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## Department of Information Systems

Chris Upfold  
Head of Department

### Introduction

Despite 2020 being a challenging year, not least due to lockdown restrictions, with minimal travel opportunities and most if not all research collaboration and conferences moving online, staff and students did exceptionally well with robust research outputs.

### Postgraduates / Graduations

Six (6) students graduated at the April and October 2020 graduations with their Masters or PhD degrees.

#### MASTERS

1. **Mudzamba, Ronald Ratidzo.** Thesis: *A Cloud adoption framework for South African SMEs.*
2. **Nathoo, Dina.** Thesis: *Guidelines for the User Interface Design of Electronic Medical Records in Optometry.*
3. **Tilbury, Jack Laurie.** Thesis: *A Business Process For Blockchain-based South African Real Estate Transactions.*

#### PhD

1. **Bhana, Bhaveer.** Thesis: *Passphrase Authentication Model: Balancing Usability and Security in User Authentication.*
2. **Jordaan, Leandra.** Thesis: *Using phronesis to enact design ethnography: Methodological considerations for rebalancing socio-technical phenomena in CMS performativity.*
3. **van der Schyff, Karl Izak.** Thesis: *A Personality-based Surveillance Model for Facebook Apps.*

### Distinguished Visitors / International Visits

Professor Foster was a recipient of a South Africa-Sweden University Forum (SASUF) grant, which is an internationalisation initiative aimed at strengthening ties between Swedish and South African universities in research, education, and innovation. The successful research proposal was for a project entitled "*Understanding the design factors for diabetes information sharing when using health information kiosks: A Citizen-Centric Approach to Healthcare Management*" that was developed in collaboration with Dr Orre (Malmö University), Dr Lindroth (University of Gothenburg) and Boucher (University of Fort Hare).

Stephen Flowerday works on a project funded by the South Africa - Sweden University Forum (SASUF) under the theme - Digital technologies, big data and cybersecurity. The project's title is "Global Sustainability through Cybersecurity" and is informed by the UN Millennium Development Goals.

The four (4) researchers are Fredrik Blix, Stockholm University; Stephen Flowerday, Rhodes University; Fredrik Karlsson, Örebro University; Jacques Ophoff, University of Cape Town. Based on this project, they currently have a journal article under review.

## Significant Research Aligned Events

The following staff and students were recognised for their research awards in 2020:

1. Dr Caroline Pade-Khene, Dr Ingrid Sieborger, Percy Ngwerume and Chido Rusike - Best Paper Award at the European Conference on Information Systems (ECIS) 2020.
2. Professor Stephen Flowerday - Commerce Faculty Researcher of the Year 2020.
3. Dr Gugulethu Baduza - Best Short Paper Award at the Digital Skills 2020 Research Colloquium hosted by UNISA and NEMISA.



Dr Gugu Baduza receives her Best Short Paper Award at the Digital Skills 2020 Research Colloquium' hosted by UNISA and NEMISA.

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## PUBLICATIONS

### Peer Reviewed Non-Subsidy-Earning Journal Research Publications

**Thinyane, H.**

Gallo, M. and **Thinyane, H.** (2020) Sentinel Surveillance and Centring Prevention in Anti-Trafficking Policy and Response. *Journal of Modern Slavery*. 5 (1). p.1-24.

### Peer Reviewed Subsidy-Earning Journal Research Publications

**Bhana, B. and Flowerday, S.**

**Bhana, B. and Flowerday, S.** (2020) Passphrase and keystroke dynamics authentication: Usable security. *Computers & Security*. 96, 101925.

**Conger, S.**

**Conger, S.** (2020) The Impact of the COVID-19 Pandemic on Information Systems Management. *Information Systems Management*. 37 (4). p.327-331.

**Flowerday, S.**

Maoneke, P.B., **Flowerday, S.** and Isabirye, N. (2020) Evaluating the strength of a multilingual passphrase policy. *Computers & Security*. 92, 101746.

**Frauenstein, E.D. and Flowerday, S.**

**Frauenstein, E.D. and Flowerday, S.** (2020) Susceptibility to phishing on social network sites: A personality information processing model. *Computers & Security*. 94, 101862.

**Machiri, M. and Pade-Khene, C.**

**Machiri, M. and Pade-Khene, C.** (2020) Appropriating digital citizen engagement in resource constrained local government service delivery A case study in South Africa. *Communications in Computer and Information Science*. 1236 (242249). p.141-154.

**Pade-Khene, C.**

**Osah, J. and Pade-Khene, C.** (2020) E-government strategy formulation in resource-constrained local government in South Africa. *Journal of Information Technology & Politics*. 17 (4). p.426-451.

**Parker, H.J. and Flowerday, S.**

**Parker, H.J. and Flowerday, S.** (2020) Contributing factors to increased susceptibility to social media phishing attacks. *South African Journal of Information Management*. 22 (1), a1176.

**Read, K. and Van Der Schyff, K.**

**Read, K. and Van Der Schyff, K.** (2020) Modelling the intended use of Facebook privacy settings. *South African Journal of Information Management*. 22 (1). p.1-9.

**Renaud, K.**

Bongiovanni, I., **Renaud, K.** and Cairns, G. (2020) Securing intellectual capital: an exploratory study in Australian universities. *Journal of Intellectual Capital*. 21 (3). p.481-505.

Ferguson, R.I., **Renaud, K.**, Wilford, S. and Irons, A. (2020) PRECEPT: a framework for ethical digital forensics investigations. *Journal of Intellectual Capital*. 21 (2). p.257-290.

**Renaud, K.**, Orgeron, C., Warkentin, M. and French, P.E. (2020) Cyber Security Responsibilization: An Evaluation of the Intervention Approaches Adopted by the Five Eyes Countries and China. *Public Administration Review*. 80 (4). p.577-589.

**Renaud, K. and Prior, S.** (2020) Children's Password-Related Books: Efficacious, Vexatious and Incongruous. *Early Childhood Education Journal*. 2020. p.1-14.

Aleisa, N., **Renaud, K.** and Bongiovanni, I. (2020) The privacy paradox applies to IoT devices too: A Saudi Arabian study. *Computers & Security*. 96, 101897.

Prior, S. and **Renaud, K.** (2020) Age-appropriate password "best practice" ontologies for early educators and parents. *International Journal of Child-Computer Interaction*. 23-24, 100169.



Dr Carl Johan Orre (Malmö University, Sweden), Duane Boucher (University of Fort Hare, South Africa), Dr Tomas Lindroth (University of Gothenburg, Sweden), Professor Greg Foster (Rhodes University, South Africa).

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Dupuis, M. and Renaud, K. (2020) Scoping the ethical principles of cybersecurity fear appeals. *Ethics and Information Technology*. p.1-20.

Alahmari, S., Renaud, K. and Omoronyia, I. (2020) A model for describing and maximising security knowledge sharing to enhance security awareness. *Lecture Notes in Business Information Processing*. 381 (LNBIP2020). p.376-390.

van Schaik, P., Renaud, K., Wilson, C., Jansen, J. and Onibokun, J. (2020) Risk as affect: The affect heuristic in cybersecurity. *Computers and Security*. 90. p.1-16.

Kulyk, O., Volkamer, M., Müller, M. and Renaud, K. (2020) Towards Improving the Efficacy of Code-Based Verification in Internet Voting. *Lecture Notes in Computer Science*. 12063 (LNCS2020). p.291-309.

Alkhamis, E., Petrie, H. and Renaud, K. (2020) KidsDoodlePass: An Exploratory Study of an Authentication Mechanism for Young Children. *IFIP Advances in Information and Communication Technology*. 593. p.123-132.

Renaud, K., Johnson, G. and Ophoff, J. (2020) Dyslexia and Password Usage: Accessibility in Authentication Design. *IFIP Advances in Information and Communication Technology*. 593 (2020). p.259-268.

Sieborger, I.

Sieborger, I., Terzoli, A. and Hodgkinson-Williams, C. (2020) Evolving an Efficient and Effective Off-the-Shelf Computing Infrastructure for Rural Communities of South Africa. *Communications in Computer and Information Science*. 1236 (2020). p.63-80.

Thinyane, H.

Gallo, M., Konrad, R.A. and Thinyane, H. (2020) An Epidemiological Perspective on Labor Trafficking. *Journal of Human Trafficking*. p.1-10.

Thinyane, H. and Sasseti, F. (2020) Towards a Human Rights-Based Approach to AI: Case Study of Apprise. *Communications in Computer and Information Science*. 1236. p.33-47.

Thinyane, H. and Sasseti, F. (2020) Digital Technology for Unmasking Labour Exploitation in Supply Chains. *IFIP Advances in Information and Communication Technology*. 601. p.267-280.

Tsegaye, T.A. and Flowerday, S.

Tsegaye, T.A. and Flowerday, S. (2020) A Clark-Wilson and ANSI Role-Based Access Control Model. *Information and Computer Security*. 28 (3). p.373-395.

Van Der Schyff, K. and Flowerday, S.

Van Der Schyff, K., Flowerday, S. and Lowry, P.B. (2020) Information privacy behavior in the use of Facebook apps: A personality-based vulnerability assessment. *Heliyon*. 6, e04717.

Van Der Schyff, K., Flowerday, S. and Furnell, S. (2020) Duplicitous social media and data surveillance: An evaluation of privacy risk. *Computers & Security*. 94, 101822.

Van Der Schyff, K., Flowerday, S. and Furnell, S. (2020) Privacy risk and the use of Facebook Apps: A gender-focused vulnerability assessment. *Computers & Security*. 96, 101866.

Van Der Schyff, K., Flowerday, S. and Patel, N.

Van Der Schyff, K., Flowerday, S., Kruger, H. and Patel, N. (2020) Intensity of Facebook use: a personality-based perspective on dependency formation. *Behaviour & Information Technology*. DOI /10.1080/0144929X.2020.1800095.

Wright, G.

Betts, A. and Wright, G. (2020) 200 Years Since the Birth of Nursing Informatics? *Studies in Health Technology and Informatics*. 272 (2020). p.28-32.

Wright, G. and Flowerday, S.

Tsai, C.H., Eghdam, A., Davoody, N., Wright, G., Flowerday, S. and Koch, S. (2020) Effects of Electronic Health Record Implementation and Barriers to Adoption and Use: A Scoping Review and Qualitative Analysis of the Content. *Life*. 10 (327). p.1-27.

## Peer Reviewed Proceedings

Baduza, G. and Pade-Khene, C.

Baduza, G. and Pade-Khene, C. Up-Scaling ICT for Development Projects in Growing the Digital Economy. *Digital Skills Colloquium & Postgraduate Symposium 2020*. Birchwood Hotel, Gauteng. South Africa. March 2020.

Flowerday, S.

Flowerday, S., Maoneke, P.B. and Warkentin, M. Evaluating the Usability of a Multilingual Passphrase Policy. *26th Americas Conference on Information Systems, AMCIS 2020*. Virtual Conference. United States. August 2020.

Pade-Khene, C. and Sieborger, I.

Pade-Khene, C., Sieborger, I., Ngwerume, P. and Rusike, C. Enabling Digital Social Accountability Monitoring of Adolescent Sexual Reproductive Health Services: MobiSAFAIDS. *28th European Conference on Information Systems (ECIS) 2020: Liberty, Equality, and Fraternity in a Digitizing World*. Online, HEM Business School. Morocco. June 2020.