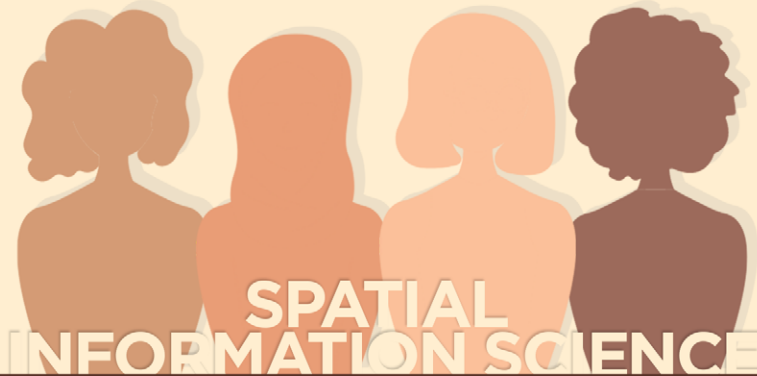
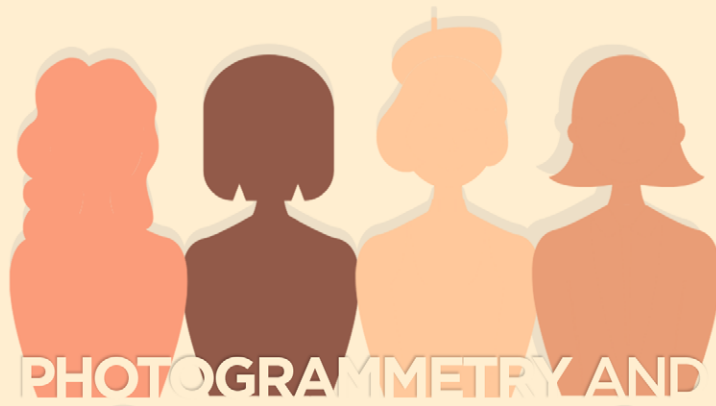


THE OFFICIAL NEWSLETTER OF THE ISPRS STUDENT CONSORTIUM

# SPECTRUM

Volume No. 15 Issue No. 3 | June 2022

women



SPECIAL ISSUE

**AFRICAN WOMEN IN GIS | WOMEN IN GIS KENYA |  
WOMEN IN COPERNICUS | GEOLADIES PH | SHE MAPS**

**IFOV:**

Dr. Arzu Çöltekin | Dr. Suzana Dragicevic | Dr. Isabella Toschi



WOMEN IN ISPRS SC **TRADING CARDS**



# CONTENTS

## 04 | SPOTLIGHTS

- 04 | African Women In GIS
- 05 | Women In GIS Kenya
- 06 | Women In Copernicus
- 07 | GeoLadies PH
- 08 | She Maps

## 09 | IFOV

- 09 | Dr. Arzu Çöltekin
- 13 | Dr. Suzana Dragicevic
- 16 | Dr. Isabella Toschi

## 19 | TRADING CARDS

## 23 | FORESIGHT

- 23 | SUNRISE Summer School

Vincent **AZUCENA**  
Franz Raymond **BALA**  
Amihan **MANUEL**  
Sandra **PULMANO**  
**DESIGN TEAM**

Andre John **OBIDOS**  
**PROOF READER**

Charmaine **CRUZ**  
**EDITOR-IN-CHIEF**

Join the  
**ISPRS Student  
Consortium**  
today!

**ENGAGE** WITH OUR GLOBAL NETWORK OF EXPERTS AND **BE EMPOWERED**

## JOIN the SPECTRUM TEAM!

We are constantly in search for passionate volunteers to be part of the ISPRS-SC Newsletter team. If you are a student or a young professional (ages 20-35 years old), willing to lend your time and skills with the passion to tell stories, share knowledge and experiences, then join us as a CONTRIBUTOR to the Spectrum.

Have a passion for design, layouts and infographic?  
Be one of the volunteers of our CREATIVE DESIGN TEAM  
and help us tell stories through pictures and images.

Take the opportunity to work with an international array of experts to bring the latest stories and developments in the field of Remote Sensing, Geomatics and Photogrammetry.

Click here to register as a Volunteer today!

Or you can email us at [sc@isprs.org](mailto:sc@isprs.org)

**Follow us on:**



Dear ISPRS SC Newsletter readers,

I am very pleased to share with you the most awaited follow-up issue on our April 2019 Newsletter on Women in Remote Sensing and Geospatial Information – **Women in Remote Sensing, Photogrammetry and Spatial Information Science**. This special issue is published in support of our forum of the same title in the ISPRS Congress. After more than two years in the pandemic, we are very happy to be hosting this forum in partnership with ISPRS and the Ladies of Landsat. The forum aims to connect women in remote sensing, photogrammetry and spatial information science, within and outside ISPRS. The forum will also be an avenue for women to tell their stories and exchange ideas and experiences in the profession. Finally, this forum's ultimate goal is to raise awareness about the current status of women in the profession and promote diversity and inclusiveness within ISPRS through the exchange of ideas and recommendations to the Society.

In addition to our presenters and panelists in the in-person forum, we are delighted to further share with you interviews of some of the amazing women in ISPRS – Dr. Arzu Coltekin, Dr. Suzana Dragicevic and Dr. Isabella Toschi. We also present you with some of the groups of women in our profession. Finally, we are also adding a few more profiles to the existing database of the Ladies of Landsat's trading cards. We sincerely hope that this issue will again inspire and empower women and other underrepresented groups in remote sensing, photogrammetry and spatial information science.

Enjoy reading!



**SHERYL ROSE REYES**  
PRESIDENT



# AFRICAN WOMEN IN GIS

@africwomeningis

**African Women in GIS** was jointly founded in year 2020 by Chidimma C. Umeogu (Nigeria) and Cyhana L. Williams (Ghana).

We are a community of 500+ African Women around 30+ countries that work, study, or are enthusiastic about the Geospatial industry and its related fields. Our community vision and goals are:

- Support the visibility of more African women in the GIS industry,
- Mentorship programs for the younger generation in their career journey,
- Collaborations and partnerships with organizations across the Geospatial industry,
- Bridge the gender gap in the African geospatial industry.

Below are the problems that influenced our existence:

- African GIS industry and other STEM fields are predominated by men.
- Lack of proper career guidance.
- Lack of grass roots GIS benefits and application awareness amongst students as well as the public.
- Lack of female GIS mentors for career guidance.
- Inaccessible or unaffordable GIS events and skills upgrade courses.
- No knowledge of community membership, amongst others.



# WOMEN IN GIS KENYA



@WiGISKe

**Women in GIS Kenya (WiGISKe)** is a consortium of advocates from academia, government, and private industry designed to advance the presence of women in GIS. The night before WiGIS was formed, we had just ran a very successful Women in GIS event which was part of a UN Women series themed “Women in” which was fully sponsored by 4 women trailblazers, Jackie Mwaniki, Pauline Okeyo, Imelda Okiro and Prof. Faith Karanja, that was the beginning of a very fulfilling journey.


Besides our growth being very organic, we have made it this far because of a very supportive community and a very committed team of volunteers. We have so far trained over 300 students, partnered with over 10 organizations across academia, NGOs, private companies, universities and spearheaded key data driven projects including the National COVID-19 Task Team, the Gender Situation Room for State Department of Gender. The initiative is built on 3 key pillars: Community Learning, Community Insights, Community Projects.



# Women in Copernicus

@WomenCopernicus

## WOMEN IN COPERNICUS

 [www.womenincopernicus.eu](http://www.womenincopernicus.eu)



Nathalie Stéphanne  
(Public Service of Wallonia)



Marie Jagaille  
(Brittany Remote Sensing Group)



Estefania Aguilar Moreno  
(University Jaume I)



Barbara Riedler  
(University of Salzburg)



Grazia Fiore  
(EURISY)



Natassa Antoniou  
(EARSC)



Aida Monfort Muriach  
(University Jaume I)



Kathrin Lenvain  
(AZO Space of Innovation)



Women only represent 17% of people in ICT studies and careers in the EU [1]. Indeed, a gender bias exists also in the space sector. However, women are well present in the Copernicus ecosystem. Based on this assumption, the Women in Copernicus (WIC) project aims to make them more visible. With 450 answers, the 2020 survey gave them a voice and a face [2]. They report to have faced barriers in their education and their everyday job life that should be tackled to answer to the EU Gender Equality Strategy. The Women in Copernicus propose recommendations and disseminate them in meetings and publications.

[1] <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0152&from=EN>

[2] Women in Copernicus



**GEOLADIES PH**  
**@geoladiesph**

GeoLadies PH advocates for community diversity, collaborative participation, and affirmative spaces especially for women, and under-represented communities in OpenStreetMap and the geospatial science community.

GeoLadies PH made space through events and workshops like Mapababae, a collaboration with the Department of Social Welfare and Development and OSM PH. Geoladies PH conducted a workshop titled 'When Women Map' at the first Pista ng Mapa.

Last March, GeoLadies PH celebrated International Women's Day with a month-long mapathon targeting women's spaces culminating with a webinar focusing how to #breakthebias.



When many people think of a scientist, they imagine someone (often male) in a lab coat working with a microscope or test tubes. Our vision of science is far broader. We need diversity in science disciplines beyond the lab coat, and diversity in ideas from people from all walks of life. Our purpose at She Maps is to bring diversity into how we perceive science, and who does it. We give students the confidence to dream it, so they can be it. We connect teachers with industry to bring real-world problems into their classroom. Our engagement tool is drones!



**I** MPORTANT  
**F** OCUSED  
**O** UTSTANDING  
**V** ALUABLE

**Dr. Arzu Çöltekin**

@acolt | <http://coltekin.net/arzu/>

Current Position - Affiliation:

*Director of Institute of Interactive Technologies, Professor of Human Computer Interaction, Visualization and Extended Reality - University of Applied Sciences and Arts Northwestern Switzerland, Switzerland*

Research Interests and Expertise:

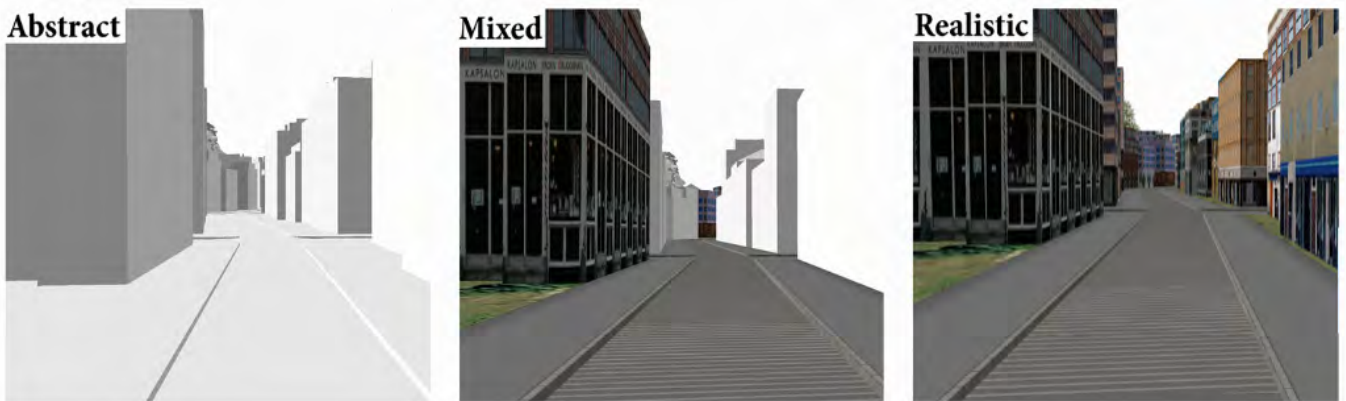
*Human computer interaction, extended reality, visualization, visual analytics, spatial cognition, eye tracking, navigation*



I lead the University of Applied Sciences and Arts Northwestern Switzerland's Institute for Interactive Technologies and work at the same institute as a Professor of Human-Computer Interaction, Visualization and Extended Reality, chairing a research group on these topics. Also, I am a research affiliate at the Seamless Astronomy group in the Harvard-Smithsonian Center for Astrophysics of the Harvard University in Cambridge, USA, which specializes in scientific data analysis and visualization. I chair the international Geovisualization, Augmented and Virtual Reality working group within the ISPRS; co-chair the Commission on Visual Analytics, and I am a council member with the International Society of Digital Earth. Prior to this post, between November 2007 and February 2019, I worked as a Group Leader and Senior Lecturer in the Geographic Information Visualization and Analysis (GIVA) unit of the Geographic Information Science Center at the Department of Geography, University of Zurich, Switzerland.

**Can you give us a brief introduction about your career in remote sensing/photogrammetry/spatial information science / other relevant fields? What made you decide to pursue a career in this field?**

In high school, I was a mathematics major. When I was about to finish high school I was browsing a brochure that profiled different professions, and as a math major I focused on engineering programs. I had a broad interest in environmental sciences, and while looking into that I noticed geoinformatics. Since I always liked maps, I kept reading. The brochure had a sentence which in essence suggested that this was not recommended for women due to field work – I got really angry and decided to put the study immediately in my list out of spite, which started my journey in the field. Choosing a profession out of spite is of course a bit childish but I was only 16, so I was allowed to be childish (and, as I said, I liked maps, so who could stop me?!).



VISUALIZATIONS BY LOKKA & ÇÖLTEKIN

### How were you introduced to ISPRS? What made you decide to take on the leadership role?

I was an MSc student, and my MSc advisor (Prof. Dr. Ayhan Alkılıç and his research team) used to go to ISPRS. I participated in the congress in Vienna (1996), which I found very rewarding. This led to me deciding to do a PhD, as I also met my PhD advisor (Prof. Dr. Henrik Haggrén) there. The leadership role came much later. I was an active participant in various VR-related working groups, contributed to events and social media conversations of our organic interest, and when I was offered the role, I thought, “Why not?”

### What were the challenges you encountered while pursuing your career, and how did you overcome them?

I experienced (possibly) implicit sexist and racist micro-aggressions e.g., in work I lead, I’d list my name first, and someone would actively change it to second (happened five times!), or people assumed I was the secretary (countless times). I was often underestimated even by people who meant well. These led to a form of imposter syndrome. This was resolved by self-reflection, perseverance, and importantly, by experience, i.e., understanding that people we celebrate were people after all, and while productive and brilliant, had their own imperfections too. I was also bullied by one individual, which required asking support from others. If you experience something like that, don’t wait too long to talk to others and get allies on your side, it makes a big difference.

“

These led to a form of imposter syndrome. This was resolved by **self-reflection, perseverance, and importantly, by experience, i.e., understanding that people we celebrate were people after all, and while productive and brilliant, had their own imperfections too.**

”

In a study published earlier this year, two researchers based in Switzerland, Julien Biland and [Arzu Çöltekin](#), showed terrain images with differing angles of illumination to 27 volunteers and came up with a remarkably precise estimate of the optimal angle for reducing this optical illusion: 337.5 degrees, just a bit to the north of the 315 degree northwest lighting cartographers have traditionally used.



The red letters A, B, and C sit on top of a ridge in the shaded relief image on the right, which has northwest illumination. They appear to sit in a valley when the illumination comes from the southeast.

MAP BY JULIEN BILAND AND ARZU ÇÖLTEKIN

## What kept you motivated or inspired you to keep going?

I take a lot of pleasure from the international and interdisciplinary aspects of my work, there's always something new. For example, conferences can energize me, and when alone with my thoughts, understanding something difficult or getting insights into sophisticated complex issues excites me (I call these 'geek moments'). I like to joke that "I get paid for thinking", which is an extreme privilege and I consider myself lucky that I (sort of) have the freedom to define my own work and indeed can tackle interesting questions (big or small) that goes beyond everyday routines.

“

**..and I consider myself lucky that I (sort of) have the freedom to define my own work and indeed can tackle interesting questions (big or small) that goes beyond everyday routines.**

”

■ **Can you briefly share with us your current research? In your own opinion, why is your research important?**

I lead several funded and internal (unfunded) projects. Many of them involve examining technological or cognitive questions (e.g., on visualization, interaction, extended reality, eye tracking, visual illusions) from the lens of human information processing, specifically visuospatial cognition. A dominant theme in my projects is aging and technology, especially from a navigation perspective, often linked extended reality, but also about optimizing interactions and visualizations for accessibility. Many of our abilities decline as we age, including our visual and spatial abilities, yet technology solutions rarely target older adults. This is an important area of research because, even though life expectancy is still going up globally, we still know relatively little about aging and cognition, specifically, if there are some technology interventions that can help with healthy, independent aging. I also study visual illusions, and how to best facilitate spatial decision making and making collaboration effective and efficient through the knowledge and technologies mentioned above.

■ **What is your advice for young women aspiring to pursue a career in science and engineering as well as become leaders?**

First and foremost, trust your abilities. Dismiss those who dismiss you and move forward. Through science and technology, you can make a difference to people's lives and on the entire humanity in the long run. Don't be afraid of highlighting your achievements and speaking up. Ask questions, ask for help (and offer help where you can). Offer your services also in roles that seem slightly above your level (leadership, co-leadership) – on average men do this but women don't. If you fit e.g., 70%, you can learn the rest on the job, which is what most people do anyway.

“

**Dismiss those who dismiss you and move forward.**

”



**I** MPORTANT  
**F** OCUSED  
**O** UTSTANDING  
**V** ALUABLE

**Suzana Dragičević**  
<http://www.sfu.ca/dragicevic>

Current Position - Affiliation:  
*Professor - Geography Department,  
Simon Fraser University, Canada*

Research Interests and Expertise:  
*Geographic Information Systems and science (GIS),  
complexity science, artificial intelligence and soft  
computing*

Suzana Dragicevic is Professor in the Department of Geography, Simon Fraser University, Canada and Director of Spatial Analysis and Modeling (SAM) Laboratory. She obtained her PhD degree from the University of Montreal, Department of Geography focusing on fuzzy sets and spatio-temporal GIS. Her research interests include GIS, spatial analysis and modeling, geographic automata systems, geosimulation, and spatial decision-making.

**Can you give us a brief introduction about your career in remote sensing/photogrammetry/spatial information science / other relevant fields? What made you decide to pursue a career in this field?**

My grandfather was a professional land surveyor, and I was introduced to maps, cartography, numbers and calligraphy at an early age. During high school, I was enrolled in a special math intensive program with strong preparation for science and engineering degrees. These activities inspired me to pursue an undergraduate and then a master's degree in the field of geodetic engineering at the University of Belgrade. As an undergraduate student, I was selected in 1986 to participate in a student exchange program at the Institute for Geodesy and Photogrammetry, ETH, Zurich, Switzerland where I started work in the field of geodetic metrology. This experience became the foundation for my research during the undergraduate degree for the honor's project - also called the diploma project - which required the successful completion of an oral defense to graduate. Upon completion of the five years long undergraduate degree program in 1987, I obtained a position at the university where my duties included both teaching and research. While holding the full-time university job, I continued working in the geodetic metrology research direction to complete a master's degree in 1993 and had several academic papers published at the time.

Meanwhile, I was intrigued with the new and emerging Geographic Information Systems (GIS) and was very much interested to acquire new knowledge. I was offered the chance to pursue a graduate degree in Geomatics Engineering at the University Laval, Canada, but I ultimately declined in favor of doctoral studies in GIS and Geography at the University of Montreal. Being a new immigrant in Canada, I was excited to obtain the highly competitive graduate scholarship by the Natural Sciences and Engineering Research Council of Canada (NSERC) and later by the Fonds FCAR, Quebec, that supported my graduate studies. My doctoral research work was a big leap from my previous education to the completely new but amazing field of GIS. I worked on integrating the temporal component in a GIS framework by developing new space-time modeling methods to represent processes such as urban growth and using fuzzy reasoning. I completed the PhD in 1999, became a research and postdoctoral fellow at McGill University, and then in 2001 obtaining an Assistant Professor position at Simon Fraser University (SFU).

## How were you introduced to ISPRS? What made you decide to take on the leadership role?

ISPRS is a well-known international organization with an enormous reputation and history. In 2005 Dr. Songnian Li invited me to join as Secretary of Working Group WG-5 of TC-IV, then from 2012 to contribute with the role of a Vice-President of TC-II. From 2016 this evolved into new TC-IV, and I continued the work with Drs. Sisi Zlatanova and George Sithole. I accepted these roles as they provided me a rewarding experience and the privilege to collaborate with researchers in the field of spatial information sciences within the WGs and across the globe, participate in the organization of conference and workshop events, review grant applications, complete collaborative book project and several papers.

## What were the challenges you encountered while pursuing your career, and how did you overcome them?

During my early years, we were educated that we are all equal and so I was surrounded with lots of girlfriends who just like me enrolled in math and physics programs and became engineers and scientists with successful careers. However, there were some small hurdles along the way. For example, I was declined an undergraduate scholarship to have an internship in a large engineering company because I was a woman. It was also a challenge for me as a woman in a male-dominated field to even obtain the job despite my excellent qualifications. Nevertheless, it is important to note that we always had equal pay for the same job and qualifications.

When I arrived in Canada in the early 1990s, I was surprised to learn that in North America women were not equally paid as men for the same jobs. During my doctoral journey in Canada, I became a parent and despite the challenges of motherhood I successfully completed the degree a few years afterwards. At that time scholarship funding was not allowed for maternity leave, and as a graduate student I was not eligible to obtain government allocations for leave. The University of Montreal was probably among the first in Canada to recognize this problem and they opened a Research Excellence Award for all young female researchers on maternity leave, and I was fortunate to obtain one. I am also happy to see how much society has changed over the last 30 years to support women in science and academia, that maternity and parental leaves are covered for graduate students, and that many institutions including universities are working diligently to correct past salary imbalances.

“

I am also happy to see how much society has changed over the last 30 years **to support women in science and academia, that maternity and parental leaves are covered for graduate students, and that many institutions including universities are working diligently to correct past salary imbalances.**

”

## What kept you motivated or inspired you to keep going?

The source of my inspiration is my work in academic research, and of course my immediate family. My main motivation is the constant interactions and research work with my graduate students, continuous transfer of knowledge with students at all levels such as through creative exchanges of ideas with grads or teaching to undergraduate students. Since 2001 I have been the Director

of the Spatial Analysis and Modeling (SAM) Research Laboratory at SFU, where I continue to conduct my research program with a wonderful team of highly motivated graduate students. It is an additional source of motivation to witness their personal and professional growth, and their progress into successful careers of their own. I am very proud of the successes of all my graduate students, but especially of several young women who obtained academic positions or work in industry once graduating from my research lab.

**Can you briefly share with us your current research? In your own opinion, why is your research important?**

My research program focuses on advancing the field of geographic information systems and science (GIS) primarily through the development of novel geospatial modeling and geosimulation methods for representing dynamic complex geospatial systems. The main contributions of these methods are in refining our scientific knowledge and understanding about the mechanisms associated with human-environment interactions and processes such as land-use and land-cover change, urban sprawl or densification, forest disturbances with fires, insect infestations, propagation of endangered species or even human disease. For that reason, GIS, theory of geographic automata such as cellular automata and agent-based models as well as artificial intelligence and soft computing approaches are combined to build improved analysis and modeling of these geospatial systems. Ultimately, such GIS-based methods can be further used as tools to improve management and spatial decision-making. The results of my research program have an immediate impact on mitigating anthropogenic effects of the environment and help building better planning procedures and protection policies.

**What is your advice for young women aspiring to pursue a career in science and engineering as well as become leaders?**

Always pursue your dreams and aspirations and never stop learning so that you can be infinitely creative. Keep your career and family life in a balance and celebrate the successes to enjoy every moment of the journey.

“

**..never stop learning so that you can be infinitely creative.**

”

**I** MPORTANT  
**F** OCUSED  
**O** UTSTANDING  
**V** ALUABLE

**Isabella Toschi**  
itoschi@esri.com

Current Position - Affiliation:

*Sr. Product Engineer - nFrames GmbH, Esri  
R&D Center Stuttgart*

Research Interests and Expertise:

*Airborne photogrammetry; Oblique aerial  
cameras, imagery, and processing; LiDAR –  
DIM integration; geospatial data processing*

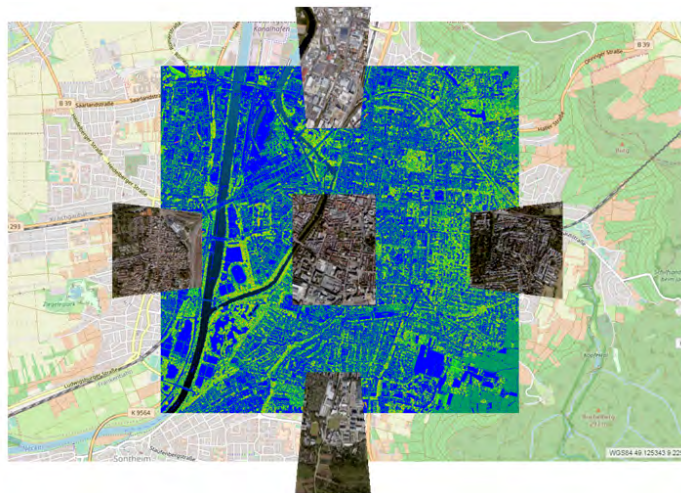
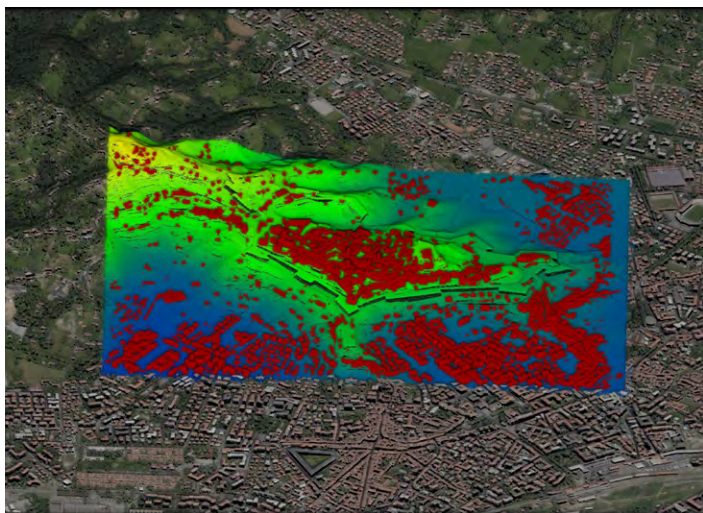


Isabella is currently working as Sr. Product Engineer at nFrames, Esri R&D Center in Stuttgart, Germany. From 2014 to 2020 she worked as a researcher in the 3D Optical Metrology research unit of the Bruno Kessler Foundation (Trento, Italy). At the same time, she served as the secretary of the ISPRS Technical Commission II, as a member of the O3DM Scientific Committee, and as a reviewer for several international journals. She holds a BSc. and a MSc. degree in Environmental Engineering from the University of Modena and Reggio Emilia, and a Ph.D. from the School of High Mechanics and Automotive Design & Technology of the same university. Since 2015 she investigates the potentials and challenges of airborne oblique imaging systems, also in collaboration with international organizations in the geospatial sector such as EuroSDR, for which she served as teacher of the e-learning course “Oblique Aerial Camera Systems for Mapping Purposes” (EDUSERV15-16).

**Can you give us a brief introduction about your career in remote sensing/photogrammetry/spatial information science / other relevant fields? What made you decide to pursue a career in this field?**

During my Ph.D. studies, I had the privilege to meet outstanding international researchers in the Optical Metrology field who enthusiastically encouraged me to take a step forward and aim for a career in this field. With their passion for measurement, they supervised my PhD research work carried out in Italy, Canada, and France and they – above all – showed me that measurement is beauty. Their example motivated me to pursue this beauty in all my succeeding working experiences: from my research work at the Bruno Kessler Foundation (FBK, Trento) to my experience at nFrames (Esri R&D Center, Stuttgart), where I’m currently employed as Sr. Product Engineer. The application field and scale of my research has evolved during the years – from the challenges of a metrological evaluation of 3D imaging sensors, to investigations on airborne oblique photogrammetry, multi-camera systems, and their integration with LiDAR. Still, the source of inspiration has remained the same: the passion for photogrammetry that I learnt from my teachers and mentors.





### **How were you introduced to ISPRS? What made you decide to take on the leadership role?**

My first step in the ISPRS community goes back to 2016 when I participated in the ISPRS Congress in Prague as a researcher of the Bruno Kessler Foundation. This event gave me a first insight into the ISPRS mission and organization and the chance to experience the enthusiasm of many young researchers working in international institutions and research organizations. During this Congress, the head of my research unit, Fabio Remondino, was elected President of ISPRS Technical Commission II (Photogrammetry). He then invited me to take an active role as Secretary of the same Commission. His huge expertise, energy, and support convinced me to take on this role and serve as ISPRS Secretary from 2016 to 2021.

### **What were the challenges you encountered while pursuing your career, and how did you overcome them?**

Among others, two aspects were quite challenging but proved to be a game-changer in my career. First, the need to travel frequently and adapt to work in different countries and research groups. Although hard and exhausting sometimes, every experience in a different country contributed to the establishment of fruitful international collaborations that are nowadays my network of colleagues and friends. Second aspect was the movement from academia to industry which gave me a great chance to enrich my personality and professional expertise. In both cases, I tried to live these experiences as sources of inspiration, and this helped me to overcome the initial fear of change.

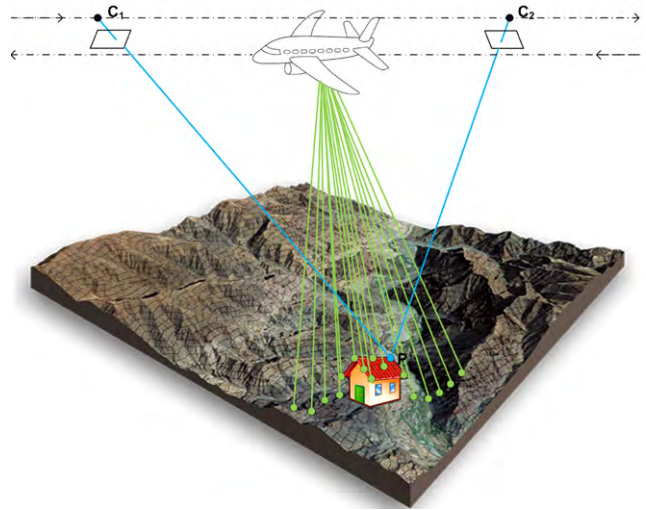
“

**I tried to live these experiences as sources of inspiration, and this helped me to overcome the initial fear of change.**

”

### **What kept you motivated or inspired you to keep going?**

I have always loved my job in all the forms in which it evolved over the years. I see this as the main driver that motivated me to keep moving on in my career. However, this passion wouldn't have been decisive if it had not been accompanied by the professional and emotional support of the people who joined parts of this journey with me. On the one hand - the teachers, mentors, and colleagues who motivated me to take steps forward when I was afraid to leave my comfort zone. On the other hand - the people who love me and never hesitated to support my dreams.



**Can you share with us one of your previous research studies that you find most interesting?**

Among others, I have always found of particular interest the topic of multi-sensor data integration as it represents an emerging trend in various applications being at the same time quite challenging with regards to the related uncertainty management issue. This trend is, e.g., leading the airborne market for area-wide 3D data acquisition towards a hybrid mapping concept, where LiDAR and Dense Image Matching points are supporting each other's to improve the quality of the final geospatial products. I worked on two main aspects of this topic. On the one hand, I had the chance to analyze the data collected by the first airborne hybrid sensor combining a LiDAR unit and a multi-head oblique camera system, and to propose and test some solutions towards a hybrid processing workflow. On the other hand, I tried to address one of the main challenges in this domain, that is to properly consider the high variations in resolution and precision of these two complementary sources of information. In this regard, my colleagues and I proposed a co-registration method based on sensor-specific and point-wise quality features, to support a consistent integration of concurrently or multi-temporally acquired airborne LiDAR and DIM point clouds.

**What is your advice for young women aspiring to pursue a career in science and engineering as well as become leaders?**

First, don't be afraid of changes and rather motivate yourselves to leave your comfort zone, the latter being your original country, the work you have been used to do, or even your old visions. Second, set-up a network of international experts, colleagues, mentors, and teachers and don't be afraid to seek advice from them when needed. Finally, don't stop studying: as our sector is continuously changing, keeping up-to-date is a major driver in our career. I hope that these three suggestions that I try to apply to my own professional life can help and inspire the young women working in our field.

“

**..don't stop studying: as our sector is continuously changing, keeping up-to-date is a major driver in our career.**

”

Inspired by the example of **Ladies of Landsat trading cards** released during the Landsat 9 launch, the ISPRS SC features more women working in remote sensing, photogrammetry, and spatial information sciences by sharing their profiles in our Newsletter.



## Berit Mohr

Germany berit-mohr@hotmail.de

**What are your remote sensing professional/research interests?** Environmental conservation, Natural Resource Management, Biodiversity, Carbon Sequestration, LiDAR

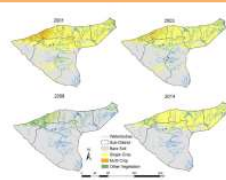
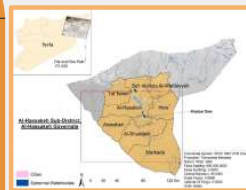
**What is one interesting fact that's come out of your work?** Priority Areas for possible biodiversity conservation and maximum carbon sequestration

**What do you envision for the future of remote sensing?** Remote Sensing will be key to monitor and assess the status of our environment.

**Tell us a little bit about yourself.** I am an environmentally focused professional with a passion for interdisciplinary research and the application of Remote Sensing technologies and GIS. Through integrating the right language and tailored GI solutions, I inspire people making the invisible visible.

**Which best describes your field(s) of expertise?** Remote Sensing; Spatial Information Science; Education and Outreach

**What are your specific research interests?** Wildlife; Agriculture; Forestry; Climate



## Fulya Aydin-Kandemir

Turkey fulya.aydin.edu@gmail.com @fulya\_aykandemir

**What are your remote sensing professional/research interests?** My research interests focus on climate change, land use management, and agriculture based on remote sensing techniques, summarized as Land use change modeling, crop pattern determination, future projections of deforestation, top-soil texture determination, erosion studies, desertification indices, and spatio-temporal water body (lake, river, etc.) area and snow cover changes.

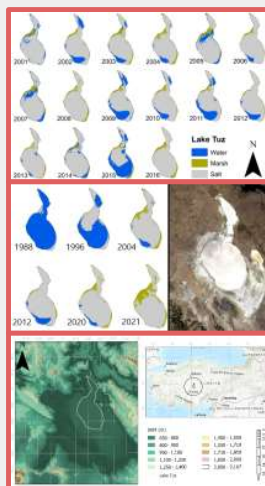
**What is one interesting fact that's come out of your work?** One short example - the study of Lake Tuz (Turkey) has caused significant repercussions internationally, and I had an opportunity to show the dramatic change of the lake with my colleagues (my remote sensing analyses by using LANDSAT images was selected as Image of the Day by NASA EO on 16 Dec 2021, see Disappearing Lake Tuz).

**What do you envision for the future of remote sensing?** I think remote sensing should be used more for readiness before natural disasters. The future of Remote Sensing will continuously evolve further if it remains open to all researchers with publicly available satellite images and data.

**Tell us a little bit about yourself.** I am based in Turkey (PhD) and bring a scientific background in theoretical physics and life sciences to remote sensing, geographic information systems, spatial analysis, climate change projections, biodiversity modeling, and land use management.

**Which best describes your field(s) of expertise?** Remote Sensing; Spatial Information Science

**What are your specific research interests?** Ice/Snow; Agriculture; Forestry; Climate; Water



## Irini Soubry

Saskatoon, Saskatchewan, Canada irini.soubry@usask.ca @ISoubry and #IriniSoubry

**What are your remote sensing professional/research interests?** My current research focuses on understanding the expansion of woody plants into grasslands by mapping changes with aerial and satellite imagery. Overall, I am interested in analyzing issues related to climate change, ecosystem health, ecosystem services, food security, and ecosystem management with optical remote sensing techniques.

**What is one interesting fact that's come out of your work?** One of our recent systematic reviews showed that almost half of the examined studies used remote sensing to estimate ecosystem health.

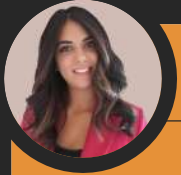
**What do you envision for the future of remote sensing?** Generating more analysis-ready data that can be easily used and interpreted by end-users so that these can facilitate decision-makers and land managers.

**Tell us a little bit about yourself.** I would say I am an Earth observation enthusiast, passionate about environmental awareness and sustainability, a global citizen, a teacher-mentor, open-minded and positive.

**Which best describes your field(s) of expertise?** Photogrammetry; Remote Sensing; Education and Outreach

**What are your specific research interests?** Wildlife; Fire; Agriculture; Forestry; Climate





## Francesca Condorelli

Italy francesca.condorelli@hotmail.it

What are your remote sensing professional/research interests?

I am interested in remote sensing techniques and in particular photogrammetry for the valorization of cultural heritage.

What is one interesting fact that's come out of your work?

The combination of AI and photogrammetry applied to historical data such as images and film footage for the 3D reconstruction of lost cultural heritage

What do you envision for the future of remote sensing?

I strongly believe in making remote sensing accessible to everyone through open data.

Tell us a little bit about yourself.

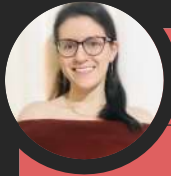
Post-Doctoral Researcher in Geomatics applied to Cultural Heritage. Expert in Metric Survey with Photogrammetric technique for 3D Documentation combined with Artificial Intelligence algorithms. Drone Pilot.

Which best describes your field(s) of expertise?

Photogrammetry

What are your specific research interests?

Urban; Engineering; Cultural heritage



## Pamela Carolina Pesantez Cabrera

Cuenca - Ecuador pamela.pesantez@ucuenca.edu.ec

What are your remote sensing professional/research interests?

Landslide study using TLS and UAV images

What is one interesting fact that's come out of your work?

TLS is very helpful to early detections of landslides.

What do you envision for the future of remote sensing?

I think that remote scanning can help detect landslides, thaws, floods, etc. early, which would help prevent them and avoid catastrophes.

Tell us a little bit about yourself.

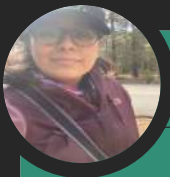
I'm a student of Civil Engineering at University of Cuenca. Currently I'm a researcher in Disaster Assessment, Monitoring and Management using terrestrial laser scanner (LiDAR) technology and UAV images.

Which best describes your field(s) of expertise?

Photogrammetry; Remote Sensing; Spatial Information Science

What are your specific research interests?

Urban; Engineering; Geology



## Marcela Rosas Chavoya

Mexico marcela.1108286@ujed.mx @MarcelaChavoya

What are your remote sensing professional/research interests?

I am interested in the use of the temperature of the earth's surface (from drones and satellites) to understand the ecological processes of forests.

What is one interesting fact that's come out of your work?

I am currently working on the use of thermal data acquired by drones to characterize the thermal effects of an urban forest in Mexico City.

What do you envision for the future of remote sensing?

I hope that in the future more students of several knowledgeable areas will incorporate remote sensing techniques in their activities.

Tell us a little bit about yourself.

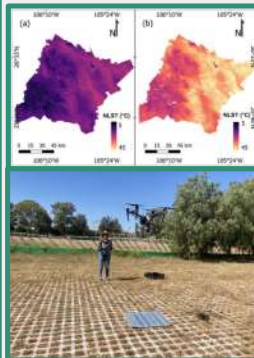
I am a Mexican biologist who is very attracted to remote sensing techniques and their applications in ecological aspects. I consider myself passionate about working on remote sensing and geospatial information management.

Which best describes your field(s) of expertise?

Remote Sensing

What are your specific research interests?

Urban; Forestry; Climate





## Sudip Dey

Kolkata, West Bengal, India | sudip24hrsalert@gmail.com | SUDIPDE87658741

What are your remote sensing professional/research interests?

Regional Planning, Water Security, Disaster Management and GIS, Urban Geoinformatics

What is one interesting fact that's come out of your work?

Geospatial field huge entity

What do you envision for the future of remote sensing?

Very prospective

Tell us a little bit about yourself.

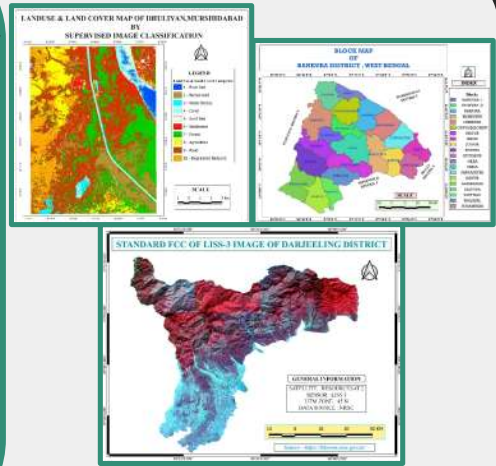
I am SUDIP DEY a creative and enthusiastic Geographer. I am a hardworking and ambitious individual with a great passion for the transport and logistics industry. I am currently doing Msc Geography in Calcutta University. I have excellent communication skills, enabling me to effectively communicate with a wide range of people.

Which best describes your field(s) of expertise?

Remote Sensing; Spatial Information Science; Education and Outreach

What are your specific research interests?

Urban; Engineering; Wildlife; Forestry; Climate; Water; Social Science; Diversity; Equity; Inclusion; Justice



## Neema Simon Sunari

Latitude and longitude coordinates are: -6.830373, 37.670589 | neydsunari@gmail.com

What are your remote sensing professional/research interests?

Urban and Agriculture remote sensing

What is one interesting fact that's come out of your work?

An interesting fact about my work is the ability to integrate almost everything on the earth with the technology of location. With the right data, model, and method, I can monitor, predict, or study anything on the surface of the earth. The fact that the field is growing with the potential of combining various statistical, Computer science, and physiological models makes the future even more exciting because our arsenal will be loaded with so many weapons with just a need to study and integrate.

What do you envision for the future of remote sensing?

I can say that what I envision as the future of remote sensing is exciting with so much potential and applications to be unlocked, especially in Tanzania and in the field of urban and agriculture remote sensing which I am currently working on.

Tell us a little bit about yourself.

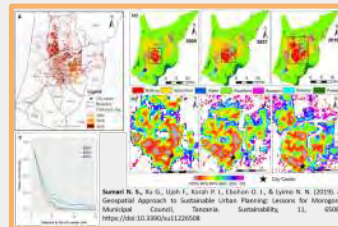
Neema S. Sunari holds a PhD in Geo-Spatial Information Science, with specialization in Photogrammetry and Remote Sensing at LIESMARS, Wuhan University, China. She is also an affiliate member at Sokoine University of Agriculture (SUA), Morogoro, Tanzania. She obtained her MSc and BSc both in Computer Science at Alabama Agricultural and Mechanical University in the United States of America.

Which best describes your field(s) of expertise?

Sensor Systems; Remote Sensing; Spatial Information Science; Education and Outreach

What are your specific research interests?

Urban; Engineering; Agriculture; Geology; Climate; Water; Social Science



### Conferences, Outreach and Training



Kinshasa Consultation on the Applications of GIS and RS for site planning and Environmental Impact Assessment for the manufacturing industries



## Shravane Singh

India | shravane.singha@gmail.com

What are your remote sensing professional/research interests?

I work as remote and GIS analyst at WSP. My work involves more on GIS yet a fraction of it revolves around environment theme. So I am interested to work on salt marsh area specifically as this is current research interest. Knowing the species and finding reasons for degradation.

What is one interesting fact that's come out of your work?

The interesting fact about my present research is that I found that NDVI is decreasing but at the same time the NDWI is increasing which got later analyzed that the land got covered with marine water and it in the verge to lose the entire marshy areas.

What do you envision for the future of remote sensing?

Remote Sensing; at present, has a diverse range of applications, and satellite image analysis needs more automation for quick interpretation and action. This would further develop the model for the active optimization of huge datasets.

Tell us a little bit about yourself.

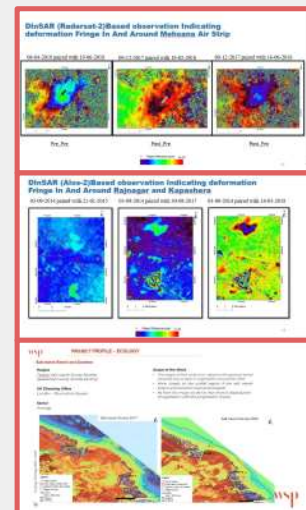
I am working as Assistant consultant on ecology at WSP. Prior to WSP, I had an academic research career of about 3.5 years where I actively processed various kinds of satellite images in different domain of natural hazards and ground water depletion.

Which best describes your field(s) of expertise?

Remote Sensing; Spatial Information Science

What are your specific research interests?

Wildlife; Fire; Ice/Snow; Agriculture; Forestry; Geology; Water





## Srashti Singh

Roorkee, India    [ssingh14@ce.iitr.ac.in](mailto:ssingh14@ce.iitr.ac.in)

What are your remote sensing professional/research interests?

My research interest is to assess the comprehensive environmental quality of urban areas. Due to the perpetual state of urbanization, most developed cities have become unsustainable. Finding the level of damage it does to the environment and suggesting ways to help the cities from converging towards death.

What is one interesting fact that's come out of your work?

Land surface temperature, air pollution, and Vegetation coverage are a few of the major factors affecting the environmental health of urban cities. And the effects of these can be studied using these as indicators for the same.

What do you envision for the future of remote sensing?

All the satellite data should be freely available to download in any required format. And that the resolution of currently low-resolution data improves to a level where it can be clubbed with the high-resolution data for any micro-analysis.

Tell us a little bit about yourself.

I am a PhD research scholar from IIT Roorkee, keen to know the urban environmental quality of the current era and after that.

Which best describes your field(s) of expertise?

Remote Sensing; Spatial Information Science

What are your specific research interests?

Engineering; Climate

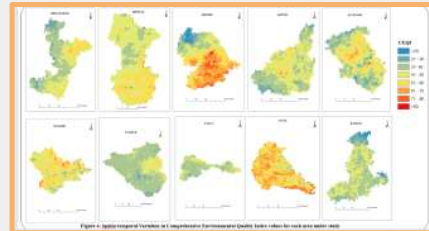


Figure 2. Satellite-based Variability of Environmental Parameters (Quality Index) for Lucknow urban area

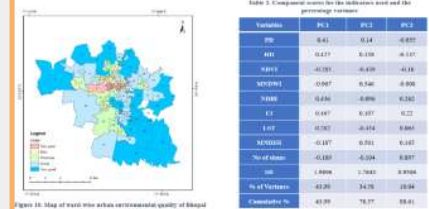


Figure 3. Map of Lucknow urban environmental quality of Bhopal



## Serah Akojenu

Ogun State, Nigeria    [akojenuserah2@gmail.com](mailto:akojenuserah2@gmail.com)

What are your remote sensing professional/research interests?

I am interested in using various remote sensing technologies to solve various environmental and agricultural issues facing my country Nigeria and the world.

What is one interesting fact that's come out of your work?

From the analysis, we have 82,322sqm of the built-up area prone to flooding, which amounts to over 90% of the area.

What do you envision for the future of remote sensing?

I envision the emergence of big data, which requires a sophisticated approach to analyzing and processing data.

Tell us a little bit about yourself.

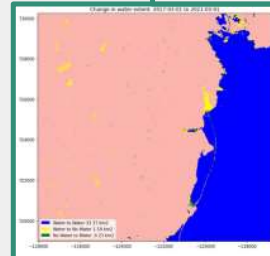
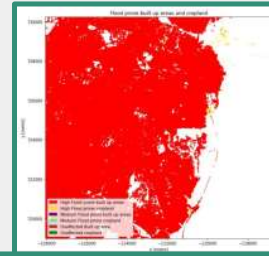
I hold a bachelor's degree in Surveying and Geo-informatics. I am an Environmentally Sustainable enthusiast.

Which best describes your field(s) of expertise?

Remote Sensing

What are your specific research interests?

Urban; Engineering; Agriculture; Climate; Water



Don't miss out to check the [@LadiesofLandsat](#) trading card deck!





## SEASHORE AND UNDERWATER DOCUMENTATION OF ARCHAEOLOGICAL HERITAGE PALIMPSESTS AND ENVIRONMENT

3-9 September 2022 | Marina di Ragusa, Sicily, Italy



The **SUNRISE** summer school will be carried out in cooperation between ISPRS and SIFET (Italian Society of Photogrammetry and Topography) and will involve international students and professional surveyors with different backgrounds (e.g. archaeologists, architects, engineers, etc.) for the documentation of an archaeological site and the surrounding environment with several geomatics techniques.



The main objective is to provide the participants with a general overview of the state of the art of the different geomatics techniques that can be used for the documentation of both the Cultural Heritage (emerged and submerged) and the environment in which it is located, constituting the coastal heritage.



The site on which students will work for the summer school is the Archaeological Park of Kamarina (Sicily - Italy), which hosts different archaeological remains (both emerged and submerged) and that is located in a stunning and thriving natural and historical environment. Kamarina has an ancient history, dating back to around 600 BC, a period in which the Syracusan Greeks of that time settled in this small town to create a colony.

Some activities will be carried out in the area of Santa Croce Camera in order to survey the Mezzagnone Building, a Latin Cross Building dated back to the IV-IX cent. A.D. used in the past as thermal bath as well.

The summer school activities will foresee both interactive lectures, fieldwork activities, and data processing and interpretation with the involved participants. They will be divided into working groups on the basis of their background; each group will work on a specific topic during the week of the summer school starting from the data acquisition and processing, toward their use for different purposes. The works of the participants will then be collected in a single report that will be published online and will be freely available to the public in order to disseminate the results obtained by the summer school.

**LIMITED AVAILABILITY. SEND YOUR APPLICATION TODAY:**

**REQTS:** MOTIVATION LETTER | CV | ENGLISH CERTIFICATE

**COST:** 250 € INCLUDING ACCOMMODATION AND MEALS; TRAVEL COST NOT INCLUDED

**APPLY TODAY FOR LIMITED TRAVEL GRANTS (FORFAIT)**

Please visit our ISPRS SC web page

[sc.isprs.org](https://sc.isprs.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.

## ACKNOWLEDGEMENT

---

We would like to extend our sincerest gratitude to all these beautiful and brilliant women who gave us their time to answer the interviews and prepare a short write-up about these fantastic women groups. Thank you for bravely sharing your valuable experiences with us so we can empower more women in our profession.

We are also acknowledging all women out there, not only in the remote sensing and geospatial information fields - but also for every woman representing advocacy, breaking barriers, and becoming vulnerable.

*We thank you for your courage and exceptional capabilities!*



**SPECTRUM**