

# HELEN GOODLUCK MSC. PHD.

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## EXPERIENCE

2020-TO DATE

ADJUNCT PROFESSOR (BIOLOGY DEPARTMENT)

POINT LOMA NAZARENE UNIVERSITY

(San Diego California)

I am currently an adjunct professor in PLNU where I teach graduate students about the importance, growth, and survival of a cell individually and collectively. I also teach hands-on cell biology laboratory course with special emphasis on Microbiology and Molecular biology methods and techniques applicable in research and industry.

Hands on skills mastered:

- Teaching and making sure my students understand the subject.
- Making class interactive and challenging my student to think for themselves
- Equipping students with technical/laboratory skills that is applicable in research and industry

2019-TO DATE

RESEARCH ASSOCIATE

VETERANS MEDICAL RESEARCH FOUNDATION (VMRF)

(VA San Diego Healthcare System)

I am currently working on research projects to better understand the physiology and pathophysiology of kidney function utilizing gene-targeted mice and pharmacological tools, surgical models of acute and chronic kidney disease, and analytical methods of molecular biology, cell biology and microbiology.

Hands on techniques mastered:

- Creating and phenotyping surgical kidney disease models in mice (subtotal nephrectomy, renal ischemia reperfusion)
- Behavioral studies in mice
- Genotyping of study animals (using tail or ear snips)
- DNA extraction and amplification, PCR, agarose gel electrophoresis
- qPCR, ELISA and assay development, immunoprecipitation, Western blotting
- Animal handling (dosing, surgery, and monitoring)
- Harvesting of tissues, cells, and tissue culture (cell lines and primary cells)
- Fluorescence microscopy and confocal microscopy.
- Data analysis and troubleshooting
- Training and supervising personnel

2015-2019

POST-DOCTORAL RESEARCH ASSOCIATE

LOMA LINDA VETERAN ASSOCIATION OF RESEARCH AND EDUCATION (LLVARE)

## **(VA Loma Linda Healthcare System)**

**I was working on an NIH funded project on the “Mechanisms of Lrrk1 regulation of Osteoclast function in relation to bone diseases and bone remodeling” using Molecular biology, Cell biology and Microbiology techniques.**

### **Hands on techniques mastered:**

- Genotypic and phenotypic studies; Genotyping of study animals (using tail or ear snips)
- DNA extraction and amplification, PCR, agarose gel electrophoresis
- Molecular cloning, methylation, ligation, transformation, transduction and transfection
- Protein chemistry, protein- over expression (and peptide), extraction and purification, HPLC
- qPCR, ELISA and assay development, immunoprecipitation, western blotting
- Animal handling (dosing, surgery and monitoring)
- Harvesting of tissues, cell and tissue culture (cell lines and primary cells)
- Fluorescence microscopy and confocal microscopy.
- Data analysis and troubleshooting
- Training, teaching, and supervising personnel
- Laboratory manager

2013 – 2015

### **POST-DOCTORAL RESEARCH SCIENTIST**

**UNIVERSITY OF CALIFORNIA DAVIS (CALIFORNIA ANIMAL HEALTH AND FOOD SAFETY LABORATORY)**

**CAHFS/FDA Collaborative Study: Validation of Environmental single and pooled manure drag swabs using Molecular Microbiology techniques. I was the scientist responsible for the research project, here I employed Microbiology and Molecular Biology skills and techniques in my work.**

### **Hands on techniques mastered:**

- Method validation
- DNA extraction and amplification, qPCR
- Antibiotic susceptibility testing
- Laboratory manager
- ELISA and assay development
- Spiking of test samples and analysis
- Serology tests
- Data analysis
- Troubleshooting
- Laboratory manager
- Training and supervising personnel

2004-2009

### **RESEARCH FELLOW**

**NIGERIAN INSTITUTE OF MEDICAL RESEARCH (LAGOS-NIGERIA)**

**Isolation, identification, and characterization of bacteria from food, environmental and clinical samples (Bacteria, Yeast and Fungi), Molecular biology of/ and genetic studies of these isolates, data collection and analysis.**

### **Hands on techniques mastered:**

- Genotypic and phenotypic studies; genotyping of study animals (using tail or ear snips)

- DNA extraction and amplification, PCR, agarose gel electrophoresis
- Plasmid profiling and curing
- DNA extraction using Kit and phenol-chloroform
- ELIZA and assay development, western blotting
- Animal handling (dosing, surgery, and monitoring)
- Antibiotic susceptibility testing
- Bacteria culture, identification and characterization of Bacteria using molecular biology and Genetic based techniques, microbiology and biochemical techniques
- Data analysis
- Project design for undergraduate and graduate students
- Supervision and training of undergraduate and graduate students
- Teaching undergraduate students
- Mentoring

**2003 -2008** Clinical Research Associate: **clinical trial team; SAVVY Microbicides studies for HIV prevention amongst sexually active participants and commercial sex workers, Microbiology Division, NIMR, Lagos Nigeria.**

**2002-2004** Voluntary Research worker: **Molecular biology and Biotechnology Division, Nigerian Institute of Medical Research, Lagos, Nigeria (NIMR).**

## EDUCATION

**JULY 2013**

**PhD. Molecular Microbiology**

**UNIVERSITY OF READING, READING BERKSHIRE, UK**

**Thesis: *Molecular-genetic analysis of the intra- and extracellular ferric reductases (YqjH and YceJ) of Escherichia coli.***

**Hands on techniques mastered:**

- Genotypic and phenotypic studies
- DNA extraction and amplification, PCR, agarose gel electrophoresis
- Molecular cloning, methylation, ligation, transformation and P1 transduction
- Protein chemistry, protein- over expression (and peptide), extraction and purification, HPLC
- Gene knockout and manipulation
- Bacteriology, Bacteria culture, in vivo and in vitro assay development/ studies.
- Western blotting
- Data analysis
- Supervision of undergraduate laboratory practical
- Invigilation of examination (students with special needs)

**OCTOBER 2005**

**M.SC. MICROBIOLOGY**

**UNIVERSITY OF LAGOS, LAGOS NIGERIA**

**Thesis: *Antibiotic susceptibility testing and Plasmid profile of Escherichia coli O157:H7 isolated from clinical and environmental sources in Lagos and Zaria, Nigeria.***

**JANUARY 2001**

**B.Tech. Pure and applied Biology (option Microbiology)**

**LAUTECH (Ladoke Akintola University of Technology, Oyo state Nigeria)**

**Thesis: Isolation, characterization, and antibiotic properties of Lactobacillus spp. from selected locally fermented foods in Lagos Nigeria.**

## TECHNIQUES MASTERED

Generating surgical models of acute and chronic kidney disease in mice and their phenotypic characterization. Bacteria culture, identification and characterization of Bacteria using Molecular Biology and Genetic based techniques, Microbiology and Biochemical techniques, Cloning, Gene knockout and manipulation, protein over-expression and purification, ion exchange chromatography, HPLC/FPLC, assays and analysis, strain construction. Cell and tissue culture, Animal handling and tissue harvesting, DNA/RNA isolation, purification and cDNA synthesis, qPCR, PCR, the use of Agilent 2100 Bioanalyzer for DNA, RNA and Protein analysis, western blotting, Transformation, Transfection, Iron transport assay and whole cell iron assay, phenotypic studies, ELISA, CRA, GLP, GMP, GCP and QC standards and procedures, IVD, Immunoassays, Antibody/Antigen assays. Preparing working SOPs, Troubleshooting, Antibiotics susceptibility testing, DNA extraction using kit and Phenol chloroform. Fluorescence microscopy and Confocal microscopy.

## WORK SKILLS

- **Teamwork – Team player;** all it takes to meet the lab's targets, presentations and team 'de-briefing meetings on progress and reports
- **Time management - Effectively maximize time,** to meet targets and deadlines.
- **Communication - Have excellent interpersonal skills,** including when liaising with collaborators.
- **Project Management - Setting and attaining goals and deadlines for work projects,** ability to train laboratory personnel and liaised with colleagues to design work plan.
- **Results oriented and detail oriented – Highly dedicated to work at hand,** pay attention to details and highly efficient.
- **Data analysis – Data management, bookkeeping, identification of trends and processing of acquired data**

## ACTIVITIES

**Awards:** Recipient - ASM2012 Student award. (American Society for Microbiologist 2012 general meeting, San Francisco, California, USA, June 15-20, 2012).

**Reviewer/Editor:** (1) British Journal of Pharmacology  
(2) Journal of Applied Nutritional Sciences

## TEACHING AND PRACTICAL EXPERIENCE

- Demonstrator for Microbiology and Biochemistry practical aspects during my PhD, examination invigilator and script marking.
- Laboratory supervisor and instructor of undergraduate and post-graduate final year projects, supervision of laboratory experiments and trainings on molecular microbiology techniques.
- Training staff on Biological safety, equipment use and safety, basic Microbiology and Molecular biology techniques and supervision of hands on experiments.

## Key Achievements:

- 2008 Secretary to the Central Organising Committee for the - **1st Nigerian Institute of Medical Research Annual scientific conference**, I set up meetings with the chairperson and the heads of all the sub-committees, making sure everyone attended and took all the minutes and also represented the chairperson in her absence, together we planned a successful conference which now runs every year in the institute.
- 2008 Developed the idea and together with a team organised and planned the – **1<sup>st</sup> Molecular biology and Biotechnology Workshop** in the Nigerian Institute of Medical Research, Lagos, Nigeria (NIMR). The workshop was a success and is now run yearly.

## Training & Workshops Attended:

- ❖ Evaluation of STI Syndromic Management Training, (IMPACT) FHI North Carolina U.S.A in (Lagos/ Nigeria), **2004**
- ❖ Introduction of Microbicides as a drug trial for HIV Prevention.
- ❖ CRA, certificate: CRA experience as part of the Microbicides for HIV prevention, clinical trial team, Lagos, Nigeria, SAVVY **2004-2007**.
- ❖ Initiation Course: Procedures to be taken on the SAVVY drug trial & ethical issues involved, **2004**
- ❖ Randomized Controlled Trial of SAVVY and HIV, Nigeria Study 9784, Product Accountability Log, **2004**.
- ❖ Training on Diagnostic Test/Lab procedures necessary to confirm eligibility of participants, 2004.
- ❖ Training on Western Blot Techniques/Application, **2004**
- ❖ Training on ELISA Techniques, **2004**.
- ❖ Collection, processing, and analysis of Industrial, Pharmaceutical, Clinical and Environmental samples for effective study, NIMR, **2006**, (Lagos/Nigeria)
- ❖ Bioinformatics: Computational Biology, NIMR, **2006** (Lagos/Nigeria).
- ❖ Research Methodology & Proposal Writing, NIMR, **2006** (Lagos/Nigeria).
- ❖ Remote Sample collection and Data Training by FHI North Carolina U.S.A in (Lagos/ Nigeria)
- ❖ Research Ethics Training by FHI Project on microbicides Trial gel 2004 (Lagos/ Nigeria)
- ❖ Database Management Training by NIMR in **2009** (Lagos/Nigeria)
- ❖ Workshop to Strengthen the Design, Monitoring, and Evaluation of Family Planning Projects 2004 (NIMR, Lagos).
- ❖ Train the Trainer workshop on Research ethics and data management by NIMR, **2008** (Lagos/Nigeria)
- ❖ Teaching in the Biosciences: an introduction for Postgraduates and Postdoctoral fellows by the University of Reading UK, **2011**
- ❖ Peer Educator training by the University of Reading UK, **2011**

## Professional / Research Society membership

- Society for Applied Microbiology (SFAM)
- Society for General Microbiology (SGM)
- The Biochemical Society
- Society for Experimental Biology (SEB)
- American Society for Biochemistry and Molecular Biology (ASBMB)
- American Society for Microbiology (ASM)

## Posters and Seminars presented:

1. **“Lrrk1 regulation of actin assembly in osteoclasts involves serine phosphorylation of L-plastin”**  
Helen Goodluck, Songqin Pan, Sharon Celeste Morley, Subburaman Mohan and Weirong Xing. ASBMR, Denver USA, 2017
2. **"Leucine Rich Repeat Kinase 1 Regulates Osteoclast Function by Modulating RAC1/Cdc42 Small GTPase Phosphorylation and Activation"** by **Helen Goodluck**, Canjun Zeng, Xuezhong Qin, Bo Liu, Subburaman Mohan, and Weirong Xing. ASBMR, Atlanta USA, 2016
3. **‘Validation of Single and Pooled Manure Drag Swabs for the detection of *Salmonella* ser. Enteritidis in Commercial Poultry Houses: A collaborative Study’**  
Hailu Kinde, **Helen Goodluck**, Maurice Pitesky, Ashley Hill. AAVLD Conference, 2015.
4. **‘Examination of the intra-cellular ferric reductase (YqjH) of *E. coli* ‘**  
**Helen A. Goodluck**, Maria Armour, Dimitri Svistunenko, Simon C. Andrews. BIOMETALS 2012, July 16<sup>th</sup>- 19<sup>th</sup>, 2012, Brussels Belgium
5. **‘YqjH from *E. coli*-A novel role in intracellular iron recycling? ‘**  
**Helen A. Goodluck**, Simon C. Andrews. ASM2012, June 15<sup>th</sup>-19<sup>th</sup> 2012, San Francisco, USA
6. **‘YqjH from *E. coli*-A novel role in intracellular iron scavenging? ‘**  
**Helen A. Goodluck**, Maria Armour, Vicky A. Bamford, Sue A. Mitchell, Kimberly A. Watson and Simon C. Andrews. Society for General Microbiology Autumn meeting, September 6-9, 2010, Nottingham Jubilee campus UK.
7. **‘YqjH from *E. coli*-A novel role in intracellular iron recycling? ‘**  
**Helen A. Goodluck**, Maria Armour, Vicky A. Bamford, Sue A. Mitchell, Kimberly A. Watson and Simon C. Andrews. The 7<sup>th</sup> International Biometals Symposium (Biometals 2010), July 25-30, 2010, Tucson, Arizona, USA.

## Published work:

1. Mingjue Si, Canjun Zeng, **Helen Goodluck**, Sandi Shen, Subburaman Mohan, Weirong Xing (2019). A small molecular inhibitor of LRRK1 identified by homology modeling and virtual screening suppresses osteoclast function, but not osteoclast differentiation, in vitro. AGING 2019, Vol. 11, No. 10
2. Si, Mingjue; **Goodluck, Helen**; Zeng, Canjun; Pan, Songqin; Todd, Elizabeth; Morley, Sharon; Qin, Xuezhong; Mohan, Subburaman; Xing, Weirong (2018). LRRK1 Regulation of Actin Assembly in Osteoclasts Involves Serine 5 Phosphorylation of L-Plastin. J Cell Biochem. 2018;1-7.
3. Weirong Xing, **Helen Goodluck**, Canjun Zeng and Subburaman Mohan. Role and mechanism of action of leucine-rich repeat kinase 1 in bone. Bone Research (2017) 4, 17003.
4. Canjun Zeng, **Helen Goodluck**, Xuezhong Qin, Bo Liu, Subburaman Mohan, Weirong Xing (2016). Leucine Rich Repeat Kinase 1 Regulates Osteoclast Function by Modulating RAC1/Cdc42 Small GTPase Phosphorylation and Activation. Am J Physiol Endocrinol Metab 311: E772–E780, DOI: 10.1152/ajpendo.00189.2016
5. Xing W, Aghajanian P, **Goodluck H**, Kesavan C, Cheng S, Pourteymoor S, Watt H, Alarcon C, Mohan S. (2016). Thyroid hormone receptor-β1 signaling is critically involved in regulating secondary ossification via promoting transcription of the Ihh gene in the epiphysis. Am J Physiol Endocrinol Metab. 310 (10): E846-54.
6. Kinde H, **Goodluck HA**, Pitesky M, Friend TD, Campbell JA, Hill AE. (2015). Validation of Single and Pooled Manure Drag Swabs for the Detection of Salmonella Serovar Enteritidis in Commercial Poultry Houses. Avian Dis. 59 (4):548-53.
7. Norton I., Salunkhe A., **Goodluck H.**, Aly W., Mourad-Agha H., Cornelis P. and Andrews S. C. (2012). Control of Iron Metabolism in Bacteria. Metallomics and the Cell, Metal Ions in Life Sciences 12.
8. Stella Ifeanyi Smith, Moses Bamidele, Muinah Fowora, **Helen A Goodluck**, Emmanuel A Omonigbehin, Kehinde A Akinsinde, Toun Fesobi, Rob Pastoor, Theresia H Abdoel, Henk L Smits, 2011. Application of a point-of-care test for the serodiagnosis of typhoid fever in Nigeria and the need for improved diagnostics. The Journal of Infection in Developing Countries, 5 (07):520-526

9. M T Niemogha , S I Smith , **Helen A Goodluck**, T Gbaja-biamila , T Fesobi , A Umurhuru , O O Oduyebo , A A Adeiga , S A Adesida , A O Adagbada , A Z Musa , T Bamidele, 2010. Chlamydia and Vaginitis in Sexually Active Females: Classical Identification Methods for Effective Control Sierra Leone J Biomed R., 2 (2):142-150
10. I.A. Adeleye, R.O. Nwanze, F.V. Daniels, V.A. Eyinnia, S.I. Smith, M.A. Fowora and **H.A. Goodluck**. 2011. Non-plasmid Mediated Multi-drug Resistance in *Vibrio* and *Aeromonas* sp. Isolated from Seafoods in Lagos, Nigeria. Res. J. Microbiol., 6 (2):147-152
11. Smith SI, Oyediji KS, **Goodluck HA**, Fowora MA, Anomneze E, Lesi OA., 2011. The use of *Helicobacter pylori* stool antigen test for the diagnosis of *Helicobacter pylori* in Lagos, Nigeria. West Indian Med J., 60(1):33-5.
12. Stella I. Smith, Muinah A. Fowora, **Helen A. Goodluck**, Francisca O. Nwaokorie, Olusimbo O. Aboaba, Bolanle Opere., 2011. Brief Communication: Molecular typing of *Salmonella* spp isolated from food handlers and animals in Nigeria. Int J Mol Epidemiol Genet., 2(1):73-77.
13. Smith SI, Omonigbehin EA, **Goodluck HA**, Abdulkareem FB, Onyekwere CA, Agomo C, Ndububa DA, Fowora MA, Otegbayo JA, Contreras M, Haas R, Rieder G., 2010. Diagnostic methods for the detection of *Helicobacter pylori* in Nigeria. Tropical gastroenterology: official journal of the Digestive Diseases Foundation, 31 (2):113-5
14. Smith SI, Opere B, **Goodluck HT**, Akindolire OT, Folaranmi A, Odekeye OM, Omonigbehin EA, 2009. Antibiotic susceptibility pattern of *Staphylococcus* species isolated from telephone receivers. Singapore medical journal, 50 (2):208-11
15. Stella I Smith, Moses Bamidele, **Helen A Goodluck**, Muinah N Fowora, Emmanuel A Omonigbehin, Bolanle O Opere, Olusimbo O Aboaba, 2009. Antimicrobial Susceptibilities of *Salmonellae* Isolated from Food Handlers and Cattle in Lagos, Nigeria. Int J Health Res., 2 (2):189-193
16. S I Smith, O S Bello, **H A Goodluck**, E A Omonigbehin, V N Agbogu, P Odeigah, 2009. Prevalence of EHEC O157:H7 from human and Environmental samples from Lagos and Zaria. Pak J Med Sci., 25 (3):398-403
17. Stella Ifeanyi Smith, E. A. Omonigbehin, **Helen Goodluck**, [...], Rainer Haas (2009). The Use of Histology as a Gold Standard for Diagnosis of *H. pylori* in Nigeria. Conference: 22nd International Workshop on *Helicobacter* and Related Bacteria Volume: 14
18. David Oladele, **Helen A Goodluck**, *et al.*, 2008. Adolescent Girls Self-Reported STI Symptoms and Mothers Perception of Their HIV Risk in an Urban Market in Lagos, Nigeria. Research Journal of Medical Sciences, 2 (5):220-223
19. Mary T Niemogha, **Helen A Goodluck**, *et al.*, 2008. Antibiotic susceptibility of *Salmonella typhi* and Evaluation of Outer Membrane Proteins as a Molecular Index of Baseline Titre for Typhoid Fever in Lagos, Nigeria. Inter J Malaria and Tropical Diseases (IJMAT), 4:144-16
20. Smith SI, Alao F, **Goodluck HT**, Fowora M, Bamidele M, Omonigbehin E, Coker AO, 2008. Prevalence of *Salmonella typhi* among food handlers from bukbas in Nigeria. British J of biomedical science, 65 (3):158-60
21. Stella Ifeanyi Smith, **Helen Goodluck**, Muinah Fowora, [...], Akitoye O. Coker (2007). Prevalence of EHEC O157: H7 among patients positive for *Helicobacter pylori* (A pilot study). *Helicobacter* - 20th International Workshop on *Helicobacter* and Related Bacteria Volume: 12
22. Stella I Smith, **Helen A Goodluck**, *et al.*, 2006. Typhoid Fever in Nigeria: Analysis of Phenotypic and Genotypic Methods of *Salmonella typhi* Identification . Res. J. Biotech, 1:17-21
23. Stella I Smith, **Helen A Onibokun**, *et al.*, 2004. Plasmid Profile of *Escherichia coli* O157:H7, from apparently healthy animals. Afri. J. Biotech., 2: 322-324