

CONTACT
INFORMATION

College of Charleston
Department of Physics and Astronomy
223 J. C. Long Building
9 Liberty Street
Charleston, SC 29424

Phone: (843) 953-0278

Email: williamsgj@cofc.edu
<http://williamsgj.people.cofc.edu>

EDUCATION

Ph.D. in Atmospheric Science

Colorado State University

Thesis: *The Effects of Environmental Flow on the Internal Dynamics of Tropical Cyclones*

Advisor: Wayne Schubert

August 2012

M.S. in Physics

University of Texas at Brownsville

Thesis: *A Statistical Analysis of Double White Dwarf Binaries in the LISA Gravitational Wave Foreground.*

Advisor: Matthew Benacquista

May 2008

B.S. in Mathematics and Physics

Morehouse College

Magna Cum Laude

May 2006

PROFESSIONAL
POSITIONS

College of Charleston

2013-present

Assistant Professor of Atmospheric Physics

University of Louisiana at Monroe

2012-2013

Assistant Professor of Atmospheric Sciences

Front Range Community College

2010-2011

Adjunct Instructor of Physics and Meteorology

University of Texas at Brownsville

2006-2008

Physics Lecturer and Lab Instructor

RESEARCH
INTERESTS

Dynamics of the Tropical Cyclone Boundary Layer
Axisymmetrization of Geophysical Vortices
Tropical Cyclone Inner Core Structure and Evolution

PROFESSIONAL
ORGANIZATIONS

American Geophysical Union
American Meteorological Society

RESEARCH
STUDENTS
SUPERVISED

Terreka Hart (CSU CMMAP Summer Intern): Concurrent Observations of Eyewall Mesovortices and Concentric Eyewalls in Hurricane Ivan, 2009.

Jared Marquis: Investigation of Strength, Intensity, and Integrated Kinetic Energy Associated with Hurricane Humberto (2008), 2013-2014.

Courtney Lawrence: Convection Associated with the Collision of Sea-Breeze Front and Gust Front on June 16th, 2014.

Linsey Passarella: Concurrent Observations of Eyewall Mesovortices and Concentric Eyewalls in Atlantic Hurricanes, 2015 - 2016

Joseph Dibrigida: The Role of Warm Oceanic Eddies in the Rapid Intensification of Atlantic Hurricanes, 2016

Joseph Dibrigida: Synoptic and Mesoscale Analysis of Folly Beach Wave, 2016 – 2017.

PUBLICATIONS

G. Williams, 2017: The Thermodynamic Evolution of the Hurricane Boundary Layer During Eyewall Replacement Cycles, *Meteorology and Atmospheric Physics*, doi: 10.1007/s00703-016-0495-4, pp. 1 – 17.

G. Williams, 2016: Inner Core Thermodynamics of the Tropical Cyclone Boundary Layer, *Meteorology and Atmospheric Physics*, doi:10.1007/s00703-016-0441-5, pp.1 – 20.

G. Williams, 2015: The Effects of Vortex Structure and Vortex Translation on the Tropical Cyclone Boundary Layer Wind Field, *J. Adv. Model. Earth Syst.*, 07, doi:10.1002/2013MS000299

G. Williams et al. 2013: Shock-like Structures in the Tropical Cyclone Boundary Layer. *J. Adv. Model. Earth Syst.*, **5**, 338-353.

B. McNoldy, Z. Finch, D. Henderson, D. Lerach, R. Seigel, J. Steinweg-Woods, E. Stuckmeyer, D. Van Cleave, **G. Williams** et al. 2011: A High Wind Statistical Prediction Model for the Northern Front Range of Colorado. *Electronic Journal of Operational Meteorology*.

PRESENTATIONS

Vortex Rossby Wave (VRW) Dynamics in Hurricane-Like Vortices. Eleventh CMMAP Team Meeting Presentation, August 11, 2011.

The Instability of Vortex Rings in Vertical Shear. NCAR/NOAA/CSU TC Workshop. November 16, 2011.

Shock-Like Structures in the Tropical Cyclone Boundary Layer. National Weather Association, 38th Annual Meeting. October 17, 2013

The Inner Core Thermal Structure of the Tropical Cyclone Boundary Layer. 22nd Annual PAMS Allen Weber Mini-Technical Conference, March 4, 2016.

The Generation and Maintenance of Hollow PV Towers in a Forced Primitive Equation Model. The 2nd International Electronic Conference on Atmospheric Sciences, July 16 – 31st, 2017.

C. Slocum, **G. Williams**, R. Taft, and W. Schubert 2014: Tropical Cyclone Boundary Layer Shocks. arXiv:1405.7939 [physics.ao-ph].

COURSE TAUGHT

Introductory Physics I (F2013, F2014, F2015, S2015, F2017)
Introductory Physics I Lab (F2013, F2017)
Introductory Physics II (S2016, F2016)
Introductory Physics II Lab (S2014)
Introduction to Oceanography (F2012, S2013)
Introduction to Meteorology (S2017)
Basic Meteorology Lab (F2012)
General Physics I (Calculus Based) (F2007)
General Physics I Lab (Calculus Based) (F2007)
General Physics II (Calculus Based) (S2008)
General Physics II Lab (Calculus Based) (S2008)
General Meteorology (Calculus Based) (F2010, S2011)
Human and Atmosphere Interaction (F2012)
Climate (S2017)
Physical Meteorology (S2013)
Synoptic Meteorology (S2014, S2016)
Mesoscale Meteorology (S2013)
Micrometeorology (S2013)
Electricity and Magnetism (F2014, F2015, F2016, F2017)
Thermal Physics (S2014, S2015, S2016, S2017)
Tropical Meteorology (F2012)

PROFESSIONAL SERVICE

Councilor
Council on Undergraduate Research 2016 – present

Referee
Energies (MDPI – Open Access Publishing) 2013 – present

College of Charleston Committees
Physics Department Air Quality Faculty Search Committee 2014
Physics Department Atmospheric Physics Curriculum Committee 2013 – present

Physics Department Resources and Awards Committee	2015 – 2016
Physics Department Assessment Committee	2015 – present
Committee on Assessment of Institutional Effectiveness	2015 – present