

VELAPI C. THIPE

Mvcthipe@gmail.com | [in LinkedIn](#) | [Phone](#) +1 (573) 530-7651 | [WhatsApp](#) +1 (819) 934-1140

Nationality: South African

Date of birth: June 25, 1990

Address: 911 Ashland Road, Columbia, MO 65201, United States

EDUCATION:

University of Missouri, United States - MBA (Life Sciences, Innovation & Entrepreneurship)	Aug 2023 - May 2025
University of Missouri, United States – Ph.D. in Chemistry (Fulbright Scholarship Recipient)	Aug 2015 - May 2019
University of Johannesburg, South Africa - MSc in Nanosciences	Feb 2013 - Dec 2014
University of Johannesburg, South Africa - BSc in Biotechnology	Feb 2009 - Dec 2012

PROFESSIONAL EXPERIENCE:

Postdoctoral Fellow – University of Missouri, United States	Oct 2021- hitherto
<ul style="list-style-type: none">Led R&D of nanomedical technologies for biomedical applications (e.g., cancer therapy) and imaging.Managed cross-functional student teams and experimental design for translational medicine.Collaborate with industry partners on translational research and technology transfer.Train and mentor students in advanced technologies and experimental methods.	
Research Consultant – ScavMedical, Brazil	Aug 2020- Oct 2021
<ul style="list-style-type: none">Developed bioactive respiratory filters for ICU/OR; project led to patented technology.Principal inventor of Youfilter Ag® productCollaborated across R&D, regulatory, and clinical domains for product commercialization.	
Postdoctoral Fellow – Instituto de Pesquisas Energéticas e Nucleares (IPEN), Brazil	Feb 2020- Oct 2021
<ul style="list-style-type: none">Led R&D of next-generation nanomaterials for combinational (nanoimmunotherapeutic and radiotherapeutic agents) cancer therapy.	
Research Consultant – University of Pretoria, South Africa	Sep 2019- Nov 2019
<ul style="list-style-type: none">Strategic consulting on green nanotechnology development and commercializationTraining and capacity building for emerging technology adoption	
Research Analyst – Coulter Biomedical Accelerator Program, United States	Sep 2019- Nov 2019
<ul style="list-style-type: none">Strategic consulting on green nanotechnology development and commercializationTraining and capacity building for emerging technology adoption	

PATENTS:

- [US20250194605A1](#): Biocidal Heat and Moisture Exchanger Filter (Pending)
- [US20250205162A1](#): Systems and methods for small molecule encapsulation (Pending)

SKILLS

- Core:** Strategic thinking, business development, communication, leadership, project management, cross-cultural collaboration, data-driven decision-making, grant/patent writing, commercialization
- Technical:** Data analytics, LIMS, R&D methods, Microsoft Office, QC systems, scientific instrumentation

LEADERSHIP & HONORS

- Rotary Club of Columbia Board Member | 2022 – hitherto
- Lindau Nobel Laureate Meeting Alumnus | 2023
- President, MU Fulbright Organization | 2016 – 2018
- [TEDx Speaker](#): Ubuntu and Social Healing | 2017
- Fulbright Scholar | 2015 – 2019

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EDUCATION:

University of Missouri Columbia, MO
Trulaske College of Business May 2025

Master of Business Administration (MBA)

Certification: Life Science, Innovation and Entrepreneurship
GPA: 3.6/4.0

University of Missouri Columbia, MO
Department of Chemistry May 2019

Doctor of Philosophy (Ph.D.) in Chemistry

GPA: 3.6/4.0
Dissertation: Resveratrol conjugated palladium nanoparticles for targeted prostate cancer therapy
Advisor: Professor Kattesh V. Katti

University of Johannesburg Johannesburg, GP, South Africa
Department of Applied Chemistry Dec 2014

Master of Science (MSc) in Nanoscience

GPA: 3.0/4.0
Dissertation: The enhancement of the activity of commercial anti-fungal agents using *Aspalathus linearis* synthesized gold nanoparticles
Advisor: Professor Patrick B. Njobeh

University of Johannesburg Johannesburg, GP, South Africa
Department of Biotechnology Dec 2012

Bachelor of Science (BSc) in Biotechnology

GPA: 3.7/4.0
Dissertation: The screening and quantification of ochratoxin A in commercial coffee from South Africa
Advisor: Professor Patrick B. Njobeh

RESEACH EXPERIENCE:

University of Missouri Columbia, MO
Postdoctoral fellow, Department of Radiology, School of Medicine Oct 2021 – Present

- Research and development activities related to the design, fabrication, small/large scale production of various types of nanoparticles for use in molecular imaging, therapy, and related biomedical applications.

Nuclear and Energy Research Institute (IPEN) São Paulo, SP, Brazil
Postdoctoral fellow, Center of Chemistry and Environment Feb 2020 – Oct 2021

- Smart Immunotherapeutic gold and palladium nanoparticles functionalized with immunomodulatory proteins (Mangiferin, Resveratrol, Piceatannol, Naringin, Silibinin, and Astringin) and their use as radiosensitizers for tumor ablation therapy.

University of Missouri

Ph.D, Department of Chemistry

Columbia, MO

Aug 2015 – May 2019

- Palladium nanoparticles encapsulated with resveratrol-derived phenols and polyphenols (Res-PdNPs) for targeted prostate cancer therapy. Res-PdNPs' immunomodulatory properties indicate that it targets NF- κ B, thus providing novel treatment avenues in cancer and a variety of inflammatory disorders.
- The immunomodulatory properties of this nanoparticle have been validated by its exceptional therapeutic effectiveness. This was attributed to the high corona of resveratrol-derived phenols and polyphenols on the PdNPs, which enabled efficient increased delivery of resveratrol with a high bioavailability, an advantage in tumor treatment.

University of Johannesburg

MSc, Department of Applied Chemistry

Johannesburg, GP, South Africa

Feb 2013 – Dec 2014

- Optimization of the antifungal activity of several antifungal agents using gold nanoparticles (AuNPs) synthesized through green chemistry. This project reports the environmentally friendly synthesis of gold nanoparticles (AuNPs) using *Apparatus Linearis* tea leaves, which were then used to optimize the antifungal activity of several commercial antifungal discs.
- AuNPs were immobilized on the discs as shown by SEM images. Antifungal findings showed that AuNPs substantially ($p < 0.001$) improved the antifungal activity of antibiotic discs against the investigated fungi. As a result, these AuNPs can be vital in the development of fungicidal medicines for medicinal and veterinary purposes.

University of Johannesburg

BSc, Department of Biotechnology

Johannesburg, GP, South Africa

Feb 2009 – Dec 2011

- The screening and quantification of ochratoxin A in commercial coffee from South Africa. The purpose of the study was to assess the quality control of commercial coffee in South Africa, ranging from high-end to low-end brands. To screen and quantify the level of ochratoxin A (OTA), and the findings showed that high-priced coffee was free of OTA, while low-priced coffee included some level of OTA but was still within the regulatory accepted levels. This was accomplished via good manufacturing practices.

WORK AND TEACHING EXPERIENCE:

University of Missouri

Teaching, Department of Radiology, School of Medicine

Columbia, MO

Oct 2021 – Present

- Teaching and training students in experimental nanomedicine in PHYSCS 4190/9090-05: Physics and Chemistry of Materials course. Physics and Chemistry of Materials is a 3 credit hours course offered every spring semester for students from Physics, Chemistry, Engineering and Medical Departments and consists of lectures, laboratory demonstrations, two mid-term and one final exam.

ScavMedical

Research Consultant,

Jundiaí – SP, Brazil

Aug 2020 - Oct 2021

- Development and manufacture bioactive heat and moisture exchanger (HME) filters and breathing system filters for use in the operating room (OR), intensive care unit (ICU), and other clinical settings to protect patients from coronavirus infection and nosocomial cross-contamination infections caused by microorganisms such as bacteria, fungi, yeasts, and viruses during tracheal intubation. The project has resulted in a patent ([BR 102021009290-4 A2/US20250194605A1](#)) and a biocidal activity heat and moisture exchanger product ([HME Youfilter Ag®](#)) fast-tracked to assist combat the burden of COVID-19 in Brazil and South America.

Nuclear and Energy Research Institute (IPEN)

Postdoctoral fellow, Center of Chemistry and Environment

São Paulo, SP, Brazil

Feb 2020 – Oct 2021

- Teaching and supervising students in green chemistry with emphasis in synthesizing nanoparticles using immunomodulatory phytochemicals for target specific cancer therapy.

University of Pretoria Pretoria, GP, South Africa

Research Consultant, Department of Medicinal Plant Science

Sep 2019 – Nov 2019

- Training and supervising honors, masters, doctoral and postdoctoral students/fellows with the development of nanomaterials through Green Nanotechnology.

University of Johannesburg

Associate Research Scientist, Department of Food and Biotechnology

Johannesburg, GP, South Africa

Jun 2019 – Aug 2019

- Writing research grants and proposals. Assisting students (Honors, Masters, and Doctoral) with their research work and prepping them for the next step of their careers through securing opportunities locally and internationally.

University of Missouri

Lab manager, Department of Radiology, School of Medicine

Columbia, MO

Jan 2018 – May 2019

- Teaching and training both undergraduates and graduates' students from different countries and different universities within the United States would be particularly beneficial to this position.

University of Missouri

Research assistant, Coulter Translational Partnership

Columbia, MO

Aug 2018 – Dec 2018

- Sure Burn Project: Real-Time Percutaneous Tumor Ablation Guidance Software. A percutaneous ablation guiding software that aids in intraprocedural decision-making by delivering real-time ablation zone calculation superimposed on a high-resolution computed tomography (CT) image cube. The software enables the physician to see CT images collected during the operation and to label the ablation probe with two mouse clicks to calculate the probe's position and orientation in the three-dimensional CT image. This enhances patient precision healthcare by minimizing the need for repeated interventions and the risk of morbidity due to improper probe placement. The program requires little training because to its intuitive graphical user interface.

The South African Breweries (SAB) Limited

Brewing technician operator, Brew House

Alberton, GP, South Africa

Jan 2015 – Aug 2015

- Operating the brewery and related process areas, conduct quality control checks and analyses, and perform maintenance and asset care operations in support of the Brewing Technician Artisan. Contributing to the resolution of problems and initiating remedial action in the lowest possible time frame.

The South African Breweries (SAB) Limited

Laboratory technician, Quality Assurance Department

Alberton, GP, South Africa

Jan 2010 – Dec 2012

Conducting a variety of analyses in both the analytical and microbiological laboratories, including limit of extract, alpha-glucan, isohumulones, cross-blends, foams, and free amino-nitrogen, water analysis (calcium, caustic, and acid strengths, dechlorinated water), aseptic micro sampling, and yeast and cell count. High level of competency in the use of a laboratory information management system (LIMS) for reporting results and participation in laboratory excellence initiatives such as 5S cleaning system, calibration, usage, and maintenance of laboratory equipment, including Ultra High-Performance Liquid Chromatography (UHPLC), as well as training new students in the company.

PATENTS:

- Biocidal heat and moisture exchange filter, method for preparing a biocidal heat and moisture exchange filter, and use of silver nanoparticles. **United States Patent Application Serial No. [US20250194605A1](#)**. Status: Pending

Inventor(s): **Velaphi Clement Thipe**, Jorge Gabriel dos Santos Batista, Ademar Benevolo Lugao, Hernan Cortes Gomez, Raphael Gomes Scavone

- Systems and Methods for Small Molecule Encapsulation. **United States Patent Application Serial No. [US20250205162A1](#)**. Status: Pending

Inventor(s): Kattesh V. Katti, Alice Raphael Karikachery, Kavita K. Katti, **Velaphi C. Thipe**, Alton Michael Chesne, Udaiyan Jatar

- Filled a **provisional patent US Application: 63/651,593** entitled “*Gold Nanoparticle Embedded Combinatorial Nano-Ayurveda for Immunoboosting, Immunomodulation and Prophylactic Objectives in Cancer and Various Inflammatory Diseases Treatment*” was filed on May 24, 2024”

Inventor(s): Kavita K. Katti, Kattesh V. Katti, **Velaphi C. Thipe**, Alice Raphael Karikachery

PUBLICATIONS:

Articles

1. Temitope R Fagbohun, Oluwasola A Adelusi, Oluwafemi Ayodeji Adebo, Clarence Yah, Velaphi C Thipe, Kattesh V Katti, Patrick B Njobeh. Revolutionizing Food Safety: A Systematic Review of Nanotechnology-Based Aflatoxin Detection (2010–2023). *J. Drug Deliv. Sci. Technol.* 19. **2026**. <https://doi.org/10.2147/NSA.S558176>
2. Tanyaradzwa Tiandra Dembetembe, Danielle Twilley, Jacqueline Maphutha, Marco Nuno De Canha, **Velaphi Clement Thipe**, Vusani Mandiwana, Michel Lonji Kalombo, Rirhandzu Rikhotso, Suprakas Sinha Ray, Namrita Lall, Quenton Kritzing. *Gunnera perpersa L.* - mediated gold nanoparticles with enhanced anti-gonococcal activity. *J. Drug Deliv. Sci. Technol.* 117:107977. **2026**. <https://doi.org/10.1016/j.jddst.2026.107977>
3. Alice Raphael Karikachery, Kavita K Katti, **Velaphi C Thipe**, Prajna Hegde, Deepa Prakash, Anantkumar Hegde, Alton Michael Chesne, Kattesh V Katti. Green Nanotechnology and Phytochemical Mediated Production of Ketone Encapsulated Protein Nanoparticles—in vitro and in vivo Bioavailability Investigations. *Nanotechnology, Science and Applications*, 18, 661–685. **2026**. <https://doi.org/10.2147/NSA.S536454>
4. Richard J Bloomer, Alice Raphael Karikachery, **Velaphi C Thipe**, Kavita K Katti, Kattesh V Katti, MR Harsha, Vaidy Vaidyanathan, Caleb M Schmidt, Michael A Schmidt. Attenuation of Blood Glucose by Ketone Monoesters in Healthy Male Sprague Dawley Rats in Response to a Standard Oral Glucose Tolerance Test. *Recent Progress in Nutrition*. **2025**. <http://dx.doi.org/10.21926/rpn.2503014>
5. **Velaphi C. Thipe**, Alice Raphael Karikachery, Kavita Katti, Kattesh V. Katti. Immunomodulatory and tumor-targeting palladium nanoparticles functionalized with resveratrol via green nanotechnology: synthesis, mechanisms, and in vivo therapeutic evaluation. *J. Mater. Chem. B*, **2025**. <https://doi.org/10.1039/D5TB00620A>
6. Tamer M Sakr, **Velaphi C Thipe**, Kavita K Katti, Lisa Watkinson, Terry Carmack, Charles J Smith, Cathy Cutler, Prajna Hegde, Anantkumar Hegde, Ademar B Lugão, Kattesh V Katti. Immunomodulatory green nanomedicine production, tumor cellular targeting, in vivo biodistributions and preclinical therapeutic efficacy investigations of resveratrol-functionalized gold and theranostic ¹⁹⁸gold nanoparticles. *J. Mater. Chem. B*, **2025**.

<https://doi.org/10.1039/D5TB00815H>

7. Aryel H Ferreira, Fábio LN Marques, Caroline C Real, **Velaphi C Thipe**, Lucas F Freitas, Caroline SA Lima, Larissa Estessi de Souza, Mara S Junqueira, Daniele de Paula Faria, Gustavo HC Varca, Ademar B Lugão, Kattesh V Katti. Green Nanotechnology Through Papain Nanoparticles: Preclinical *in vitro* and *in vivo* Evaluation of Imaging Triple-Negative Breast Tumors. *Nanotechnol Sci Appl*. **2024**. 17, 211–226. <https://doi.org/10.2147/NSA.S474194>.
8. **Velaphi C Thipe**, Nya Hall, Amoolya Pandurangi, Samuel Ajayi, Prosper Emeh, Iti Gauttam, Rania Ghamgui, Fatima Hameedat, Sihem Khelil, Nhu Ky Ly, Mahmoud Salim, Anum Shahid Waleed, Prajna Hegde, Vrushali Hegde, Deepa Prakash, Ilaadevi Hegde, Kavita Katti, Alice Raphael Karikachery, Emilie Roger, Anne Landreau, Kattesh V Katti. Nano-Ayurvedic Medicine Approaches Using *Ginkgo biloba*-Phytochemicals Functionalized Gold Nanoparticles Against Breast Cancer. *Nanotechnol Sci Appl*. **2024**. 17, 189–210. <https://doi.org/10.2147/NSA.S478533>.
9. Marizé Cuyler, Danielle Twilley, **Velaphi C Thipe**, Vusani Mandiwana, Michel L Kalombo, Suprakas S Ray, Rirhandzu Shamaine Rikhotso-Mbungela, Arno Janse van Vuuren, Will Coetsee, Kattesh V Katti, Namrita Lall. Antihistamine and Wound Healing Potential of Gold Nanoparticles Synthesized Using *Bulbine frutescens* (L.) Willd. *Nanotechnol Sci Appl*. **2024**. 17, 59–76. <https://doi.org/10.2147/NSA.S445116>.
10. Adriana S Rodrigues, Jorge GS Batista, Murilo ÁV Rodrigues, **Velaphi C Thipe**, Luciene AR Minarini, Patricia S Lopes, Ademar B Lugão. Advances in silver nanoparticles: a comprehensive review on their potential as antimicrobial agents and their mechanisms of action elucidated by proteomics. *Front. Microbiol*. **2024**; <https://doi.org/10.3389/fmicb.2024.1440065>.
11. Pharidah Rajan Ibrahim Omar Sundi, **Velaphi C Thipe**, Mohamed Abdullahi Omar, Temitope Isaac Adelusi, Jalene Gedefa, Olamide T Olaoba. Preclinical human and murine models of hepatocellular carcinoma (HCC). *Clin. Res. Hepatol. Gastroenterol*. **2024**; 102418. <https://doi.org/10.1016/j.clinre.2024.102418>.
12. Tenille Esmear, Danielle Twilley, **Velaphi Clement Thipe**, Kattesh V. Katti, Vusani Mandiwana, Michel Lonji Kalombo, Suprakas Sinha Ray, Rirhandzu Rikhotso-Mbungela, Venugopal Reddy Bovilla, SubbaRao Madhunapantula, Lenka Langhanshova, Catarina Roma-Rodrigues, Alexandra R. Fernandes, Pedro Baptista, Silvestre Hlati, Judey Pretorius, Namrita Lall. Anti-inflammatory and antiproliferative activity of *Helichrysum odoratissimum* sweet. Against lung cancer. *S Afr J Bot*. **2024**; 525-538. <https://doi.org/10.1016/j.saib.2024.01.056>.
13. **Velaphi C. Thipe**, Alice Raphael Karikachery, Pinar Çakılkeya, Umer Farooq, Hussein H.Genedy, Norraseth Kaeokhamloed, Dieu-Hien Phan, Refaya Rezwan, Gözde Tezcan, Emilie Roger, Kattesh V. Katti. Green nanotechnology—An innovative pathway towards biocompatible and medically relevant gold nanoparticles. *J Drug Deliv Sci Technol*. **2022**; 1-31. <https://doi.org/10.1016/j.jddst.2022.103256>
14. Isa A. Lambrechts, **Velaphi C. Thipe**, Kattesh V. Katti, Vusani Mandiwana, Michel Lonji Kalombo, Suprakas Sinha Ray, Rirhandzu Rikhotso, Arno Janse van Vuuren, Tenille Esmear, Namrita Lall. Targeting Acne Bacteria and Wound Healing In Vitro Using *Plectranthus aliciae*, Rosmarinic Acid, and Tetracycline Gold Nanoparticles. *Pharmaceuticals* **2022**, 15(8), 933; <https://doi.org/10.3390/ph15080933>
15. Daniel T. Lebre, **Velaphi C. Thipe**, Marycel E. B. Cotrim, and José Oscar V. Bustillos. Use of Sugar Cane Bagasse as Solid Extraction Phase Sorbent to Analyze Hormones from Industrial Effluent. *ACS Omega* **2022**, 7, 12, 10069–10076. <https://doi.org/10.1021/acsomega.1c06064>
16. Baljeet Seniwal, **Velaphi C. Thipe**, Sukhvir Singh, Telma C. F. Fonseca, Lucas Freitas de Freitas. Recent Advances in Brachytherapy Using Radioactive Nanoparticles: An Alternative to Seed-Based Brachytherapy. *Front. Oncol*. 2021; 11:766407. <https://doi.org/10.3389/fonc.2021.766407>
17. Theeranan Tangthong, Thananchai Piroonpan, **Velaphi C. Thipe**, Menka Khoobchandani, Kavita Katti, Kattesh V Katti, and Wanvimol Pasanphan. Water-Soluble Chitosan Conjugated DOTA-Bombesin Peptide Capped Gold Nanoparticles as a Targeted Therapeutic Agent for Prostate Cancer. *Int J Nanomedicine*. **2021**; 69—89. <https://doi.org/10.2147/NSA.S301942>
18. Tangthong T, Piroonpan T, **Thipe VC**, Khoobchandani M, Katti K, Katti KV, Pasanphan W. Bombesin

- Peptide Conjugated Water-Soluble Chitosan Gallate—A New Nanopharmaceutical Architecture for the Rapid One-Pot Synthesis of Prostate Tumor Targeted Gold Nanoparticles, *Int J Nanomedicine*; **2021**; 6957—6981. <https://doi.org/10.2147/IJN.S327045>
19. Menka Khoobchandani, Aslam Khan, Kavita K. Katti, **Velaphi C. Thipe**, Amal Y. Al-Yasiri, Darsha K. D. Mohan Doss, Michael B. Nicholl, Ademar B. Lugão, Chetan P. Hans, Kattesh V. Katti. Green nanotechnology of MGF-AuNPs for immunomodulatory intervention in prostate cancer therapy. *Sci. Rep.* **2021**; 16797; <https://doi.org/10.1038/s41598-021-96224-8>
 20. Lucas F. Freitas, Aryel H. Ferreira, **Velaphi C. Thipe**, Gustavo H.C. Varca, Caroline S.A. Lima, Jorge G.S. Batista, Fabiane N. Riello, Kamila Nogueira, Cassia P. C. Cruz, Giovanna O. A. Mendes, Adriana S. Rodrigues, Thayna S. Sousa, Victoria M. Alves, Ademar B. Lugao. The State of the Art of Theranostic Nanomaterials for Lung, Breast, and Prostate Cancers. *Nanomaterials*; **2021**, 2579; <https://doi.org/10.3390/nano11102579>
 21. Marco Nuno De Canha, **Velaphi C. Thipe**, Kattesh V. Katti, Vusani Mandiwana, Michel Lonji Kalombo, Suprakas Sinha Ray, Rirhandzu Rikhotso, Arno Janse van Vuuren, Namrita Lall. The Activity of Gold Nanoparticles Synthesized Using *Helichrysum odoratissimum* Against *Cutibacterium acnes* Biofilms. *Front Cell Dev Biol.* **2021**; 675064; <https://dx.doi.org/10.3389%2Ffcell.2021.675064>
 22. Nicole Remaliah Samantha Sibuyi, **Velaphi Clement Thipe**, Kiandokht Panjtan-Amiri, Mervin Meyer, Kattesh V. Katti. Green synthesis of gold nanoparticles using Acai berry and Elderberry extracts and investigation of their effect on prostate and pancreatic cancer cells. *Nanomedicine.* **2021**; 8: 1-8. <https://doi.org/10.1177%2F1849543521995310>
 23. Joana S Maziero, **Velaphi C Thipe**, Sizue O Rogero, Adriana K Cavalcante, Kelme C Damasceno, Matheus B Ormenio, Gisela A Martini, Jorge G S Batista, William Viveiros, Kavita K Katti, Alice Raphael Karikachery, DarshaKumar Dhurvas Mohandoss, Rashmi DarshaKumar Dhurvas, Mohanavelu Nappinnai, José R Rogero, Ademar B Lugão, and Kattesh V Katti. Species-Specific in vitro and in vivo Evaluation of Toxicity of Silver Nanoparticles Stabilized with Gum Arabic Protein. *Int J Nanomedicine.* **2020**; 15: 7359–7376. <https://doi.org/10.2147/IJN.S250467>
 24. Khoobchandani, Menka; Katti, Kavita K; Alice Raphael Karikachery; **Thipe, Velaphi C**; Sriramulu, Deepak; Darshan Kumar, Dhruva's Mohandas, Rashmi Dhurvas Darshakumar, Chintamani M Joshi, Kattesh V Katti. New Approaches in Breast Cancer Therapy Through Green Nanotechnology and Nano-Ayurvedic Medicine – Pre-Clinical and Pilot Human Clinical Investigations, *Int J Nanomedicine*; **2020**: 181-197. <https://dx.doi.org/10.2147%2FIJN.S219042>
 25. Rhulani Makhuele, Kayleen Naidu, Sefater Gbashi, **Velaphi C. Thipe**, Oluwafemi A. Adebo, Patrick B. Njobeh. The use of plant extracts and their phytochemicals for control of toxigenic fungi and mycotoxins. *Heliyon*, **2020**, 6, 10, e05291. <https://doi.org/10.1016/j.heliyon.2020.e05291>
 26. **Thipe V.C.**, Panjtan Amiri K., Bloebaum, Pierce., Raphael Karikachery, A.K., Khoobchandani, M, Katti, K.K., Jurisson, S., Katti, K.V. Development of resveratrol conjugated gold nanoparticles— Interrelationship of increased resveratrol corona on anti- tumor efficacy against breast, pancreatic and prostate cancers. *Int J Nanomedicine.* **2019**, 14: 4413–4428. <https://dx.doi.org/10.2147%2FIJN.S204443>
 27. Katti K.V., Khoobchandani M., **Thipe V.C.**, Al-Yasir A.Y., Katti K.K., Loyola S.K., SEAKR T.M., Lugao A.B. Prostate tumor therapy advances in nuclear medicine: green nanotechnology toward the design of tumor specific radioactive gold nanoparticles. *J. Radio anal. Null. Chem.* **2018**, 318 (3): 1737-1747. <https://doi.org/10.1007/s10967-018-6320-4>
 28. **Thipe V.C.**, Njobeh P.B., Mhlanga S.D. Optimization of commercial antibiotic agents using gold nanoparticles against toxigenic *Aspergillus spp.* *Materials today: Proceedings.* **2015**, 2(7): 4136-4148. <https://doi.org/10.1016/j.matpr.2015.08.044>

Book Chapters:

1. Jorge Gabriel dos Santos Batista, Murilo Állison Vigilato Rodrigues, Lucas Freitas de Freitas, Ana Carolina Moreira Fonseca, Adriana de Souza Rodrigues, Cássia Priscila Cunha da Cruz, **Velaphi Clement Thipe**, Ademar Benévolo Lugão (2024). Chapter 12 - Copper-Based Nanomaterials for

Biologically Relevant Compounds. Copper-Based Nanomaterials in Organic Transformations, Pages 305-338. ACS Symposium Series Vol. 1466 eISBN: 9780841296817. <https://doi.org/10.1021/bk-2024-1466.ch012>.

2. **Velaphi C Thipe**, Lucas F Freitas, Caroline SA Lima, Jorge GS Batista, Aryel H Ferreira, Justine P Ramos de Oliveira, Tatiana S Balogh, Slawomir Kadlubowski, Ademar B Lugão, Kattesh V Katti, (2023). Chapter 2 - Fabrication of Green Nanomaterials: Biomedical Applications and Ecotoxicology. In: Shanker, U., Hussain, C.M., Rani, M. (eds) Handbook of Green and Sustainable Nanotechnology. Springer, Cham. https://doi.org/10.1007/978-3-031-16101-8_2.
3. R. Fanelwa Ajayi, Simone Barry, Mulisa Nkuna, Nzumbululo Ndou, Tessia Rakgotho, Sphamandla Nqunqa, Nokwanda Ngema, **Velaphi Thipe**, Takalani Muluadzi. (2022). Chapter 18 - Nanoparticles in biosensor development for the detection of pathogenic bacteria in water. In: Tatenda Dalu and Nikita T. Tavengwa (eds). Emerging Freshwater Pollutants - Analysis, Fate, and Regulations. Elsevier, Pages 331-358. <https://doi.org/10.1016/B978-0-12-822850-0.00004-1>
4. **Velaphi C. Thipe**, Lucas F. Freitas, Caroline S.A. de Lima, Kamila M. Nogueira, Jorge G.S. Batista, Aryel H. Ferreira, Ademar B. Lugão. (2022) Chapter 7 - Cu and Cu-based nanomaterials as nanofungicides. Copper Nanostructures: Next-Generation of Agrochemicals for Sustainable Agroecosystems. Elsevier, Pages 155-183. <https://doi.org/10.1016/B978-0-12-823833-2.00020-9>
5. **Velaphi C. Thipe**, Jorge G.S. Batista, Ademar B. Lugão. (2022) Chapter 11 - Copper nanomaterials for eliminating the risk of mycotoxins. In Copper Nanostructures: Next-Generation of Agrochemicals for Sustainable Agroecosystems. Elsevier, Pages 243-262. <https://doi.org/10.1016/B978-0-12-823833-2.00026-X>
6. **Velaphi C. Thipe**, Shireen Mentor, Caroline S.A. Lima, Lucas F. Freitas, Ana C.M. Fonseca, Kamila M. Nogueira, Adriana S. Rodrigues, Jorge G.S. Batista, Aryel H. Ferreira, Ademar B. Lugão. (2022) Chapter 3 - The role of probiotics in maintaining immune homeostasis. In Probiotics in the Prevention and Management of Human Diseases. Elsevier, Pages 41-58. <https://doi.org/10.1016/B978-0-12-823733-5.00024-6>
7. **Velaphi C. Thipe**, Caroline S.A. Lima, Kamila M. Nogueira, Jorge G.S. Batista, Aryel H. Ferreira, Kattesh V. Katti, Ademar B. Lugão. (2021) Chapter 23 - Silver nanoparticles applications and ecotoxicology for controlling mycotoxins. In Silver Nanomaterials for Agri-Food Applications. Elsevier, Pages 549-575. <https://doi.org/10.1016/B978-0-12-823528-7.00019-6>
8. **Velaphi C. Thipe**, Victoria Maloney, Ashwil Klein, Arun Gokul, Marshall Keyster, Kattesh V. Katti. (2021) Chapter 21 - RNA interference and CRISPR/Cas9 techniques for controlling mycotoxins. In: Kamel A. Abd-Elsalam (eds). CRISPR and RNAi Systems. Nanobiotechnology Approaches to Plant Breeding and Protection. Elsevier, Pages 463-390. <https://doi.org/10.1016/B978-0-12-821910-2.00012-6>
9. **Velaphi C. Thipe**, Maxwell Thatyana, Fanelwa R. Ajayi, Patrick B. Njobeh, Kattesh V. Katti. (2020) Chapter 12 - Hybrid nanomaterials for detection, detoxification, and management mycotoxins. In: Kamel A. Abd-Elsalam (eds). Multifunctional Hybrid Nanomaterials for Sustainable Agri-Food and Ecosystems: A volume in Micro and Nano Technologies. Elsevier, Pages 271-285. <https://doi.org/10.1016/B978-0-12-821354-4.00012-1>
10. **Velaphi C. Thipe**, Pierce Bloebaum, Menka Khoobchandani, Alice Raphael, Karikachery, Kavita K. Katti, Kattesh V. Katti. (2020) Chapter 7 - Green nanotechnology: nano formulations against toxigenic fungi to limit mycotoxin production, In: Abd-Elsalam K, Rai, Mahindra (eds) Nanomycotoxicology. Elsevier, Nanomycotoxicology, Treating Mycotoxins in the Nano Way,

Pages 155-188. <https://doi.org/10.1016/B978-0-12-817998-7.00007-0>

11. Khoobchandani M., Katti K.K., Karikachery A.R., **Thipe V.C.**, Bloebaum P., Katti K.V. (2019) Targeted Phytochemical-Conjugated Gold Nanoparticles in Cancer Treatment. In: Khoobchandani M., Saxena A. (eds) Biotechnology Products in Everyday Life. Eco Production (Environmental Issues in Logistics and Manufacturing). Springer, Cham. https://doi.org/10.1007/978-3-319-92399-4_3
12. **Thipe V.C.**, Keyster M., Katti K.V. (2018) Sustainable Nanotechnology: Mycotoxin Detection and Protection. In: Abd-Elsalam K., Prasad R. (eds) Nanobiotechnology Applications in Plant Protection. Nanotechnology in the Life Sciences. Springer, Cham. https://doi.org/10.1007/978-3-319-91161-8_12

OTHER DUTIES:

Reviewer for the Journal of Fungi – MDPI, Impact factor = 4.621

Reviewer for Antibiotics – MDPI, Impact factor = 3.893

Reviewer for Frontiers in Nanotechnology, Impact factor = 3.5

Scientific Panel member for the South African Medical Research Council (SAMRC)

Brand Ambassador for Tecton™ (a multifunctional health beverage powered by nature-identical exogenous ketones)

ACADEMIC/COMMUNITY SERVICE:

Rotary Club of Columbia

2022 – Present

- Rotary is a global network of business and professional leaders who provide humanitarian service and help to build goodwill and peace in the world. It is a non-political and non-sectarian organization open to all people regardless of race, color, creed, religion, gender, or political preference.

South African Professional Network Association (SAPNA)

2019 – Present

- The ultimate networking and empowerment platform for professionals and entrepreneurs. SAPNA's mission is to be the preeminent and most distinctive platform for world-shapers to influence the communities in which they live and work. Attained by providing a platform for professionals to master the art of networking, empowering professionals by promoting sustainable wealth creation and preservation, highlighting role models by sharing their experiences and lessons learned along their personal path to success, influencing practical change and transformation in communities, and promoting a culture of giving back through mentoring youth to succeed.

Creative Media Television

2017 – Present

- CMTV is a free subscription-based streaming and video-on-demand (VOD) service that offers an eclectic mix of lifestyle, educational, and documentary content. We are in the process of introducing a Science, Technology, Engineering, Art, and Math (STEAM) streaming program as a great tool for stimulate high school learners' interest in STEM subjects while also fostering their natural curiosity about the world via enrichment programs supporting STEAM through fun and interactive workshops, seminars, and scholarly resources and advice for high school learners and undergraduates.

MU Advisory Board Member in Africa Hub

2018 – 2019

- The MU African Interdisciplinary Studies Hub (Africa Hub) promotes and strengthens the University of Missouri's research, teaching, innovation, economic development, and outreach initiatives in and about Africa.

Africa Festival Steering committee member

2018-2019

- Africa Fest, presented by Jabberwocky Studios and AGPSA in collaboration with Oakland Middle

School, educates the school and surrounding community about African culture via arts, dance, drumming, music, poetry, and lectures. The event helps local and foreign students acquire a multicultural viewpoint, preparing them for a worldwide profession. Additionally, it promotes cross-cultural understanding and dialogue among Mizzou community members, especially students and professors.

Missouri International Student Council (MISC) Executive member 2017 – 2019

- MISC serves as a link between diverse organizations and a forum for foreign students to express their issues and advocates as a unified voice to ensure that these unique perspectives are not drowned out or ignored in the middle of such a vibrant campus community.

University of Missouri Men's Soccer 2016 – 2019

- Men's Club Soccer at Mizzou provides MU students with the chance to travel and compete against other competitive college soccer teams. The league's games are held entirely in Missouri/Kansas. During the Fall semester, we usually compete in two tournaments (Regionals and Nationals).

Mizzou for Malawi Steering Committee member 2017 – 2018

- Mizzou for Malawi was founded in 2008 with the Global Orphan Project to establish an organization dedicated to making a positive impact in the world. Since 2008, we have collected enough funds to construct and finance a primary school for the 104 orphans at the Pothawira Village (Safe Haven) in Salima, Malawi, as well as to supply school uniforms for all the children. Mizzou for Malawi is a "students for students" group dedicated to securing the future education of orphaned children in Salima, Malawi.

MU HealthCare Volunteer 2016 – 2018

- Patient Pals volunteer in Oncology Department to improve the patient experience through non-clinical conversation, room orientation and assistance with comfort and room cleanliness needs.

South African Football Association (SAFA) Ekurhuleni soccer player 2012-2014

- Participate in soccer (chosen to represent Ekurhuleni Municipality at the OR Tambo games in Port Elizabeth)

LEADERSHIP:

MU African Graduate and Professional Student Association (AGPSA) 2018 – 2019

- Served as President of AGPSA, an organization that fosters intercultural views, tolerance, and a cohesive community for MU graduate students from many African nations to develop reciprocal relationships based on shared international experience and cultural heritage.

University of Missouri Fulbright Organization (MUFO) 2016 – 2017

Served as the president of MUFO, organization dedicated to bringing together Fulbrighters/Fulbright Scholars at the University of Missouri-Columbia. Promote and enable academic success through promoting and facilitating assistance, communication, and academic accomplishment.

MEDIA PRESENTATIONS:

[TEDxCoMo speaker 2017](#)

Ubuntu is a notion that has aided South Africa in rebuilding the nation after the hardships of the Apartheid period. This presentation was delivered at a TEDx event, which follows the TED conference model but is organized independently by a local community.

[KOMU 8 News](#)

The article discusses the efforts on making cancer treatments more accessible to underrepresented communities. The research focused on developing affordable and effective cancer therapies, particularly for prostate cancer, which disproportionately affects Black men. Emphasizing the importance of addressing health disparities and ensuring that advancements in cancer treatment are accessible to underserved communities.

SKILLS:

Synthesis: Design and synthesis of nanomaterials through green nanotechnology and the encapsulation of prodrugs for enhanced bioavailability and therapeutic outcomes.

Instruments: High-performance liquid chromatography, enzyme-linked immunosorbent assay, Reverse transcription polymerase chain reaction, scanning electron microscopy, Transmission electron microscopy, CytoViva Nanoscale Hyperspectral Microscopy, Leica SP8 spectral confocal microscope, Olympus 1X71 Fluorescent Microscope, Dynamic light scattering, Molecular device Spectra ax M2 microplate reader, Fourier-transform infrared spectroscopy, X-ray powder diffraction

In vitro techniques: Cell culture, cellular binding/uptake assay, cytotoxicity assay, SDS-PAGE, Western Blot

In vivo techniques: hands-on mouse handling, tumor caliper measurement, intravenous/intraperitoneal injections, nanoparticle biodistribution assay, efficacy study

HONORS AND AWARDS:

- | | |
|--|-------------|
| 1. Lindau Nobel Laureate Meeting | 2023 |
| 2. Graduate Professional Council (GPC) International Student Award | 2019 |
| 3. Fulbright Scholar | 2015 - 2019 |
| 3. National Research Foundation Fellowship: Nanobiotechnology for cancer therapy | 2015-2018 |
| 4. The Deaton Institute, Deaton Scholar | 2018 |
| 5. Mizzou Annual Scholarship | 2017 |
| 6. National Nanoscience Postgraduate Teaching and Training Platform (NNPTTP) | 2013-2014 |

PROFESSIONAL AFFILIATIONS:

- | | |
|--|----------------|
| 1. National Postdoctoral Association | 2021 – Present |
| 2. National Center for Faculty Development & Diversity | 2021 – Present |

INTERESTS:

Healthcare, Fitness and Wellness, Soccer, Traveling, Cooking, Fashion, and Photography