

# *CURRICULUM VITAE*

## **Errol Duncan Cason**

### PERSONAL INFORMATION

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Date of Birth: 19 August 1983  
Nationality: South African  
Home address: 16 John Knox Street, Park West, Bloemfontein, 9301  
Phone (Cell): (+27) 72 768 2367  
Email: [CasonED@ufs.ac.za](mailto:CasonED@ufs.ac.za); [Errol.Cason@gmail.com](mailto:Errol.Cason@gmail.com)

### EDUCATION

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<b>DEGREE</b>	<b>YEAR</b>	<b>INSTITUTION</b>	<b>FIELD OF STUDY</b>
PhD	2011-2015	University of the Free State	Biochemistry
M.Sc	2008-2010	University of the Free State	Biochemistry
B.Sc (Hons)	2007	University of the Free State	Biochemistry
B.Sc	2004-2006	University of the Free State	Chemistry and Biology

### PROFESSIONAL EXPERIENCE

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January 2023 – Present

- Associate Professor, Department of Animal Sciences, University of the Free State

June 2019 – December 2022

- Senior Lecturer, Department of Animal-, Wildlife- and Grassland Sciences, University of the Free State

2016 – May 2019

- Postdoctoral Fellow, Department of Microbial, Biochemical and Food Biotechnology, University of the Free State

2014-2017

- Lecturer for Honours Level Students, course BOCE654 (later BOCB6824) Bioinformatics (Temporary appointment).

2016-2017

- Lecturer for 2<sup>nd</sup> Year Undergraduate Biochemistry Students, course: Biochemistry BOCE2626 (Temporary appointment).

2015

- Lecturer for 3<sup>rd</sup> Year Undergraduate Biochemistry Students, course: Biochemistry BOCE3724 Proteomics (Temporary appointment).

2014

- Practical lecturer for 2<sup>nd</sup> Year Undergraduate Biochemistry Students, course: Biochemistry BOCE2616 Biochemistry of Biological Compounds (Temporary appointment).
- Practical lecturer for 3<sup>rd</sup> Year Undergraduate Biochemistry Students, course: Biochemistry BOC344 Macromolecular Structures. (Temporary appointment).
- Guest Lecturer at the Central University of Technology Winter School program.

2011

- Lecturer for 3<sup>rd</sup> Year Undergraduate Biochemistry Students (2011), course: Biochemistry BOC344 Macromolecular Structures (Temporary appointment).

2010-2014

- Lecturer's Assistant at the Central University of Technology for Statistical Mathematic and Biochemistry courses.

2005-2011

- Practical Demonstrator for 1<sup>st</sup> Year Undergraduate Students, course: Biology BLG114.

2007-2015

- Practical Demonstrator for 3<sup>rd</sup> Year Undergraduate Students, course: Biochemistry BOC344.

## CITATION ANALYSIS

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Orcid ID:

<https://orcid.org/0000-0003-1598-6151>

Scopus (anuary 2024): Number of citations: 445; H index: 12

<https://www.scopus.com/authid/detail.uri?authorId=25636782500>

Google Scholar (January 2024): Number of citations: 593; H index: 14

<https://scholar.google.co.za/citations?user=V3fpZ3YAAAAJ&hl=en>

***CURRICULUM VITAE Errol Duncan Cason***

## NRF Rating

Obtained Y2 rating in 2022

## CURRENT RESEARCH TOPICS AND INTERESTS

To utilize my bioinformatics skills to tackle new challenges in a research or academic institute and contribute to the development and better understanding of science. My current research covers different aspects of animal breeding focussing on genetic selection as well as microbial biodiversity, especially in the fields of taxonomy, phylogenetics and “omics”.

My interests include:

- Bioinformatics
- Genomic Selection
- Variant Discovery
- Sequence Analysis
- Genome Assembly
- Microbial diversity
- High Performance Computing

## TEACHING

### **Lectures**

Intro to Bioinformatics - BOCE654 (later BOCB6824). University of the Free State.

Enzymology and Introductory Metabolism - BOCE2626. University of the Free State.

Proteomics - BOCE3724. University of the Free State.

Biochemistry of Biological Compounds - BOCE2616. University of the Free State.

Macromolecular Structures - Biochemistry BOC344. University of the Free State.

Animal Breeding: Mixed Model Theory – ANIB4814 and ANIB6814. University of the Free State.

Animal Breeding: Application of Mixed Models in Selection – ANIB4824 and ANIB6824. University of the Free State.

Animal Breeding: New Technologies in Animal Breeding – ANIB3724. University of the Free State.

Animal Breeding: XXX – ANIB3714. University of the Free State.

Animal Breeding: XXX – ANIB2624. University of the Free State.

*CURRICULUM VITAE* **Errol Duncan Cason**

Animal Science Practical – ANIG2602. University of the Free State.

Research Project Animal Production – AGRI6808. University of the Free State.

Research Project Animal Science – ANIG4808. University of the Free State.

## **Training**

16S metagenomics data analysis in Qiime and R. Postgraduate course. University of the Free State (2018-Present).

Introduction to Bioinformatics (IBT). H3ABionet Course. University of the Free State (2019).

Animal Breeding Course. Short Learning Course. University of the Free State (2019-Present).

**Martin Workshop**

## **SUPERVISION OF STUDENTS**

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### **PhD**

Fosa

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Deidre Januarie. “Genetic diversity of the Namibian sanga cattle”. University of the Free State, South Africa (From 2019-Present).

Sue-Rica Schneider. “Genetic signature for schizophrenia in African groups”. University of the Free State, South Africa (From 2021-Present).

Andisiwe Matu. TBD – Project on metagenome assembled genomes (MAGs) from scalding springs in SA. University of the Free State, South Africa (2021-Present).

Andri Grobbelaar. Faecal analysis techniques to monitor the health condition of giraffe (*Giraffa camelopardalis*), as a non-invasive model, in southern Africa. University of the Free State, South Africa (From 2021-Present).

Katrien van Zyl. TBD – Project on attention-deficit/hyperactivity disorder (ADHD) symptom severity and gut microbiome dysbiosis. University of the Free State, South Africa (2022-Present).

Karabelo Moloantoa. “Optimization of a passive denitrification system by a novel bacterial consortium enriched from mining wastewater”. University of the Free State, South Africa (2015-2022).

Christopher Rothmann, “Solid state fermentation of *Acacia mellifera* using mushrooms for value addition to animal feed.” University of the Free State, South Africa (2015-2021).

Gilmore Taenzaniswa Pambuka. “Characterization of the fungal microbiome of a cereal-legume intercrop system using Illumina sequencing.” University of the Free State, South Africa (2015-2021).

Jou-An Chen. “Scoping and quantification study of emerging contaminants in the Free State: effects on microbial diversity.” University of the Free State, South Africa (2015-2021).

Maleke Maleke. “Insights into Rare Earth Metal microbe interactions using a known metal resistant bacterium and a site-specific isolate”. University of the Free State, South Africa (2015-2019).

Wilmarie Viljoen. “Isolation and Elucidation of Microorganisms Capable of Amylase Activity in Munkoyo Beverage”. University of the Free State, South Africa (2016-2020).

Abidemi Ojo. “Biodegradation of chloroethenes under microaerophilic conditions”. University of the Free State, South Africa (2015-2020).

## **MSc**

Kasandra

Ricky

Andries van der Merwe. TBD – Project on the effect of dietary supplements on pregnant ewes and their progeny. University of the Free State, South Africa (From 2021-Present).

Nthuseng Phooko. “Constructing a microbial diversity profile for red meat abattoir effluent”. Central University of Technology, South Africa (From 2019-Present).

Tshegofatso Mohlamme. “Analysis of the rumen microbiome with respect to rumen stasis”. University of the Free State, South Africa (From 2022-Present).

Rina-Mari

Justin Claytin

Berenice-Anne du Toit. “The effect of silage inoculants on the performance of finisher steers”. University of the Free State, South Africa (From 2022-Present).

Bianca Valentin. "The effect of fungal feed additives on in vitro nutrient degradability, fermentation parameters and microbial population". University of the Free State, South Africa (From 2022-Present).

Hennie Goosen. "Random Regression Models for Fertility Traits of South African Afrikaner Cattle." University of the Free State, South Africa (From 2021-Present).

Kloppers, G. Antonie E. "Skin Microbiome diversity of *Batrachochytrium Dendrobatidis*-Challenged Phofung River Frogs (*Amietia Hymenopus*) in the Drakensberg Mountain Range". (From 2018-2023).

Jameel Alom. "Characterisation of bacterial colonisation and diversity in a passive chemical system examination". University of the Free State, South Africa (From 2021-2023).

Benri Mattheus Coffee. "The effect of a rumen-specific probiotic combination on microbial diversity, fermentation characteristics and performance of finishing lambs." University of the Free State, South Africa (From 2019-2023).

Els Erhard Macdonald. "The effect of secondary plant compound supplementation on rumen microbial diversity, fermentation characteristics and performance of finishing lambs". University of the Free State, South Africa (From 2019-2023).

Luke David Barnard. "The effect of a beta-agonist on feedlot performance and meat quality in beef cattle." University of the Free State, South Africa (From 2020-Present).

Matt Kinghorn. "Comparison of Random Regression Test-Day Models for Production Traits of South African Jersey Cattle". University of the Free State, South Africa (From 2019-2023).

Martha Mogale. "Characterization of bacterial diversity and chemical composition of alkaline pit lakes: Insights into natural desalination processes". University of the Free State, South Africa (2020-2021).

Andisiwe Matu. "A comparative metagenomic study reveals variations of microbial composition and functionality associated to iron availability in oligotrophic scalding springs of South Africa". University of the Free State, South Africa (2019-2021).

Katrien van Zyl. "Attention-deficit/hyperactivity disorder (ADHD) symptom severity and gut microbiome dysbiosis: an aetiological perspective on an emerging relationship. University of the Free State, South Africa (2019 – 2021).

Elzette van der Walt. "Analysing the potential of the African elephant gut microbiome for biogas optimization". University of the Free State (2017-2020).

Corinne Fourie. "Novel insights into precipitation and interactions of copper with *Desulfosporosinus* sp. and *Rhodanobacter* sp." University of the Free State, South Africa (2017-2019).

Gerhard Potgieter. "Genomic outlook of Arsenic hyper resistant sulfate reducing bacteria in bio-remediation and bio-recovery of arsenic from groundwater sources.". University of the Free State, South Africa (2017-2019).

Teboho Rankoroane. "Deciphering the bacterial diversity of the barium carbonate ( $BaCO_3$ ) dispersed alkaline substrate (BDAS) passive system". University of the Free State, South Africa (2017-2019).

Julius Eduard Hellmuth. "Comparative genome analysis of *Avibacterium paragallinarum* serogroups". University of the Free State, South Africa (2017-2019).

Bokang J. Mahlomaholo. "Microbial succession in indigenous fermented cereal beverages of Lesotho" University of the Free State, South Africa (2016-2018).

Cumisa Manzikazi Mlandu. "Exploring horizontal gene transfer and phage infections in a South African deep subsurface bacterial population". University of the Free State, South Africa (2015-2017).

## RELEVANT TECHNIQUES

### **COMPUTER LITERACY**

- Excellent knowledge of Microsoft Windows based systems. Develop, organize and complete tasks and projects using software programs such as Microsoft Word, Excel and PowerPoint as well as biological packages including Geneious, Graphpad Prism, Vector NTI.
- Good understanding of Unix based systems such as Linux and MacOS
- Extensive working knowledge in analysis of Next Generation Sequencing data using R, Perl, Python and Linux shell scripting.
- Extensive working knowledge in analysis of Genotyping data using R, Perl, Python and Linux shell scripting.
- Excellent knowledge of computer hardware and installations.

### **BIOINFORMATICS**

## Applications

- Extensive working knowledge in analysis of Next Generation Sequencing data (Illumina, PacBio, Torrent, 454).
- Assembly and data mining of next generation sequencing data (Genomics, targeted and shotgun metagenomics, Transcriptomics, SNP analysis).
- Good understanding of biostatistical methodology and tools.
- Good understanding of quantitative genetic methodology and tools.
- Design and usage of biological databases.

## LABORATORY TECHNIQUES

- Microbiology skills:

Aseptic and sterile techniques; optical microscopy; bacterial staining; plating methods (streak, spread, pour, replica); enumeration and identification of bacteria; use of biological safety cabinets; media and buffer preparation; water sample analysis by membrane filtration and MPN; determination of optimal bacterial growth conditions; diagnostic biochemical tests for enteric bacteria; use of selective media; antibiotic assay (MIC); preparation of cells for cryopreservation; preparation of anaerobic media; anaerobic techniques.
- Biochemistry and Cell & Molecular Biology skills:

DNA extraction; plasmid DNA preparation; DNA sanger sequencing; restriction enzyme digests; PCR; agarose gel electrophoresis; denaturing gradient gel electrophoresis; SDS-PAGE; 2D-PAGE; cell fractionation by differential centrifugation; quantitative extraction, isolation and determination of proteins; protein activity assays.
- Chemistry skills:

Solution preparation; titrations; thin-layer chromatography; liquid chromatography; gas chromatography
- Spectroscopy skills:

UV, visible and mass spectroscopy.



I have received health and safety briefings for all laboratory sessions and diligently follow the guidelines and procedures

## GRANTS RECEIVED

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NRF Thuthuka Grant. "A Genomic Investigation into the Diversity and Selection Signatures for Adaptation in a Closed Dexter population" (2021-2023). R150,00 p/a. Principle Investigator.

UFS CRF Funding. "Unravelling the link between the rumen microbiota and production traits in South African beef cattle" (2021). R120,000. Principle Investigator.

UFS/CUT Joint Research Program. "Unravelling the microbiome of Sesotho (sorghum beer) through targeted metagenomics" (2018-2019). R100,000. Principle Investigator.

TIA/RMRD Funding. "Investigating the possible link between microbiome and wet carcass syndrome in sheep." (2021-2023). R120,000. Principle Investigator.

NRF Foundational Biodiversity Information Programme. "Unexplored Bacterial Diversity and Metabolic Potential Within South African Hot Springs" (2018-2019). R100,000. Co-Investigator.

TIA Seed Funding. "Solid State Fermentation (SSF) to convert spent brewers grain to biogas, as well as to create value addition animal feed." (2017). R500,000. Principle Investigator.

TIA Seed Funding. "Applications of liquid yeast in the brewing industry" (2018). R500,000. Co-investigator.

### Study Grants

Ernst & Ethel Eriksen Trust (2008-2014).

NRF Knowledge, Interchange and Collaboration (KIC) Scientific Events / Travel Grants (2008).

NRF Innovation Fund (2008-2014).

## PROJECTS INVOLVEMENT

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2020- Present

- UFS / ZZ2 Collaboration “NovaLogix”

2016-2019

- DSEIS Deep Subsurface Drilling Project. ICDP Funded
- U-Tube Subsurface Microbial Sampler in Moab Khotsong. NSF Funded, Princeton Collaboration.
- Processes of hydrogen genesis during seismic cycles in active fault zones”, GFZ/Potsdam Collaboration.

2007-2016

- NELSAM (National Earthquake in South African Mines) Project, GFZ/Potsdam Collaboration.
- Deep Mine Microbial Ecosystem Project, Princeton Collaboration.
- Deep Carbon Observatory Project, University of Princeton, University of Toronto, Bigelow Laboratory for Ocean Sciences and New Mexico Institute of Mining and Technology Collaboration.

2013-2014

- Marble Hall and Standerton Chrome(VI) bioremediation project. TIA Metagenomics Platform and Geosyntec Consultants, USA Collaboration.

2011

- Monrovia Water Point Sampling – Liberia Water Point Mapping Project Phase 3. UHL & Associates, USA, University of the Free State and Eden Preferred Water Services, Liberia, Collaboration.

## PUBLICATIONS

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- Ojo, A. O., Castillo, J., Cason, E. D., & Valverde, A. (2023). Biodegradation of chloroethene compounds under microoxic conditions. *Biotechnology and Bioengineering*, 1–14. <https://doi.org/10.1002/bit.28630>
- Karabelo Moloantoa, Zenzile Khetsha, Mokgaotsa Mochane, John Unuofin, Abdon Atangana, **Errol Cason**, Esta van Heerden & Julio Castillo (2023) Evaluating the effects of pH and temperature on sulphate-reducing bacteria and modelling of their effects in stirred bioreactors, *Environmental Pollutants and Bioavailability*, 35:1, DOI: [10.1080/26395940.2023.2257388](https://doi.org/10.1080/26395940.2023.2257388)
- Devan M. Nisson, Clifford C. Walters, Martha L. Chacón-Patiño, Chad R. Weisbrod, Thomas L. Kieft, Barbara Sherwood Lollar, Oliver Warr, Julio Castillo, Scott M. Perl, **Errol D. Cason**, Barry M. Freifeld & Tullis C. Onstott Radiolytically reworked Archean organic matter in a habitable deep ancient high-temperature brine. *Nat Commun* **14**, 6163 (2023). <https://doi.org/10.1038/s41467-023-41900-8>
- Abdulsalam, R.A.; Ijabadeniyi, O.A.; **Cason, E.D.**; Sabiu, S. Characterization of Microbial Diversity of Two Tomato Cultivars through Targeted Next-Generation Sequencing 16S rRNA and ITS Techniques. *Microorganisms* **2023**, *11*, 2337. <https://doi.org/10.3390/microorganisms11092337>
- Rothmann C, Rothmann L, Viljoen B, **Cason ED**. Application of solid-state fermentation using mushrooms for the production of animal feed. *J Basic Microbiol*. 2023 Jul 14. doi: 10.1002/jobm.202300218. Epub ahead of print. PMID: 37452386.
- Castillo, J., Alom, J., Gomez-Arias, A., Cebekhulu, S., Matu, A., **Cason, E.**, Valverde, A., 2023. Bacterial communities shift and influence in an acid mine drainage treatment using barium carbonate disperse alkaline substrate system. *Sci. Total Environ.* **885**, 163526. <https://doi.org/10.1016/j.scitotenv.2023.163526>
- Balogun, F.O.; Abdulsalam, R.A.; Ojo, A.O.; **Cason, E.**; Sabiu, S. Chemical Characterization and Metagenomic Identification of Endophytic Microbiome from South African Sunflower (*Helianthus annuus*) Seeds. *Microorganisms* **2023**, *11*, 988. <https://doi.org/10.3390/microorganisms11040988>
- Moloantoa KM, Khetsha ZP, Kana GEB, Maleke MM, Van Heerden E, Castillo JC and **Cason ED** (2023), Metagenomic assessment of nitrate-contaminated mine

wastewaters and optimization of complete denitrification by indigenous enriched bacteria. *Front. Environ. Sci.* 11:1148872.doi: 10.3389/fenvs.2023.1148872

- MG Kinghorn, **ED Cason**, V Ducrocq, FWC Naser. Comparison of random regression test-day models for production traits of South African Jersey Cattle. Proceeding of 12th World Congress on Genetics Applied to Livestock Production (WCGALP) Technical and species orientated innovations in animal breeding, and contribution of genetics to solving societal challenges. 2022. 2749-2752. [https://doi.org/10.3920/978-90-8686-940-4\\_666](https://doi.org/10.3920/978-90-8686-940-4_666)
- **ED Cason**, J Alom, J Barnard, M Fair, PD Vermeulen, FWC Naser. Preliminary investigation into the association of members of the rumen biome with production traits in Afrikaner cattle. Proceeding of 12th World Congress on Genetics Applied to Livestock Production (WCGALP) Technical and species orientated innovations in animal breeding, and contribution of genetics to solving societal challenges. 2022. 2069-2072. [https://doi.org/10.3920/978-90-8686-940-4\\_498](https://doi.org/10.3920/978-90-8686-940-4_498)
- DA Januarie, **ED Cason**, FWC Naser. Genetic characterization of the indigenous Sanga cattle of Namibia. Proceeding of 12th World Congress on Genetics Applied to Livestock Production (WCGALP) Technical and species orientated innovations in animal breeding, and contribution of genetics to solving societal challenges. 2022. 932-935. [https://doi.org/10.3920/978-90-8686-940-4\\_219](https://doi.org/10.3920/978-90-8686-940-4_219)
- Harris, R.L., Vetter, M.C.Y.L., van Heerden, E. **Cason, E.D.**, et al. FISH-TAMB, a Fixation-Free mRNA Fluorescent Labeling Technique to Target Transcriptionally Active Members in Microbial Communities. *Microb Ecol* 84, 182–197 (2022). <https://doi.org/10.1007/s00248-021-01809-5>
- Tonjock Rosemary Kinge, Soumya Ghosh, **Errol D Cason**, Marieka Gryzenhout. 2022. Characterization of the Endophytic Mycobiome in Cowpea (*Vigna unguiculata*) from a Single Location Using Illumina Sequencing. *Agriculture*. 12(3): 333. <https://doi.org/10.3390/agriculture12030333>
- Karabelo M Moloantoa, Zenzile P Khetsha, Esta van Heerden, Julio C Castillo, **Errol D Cason**. 2022. Nitrate Water Contamination from Industrial Activities and Complete Denitrification as a Remediation Option. *Water* 14(5):799. <https://doi.org/10.3390/w14050799>
- Gilmore T Pambuka, Tonjock Rosemary Kinge, Soumya Ghosh, **Errol D Cason**, Martin M Nyaga, Marieka Gryzenhout. 2021. Baseline Data of the Fungal Phytobiome of Three Sorghum (*Sorghum bicolor*) Cultivars in South Africa using

Targeted Environmental Sequencing. *Journal of Fungi*. 7(11): 978.  
<https://doi.org/10.3390/jof7110978>

- Rachel L Harris, MCL Vetter, Esta van Heerdeen, **Errol Cason**, Jan-G Vermeulen, Anjali Taneja, Thomas L Kieft, Christina J DeCoste, Gary Laevsky, Tullis Onstott. FISH-TAMB, a Fixation-Free mRNA Fluorescent Labeling Technique to Target Transcriptionally Active Members in Microbial Communities. *Microb Ecol* (2021).  
<https://doi.org/10.1007/s00248-021-01809-5>
- Asuncion de los Rios, Isaac Garrido-Benavent, Alicia Limón, **Errol D Cason**, Gilliam Maggs-Killing, Don Cowan, Angel Valverde. Novel lichen-dominated hypolithic communities in the Namib Desert. *Microb Ecol* (2021).  
<https://doi.org/10.1007/s00248-021-01812-w>
- R. Purtschert, R. Yokochi, W. Jiang, Z.-T. Lu, P. Mueller, J. Zappala, E. Van Heerden, **E. Cason**, M. Lau, T.L. Kieft, C. Gerber, M.S. Brennwald, T.C. Onstott. Underground production of 81Kr detected in subsurface fluids. *Geochimica et Cosmochimica Acta*. Volume 295, 2021, Pages 65-79, ISSN 0016-7037,  
<https://doi.org/10.1016/j.gca.2020.11.024>.
- Coetzer, W.G., Coetzee, L.M., **Cason, E.D.** et al. A Preliminary Assessment of Skin Microbiome Diversity of Zebrafish (*Danio rerio*): South African Pet Shop Fish. *Indian J Microbiol* 61, 81–84 (2021). <https://doi.org/10.1007/s12088-020-00900-8>
- Ruan Fourie, Errol D Cason, Jacobus Albertyn, Carolina H Pohl, Transcriptional response of *Candida albicans* to *Pseudomonas aeruginosa* in a polymicrobial biofilm, *G3 Genes|Genomes|Genetics*, Volume 11, Issue 4, April 2021, jkab042,  
<https://doi.org/10.1093/g3journal/jkab042>
- Valverde, A., **Cason, E.D.**, Gómez-Arias, A. et al. Pollution shapes the microbial communities in river water and sediments from the Olifants River catchment, South Africa. *Arch Microbiol* 203, 295–303 (2021). <https://doi.org/10.1007/s00203-020-02035-2>
- Cason, E.D., Mahlomaholo, B.J., Taole, M.M., Abong, G.O., Vermeulen, J-G., deSmidt, O., Vermeulen, M., Steyn, L., Valverde, A. & Viljoen, B. 2020. Bacterial and fungal dynamics during the fermentation process of Sesotho, a traditional beer of Southern Africa. *Frontiers in Microbiology* 11: art 1451. DOI: 10.3389/fmicb.2020.01451
- Kuloyo, O., Fourie, R., Cason, E., Albertyn, J & Pohl, C.H. 2020. Transcriptome analyses of *Candida albicans* biofilms, exposed to arachidonic acid and

fluconazole, indicates potential drug targets. *G3: Genes, Genomes, Genetics* 10: 309-3108. DOI: 10.1534/g3.120.401340

- Naidoo, Y., Valverde, A., Cason, E.D., Pierneef, R.E. & Cowan, D. 2020. A clinically important, plasmid-borne antibiotic resistance gene ( $\beta$ -lactamase TEM-116) present in desert soils. *Science of the Total Environment* 719: 137497. DOI: 10.1016/j.scitotenv.2020.137497
- Grobler, R., de Witt, F., Cason, E.D., Einkamerer, O.B., Josling, G.C., O'Neill, H.A., Fair, M.D., Baloyi, J.J., MacNeil, M.D. & Naser, FWC. 2020. Training the next generation of animal scientists for South Africa. *Animal Frontiers* 10:10-17. <https://doi.org/10.1093/af/vfaa017>
- Gryzenhout, M., Cason, E.D., Vermeulen, M., Kloppers, G.A.E., Bailey, B., & Ghosh, S. 2020. Fungal community structure variability between the root rhizosphere and endosphere in a granite catena system in Kruger National Park, South Africa. *Koedoe* 62: a1597. <https://doi.org/10.4102/koedoe.v62i2.1597>
- Vermeulen, M., Cason, E.D. & Swart, W.J. 2020. The rhizobiome of herbaceous plants in Clovelly and Sterkspruit soils of the Stevenson–Hamilton supersite. *Koedoe* 62: a1596. <https://doi.org/10.4102/koedoe.v62i2.1596>.
- Maleke Maleke, Angel Valverde, Alba Gomez-Arias, **Errol Cason**, Jan-G Vermeulen, Lisa Coetsee-Hugo, Hendrik Swart, Esta Van Heerden, and Julio Castillo. (2019). Reduction of Europium by a Clostridium Strain. *Scientific Reports*. 9(1):1-11.
- Tonjock Rosemary Kinge, **Errol Cason**, Angel Valverde, Martin Nyaga, Marieka Gryzenhout. (2019). Endophytic seed mycobiomes of six sorghum (*Sorghum bicolor*) cultivars from commercial seedlots using an Illumina sequencing approach. *Mycosphere*. 10(1):739-756.
- Gaetan Borgonie, Cara Magnabosco, Antonio Garcia-Moyano, Borja Linage-Alvarez, Abidemi Ojo, Linda Freese, Charl Van Jaarsveld, Christelle Van Rooyen, Olukayode Olakunle Kuloyo, **Errol Duncan Cason**, Jan-G Vermeulen, Caroline Pienaar, Esta Van Heerden, Barbara Sherwood Lollar, Tullis Onstott, Scott Mundle. (2019). New ecosystems in the deep subsurface follow the flow of water driven by geological activity. *Scientific Reports*. 9(1):1-16.
- Maleke Maleke, Angel Valverde, Jan-G Vermeulen, **Errol Duncan Cason**, Alba Gomez-Arias, Karabelo Macmillan Moloantoa, Lisa Coetsee-Hugo, Hendrik C

Swart, Esta van Heerden, Julio C Castillo. (2019). Biomineralization and Bioaccumulations of Europium by a Thermophilic Metal Resistant Bacterium. *Frontiers in Microbiology*. 10:81.

- **Errol D. Cason**, Jan-G Vermeulen, Walter J. Müller and Esta van Heerden (2019). Aerobic and anaerobic enrichment cultures highlight the pivotal role of facultative anaerobes in soil hydrocarbon degradation. *Environmental Science and Health, Part A*. Jan 24:1-8
- Rachel L. Harris, Maggie C. Y. Lau, Andreia Cadar, Douglas H. Bartlett, **Errol Cason**, Esta van Heerden, Tullis C. Onstott. (2018). Draft Genome Sequence of “*Candidatus Bathyarchaeota*” Archaeon BE326-BA-RLH, an Uncultured Denitrifier and Putative Anaerobic Methanotroph from South Africa’s Deep Continental Biosphere. *Microbial Resource Announcements*. 7 (20) e01295-18.
- Jan-G. Vermeulen, Felicity Burt, Esta van Heerden, **Errol Cason**, Muriel Meiring. (2018) Evaluation of in vitro refolding vs cold shock expression: Production of a low yielding single chain variable fragment. *Protein Expression and Purification*. 151:62-71.
- Andrew W. Heard, Oliver Warr, Gaetan Borgonie, Borja Linage, Olukayode Kuloyo, Jonathan W. Fellowes, Cara Magnabosco, Maggie C.Y. Lau, Mariana Erasmus, **Errol D. Cason**, Esta van Heerden, Thomas L. Kieft, Jennifer C. Mabry, Tullis C. Onstott, Barbara Sherwood Lollar, Chris J. Ballentine. (2018). South African crustal fracture fluids preserve paleometeoric water signatures for up to tens of millions of years. *Chemical Geology*. 493:379-395.
- Olga A Podosokorskaya, Alexander Y. Merkel, Esta van Heerden, **Errol D. Cason**, Dmitry S. Kopitsyn, Maria Vasilieva, Elizaveta A. Bonch-Osmolovskaya, Ilya V. Kublanov. (2017) *Sporosalibacterium tautonense* sp. nov., a novel thermotolerant halophilic hydrolytic bacterium isolated from a gold mine, and emended description of the genus *Sporosalibacterium*. *International Journal of Systematic and Evolutionary Microbiology* doi: 10.1099/ijsem.0.001737
- **Errol D. Cason**, Peter J. Williams, Elizabeth Ojo, Julio Castillo, Mary F. DeFlaun and Esta van Heerden. (2017) Hexavalent chromium bioreduction and chemical precipitation of sulphate as a treatment of site-specific fly ash leachates. *World*

Journal of Microbiology and Biotechnology. 33:88. DOI: 10.1007/s11274-017-2243-4.

- Gaëtan Borgonie, Borja Linage-Alvarez, Abidemi Ojo, Steven Shivambu, Olukayode Kuloyo, **Errol D. Cason**, Sihle Maphanga, Jan-G Vermeulen, Derek Litthauer, Colin D. Ralston, Tullis C. Onstott, Barbara Sherwood-Lollar and Esta Van Heerden. Deep subsurface mine stalactites trap endemic fissure fluid Archaea, Bacteria, and Nematoda possibly originating from ancient seas. In *Geomicrobes: Life in Terrestrial Deep Subsurface* (2017). Ed Malin Bomberg and Lasse Ahonen. *Frontiers Research Topics*.
- G. Borgonie, B. Linage-Alvarez, A. Ojo, S. Shivambu, O. Kuloyo, **E.D. Cason**, S. Maphanga, J. Vermeulen, D. Litthauer, C.D. Ralston, T.C. Onstott, B. Sherwood-Lollar and E van Heerden (2015) Deep subsurface mine stalactites trap endemic fissure fluid Archaea, Bacteria, and Nematoda possibly originating from ancient seas. *Frontiers in Microbiology*. 6:833.
- G. Borgonie, B. Linage-Alvarez, A. O. Ojo, S.O.C. Mundle, L. B. Freese, C. Van Rooyen, O. Kuloyo, J. Albertyn, C. Pohl, **E. D. Cason**, J. Vermeulen, C. Pienaar, D. Litthauer, H. Van Niekerk, J. Van Eeden, B. Sherwood Lollar, T.C. Onstott & E. Van Heerden (2015) Eukaryotic opportunists rule the deep subsurface biosphere in South Africa. *Nature Communications*. 6:8952.
- G. Borgonie, M. Erasmus, **E.D. Cason** and E. Van Heerden (2015) *Beatrix Sibanye Gold and Star Diamonds* (Frontier Mining). French TV channel ARTE documentary. To be released in 2016.
- W.J. Müller, N. Tlalajoe, **E.D. Cason**, D. Litthauer, Oleg Reva, E. Brzuszkiewicz, E. van Heerden. (2016) *Thermus* sp. NMX2 A.1 Genome Analyses Reveals a Putative Calvin Benson-Bassham Pathway. *G3*. 6(9):2791-7. doi: 10.1534/g3.116.032953
- Podosokorskaya O.A., Merkel A.Y., Gavrilov S.N., Fedoseev I., Heerden E.V., **Cason E.D.**, Novikov A.A., Kolganova T.V., Korzhenkov A.A., Bonch-Osmolovskaya E.A., Kublanov I.V. (2016) *Tepidibacillus infernus* sp. nov., a novel moderately thermophilic selenate- and arsenate-respiring hydrolytic bacterium isolated from the TauTona gold mine, South Africa. *Int J Syst Evol Microbiol*. *Int J Syst Evol Microbiol*. 66(8):3189-94.



- M. Erasmus, **E.D. Cason**, J. van Marwijk, E. Botes, M. Gericke and E. van Heerden. (2014) Gold nanoparticle synthesis using the thermophilic bacterium *Thermus scotoductus* SA-01 and the purification and characterization of its unusual gold reducing protein. *Gold Bulletin*. (47): 245-253.
- C. Magnabosco, M. Tekere, M.C.Y. Lau, B. Linage-Alvarez, O. Kuloyo, M. Erasmus, **E.D. Cason**, E. Van Heerden, G. Borgonie, T.L. Kieft, J. Olivier and T.C. Onstott. (2014) Comparisons of the composition and biogeographic distribution of the bacterial communities occupying South African thermal springs with those inhabiting deep subsurface fracture water. *Frontiers in Microbiology*. (5) 697.
- **E.D Cason**, L.A. Piater and E. Van Heerden. (2012) Reduction of U(VI) by the deep subsurface bacterium, *Thermus scotoductus* SA-01, and the involvement of the ABC transporter protein. *Chemosphere*. (86): 572-577.
- E. Van Heerden, D.J. Opperman, A.P. Bester, J. Van Marwijk, **E.D. Cason**, D. Litthauer, L.A. Piater and T.C. Onstott. (2008) Metabolic promiscuity from the deep subsurface: a story of Survival or Superiority. *Instruments, Methods, and Missions for Astrobiology XI. Proceedings of the SPIE, Volume 7097*, pp. 70970S-70970S-12.

## CONFERENCE CONTRIBUTIONS

### **CONFERENCE POSTERS:**

- **E.D. Cason**, J. Alom, J. Barnard, M. Fair, P.D. Vermeulen, F.W.C. Naser. 2022. Possible association of members of the rumen bacterial microbiome with production traits in Afrikaner cattle. Poster presented at the World Congress on Genetics Applied to Livestock Production. Rotterdam, the Netherlands. 3-8 July 2022.
- **Cason, E.D.**; van Wyk, J.B.; Vermeulen, P.D. and Naser, F.W.C. 2022. Genetic characterization of Dexter cattle in Southern African. Poster presented at the European Federation of Animal Science (EAAP). Porto, Portugal. 5-9 September 2022.
- Malefane, M.; **Cason. E.D.** and de Smidt, O. 2022. Microbial functional and genetic diversity characterisation of soft drink effluent using CLPP and NGS. Poster presented at FoodMicro. Athens, Greece. 28-31 August 2022.

- Kinghorn, M.G.; **Cason, E.D.**; Ducrocq, V. and Naser, F.W.C. 2022. Comparison of Random Regression Test-Day Models for Production Traits of South African Jersey Cattle. Poster presented at the World Congress on Genetics Applied to Livestock Production. Rotterdam, the Netherlands. 3-8 July 2022.
- **Cason, E.D.**; van Wyk, J.B.; Vermeulen, P.D. & Naser, F.W.C. 2020. Estimation of genetic parameters for reproduction traits in South African Brahman cattle. Poster presented at the European Federation of Animal Science (EAAP) 2020 Virtual Meeting. 1-4 December 2020.
- Fourie C, Castillo J, Vermeulen J, **Cason ED**, van Heerden E, Valverde A (April 2018) Novel insights into precipitation and interactions of copper with *Desulfosporosinus acidiphilus* and *Rhodunobacter denitrificans*. The 20th Biennial congress of the South African Society for Microbiology. Muldersdrift, South Africa.
- Maleke MM, Castillo J, **Cason ED**, Vermeulen J, Molontoa KM, Gomez-Arias A, van Heerden E, Valverde A (April 2018) New insights into microtial rare earth interactions: Bioreduction and bioaccumulation. The 20th Biennial congress of the South African Society for Microbiology. Muldersdrift, South Africa.
- Moloantoa KM, Maleke MM, **Cason ED**, Vermeulen J, Valverde A, van Heerden E, Castillo J (April 2018) Isolation and characterization of denitrifying bacteria from open cast mines of Southern Africa. The 20th Biennial congress of the South African Society for Microbiology. Muldersdrift, South Africa.
- Hellmuth, JE, **Cason ED**, Boucher, CE (April 2018) Comparative genome analysis of *Avibacterium paragallinarum* serogroups. The 20th Biennial congress of the South African Society for Microbiology. Muldersdrift, South Africa.
- Heard, A.W., Warr, O., Borgonie, G., Linage, B., Kuloyo, O., Magnabosco, C., Lau, M.C.Y., Erasmus, M., **Cason, E.**, van Heerden, E., Kieft, T.L., Mabry, J., Onstott, T.C., Sherwood Lollar, B., and Ballentine, C.J. Origin and ages of fracture fluids in the South African crust. AGU Fall Meeting, New Orleans, LA, Dec. 11-15, 2017.
- R Tonjock Kinge, **E Cason**, M Gryzenhout. Differentiation of fungal communities between different crops and substrates in an intercropping trial. (July 2018) 11<sup>th</sup> International Mycological Congress in San Juan, Puerto Rico from 16-21 July 2018.
- G Pambuke, R Tonjock Kinge, **E Cason**, M Nyaga, M Gryzenhout. Characterization of the fungal phytobiome of sorghum (*Sorghum bicolor*) using environmental sequencing. (July 2018) 11<sup>th</sup> International Mycological Congress in

San Juan, Puerto Rico from 16-21 July 2018.

- C Rothmann, **E Cason**, R Tonjock Kinge, M Gryzenhout, B Viljoen. Discovery of a new thermotolerant *Ganoderma* species from the South African deep subsurface. (July 2018) 11<sup>th</sup> International Mycological Congress in San Juan, Puerto Rico from 16-21 July 2018.
- M Mqeku, **E Cason**, R Tonjock Kinge, M Gryzenhout. The mycobiome of Karee Malformation Disease symptoms on *Searsia lancea* (karee) trees in South Africa. (July 2018) 11<sup>th</sup> International Mycological Congress in San Juan, Puerto Rico from 16-21 July 2018.
- Bailey, B., Tonjock, R.K., **Cason, E.**, Gryzenhout, M. (2017) Root endophyte communities from sodic and non-sodic soils in a catena ecosystem of the Kruger National Park, South Africa. XXI<sup>th</sup> Congress of AETFAT, Nairobi, Kenya, 15-19 May 2017.
- Tonjock, R.K., **Cason, E.**, Gryzenhout, M. (2017) Seed mycobiomes of six sorghum varieties using Next Generation Sequencing. XXI<sup>th</sup> Congress of AETFAT, Nairobi, Kenya, 15-19 May 2017.
- Gryzenhout, M., Bailey, B., Kloppers, A., **Cason, E.**, Tonjock R. K. (2017) Root endophyte communities differ between sodic and non-sodic soils in a catena ecosystem of the Kruger National Park, South Africa. 7<sup>th</sup> International Barcode of Life Conference, Kruger National Park, South Africa, 20-24 November 2017.
- Mqeku, M., **Cason, E.**, Tonjock R.K., Gryzenhout, M. (2017) The fungal phytobiome of *Searsia lancea* (karee) trees with Karee Malformation Disease in South Africa. 7<sup>th</sup> International Barcode of Life Conference, Kruger National Park, South Africa, 20-24 November 2017.
- Tonjock R.K., **Cason, E.**, Gryzenhout, M. (2017) Comparisons of the mycobiome of five underutilized crop species in an intercropping system using Next Generation Sequencing. 7<sup>th</sup> International Barcode of Life Conference, Kruger National Park, South Africa, 20-24 November 2017.
- Tonjock Rosemary Kinge, **Errol D. Cason**, Marieka Gryenhout (2017) The Mycobiome of cowpea (*Vigna unguiculata*) using environmental sequencing. Fungal conservation in a changing Europe. Ohrid, Republic of Macedonia, 1-6 October 2017
- Maggie C.Y. Lau, Eric Becraft, **Errol Cason**, Gaetan Borgonie, Thomas L. Kieft, Long Li, Esta van Heerde, Jessica Jarett, Tanja Wokye, Ramunas

Stepanauskas and Tullis C. Onstott. The uncultivated phylum TA06. 3rd Deep Carbon Observatory International Meeting at St. Andrew, Edinburgh.

- Hiroshi Ogasawara, Y Yabe, T Ito, G van Aswegen, A Cichowicz, R Durrheim, TC Onstott, T Kieft, A Ishida, HY Ogasawara, T Yasutomi, A Funato, K Imanishi, M Okubo, M Boettcher, P Moyer, W Ellsworth, M Ziegler, S Wiemer, C Janssen, S Shapiro, H Gupta, P Dight, N Wechsler, AK Ward, B Liebenberg, Y Mukuhira, SN Somala, JP Hunt, S Bucibo, N Berset, R Haris, **ED Cason**. Drilling to probe quasi-static and dynamic seismic ruptures in deep South African gold mines. Schatzalp Workshop on Induced Seismicity. 14 to 17 March 2017 in Davos, Switzerland
- Hiroshi Ogasawara, Yasuo Yabe,, Takatoshi Ito, Gerrie van Aswegen, Michelle Grobbelaar, Raymond Durrheim, Martin Ziegler, Margaret Boettcher, Tullis C Onstott, Christo Craill, Akimasa Ishida, Hiroyuki Ogasawara, Musa Manzi, Harumi Kato, Akio Funato, Siyanda Mngadi,, Tatsunari Yasutomi, Shigeki Horiuchi, Alex Milev,, Pamela Moyer, William Ellsworth, Shuhei Abe, Makoto Okubo,, Kazutoshi Imanishi,, Tony Ward,, Denver Birch , Neta Wechsler, Bennie Liebenberg, Nicolas Berset, John Paul Hunt, Sifiso Bucibo, Sylvester Morema, Phil Dight, Tom Kieft, James Mori, Harsh Gupta, Christoph Janssen, Serge Shapiro, Yusuke Mukuhira, Stefan Wiemer, Joachim Philipp, Katrin Plenkers, Makoto Naoi,, Hirokazu Moriya,, Kentaro Omura, Surendra Nadh Somala , Kiyotoshi Sakaguchi, Rachel Harris, **Errol Cason**, Esta van Heerden. ICDP Drilling project to probe seismogenic zones of M2.0-5.5 earthquake in deep South African gold mines - Commencement of drilling. DSEIS talk at JpGU meeting in May 2017, Chiba, Japan.
- Ruan Fourie, **Errol D. Cason**, Ruan Ells, Olihile M. Sebolai, Jakobus Albertyn, Carolina H. Pohl (2017) Drilling beyond the tip of the iceberg: A deeper look at the polymicrobial interaction between *Candida albicans* and *Pseudomonas aeruginosa* using RNAseq. Bioinformatics: From Algorithms to Applications 2017 (BiATA 2017), St Petersburg, Russia.
- Purtscher, R., Onstott, T.C., Jiang, W., Lu, Z.-T., Müller, P., Zappala, J., Yokochi, J., van Heerden, E., **Cason E.D.**, Lau, M., Kieft, T., Brennwald, M.S. (2017) Underground production of  $^{81}\text{Kr}$  detected in subsurface fluids. Goldschmidt 2017. Paris. August 13-18.
- Castillo J, Linage B, Fourie C, Vermeulen M, **Cason E**, Coetsee-Hugo E, Swart H, Nieto JM, Macias F, Caraballo M, Becerra M, Gomez-Arias A, Corzo A, Papaspyrou S, Jimenez-Arias JL, Gonzalez-Perez JA & van Heerden. Bacterial

Mutualism as New Strategy of Survive Extreme Acidic and Microaerophilic Conditions. Goldsmidt YokoHama 26 June-1 July 2016. Hybrid code 21, CESM Code 13

- K.M. Moloantoa, J.C. Castillo, P.J. Williams, M. Erasmus, **E.D. Cason** and E. van Heerden. A Possible Bioremedial Solution for Nitrate Contamination in Open Cast Mines of Southern Africa. 3rd International Congress on Water, Waste and Energy Management, Rome, Italy. 18-20 July 2016. Hybrid code 31, CESM Code 13
- Maleke Maleke, Julio Castillo, **Errol Cason** and Esta van Heerden. A thermophilic *Thermus scotoductus* SA-01 interaction with Rare Earth Elements under Extreme conditions: 3rd International Congress on Water, Waste and Energy Management, Rome, Italy. 18-20 July 2016. Hybrid code 21, CESM Code 13
- B. Linage-Alvarez, G. Borgonie, O. Kuloyo, **E.D. Cason**, A.O. Ojo, S. Shivambu, S. Maphanga, A. Botha, W. Seymore, B. Sherwood-Lollar, T.C. Onstott and E. van Heerden. Stalactites, natural traps for deep life? Deep Carbon Observatory, Early Career Scientist workshop. University of Costa Rica. 18 to 21 February, 2014.
- V. Diedericks, **E.D. Cason**, A. Ojo, M.F. DeFlaun, P. Williams and E van Heerden. Optimizing conditions of upscale bioreactors for microbial hexavalent chromium reduction – identification of biomes. SASBMB 2014 – 24th Congress of the South African Society of Biochemistry and Molecular Biology. Goudini Spa, South Africa. 6 to 9 July 2014.
- **E.D. Cason** and E. van Heerden. Anaerobic naphthalene degradation by an indigenous nitrate-reducing culture: metagenomic insight into potential hydrocarbon activating pathways. SASBMB 2014 – 24th Congress of the South African Society of Biochemistry and Molecular Biology. Goudini Spa, South Africa. 6 to 9 July 2014.
- **E.D. Cason** and E. van Heerden. Anaerobic naphthalene degradation by an indigenous nitrate-reducing culture: metagenomic insight into potential hydrocarbon activating pathways. Extremophiles 2014, St. Petersburg, Russia. 7 to 11 September 2014.
- B. Linage-Alvarez, G. Borgonie, O. Kuloyo, A. Ojo, S. Shivambu, **E.D. Cason**, S. Maphanga, J. Vermeulen, D. Litthauer, C. Ralson, T.C. Onstott, B. Sherwood-

Lollar, E. Van Heerden. "Monhystrella parvella (Eumetazoa: Nematoda) survives inside a CaCO<sub>3</sub> stalactite at -1.4 km in Beatrix Gold Mine (South Africa) and is of marine origin". 10th International Congress on Extremophiles. Saint Petersburg. 7 to 11 September 2014.

#### **PRESENTED WORK:**

- Januarie, D.A.; Nesor, F.W.C.; and **Cason, E.D.** 2022. Genetic characterization of the indigenous Sanga cattle of Namibia. Presented at the World Congress on Genetics Applied to Livestock Production. Rotterdam, the Netherlands. 3-8 July 2022.
- Fourie R, **Cason ED**, Ells R, Sebolai OM, Albertyn J, Pohl CH (April 2018) Peeking behind the curtain: Transcriptomics of *Candida albicans*-*Pseudomonas aeruginosa* interaction. The 20th Biennial congress of the South African Society for Microbiology. Muldersdrift, South Africa.
- Ojo AO, Castillo J, **Cason ED**, Valverde A, DeFlaun M, van Heerden E (April 2018) Biodegradation of chloroethene compounds by an indigenous mixed microbial consortium. The 20th Biennial congress of the South African Society for Microbiology. Muldersdrift, South Africa.
- Maggie C.Y. Lau, Eric Becraft, **Errol Cason**, Gaetan Borgonie, Thomas L. Kieft, Long Li, Esta van Heerde, Jessica Jarett, Tanja Wokye, Ramunas Stepanauskas and Tullis C. Onstott. The uncultivated phylum TA06. 3rd Deep Carbon Observatory International Meeting at St. Andrew, Edinburgh.
- Hiroshi Ogasawara, Y Yabe, T Ito, G van Aswegen, A Cichowicz, R Durrheim, TC Onstott, T Kieft, A Ishida, HY Ogasawara, T Yasutomi, A Funato, K Imanishi, M Okubo, M Boettcher, P Moyer, W Ellsworth, M Ziegler, S Wiemer, C Janssen, S Shapiro, H Gupta, P Dight, N Wechsler, AK Ward, B Liebenberg, Y Mukuhira, SN Somala, JP Hunt, S Bucibo, N Berset, R Haris, **ED Cason**. Drilling to probe quasi-static and dynamic seismic ruptures in deep South African gold mines. Schatzalp Workshop on Induced Seismicity. 14 to 17 March 2017 in Davos, Switzerland
- Hiroshi Ogasawara, Yasuo Yabe,, Takatoshi Ito, Gerrie van Aswegen, Michelle Grobbelaar, Raymond Durrheim, Martin Ziegler, Margaret Boettcher, Tullis C Onstott, Christo Craill, Akimasa Ishida, Hiroyuki Ogasawara, Musa Manzi, Harumi

Kato, Akio Funato, Siyanda Mngadi,, Tatsunari Yasutomi, Shigeki Horiuchi, Alex Milev,, Pamela Moyer, William Ellsworth, Shuhei Abe, Makoto Okubo,, Kazutoshi Imanishi,, Tony Ward,, Denver Birch , Neta Wechsler, Bennie Liebenberg, Nicolas Berset, John Paul Hunt, Sifiso Bucibo, Sylvester Morema, Phil Dight, Tom Kieft, James Mori, Harsh Gupta, Christoph Janssen, Serge Shapiro, Yusuke Mukuhira, Stefan Wiemer, Joachim Philipp, Katrin Plenkers, Makoto Naoi,, Hirokazu Moriya,, Kentaro Omura, Surendra Nadh Somala , Kiyotoshi Sakaguchi, Rachel Harris, **Errol Cason**, Esta van Heerden. ICDP Drilling project to probe seismogenic zones of M2.0-5.5 earthquake in deep South African gold mines - Commencement of drilling. DSEIS talk at JpGU meeting in May 2017, Chiba, Japan.

- **Errol Duncan Cason**, Cumisa Mlandu, Esta van Heerden (2017) Metagenomic exploration of horizontal gene transfer events and phage infections in a South African deep subsurface bacterial population. Bioinformatics: From Algorithms to Applications 2017 (BiATA 2017), St Petersburg, Russia.
- **E.D. Cason**, T.C. Onstott, R. Harris and E. van Heerden. Deep mine subsurface research – Diversity, geochemistry and (meta)genomics. Research Talk presented at ICDP DSeis Worskshop “Drilling into Seismogenic Zones of M2.0-5-5 earthquakes in South African Gold Mines, Potchefstroom, South Africa. 31 October to 3 November 2015.
- E. Van Heerden, N. Tlalajoe, E. Brzuszkiewics, J.C. Berenguer, T.C. Onstott, M. Lau, O Kuloyo, B Linage-Alvarez, **E.D. Cason**, M Erasmus, and D. Litthauer. 6-9 July 2014. Exploring deep mine biodiversity plasticity and adaptability. Paper delivered at the 24th Biennial Congress of the South African Society of Biochemistry and Molecular Biology, Worcester, South Africa.
- Onstott, T.C., Lau, M.C.Y., Magnabosco, C., Lindsay, M., Alleva, R., Tetteh, G., Kieft, T.L., Pullin, M.J., Hendrickson, S., Cameron, C., Schilkey, F.D., Grim, S., Morrison, H., Sogin, M., Kuloyo, O., Linage-Alvarez, B., **Cason, E.**, Erasmus, M., van Heerden, E., Borgonie, Slater, G.F., Simkus, D., Lacrampe-Couloume, G., Sherwood Lollar, B., Labonté, J. and Stepanauskas, R. Does Your Deep Biosphere differ from My Deep Biosphere? What Comparative Genomics Tells Us. Invited. 10<sup>th</sup> International Congress on Extremophiles. Saint Petersburg, Russia. Sept. 7-11, 2014.

## WORKSHOPS ATTENDED

- Introduction to Next Generation Sequencing Analysis and Bioinformatics (2016), hosted by the CPGR, Cape Town.
- Invited to for a visit to discuss Targeted and Metagenomic sequence analysis at Princeton University, USA, by Prof TC Onstott and Dr C.M. Lau (2016).
- Single Cell Genomics Workshop (2015), Boothbay Harbour, Maine.
- Software Carpentry Bootcamp (2014), University of Cape Town.
- Next Generation Sequence analysis (2013), University of the Free State, Bloemfontein
- Zeiss Microscopy introduction course (2010), University of the Free State, Bloemfontein.
- Workshop in Laboratory Safety & Chemical Grades (2010) hosted by MERCK, Bloemfontein.
- Workshop in SEM and TEM sample preparation and visualisation, University of the Free State, Bloemfontein (2008)
- Invited to attend a course in Geochemical cycling at Princeton University by Prof TC Onstott (2008).
- Workshop in LC-MS training (2008) hosted by Parexel, Bloemfontein.

## REPORTS

- Summary report on the efficacy of S-Oil Purge in remediation of hydrocarbon contaminated soils. Prepared by **E.D. Cason** and E van Heerden. November 2017
- Summary report on the efficacy of the pilot scale biological treatment options investigated at Marble Hall. Prepared by E. van Heerden, **E.D. Cason** and V. Diedericks. May 2014
- Monrovia Water Point Sampling – Liberia Water Point Mapping Project Phase 3. Prepared for World Bank Water and Sanitation Program. Prepared by UHL & Associates (Lambertville, USA) in association with University of the Free State (Bloemfontein, South Africa) and Eden Preferred Water Services (Monrovia Liberia). November 2011.

## PATENTS

Isolation of a Protein responsible for uranium(VI) reduction (PCT/IB 2010/054259).



## ACADEMIC RECOGNITION

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Included in the Academic Leadership Program at the University of the Free State (2022-2023).

Included in the Integrated Transformation Plan (ITP) Research Task Team at the University of the Free State (2018-2020).

President of the Microbial, Biochemical and Food Biotechnology Student Representative Society (2011-2012).

Member of the Natural and Agricultural Sciences Student Society (NASSS) (2011-2012).

## OTHER ACHIEVEMENTS

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One of the founding members of Kovsie Brewing (2012-Present).

One of the founding members of LiquidCulture (2017-Present).

University of the Free State Craft Brewing Team Captain (2013 to 2017).

Winner SAB 2013, 2014, 2015 and 2018 Intervarsity Beer Brewing Competition, Beer Dreamer Label Award.

Winner SAB 2017 Intervarsity Beer Brewing Competition, Spirit Award

## ACTIVITIES AND INTERESTS

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Unicycling and juggling.

Home brewing of lagers and ales.

Travel (countries visited: USA, England, Scotland, Netherlands, Belgium, Russia, France, Thailand, Liberia, Mozambique, Mauritius, Germany, Lesotho)

## REFERENCES

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### **Prof Angel Valverde**

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