

Natalia Valentina Flores Quiroz
Fire Safety Engineer

+27 609454435

fq.natalia@gmail.com

www.linkedin.com/in/natalia-flores-guiroz

<https://www.researchgate.net/profile/Natalia-Flores-Quiroz-2>

EDUCATION

2019 – 2021 Stellenbosch – SA	PhD Student Stellenbosch University PhD Topic “Forensic Investigations for Informal Settlement Fires”
2016 – 2018 Ghent – Belgium	Master of Science in Fire Safety Engineering (cum laude) Ghent University Master's Dissertation: “Evacuation Analysis of the Kiss Nightclub Disaster”. Grade 17/20.
July – Dec. 2014 Santiago – Chile	Diploma in Fire Design University of Chile
2003 – 2009 Santiago – Chile	Electrical Engineering University of Santiago of Chile Dissertation: “Fire Protection System Electrogas Plant”. Grade 6.9/7.0.

RESEARCH & PUBLICATIONS

Research Interests and Experience

Researcher with experience in fire safety engineering. She holds a M.Sc. in Fire Safety Engineering from Ghent University and completed her PhD at Stellenbosch University, South Africa, in the Fire Engineering Research Unit (FireSUN). Her PhD focused on Fire investigations in Informal Settlements where she reconstructed past incidents in order to understand the fire spread, the residents' behaviour and the firefighters' operations. In 2020 she received the Sheldon Tieszen Student Award for her paper “Developing a Framework for Fire Investigations in Informal Settlements” and the SFPE Student Research Grant. She is currently a postdoctoral researcher at Stellenbosch University, where one of the main research areas are reconstruction of incidents in low-income settlements (i.e., informal settlements, refugee camps) and wildland urban interface (WUI) fires.

Journal Papers

1. **N. Flores Quiroz**, R. Walls, A. Cicione. Developing a Framework for Fire Investigations in Informal Settlements, Fire Saf. J. 120 (2021) 103046. doi:10.1016/j.firesaf.2020.103046.
2. **N. Flores Quiroz**, R. Walls, A. Cicione, M. Smith. Fire incident analysis of a large-scale informal settlement fire based on video imagery, Int. J. Disaster Risk Reduct. 55 (2021). doi:10.1016/j.ijdrr.2021.102107.
3. **N. Flores Quiroz**, R. Walls, A. Cicione, M. Smith, Application of the Framework for Fire Investigations in Informal Settlements to large-scale real fire events – Consideration of

- fire formation patterns, fire spread rates and home survivability, Fire Saf. J. 125 (2021). doi:10.1016/j.firesaf.2021.103435.
4. **N. Flores Quiroz**, R. Walls, A. Cicione. Towards Understanding Fire Causes in Informal Settlements Based on Inhabitant Risk Perception, Fire. 4 (2021). doi:https://doi.org/10.3390/fire4030039.
 5. A. Cicione, R. Walls, Z. Sander, **N. Flores**, V. Narayanan, S. Stevens, D. Rush. The Effect of Separation Distance Between Informal Dwellings on Fire Spread Rates Based on Experimental Data and Analytical Equations, Springer US, 2021. doi:10.1007/s10694-020-01023-8.
 6. A. Cicione, R. Walls, S. Stevens, Z. Sander, **N. Flores**, V. Narayanan, D. Rush. An Experimental and Numerical Study on the Effects of Leakages and Ventilation Conditions on Informal Settlement Fire Dynamics. Fire Technol (2021). https://doi.org/10.1007/s10694-021-01136-8.
 7. A. Cicione, R. Walls, **N. Flores**, J. Pretorius J., Z. Sander, V. Narayanan, S. Stevens, L. Gibson, D. Rush. An experimental study of the fire dynamics of double storey informal settlement dwellings. Under review.
 8. **N. Flores Quiroz**, R. Walls, A. Moran, A. van Straten, R. van den Dool, P. Ryan, and R. Heydenrych. Analysis of homes and structures damaged or destroyed in the 2017 Knysna fires disaster, South Africa. Under review.

Conference Papers

1. R. Walls, C. Kahanji, **N. Flores Quiroz**, A. Cicione, L Gibson. M.Beshir, Y. Wang, D. Rush. Large-scale informal settlement experiment considering fire spread under opposed wind flow conditions. AOSFST 2021 – 12th Asia-Oceania Symposium on Fire Science and Technology.

CONSULTING EXPERIENCE

2012 - 2016 FDA INGENIEROS

Project Leader / Supervisor Electrical-Instrumentation Department

Project Leader of the projects related to Fire Protection in an Engineering Company focused on the development of multidisciplinary engineering solutions for Mining and other Industries. In charge of ensuring the technical development compliance and client satisfaction.

To plan for and coordinate the activities of the Electrical-Instrumentation Department.

Project Engineer

In charge of the developing of fire protection systems engineering, in all its stages.

2011 - 2012 FDA INGENIEROS

Electrical-Instrumentation Engineer

In charge of the developing of electrical and instrumentation engineering, in all its stages.

2010 – 2011 PROMINEL

Junior Engineer

COURSES AND TRAINING

February 2015 Miami, FL – USA	Pre-Engineered Wet Chemical <i>Kidde Fire Systems</i>
February 2015 Miami, FL – USA	Detection, Alarm & Controls <i>Kidde Fire Systems</i>
November 2014 Santiago – Chile	Standard for Fire Prevention and Control in Metal/Nonmetal Mining and Metal Mineral Processing Facilities NFPA – 122 <i>National Fire Protection Association</i>
June 2014 Santiago – Chile	Life Safety Code NFPA – 101 <i>National Fire Protection Association</i>
March 2014 Santiago - Chile	National Fire Alarm and Signaling Code NFPA – 72 <i>National Fire Protection Association</i>
October 2013 Santiago – Chile	Standard for Water Spray Fixed Systems for Fire Protection and Standard for the Installation of Private Fire Service Mains and their Appurtenances NFPA – 15/24 <i>National Fire Protection Association</i>

COMPUTER SKILLS

Microsoft Office	: Advanced
Microsoft Project	: Medium
AutoCad	: Basic
B-RISK	: Basic
buildingEXODUS	: Medium
SMARTFIRE	: Basic
FDS	: Basic

LANGUAGE SKILLS

English	: Advanced (TOEFL 100 points)
Spanish	: Native

REFERENCES

Richard Walls	Lecturer at Stellenbosch University +27 723724096 rwalls@sun.ac.za
Ed Galea	Director Fire Safety Engineering Group, Greenwich University. +44 2083318706 e.r.galea@gre.ac.uk
Bart Merci	Full Professor at Ghent University, Department of Fluid Mechanics, Heat and Combustion. Coordinator of MFSE program. +32 092643314 Bart.Merci@UGent.be