

## Lazarus Solomon

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### EDUCATIONAL QUALIFICATION

- **Doctor of Philosophy in Engineering with concentration in Engineering Physics**, Mississippi State University, Mississippi State, Mississippi, May 2010  
Thesis: Quantum Electron Transport in Models of Nanoparticles using Matrix Algebra and Renormalization Group Methods
- **Master of Science in Physics**, Mississippi State University, Mississippi State, Mississippi, December 2006  
Thesis: Study of Spin-Lattice Relaxation Rates in Solids: Lattice-Frame Method compared with Quantum Density-Matrix Method, and Glauber Dynamic
- **Master of Science in Physics (Solid State)**, Karnatak University, Dharwad, India, April 1984
- **Bachelor of Science in Physics**, with minors in Mathematics and Chemistry, Karnatak University, Dharwad, India, May 1980

### PROFESSIONAL QUALIFICATION

- Over 20 years experience teaching physics and mathematics at undergraduate level in spanning at least four countries.
- Over 5 years experience in academic administration at tertiary level.
- Excellent relationship builder with students, faculty, staff, and administration.
- Exceptional interpersonal, writing, verbal communication and research skills.
- Ability to understand the needs of students and motivate them to perform to the best of their abilities.

## TEACHING EXPERIENCE

- **Instructor**, Mississippi State University, Mississippi State
  - August 16, 2012 – present
  - Teaching General Physics I, II, III, Calculus based Physics I, II , Graduate level course – Quantum Mechanics
  - Lab coordinator – General Physics I, II, III, Physics II
  
- **Visiting Assistant Professor**, Mississippi State University, Mississippi State  
August 2010 – May 2012
  - Taught General Physics I, Physics I, Physics II  
Trig based Mechanics; Calculus based Mechanics, Electricity and Magnetism
  - Lab Coordinator – Physics I, II
  
- **Lecturer**, Mississippi State University, Mississippi State  
July 2010 – August 2010
  - Taught General Physics I
  
- **Graduate Teaching Assistant**, Mississippi State University, Mississippi State, Mississippi,  
January 2004 – April 2010
  - Served as Lab coordinator
  - Proctored exams and taught labs
  - Assisted Labs for Teacher Training Institute in Physical Sciences TTIPS 2009
  
- **Associate Professor** of Physics and Mathematics, Caribbean Union College\*, Trinidad & Tobago, September 2001 – December 2003
  - Taught General Physics, Concepts of Physical Science, College Algebra, Calculus I and II, Applied Linear Algebra, Statistical Methods, Business Algebra, Probability & Statistics, Applied Calculus
  - Helped students in the area of Physics and Mathematics, and provided advice for general academic programs
  
- **Assistant Professor** of Physics and Mathematics, Caribbean Union College\*, Trinidad & Tobago, September 1997 – August 2001
  - Taught General Physics, Concepts of Physical Science, College Algebra, Calculus I and II, Applied Linear Algebra, Statistical methods, General Chemistry, Business Algebra, Probability & Statistics, Applied Calculus
  - Helped students in the area of Physics and Mathematics, and provided advice for general academic programs

\* Caribbean Union College, fully affiliated to Andrews University, Berrien Springs, MI, is now the University of the Southern Caribbean, also recognized as tertiary level educational institution by the Govt. of Trinidad and Tobago.

- **Teacher** – Macau Sam Yuk Secondary School, Macau, Special Administrative Region of China, February – June 1997
  - Taught Science, English, and Music at secondary school level
  
- **Assistant Professor** of Physics and Mathematics, Hong Kong Adventist College, Hong Kong, May 1990 – January 1997
  - Taught Introduction to Physics, Advanced Level Physics, General Physics, College Algebra, Trigonometry & Geometry, Calculus, Probability and Mechanics, British GCE (General Certificate of Education) – Advanced Level Physics and Advanced Level Mathematics, General Certificate of Education – Ordinary Level Biology and Ordinary Level Mathematics
  - Served as Chief Editor for the College Yearbook and Facebook
  - Member of Deans’ Council
  - Helped students in the area of Physics and Mathematics, and provided advice for general academic programs
  
- **Instructor** in Physics and Mathematics, Hong Kong Adventist College, Hong Kong, August 1988 – April 1990
  - Taught Introduction to Physics, General Physics, College Algebra, Calculus, Trigonometry & Geometry, GCE A-Level Physics, GCE A-Level Mathematics, GCE O-Level Biology, GCE O-Level Mathematics
  - Served as Chief Editor for the College Yearbook and Facebook
  
- **Instructor** – Lowry Memorial Junior College, Bangalore, India, 1984 – 1988
  - Taught Physics, Mathematics, and Chemistry at high school level
  - Served as school assembly coordinator and discipline master
  - Organized school field trips
  - Served as field sports commentator
  - Member of student promotion committee
  
- **Teacher** – Seventh-day Adventist High School, Bangalore, India, August 1980 – July 1981
  - Served as class (homeroom) teacher for Standard VIII (Grade 8)
  - Taught Social Sciences at middle school level

## ADMINISTRATIVE EXPERIENCE

- **Dean** – Faculty of Natural Sciences, Mathematics, Computer Sciences, and Technology, Caribbean Union College, Trinidad & Tobago, September 2001 – December 2003
  - Provided advice and made recommendations to Vice President of Academic Administration matters regarding academics and general administration
  - Consulted with Department Chairs on the development of policies and provided the College Administration with the views of the departments on issues and plans
  - Supervised and coordinated academic program for the faculty
  - Performed annual faculty review
  - Resolved issues and conflicts between students, staff, and faculty
  - Maintained accreditation acquiescence with Andrews University, MI
  - Maintained high standards of teaching through evaluation of teaching effectiveness, testing, and grading practices
  - Allocated teaching loads, duties and responsibilities for faculty members
  - Handled budgeting, planning, scheduling, and hiring of teaching faculty and office staff
  - Member of: Administrative Council, Deans' Council, Academic Policies Committee, Rank and Tenure Committee, Curriculum Committee, Examination Council, Library Committee
  - Edited College Bulletin for the Faculty of Natural Sciences, Mathematics, Computer Science and Technology
  - Assisted in conversion of the Quarter System to Semester System with regards to credit hours, curriculum and graduation requirements
  - Assisted in the process of acquiring government endorsement for university status
  - Reviewed course schedules and faculty assignments
  - Taught at least one course within discipline each semester
  
- **Acting Vice President** – Academic Administration, Caribbean Union College, Trinidad & Tobago (now University of the Southern Caribbean), affiliated with Andrews University, Berrien Springs, Michigan, July 2002 – August 2002
  - Oversaw general academic administration
  - Coordinated Faculties and Faculty needs
  - Attended President's Council meetings
  - Attended College Board meetings
  - Ensured smooth running of academic programs

- **Acting Dean** – Faculty of Natural Sciences, Mathematics, Computer Sciences, and Technology, Caribbean Union College, Trinidad & Tobago, September 1999 – August 2001
  - Provided advice and made recommendations to Vice President of Academic Administration
  - Consulted with Department Chairs on the development of policies and provided the College Administration with the views of the departments on issues and plans
  - Supervised and coordinated academic program for the faculty.
  - Maintained high standards of teaching through evaluation of teaching effectiveness, testing, and grading practices
  - Allocated teaching loads, duties and responsibilities for faculty members.
  - Handled budgeting, planning, scheduling, and hiring of teaching faculty and office staff
  - Attended meetings for the following committees: Administrative Council, Deans' Council, Academic Policies, Rank and Tenure, Curriculum, Examination Council, Library
  
- **Chair** – Department of Mathematics, Physics, and Technology, Caribbean Union College, Trinidad & Tobago, September 1998 – December 2003
  - Supervised faculty and staff in the department
  - Scheduled classes and oversaw department needs
  - Advised students on their academic programs
  - Reviewed course syllabus/outline for each course taught in the department
  - Managed and supervised labs, equipment, and departmental resources
  - Planned, designed, and established Physics laboratory and lecture hall
  
- **Acting Chair** – Department of Chemistry, Caribbean Union College, Trinidad & Tobago, September 1999 – December 2003
  - Supervised faculty and staff in the department
  - Scheduled classes and oversaw department needs
  - Advised students on their academic programs
  - Reviewed syllabus/outline for each course taught in the department

## RESEARCH EXPERIENCE

- Theoretical/computational: Quantum Electron Transport in Models of Nanoparticles using Matrix Algebra and Renormalization Group Methods, January 2005 – March 2010
- Theoretical/computational: Spin-lattice Relaxation in Solids – Lattice Frame method, September 2004 – November 2006
- Experimental: Laser Induced Breakdown Spectroscopy (LIBS), May – August 2004
- Lab requirement for Graduate studies: Experimental X-Ray Diffraction (Crystallography), October 1982 – February 1983

## PRESENTATIONS

- Poster Session Presentation – APS March Meeting 2007, Denver, CO  
Title: *Dynamic Monte Carlo Constants for Magnetic Hamiltonians Coupled to a Phonon Bath*
- Focus Session Presentation – APS March Meeting 2008, New Orleans, LA  
Title: *Electron Transport through Models for Small-World Nanomaterials*
- Departmental Colloquium – November 1983, Karnatak University, India  
Title: *Black Holes*

## PROFESSIONAL MEMBERSHIP

American Physical Society (to be renewed)

American Association of Physics Teachers

## AWARD/RECOGNITION

Increasing Minority Access to Graduate Education (IMAGE) and the National Society of Black Engineers (NSBE) Award:

Outstanding leadership, service to the engineering profession, and commitment to enhancing diversity, at the James Worth Bagley College of Engineering and Mississippi State University.

Certificate of Appreciation for service and dedication to the ideals and purpose of Mississippi State University and continual support of the holistic development of students; awarded by Delta Sigma Theta Sorority Inc. Nu Beta Chapter.

## PUBLICATIONS

- *Electronic Transport through Nanoparticles using Finite-Dimensional Matrix Algebra*, American Journal of Physics, submitted
- *Renormalization Group Calculation of Electron Transport through a Fully Connected Blob*, Physics Procedia 4, 2010, published
- *Electronic Transport through Nanoparticles using Finite-Dimensional Matrix Algebra and Renormalization Group Calculations: General Case – Fully Connected, 10 Equations 10 Unknowns*, to be submitted to Phys. Rev. E.
- *Quantum Transport through a Fully Connected Network with Disorder* Science Direct, Physics Procedia 53 (2014) 71-74

## COMPUTER SKILLS

- Proficient in Windows, Microsoft Office Suite
- Working knowledge of C++, FORTRAN, UNIX
- Mathematica, LaTeX, Easy Java Simulations (EJS)