

**Table of Content**

**Summary of research career ..... 2**  
**Research Interest ..... 3**  
**General Fields of Expertise..... 3**  
**Specific Skills..... 3**  
**Education: ..... 3**  
**Employment History: ..... 4**  
**Scholarship and Awards: ..... 5**  
**Other Academic Awards:..... 6**  
**Research Experience ..... 6**  
    Peer-Reviewed Publications ..... 6  
    Manuscripts under review ..... 7  
    Manuscripts in preparation ..... 7  
    Invited Talk..... 8  
    Conference Presentations ..... 8  
**Trainings and Workshops..... 10**  
**Membership of Committees..... 11**  
**Membership of Professional Associations ..... 11**  
**Administrative Positions ..... 11**  
**Community Service ..... 12**  
**Extracurricular Activities ..... 12**  
**Referees..... 12**

**Summary of research career**

I obtained a BSc Hons (General Microbiology) in 1998 and an MSc (Medical Microbiology) in 2002 from the University of Nigeria, Nsukka (UNN), and proceeded to work in the same university in an Assistant Lecturer position in the Department of Microbiology between 2002 and 2004. In 2004 I was offered an Endeavor International Postgraduate Research Scholarship (EIPRS) by the Australian Research Council to undertake a PhD at the Faculty of Medicine, The University of New South Wales, Sydney, Australia and successfully completed the program in 2009. During my candidature, I was also the recipient of 5 awards to attend and present my work at different scientific meetings. I returned to UNN after my PhD candidature in 2009 to take up an academic position as a Lecturer in the Department of Microbiology. In 2010, I received two separate Post-doctoral Fellowship awards: (1) a three-year fellowship from GenØK- The Norwegian Centre for Biosafety, University of Tromsø, Norway to study the functional genomics of vaccine-vector relevant naturally occurring and genetically modified orthopoxviruses during infection of human and mammalian cells (2010-2013); (2) a two- year fellowship from Fondation de Coopération Scientifique, “Infectiopôle Sud”, Faculté de Médecine, Université de la Méditerranée, EA 3781 – Université Aix-Marseille 1 (2010-2012) to study the functional genomics of African recurrent Borrelia fever. I declined the second award in preference for the first because it promised more fascinating challenges and prospects.

I was also active in a number of non-academic groups/activities. In particular between 2005 and 2008 I served as Assistant Secretary of the New South Wales Australian-Nigerian Igbo Association, a cultural group comprising of Australians with Nigerian background.

**Research Interest**

Application of biomedical science techniques such as proteomics, transcriptomics, bioinformatics, cell and molecular biology in answering biological questions regarding the development and progression of diseases as well as environmental safety.

**General Fields of Expertise**

Microbiology, Virology, Transcriptomics, Proteomics, Bioinformatics, Cancer biology, Cell and Molecular biology.

**Specific Skills**

Tissue, bacterial, fungal, and virus culture and purification techniques. Spectrophotometric assay techniques. Protein, DNA, RNA extraction and purification. Protein Immunoblot techniques, Reverse transcription and quantitative real-time PCR. Proteomics techniques including two-dimensional gel electrophoresis, Stable Isotope Labeling of Amino Acids in Cell Cultures. Mass spectrometry and protein identification. Bioinformatics.

**Education:****2004-2009****Doctor of Philosophy**

Faculty of Medicine

The University of New South Wales, Sydney, Australia

Thesis: Molecular studies of the response of *Helicobacter hepaticus* to bile and the effects of *Helicobacter bilis* on human hepatoma cells**1999-2002****Master of Medical Microbiology**

Faculty of Biological Sciences

The University of Nigeria

**1993-1998****Bachelor of Microbiology (Honours)**

Faculty of Biological Sciences

The University of Nigeria

## Employment History:

- (1) 2010 - **Post-Doctoral Research Fellow**  
GenØK – Centre for Biosafety  
Research Park at Breivika  
University of Tromsø  
9294, Tromsø  
Norway
- (2) 2009-2010 **Lecturer**  
Department of Microbiology  
University of Nigeria  
Nsukka  
*Responsibilities: Research, Teaching and Supervision of Students  
Research Projects*
- (3) 2008-2009 **Junior Research Fellow**  
1) Memory and Ageing Study  
The University of New South Wales  
2) Cerebral Palsy Study Group  
School of Medicine, The University of Notre Dame, Sydney
- (4) 2005-2007 **Teaching Assistant**  
The University of New South Wales  
*Responsibilities: Tutoring and demonstrating to undergraduate students*
- | Name of Course                                     | Role                   |
|--|------------------------|
| Fundamentals of microbiology                       | Tutor and demonstrator |
| Microbiology 1                                     | Tutor and demonstrator |
| BIOS2021 Genetics                                  | Tutor and demonstrator |
| Medical Biochemistry                               | Demonstrator           |
| HIV and other unconquered infections<br>(GENS6033) | Tutor                  |
- (5) 2005-2006 **Postgraduate Mentor**  
Faculty of Science  
The University of New South Wales  
*Responsibilities: Secondary School Enrichment Program*
- (6) 2002-2004 **Assistant Lecturer**  
Department of Microbiology

Faculty of Biological Sciences  
The University of Nigeria  
*Responsibilities: Research, Teaching and Supervision of undergraduate students' Research Projects.*

## (7) 1993-2001

### **1. Part-time data analyst and tutor in different computer application software**

Queens Computer World Limited  
The University of Nigeria

*Responsibilities: (i) Data Analysis comprising of collation and analysis of data using MS Excel and SPSS (ii) Tutor of different computer application software.*

### **2. Medical Laboratory Scientist (Microbiology)**

Nigerian/German Leprosy & Tuberculosis Laboratory (NGLT)

*Responsibilities: (i) In charge of screening sputum for the tuberculosis bacillus, and reporting to the central NGLT office. (ii) Routine laboratory duties.*

## **Scholarships and Awards:**

### **2010-**

Post-doctoral Fellowship from GenØK- The Norwegian Centre for Biosafety, The University of Tromsø, Norway.

### **2004-2009**

- (i) **Endeavor International Postgraduate Research Scholarship (EIPRS)**, Australian Research Council.
- (ii) **Quota Postgraduate Research Scholarship in Medical Biology, Faculty of Medicine, The University of Tromsø, Tromsø, Norway** – Declined in favour of EIPRS. [*This is a competitive scholarship offered by the Norwegian Government to outstanding students from developing countries*].

### **2007**

- (i) **ESCMID Grant** for the 14<sup>th</sup> International Workshop on *Campylobacter, Helicobacter* and Related Organisms. September 2-5, 2007, Rotterdam, The Netherlands.
- (ii) **Postgraduate Research Scholarship Scheme (PRSS)**, Graduate Research School, The University of New South Wales.
- (iii) **School of Medical Sciences Conference Travel Grant**, The University of New South Wales.

## 2006

- (i) Travel Grant from the Australian Research Council supported project to attend the 2006 Australian Society for Microbiology Meeting.

## 2005

- (i) **Becton & Dickinson Finalist Award**, Australian Society for Microbiology Meeting 2005.

## Other Academic Awards:

### 2001

- (i) **Best Graduating** MSc Student.

### 1996/1997

- (i) **2<sup>nd</sup> Best Graduating Student**, BSc Honours.

### 1990

- (i) **Best Graduating Student**, Government Secondary School, Rubochi, Abuja.

## Research Experience

### Peer-Reviewed Publications

1. Tania E. Farrar, **A.S. Okoli**, George L. Mendz. (2011). “*Campylobacter* spp. Responses to the Environment and Adaptations to Hosts”. In Hin-chung Wong (ed), *Stress Response of Foodborne Microorganisms*, Nova Science Publishers, Hauppauge, NY, Chapter 8. ISBN: 9781611228106. [https://www.novapublishers.com/catalog/product\\_info.php?products\\_id=19856](https://www.novapublishers.com/catalog/product_info.php?products_id=19856)
2. **A.S. Okoli**, M.R. Wilkins, M.J. Raftery and G.L. Mendz. (2010). The Response of *H. hepaticus* To Bovine Bile. *J Proteome Res.* **9(3)**:1374-84.
3. Q. V. Tu, **A.S. Okoli**, Z. Kovach and G. L. Mendz. (2009). Hepatocellular Carcinoma: Prevalence of *Helicobacter* spp. and Molecular Pathogenesis. *Future Microbiol.* **4**:1283-13301.
4. **A.S. Okoli**, C. Armalle and G.L. Mendz. (2009) The Year in *Helicobacter*: Other *Helicobacter* species. *Helicobacter.* **14 (1)**: 69-74.
5. Megan Duckworth, **A.S. Okoli** and G.L. Mendz. (2009). Novel *Helicobacter pylori* therapeutic targets: the unusual suspects. *Expert Rev. Anti. Infect. Ther.* **7(7)**: 835-867.
6. **A.S. Okoli** (2010). Insight into Host Adaptation of Enterohepatic *Helicobacter* Bacteria: A molecular study of the response of *Helicobacter hepaticus* to bile, and the effect of *Helicobacter*

*bilis* on human hepatoma cells. PhD Thesis. University of New South Wales, Sydney, Australia. VDM Verlag Dr. Muller Aktiengesellschaft & Co. KG. ISBN: 978-3-639-27414-1

7. **A.S. Okoli**, T. Wadstrom and G.L. Mendz. (2007). Bioinformatic Study of Bile Responses in Campylobacterales. *FEMS Immunology & Medical Microbiology* **49**: 101-103.
8. **A.S. Okoli**, E.M. Fox, M.J. Raftery and G.L. Mendz. (2007). Effects of *Helicobacter hepaticus* on the proteome of HEp-2 cells. *Antonie van Leeuwenhoek*. **92**: 289-300.
9. C.O. Okoli, P. A. Akah, and **A.S. Okoli** (2007). Potentials of leaves of *Aspilia africana* (Compositae) in wound care: an experimental evaluation. *BMC Complement & Alternative Medicine*. **7:24**. Doi:10.1186/1472-6882-7-24.
10. **A.S. Okoli** and C.U. Iroegbu (2005). *In Vitro* Antibacterial Activity of *Synclisa Scabruda* Whole Root Extracts. *African Journal of Biotechnology* **4**: 946-952.
11. **A.S. Okoli**, and C.U. Iroegbu (2004). Evaluation of Extracts of *Anthocleista Djalensis*, *Nauclea Latifolia* and *Uvaria Afzalii* for Activity against Bacterial Isolates from cases of Non-Gonococcal Urethritis. *Journal of Ethnopharmacology*. **92**: 135-144.
12. **A.S. Okoli**, M.I. Okeke, C.U. Iroegbu and P.U. Ebo (2002). Antibacterial Activity of *Harungana madagascariensis* Leaf Extracts. *Phytotherapy Research* **15**: 1-6.
13. M.I. Okeke, C.U. Iroegbu, E.N. Eze, **A.S. Okoli** (2001). Evaluation of Extracts of the Root of *Landolphia owerrience* for Antibacterial Activity. *Journal of Ethnopharmacology*. **78**: 119-127.
14. M.I. Okeke, C.U. Iroegbu, C.O. Jideofor, **A.S. Okoli**, and C.O. Esimone (2000). Antimicrobial Activity of Ethanol Extracts of two Indigenous Nigerian Spices. *Journal of Herbs, Spices and Medicinal Plants* **8**: 39-46.

#### **Manuscripts under review**

1. **A.S. Okoli** and G.L. Mendz. Comparative proteomic investigation of the effects of Porcine and Human bile on the proteome of *H. hepaticus*.
2. **A.S. Okoli**, M.R. Wilkins, M.J. Raftery, H.M. Mitchell and G.L. Mendz. Proteomic investigation of effects of *Helicobacter bilis* on human hepatoma Huh7 cell line. (Submitted to the *Journal of Hepatology*).

#### **Manuscripts in preparation**

3. **A.S. Okoli**, M.R. Wilkins, M. J. Raftery and G.L Mendz. Comparative proteomic studies of the effects of *Helicobacter bilis* on Huh7 NNeo3-5B(RG) and Cured-Huh7 NNeo3-5B(RG) Cell Lines.

**Invited Talk**

1. Interactions between Enterohepatic *Helicobacter* Species and Human Hepatoma Cell Line in the Presence of Deleterious Host Factors such as Bile. September 7<sup>th</sup>, 2007. Department of Medical Microbiology, Dermatology and Infection, Lund University, Lund, Sweden.

**Conference Presentations**

1. Z. Kovach, Q. V. Tu, G. L. Mendz, **A.S. Okoli**, and M. J. Raftery (2008). A proteome and transcriptome analysis of the response of human liver carcinoma Huh7 and HepG2 cells to *Helicobacter bilis* co-culture. 21<sup>st</sup> International Workshop on *Helicobacter* and Related Bacteria in Chronic Digestive Inflammation. Riga, Latvia. September 18-20. [**Oral presentation**]
2. **A.S. Okoli**, M.R. Wilkins, M.J. Raftery and G.L. Mendz. (2007). Comparative Proteomics Study of Effects of *Helicobacter bilis* on Huh7, Huh7 Nneo3-5B(RG) and Cured-Huh7 Nneo3-5(RG) Cell Lines. 20<sup>th</sup> International Workshop on *Helicobacter* and Related Bacteria in Chronic Digestive Inflammation. Istanbul, Turkey. September 20-22. W2.03. *Helicobacter*. **12**: 382. [**Oral presentation**].
3. **A.S. Okoli** and G.L. Mendz. (2007). A proteomics investigation Revealed Differences in the Modulation of the Expression of *Helicobacter hepaticus* Virulence Determinants by Bovine, Porcine and Human bile. 20<sup>th</sup> International Workshop on *Helicobacter* and Related Bacteria in Chronic Digestive Inflammation. Istanbul, Turkey. September 20-22. Abstract No. P035 [**Poster presentation**].
4. Z. Kovach, Q.V. Tu, G. Chang, **A.S. Okoli**, W.G. Miller and G.L. Mendz. (2007). Changes in the Expression of Virulence-Related Genes in Response to Ox Bile of six Species of Campylobacterales. 20<sup>th</sup> International Workshop on *Helicobacter* and Related Bacteria in Chronic Digestive Inflammation. Istanbul, Turkey. September 20-22. Abstract No. P036. *Helicobacter*. **12**: 418. [**Poster presentation**].
5. **A.S. Okoli** and G.L. Mendz. (2007). Effects of Bovine, porcine and Human Bile on the Protein Expression of *Helicobacter hepaticus*. 14<sup>h</sup> International Workshop on *Campylobacter*, *Helicobacter* and Related Organisms. Rotterdam, The Netherlands, September 2-5. Abstract No.; P137. *Zoonoses and Public Health*. **54**: 57. [**Poster presentation**]. **ESCMID Grant**.
6. **A.S. Okoli**, M.R. Wilkins, M.J. Raftery and G.L. Mendz. (2007). Proteomic Investigation of Effects of *Helicobacter bilis* on the Human Hepatoma Huh7 Cell Line. 14<sup>h</sup> International Workshop on *Campylobacter*, *Helicobacter* and Related Organisms. Rotterdam, The Netherlands, September

- 
- 2-5. Abstract No.; P252. *Zoonoses and Public Health*. **54**: 88. [**Poster presentation**]. **ESCMID Grant**
7. Z. Kovach, Q.V. Tu, G. Chang, **A.S. Okoli**, W.G. Miller and G.L. Mendz. (2007). Changes in the Expression of Virulence-Related Genes in Response to Ox Bile of six Species of Campylobacterales. 14<sup>th</sup> International Workshop on *Campylobacter*, *Helicobacter* and Related Organisms. Rotterdam, The Netherlands, September 2-5. Abstract No.; P289. *Zoonoses and Public Health*. **54**: 98. [**Poster presentation**].
8. **A.S. Okoli** and George L. Mendz. (2007). Comparative Proteomic Study of the Response of *Helicobacter hepaticus* to Bovine, Porcine and Human Bile. Annual Scientific Meeting of the Australian Society for Microbiology. Adelaide. July 9-13. Abstract No.: PP08.3 [**Oral Presentation**].
9. Q.V. Tu, G. Chang, **A.S. Okoli**, Z. Kovach and G.L. Mendz. (2007). Changes in the Expression of Virulence-related Genes in Response to Ox-bile Stress of six Species of Campylobacterales. Annual Scientific Meeting of the Australian Society for Microbiology. Adelaide. July 9-13. Abstract No.: PP08.1 [**Oral presentation**].
10. C.W. Yew, **A.S. Okoli** and G.L. Mendz. (2007). Effects of *Helicobacter bilis* on the Proteome of Human Liver Cells. 107<sup>th</sup> General Meeting of the American Society for Microbiology. Ontario, Toronto. Canada. May 21-25. Abstract No.: B-326. [**Poster Presentation**].
11. **A.S. Okoli**, E.M. Fox, M.J. Raftery and G.L. Mendz. (2006). Response of HEp-2 Cells to *Helicobacter hepaticus*. 19<sup>th</sup> International Workshop on *Helicobacter* and Related Bacteria in Chronic Digestive Inflammation. September 7-9. Wroclaw, Poland. Abstract No.: 16.05 [**Oral presentation**].
12. **A.S. Okoli**, E.M. Fox, M.J. Raftery and G.L. Mendz. (2006). Effects of *Helicobacter hepaticus* on the proteome of HEp-2 cells. Annual Scientific Meeting of the Australian Society for Microbiology. Gold Coast. July 5. Abstract No.: PP15.1. [**Oral presentation**].
13. **A.S. Okoli**, E.M. Fox, M.J. Raftery and G.L. Mendz. (2006). Changes in the Proteome of Hep-2 Cells Cultured with *Helicobacter hepaticus*. Helsingor, Denmark. July 1-4. Abstract No.: P-24. [**Oral presentation**].
14. **A.S. Okoli** and G.L. Mendz. (2005). Effects of Bile on *Helicobacter hepaticus* Expression of Virulence Factors. 18<sup>th</sup> International Workshop on Gastrointestinal Pathology and *Helicobacter*. October 12-14. Copenhagen, Denmark. Abstract No.: 03.07 [**Poster presentation**].
15. **A.S. Okoli**, E.M. Fox and G.L. Mendz. (2005). Investigation of *Helicobacter hepaticus* response to bile stress. Annual Scientific Meeting of the Australian Society for Microbiology. Canberra. September 25-29. P23.29. [**Poster presentation**].

16. **A.S. Okoli** and G.L. Mendz. (2005). Bioinformatic study of bile responses in Campylobacterales. 13<sup>th</sup> International Workshop on *Campylobacter*, *Helicobacter* and Related Organisms. Gold Coast, Queensland, Australia. September 4-8. Paper No.: C6; pp. 50. [**Oral presentation**].
17. **A.S. Okoli**, E.M. Fox and G.L. Mendz. (2005). Effects of *H. hepaticus* infection on human liver cells. 13<sup>th</sup> International Workshop on *Campylobacter*, *Helicobacter* and Related Organisms. Gold Coast, Queensland, Australia. September 4-8. Paper No.: G16; pp. 97. [**Poster presentation**].
18. **A.S. Okoli**, E.M. Fox and G.L. Mendz. (2005). Investigation of *Helicobacter hepaticus* response to bile stress. Becton and Dickenson award night presentation. University of Sydney, Sydney, Australia. [**Oral presentation**].
19. **A.S. Okoli** and G.L. Mendz. (2004). Review of Bile Resistance in Campylobacterales. School of Biotechnology and Biomolecular Sciences Third Annual Symposium. Sydney, Australia. November 5. P. 33. [**Poster presentation**].
20. **A.S. Okoli** and Iroegbu C.U. (2002). Antibacterial Activity of *Anthocleista djalonenensis*, *Nauclea latifolia* and *Uvaria afzalii* root extracts against organisms isolated from sexually transmitted disease (STD) cases. Twenty-sixth Annual Conference of the Nigerian Society for Microbiology. July 15-19. [**Oral presentation**].
21. **A.S. Okoli**, C.U. Iroegbu and J.A.C. Ugonabo, (2001). The Rate of Kill of *Synclisia scabrida* and *Uvaria afzalii* on clinical strains of *S. aureus* and *E.coli*. 21<sup>st</sup> Annual Conference of Nigerian Society of Biochemistry and Molecular Biology, Nsukka, Nigeria, September 19-22, 2001. [**Oral presentation**].
22. **A.S. Okoli**, C.U. Iroegbu, J.A.C. Ugonabo and U.I. Obialu (2001). The Rate of Kill of *Synclisia scabrida* and *Uvaria afzalii* on clinical strains of *S. aureus* and *E.coli*. 21<sup>st</sup> Annual Conference of Nigerian Society of Biochemistry and Molecular Biology, Nsukka Nigeria, September 19-22, 2001. [**Oral presentation**].
23. M.I. Okeke, C.U. Iroegbu, **A.S. Okoli**. *et al.*, (1999). Antibacterial Activity of Extracts of *Citrus limonium* a *Cleistopholis Patens*, *Landolphia owerrience* and *Securidaca longpendunculata*. XXVIth Annual Regional Conference of West African Society for Pharmacology, Nsukka, Nigeria, October 20-23, 1999. Abstract No: MIC 13. [**Oral presentation**].

### Trainings and Workshops

- 2006: OGTR PC2 & Biosafety
- 2005: Gene Technology Training for Researchers

**Membership of Committees**

- 2007: The University of Nigeria World Bank-Assisted grant preparation committee.
- 2005: Member of the Students Committee for the *Campylobacter*, *Helicobacter* and Other Related Organisms(CHRO) conference.

**Membership of Professional Associations**

- Australasian Proteomics Society
- Australian Association of Microbiologists
- Nigerian Association of Microbiologists
- American Association of Microbiologists

**Administrative Positions**

- (i) Assistant Secretary, Igbo Association of New South Wales.

In this role, I actively participated in the organization of various cultural programmes of the association including, Igbo cultural outings, end of year parties, charitable fundraising nites, etc. I also participated in grant preparation and management of different projects undertaken by the association including African Access Project (2005-2007), Igbo Cultural Day (2007) and Igbo Cooperative Ventures A&B (2007-2008). All projects were funded by the NSW government to a total of \$94,000.00 and administered by the Liverpool and Parramatta Migrant Resources Centres.

- (ii) Hall President, Postgraduate Student Hall, Nkrumah, University of Nigeria, Nsukka (2000).
- (iii) Financial Secretary, National Association of Microbiology Students, University of Nigeria, Nsukka.
- (iv) Assistant Secretary, ROTARACT Club of University of Nigeria, Nsukka (1996-1997).
- (v) Senior Prefect, Government Secondary School Rubochi, Abuja (1988-1990).

## Community Service

1. University of Nigeria ROTARACT Club of District 9140 (1993-1999): Participated in several community development services such as:
  - a) Visits to prisons and to a motherless babies home.
  - b) Campaigns create awareness of HIV/AIDS prevention and control.
  - c) Campaigns to educate the general public of Sickle Cell Anemia and the appropriateness to determine genotype before marriage.

## Extracurricular Activities

1. Poetry.
2. Listening to Music.
3. Reading literature, novels.

## Referees

1. Professor Marc Wilkins  
School of Biotechnology and Biomolecular Sciences  
The University of New South Wales  
Email: [marc.wilkins@unsw.edu.au](mailto:marc.wilkins@unsw.edu.au)  
Phone: +61-2-93853633; +61-434958347
2. Professor Christian U. Iroegbu  
Department of Microbiology  
The University of Nigeria, Nsukka  
Email: [cuiroegbu@yahoo.com](mailto:cuiroegbu@yahoo.com)  
Phone: +234-8063304992
3. Professor Thomas Bøhn  
Science Director  
GenØK- Norwegian Centre for Biosafety  
Science Research Park at Breivika  
University of Tromsø  
Email: [thomas.bohn@genok.no](mailto:thomas.bohn@genok.no)  
Phone: +47-77644541; +47-97009916