

# 2018/2019 NSTF-South32 Awards



## Science Oscars, a lens through which to look at our world

THEMED to align with the United Nations' 'Year of the Periodic Table of Chemical Elements', the National Science and Technology Forum's (NSTF) 2018/2019 NSTF-South32 Awards ceremony included a special award for a contribution to science, engineering and technology (SET) and innovation for "Materials for inclusive economic development".

The awards recognise a variety of outstanding contributions to SET and innovation, by professional scientists, innovators, and other science-related professionals. Held last night in Gauteng, the annual NSTF-South32 Awards event also acknowledged outstanding achievements in science and mathematics in Grade 12 through the forum's Brilliants Programme.

It is 150 years since Dmitry Mendeleev discovered the Periodic System and the UN's declaration of this International Year theme has the support of numerous scientific, technological, philosophical and historical organisations from more than 50 countries.

Elaborating on the Periodic Table, NSTF Chairman, Prof Ali Dhansay, says, "At first glance, it appears to be just an arranged list of elements used as a tool in chemistry. However, it is also a lens through which to look at our world. It is one of the most significant achievements in science, capturing the essence not only of chemistry, but also of physics and biology."

The unique tool enables scientists to predict the appearance and properties of matter on the Earth and in the rest of the Universe."

The 21st celebration of South African ex-



Prof Ali Dhansay

cellence and outstanding contributions to SET featured awards in the following broad areas in 13 categories:

- Scientific research
- Innovation
- Management and related activities
- Capacity development in engineering research
- Environmental sustainability, biodiversity conservation and the green economy

- Water research and innovation
- Data management
- Science communication

The Special Annual Theme Award, which went to Prof Alexander Quandt was for an outstanding contribution to SET and innovation, through work on materials for inclusive economic development. He is the Acting Chair: Materials for Energy Research Group; and Focus Area Co-ordinator: Centre of Excellence in Strong Materials, at the University of the Witwatersrand.

The Lifetime Award went to Prof Robin Crewe, Senior Research Fellow: Centre for the Advancement of Scholarship, at the University of Pretoria.

The awards showcase the research and development capacity of our nation and how the winners' work supports South Africa's advancement, economic growth and the social upliftment of our people. They were the first and are the largest SET and innovation awards in the country. Known as the 'Science Oscars', part of the focus is on profiling the Award Winners as role models, which includes the year-long engagement programme with students and learners called the 'Share 'n Dare Programme'.

The NSTF Brilliants Programme recognises the outstanding Grade 12 performers in physical science and mathematics, exposing them to the SET network and future career opportunities.

The NSTF is the most representative multi-stakeholder forum in South Africa promoting SET and innovation.

### Winners of the 2018/2019 NSTF-South32 Awards

The national NSTF-South32 Awards are the largest science, engineering, technology (SET) and innovation awards in South Africa. Known as the 'Science Oscars', they were the first science awards in the country. The focus is on spreading information about SET to the public, which includes the year-long engagement programme with students and learners called the Share 'n Dare Programme. The Brilliants Programme recognises outstanding Grade 12 performers in physical science and mathematics, exposing them to the SET network and future career opportunities.

This year a record number of 161 nominations, 20 percent up on last year, were adjudicated in 13 categories. Of these, 27 were nominated for more than one category. There were 60 finalists, 19 in more than one category, giving a total of 79. It is an extraordinary honour to be an NSTF-South32 Award finalist given the quality of the nominations received, the fierce competition, and the growing interest from the community over the years.

Outstanding contributions to SET and in-

novation were awarded and celebrated in the following broad areas under 13 categories:

- Scientific research
- Innovation
- Management and related activities
- Capacity development in engineering research
- Environmental sustainability, biodiversity conservation and green economy
- Water research and innovation
- Data management
- Science Communication

The special annual theme award was made for a contribution towards 'Materials for inclusive economic development'. This was made in recognition of the 'International Year of the Periodic Table of Chemical Elements' declared by the United Nations (IYPT2019).

**Jansie Niehaus, NSTF Executive Director and spokesperson,** says "It is an honour to be nominated, an outstanding achievement to reach the finals as well as an exceptional milestone and celebration of excellence to win one of these awards."



Lifetime Award, by an individual over 15 years or more: **Prof Robin Crewe**, Senior Research Fellow Centre for the Advancement of Scholarship, University of Pretoria

TW Kambule-NSTF Award: **Researcher** through research and its outputs, by an individual from six years up to 15 years of research work from the commencement of the research career, predominantly in South Africa: **Prof Lindwe Innocentia Zungu** Executive Dean: Graduate Studies, University of South Africa

TW Kambule-NSTF Award: **Emerging researcher** through research and its outputs, by an individual up to six years of research work from the commencement of the research career, predominantly in South Africa: **Dr Mardé Helbig**, Senior Lecturer: Computer Science Department, University of Pretoria and **Dr Hlumanani Ndlovu**, Lecturer: Division of Chemical and Systems Biology, Dept of Integrative Biomedical Sciences, University of Cape Town (UCT)

### Independence, innovation, collaboration, dissemination

THE National Science and Technology Forum (NSTF) is the largest national non-profit stakeholder body for all science, engineering and technology (SET) and innovation organisations in South Africa.

Since 1995, it has been an independent voice promoting SET and innovation through collaborative efforts and its aim is to impact positively on society and improve

people's lives by: playing a powerful consultative role in policy matters; organising the prestigious NSTF Awards, in partnership with South32 as the co-branding sponsor; facilitating networking and cooperation within the community; widely disseminating and sharing SET-related news and information; ensuring the implementation and running of SET programmes.

### SET skills are critical to its business

SOUTH32, a globally diversified mining and metals company, produces bauxite, alumina, aluminium, energy and metallurgical coal, manganese, nickel, silver, lead and zinc in Australia, Southern Africa and South America. It also owns a high-grade zinc, lead and silver development option in North America and has several partnerships with junior explorers with a focus on base metals.

The company's declared purpose is to make a difference by developing natural resources, improving people's lives for generations

to come, and to be trusted by its owners and partners to realise the potential of its resources.

Skills in science, engineering and technology (SET) are critical to the business and investment in education and skills development for local communities is a priority for its operations in Gauteng, KwaZulu-Natal, Mpumalanga and Northern Cape, where it supports local learning programmes to improve education outcomes. It sponsors the NSTF awards because of SA's potential to influence the world through SET and innovation.

## NSTF and SET community are already attuned to President's aspirations

THERE were a number of indications in President Ramaphosa's State of the Nation Address to indicate that research, technological innovation and R&D are of critical importance to South Africa.

Jansie Niehaus, NSTF Executive Director, comments as follows:

These have always been essential to a country's development and its global competitiveness. The NSTF Awards demonstrate every year that South Africa has world class talent, capabilities and achievements. This country should leverage this wealth of capacity better, and appreciate its scientists, engineers and innovators as essential resources in the 21st century.

Speaking of the need for a new social compact, the president indicated that partnerships between government, business, labour, communities and civil society are essential to achieve the national goals. We agree, it is an approach that has borne fruit wherever it has been applied seriously. All stakeholders should 'buy into' the process and play their roles to ensure success.

At NSTF discussion forums the need for collaboration among various sectors has been raised repeatedly in different contexts. The NSTF itself is a stakeholder forum that brings these sectors together from the point of view of scientific research, technological innovation and the policy environment.

President Ramaphosa wants a high-tech economy where, for example, advances in



Jansie Niehaus, NSTF Executive Director

e-health, robotics and remote medicine are applied to improve health care. Although high-tech is not the only way to improve people's lives, there are newly available technologies that can make a difference. New health care

technologies are examples of Fourth Industrial Revolution (4IR) technologies that are developing rapidly in the global context. They are becoming increasingly available for application in the solution of complex problems, as reflected by some of our award winners, current and past. A case in point is Prof Tshilidzi Marwala, now the vice-chancellor of the University of Johannesburg, who received the NSTF Award in the Researcher category in 2007. Prof Marwala is arguably the top expert in our country on the 4IR and its technologies.

Addressing the urgent need to grow the economy, Ramaphosa outlined various government priorities, including the mining sector, and developing markets for South African minerals. One of the ways in which this will be done is 'increased research and development. In keeping with his call for South Africans to prepare for the 4IR and embrace its opportunities, he highlighted the need for skills in new technologies as well as empowering the youth to participate in the economy and take advantage of such opportunities.

The 4IR context entails a rapidly changing job market to which South Africa has to adapt. The foundation for the required skills has to be laid during primary school, including subjects like coding and data analytics. An enabling environment has to be created to allow and stimulate innovation. The president also recognises the increasingly significant role of young people in generating innovative ideas and businesses.

## CONGRATULATIONS

to our NSTF Award finalists and winners as well as all our Wits researchers.

**We are proud of you for making WITS a leading, research-intensive university that is committed to making a positive impact on society.**

We are proud of our 27 A-rated Researchers (recognised by peers internationally as global leaders in their field) - 1 Engineering; 9 Health Sciences; 4 Humanities and 13 Sciences.

27

A-rated researchers

Thank you for upholding and improving the quality of our research. We lead the country in articles published in top-tier journals like *Nature* and *Science*. We have achieved an almost 80% increase in research output in the last 5 years.

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of WITS' RESEARCH PUBLISHED IN LEADING INTERNATIONAL JOURNALS

We continue to attract some of the leading minds in the world, with 23 Distinguished Professors appointed.

23

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Human Origins	Rural Health

Wits has 6 DST/NRF Centres of Excellence, the highest number of all South African universities.

[www.wits.ac.za/research](http://www.wits.ac.za/research)

## CREATING A GREENER TOMORROW

The University of Johannesburg's Process, Energy and Environmental Technology Station (PEETS), under the leadership of NICKY JANSE VAN RENSBURG, has recently been listed as a finalist for the National Science and Technology Forum's NSTF-Lewis Foundation Green Economy Award.

In the face of climate change, we urgently need to find pathways to a low-carbon, green economy. Only then can we improve the well-being of nine billion people by 2050 and achieve the United Nation's Sustainable Development Goals. UJ PEETS strives to enable innovation and technology transfer and is committed to CREATING TOMORROW.

[uj.ac.za](http://uj.ac.za)

**The Future Reimagined**

# 2018/2019 NSTF-South32 Awards



**Management Award:** through management and related activities (by an individual over the last 5-10 years) **Dr Happy Marumo Sithole** Director: Centre for High Performance Computing, Council for Scientific and Industrial Research



**Data for Research Award:** for advancing the availability, management and use of data for research (by an individual or an organisation) **Prof Tandi Matsha** Chair: Department of Science and Technology / National Research Foundation South African Research Chair Initiative of Cardiometabolic Health, Cape Peninsula University of Technology Director: Environmental Policy Research Unit; Professor: Economics, School of Economics; Research Chair: African Climate Development Initiative, UCT



**NSTF-Lewis Foundation Green Economy Award:** towards achieving biodiversity conservation, environmental sustainability and a greener economy (by an individual or an organisation over the last 5 to 10 years) Sponsor: The Lewis Foundation since 2019 **Process, Energy & Environmental Technology Station, University of Johannesburg** Manager: Ms Nicoleen Janse van Rensburg



**NSTF-Water Research Commission (WRC) Award:** towards achieving sustainable water management, knowledge generation and solutions with demonstrated leadership and impact (by an individual or an organisation over the last 5 to 10 years) Sponsor: WRC since 2017 **Prof Martine Visser** Director: Environmental Policy Research Unit; Professor: Economics, School of Economics; Research Chair: African Climate Development Initiative, UCT



**Engineering Research Capacity Development Award:** (by an individual over the last 5 to 10 years) Sponsor: Eskom since 2003 **Prof Alison Lewis** Dean: Faculty of Engineering and the Built Environment, UCT **Prof Elvis Fosso-Kankeu** Associate Professor: School of Chemical and Minerals Engineering, North-West University



**Special Annual Theme Award: Materials for inclusive economic development** (in recognition of the United Nations (YPT2019) **Prof Alexander Quandt** Acting Chair: Materials for Energy Research Group; and Focus Area Co-ordinator: Centre of Excellence in Strong Materials, Wits

**Innovation Award: Small, Medium and Micro Enterprise** for innovations and their research and/or development (by a team or an individual over the last 5 to 10 years) Sponsor: National Intellectual Property Management Office (NIPMO) since 2019 **Hydrox Holdings (Pty) Ltd** Team Chief Executive Officer: Mr Cornelis Johannes de Jager

**Innovation Award: Corporate Organisation** for innovations and their research and/or development (by a team or an individual over the last 5 years) **Centre for Rapid Prototyping and Manufacturing Unit, Central University of Technology** Director: Mr Gerrie Booyson

**Communication Award:** for outreach and creating awareness (by a team or individual over the last 5 years) **Wits Communications Services** Head: Shirona Patel, University of the Witwatersrand (Wits)

**Non-Governmental Organisation Award:** including technology transfer, and education and training activities (over the last 5 to 10 years) **Eskom Expo for Young Scientists** Executive Director: Mr Parthy Chetty

## University of Pretoria: placing research excellence centre stage

UNIVERSITY of Pretoria (UP) featured strongly in last night's awards. Prof Robin Crewe, Senior Research Fellow at the Centre for Advancement of Scholarship, was honoured with a Lifetime Award. Dr Mardé Helbig, Senior lecturer: Computer Science Dept, was recognised with the TW-Kambule-NSTF award for an emerging researcher.

Since 1908 UP has one of Africa's leading universities, consistently ranked among the top universities worldwide. Professor Tawana Kupe, its first black Vice-Chancellor and Principal, proudly mentions nine faculties, the only veterinary faculty in the country, and a business school. It is also home to staff and students from diverse backgrounds and cultures.

"Research," he adds, "is at the heart of UP's vision. While the university already produces the most research outputs locally, and has the most academic staff at PhD level (as recorded by the Department of Higher Education and Training), it remains dedicated to furthering world-class research."

Hence the recent establishment of three large-scale projects – the



Professor Tawana Kupe

University of Pretoria

Future Africa campus, a platform for trans-disciplinary research on issues critical to Africa; the Javett Art Centre, set to become a key venue for local and international exhibitions, and research into African art; as well as The Engineering 4.0 development, a world-class hub for smart cities and transportation, linking vast resources in technology and data sciences to other faculties via Future Africa.

In the past year alone, UP's com-

mitment to furthering research has scored several world firsts:

In March, Head of the Department of Otorhinolaryngology, Professor Mashudu Tshifularo and his team at the UP Faculty of Health Sciences, successfully conducted a pioneering surgical procedure using 3D-printed middle ear bones. It is hoped that the procedure will treat conductive hearing loss.

Late last year, a lioness at the

North West province's Ukutula Conservation Center and Biobank gave birth to two cubs conceived via non-surgical artificial insemination, part of a research study by a team of UP scientists. Dr Isabel Callealta, a PhD candidate, says the research has produced new data on the African lion's reproductive physiology, and has founded effective non-surgical AI protocols for this species, which may help to conserve the African lion.

In April UP astrophysicist, Professor Roger Deane was part of the international team behind the first image of a black hole. His research group developed simulations of the Event Horizon Telescope – the instrument used to obtain the ground-breaking image – thereby helping to better understand the data it provides.

"These achievements further entrench UP's established reputation for research quality and excellence. The university continues to emphasise research that is multi-, inter- and trans-disciplinary, and to encourage partnerships and collaborative work between research and industry worldwide – so more world firsts will surely follow," Prof Kupe concludes.

## Achieving biodiversity conservation, environmental sustainability and a green economy

THE University of Johannesburg (UJ) congratulates its Technology Station Manager, Nickey Janse van Rensburg, for being awarded the National Science and Technology Forum for the NSTF-Lewis Foundation Green Economy Award. She is recognised for her role in research and innovation in South Africa towards achieving biodiversity conservation, environmental sustainability and a green economy by an individual or an organisation over the past 5 to 10 years.

Senior Manager Lesmarie Bentley-Steyn says, "Beyond the award, it shows that along with her peers at UJ, Nickey is committed to 'creating tomorrow'. It further justifies UJ's position as the African leader in the fourth industrial revolution which plays an increasingly bigger role in

our daily lives and work and the value of these awards becomes more relevant every year."

As the Process, Energy and Environmental Technology Station Manager and researcher in sustainable socio-technical systems Janse van Rensburg's research interests span engineering education, social innovation and appropriate technology development. She has presented her research in local and international conferences in eight countries and published 38 accredited journal papers, conference proceedings and book chapters. She is also a recent recipient of the SANEA Energy Award and was a NSTF nominee in 2016 for Outreach and Creating Awareness of SET and Innovation.

The Technology Station Programme, implemented by the Tech-

nology Innovation Agency on behalf of the Department of Science and Technology, has created a framework for knowledge transfer mandated to support technology development with SMEs. She believes universities should serve as centres for the flow of new knowledge and technology development to support economic growth and the UJ station provides subsidised engineering services to small and medium enterprises that operate in the green economy.

She says, "The primary mandate is to contribute towards improving the competitiveness of industry, SMEs, through the application of specialised knowledge, technology and the interaction between industry and academia enable innovation and technology transfer to grow the green economy."

"We facilitate access to UJ resources, such as laboratories, specialist expertise and engineering services, by implementing R&D projects on their behalf. To impact on the green economy in a sustainable manner, a return on investment in science and technology must be measured through the impact on the well-being of our communities. In the face of climate change, we urgently need to find pathways to a low-carbon, green economy. Only then can we improve the well-being of nine billion people by 2050 and achieve our national Sustainable Development Goals."

She adds: "Our focus is on process optimisation, specifically in the energy and environmental sectors that supports 14.0 business strategies, among others."

## A lifetime of national and international service

Short-listed as a 2018/2019 NSTF-South32 finalist in the category: Lifetime Award, Prof Mary Gulumian, now head of Toxicology Research Projects at the National Institute for Occupational Health (NIOH), has represented the Toxicology & Biochemistry Department for numerous years. Her focus having included research, teaching, training and consultation to number of governmental departments and industry stakeholders, as well as specialised service delivery.

The department aims to assess the risk associated with particles or chemicals by conducting hazard identification and exposure assessment, as well as risk assessment and characterisation, using various methodologies and modelling

strategies. Hazard identification involves determining the toxicity of particles or chemicals, while exposure assessment involves determining the degree of exposure, if any, to humans or the environment. Risk assessment and characterisation involves correlating the existing information to assess whether a risk is imminent. Online resources include [www.nioh.ac.za/services/genotoxicity-unit/](http://www.nioh.ac.za/services/genotoxicity-unit/), [www.nioh.ac.za/services/nano-and-microparticle-toxicity-unit/](http://www.nioh.ac.za/services/nano-and-microparticle-toxicity-unit/) and <http://www.nioh.ac.za/services/healthrisk-assessment-unit/>.

Similarly, Prof Gulumian has established collaborations with local and international institutions over the years, which allowed for training of staff and post-graduate students in the field of general occupational toxicology and nano-toxicology. These international collaborations include a Brazil, Russia, India, China and South Africa (BRICS) Multilateral Project and various European Union projects, e.g. EUH2020s projects including

caLIBRAte, NanoSolveIT, and Gov4Nano.

Locally, the professor liaised with various stakeholders regarding research projects conducted within the Toxicology & Biochemistry Department at the NIOH. Examples include the Department of Science and Technology, Mine Health & Safety Council, Medical Research Council, National Research Foundation, and Council for Scientific and Industrial Research. She also served on committees for South African Bureau of Standards and as Council member of the South African Council for Natural Scientific Professions. Prof Gulumian was also the founder member and the President of the Toxicology Society of Toxicology and more recently, the Society of Risk Analysis.

She has also served on various international committees, such as the Vice President of International Union of Toxicology, the International Organisation for Standardisation, the Organisation for Economic Co-operation and Development, as well as the WHO Chemical Risk Assessment Network.

A finalist is a nominee who, in the opinion of the adjudication panel, is considered eligible for the award. This means that the nominee has made a significantly outstanding contribution to SET and innovation in South Africa and qualifies to be considered as a potential winner.

## Researchers are the real heroes of the revolution

THE Fourth Industrial Revolution is dramatically changing how humans interact with new technologies, how we embrace innovation and convergence, how we communicate, and how we use technology to improve our collective futures, according to Professor Zebon Vilakazi, (Deputy Vice-Chancellor: Research and Postgraduate Affairs, University of the Witwatersrand (WITS)).

He says, "It is dramatically changing how humans interact with new technologies, how we embrace innovation and convergence, how we communicate, and how we use technology to improve our collective futures."

"Universities have a critical role to play in shaping the new digital world order through reshaping how we think about the future of work and jobs, the digital economy and new trade opportunities; the role of the state and citizens in a local, regional and global digital context; and the challenges associated with the digital divide, inequality, privacy and ethics, amongst other issues."

"Researchers are at the heart of spearheading the creation of

new knowledge, be it discovery, applied or innovative research. For example, in a first for Africa, Wits announced last week that researchers now have access to the IBM Q network that is exploring the potential applications of quantum computing (exponentially faster computing), enhanced medical imaging, efficient light harvesting materials (clean energy), secure optical communication networks (cyber-security), amongst other aspects."

Examples of applied research undertaken by Wits academics and researchers inform national policies like those related to the sugar tax, national health insurance, organ donation and the national minimum wage, for example. The university's scientists have developed technology that ensures the efficacy of equipment that test for tuberculosis, which is now in use around the world.

"But", the professor emphasises, "none of these achievements would be possible without the talented researchers and students who work to advance society. They are the problem-posers and problem-solvers, the critical thinkers, the experimenters and the challen-

gers who dare to ask the difficult questions and to seek the answers. They work across disciplines to produce new knowledge, find cures, save lives, effect social change, and improve the world for future generations."

Universities also develop the multidisciplinary, high level skills required to tackle the problems of the future and reproduce them in adequate measure. In the digital era, new teaching pedagogies are required to ensure that academics can participate in the digital space, coupled with world-class infrastructure, creative technologies, access to data, smart classrooms, simulation laboratories and e-zones to prepare future graduates.

He adds, "Our exceptional researchers make novel discoveries, create new knowledge, impact on policy, change the way we work, advance human rights and social justice, and help us to think critically in order to find solutions to our current and future challenges. They are the vanguards of society who should be applauded and who deserve our deep appreciation and continuous support. Researchers, we salute you!"

## UP researchers shine in 2019 NSTF nominations list

The University of Pretoria is extremely proud of the research done by its academics and the deep impact that their research has on changing people's lives and transforming society.

UP'S 2019 FINALISTS IN THE VARIOUS CATEGORIES ARE:

### CONTRIBUTION OVER A LIFETIME

1. **Prof Robin Crewe**, Senior Research Fellow: Centre for the Advancement of Scholarship.
2. **Prof Xiaohua Xia**, Professor in the Department of Electrical, Electronic and Computer Engineering.

### TW KAMBULE- NSTF AWARDS: RESEARCHERS

1. **Prof Serena Coetzee**, Professor and Head of the Department of Geography, Geo-informatics and Meteorology and Director: Centre for Geo-Information Science.
2. **Prof André Ganswindt**, Professor and Director: Mammal Research Institute in the Department of Zoology and Entomology.
3. **Dr Thomas Ebenhan**, Research Fellow in the Department of Nuclear Medicine and Acting Manager of NuMeRI, Pre-clinical Imaging Facility.

### TW KAMBULE- NSTF AWARDS: EMERGING RESEARCHERS

1. **Dr Mardé Helbig**, Senior Lecturer in the Department of Computer Science.
2. **Prof Eshchar Mizrachi**, Associate Professor in the Department of Biochemistry, Genetics and Microbiology, and the Forestry and Agricultural Biotechnology Institute.

### CONTRIBUTION THROUGH MANAGEMENT AND RELATED SET ACTIVITIES

**Prof Robin Crewe**, Senior Research Fellow: Centre for the Advancement of Scholarship.

### CORPORATE ORGANISATIONS

Marion Island Marine Mammal Programme, led by team leader, **Prof Nico de Bruyn**, Associate Professor in the Department of Zoology and Entomology.



Prof Robin Crewe

Prof Xiaohua Xia

Prof Serena Coetzee

Prof André Ganswindt

Dr Thomas Ebenhan

Dr Mardé Helbig

Prof Eshchar Mizrachi

Prof Nico de Bruyn



## Healthy, Safe and Sustainable Workplaces

PROMOTING DECENT WORK THROUGH CUTTING EDGE RESEARCH, SPECIALISED SERVICE DELIVERY, TEACHING & TRAINING

The National Institute for Occupational Health is a National Public Health Institute, which provides occupational and environmental health and safety (OEHS) support across all sectors of the economy to improve and promote workers' health and safety. Among its core functions are research and surveillance and the provision of teaching and training in OEHS.

The NIOH provides discipline-specific advisory services to national and provincial government departments including the Medical Bureau for Occupational Diseases (MBOD) of the NDoH as well as most industrial sectors and the informal economy. Its laboratory work includes asbestos identification and counting; diagnostic lung pathology; analytical chemistry (e.g. for biological monitoring specimens); the identification of components of dusts (respirable crystalline silica in particular); microbial air sampling; allergy diagnostics; nanoparticles and in vitro risk assessments. Discipline-specific specialist services include occupational medicine, HIV and TB at work, occupational hygiene, occupational toxicology, immunology and microbiology and occupational epidemiology.

The unique national occupational health library continues to provide support and information well beyond the borders of South Africa. The NIOH currently also houses the NHLS National Biobank and implements and monitors the innovative Occupational Health and Safety Information System (OHASIS).

For more information contact: [info@nioh.ac.za](mailto:info@nioh.ac.za) | 011 712 6400 | [www.nioh.ac.za](https://www.nioh.ac.za)

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