

Establishment of a Forum for Industry-University Regional Initiative enabling Students' Participation and improved Research Benefits



NELSON MANDELA
UNIVERSITY



Presented: Kim Jenkins

Acknowledge: Phil Hendricks, Elaine Goosen and Herman Marais



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forward together
sonke siya phambili
saam vorentoe

Initial Sectors and Role Players

Acknowledge: W Cape, KZN & E Cape



forward together
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saam vorentoe

CONSULTANTS

CONTRACTORS

PUBLIC SECTOR

SUPPLIERS

UNIVERSITIES

- BVi Eng, Naidu, Zutari, Ingerop, PMA,
- RHDHV, SMEC, ARRB Sys, BMK, Nako-Iliso
- iX Eng, EFG Eng, MyCube, 10Log, Nankho
- M&E, H&I, C2000, WBHO, Aqua, Rumdel,
- Roadmac, Raubex, Roadspan-smart, 10Civils
- SANRAL
- Western Cape Government, KZN DoT
- City of Cape Town, Ethikweni
- AECIWorld (Much), More Asphalt, National Asp
- COLAS, Tekfalt, Tosas Shisha'langa, Lafarge, Afrisam
- StellUniv, UKZN, CPUT, MUT, WSU, DUT

What is the Initiative? Why?



- **It is time to revitalize our roads industry by building human capital through research, training, supporting innovation, finding solutions for challenges and investing in growing of technology.**
- **The industry can benefit by contributing technically or financially and benefiting from research spinoffs and implementation.**
- **Identification and executing improvements required in these fields:**
 - **Pavement performance**
 - **Construction efficiency**
 - **Pavement Management Systems**
 - **Sustainability and Climate Change**
- **Ensure the industry stays ahead of approaching challenges, provide continuous improvements and enable the roads industry to address existing challenges and proactively prepare for the future.**

Eternal loop



Training & Dissemination



Involvement in Working Groups

Identify Challenges

Industry Challenges

Fund Research Projects

Collaborate with Sector



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Workshops, Set Objectives

Acquire knowledge



Research, Support & Innovation



Fund Research Project, Create **FORUM** Tackle Projects

Implement



ID & Select Projects, Share Resources

Collaborate with Sector

Who is involved? What is the purpose?



INDUSTRY

How does it participate in research?

Identify Research Needs

- SANRAL – continue support
- Regional/ 3rd Tier – Universities innovation, models & commerce

Collaborate with research bodies, universities, authorities, associations

- SABITA, SANRAL, SAT...
- Universities – no formal mechanism

Fund research projects

- Benefits? Finding solutions & Implement
- How? From Sector to Universities
- Collaborative – SANRAL, Provinces, +

Support: Participate in Committees, Working Groups

- RPF
- SABITA

OUTCOMES: Share Technical Expertise, Field Trials, Implement Findings, Dissemination

How can Industry and Universities create research synergy ?



Industry participation with universities research efforts?



- **How does Industry establish Research Partnerships?** - collaborating on specific projects, sharing resources, and jointly addressing industry challenges.
- **How can Industry sponsor Research Projects at Universities?** - access research findings to implement, also receive tax breaks.
- **How can Industry participate in specific pavement related projects?** - advisory boards to guide and inform research agendas
- **How can Industry fund Graduate Research?** – select research projects from industry and use universities to identify projects and solve challenges, by providing student bursaries

Objectives



- **Develop a Forum:** to manage an increasing Industry research participation with Universities, to the benefit of students and industry.
- **Optimum use of available research funds:** proposed national initiative ensures minimal duplication in research efforts.
- **Provide continuous training and skill development for students:** i.e. the latest research methodologies and projects
- **Transparency & Synergy:** with respect to inputs and outputs of industry funded research projects at our universities. Work together!!
- **Roads Industry must aim high:** attract the best young minds and talent through its collaborative research and development program.

Relevant Research for Industry



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**PUBLIC
SECTOR**

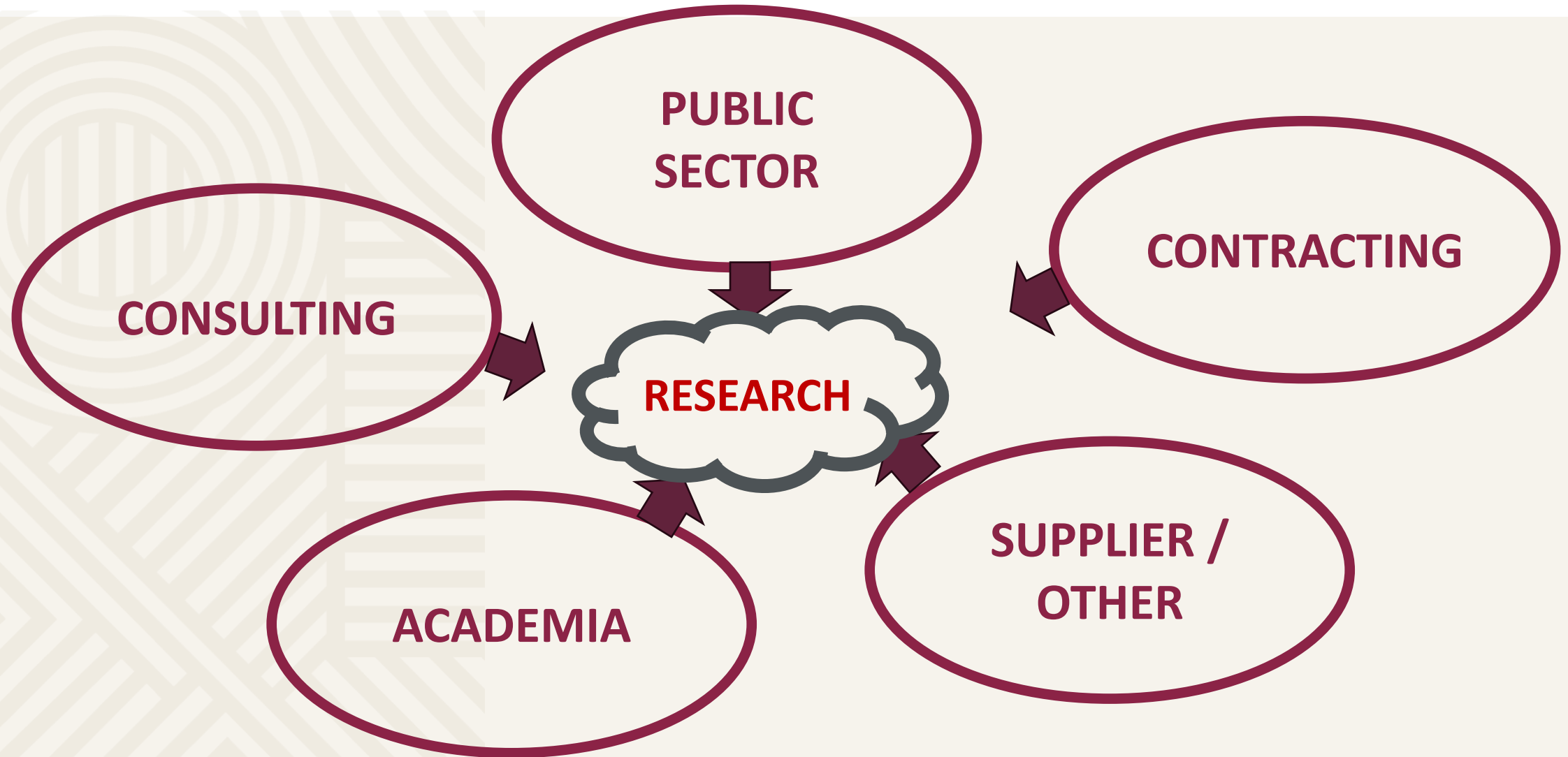
CONTRACTOR

We are currently here!

ACADEMIA

**SUPPLIER /
OTHER**

Relevant Research for Industry



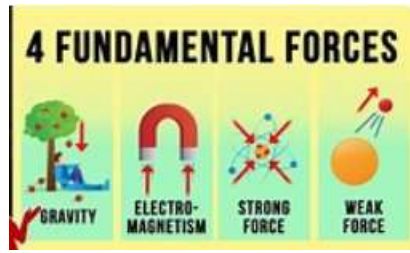
Relevant Research for Industry



Avoid Red Tape & unnecessary Rules

Break the chains

Types of Research



PRACTICAL

FUNDAMENTAL

INNOVATIVE

RESEARCH



THEORETICAL

PROBLEM SOLVING

APPLIED



for Pavement Eng. context

How to Optimise Research??????



KNOWLEDGE SHARING

INVOLVE PRACTITIONERS

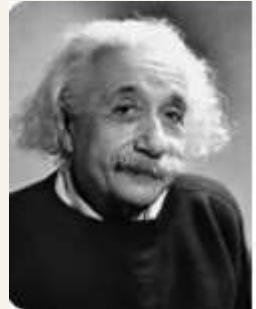
RESEARCH

MULTI-DISCIPLINARY

INVOLVE SPECIALISTS



PLUG THE GAPS



Bursaries Awarded & Degrees + Expenditure

Tertiary: UG vs PG split?



Student needs:

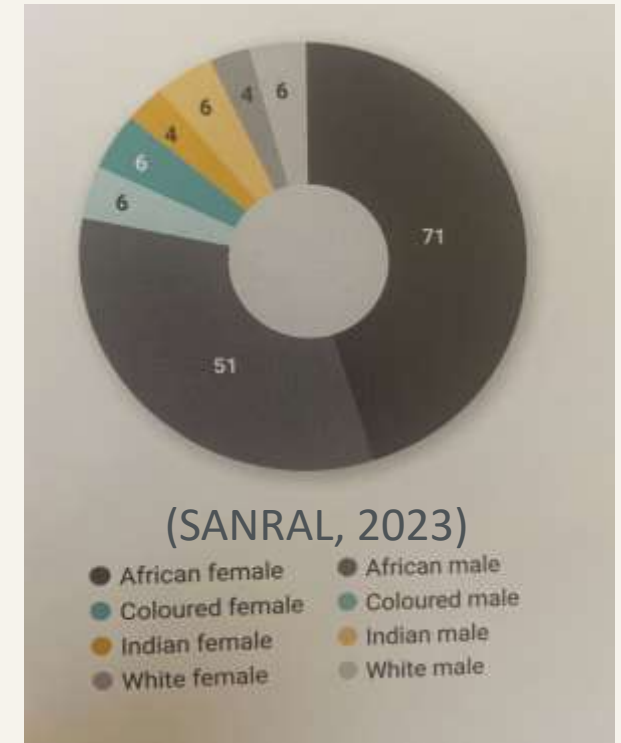
- Find funding sources
- Direct link with industry
- Identify best candidates
- Development of specific pavement knowledge

External bursaries

- MEng funding with 2 year work back period
- Traditional SA funding sources:
 - industry
 - research institutes
 - scholarships
- **Tax benefits: Section 11D R&D Incentive:** deduction of 150% expenses, and accelerated depreciation for capital expenditure

[Link to SARS info](#)

Bursary nr vs population group



To expand the number of bursaries for students, the **Universities of Technology** need to be involved

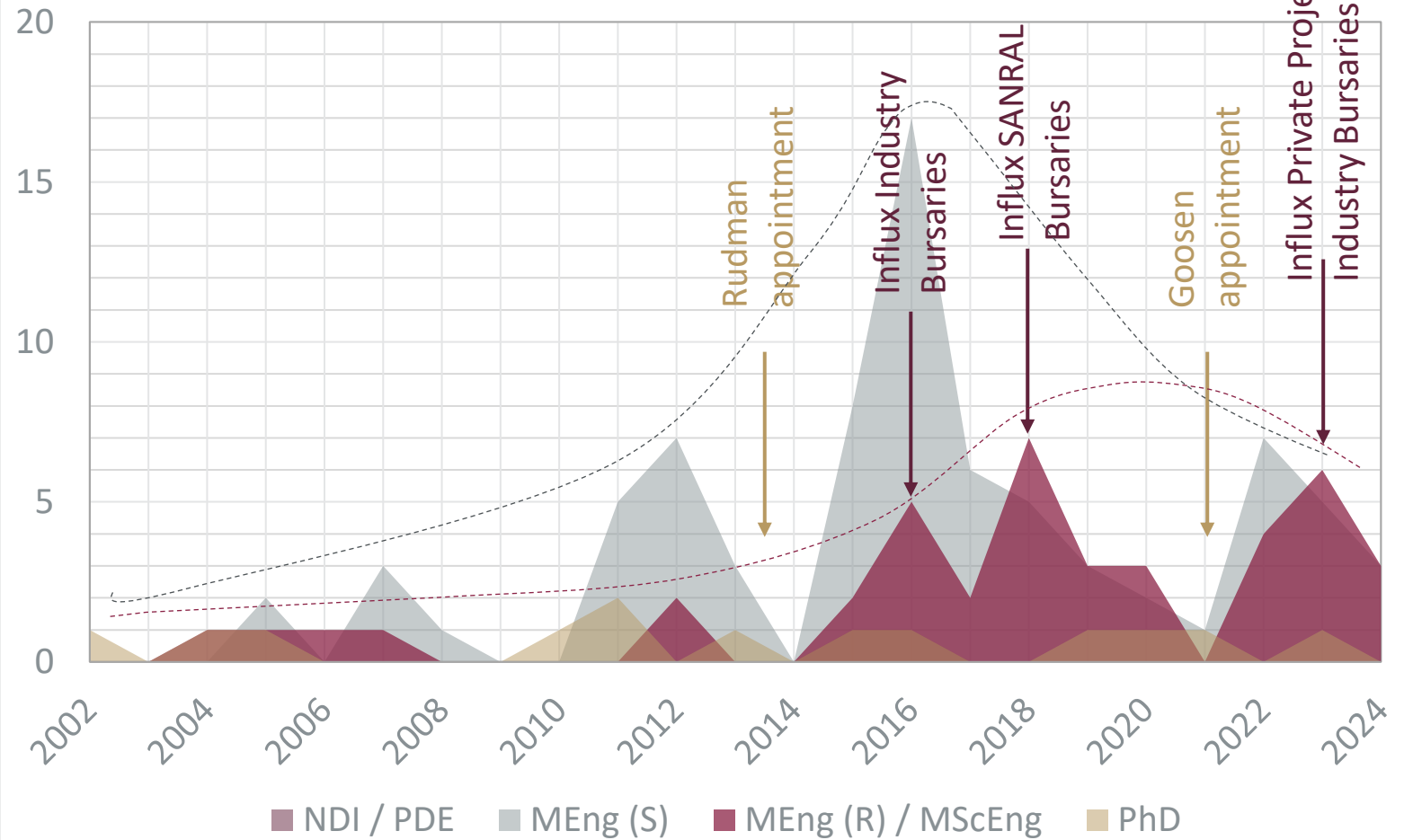
Student Development



Funding vs Student Output

**Bursaries
Create
Solutions
through
Quality
Research**

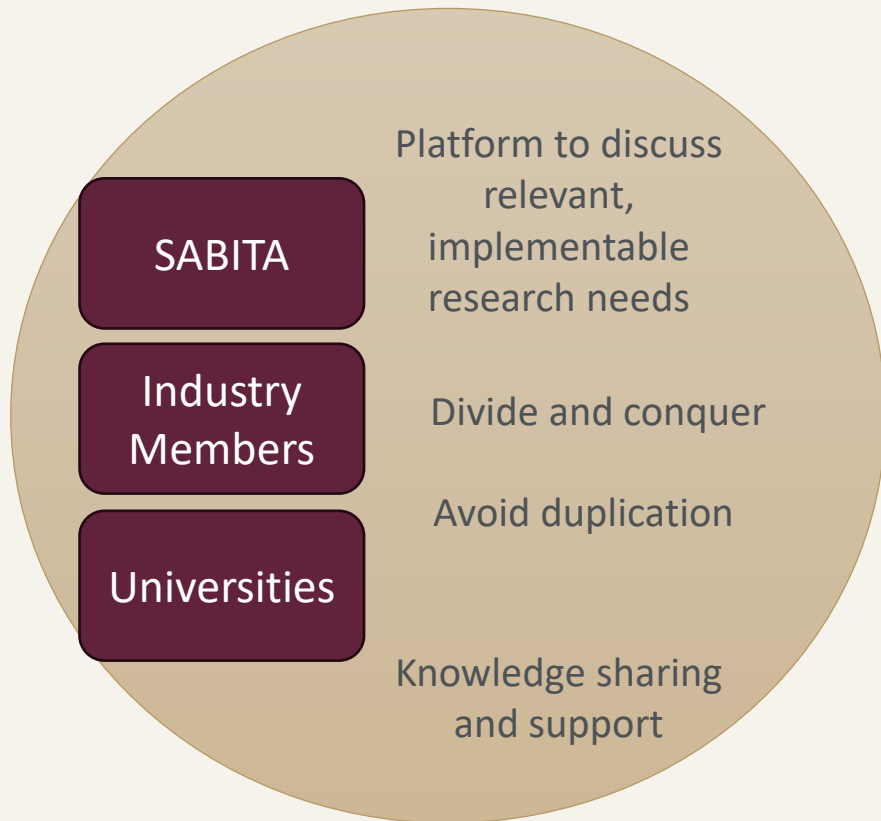
Pavement Engineering Graduates



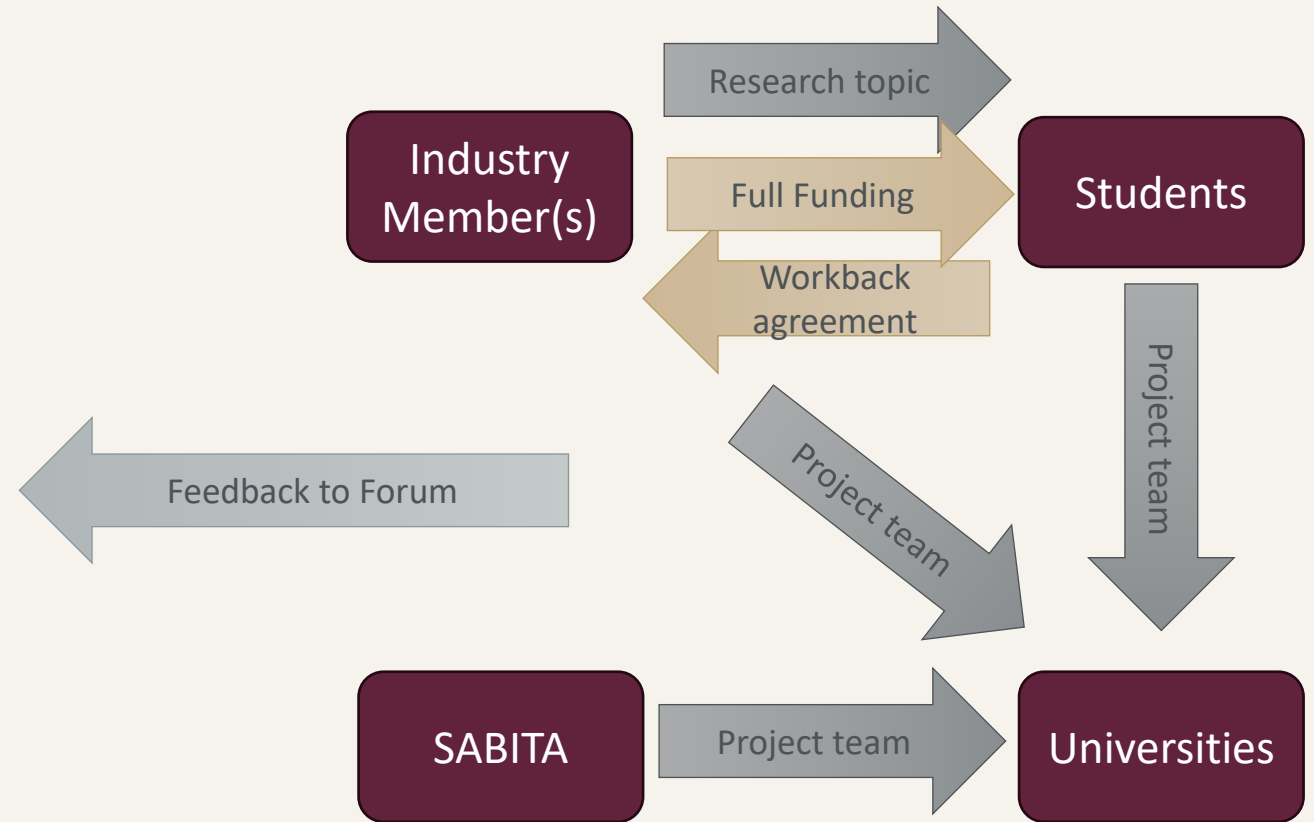
Forum Implementation

Role players
Fair access to funding
National implementation

Forum



Project



Forum Implementation

System management

Forum meetings

2 regional

1 national

Project meetings as needed

Policy Considerations

What fundamental policies need to be implemented to make the sponsorship fair to all participants?

What policies need to be implemented to make the access the researchers fair to all participants?

Expansion

Provincial: Intention to roll out Regional Forum at Provincial levels – WC, KZN, EC etc

National: Consolidated feedback regionally, Feedback research group, FORUM



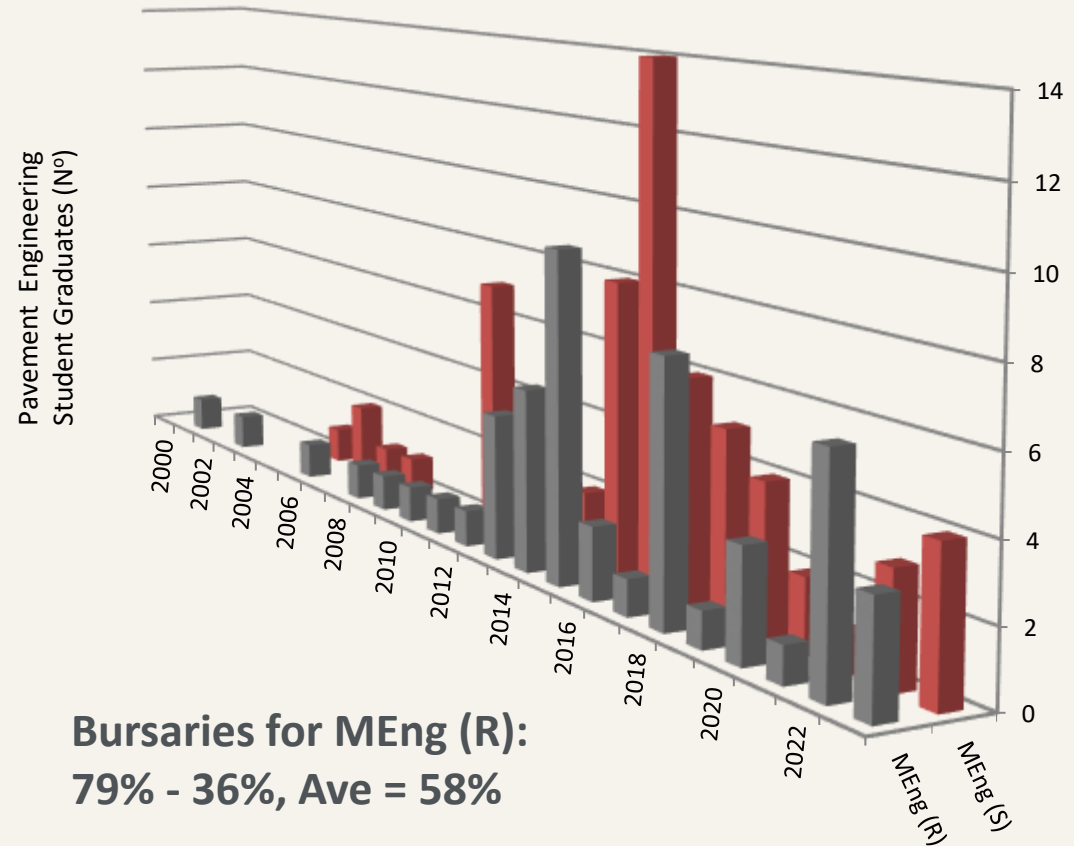
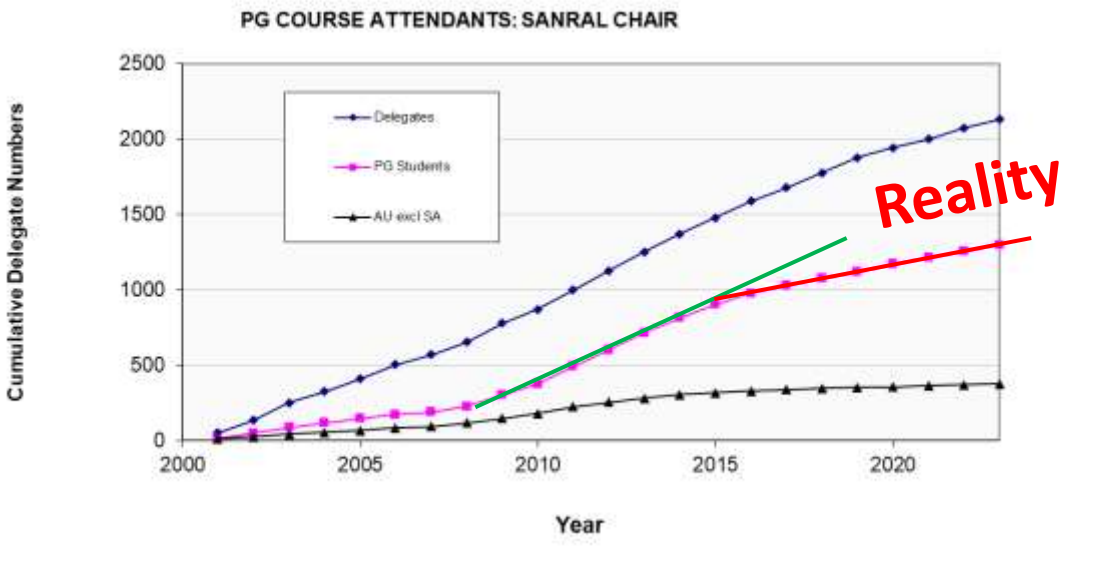
Thank you
Enkosi
Dankie



Photo by Stefan Els

Graduations from 2001 to 2023

- 9 Doctoral PhDs
- 115 Masters MEng (51 Research & 64 Structured)



Bursaries for MEng (R):
79% - 36%, Ave = 58%

Masakh'iSizwe Bursary Programme



This programme provides bursaries for Higher Education Institutes in the WC for degrees or diplomas in transport, engineering and built environment (UCT, CPUT, SU).



It prioritises financially disadvantaged learners, especially women, students with disabilities, and learners from rural communities.



The bursaries are offered on a work-back basis. You will have to work in the public service and/or partnered companies for one year for every year you have received a bursary.



It covers tuition fees, accommodation and meals (or transport), support programmes, and all prescribed books and materials.

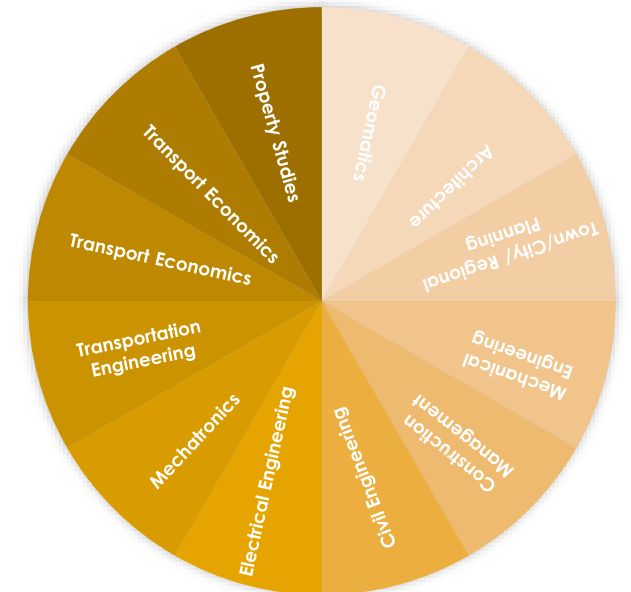
Application Information

Application information can be found here:
www.westerncape.gov.za/masakhisizwe

The closing date for applications is 31 August every year.

Application requirements: (1) South African citizen and
(2) accepted or intending to study at HEI in the WC

Bursaries Offered in the Following Disciplines



Contact details

Tel: 021 483 9545/0964

Email: DoIBursary@westerncape.gov.za

Physical address: 9 Lower Burg Str, The Box, 23rd Floor, Cape Town 8000



In response to the shortage of staff, the Branch conducts a comprehensive Engineer and Technician Recruitment and Training Programme, which facilitates the training and registration of civil engineering professionals.

The Candidate Development Programme provides newly graduated technicians, technologists and engineers who are exiting from the Masahki'Sizwe Bursary Programme with workplace experience to allow them to register as professionals with ECSA.

The workplace experience provided is designed to incorporate exposure to all phases of the project lifecycle i.e., conception, design, construction and maintenance.

102 Graduates have joined the Candidate Development Programme since 2010



Practical Skills Developed During Training:



CANDIDATE DEVELOPMENT PROGRAMME