The Carnegie-IAS Regional Initiative in Science and Education (RISE) aims to strengthen higher education in sub-Saharan Africa by increasing the population of qualified faculty teaching in Africa’s universities. RISE prepares PhD- and MSc-level scientists and engineers through university-based research and training networks in selected disciplines. Its primary emphases are on preparing new faculty to teach in African universities and on upgrading the qualifications of current faculty.

RISE networks provide comprehensive graduate training programs, where students and faculty seeking advanced degrees can take advantage of the complementary instruction and research opportunities available at each institution within the network. Networks also enable researchers from multiple universities to use specialized scientific instrumentation that may be available at only one of the sites, or to pool resources to obtain new equipment.

The network structure benefits the universities as well, as each gains capacity through affiliation with the others. In the words of one of the successful applicants, “The principle to be employed is to exploit the respective strengths of individual partner institutions for the collective benefit to build capacity.”

RISE is supported by grants totaling over $10.4 million from Carnegie Corporation of New York to the Science Initiative Group (SIG) at the Institute for Advanced Study in Princeton, NJ, USA. SIG is leading the RISE initiative in partnership with the African University of Science and Technology in Abuja, Nigeria.

The following five networks were selected in 2008 from among 48 proposals:

**African Materials Science and Engineering Network (AMSEN)**
*Academic Director:* Lesley A. Cornish, Director, DST/NRF Centre of Excellence in Strong Materials, University of the Witwatersrand, Johannesburg, South Africa
*Other participating institutions:* University of Nairobi, Kenya; University of Namibia; Federal University of Technology, Akure, Nigeria; University of Botswana
*Description:* AMSEN focuses on developing the skills in materials science and engineering needed to develop and add value to the extensive mineral deposits in southern Africa.

**African Natural Products Network (RISE-AFNNET)**
*Academic Director:* John David Kabasa, University Professor, Natural Products Research Laboratory, Department of Physiological Sciences, Makerere University, Kampala, Uganda
*Other participating institutions:* University of Nairobi, Kenya; Sokoine University of Agriculture, Tanzania
*Description:* RISE-AFNNET seeks to develop Africa’s rich biodiversity into a natural products industry of social and economic significance through coursework and research in engineering, biochemistry, environmental science, pharmacology, economic development, and nutrition.

**Southern African Biochemistry and Informatics for Natural Products (SABINA)**
*Academic Director:* John D. Saka, Professor of Chemistry, Chancellor College, University of Malawi
Other participating institutions: University of Namibia; University of Dar es Salaam, Tanzania; University of Pretoria, South Africa; University of the Witwatersrand, South Africa; Council for Scientific and Industrial Research (CSIR), South Africa; Tea Research Foundation of Central Africa, Malawi

Description: SABINA works with natural products that have the potential to increase food security, public health, and value-added exports. Its research emphasis is on biochemistry and chemistry of natural products.

Sub-Saharan Africa Water Resources Network (SSAWRN)

Academic Director: Denis Hughes, Director, Institute for Water Research, Rhodes University, South Africa

Other participating institutions: Eduardo Mondlane University, Mozambique; University of Botswana; Makerere University, Uganda

Description: SSAWRN focuses on the most pressing water issues of sub-Saharan Africa, including rising use, declining quality, insufficient research and teaching capacity, inadequate weather stations, and the likelihood of increased variability of water supplies associated with future climates.

Western Indian Ocean Regional Initiative in Marine Science and Education (WIO-RISE)

Academic Director: Margareth S. Kyewalyanga, Director, Institute of Marine Sciences, University of Dar es Salaam, Zanzibar, Tanzania

Other participating institutions: Eduardo Mondlane University, Mozambique; University of Cape Town, South Africa

Description: WIO-RISE provides research and training in skills associated with the utilization of coastal and marine resources and protection of the coastal and marine environment.