



Curriculum Vitae of:

RYAN DAVID RATTRAY

Address: P. O. Box 30129, Richards Bay, 3900 - South Africa
Tel: +27 76 594 6999 · +27 11 559 3477
E-mail: ryanr@uj.ac.za · ryan.rattz@gmail.com
LinkedIn: <http://www.linkedin.com/in/ryandrattray>

PROFILE

I completed my undergraduate BSc degree at the University of Pretoria in 2014 with specialisation in Genetics and Plant Science. In 2015 I completed my BSc (Hons) degree at the University of Johannesburg; where my project focused on the ethnobotany, phytochemistry and antimicrobial activity of several plant species used by the Basotho people for the treatment of skin ailments.

I am currently completing my MSc in Botany. My project focuses on using the combination of multi-disciplinary techniques (DNA barcoding and phytochemical analysis) in discriminating between 'pure' and 'adulterant' plant species used in herbal medicines both locally and internationally.

Apart from my academic inclination; I have managed to develop keen skills in aspects of leadership and youth development. I am currently serving as a ResLife & Education Co-ordinator for a student accommodation company whereby I have the responsibility of developing, initiating and overseeing a tailor-made programme that offers the platform for students to grow and develop themselves in aspects such as: leadership, social & academic development and community engagement.

I am a passionate, dedicated and strong-willed individual who always gives of my best in everything that I do. I have excellent people skills and will always try my utmost best to get the job done!

KEY ACHIEVEMENTS

- ✓ **2008:** Executive Member of the Student Council at John Ross College.
- ✓ **2009:** Head Boy and Chairperson of the Student Council at John Ross College.
- ✓ **2010:** Chairperson of the University of Pretoria Residence: Tuks Naledi.
- ✓ **2011:** Delegate for the University of Pretoria at the **ACUHO-I-SAC** [*Association of College and University Housing Officers International - South African Chapter*].
- ✓ **2016:** Chairperson of Local Organizing committee for the Annual Postgraduate Symposium for the Department of Botany – UJ
- ✓ **2017:** Member of the Local Organizing Committee for the 7th International Barcode of Life (iBOL) Conference.

EMPLOYMENT HISTORY

Rates Wizard	2011	Handling all admin/client files and relating documentation.
<i>Assistant</i>	-	Personal assistant capacity at times as well as some basic
	2014	financial work.

Respublica Student Living RLEC	Jan 2015 – Dec 2016	I was appointed as the ResLife & Education Co-ordinator (RLEC) for a private student residence: Saratoga Village. I had to oversee, create and initiate a curriculum/programme aimed at enriching and developing students (over 1200 of them) in: leadership, social and academic aspects during their stay. The programme has thus far been successful, and strengthens year to year.
African Centre for DNA Barcoding Junior Researcher	2015	I was given the task of assisting a colleague on a DNA Barcoding project in order to better understand the phylogeny and identity of a group of plant species. The job entailed basic DNA extraction and preparation from plant material. A specific region/gene was then amplified through PCR (polymerase chain reaction) from the DNA. The DNA sequence was then elucidated through Cycle Sequencing. The DNA raw sequence data obtained was edited and aligned through computer software. The edited data was then run through a database to confirm identity, followed by being entered into software that determined the phylogenetic relationship between the plant species based on gene sequence similarities.
African Centre for DNA Barcoding Researcher	2016	<p>I was assisting with the sequencing of data for the Barcode of Wildlife Project (South Africa). The data is used to assist in the creating of a public DNA barcode reference library of 50 000 voucher specimens, representing 10 000 species. 2 000 of these will represent endangered species. The data is used in conjunction with local authorities to assist in the slowing down of illegal trade.</p> <p>My other duties included assisting with the media and branding of the Laboratory and coming up with new and modern ways to represent our brand in an ever-changing environment.</p>
African Centre for DNA Barcoding Lab Manager	2017 - Present	I have been assigned the task of the overall administration and management of the Lab as well as overseeing an invasive species project we are currently working on. I oversee all our DNA Barcoding Technicians and their projects and duties, I handle procurement of Lab consumables, staff appointments as well as the general running of the Lab.

EDUCATION AND TRAINING

Degree: Bachelor of Science (BSc) specialization in Genetics and Plant Science¹.
Institution: University of Pretoria (2010 - 2014).

Degree: Honours Degree in Science specialization in Botany and Plant Biotechnology².
Institution: University of Johannesburg (2015).
Project Title: “*Medicinal plants used by the Basotho People for the treatment of skin ailments.*”

Degree: Master’s Degree in Science specialization in Botany and Plant Biotechnology
Institution: University of Johannesburg (Current)
Project Title: “*The use of DNA barcoding technology and metabolomics to identify material utilised to manufacture herbal medicines - The interchangeable use of Pelargonium sidoides and Pelargonium reniforme in commercial herbal products as a case study.*”

CORE SKILLS

IT Proficiency: MS Word, Outlook, Excel, PowerPoint and Internet
Mac Pages, Numbers and Keynote
Apple/Mac software and Operating System
Limited Adobe PhotoShop
Geneious Software
Adobe DreamWeaver
WordPress

DNA Barcoding: Basic DNA extraction, Gene amplification via PCR (polymerase chain reaction). Cycle Sequencing of gene regions. Editing and aligning of DNA sequences. Database comparisons of DNA sequences and compilation of phylogenetic trees.

MIC Analysis: Preparation of crude plant extracts and testing the minimum concentration of extract required to inhibit the growth of certain pathogens.

Languages: Fluent English and Afrikaans.

SCIENTIFIC CONFERENCES

1. Department of Botany - University of Johannesburg. “*Postgraduate Symposium*”, October 2015.
2. South African Association of Botanists. “*43rd SAAB Conference*”, January 2017.

¹ List of modules completed can be found in Appendix A.

² List of modules completed can be found in Appendix A.

PUBLICATIONS

1. **Rattray, R.D.**, Viljoen, A.M., Van der Bank, M., 2017. DNA Barcoding to discriminate between the interchangeable use of *Pelargonium sidoides* DC. and *Pelargonium reniforme* Curtis in commercial herbal products. *South African J. Bot.* 109, 367. doi:10.1016/j.sajb.2017.01.169

REFERENCES

Prof. Michelle van der Bank - University of Johannesburg

Director - African Centre for DNA Barcoding

E-mail: mvdbank@uj.ac.za

Tel: +27 11 559 2495

Prof. Alvaro Viljoen – Tshwane University of Technology

Director – MRC Herbal Drug Research Unit

Email: viljoenam@tut.ac.za

Tel: +27 12 382 6360

Prof. Marion Meyer - University of Pretoria

Professor and Lecturer - Department of Plant Science

E-mail: marion.meyer@up.ac.za

Tel: +27 12 420 2224

Mrs. Bronwyn Boavida - Respublica

Portfolio Manager

E-mail: bronywn@respublica.co.za

Tel: +27 10 020 0320

APPENDIX A

1. List of modules completed at The University of Pretoria (BSc)

Phytomedicine (BOT 365)
Genome Evolution & Phylogenetics (GTS 354)
Population & Evolutionary Genetics (GTS 367)
Genetics in Human Health (GTS 368)
Plant Genetics and Crop Biotechnology (BTC 361)
Plant Ecophysiology (BOT 356)
Plant Ecology (BOT 358)
Eukaryotic Gene Control and Development (GTS 351)
Plant Biology (BOT 161)
Computer Literacy (CIL 111)
Chemistry (CMY 117)
Introductory Genetics (GTS 161)
Introductory Microbiology (MBY 161)
Molecular and Cell Biology (MLB 111)
General Physics (PHY 131)
Calculus (WTW 134)
Animal Diversity (ZEN 161)
Biometry (BME 120)
South African Flora and Vegetation (BOT 251)
Introduction to Proteins and Enzymes (BCM 253)
Carbohydrate Metabolism (BCM 254)
Lipid and Nitrogen Metabolism (BCM 255)
Molecular Genetics (GTS 251)
Genetic Diversity and Evolution (GTS 261)
Mycology (MBY 261)
Principles of Plant Pathology (PLG 262)
Invertebrate Biology (ZEN 251)
African Vertebrates (ZEN 261)
Plant Physiology and Biotechnology (BOT 261)

2. List of modules completed at The University of Johannesburg (BSc Hons)

Plant Biotechnology (BOT 0047)
Molecular Systematics and Evolution (BOT 0067)
Advanced Plant Taxonomy (BOT 0097)
Post-Harvest Physiology (BOT 0017)
Scientific Methods (BOT 0087)
Project (BOT 0077)