions highly benefited from the cooperation, extending our research, which was one of the goals of the call. The project was published and hopefully will have an impact on governance through the academic sphere in the future. SOD is applied in some state institutions in Norway and Canada. POA has an impact on state Forestry in Norway. The steps forward are rather slow, but we hope to increase the impact in the Czech Republic. At the Oslo School of Architecture, it is common to publish Ph.D. theses by the school. TUL does not have such an option, which leads to the fact that the research does not have such impact. By publishing common interest studies, we have narrowed the gap between the partner countries as well as generated higher impact. A copy of the publication was sent to the Ministry of Environment, the Ministry of Regional Development of the Czech Republic and Czech Forests, A.S. (this applies to the Good Governance horizontal theme as well as the call's goal reduction of economic and social disparities within the EEA).

The project's method covered all strategies mentioned in the call: a) ECTS mobility; b) joint supervision / presentation of Ph.D. work; c) increased skills / competences of staff; d) new HE mobility agreements; e) promotional events (both at the program and project levels); f) production of joint products and services (scientific publications, common curricula, joint teaching method-

ologies, joint summer schools/intensive courses, presentations of papers at international conferences, good practice handbooks and guidelines, management and development plans where environmental and sustainability issues are integrated); g) further cooperation (planned or realized).

**SUMMARY:**

The project was being held in cooperation on common research interests of the Institutions in Performance Oriented Architecture (POA) through the Systems Oriented Design (SOD) method. Those fields are represented at the Oslo School of Architecture and Design by international key persons in the disciplines, POA by Michael Hensel and SOD by Birger Sevaldson.

The case study of FUA TUL's Ph.D. student's Marie Davidova's, research on Wood as a Primary Medium to Architectural Performance were applied and the results were presented to the academy. In the same time, the project covered the advising of Marie Davidova's Ph.D. project, the workshop, public lectures, discussions, common critiques, conference attendance, and publications, which helped to introduce the field to the academic audience and strengthen the engagement in the common interest of the institutions and their connections.

## LANGUAGE ACQUISITION IN THE CONTEXT OF TRADITIONAL AND CONTEMPORARY CULTURE IN NORWAY

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Miluše Juříčková**

CZECH INSTITUTION:

**Masaryk University, Faculty of Arts, [www.phil.muni.cz](http://www.phil.muni.cz)**

FOREIGN INSTITUTION:

**University College of Southeast Norway  
<https://www.usn.no/>**

FINAL GRANT:

**601 151,40 Kč / 22 685 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-330-2016**

**ANNOTATION:**

The overall objective was to contribute to the internationalization process of tertiary education through cooperation between the Czech Republic and Norway – through a direct cooperation project between our two departments.

The main expected benefit was the advancement of human resources in field humanities and philology. The incorporation of the project's results at MU will convey the participants' experience with Norwegian cultural and democratic traditions. The internationalization of the study profile was considered a very important item for the professional development of our students and graduates.

The objectives of the project included providing a brief introduction to language acquisition, inclusive of Norwegian literary traditions and contemporary culture and society. Through this project, the study curriculum was enriched and renewed and teaching methods were be innovated.

**SUMMARY:**

The institutional cooperation project has achieved all the planned benefits and results. The students at MU have been introduced

to and engaged in institutional development aspects in all phases of the project (see e.g. NOII-70 Norština magisterská praxe), as well as in the international cooperation process between the partner departments over these nine months (From January to September 2016). The Czech students' Norwegian language acquisition methods have been brought to a new and qualitatively higher phase. The knowledge of contextual contingency of the "Norwegian language and literature" study branch was very much appreciated, and our graduates at both the bachelor's and master's levels have been given better opportunities for participating in various activities and succeeding in their future jobs and professional careers in areas such as translators, interpreters, journalists, teachers, and tour guides. International cooperation at our institute and at MU as whole has been focused and qualitatively enhanced through the joint arrangements with our partner at University College in Southeast Norway.

## NORWEGIAN LITERATURE: LOCATION EXPERIENCE AND EUROPEAN PERSPECTIVES

### TYPE OF ACTIVITY:

**Mobility project**

### CONTACT PERSON:

**Miluše Juříčková**

### CZECH INSTITUTION:

**Masaryk University – Faculty of Arts, [www.muni.cz](http://www.muni.cz)**

### FOREIGN INSTITUTION:

**University College of Southeast Norway, [www.usn.no](http://www.usn.no)**

### FINAL GRANT:

**521 051 CZK / 19 662 EUR**

### PROJECT NUMBER:

**NF-CZ07-MOP-4-329-2016**

### ANNOTATION:

The overall objective of this Mobility Project – a student group excursion to Telemark – was to obtain knowledge about Norwegian classical and modern authors who were born, live, and write

in the South Norway and Telemark region. Through this mobility project, the students have had a unique chance to be acquainted with the historical, social, and creative background of their artistic production in a new, innovative way that is compatible with digitalized interposition. Literature lectures were held at MU before and at TUC during our stay, furthermore the communication with Norwegian students has been fostered and consultations with specialists from TUC were held.

### SUMMARY:

Through this mobility project, Czech and Slovak students (studying Norwegian Language and Literature on the bachelor's and master's level) at Masaryk University in Brno could have a unique possibility to meet Norwegian students in the partner institution's surroundings, have specialist consultations on the topics and receive mentorship methodologies for their bachelor diploma and master diploma theses at Masaryk University. A one-week study stay and mobility: The main focus is on modern and classical Norwegian prose and lyrics at their original places in southern Norway and especially the Telemark region, and gaining experience of the local medium of the authors (Vesaas, Ham-sun, Flatland, Solstad, Ibsen) combined with European literature and cultural history.

The primary aspects of the Mobility Project were closely related to sustainable human resources because of the close contact with Norwegian society and the education system. The same fact presents an important institutional benefit.

# THE MARKETING OF GALLERIES AND TRADING ARTWORKS IN THE CZECH REPUBLIC AND ICELAND

TYPE OF ACTIVITY:

**Mobility projects**

CONTACT PERSON:

**Anna Vaněčková**

CZECH INSTITUTION:

**ART & DESIGN INSTITUT, s. r. o., [www.artdesigninstitut.cz](http://www.artdesigninstitut.cz)**

FOREIGN INSTITUTION:

**Bifröst University, [www.bifrost.is](http://www.bifrost.is)**

FINAL GRANT:

**95 909 Kč / 3 619 €**

PROJECT NUMBER:

**EHP-CZ07-MOP-2-098-2015**

## ANNOTATION:

Art and cultural activities represent inherent potential to strengthen international dialogue and to develop multicultural understanding. The main objective of The Marketing of Galleries and Trading Artworks in the Czech Republic and Iceland mobility and research project was to create the promotion of beneficial projects for holding intercultural dialogue in the field of art management and cultural administration in both countries. In addition, the development of new and innovative forms of educational methods and individual competences and the improvement of professional skills, knowledge and language competences of the academic staff were envisioned. From this emerges the second important priority of the mobility and research project, which was to provide a high standard of progressive training for our students and their art and cultural activities in the future.

Our project aimed to show what the differences between the Czech and Icelandic marketing strategies of contemporary art are and to hold a multicultural dialogue leading to a deeper understanding of how universities fulfil their roles in preparing their students for a new career in the art and culture branches in both countries. Both of the parties sent a specialist to the partner country and he/she gave a Guest Lecture for the students at the

partner Institution. The pedagogue received the chance to see the specifics of art galleries and cultural institutions in both countries and in co-operation with the partner institution, we organized an interview with the management of cultural institutions and art galleries. The lectures and interviews were displayed on a web page dedicated to this topic, so the art world in general can have access to this knowledge.

## SUMMARY:

The Marketing of Galleries and Trading Artworks in the Czech Republic and Iceland was focused on the educational methods of art management and cultural administration. The aim of the project was to show the similarities and differences between the Czech and Icelandic creative industries and the teaching methods surrounding the marketing strategies of the fine arts. The mobility and research project between the Art and Design Institut and Bifröst University proposed to organize guest lectures at the partner institution by our academic staff and specialists in art management and cultural administration, Ph.D. Radka Johnova and Ph.D. Njördur Sigurjónsson. The mobility topic was concentrated on the methods and ways how schools fulfil their roles in preparing their students for a new career in the art and culture branches in both countries. We proposed to create a web page dedicated to this topic, which could provide the background for establishing further cooperation and research activities.

# Did you know that...?

## Norway

As a student in Norway you will experience having a friendly relationship with your professor, and this carries over into the workplace, where you may well have lunch with your boss.

[www.studyinnorway.no](http://www.studyinnorway.no)

## Czech Republic

Law, medicine and art – fields which are most attractive to young people. JUDr. and MUDr. – these are two titles, acquisition and the subsequent opportunity of carrying out the profession of lawyer or physician, which are most desirable ones. Every year more than ten thousand young people apply to Faculties of Law, of which there are only four in the country – in Prague, Brno, Pilsen and Olomouc – and more than three quarters of these applicants will not be accepted. The chances of acceptance by individual medical and pharmaceutical faculties range from between 23-40%. There is an even smaller probability of acceptance by a university for students who wish to study one of the fields of art. A number of subjects at this school are also taught in English.

[www.czech.cz/en/Life-Work/Education-system/Public-and-private-universities/The-most-popular-fields-of-study](http://www.czech.cz/en/Life-Work/Education-system/Public-and-private-universities/The-most-popular-fields-of-study)

## Iceland

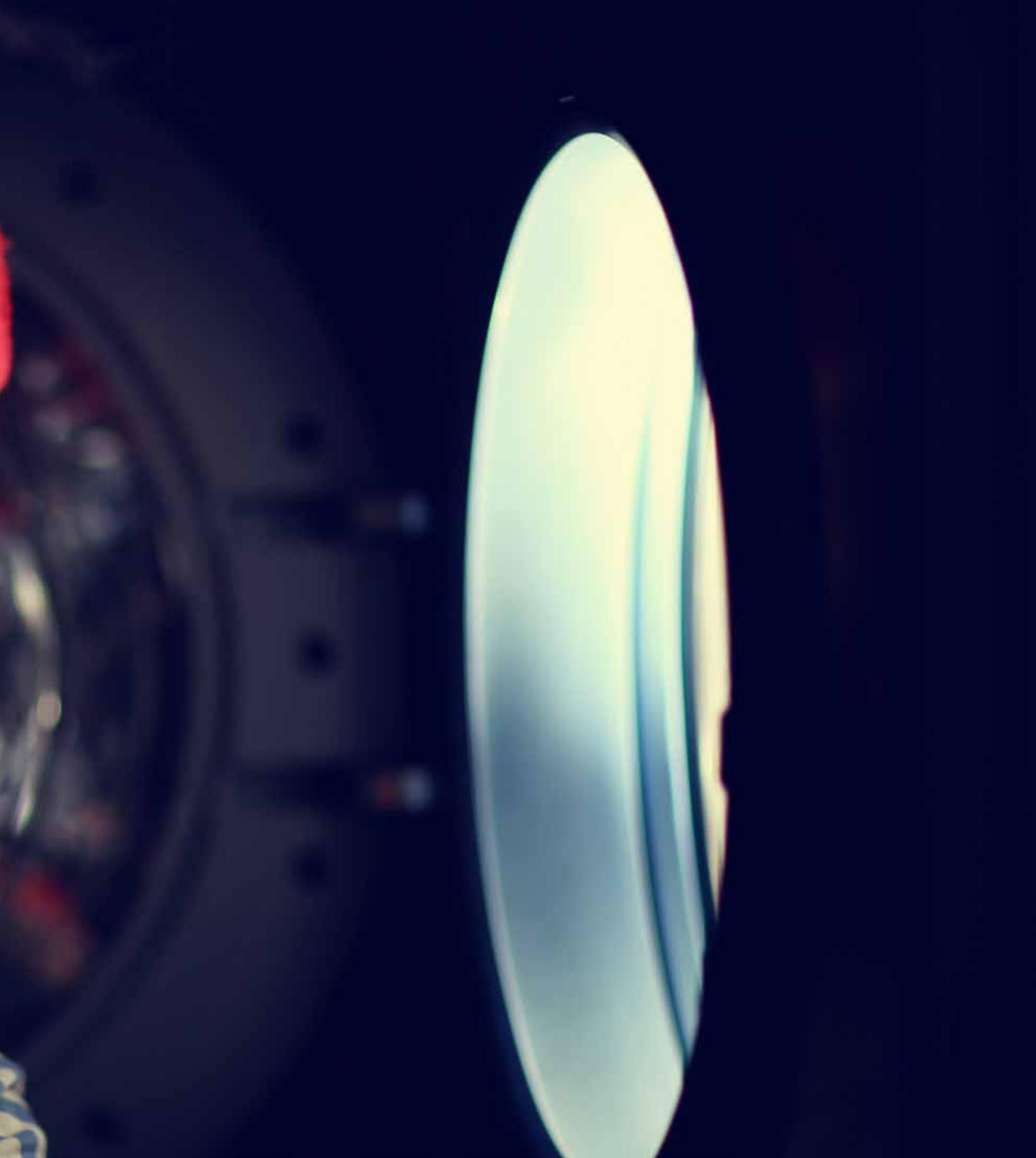
Currently there are approximately 18000 students enrolled at all seven of Icelandic universities altogether, of which about 5% are international students.

[www.studyiniceland.is/page/StudyInIceland](http://www.studyiniceland.is/page/StudyInIceland)

A close-up, profile view of a man with a full, dark beard and a red knit beanie. He is looking towards the right of the frame. The lighting is dramatic, with strong highlights on his face and the beanie, and deep shadows elsewhere. He is wearing a blue and white striped t-shirt. The background is dark and out of focus.

**PROJECTS**

**IN SOCIAL SCIENCES**



## UNIVERSITIES' APPROACHES IN TACKLING THE CHANGING JOB MARKET FOR RECENT GRADUATES

### TYPE OF ACTIVITY:

**Institutional cooperation project**

### CONTACT PERSON:

**Emil Velinov**

### CZECH INSTITUTION:

**Faculty of Business Administration, The University of Economics, Prague, [www.vse.cz](http://www.vse.cz)**

### FOREIGN INSTITUTION:

**Bifrost University, The Department of Business**

### FINAL GRANT:

**494 778,60 Kč / 18 670 €**

### PROJECT NUMBER:

**EHP-CZ07-ICP-2-150-2015**

### ANOTATION:

This project's implementation was closely related to the European Union's policy of curbing unemployment among recent graduates across the European continent. Therefore, this project's implementation was a very important step in dealing with the challenging and fluctuating job market for recent graduates. The project was connected to other projects across universities which are focused on adequate study plans and solid teachers who are able to prepare the students so that they can succeed in the turbulent job finding environment. This project aligned with this call for EEA grants because it directly involved human capital and aimed to diminish the socio-economic gaps between the Czech Republic and Iceland through the exchange of best practices for better dealing with the changing job market by recent graduates. By implementing this project, common approaches and methods were found focused on supporting and better preparing the students to find a job on the domestic job markets in the Czech Republic and Iceland. Also, the project helped to exchange best practices between our institutions and to apply them in our local conditions.

### SUMMARY:

The main aim of the project was successfully completed in terms of reaching the target groups in the project. During the project, a group of twenty students from the University of Economics, Prague were directly involved in practical sessions in three companies- Nano Energies in the City of Prague, Linet Group in the Central Bohemian Region and Jansen Display in the Usti nad Labem Region. The students were engaged in hands on experience in different departments of the selected companies such as Quality Management, Marketing, Sales, Finance, Export, Maintenance and Facility Management. Throughout the project, the students were supervised and guided by mentors from the University of Economics, who guaranteed the outcome and the performance of the students. The mobilities between Iceland and the Czech Republic were carried out because the participants visited companies in both countries. At the end of the project, a concise handbook with recommendations for the companies in which the students visited was created as an outcome of the analyses. A final workshop and several local and international conferences were held in order to disseminate project outcomes and results.



# NEW PUBLIC MANAGEMENT REFORMS AND ACCOUNTING PRACTICES IN MUNICIPALITIES OF THE CZECH REPUBLIC AND NORWAY

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Emil Velinov**

CZECH INSTITUTION:

**Faculty of Business Administration,  
the University of Economics, Prague, [www.vse.cz](http://www.vse.cz)**

ABROAD INSTITUTION:

**Buskerud and Vestfold University College, [www.hbv.no](http://www.hbv.no)**

FINAL GRANT:

**1 193 541,51 Kč / 45 039 €**

PROJECT NUMBER:

**NF-CZ07-ICP-3-149-2015**

## ANNOTATION:

Historically, comparative international studies have been used to explore the philosophy behind best practices and how they work with a view to adapting such practices in a new context. However, the published literature does not envisage any evidence to prove such a comparative analysis has been conducted concerning Czech and Norwegian Municipalities. Primarily, the project aimed at carrying out a comparative study in identifying best accounting and budgeting practices developed by Norwegian and Czech local governments as a result of reform efforts. In so doing, this study enabled us to comprehend how Norway and the Czech Republic have implemented accounting and budgeting reforms and also pinpoint what types of challenges they have encountered throughout the reform process. We also learned how they overcame such barriers. In other words, this study envisaged what kind of strategies have been used to successfully implement accounting and budgeting reforms. Accordingly, this study enabled us to provide suggestions and recommendations for the implementation of accounting and budgeting reforms for selected local governments and for policy makers in general.

## SUMMARY:

This inter-institutional research-development project between the University of Economics, Prague and Southeast University College of Norway aimed at investigating the accounting practices in selected municipalities in the Czech Republic and Norway and specifically at carrying out qualitative research on new methods of budgeting in the public sector in the local governments of these two countries. Another outcome of the project was the creation of a handbook with recommendations for the local governments how better to work with outside sectors in the project partners' countries. The main benefits of the projects were teaching mobility, conferences, the handbook for the municipalities, and cooperation with local governments, which enriched the research capacity of the universities in the aforementioned areas. The project partners will continue to cooperate through an Erasmus Plus agreement in the future.

# TRANSNATIONAL AND NATIONAL MIGRATION: EXPERIENCE FROM THE CZECH REPUBLIC AND NORWAY

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Vendula Vlková Hingarová**

CZECH INSTITUTION:

**Charles University Prague, Faculty of Arts, [www.ff.cuni.cz](http://www.ff.cuni.cz)**

FOREIGN INSTITUTION:

**The University of Tromsø, The Arctic University of Norway  
[www.uit.no](http://www.uit.no)**

FINAL GRANT:

**1 286 950 CZK / € 48 564**

PROJECT NUMBER:

**NF-CZ07-ICP-3-155-2015**

**ANNOTATION:**

The fundamental aim of the project was to contribute to research on national and translational migration and its influence on minority languages, literature, and social perspectives. Institutional cooperative research helped to develop new perspectives on knowledge and knowledge dissemination in different international contexts and academic environments. The research aimed to enrich the research methodology on migration in general and provide new instruments for analyzing, promoting, and supporting marginalized migrant groups.

The research on social issues on migration brought new knowledge and perspectives on human mobility, and revitalization of minority cultures.

The main objective was to create an academic research infrastructure: to educate more experts in Migration and Minority Studies in the Czech Republic, to help them develop their career in this field and to create an international (not only Norwegian-Czech) research network by, in addition to other courses, common research teams and individual tutoring.

**The Czech team's objectives also included:**

- to strengthen the experience of the joint research community;
- to build a research environment open to knowledge transfer and experience sharing;
- active involvement of female researchers in the project's management.

Another project objective was to train and develop human resources. The network aspect of bringing together researchers and students from different departments and disciplines was also an important goal for this project. Since the project members worked and conducted research in many different departments where their research objective was usually not the main focus of general research, the project aimed to create a strong research group environment to strengthen and motivate active research on emigration topics.

On a concrete level, the project published a joint publication and prepared new curricula for semester courses. This was an important contribution to the knowledge transfer produced by the project.

**SUMMARY:**

The Norwegian and Czech experience of transatlantic mobility was quite similar in many ways - mass emigration in the 19th and 20th centuries to the Americas, the institutionalization of expatriate communities and efforts to preserve national identity. The CZ emigration in the second half of the 20th century, and especially the current international mobility, brought new research challenges that were not sufficiently reflected in the philological research and lack integration in study fields. By comparing historical experience, research methods led to joint activities: 1)

new academic courses; 2) publications; 3) the creation of a digital database of sources. The CZ team helped to disseminate knowledge about CZ emigration in Scandinavia and the Americas; the NO team implements the minority perspective in migration studies. The project worked actively with young researchers who developed research and teaching competences and acquired experience in using modern technology.

## OPTIMIZATION MODELING AND STATISTICAL PROCESSING FOR DEMAND BASED PROBLEMS – MARKETING DECISION-MAKING SUPPORT

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Dušan Hrabec**

CZECH INSTITUTION:

**Tomáš Baťa University in Zlín, [www.utb.cz/fame-en](http://www.utb.cz/fame-en)**

FOREIGN INSTITUTION:

**Molde University College, [www.himolde.no](http://www.himolde.no)**

FINAL GRANT:

**1 025 847 Kč / 38 711 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-345-2016**

**ANNOTATION:**

The main goal of the project was to establish new international academical relationships between the Faculty of Management and Economics, TBU in Zlín, and MUC, Norway, and to build scientific and research team in the field of theoretical as well as applied economics. We utilized and shared the unique combination of knowledge of all involved partners. We integrated and enhanced the separately studied fields to improve the achievements in preparation of a unified theoretical methodology with



the perspective of the future development of subsequent tools that may help to solve selected problems of considered application areas by suitable models.

The project took advantage of the combination of the deep knowledge and practical competence of the Czech and Norwegian partners in the areas of economics, applied mathematics, logistics, optimization, and statistics. Therefore, another main idea of this project was to build on the extensive experience and synergetic knowledge of the involved parties in the development of economic-optimization problems. The result of the cooperation was a professional network among the partner organizations, with an intensive transfer of knowledge and a high integration of know-how. More specifically, the team mostly focused on the development of suitable optimization models for decision-making support on the company, managerial and customer levels. Statistical methods were used especially as a suitable tool for the demand prediction that was necessary in recent operational research as well as demand based and revenue problems. The related research outputs could lead to equalization of the customer-company (manager) position on the market side.

We planned to strengthen the international cooperation, which should have a positive influence on the student mobility between TBU and MUC. Establishing a new bilateral agreement between the universities was indisputably one of the principal targets of the project. Such two-sided student exchange programs (e.g. bachelor's, master's and doctoral ones) are always beneficial from the teaching and studying perspective.

Last but not least, such a planned project can lead to further project applications within other grants.

#### **SUMMARY:**

The main goal of the project was to establish new international academic relations and to build a scientific and research team in the field of theoretical and applied economics. The team focused on the development of suitable optimization models for decision-making support on the company, managerial and customer levels. Statistical methods were used especially as a suitable tool for demand prediction. Therefore, another main idea of this project was to build on the extensive experience and synergetic knowledge of the involved parties in the development of economic-optimization problems. The project took advantage of the combination of the deep knowledge and practical competence of the Czech and Norwegian partners in the areas of economics, applied mathematics, logistics, optimization, and statistics. The result of the cooperation was a professional network among the partner organizations, with an intensive transfer of knowledge and a high integration of know-how.

## **BUILDING A RESEARCH TEAM IN THE FIELD OF SOCIAL ECONOMY AS SOURCES OF SUSTAINABLE ECONOMIC GROWTH FOR POST-INDUSTRIAL EUROPEAN REGIONS**

TYPE OF ACTIVITY:

**Institutional cooperation project**

CONTACT PERSON:

**Zuzana Tučková**

CZECH INSTITUTION:

**Tomáš Baťa University in Zlín, [www.utb.cz](http://www.utb.cz)**

FOREIGN INSTITUTION:

**Molde University College, [www.himolde.no](http://www.himolde.no)**

FINAL GRANT:

**1 035 531,9 Kč / 39 077 €**

PROJECT NUMBER:

**NF-CZ07-ICP-4-338-2016**

#### **ANNOTATION:**

The international status of FaME was relatively weak and the faculty cannot currently have any further ambitions for systematic success in projects such as Horizon 2020 (for example, a lack of administrative capacity, incentives for R&D employees, dynamic environment open to new ideas, workers and incentives, and especially a lack of experience with small international projects and partnerships). After all, this situation is not entirely specific only for FaME, but a similar situation can also be found in other (not only) economic faculties in Czech universities.

Within this project, we strengthened the institutional capacity of the recipient for basic research in the area of social economy, economic growth, and social business in relation to sustainability. This caused not only expansion and stability of the research team, but it made the cooperation with FaME more efficient.

The cooperation with Norway emphasized the fact that Norway earned 1st place in a ranking of the UNDP'S Human Development Index in 2015. Its score index was 88.36 along with the

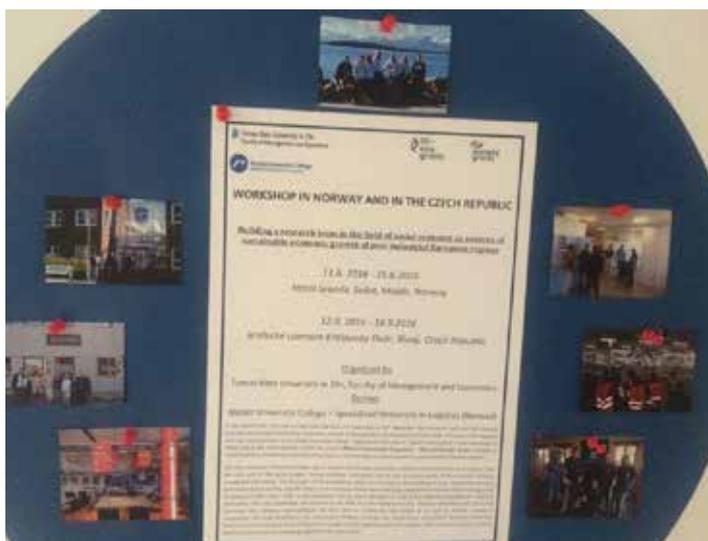
largest gross domestic product. Also, its purchasing power parity was 62.448 dollars. Logically, cooperation with the mentioned institutions must lead to increased skills and knowledge.

#### SUMMARY:

The main aim of the project was to build a research team in the field of social economy as sources of sustainable economic growth in post-industrial European regions, as well as to support the involvement of FaME in international university and non-university research projects. The main aim was reached by completing the following steps:

- two-way consultations, experience sharing and incorporating the achieved results in the teaching syllabus;
- planning bilateral university cooperation in order to establish a new exchange program for bachelor's, master's and Ph.D. students.
- creating a team with specialized background for obtaining international scientific grants in given fields of research.

The main outcomes of the project were namely the research activity of the Faculty of Management and Economics on a higher level, involvement in international cooperation, as well as gained competences for international scientific cooperation.



## Compendium of projects

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# Did you know that...?

## Norway

Norway became an independent nation in 1814, but seceded from Sweden as late as in 1905. At that time, the country had been part of unions with Denmark and Sweden respectively since 1380. This is still reflected in our most used written language, bokmål. Our second written language, nynorsk, testifies to the country's far older history and the legacy of the Vikings and Norse antiquity.

[www.studyinnorway.no](http://www.studyinnorway.no)

## Iceland

Iceland was the country that had the world's first republican government. The parliament was established in Þingvellir in 930 and met continuously until 1291 when Iceland lost its independence and became part of the Kingdom of Norway and later came under the Danish Crown.

[www.studyiniceland.is/page/WhyIceland](http://www.studyiniceland.is/page/WhyIceland)

## Czech Republic

Czech scientists cooperate in the scientific programme of one of the most famous scientific centres, the CERN (European Organisation for Nuclear Research). Currently, 200 citizens of the Czech Republic work in the centre, of which one third are students.

[www.czech.cz/en/Life-Work/Science-and-research/Czech-research-in-the-world/Czechs-in-the-CERN-200-Czechs-work-in-the-most-fa](http://www.czech.cz/en/Life-Work/Science-and-research/Czech-research-in-the-world/Czechs-in-the-CERN-200-Czechs-work-in-the-most-fa)

