



# Geo4All: ICA-OSGEO-ISPRS Global network

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# Geo4All initiative

## Global network of Open Source Geospatial Research and Education Laboratories:

- 2011 ICA-OSGeo MOU: build teaching and research infrastructure worldwide
- open network
- 6 founding laboratories

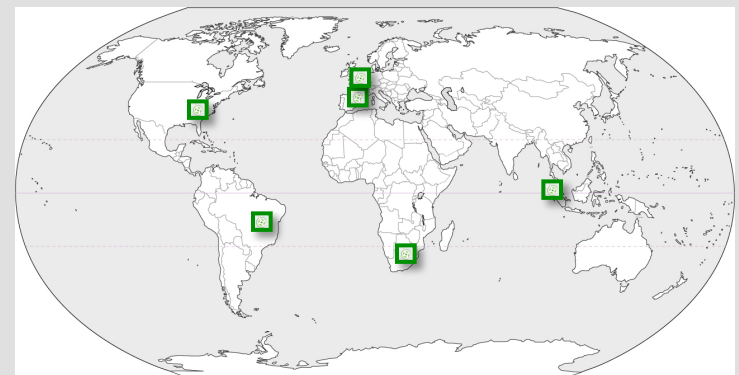
<http://www.geoforall.org/>

Lead coordinator:

Suchith Anand, Nottingham University

Contact for North America:

Helena Mitasova: [hmitaso@ncsu.edu](mailto:hmitaso@ncsu.edu)



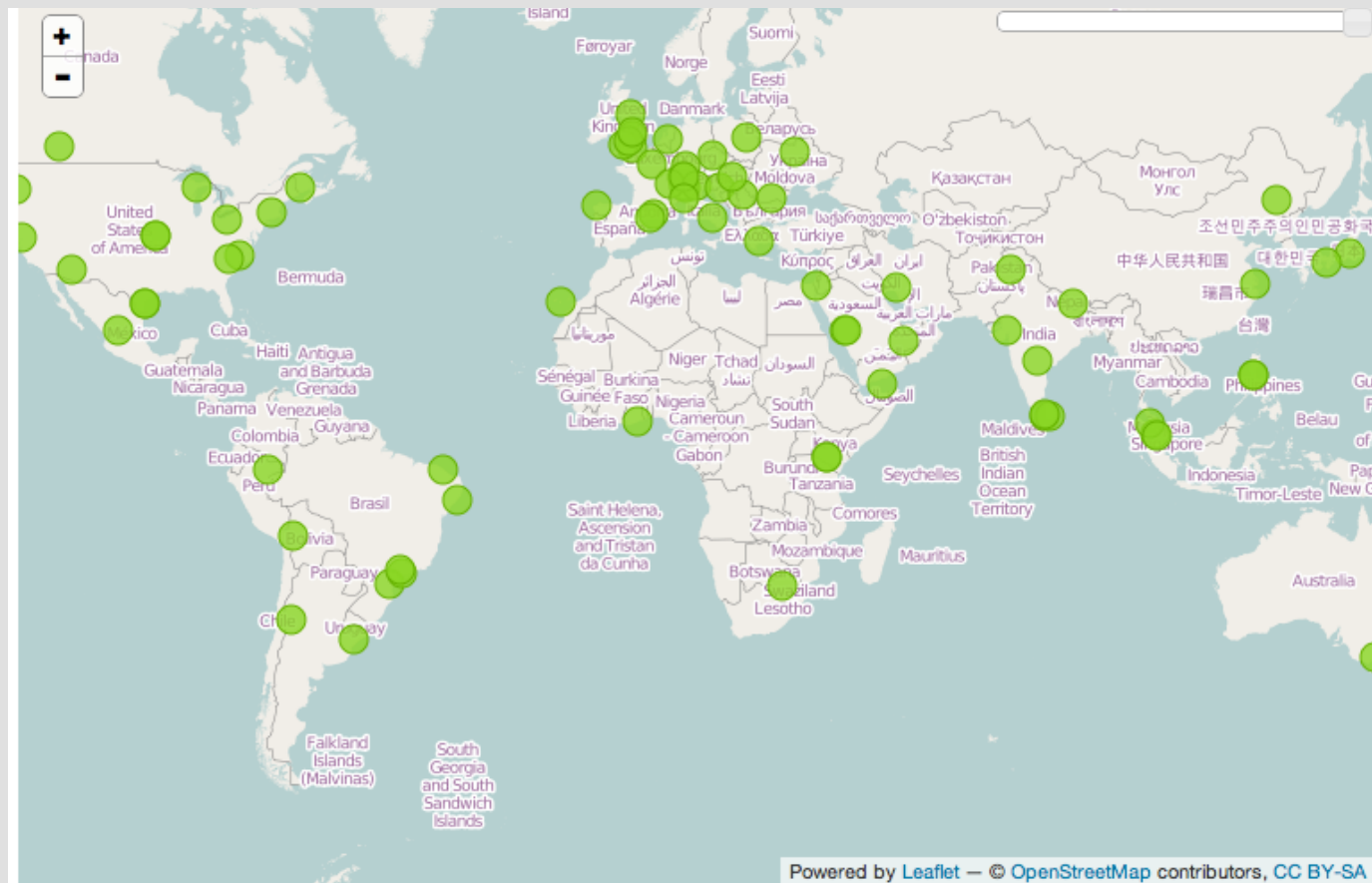
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# Global network: current status

**85 Labs** in September 2014

Wiki Table [http://wiki.osgeo.org/wiki/Edu\\_current\\_initiatives](http://wiki.osgeo.org/wiki/Edu_current_initiatives)

Spatio-temporal map: <http://www.geoforall.org/locations/>



# Geo4All: what is new in 2014

- ISPRS joined the initiative
- FOSS4G Academy (more from Phil)
- Growth of membership: Over 80 labs
- Advisory board was established

Professor Georg Gartner (ICA President & co-chair)

Jeff McKenna (OSGeo President & Co-chair)

Professor Maria Brovelli (ISPRS, Italy)

Professor Josef Strobl (Austria)

Professor Marguerite Madden (USA)

Professor Mike Jackson (UK)

Sven Schade (Germany)

Gavin Fleming (South Africa)

Sergio Acosta y Lara (Uruguay)

Dr Chris Pettit (Australia)

Professor Venkatesh Raghavan (India/Japan)

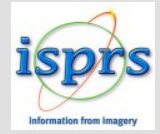
Geoff Zeiss (Canada)

Jeroen Ticheler (Italy)

Phillip Davis (USA)

Arnulf Christl (Germany)

Dr Rafael Moreno (USA)



Three presidents at  
AfricaGEO in Cape Town:  
Prof. Georg Gartner, ICA  
Jeff McKenna, OSGeo  
Prof. Chen Jun, ISPRS

# Geo4All: planned for 2015

Competitive **travel scholarships for students** working on FOSS4G projects to the FOSS4G, ICA and ISPRS annual conferences.

**Special issue** of ISPRS International journal of Geo-Information on “Open geospatial science and applications”, Abstracts due in August, manuscripts in February 2015.

**Criteria for admission** and for keeping the membership are being formalized

+ many other activities such as workshops, webinars, conference sessions, research and collaborative networks grant proposals educational material development

# Geo4All membership rules

## To establish:

- commitment to the MoU vision: opportunities for FOSS4G and open data
- expertise and vision in geospatial knowledge
- set up website listing people, research and training/education
- promote geo4all activities

## To maintain:

- at least once a year updates on activities on labs webpage
- examples of activities:
  - participating at FOSS4G
  - teaching a course, workshop
  - publishing scientific papers
  - GSoC mentoring
  - working in committees
  - contributing to documentation, testing and translations

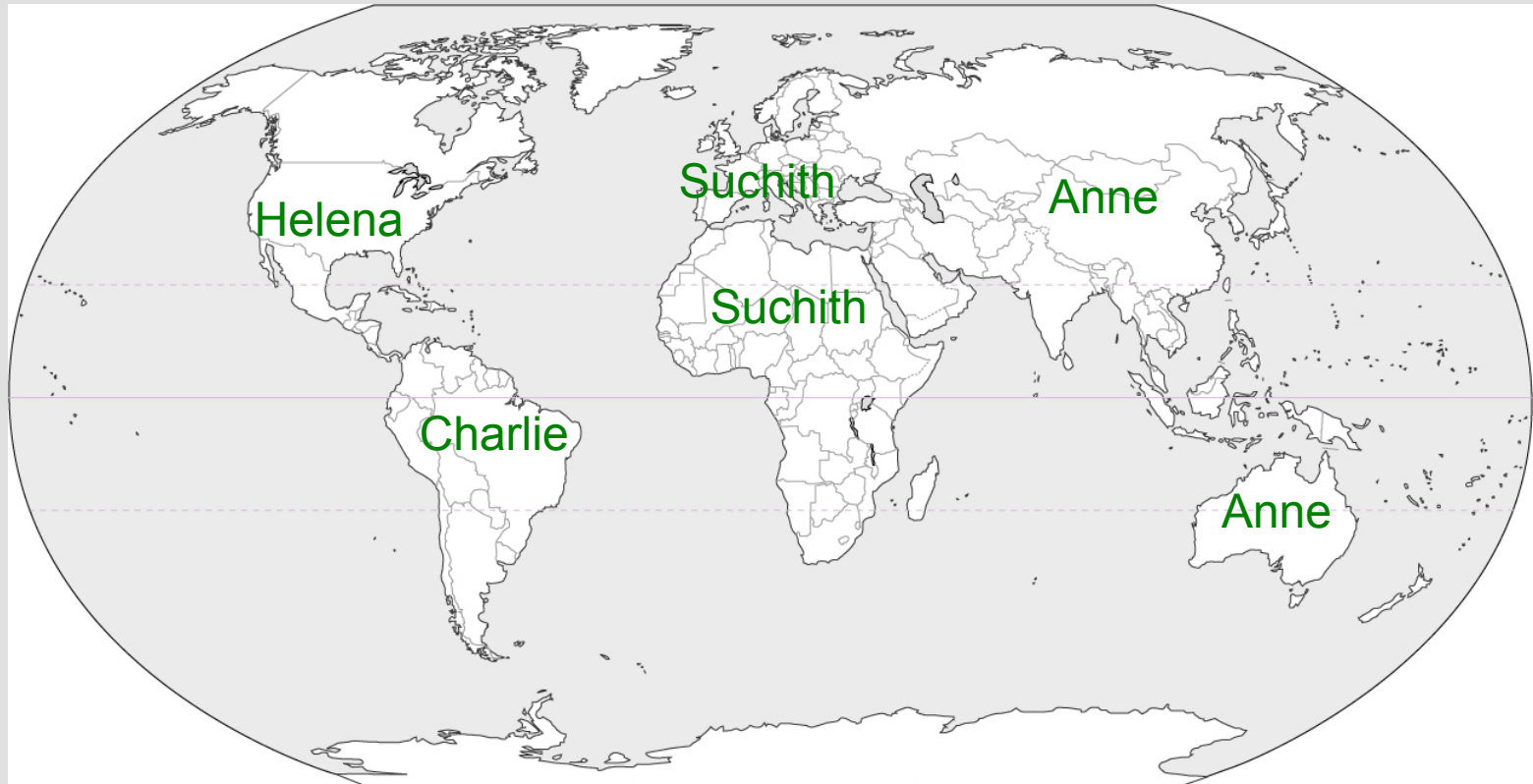
# Geo4All: how to join

see [geoforall.org](http://geoforall.org) web site, send email to:

**Anne Ghisla** Asia & Australia, **Helena Mitasova** North America

**Charlie Schweik** South America, **Suchith Anand** Europe & Africa

add to the list of participating labs on wiki





# Example: OSGeo REL at NCSU

Lab in the **Center for Geospatial Analytics** focused on

- basic and applied research
- course development
- active participation in OSGeo projects: software, documentation, testing

<http://geospatial.ncsu.edu/osgeorel/>



## Courses

**GIS/MEA582: Geospatial Analysis and Modeling**

The course explains digital representation and analysis of geospatial phenomena and provides foundations in methods and algorithms used in GIS analysis. Special focus is on terrain modeling, geomorphometry, watershed analysis and introductory GIS-based modeling of landscape processes (water, sediment). The course includes analysis from lidar data, 3D visualization, and exploratory land management design with Tangible GIS. Assignments are performed in Open source GRASS GIS and ArcGIS.

**MEA592: Multidimensional Geospatial Modeling**

The course covers concepts, methods and tools for analysis and modeling of landscape dynamics using multitemporal georeferenced data and simulations. Representation of evolving phenomena using point clouds and particles, surfaces and voxel models will be explained. The course will also include hands-on practice and development of techniques for visualization and communication of lidar data time series and outputs of dynamic simulations using the state of the art technology in the GIST Visualization laboratory, such as 3D projection, immersion and tangible modeling system.

**GIS/MEA792: Advanced Geospatial Modeling**

The course provides foundations in methods and algorithms used in GIS modeling. Special focus is on integrated modeling using vector and raster data processing, data base management tools, basic image processing, and python programming for open source GIS. The course includes workflow development combining different tools from open source geospatial software stack especially GRASS GIS, GDAL/OGR, libLAS and others. Applications / case studies will include terrain modeling, geomorphometry, coastal evolution, volume modeling, dynamic visualization, and GIS-based modeling of landscape processes (water, sediment).

**GIS 550: Geospatial Data Structures and Web Services**

This course examines the spatial database models and structures used in geospatial information science and technology as well as the design and implementation of web and related mobile computing geospatial tools and systems. Students develop, evaluate, and deploy multiple spatial data models and web services that include connections to external data sources and systems.

Courses are offered through our **GIST program**.

## Tutorials

**Geospatial Analysis and Modeling with GRASS**

The short course provides introduction to GRASS GIS and its tools for terrain modeling, geomorphometry, and analysis of elevation data time series. The course includes analysis from lidar data, 3D visualization and exploration of terrain change.



# NCSU Geo4all Collaborations

## GRASS GIS development and applications

collaboration with

Czech Technical University Prague

<http://geo.fsv.cvut.cz/gwiki/>

[Open Source Geospatial Research and Education Laboratory](#)

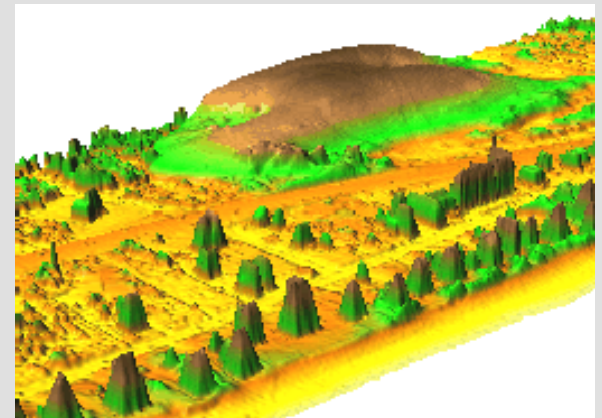
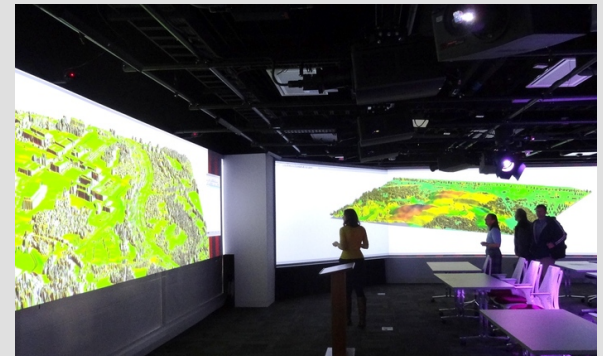
GIS and RS Unit at Fondazione Edmund Mach

<http://gis.cri.fmach.it/>

- module development / bug fixing
- GSoC students/mentors
- PhD assistantships
- Educational material: FOSS4G workshop



GRASS GIS



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# Conclusions: vision for the future

## Continue building the FOSS4G academic infrastructure:

- integrate open GIS approach into additional courses,
- share all material free on-line, **keep it up to date**
- teach not only how to use FOSS4G but also **how to contribute**:
  - code
  - documentation
  - data
  - education material, tutorials, videos
- encourage and organize participation: users and devs lists, GSoC, community sprints
- provide pool of faculty who could serve on student BS, MS, PhD committees or as advisors and mentors in GSoC
- organize student exchange, information about Research Assistant and Postdoctoral positions

The presentation was prepared by  
the NCSU OSGeo Research and Education Laboratory  
<http://geospatial.ncsu.edu/osgeorel/>

To join the OSGeo network:  
read: [http://www.geoforall.org/how\\_to\\_join/](http://www.geoforall.org/how_to_join/)  
email to: hmitaso at ncsu.edu



<https://2014.foss4g.org/>

# Geo4All initiative

