Joint ICTP-IAEA Workshop on Environmental Mapping Mobilising Trust in Measurements and Engaging Scientific Citizenry

ICTP, Trieste - Italy
March 6-24, 2017

Venue

The workshop will take place at the Centro di Fisica Teorica, Sala Dirac, ICTP (full address of the International Centre for Theoretical Physics in Trieste, Italy). The full lab set-up is centered around the use of smartphones and tablets with special focus on the use of the applications of benefit for the society.

Citizen Science

Citizens Science is a method rooted in the collection and analysis of data relating to the natural world by members of the general public, generally as part of a collaborative project with professional researchers.

Hands-on

Learners gain more than just a simple hands-on experience when they are presented "here and now" Many new concepts are presented through simple but very relevant experiments. Participants are encouraged to "take ownership", coordination of "learning by doing", and problem-based learning, in an extremely polymer method.

Purpose of the Workshop

The workshop is intended to unveil an activity that will provide an opportunity for participants to learn about the use of smartphones and tablets as sensors. Participants will develop skills in the use of smartphones and software tools and develop geographical information system (GIS) maps.

Throughout the workshop participants will engage with decision makers, training institutions, and other stakeholders in the environmental sector, to collect, collate, and use qualitative and quantitative information in the public domain and the powerful role as a force reformed citizen can have in society.

Monday March 6th

Morning session

8:30-10:00 Registration (SoFab lab, Farm Building)

10:00-10:05 Coffee Break

10:05-10:40 Welcome to the Workshop
Marco Zennaro, ICTP

10:40-11:00 Welcome from IAEA
Bert Gatley, IAEA

11:00-11:45 Welcome to the SoFab Lab
Carlo Fusting, ICTP

11:45-12:30 Introduction to Safecast
Nick Brown, Safecast

12:30-14:00 Welcome message from Ray Davis
Ray Davis, Safecast

15:30-17:00 Introductions from Participants

Afternoon Session

17:00-18:00 Introduction to Radiation Measurements
Bert Gatley, IAEA

18:00-19:00 Lab: Safety in the Lab and Introduction to Soldering
Rui Monteiro, Safecast

Social Event

19:30-20:00 ICTP Hospitality at the Adriatico Guesthouse Cafeteria

Tuesday March 7th

Morning session

8:30-10:00 Intro. 3D Printing
Carlo Fusting, ICTP

10:00-10:15 Coffee Break

10:15-12:00 Lab: the Enclosure Hands-on construction
Rui Monteiro, Safecast

Afternoon Session

13:30-15:00 Lab: the Enclosure Hands-on assembly
Rui Monteiro, Safecast

15:00-15:30 Coffee Break

15:30-17:00 Lab: the Enclosure Hands-assembly
Rui Monteiro, Safecast

Wednesday March 8th

Morning session

8:30-10:00 Digital Fabrication (part 2)
Carlo Fusting, ICTP
GIS file + CNC Mill (part 1)
Manuel Ruiz
Carlo Fusting, ICTP

10:00-10:15 Coffee Break

10:15-12:00 Lab: the Enclosure Hands-programming
Rui Monteiro, Safecast

Afternoon Session

13:30-15:00 Lab: the Enclosure Hands-operating
Rui Monteiro, Safecast

15:00-15:30 Coffee Break

15:30-17:00 **Seminar: Safecast.org**
Nick Brown, Safecast

Safecast: successful citizen science for radiation measurement and communication after Fukushima Journal of Radiological Protection Volume 36, Number 2

Safecast Report Vol. 2, 2016

Safecast Web-based Thermap

Video: Safecast Minibus by Adrian Bonez

Thursday March 9th

Morning session

8:30-10:00 Air Quality Sensing in Denmark
Alexandar Boekholt, ITU(DK)

10:00-10:15 Coffee Break

10:15-12:00 Schools: Air Quality Sensing
Nick Brown, Safecast

Afternoon Session

13:30-15:00 Lab: Lora weather monitoring and
Lora Radiation Monitoring
Karen Patrayan, ATN

15:00-15:30 Coffee Break

15:30-17:00 Participant Presentations

Friday March 10th

Morning session

8:30-10:00 Growing sensors: electron detection using organic single crystals
Alessandro Pratesi Morgana, University of Trieste

10:00-10:15 Coffee Break

10:15-12:00 Collaborative Monitoring of Air Traffic and EM spectrum: the OpenSky and SafecastNetwork projects
Fabio Nicolais, University of Ljubljana

Afternoon Session

13:30-15:00 Lab: Geiger Counters
Alexandar Boekholt, ITU(DK)

15:00-15:30 Coffee Break

15:30-17:00 Participant Presentations

Monday March 13th

Morning session

8:30-10:00 SoFab Lab upkeep
Nick Brown, Safecast

10:00-10:15 Coffee Break

10:15-12:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

Afternoon Session

13:30-15:00 Introduction to Data Visualization
Ben Fasel, Josef Stefan Institute

15:00-15:30 Coffee Break

15:30-17:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

Tuesday March 14th

Morning session

8:30-10:00 Introduction to Big Data
Giovanni Sirone, ICTP

10:00-10:15 Coffee Break

10:15-12:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

Afternoon Session

13:30-15:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

15:00-15:30 Coffee Break

15:30-17:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

Wednesday March 15th

Morning session

8:30-10:00 Introduction to Big Data II
Giovanni Sirone, ICTP

10:00-10:15 Coffee Break

10:15-12:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

Afternoon Session

13:30-15:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

15:00-15:30 Coffee Break

15:30-17:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

Thursday March 16th

Morning session

8:30-10:00 Introduction to Machine Learning
Ivo Neskovic, University of Trieste

10:00-10:15 Coffee Break

10:15-12:00 Introduction to Radiation Measurements
Karen Radha Alvarez, IAEA

Afternoon Session

13:30-15:00 Presentation of participants' analyzed data and discussion

15:00-15:30 Coffee Break

15:30-17:30 Presentation of participants' analyzed data and discussion
Air Quality Sensor Prototype Demonstration
Sandra Velic

Lessons of Kosovar Data
Shinar a

Air Quality Data Manipulation and Measurement
Sandra Velic

Citizens Science Campaign
Citizens Observatory video
Citizens Observatory video
Karen Radha Alvarez

Noise Pollution Mapping in Ghana
Ernest Ansah

Correlation of Gaseous Pollutants of Industrial Beyerbhaiya in Dakshinkala Phulwari
Kishore Kumar Mahapatra using Electrochemical Modeling and Image processing

Noise Investigation Pipe Burst
Atiq Ahsan Rahman Khan

Comparative application and related research at Bucaramanga Colombia
Maria Pena Rodriguez

LTE-2016 Quantitative Exactitude and Tool in Measurements
Maria Chen, NIT Kerala (presentation)

Friday March 17th

Morning session

8:30-10:00 LTE-Internet based geospatial information visualization tools
Karen Abrahel, France

10:00-10:15 Coffee Break

10:15-12:00 LTE-Analysing Safecast Data
Rui Monteiro, Safecast

Afternoon Session

13:30-15:00 Prototype sensor hardware design for electronics and 3D printing
Luis Arcadio, ACRE,CR

15:00-15:30 Coffee Break

15:30-16:00 Micro-Data Collection using low cost devices for field research
Giuseppe Borruso, University of Trieste

Monday March 20th

Morning session

8:30-10:00 Social Media and citizen science
Giulia Ambrosi, SISSA

10:00-10:15 Coffee Break

10:15-12:00 LTE-Play Periods
Maria Salvarani and Donato Romano, SISSA

Afternoon Session

13:30-15:00 Lab: Crowdsourcing on social media
Giulia Ambrosi, SISSA

15:00-15:30 Coffee Break

15:30-17:00 Intro to Data Communication
Gianluca Stazzoni, SISSA

Tuesday March 21st

Morning session

8:30-10:00 Peer Governance
Alessandro Bacchini, SISSA

10:00-10:15 Coffee Break

10:15-12:00 Activities of Physical Transparency Watch
Nicola Zeneratto, Nuclear Transparency Watch

Afternoon Session

13:30-15:00 LTE-Using Google Tools to Science Communications
Alessandro Tiziu, Media trainer specialist, Google News Lab

15:00-15:30 Coffee Break

15:30-17:00 LTE-Using Google Tools to Science Communications
Alessandro Tiziu, Media trainer specialist, Google News Lab

Wednesday March 22nd

Morning session

8:30-10:00 Introduction to the SoSafeLab, Development Goals
Maria McGrath, ANYTIMAG

10:00-10:15 Coffee Break

10:15-12:00 Communicating science through the media
Ed Tuttle, Communication Consultant

Afternoon Session

13:30-15:00 Engaging students: the experience with Physics Without Frontiers and with the Hour experiment
Alain Shaw, ICTP

15:00-15:30 Coffee Break

15:30-17:00 Introduction to Science Communication
Nico Pitrelli, ICTP

Thursday March 23rd

Morning session

8:30-10:00 Tech Labs Database: 30 years of Interactive Citizen Science
Rob Morris, CaRDiAc

10:00-10:15 Coffee Break

10:15-12:00 LTE-Recap on Safecast operations
Rui Monteiro, Safecast

Afternoon Session

13:30-15:00 Stakeholder Engagement: the Safecast experience
Nick Brown, Safecast

15:00-15:30 Coffee Break

15:30-17:00 LTE-Play Periods
Maria Salvarani and Donato Romano, SISSA

Friday March 24th

Morning session

8:30-10:00 Virtual Reality, advanced 3D mapping in cultural heritage studies
Gianluca Tech, ICTP

10:00-10:15 Coffee Break

10:15-12:00 Raise ideas and opportunities
Bert Gatley, IAEA

Afternoon Session

13:30-15:00 Participants Debates

15:00-15:30 Coffee Break

15:30-17:00 Review, Closing, Awards and Certificate Presentations

Pictures

Pictures taken during the workshop are on Google Photos.

The Group Photo can be downloaded here.

MEET OUR AWESOME TEAM

Marco Zennaro
Marco is a Research Officer at the Abdus Salam International Centre for Theoretical Physics. He is based in the Science Technology and Development, Networks Physical Sciences. He holds a PhD in the Royal Institute of Technology, Sweden.

Ivan Gatley
Ivan is the Head of the Nuclear Science and Instruments Laboratory (NSIL) at IAEA Seibersdorf. He holds a PhD in Physics from the University of Cambridge, UK.

Kelly Brown
Kelly is the founder and director of the Peace Bridge Institute of the Kwanyama Institute of Technology, and Nuclear Science & Instruments.

Jim Thomas
Jim is a Tibetan-American traditional and environmental science engineer and was trained by some engineers in Tibetan Medicine and Astrology. Here also earned his Bachelor of Arts National Institute for Research in Inorganic Materials in Tsukuba.

Carlo Fusting
Carlo is a Senior Technical Officer, Digital Fabrication Laboratory, Physics Section, Education Section, Education Office, and also Physics Section, ICTP. Carlo holds a degree in Electrotechnics, Technical Institute "Pietro Paleocapa" of Bergamo.

Manuel Rodriguez Ramos
Manuel is a Nuclear Instrumentation Specialist at the Nuclear Science and Instrumentation Laboratory, Seibersdorf, Austria. He holds a degree in Electronic Engineering from the University of Alicante and another PhD in Electronic Engineering from the University of Cantabria.

Ray Davis
Ray is a pioneer in the research on the Sun and Stellar Interiors in collaboration with Prof. Raymond Davis Jr. Ray's research interests include astrophysics and astrophysics instrumentation, and Ray is a Research Associate at the Department of Physics and Astronomy, Rice University, Houston, Texas.

Steve Chen
Steve is a Chinese-American Physicist. Research in ICT, Data Science, and Computational Science. Steve is a Research Associate at the Department of Physics and Astronomy, Rice University, Houston, Texas.

ICTP SciFabLab.

research interests are in nuclear spectrometry techniques and instrumentation., as applied to in comprehensive characterization of different materials.

visualizing and benchmarking their results and applying them to real-world problems.

resiliency.

Nico Pitrelli

Nico is a science writer, science communication trainer, and science events organiser. Nico is actually the codirector of the Masters course in Science Communication Franco Prattico at Sissa, International School for Advanced Studies, Trieste. Nico is also media consultant for the Abdus Salam International Centre of Theoretical Physics Ictp, Trieste and he contributes as a science writer to the Italian magazine Pagina99.

Milan Matoš

Milan is a Senior Laboratory Technician at the Electronics Group of the Nuclear Science and Instrumentation Laboratory (NSIL) at IAEA Seibersdorf Laboratories in Vienna. He holds a PhD in Nuclear Physics from University of Giessen.

Sebastian Büttrich

Sebastian is a Research Lab Manager at the IT University of Copenhagen, Network Developer and Trainer for the Network Startup Resource Center NSRC, works with data from sensor to backend, embedded/pervasive systems, wireless technology, open source / free software and solar energy to build networks, systems, skills and capacity.

Franck Albinet

Franck is a Geographical Information System and Data analyst who has been providing for the last decade support to emergency responses in various areas including Humanitarian and Nuclear Emergency.

Eric Medvet

Eric is an Assistant Professor at DIA, University of Trieste, where he is the head of the Machine Learning Lab. His research interests include Evolutionary Computation and Machine Learning applications.

Luka Mustafa

Luka is Shuttleworth Foundation Fellow and working full-time on KORUZA development as well as pursuing a PhD at University College London (UCL) in the EE ONG group. He actively pursuits the development of new and efficient systems by re-purposing mass-produced components and equipment and contributes to several open-hardware and electronics projects worldwide.

Peter McGrath

Peter is Coordinator of the InterAcademy Partnership based in Trieste. IAP is a network of more than 130 academies of science and medicine, a major aim of which is to provide credible and independent science advice to policymakers.

Claudio Tuniz

Claudio is the coordinator of the ICTP X-ray Laboratory for Cultural Heritage and Palaeoanthropology (also funded by the 'E. Fermi Centre and Science Museum',Rome) and Visiting Professor at the Centre for Archaeological Science in Australia.He is author and co-author of over 100 international journal publications and books, including Humans. An unauthorised Biography, Springer, 2016.

Giancarlo Sturloni

Giancarlo is a professional science communicator and science writer and he offers training and consultancy in the fields of techno-science, healthcare and the environment. Giancarlo is lecturer in Risk Communication at the University of Udine and at the International School for Advanced Studies (SISSA). He worked as a freelance journalist with several Italian newspapers and recently he was head of the communication at Greenpeace Italy.

Gill Tudor

Gill worked as a journalist for Reuters news agency for nearly two decades, reporting from around 30 countries. She spent five years as spokesperson and head of media for the IAEA, and has also led communication for two other international organizations.

Bob Marsh

Bob manages and implements ICT projects from design to completion with more than 35 years of technical expertise and leadership. One of the original members of the legendary Homebrew Computer Club, in 1975 he co-invented the Processor Technology Sol-20 Micro-computer, now on display in the Smithsonian Museum in Washington DC.

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THANKS FOR VISITING US

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