

Careers in Cartography and GIS

Careers in Cartography and GIS was published by the Cartographic and Geographic Information Society (CaGIS) of the United States of America. The brochure was published in 1998, 2001 and a modernized version in 2008. CaGIS's mission is to support research, education and practice and improve understanding, creation, analysis and use of maps and geoinformation in supporting quality decision making and improving life quality.

The beginning of the brochure states that according to the US Department of Labor, geospatial technology is one of three industries in making which express the greatest need for worker and the greatest growth potential in the

following decade. The purpose of the brochure is to indicate the wide range of professions in cartography and GIS. The brochure presents people who work with maps and computers on a daily basis, explains basic terms and tools and lists types of workplaces, salaries and technologies common in cartography and GIS in USA.

The brochure also explains what GIS is and why it is important for cartographers to be acquainted with its technology. GIS experts are qualified for a large number of professions in which spatial information are applied, as many as 39. There is also a list of nine federal agencies which employ cartography and GIS experts. The brochure

continues with a presentation of ten experts who found their careers in cartography and GIS. Each of them answered several questions by describing his or her job, type of education necessary for it, advising colleagues who decide on that career, etc. We found information on the brochure in the periodical *Cartography*, April 2012 (<http://www.mappingsciences.org.au/ecarto/ecarto-archive>), and the full brochure can be found at http://www.cartogis.org/docs/cartogis_careers.pdf.

Nedjeljko Frančula ■

Mathematics of Planet Earth



At the beginning of the December 2013, it was announced that the successful year-long world-wide project *Mathematics of Planet Earth 2013* (MPE2013)

under the patronage of UNESCO will continue as *Mathematics of Planet Earth* (MPE)! The idea of Christiane Rousseau, the past president of the Canadian Mathematical Society, about uniting the world's mathematicians in an effort to bring awareness to global issues has been worked out far beyond what she could have hoped.

The mission of the initiative MPE2013 is to:

- Encourage research in identifying and solving fundamental questions about planet earth

- Encourage educators at all levels to communicate the issues related to planet earth
- Inform the public about the essential role of the mathematical sciences in facing the challenges to our planet

Scientific activities include thematic programs, workshops, summer schools, scientific meetings and special issues of journals. Outreach activities include public lectures, international competitions, special issues of magazines, a daily blog in 2013 and educational resources on the web. MPE2013 initiative successfully brought together over 140 scientific societies, universities, research centres and foundations in more than 30 countries in all 5 continents on four very broad themes:

A PLANET TO DISCOVER: oceans; meteorology and climate; mantle

processes, natural resources, solar systems

A PLANET SUPPORTING LIFE: life ecology, biodiversity, evolution

A PLANET ORGANIZED BY HUMANS: political, economic, social and financial systems, organization of transport and communications networks, management of resources, energy

A PLANET AT RISK: climate change, sustainable development, epidemics; invasive species, natural disasters

Exceptional opportunities were created for long-term partnerships, both inside the mathematical sciences and with other related scientific disciplines. The permanent and virtual MPE Open Source Exhibition has been hosted on the IMAGINARY (imaginary.org/ – a platform for open and interactive mathematics). It comes from an international competition organized by the community for which prizes were

Svaki od njih odgovorio je na nekoliko pitanja kojima se tražilo da opišu svoj svakodnevni posao, odgovore na pitanje o vrsti obrazovanja koje je potrebno za taj posao, daju savjet onima koji se

odluče za takvu vrstu posla i sl. Prvu informaciju o brošuri našli smo u periodičkoj publikaciji *Cartography*, April 2012 (<http://www.mappingsciences.org.au/ecarto/ecarto-archive>), a cjeloviti

tekst brošure dostupan je na adresi: http://www.cartogis.org/docs/cartogis_careers.pdf.

Nedjeljko Frančula ■

Matematika planeta Zemlje

Početak prosinca 2013. objavljeno je da će se uspješan jednogodišnji globalni projekt *Matematika planeta Zemlje 2013* (MPE2013) pod pokroviteljstvom UNESCO-a nastaviti i dalje kao *Matematika planeta Zemlje* (MPE)! Ideja Christiane Rousseau, prijašnje predsjednice Kanadskog matematičkog društva (Canadian Mathematical Society), da se matematičari cijelog svijeta udruže u nastojanju da osvijeste pitanja našeg planeta je uspjela i daleko više od onoga što se ona nadala.

Misija inicijative MPE2013 je:

- poticanje istraživanja za nalaženje i rješavanje temeljnih pitanja planeta Zemlje
- poticanje nastavnika na svim razinama da informiraju o pitanjima vezanim za planet Zemlja
- informiranje javnosti o ključnoj ulozi matematike u suočavanju s izazovima našeg planeta

Znanstvene aktivnosti obuhvaćaju tematske programe, radionice, ljetne škole, znanstvene skupove i posebna izdanja časopisa. A aktivnosti za popularizaciju znanosti obuhvaćaju javna predavanja, međunarodna natjecanja, posebna izdanja časopisa, svakodnevni blog kroz 2013. godinu i obrazovne resurse na webu. Inicijativa MPE2013 uspješno je okupila više od 140 znanstvenih društava, sveučilišta, istraživačkih centara i zaklada u više od 30 zemalja na svih 5 kontinenta kroz četiri vrlo široke teme:

PLANET KOJI OTKRIVAMO: oceani, meteorologija i klima; procesi u zemljinom

omotaču, prirodni resursi, sunčev sustav

PLANET KOJI PODRŽAVA ŽIVOT: ekologija životne sredine, biološka raznolikost, evolucija

PLANET KOJI SU ORGANIZIRALI LJUDI: politički, ekonomski, socijalni i financijski sustavi, organizacija transporta i komunikacijskih mreža, upravljanje resursima, energija

UGROŽENI PLANET: klimatske promjene, održivi razvoj, epidemije, invazivne vrste, elementarne nepogode

Izuzetne prilike su stvorene za dugoročna partnerstva, kako unutar matematičkih znanosti tako i s drugim srodnim znanstvenim disciplinama.

Stalna virtualna *MPE izložba otvorenog postava* nalazi se na otvorenoj platformi za interaktivnu matematiku *IMAGINARY* (imaginary.org/). Ona je započela s međunarodnim natjecanjem

koju je organizirala zajednica, a za koju su nagrade dodijeljene u UNESCO-u na Danu MPE u ožujku 2013. godine. Kvalitetni izložci sad pokrivaju širok raspon tema, kao što su astronomija, mehanika fluida, matematika vulkana ili ledenjaka i probleme u kartografiji.

Projekt MPE2013 podupire razvoj javno dostupnih materijala za nastavu – web stranice predmeta, radne listove, module, knjige, recenzije knjiga, ideje za izlete, eksperimente, ... koji motiviraju djecu u školama kroz poticajne odgovore na pitanja poput „Za što je matematika korisna?“

MPE2013 nema vlastitih financijskih sredstava i predstavlja samo širok okvir djelovanja. Ima samo web stranicu na adresi mpe13.org s informacijama o aktivnostima. Njegove partnerske organizacije su domaćin i pokrovitelj predavanja, tečajeva i izložbi koje se

Diderot Forum of the EMS in the year MPE2013



December 17, 2013





Berlin – Exeter – Zagreb

awarded at UNESCO during the MPE Day in March 2013. The quality exhibits covers now a wide variety of topics such as astronomy, fluid dynamics, the mathematics of volcanoes or glaciers and problems in cartography.

Project MPE2013 has supported the development of publicly available curriculum materials – course websites, worksheets, modules, books, book reviews, field trip ideas, experiments ... which motivates kids in schools by giving stimulating answers to questions like "What is mathematics useful for?"

MPE2013 itself is only a wide framework without a budget. It has only a Web site mpe13.org with information about related activities. Its partner organizations host and sponsor the lectures, courses and exhibitions held in conjunction with the initiative. From all around the world research institutes, scientific societies, international organizations, scientific journals, schools, universities, teachers and researchers associations, museums and public institutions are invited to participate. Croatia also celebrates Mathematics of Planet Earth year.

On December 17, 2013 as one of MPE2013 activities *Diderot Mathematical Forum* was held in Zagreb at the Department of Mathematics, Faculty of Science, Zagreb. Croatian mathematicians with colleagues in Berlin (Germany) and Exeter (UK) gave eleven talks on applications of mathematics to various topics related to planet Earth (meteorology and climate, oceanology, ecology, crystallography ...). European Mathematical Society (EMS, www.euro-math-soc.eu) introduced the cycle of conferences *Diderot Mathematical Forum* in 1996 and initiated its renewal this year with the topic Mathematics of planet Earth. Professor Franka Miriam Brückler (Zagreb, Croatia) had been chosen as one of the coordinators of the event. The conference had both a research and a public component. All the talks were broadcasted over the Internet, as well as recorded to be available online later. The conference ended with a round table discussion held simultaneously in all the three cities.

Professor Brückler has also lead a team of science communicators that visited four Croatian cities and through

interesting lectures, workshops and exhibits motivated and educated younger population for topics like *Snow White and the Seven Crystal Systems, Tricks, Ropes, Beakers, Molecules, Gambling, Football, Crime and Earthquakes, ...* All began in Osijek (Eastern Croatia, 24th and 25th of April) and then the science caravan went to Split (seaside, Southern Croatia, 11th of May). They had a great part in second Croatian Science picnic in Zagreb with more than 30 000 visitors on September 15th and 16th. Their fourth and last planned station was Rijeka (Western Croatia, in October). This project was co-organized by founder of the future Croatian Science Centre – Aquis (member of European Network of Science Centres and Museums), Professor Balthazar Fun Club and French Institute, while exhibitions took place at Alliance Française's premises. Details of this project could be found on the web-page zez.hr/matematika-planeta-zemlje/.

Željka Tutek ■

Pavao Ritter Vitezović

300th Anniversary of Death

Pavao Ritter Vitezović was born in Senj on January 12, 1652 and died in Vienna on January 21, 1713. He attended elementary school in Senj and continued his education at a Jesuit high school in Zagreb, where his professor was Juraj Habdelić. After finishing the sixth grade in rhetoric, he quit school and went to Rome, where he met Johannes Lucius (Ivan Lučić). He was taught by cartographer Georg Matheus Vischer in Vienna. Vitezović spent the following two years in Bogenšperk (Wagensberg, Wagensperg), where Johann Weikhard

Valvasor taught him surveying and copper-engraving. He prepared most templates for Croatian city views for Valvasor and engraved them in copper plates. He returned to Senj in 1679. As a city emissary, he travelled to the Viennese Parliament, where he advocated for Senj getting a royal charter and rights it had had for a long time. He participated in wars against Turks and became an officer for Nikola Erdödy. While he was staying as an emissary of Senj in Linz in 1684, he produced *Odiljenje sigetsko* and changed his German last name Ritter to

Croatian Vitezović. He used to go outdoors and sketch cities and towers which he subsequently engraved in copper plates. This is how his copper-engravings were made which were incorporated in the album of Valvasor's *Topographia Ducatus Carnioliae modernae* (Topography of Duchy of Carniola), as well as in *Die Ehre des Herzogthums Crain* (Glory of Duchy of Carniola) in 1689. He participated in wars for liberation of Lika and Krbava and became the vice-prefect of Lika in 1691. He took over the Land Printing Office (*Zemaljska tiskara*) at

održavaju u suradnji s inicijativom. Istrživački instituti, znanstvena društava, međunarodne organizacije, znanstveni časopisi, škole, sveučilišta, nastavne i znanstvene udruge, muzeji i javne ustanove iz cijeloga svijeta pozvani su na sudjelovanje. Hrvatska također slavi godinu *Matematike planeta Zemlje*.

Dana 17. prosinca 2013., kao jedna od aktivnosti u sklopu MPE2013, održan je Diderotov matematički forum u Zagrebu na Odsjeku za matematiku Prirodoslovno-matematičkog fakulteta. Hrvatski matematičari s kolegama iz Berlina (Njemačka) i Exetera (UK) održali jedanaest predavanja o primjenama matematike u vezi s planetom Zemljom (meteorologija i klima, oceanologija, ekologija, kristalografija, ...). European Mathematical Society (EMS, www.euro-math-soc.eu) započelo je ciklus konferencija pod nazivom *Diderot Mathematical Forum* 1996.

godine i pokrenuo je njegovu obnovu ove godine s temom *Matematika planeta Zemlje*. Profesorica Franka Miriam Brückler (Zagreb, Hrvatska) bila je izabрана za jednog od koordinatora događaja. Konferencija je imala i znanstvenu i popularizacijsku komponentu. Sva predavanja su se prenosila putem interneta i bila su snimljena kako bi bila dostupna online i kasnije. Skup je završio zajedničkim okruglim stolom koji se održavao istodobno u sva tri grada.

Profesor Brückler je također vodila tim projekta zabavnog učenja o znanosti koji je posjetio četiri hrvatska grada i kroz zanimljiva predavanja, radionice i izložbe motivirao i podučavao mlade o temama kao što su *Snjeguljica i sedam kristalnih sustava, Trikovi, užad, čaše, molekule, Kockanje, nogomet, kriminal i potresi, ...* Započeli su u Osijeku (u istočnoj Hrvatskoj, 24. i 25. travnja), a zatim

su otišli u Split (na moru, u južnoj Hrvatskoj, 11. svibnja). U Zagrebu su imali značajnu ulogu u održavanju drugog Piknika hrvatske znanosti 15. i 16. rujna koji je okupio više od 30 000 posjetitelja. Njihov četvrti i posljednji planirani posjet bio je grad Rijeka (zapadna Hrvatska, u listopadu). Taj projekt su organizirali: osnivač budućeg hrvatskog znanstvenog centra – Aquis (član Europske mreže znanstvenih centara i muzeja), udruga Profesor Baltazar i Francuski institut, a izložbe su se održavale u prostorijama Alliance Française. Više se o ovom projektu može naći na web stranici zez.hr/matematika-planeta-zemlje/.

Željka Tutek ■

