FS Characterization: Science to Practice

WORKSHOP ON SUSTAINABLE SANITATION
GLOBAL & LOCAL PARTNERSHIPS, EXPERIENCES AND WAY AHEAD

Pollution Research Group

University of KwaZulu-Natal

Durban

South Africa

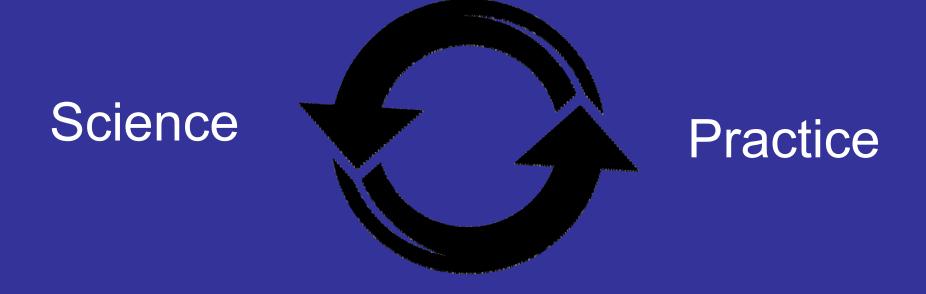
prg.ukzn.ac.za

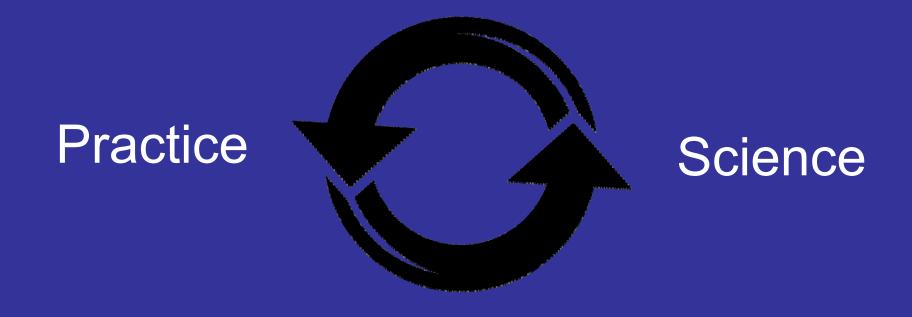
18 February 2019

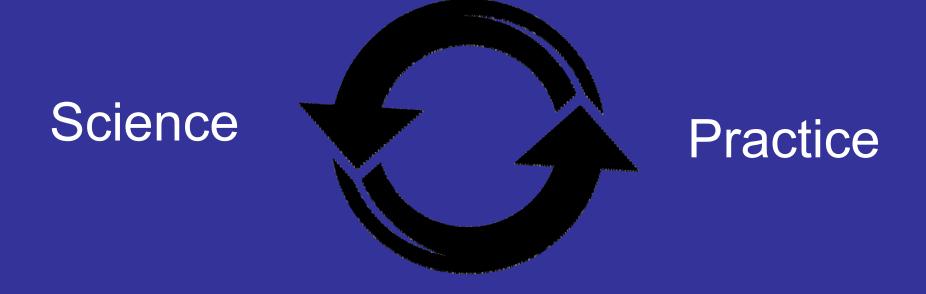






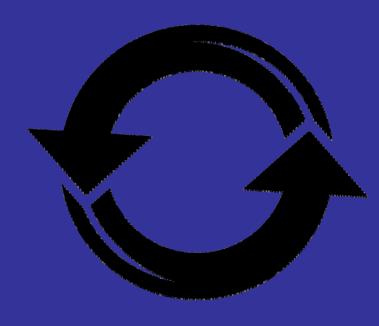






Science





Practice



Reasons for FS Characterization

- design, sizing and costing
- operational parameters
- control parameters
- revenue
- regulatory
- research and development
- reference

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FS book

Treatment Processes

- Biological
 - anaerobic
 - genetics
 - agricultural
- Reaction
 - combustion
 - oxidation
 - pyrolysis
 - precipitation

- Separation
 - membrane
 - distillation
 - particle size
 - ion exchange
 - phase diagrams
 - density
- Transport
 - rheology
 - stickiness

Minimal Laboratory

- Solids: total; ash / volatile; dissolved; settled
- Flows: mass and liquid
- Nitrogen: TKN; ammonia; nitrate
- Phosphate
- COD: total, filtered
- pH
- Pathogens: E. Coli; helminths only after full treatment

Specialised FS Laboratories

- Metagenomics research Columbia University
- Wide range of advanced techniques Eawag
- Basic teaching; specialized research
 UN-IHE
- Basic teaching; specialized research—AIT
- Training; monitoring CDD
- Accredited; training; monitoring CSE
- Specialised research; training; monitoring PRG

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Inter-Country Shipping Samples

- Safety
- Pasteurise
- Material Transfer Permit
- Ethics (human tissue)
- Export / import permit
- Specialised courier service

Conclusions

- Fit for purpose simple
- Network of specialised laboratories
- Training courses
- Assistance in setting up labs
- Inter-laboratory comparisons
- Accreditation (ISO 30500; 31800)