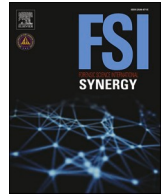


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# Forensic Science International: Synergy

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## Forensic training- bridging the gap between education and workplace

### ARTICLE INFO

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### ABSTRACT

Outreach initiatives involves mentoring students, university collaboration, and program creation to diversify roles between academia and forensic practitioners. Mixer exercises foster student-forensic scientist interaction. Emphasis is placed on improving understanding of forensic science, particularly in regions like Southern Africa, where media portrayals often distort perceptions. The outreach initiative aims to correct these misconceptions, promote evidence-based forensic education, and address research shortages through collaboration between forensic laboratories and universities. A permanent committee within the Southern Africa Regional Forensic Science Forum is proposed to facilitate cooperation and coordination. By fostering collaboration and encouraging participation in conferences and research publication, the initiative aims to meet the region's forensic scientist needs.

### Dear editors

The authors—Wickenheiser, Cadau, Muro, Whitfield, McGinnis, Murray, France, Niles, Barron, and Valentin—discuss in a recent article an exciting outreach initiative. This initiative aims to enhance the skills of current laboratory staff through activities such as presenting to and mentoring students, collaborating with universities, and creating a program that adds value to the forensic community. Additionally, it seeks to boost employee satisfaction by diversifying roles [1]. Mixer exercises are also introduced as part of the outreach initiative, to encourage meaningful interaction between students and scientists [1].

There is a critical need for forensic science in the criminal justice system, particularly in southern Africa, where complex criminal issues prevail. Forensic scientists play crucial and varied roles, encompassing, for example (albeit not limited to), digital forensics, firearm examinations, fingerprint comparisons, and DNA analysis. Public opinion of forensic science is often influenced by media portrayals which may idealise the field, creating a distorted image that does not reflect the complexity of actual forensic work. It is vital to understand that the media's portrayal oversimplifies the challenges facing forensic experts, leading to false perceptions and potential doubts about the quality of such investigations. Scholars and students, as a result, harbour a distorted impression of what a career in forensic science involves. Wickenheiser et al. [1] emphasise the opportunities created by an outreach initiative for forensic science, and the need to correct the understanding of scholars and students alike. Moreover, by adopting evidence-based practices, overcoming obstacles, and utilising practical tactics, forensic education prepares graduates for rewarding careers in the field [2].

Section 15T of the Criminal Law (Forensic Procedures) Amendment Act (Act 37 of 2013) mandates the National Commissioner of the South African Police Service (SAPS) to raise public awareness of DNA examinations and the National Forensic DNA Database of South Africa [3]. The SAPS's Forensic Services have implemented various awareness-raising initiatives targeting scholars, students, academics, and the general public.

Wickenheiser et al. (2023) propose recruiting potential applicants by approaching high school learners and tertiary students, and offering them a chance to learn about forensic careers early on in their academic journey [1]. Active engagement with forensic science during academic pursuits enables scholars or students to deepen their understanding of the profession's complexities. Research and development (R&D) operations within organisations primarily focus on applied research, making collaboration between universities and forensic services crucial. Wickenheiser et al. (2023) emphasise the benefits of closer collaboration, which include allowing students to gain experience in real-world forensic work. Tertiary qualifications should ideally include practical work which aligns with forensic laboratory methods [1]. Several South African tertiary institutions have acknowledged the need for forensic science qualifications (to address the demands of both government and private forensic laboratories) at North-West University, the University of Cape Town, the University of the Free State, the University of KwaZulu-Natal, the Vaal University of Technology, and the University of South Africa. Moreover, only a few postgraduate forensic science-related programmes are available at tertiary institutions across southern Africa [4].

To carry out internal validation studies and research, with a view to improving the adoption of novel forensic procedures in laboratories in southern Africa, we recognise the need to promote collaboration within academia. In addition, it is imperative to facilitate the hosting of regional forensic conferences and symposiums, to encourage the active participation of forensic scientists and students alike. Hosting these forensic symposiums on virtual platforms would be the optimum method for ensuring broad representation and participation.

The principal aim of these qualifications is to ensure that graduates have received adequate academic preparation, and have had some (albeit limited) experience with the methods used in the laboratories, before commencing their professional employment. Undergraduate forensic science programmes in South Africa and abroad offer students a better understanding of the field, enabling them to make more informed

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career choices. Moreover, those with degrees in forensic science have a better chance of finding employment in forensic science and related fields, than other graduates with other qualifications.

The SAPS's Forensic Services hires graduates with science degrees for various forensic examination and quality management positions. Due to the existing gap between tertiary qualifications in southern Africa and the required applied knowledge and skills related to the specific examination type, internal forensic training programmes have been developed within the SAPS. After an orientation course, newly hired forensic examiners participate in a modular in-service training programme designed for specific examination types. These programmes provide in-depth knowledge as well as the requisite skills for forensic examinations, focusing on theoretical and practical elements. Forensic examiner trainees must complete a mentorship programme before conducting independent forensic examinations. Annual proficiency tests ensure the ongoing competency of forensic analysts. Given the heavy workload, casework examinations take precedence in the laboratory, and R&D projects are frequently short on time and resources.

There needs to be more cooperation between forensic laboratories and tertiary institutions in southern Africa. Such collaboration should ideally be enhanced to ensure the ongoing relevance of tertiary qualifications. Concerns have been raised about the few scientists conducting research and publishing their findings – young African forensic scientists in particular [5], since many manuscripts are rejected due to design errors in the study, which are regrettably permanent. Prompt intervention with assistance from academia has the potential to rectify methodological errors, hence improving the calibre and acceptability of research manuscripts for publication. There is thus a need for additional initiatives to encourage participation in forensic conferences, and the publishing of manuscripts [5]. Representation in science and society is necessary to achieve scientific diversity, and to that end we propose establishing a permanent committee within the Southern Africa Regional Forensic Science Forum to include representatives from tertiary institutions, public and private forensic service providers, as well as suppliers, to facilitate cooperation and coordination. Regular meetings would ensure that forensic qualifications remain relevant, and address the region's current and emerging needs for forensic scientists. Collaborating closely with tertiary institutions – where students and forensic scientists jointly explore specific research topics – would be advantageous in terms of contributing value to the laboratory; this approach would allow tertiary institutions to ensure that the research methodologies used are scientifically well defined, thereby facilitating the publication of findings in recognised forensic and scientific journals.

## Consent and ethical approval

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**J.H. Smith:** Conceptualization, Writing – original draft. **J.S. Horne:** Supervision, Writing – review & editing.

## Declaration of competing interest

No conflict of interest to declare.

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