

CURRICULUM VITAE

Hal A. Hollingsworth Ph.D.

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<http://www.cummingsci.com>

Education:

GCE Advance level – Barbados Community College, St. Michael, Barbados
Mathematics, Physics, Chemistry

B.Sc. – University of Leeds, Leeds England
Physics with Astrophysics

Ph.D. – The University of Leeds, Leeds, England
Cosmology

Thesis Title “*The Formation and Evolution of Topological Defects in the Early Universe*”

Certificates and Licenses:

Florida Professional Educator Certificate # 987859, Mathematics, Physics, Earth Space
sUAS Aircraft Pilot certificate #4977809
Certified Bosch CDR Technician

Professional Memberships:

NAPARS - National Association of Professional Accident Reconstruction Specialists
SAE - Society of Automotive Engineers

Achievements and Awards

Adjunct Excellence in Teaching Award nominee (FIU)

Visiting Academic Consultant to the Royal Observatory at Edinburgh, Scotland

Crabtree Prize (Postgraduate research)

Tetley Lupton Scholarship (Postgraduate research)

Crabtree Prize (Outstanding academic achievement)

BP Chemicals Prize (Outstanding laboratory work)

Barbados Scholarship (Barbados’s highest academic award)

Experience:

Cummings Scientific, LLC, Tallahassee, Florida: 03/2024-Present

Mechanical Engineer

- Reconstruction of vehicular accidents; dynamic and kinematic analysis; skid coefficients; computer analysis; momentum exchange; vehicle crush energy calculations.
- Downloading and interpretation of vehicle CDR data.
- Computer modeling of vehicular accidents and occupant kinematics.
- Computer Animations
- Vehicle accident re-enactments
- Advanced Photogrammetry and Photogrammetric Modeling
- Drone assisted aerial photography and scene mapping

Leon County School District Tallahassee FL; 2017-2024

Science Teacher

- Taught Mathematics, Physics, Earth-Space Science, Comprehensive Science
- Developed syllabi, lesson plans, assignments and exams
- Provided feedback and individualized recovery plans.
- Sponsored the environmental club
- Acted as science fair coordinator.

Out of the Ashes Foundation, Miami FL 2001 - 2017

Academic Coordinator & board member

- Coordinated all academic activities of the foundation.
- Developed curricula
- Mentored low-income students.

Miami Dade College 2013 - 2016

Assistant Professor of Physics

- Developed syllabi and overall course structure for introductory physics and astronomy courses including
 - PHY2053 Physics 1 without Calculus
 - PHY 2054 Physics 2 without Calculus
 - PHY2048 Physics 2 with Calculus
 - PHY2049 Physics 2 with Calculus
 - AST1002 Introductory Astronomy
- Provided direct instruction through traditional lectures and online classes.
- Created student assignments exams and solution sets
- Graded assignments and exams.
- Provided feedback and assigned grades for the course.

Florida International University, Miami FL 2005 - 2013

Adjunct Professor of Physics.

- Developed syllabi and overall course structure for introductory physics and astronomy courses including
 - PHY2053 Physics 1 without Calculus
 - PHY 2054 Physics 2 without Calculus
 - PHY2048 Physics 2 with Calculus

- PHY2049 Physics 2 with Calculus
- AST2003/AST2004 Introductory Astronomy
- Provided direct instruction through traditional lectures and online classes.
- Created student assignments exams and solution sets
- Graded assignments and exams
- Provided feedback and assigned grades for the course.

University of the West Indies, St. Michael, Barbados

Research Fellow/ Lecturer in Physics

- Conducted research on reverse selective surfaces – surfaces which reject incident radiation while passive radiating heat away from the building.
- Responsible for 1st year undergraduate physics program at the Cave Hill Campus of the university.
- Lectured in Barbados, and supervised courses in the neighboring islands of St. Lucia and Antigua.
- Created student assignments exams and solution sets
- Graded assignments and exams
- Provided feedback and assigned grades for the course.

Skills:

Accident Reconstruction - Reconstruction of automobile accidents using physical evidence to determine causation and event sequence.

Photogrammetry of video and photographs using Photomodeler, PFTrack, Pix4D, 3DSMax, Autocad, etc. to reconstruct accident scenes and extract data.

Significant Coursework:

Mathematics: Probability and Statistics, Calculus, Linear Algebra, Ordinary and Partial Differential Equations

Physical Science: Mathematics, Physics and Chemistry with Laboratory Experience. Statics and Dynamics, Electricity and Magnetism, Thermodynamics, Quantum Mechanics, Astrophysics and Cosmology.

Biological Science: Anatomy and Physiology, Microbiology

Other: Accident Reconstruction, Solar Energy systems Installation, Methods of teaching