Areas of Excellence

African Art

The Wits Art Museum (WAM) houses one of the world’s finest collections of African art and is a rich resource for research and teaching.

Artificial Intelligence

The fundamental study of using large data sets and neural networks to process them using cutting edge algorithms is at the heart of Wits’ research into Artificial Intelligence (AI) and machine Learning.

Astronomy and Cosmology

Using the Square Kilometre Array (SKA), Meerkat and Hartebeesthoek Radio Astronomy Observatory facilities, Wits scientist are well placed to tackle the big questions about the origins of the Universe

Cities

Researchers study the impact of urban morphology on transport and service provision, lifestyles that underpin informal settlements, employment patterns, changing suburban ethnicities, inner-city rejuvenation

Communicable Diseases

HIV and TB being a major health threat in SA and are the subject of sustained research into causes, transmission and control. Work is being done to develop vaccines to control pneumococcal diseases,

Data science

Using data science teachniques to analise and interpret problems in the worlds of natural science, socials sciences and humanties. Wits now has the use of IBM’s quantum computing facilities to assist with this.

Drug Delivery

Novel drug delivery methods are being developed, often using nanoscience, so that medication is delivered directly to the areas of the human body where it is most needed, with minimal delay.

Equality studies in the Global South

Inequality is a major influencing factor in South Africa and indeed in the Global South. The study of this problem using a multidisciplinary approach is an ongoing area of research excellence at Wits.

Geoscience and Mining Engineering

Focusing on digital-mining that looks to use technology for the purpose of safety in deep and dangerous mining. This is also supplemented with research in economic geology and petrology and geophysics.

Global Change and Sustainability

Studying the effects of climate change on food sustainability, diversity of flora and fauna, water, waste and energy management, pollution control, water supply and ecosystem maintenance.

Indian Studies

Studying study the emerging political and economic alignments in the contemporary world using the Indian Ocean as a privileged vantage point from which to track a changing world order

Material Science and Engineering

The development of new and stronger materials, with applications in aerospace, mining and manufacturing. Materials studied include composites, ceramics, diamond, thin films, carbides and metallic alloys.

Mathematics and Mathematical Education

Research on mathematics spans the spectrum from primary school teaching of mathematics to cutting edge research in pure and applied mathematics and statistics.

Molecular Biosciences

A burgeoning multi-disciplinary research institute dedicated to investigating the molecular and genomic aetiology of diseases among African populations.

Non-communicable Diseases

Research is being done on obesity, hypertension, diabetes, cancer, heart disease and malaria. Many associated with a change in lifestyle, especially of our urban populations.

Palaeoanthropology, Paleontology and Palynology

Research into the evolution of modern humans, has made worldwide impact in recent years. Other studies, continue to broaden the known range of mammal-like reptiles and dinosaurs that inhabited SA.

Refugee and Migrant studies

Wits researchers try to better understand issues around migration by looking at factors influencing migration, migrants’ access to social services, housing, employment, transport and other basic human rights.

Reproductive Health and HIV

Focused on research, technical assistance, advocacy, policy development and health systems strengthening, in the areas of HIV, sexual and reproductive health (SRH), and vaccine preventable diseases (VPD).

Water Research

Focusing on Water - Systems and the Environment, Water Recovery - Recycle, Re-use and Remediate, Society for Water - Citizenship and Stewardship and Water - Education.