

CIMERA

CIMERA – DSI-NRF
Centre of Excellence for
Integrated Mineral and Energy
Resource Analysis



DSI-NRF Centre of Excellence for Integrated Mineral and Energy Resource Analysis (CIMERA) is hosted by the Department of Geology at the University of Johannesburg (UJ), and co-hosted by the School of Geosciences at the University of the Witwatersrand (Wits).

DSI-NRF CIMERA was launched in 2014 under the Centre of Excellence (CoE) initiative of the National Research Foundation (NRF), a division of the South African Department of Science and Innovation (DSI). CoEs are strategic national assets that concentrate research excellence, capacity and resources in order to enhance the pursuit of research excellence and capacity development.

What we do at DSI-NRF CIMERA

We conduct cutting-edge integrated geological, geochemical, geometalurgical and geophysical research on minerals and non-renewable energy sources, of economic and societal benefit to the region and continent, largely through the training of postgraduate students. Outcomes-driven research is built on teamwork, collaboration, and excellence in education is pursued.



DSI-NRF CIMERA IS A PARTNERSHIP

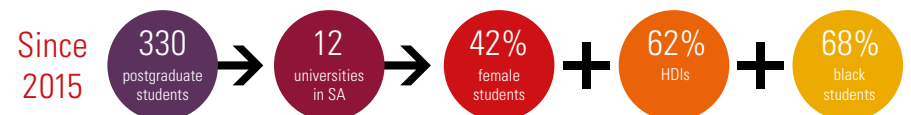
A diverse, collaborating, enabling environment for mineral and energy resource studies has been established. DSI-NRF CIMERA collaborating scientists are based at the Universities of Cape Town, Fort Hare, Free State, Johannesburg, Limpopo, Pretoria, Rhodes, Stellenbosch, KwaZulu-Natal, Venda, Western Cape and Witwatersrand, as well as the Helmholtz Freiberg Institute for Resource Technology, Germany, Delft University of Technology, Netherlands, University of Patras, Greece, and Akita University, Japan. Memoranda of Understanding have been signed with the Council for Geoscience and various industries. Further partners are actively being sought and welcomed.

OUR RESEARCH EXPERTISE

Via our extensive consortium network of scientists, research associates, postdoctoral research fellows, and postgraduate students, DSI-NRF CIMERA has expertise in many facets of economic geology, including iron and manganese ore bodies; kimberlite and diamonds; early earth mineral systems; paleogeographic continental reconstructions (paleomagnetic studies); the Bushveld Complex; Witwatersrand gold; critical metals (including rare earth elements (REE)); base metal deposits; coal, shale gas, oil; advanced analytical equipment and geotourism.

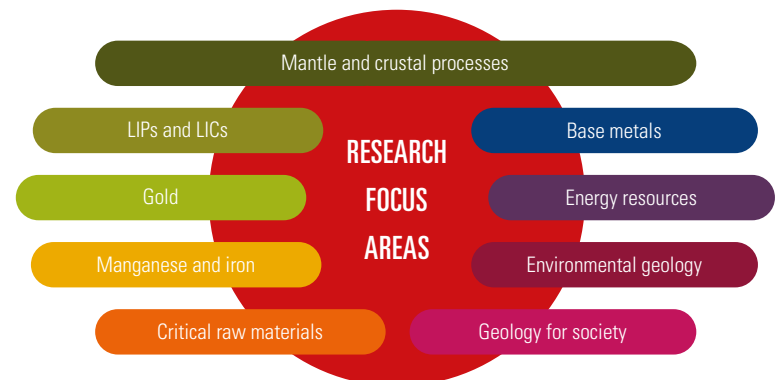
The CoE is involved in two intercontinental drilling projects (ICDP – 'Moodies' and 'Bushveld') to expand the understanding of the early earth. DSI-NRF CIMERA has completed the Karoo Research Initiative project (KARIN), the Agouron GOE biomarker drilling project, the CHARPHITE (ERA-MIN) project, and the South African Au and PGM Resource Atlas (SAMERDI) projects. Current projects include the RAEng investigation in Bushveld gases, the H2020 AISiCal project, and the Kunene Complex project in collaboration with Anglo-American, among other projects.

CAPACITY DEVELOPMENT



RESEARCH FOCUS AREAS

Purpose: to guide research direction and provide a forum for networking and discussions within a commodity thrust.



Geometalurgy, geophysics (seismics), geochemistry and small-scale mining opportunities form part of many of the above focus areas, as does analytical development, 4IR and big data processing, and geological training.

The SARChI Chair in Geometallurgy (Prof Fanus Viljoen, UJ) and the Community of Practice (CoP) in Oil and Gas (Prof Ray Durrheim, Wits) work in close collaboration with the CoE.

Research is guided by the Steering Committee and the Scientific Advisory Committee, with input from collaborating partners, industry, parastatals, Government, and international organisations.

AREAS OF INFLUENCE

1. Resource Genesis;
2. Mining;
3. Geoheritage and Geotourism;
4. 4IR and Big Data Mining;
5. Advanced Analysis;
6. Exploration;
7. Geometallurgy;
8. Mineral Economics;
9. Environmental Geology;
10. Geochemistry and Geophysics.





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Council for Geoscience



DSI-NRF CIMERA RELEVANCE AND SERVICE TO SOCIETY



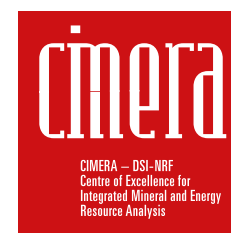
Geoscience research is imperative in the South African (and global) domain. Modern societies and technology are underpinned by geological raw materials. DSI-NRF CIMERA provides an enabling platform in the expansion of a scientifically competent population. Outreach projects in groundwater exploration, geoheritage, and geoscience education are supported. Advanced analytical facilities hosted by South African universities are supported, enabling access to world-class facilities. Collaborators participate in and organise local and international conferences, workshops, seminars, and colloquia. Our annual DSI-NRF CIMERA Research Colloquium is a highlight in our academic calendar.

DSI-NRF CIMERA ANNUAL COLLOQUIUM

The DSI-NRF CIMERA Annual Research Colloquium is our flagship event and enables postgraduate, postdoctoral research fellows, and research associates to present their findings. This is an opportunity for students to network, and for industry to gain a window-shop idea of the research within our CoE. All DSI-NRF CIMERA supported students and staff completing their research projects are invited to present interim results in the form of a poster or peer reviewed abstracts – the research abstracts are available on www.cimera.co.za.



UJ Graphic Design Studio



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STRUCTURE AND CONTACT

Directorate

Prof NJ Wagner (UJ)

Director

Prof JA Kinnaird (Wits)

Co-Director

CoE Manager

Ms Gobona Lizzie Tau (UJ)

Administrative Staff

Ms Viwe Koti

Administrative Assistant (UJ)

Ms Reshmi Singh

Administrative Assistant (Wits)

Contact Details

Department of Geology

C1 Lab (3rd Floor)

Auckland Park Kingsway Campus

University of Johannesburg

cimera@uj.ac.za

+27 11 559 4728

www.cimera.co.za