Interview with ISPRS SS Director
Eva Matoušková

Farewell from ISPRS SC Board Members

Natural Resource Management using Geoinformatics
Would you like to join SC Newsletter team? Do you want to make a difference? Want to learn new skills?

SC Newsletter is at a stage where getting broader and better demands more people to be involved in the process of it’s formation. That’s why SC Newsletter team is looking for the following volunteers:

- More **people who would be willing to prepare articles** for existing or new rubrics,
- Designers of Newsletter

If you can help us with any of the above, please let us know!

**info@isprs-studentconsortium.org**

And also...

If you **would like to publish your research work** in the SC Newsletter send us your abstract on email written above. We will soon contact you for further information.
Dear ISPRS SC Newsletter readers,

The launch of ISPRS Student Consortium (SC) in 2004 was a major step for young professionals in the scope of the maternal ISPRS. This youth organisation has made a long way since then; from being a group of only few international students that dreamt big to an “adolescent“ student group that function as a professional network. Today the SC is a well-established, lively and proactive organisation, which is addressing members from almost every country in the world, precisely reaching 100 countries across the entire world! The fact that the SC has continued to expand internationally can be seen through its membership growth, global summer school coverage, active presence in social media and the cultural variety of articles published in the SC Newsletter. Since 2007, from the start of Newsletter issuing, 35 issues has been published, most in softcopy, some (including this one) also in printed version, covering many aspects of geo-related themes.

The time has come for new board members to take over the management of SC, a motherboard of the organisation. The elections of new SC board members will take place during Youth Forum section on 17th of July 2016, at 4:30 PM during the SC general assembly at the ISPRS Congress in Prague. This day, an entire conference day will be aimed at the young people in the SC, starting with three oral sessions in the morning (each having 5 presenters), where young authors will have the chance to present their work in front of their peers. Apart from mentioned also public debate will take place in the afternoon, a panel discussion where three invited speaker will tell us their perspectives on the theme “Industry/company or academia/science – where do I fit in after graduation?”. I look forward to seeing you all at the Youth Forum on Sunday.

Saying goodbye will not be such a problem knowing there are many enthusiasts who want to continue or be newly involved in the Student Consortium in the next years. There have been an overwhelming number of applications submitted for the new board positions. I am sure a new team will do its best to continue the mission and even strengthen further professional development opportunities for young professionals.

Let me take this opportunity to thank deeply all of you that have and still are contributing to the SC and are making organizations’ existence constructive and full of content. Without our permanent contributors and their valuable input the activities of SC would be much scarcer. Finally, I would like to thank my fellow SC board members for their huge international collaborative effort during last four years; it was a pleasure working with you!

Ursa Kanjir
SC Chair (2012-2016)
Can you give us a brief introduction regarding your professional career and current research interests?
I started my university studies at the Czech Technical University (CTU) in Prague, Faculty of Civil Engineering (FCE) with Geodesy and Cartography as a study branch. After gaining my bachelor degree I continued with master studies at the CTU, FCE in Geoinformatics. During my masters studies I experienced a half-year Erasmus study at TU Delft, Nederland where I got to know many great people who shared their science passion with me and I started to think about doing my PhD. So after master graduation I stayed at the Department of Geomatics and started my PhD. My interest was always focused on remote sensing (especially on archaeology and environment monitoring), but during my first year I was introduced to hyperspectral imaging and spectroscopy. These technologies will be the key element for my thesis. They provide new information about objects of interest. In my thesis I will focus on plaster monitoring using hyperspectral imaging and spectroscopy.

As the director of the upcoming summer school, what are the challenges you encountered during the organization and preparation?
Organizing the entire ISPRS2016 Summer School is a great challenge itself and I am very happy I was given this opportunity. It requires a lot of “hidden” work that consists of communication, planning and overall management. At the end it was much more work than I imagined at the beginning, but I got a lot of experience as I learned a lot during the organization. It was a pleasure and honor to prepare the entire summer school and I hope all participants will enjoy their time in Telč. Therefore I am offering my experience from organization of multiple scientific events including the ISPRS Summer School to the Student Consorciun and thus serve to the ISPRS organization in the best way I can.

In your opinion, how important is the participation of students and young scientists/researches in international events?
Without any doubt I can say it is essential. Students are very open-minded people and it is great for them to meet other people interested in similar study branch in order to discover that the world is bigger than your country (continent). People worldwide face various challenges you may have never thought of. Communication with others not only about their science / research problems can sometimes help you to solve yours. Such international events certainly help to establish lifetime connections and friendship that can help build better scientific output and can help to cross eventual barriers among countries. That is now more important than ever.

What do you think are the benefits of Summer Schools and other student-specific events to the youth and to the profession?
Attending summer school is a great way to learn something new and to meet people with similar interests. It is nice when the learning is enriched with some fun time like a trip or a small party with other participants. During these events you can talk to other participants, ask about their point of view and discuss your interests. New strong friendships and scientific cooperation across continents and nations can come out of these events.

How important is collaboration among institutions in the field of remote sensing, photogrammetry and geospatial information sciences?
It is crucial as in all science branches. One needs to cooperate and share knowledge with other people in order to get a broad view of the challenge that you are facing. Different people have different ideas and the way of thinking varies as well, and at the end this “cocktail” can generate wonderful ideas and innovative scientific work.

What advice can you give to students and young professionals regarding a successful career?
I would advise young professionals and students to travel, gain knowledge and stay open to new ideas. Do not be afraid of the great challenges, be active and be productive, and it will be worth the effort. This is what I find as the most important.
Government, university, and industry in Canada have combined to produce a website to explore the history of Canada’s forests over a three decadal period. Using Landsat imagery provided freely by the United States Geological Survey, a time series based change detection approach was applied to determine the year of change and to provide additional information to aid in the typing of the detected changes. The Canadian Forest Service of Natural Resources Canada, partnered with the University of British Columbia, with support from the Canadian Space Agency, has been developing the science and methods to track and characterize the history of Canada’s forests. For this research we use Landsat imagery to detect changes, identify the year in which the changes occur, and estimate a change type (such as harvest or wildfire). For information see Hermosilla et al. 2016. From the time series we can also assess the recovery of forests after disturbances by wildfire and harvest. In this research, partnered with Foundry Spatial, we have developed an explore-and-discovery tool to portray and communicate forest change over Canada. The map shows the locations where forest change has been observed between 1985 and 2011. The source Landsat imagery is a continuous surface of pixels, each representing a 30m x 30m square area. For visualization purposes the change pixels have been converted to points, and generalized at different zoom levels. The accuracy of the change products was evaluated using independent validation data. Overall, change events were detected with a 90% accuracy. Fires were detected with a user’s accuracy of 98%, while harvesting was detected with a user’s accuracy of 88%. These results indicate that the automated change detection and attribution algorithms are robust, but errors will exist. Web tools such as this aid in visualizing and sharing results, but they are also designed to enable feedback that can further support refinement of the change detection and attribution algorithms.

Project lead: Mike Wulder (CFS); rest of project team: Joanne White (CFS), Geordie Hobart (CFS), and Nicholas Coops (UBC).

Site: http://forests.foundryspatial.com/

Citation:
Forests in Uttarakhand region of India are burning for months. Since February, these fires have destroyed thousands of hectares of forest. Dry conditions combined with high temperature and strong winds have facilitated the fires to spread in the entire region.

Active Forest Fires in Uttarakhand are being monitored using Satellite Datasets. False Color Composite (FCC) of Resourcesat-2 AWiFS data of Apr 28, 2016 over parts of Uttarakhand can be seen in the satellite image, indicating smoke emanating from numerous active fires. Red Color in the image shows Vegetation. Brighter White Tone shows snow covered region. Smoke Plumes are seen as bluish grey haze in the image. Smoke from the fires have filled the entire valley and spreading in surrounding regions, reaching to Delhi and other highly populated areas. This is a huge concern for the rising air pollution level in the region. Air Quality in many urban and rural area has been reached to a hazardous level. Left side image shows the fires detected by NASA VIIRS sensor on NPP satellite on March 28th (top) and April 28th (bottom). The number of fires has drastically increased over the time.

The following series of images shows how smoke is spreading in the different region over the time. Images are taken by NASA’s MODIS TERRA Satellite.

The following image shows aerosol optical depth (a proxy for PM2.5) on April 30th over Indian region. The blue is for low and red is for high aerosol loading. The forests of the country are therefore, under tremendous pressure. Forest fires are a major cause of degradation of India’s forests. As per the latest state of forests report of the Forest Survey of India the actual forest cover of India is 19.27% of the geographic area, corresponding to 63.3 million ha. Only 38 million ha of forests are well stocked (crown density above 40%). This resource has to meet the demand of a population of 950 million people and around 450 million cattle. As such, country has to meet the needs of 16% of the world’s population from 1% of the world forest resources. The same forest has also to cater for the 19% of the world cattle population (Source: FSI).
Remote sensing technology is critical to understanding the needs for effective forest resources management. Information generated using this technology has improved our understanding of the characteristics of forest ecosystems. In the last 30 years, the use of spatial information in forestry applications has developed tremendously. Measurement and monitoring of the state and function of forests has progressed from simply mapping threats and disturbances into constructing 3D measurements and models of forest structures.

In a remote sensing symposium organized by the Zoological Society of London last April 2016, Mathias Disney from the University College London delivered a presentation in which he discussed how new remote sensing observations, both from space and from the ground, are transforming the way we view changing forest structures and functions. Originally, forest cover mapping has been constrained with optical datasets that capture information of different vegetation reflectance not actual physical structures of vegetation. Mathias gave the participants of the symposium a different experience of seeing the forest using remotely sensed data. He showed to the audience what it was like to walk through the forest using their collected point cloud data acquired using Light Detection and Ranging (LiDAR) sensor. The audience has flown through the thick canopy of the forest area, walked past densely covered vegetation and even hoped over several fallen trees in the area. Whilst the video walk-through of the forest rivalled the excitement of experiencing a virtual reality game, it was equally exciting to note the potential applications of this type of information to measurement and monitoring of forests. According to Laura Duncanson, a postdoctoral fellow at NASA’s Goddard Space Flight Center, the ability to measure the volume of the world’s forests and be able to visualize them in 3D is absolutely going to be a changer. Better understanding and appreciation of the ecosystems’ physical structures, functions and ecological boundaries using more compelling stories based on how information can be better perceived by decision-makers can have more opportunities to inspire action for prioritization.

With the global priorities transitioning from the conservative Millennium Development Goals to the more elaborate Sustainable Development Goals (SDG), the demand for evidence-based measurement and monitoring of forest resources is ever growing. More specifically, SDG’s Goal 15 aims to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.” With this global priority, Geomatics experts are more compelled to explore innovative applications of remote sensing technology for forest resources management. Consequently, we are required not just to understand how anthropogenic pressures affect forest ecosystems but also consider how these changes in ecosystem functions may affect the growing society.

Remote sensing technology has progressed in terms of better design of sensors and acquisition techniques, development of new tools and software for processing and visualization. Continuously knowledge exchange between experts through new platforms and networks (e.g. Group on Earth Observations Biodiversity Network - GeoBON, Wildlabs.net) are essential to learn from experiences of others using remote sensing applications. Despite the technological advancement of this field of research, it is still essential to remember that sustainable management of forest resources demands us to cross the communication and capacity gap between research, society and policy. Therefore, building our own capacity to understand, write and tell stories for different kinds of audiences can expand reach of knowledge and possibly able to achieve lasting resource management impact.
FUTURE ISPRS RELATED EVENTS

14th ISPRS Student Consortium and WG VI/5 Summer School
‘Geoinformatics for Disaster Risk Reduction: Application of Land-Use Change Model’
by Sisira Wijayasinghe

Sri Lanka is one of the leading romantic destinations in the whole world. The land of serendipity brings spiritual tranquility and a chance to rediscover oneself. The beauty of this tiny island is simply breathtaking. Known for its enchanting ancient ruins, endless soft-sanded beaches, imposing mountains, colourful festivals, tempting water sports, dense wild-life, diverse ethnic groups and off the top hospitality from the local residents, which once you experience make you come back again. Sri Lanka Travel and Tourism bureau is eager to provide you with vital information that helps you discover the serene island for yourself.

The 37th Asian Conference on Remote Sensing (ACRS), to be held in Colombo Sri Lanka from 17th to 21st of October 2016. ACRS has always been a sound platform in sharing latest geospatial technologies among professionals, researchers, academia, scientists, industry, vendors and well-wishers related to Remote Sensing and allied fields.

Continuing the very successful tradition of previous summer schools started by the ISPRS Student Consortium in 2005, ACRS 2016 local organizer Survey Department will host the “ISPRS Student Consortium and WG VI/5 Summer School” from 22nd to 26th October 2016 in Sri Lanka with the collaboration of ACRS and ISPRS. This year the SS program will be conducted on “Geoinformatics for Disaster Risk Reduction: Application of Land-Use Change Model”. This theme is timely for Sri Lanka due to recent devastating floods in and around Colombo city as well as in many large cities around the world. The program will focus on the potentials of Geoinformatics to examine changes in an urban environment and model land-use change, population growth and urbanization and the risk this possess to human development. A land-use land cover modeler will be used as a core tool in demonstrating the integration of various GIS data in a modeling environment. Also, sufficient time is reserved for student to experiment with modeling. Students will have a good opportunity to enjoy various lectures addressing the potential usage of satellite sensors, GIS/GPS technologies and putting all these together in a modeling environment to understand how future urban planning scenarios can mitigate disasters, specifically floods. Apart from acquiring new knowledge, participants will be able to experience Sri Lankan culture, traditions and food.

The summer school will be held at the Institute of Surveying and Mapping (http://www.ism.ac.lk/allinone/) located at Diyatalawa, about 200 km away from Colombo, the capital of Sri Lanka. It embraces an area of nearly 25 hectares in undulating terrain surrounded by sky hugging mountains, which contain eucalyptus, pine and tea plantations. It provides an ideal situation for studies and carrying out field exercises in surveying. It has a temperate climate throughout the year. Students will be housed at the Institute where they will find local students studying for BSc in Surveying.

All resources persons and participants will be provided with shared accommodation at the Institute of Surveying and Mapping where hot water, wi-fi internet facilities, restaurant, a range of sport facilities including Tennis, Badminton, Table tennis etc are available. Participants may indicate any food restriction in the registration form.
FUTURE ISPRS RELATED EVENTS

41st Scientific Assembly of the Committee on Space Research (COSPAR)
Istanbul, Turkey, 30 July - 07 August 2016
For more info visit: https://www.cospar-assembly.org/index.html

3rd Potsdam Summer School
Potsdam, Germany, 05-14 September 2016
For more info visit: http://potsdam-summer-school.org/

1st International Conference on Smart Data and Smart Cities, 30th UDMS
Split, Croatia, 07-09 September 2016
For more info visit: http://www.udms.net/

2nd International Symposium on Cellular Automata Modeling for Urban and Spatial Systems
Québec, Canada, 21-23 September 2016
For more info visit: http://www.camuss2016.ulaval.ca/

Virtual Geoscience Conference 2016
Bergen, Norway, 22-23 September 2016
For more info visit: http://virtualoutcrop.com/vgc2016

GRSS YP & ISPRS SS 2016
Presidente Prudente, Brasil, 26-30 September 2016
For more info visit: http://docs.fct.unesp.br/eventos/ypss/e_index.html

International Conference on Geomatics and Geospatial Technology (GGT) 2016
Kuala Lumpur, Malaysia, 3-5 October 2016
For more info visit: http://www.geoinfo.utm.my/GGT2016

GeoAdvances 2016
Istanbul, Turkey, 16-17 October 2016
For more info visit: http://geoadvances.org/

Joint 3D Athens Conference 2016
Athens, Greece, 18-21 October 2016
For more info visit: http://3dathens2016.gr/site/

INTERESTING LINKS

Open Geospatial Science
http://www.geoforall.org/

LiDARmag
http://lidarmag.com/

SPAR 3D
http://www.spar3d.com/

Geoportal Praha
http://www.geoportalpraha.cz/en/main

Geoportal (Poland)
http://www.geoportal.gov.pl/start

FREE SOFTWARE

CloudCompare 2.7
http://www.danielgm.net/cc/

FugroViewerTM 2.2
http://www.fugroviewer.com/

RESOURCES

GeoMesa
http://www.geomesa.org/

EDUCATION

ESRI GIS Dictionary
http://support.esri.com/other-resources/gis-dictionary

JOURNALS

http://polipapers.upv.es/index.php/raet/issue/view/443

Biodiversity Informatics Training Curriculum
https://journals.ku.edu/index.php/jbi/article/view/5008/5167

CAREER BUILDER

Departmental Research Lectureship in Ecosystems Science, School of Geography and the Environment, Oxford
https://www.recruit.ox.ac.uk/pls/hrisliverecruit/erq_jobspec_version_4.display_form

The Photogrammetry and Remote Sensing group (Prof. Dr. Konrad Schindler) at the Institute of Geodesy and Photogrammetry, ETH Zurich, is seeking applications for a PhD Candidate / Research Assistant for the project 'Integrated monitoring of ice in selected Swiss lakes'.
http://www.prs.igp.ethz.ch

Big Data Research Scientist position at Penn State:
https://psu.jobs/job/64446

Assistant Professor in Environmental Informatics
University of California, Davis:
https://recruit.ucdavis.edu/

GIS academic Job at UC, Christchurch, New Zealand:
https://ucvacancies.canterbury.ac.nz
The ISPRS Student Consortium was first established in 2004 during the ISPRS congress in Istanbul, Turkey. The first board of executive members was elected in 2008 at the ISPRS congress in Beijing, China. The second mandate of the Student Consortium board ran from 2012 (Melbourne congress) to 2016 (Prague congress). While the majority of the current board members were elected in 2012, two left due to work commitments and one joined after the 2014 mid-term symposiums. The purpose of the organization as a whole is to promote ISPRS among youth within the fields of photogrammetry, remote sensing, and the spatial information sciences. Each board member has to fulfill specific duties in order for the society to keep going.

In the next five sections each of the outgoing Student Consortium board members will share their impressions and thoughts related to their experiences in the last four years:

**Urša Kanjir (Chair, Slovenia)**
I have been actively involved in the SC for more than just these 4 years and I have to admit I have no regrets in joining SC many years ago. Reflecting on the past, I most value being able to work with people from different countries who have different habits and approaches to work. I also value having the privilege to travel to different countries and meet so many geo-related enthusiasts, some of whom are now my good friends personally or are authors of my favourite remote sensing publications.

**Ayda Aktas (Publications responsible, Turkey)**
I have been working with the ISPRS-SC team for the last 6 years. It all began at the 4th summer school in Warsaw, Poland. I read the newsletter, saw that they needed team members and I believed that I could be beneficial. First I was a member of the newsletter team, working as the technical editor responsible for design related things. Afterwards I became responsible for publication. My role in the ISPRS-SC team is one of the most time consuming yet from my point of view the most joyous work. I have been responsible for soliciting articles from academics, students and professionals of various backgrounds depending on the chosen newsletter topic. After getting all the collected articles back from proof-reading, I have designed both the cover page and the newsletter, making it ready for publishing. This seems to be and it is a long process which you need to keep up with the people who are both contributing to and helping with the newsletter. It’s definitely not a one-person job, but from the first phase till the end it is a team project which is supported by all ISPRS-SC board members and permanent newsletter team members who prepare the fixed sections of the newsletter. Although this is a stressful activity with predetermined due dates it’s so delightful to see the published issue. Whoever next prepares the newsletter will have the privilege of working in a multicultural environment with lots of different points of view. I would like to take this occasion to give my thanks to all SC Board Members for their invaluable help, to newsletter permanent contributors Aleš Lazar and Charles Jjuko, to Thanasis Moysiadis for his technical articles, and to Sylvie Browne for proofreading. My only regret is not having enough time to publish a more visually interactive newsletter with a few changes in the design. I hope that the new team can handle this part and bring a fresh look and dynamic to the newsletter.

**Ivan Detchev (Secretary, Canada)**
As the SC secretary, one of my core duties was to write the minutes for each teleconference. I also submitted articles to the newsletter and invited peers to do likewise. For the last special issue, on free and/or open source software, I temporarily acted as an editor-in-chief. This duty involved coordinating and communicating with the contributors and the editors of the publication. Earlier this year, I was one of the reviewers of papers and abstracts for the Youth Forum technical sessions. Over the years, I have also sent out messages to our mailing list through the MailChimp service and maintained our e-mail inbox. Overall, I have had a positive experience with the Student Consortium and I feel that I have learned a lot about how a student organization operates. My only regret is that I was not able to attend any of the Student Consortium summer schools.
**Hiroyuki Miyazaki (Web responsible, Japan)**

As the Web Executive, I have been maintaining the website and its contents, such as announcements and dissemination of newsletters and events. During the last four years, we found that our communications were being spread more through social media than through our official website. Now that the position of Social Media Coordinator has been added to the board, I hope that exchanges among SC members become more active and timely. While the use of social media is creating diversity, the official website should be a core platform for SC information resources. Although I could not reconstruct the website using the latest technologies of content management systems (CMS), I hope the next Web Administrator can achieve this through collaboration with volunteers from the SC membership.

**Sheryl Rose Reyes (Member, the Philippines)**

As one of the board members of ISPRS SC, I have been actively contributing to the different activities and endeavours of the organization. For the past four years, I have represented ISPRS SC at different summer schools, particularly those held in Asia. I have had the opportunity to meet students, young professionals, lecturers, experts and the members of the local organizing committee of various countries wherever the summer schools were held.

Organization of the summer schools is one of the primary activities of ISPRS SC. In the last four years, I was able to experience the enthusiasm of students and young professionals in learning more about their chosen profession and their desire to be up-to-date with the latest advancements in the fields of photogrammetry, remote sensing and spatial information sciences. By gathering a number of students and lecturers from all over the world, the summer schools provided a great opportunity for them to build professional networks, be immersed in the host country’s unique culture and history, and to create strong friendships with fellow students, young professionals and even the lecturers and organizers of the summer schools. The ISPRS SC still has a very long way to go, but being able to see and experience how the activities of the organization nurture the youth and keep them interested in contributing and participating in the growth of the profession, as well as the organization, is a very good indication that the organization is doing its job well. Being a board member of the organization has also given me the opportunity to work with great people from the ISPRS Council and with the diverse and dynamic members of the ISPRS SC Board. It is a great privilege for me to work with people greatly recognized for their work and with fellow board members who share the same belief – that the younger generation is our future.

There are several areas where the Student Consortium could improve. The next bullet points are my recommendations to the next board members and those willing to contribute to the organization:

- Bring the website up to contemporary standards - it should be based on a content management system where all board members have rights to add and edit content.
- Restructure the board; for example, combine the co-chair and secretary positions into one, but bring in extra help for the newsletter and communication through the website and social media. This should create more balance in terms of the work load and its distribution among the board members.
- Reduce the duration of certain positions; for example, having a 2+2-year term instead of a 4-year term will allow for more flexibility in both the appointment and the resignation of the board members. As long as there is continuity in the ideas between the outgoing and the incoming board members this should be beneficial to the organization as the increased turnover in student help should bring in more fresh ideas.
- Engage coordinators to promote the Student Consortium within their local areas of influence.
- Continue expanding in Africa, and encourage membership growth in Latin America and Eastern Europe. This could be achieved by organizing summer schools in these regions.
- Seek collaboration with the student bodies of other engineering or scientific organizations, e.g., the FIG Young Surveyors or the IEEE Young Professionals.
- Conduct a new survey among the Student Consortium members and also ask for feedback from summer school participants. This would serve as a guide to the types and locations of future activities as well as topics of interest.
- Replace the word “student” in the name of the society, so that graduate and post-doctoral researchers or any other young professionals will be comfortable joining.
- Give a proper name to the “Newsletter” [more interesting?] to encourage more contributions.
Platinum Sponsor of the ISPRS Student Consortium

- when it has to be right

Leica Geosystems

Please visit our SC web page www.isprs-sc.org where you will find more information about Student Consortium, our previous Newsletter issues, SC activities, photo galleries from previous Summer Schools, interesting links etc.

Our previous Newsletter issues