

Ashley Isaac
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EDUCATION

Institute and Qualification	Graduation
Max Planck Institute for Marine Microbiology & University of Bremen <i>Doctor rerum naturalium (Biology: Marine Microbiology)</i>	Ongoing
University of KwaZulu-Natal <i>Master of Science (Microbiology) by Research</i>	2016
University of KwaZulu-Natal <i>Bachelor of Science Honours (Microbiology)</i>	2009
University of KwaZulu-Natal <i>Bachelor of Science (Microbial Biotechnology)</i>	2008
Westcliff Secondary School <i>Senior Certificate with Endorsement (Distinction)</i>	2005

EMPLOYMENT HISTORY

Instructor of Biology	Sept 2021 – Present
Associate Instructor of Biology	Aug 2019 – Aug 2021
Assistant Instructor of Biology	Aug 2016 – Jul 2019
<i>New York University Abu Dhabi, Abu Dhabi, UAE</i>	
<ul style="list-style-type: none">• Lead Foundations of Science Biology classes with a focus on cell and molecular biology• Taught scientific writing course to incoming science and engineering students – supervised their research/fieldwork• Prepared and graded homework, assignments and examinations for assigned courses• Served as instructor for Human Biology• Served as instructor for Communication• Served as instructor for Animal Perspectives• Served as instructor for Where the City Meets the Sea• Served as instructor for Special Topics – Field Biology – designed and implemented labs• Served as instructor for Microbes summer course• Designed Microbes J-term course in collaboration with faculty• Mentored students and provided constructive feedback regarding their progress in courses• Served as support staff for course administration and work closely with the Dean of Science• Responsible for administration of CAAR documentation for FoS 1-4 and other assigned courses accreditation• Actively involved in the NYUAD Science Department activities such as serving as a judge for the Crystal Growth Symposium and participating in open days for high school students• Evaluated capstone poster presentations• Supervised and mentored a team of students from multiple disciplines participating in the iGEM synthetic biology competition – resulting in a Gold Medal Award (2017), Gold Medal plus nomination for Best Diagnostic project (2018), Silver Medal plus nomination for Best Diagnostic project (2019)• Ensured that undergraduate teaching labs adhere safety regulations• Consulted on curriculum development for biology for engineers	

- Designed and taught laboratory component and Excel workshop for J-term course: Challenges in Global Health
- Served as trip supervisor responsible for ~13 students on regional seminars to Uganda and Nepal – attended to all logistical and financial tasks
- Research affiliation: Amin Group (Marine Microbial Ecology) with a focus on phytoplankton phycosphere colonization. Previous research on:
 - Bioinformatic analysis of diatom and microbiome genomes and transcriptomes
 - Bioactive metabolites isolated from marine microbes and plant phenolics.
 Techniques/experiments performed but not limited to:
 - Cultivation and maintenance of marine microbes
 - Solid phase extraction of organic metabolites
 - HPLC
 - Activity assays against *C. elegans*
- Biology consultant on newspaper article appearing in Gulf News on contamination of food (05 March 2018)
- Initiated and established research collaborations with the Max Planck Institute for Marine Microbiology

Global Academic Fellow (Biology)

Aug 2013 – May 2015

New York University Abu Dhabi, Abu Dhabi, UAE & New York University Shanghai, Shanghai, China

- Provided academic support to faculty and students
- Lead biology recitations, tutorials and one on one teaching sessions with 1st and 2nd year students
- Prepared and graded homework and assignments
- Prepared and delivered workshops on time management and plagiarism
- Served as support staff for course administration and participated in admissions process and evaluation of prospective students
- Served as a member of the GAF publicity team and created content to promote the Academic Resource Center
- Served on the GAF Alumni Network committee and planned and launched the Network
- Served as trip supervisor to a class of ~15 students and co-ordinated travel around the UAE
- Served as leadership in student life communities (Community Outreach interest group), reviewed budgets, planned and executed events
- Lead English language classes with Chinese students on controversial topics, and English conversations over Skype with Chinese students over school holidays

Laboratory Data Research Assistant

Feb 2010 – Jun 2011

South African Medical Research Council, HIV Prevention Research Unit, Westville, Durban, South Africa

- Responsible for quality control of all laboratory reports; Ensuring correct tests assigned to participants as per study protocol
- Administrator of the Laboratory Information Management System (LIMS); responsible for setting up and programming of new studies into the system
- Receiving of clinical samples; design of study kit labels; preparation and dispatch of study kits
- Prepared statistic reports on inventory, study results and test billing
- Wrote, reviewed and edited laboratory SOPs
- General administrative duties including filing, emailing, liaising with vendors and site personnel

Demonstrator and Teaching Assistant

Jan 2009 – Dec 2009; Duration of MSc

University of KwaZulu-Natal, Westville, Durban, South Africa

- Set up of experimental apparatus for undergraduate practical (lab) sessions
- Explained experimental procedures to students
- Supervised and assessed students' performance
- Taught tutorial sessions related to environmental/industrial microbiology and recombinant DNA technology

SKILLS & COMPETENCIES

- Project design, management and execution
- Scientific and grant proposal writing
- Microbiology techniques: Aseptic technique, handling of fungi, bacteria and viruses
- Bioinformatics
- Molecular techniques: PCR, recombinant DNA technology, heterologous expression, FISH
- Experience in *E. coli* and *Pichia* expression systems
- Public speaking
- Research and problem solving
- Computer literate
- Licensed to drive light motor vehicles

FURTHER EDUCATION & TRAINING

Computational Systems Biology <i>UCL Summer School</i>	Jun 2019
Summer School in Bioinformatics <i>Wellcome Genome Campus</i>	Jun 2018
Best Practices in Teaching and Learning <i>NYU Abu Dhabi</i>	Aug 2017
Certificate in Budgeting and Scheduling Projects <i>Cousera, University of California, Irvine (Online)</i>	Jun 2016
Certificate in Initiating and Planning Projects <i>Cousera, University of California, Irvine (Online)</i>	Mar 2016
First Aid and CPR certified <i>American Heart Association</i>	Nov 2014
TEFL certified <i>NYU Shanghai</i>	Jul 2013
Introduction to Bioinformatics <i>SANBI, University of Western Cape</i>	Feb – Mar 2013
Good Clinical Practice <i>Duke University Health System Clinical Education and Professional Development (Online)</i>	Feb 2010
Protecting Human Research Participants <i>NIH Office of Extramural Research (Online)</i>	Feb 2010

GRANTS & AWARDS

- NYUAD Research Travel Grant (2022) – USD 5000
- NYUAD Research Professional Development Travel Grant (2019) – USD 5000
- iGEM 2019 Silver Medal Award plus Nomination for Best Diagnostic Project (2019)
- NYUAD Research Professional Development Travel Grant (2018) – USD 5000
- iGEM 2018 Gold Medal Award plus Nomination for Best Diagnostic Project (2018)
- iGEM 2017 Gold Medal Award (2017)
- NRF Masters Innovation Scholarship (2011) – ZAR 60 000
- UKZN Special Honours Bursary (2009) – ZAR 30 000
- NRF Free Standing Scholarship (2009) – ZAR 10 000
- Victor Daitz Bursary (2008) – ZAR 10 000
- Revlon Bursary (2008) – ZAR 6000
- Granted Membership into the Golden Key International Honour Society (2007)
- Eskom Walter Sisulu Scholarship (2005) – ZAR 10 000

CONFERENCES & INVITED TALKS

Molecular Ecology Group Internal Seminar <i>Max Planck Institute for Marine Microbiology, Bremen, Germany</i> <i>Oral Presentation: Rhodobacteraceae functional profile and diatom secondary metabolites facilitate phycosphere colonization</i>	July 2022
Invited Seminar Speaker <i>University of Oldenburg, ICMB, Oldenburg, Germany</i> <i>Oral Presentation: Rhodobacteraceae functional profile and diatom secondary metabolites facilitate phycosphere colonization</i>	June 2022
Ocean Sciences Meeting 2022 <i>Online</i> <i>Oral Presentation: Ecological Niches of Algal Bloom Associated Roseobacters</i>	Feb 2022
NYUAD Biology Seminar Series <i>Abu Dhabi, United Arab Emirates</i> <i>Oral Presentation: Ecological Niches of Algal Bloom Associated Roseobacters</i>	Apr 2021
Marine Microbiota Symposium <i>Oldenburg, Germany</i> <i>Poster and pitch: Diatom extracellular metabolites modulate microbiome to favor Roseobacteria</i>	Aug 2019
Summer School in Bioinformatics <i>Wellcome Genome Campus, EBI, Cambridge, UK</i> <i>Poster: Metagenomic and Transcriptomic Analysis of the Diatom Core Microbiome</i>	Jun 2018
BIO International Convention <i>San Diego, USA</i> <i>Attended</i>	Jun 2017
SASM Annual Symposium <i>Durban, South Africa</i> <i>Chaired session on Biofuels</i>	Oct 2015
Energy and Material Research Conference <i>Madrid, Spain</i> <i>Attended</i>	Feb 2015

SASM Annual Symposium

Durban, South Africa
Attended

Oct 2012**SASM National Conference**

Cape Town, South Africa
Attended

Nov 2011**SASM Annual Symposium**

Durban, South Africa

Oral Presentation: Characterization of the endoxylanase from a novel haloalkaliphilic *Nesterenkonia* sp.

Oct 2009**PUBLICATIONS**

A. A. Shibl, M.A. Ochsenkühn, A. R. Mohamed, **A. Isaac**, L. Coe, Y. Yun, J-B. Raina, J. R. Seymour, A. J. Afzal, S. A. Amin. (2022). *Molecular mechanisms of microbiome modulation by the diatom secondary metabolite azelaic acid*. In Review.

A. Isaac, B. Francis, R. I. Amann and S. A. Amin (2021) *Tight adherence (Tad) pilus genes indicate putative niche differentiation in phytoplankton bloom associated Rhodobacterales*. *Frontiers in Microbiology*. doi: 10.3389/fmicb.2021.718297.

A.A. Shibl, **A. Isaac**, M.A. Ochsenkühn, A. Cardenas, C. Fei, G. Behringer, M. Arnoux, N. Drou, M.P. Santos, K.C. Gunsalus, C.R. Woolstra, S.A. Amin (2020). *Diatom modulation of select bacteria through use of two unique secondary metabolites*. *PNAS*. doi: 10.1073/pnas.2012088117.

C. Fei, M.A. Ochsenkühn, A.A. Shibl, **A. Isaac**, C.Wang, S.A. Amin. (2020). *Quorum sensing regulates 'swim-or-stick' lifestyle in the phycosphere*. *Environ. Microbiol.* doi: 10.1111/1462-2920.15228

Jacob Beal, Natalie G. Farny, Traci Haddock-Angelli, Vinoo Selvarajah, Geoff S. Baldwin, Russell Buckley-Taylor, Markus Gershater, Daisuke Kiga, John Marken, Vishal Sanchania, Abigail Sison, Christopher T. Workman, the **iGEM Interlab Study Contributors** (2020). *Robust Estimation of Bacterial Cell Count from Optical Density*. *Communications Biology*. 3: 512

Khairunnisa Semesta, Adrienne Chang, Diego Kleiman, Woo Hyun Cho, Fathurur Said, Pratik Maisuria, Laura Karpauskaite, Muhammad Shehryar Hamid, Mona Kalmouni, **Ashley Isaac**, Mazin Magzoub, Kourosh Salehi-Ashtiani, Ibrahim Chehade and Yong-Ak Song. *Synthetic Biology-Based Approach to Develop A Pathogen Diagnostic Device for Rapid Detection of Shiga Toxin-producing Escherichia coli in Resource-Limited Settings*. (In Prep)

EXTRA CURRICULAR

Interests

Guitar; Photography; Traveling; Blogging