

Public-Private Partnerships

AfricaArray is building a geoscientific community through dozens of partnerships with universities, government institutions, and companies both inside and outside of Africa. These partnerships also provide support for *AfricaArray's* academic programmes including geoscience field courses, geoscience observatories, bursary or scholarship programmes and research projects throughout Africa.

For more information contact:

Dr. Andrew Nyblade
The Pennsylvania State University
E- mail: andy@geosc.psu.edu
Telephone: +1 814 863-8341

Dr. Paul Dirks
University of the Witwatersrand
E- mail: paul.dirks@wits.ac.za
Telephone: +27 11 717-6547

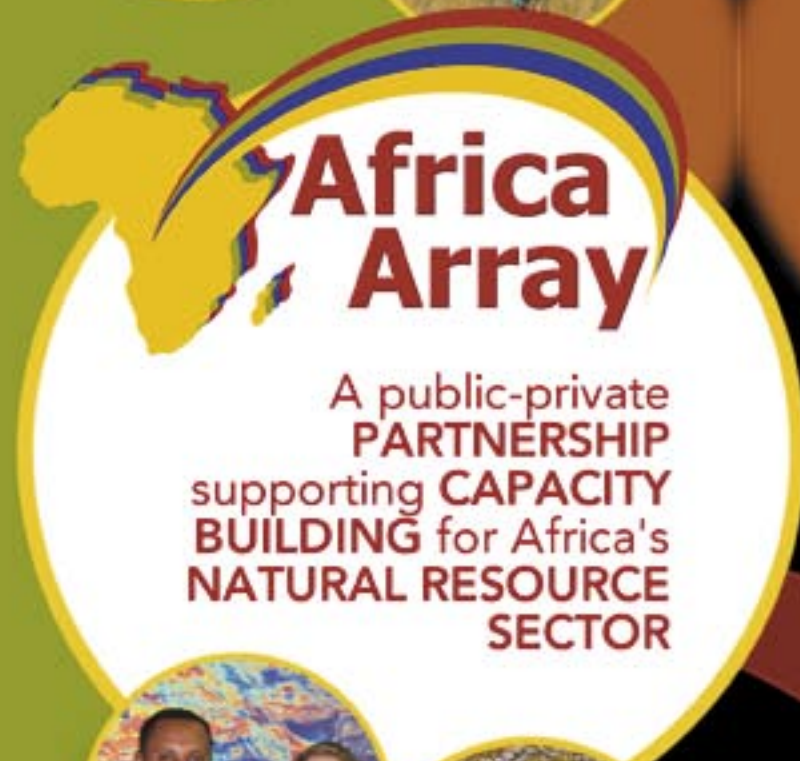
Founding Partners



PENNSTATE



Council for Geoscience



Africa Array
A public-private
PARTNERSHIP
supporting **CAPACITY**
BUILDING for Africa's
NATURAL RESOURCE
SECTOR

About AfricaArray

AfricaArray is a visionary initiative addressing the need for a continent-wide workforce of highly trained geoscientists for Africa's natural resource sector. Its mission is bold: To improve and expand geoscientific training programmes and establish an Africa-to-Africa support system for geoscience education and research.

A 20-year initiative, *AfricaArray* promotes and supports:

- Scientists working on an array of linked projects across the African continent;
- Arrays of shared training programmes and observational networks;
- A common vision that Africa will build and retain capacity in an array of technical and scientific fields critical for responsibly exploiting its vast natural resources.

Well-trained geoscience professionals are key to the sustainable development and management of Africa's mineral and petroleum wealth as well as its water and geothermal resources. However, the number of geoscientists graduating from African universities is insufficient to meet the needs of government, industry and academic institutions.

AfricaArray is addressing that gap in human-resource capacity. It is improving and expanding geoscience training in Africa through strategic and specialized programmes that involve education and research at affiliated universities in Africa, the U.S. and Europe.



www.africaarray.org

Educational Mission

AfricaArray is committed to building a scientific workforce for Africa's natural resource sector through degree and technical training programmes at African universities and affiliated government institutions. These programmes engage students and technicians in hands-on training, quality research and international collaboration.

AfricaArray supports many geoscience students and postdoctoral scientists at universities in Africa, the U.S. and Europe. Since 2005, 35 B.Sc. honours, 13 M.Sc. and 10 Ph.D. students as well as five postdoctoral scientists have participated in the *AfricaArray* programme. A "sandwich" programme has enabled 10 graduate students to spend several months each year studying and doing research with faculty at *AfricaArray*-affiliated universities in the U.S. or Europe.

Since 2006, 42 students from 12 African countries and the U.S. have gained practical experience in geophysical field methods and data analysis and modeling through the *AfricaArray* International Field Course. The success of the field course in geophysics has led to the planning of additional courses in related areas of the geosciences.

AfricaArray also is promoting geoscience education in the U.S. to underrepresented minorities by providing students with an African field experience. Funded by the National Science Foundation, industry and participating universities, this initiative aims to develop new generations of talented and diverse geoscientists.

Research Mission

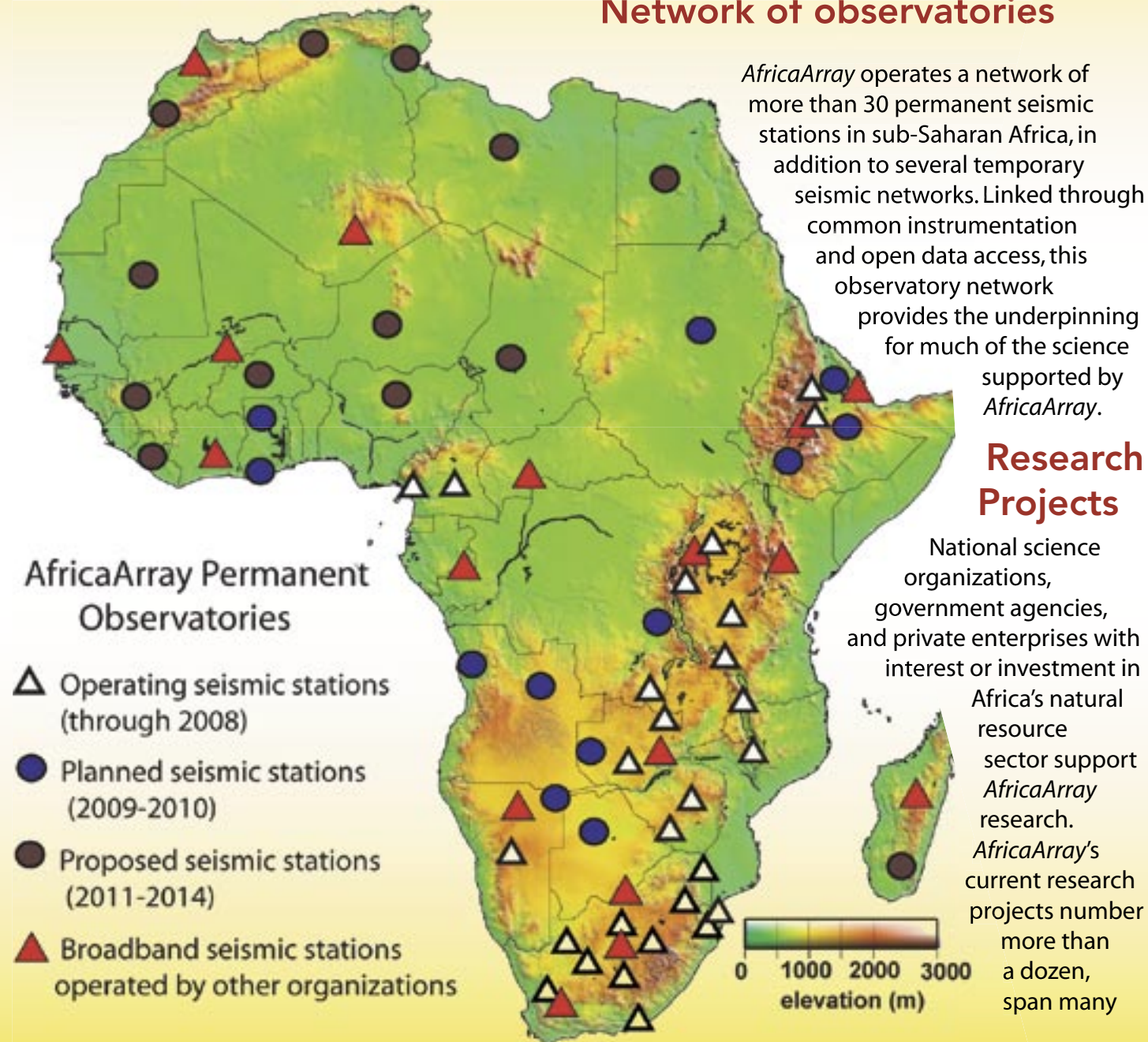
While the long-term vision for *AfricaArray* is to support training in many geoscience fields, initial

efforts have focused on geophysics. Specific undertakings have included:

- Establishment of a network of geophysical observatories;

- Promotion of geophysical research;
- Creation of public-private partnerships to support a scientific community that engages in data sharing, research collaborations, and educational projects.

Network of observatories



spatial and temporal scales, and are focused on the scientific needs of *AfricaArray*'s partners.

Current projects include:

- Imaging the African superplume, one of the most prominent and enigmatic features of the Earth's deep mantle, with a continent-wide network of seismic stations;
- Delineating the southern margin of the Congo Craton by using data from a network of seismic stations in Angola, Botswana, Namibia, and Zambia to estimate lithosphere thickness;
- Recording and analyzing data from deep gold mines in South Africa to study the origin of mining-related earthquakes;
- Mapping the subsurface structure of the Bushveld Complex in South Africa, which hosts the largest known deposit of platinum.

Future Initiatives

AfricaArray has successfully completed its initial goals of improving and expanding the geophysics programme at the University of the Witwatersrand, creating a network of geophysical observatories and initiating multiple research projects, all supported by a combination of public and private funding.

Its future goals include:

- Establishing regional centers of excellence in geoscience fields at other African universities;
- Expanding the observatory network into new areas across Africa and into new disciplines including geodesy, atmospheric sciences and water resources;
- Developing research and educational programmes in new science fields linked to the expansion of the observatory network.