

Noah P. Allen

Blacksburg, VA 24060

Noah.Allen@NoahA.net

NoahA.net

- EDUCATION:** **Doctor of Philosophy in Electrical Engineering – Electronics** *Expected Graduation May 2018*
Virginia Tech, Blacksburg, Virginia
• Research Topic: Fabrication and Characterization of GaN Power Devices
- Masters of Science in Electrical Engineering – Electronics** *December 2014*
Virginia Tech, Blacksburg, Virginia
• Thesis Title: “Electrical Characterization of Ruthenium Dioxide Schottky Contacts on GaN”
• 3.6 GPA on 4.0 scale
- Bachelor of Science in Electrical Engineering** *May 2009*
• *Georgia Institute of Technology, Atlanta, Georgia*
• Senior Design: “Helicopter Control Using the Vicon Motion Capture System”
- Georgia Tech Lorraine Study Abroad, Metz, France** *Summer 2007*
- SKILLS:**
- LAB EXPERIENCE:
- Level 100/1000 Cleanroom
 - Georgia Tech MRC Cleanroom
 - Cornell NanoScale Facility
 - Virginia Tech MicrON Cleanroom
 - Experience implementing CMOS process
 - Tool experience available on request
- ELECTRICAL TEST EQUIPMENT:
- Oscilloscope
 - DMM
 - IV Curve Tracer
 - Logic Analyzer
 - Signal Generator
 - Probe Station
- LANGUAGES:
- C/XC
 - VHDL
 - Matlab
 - LabView
 - Java
 - Assembly
- MODELING:
- CrossLight - APSYS
 - Silvaco SSuprem3
 - Virtuoso Layout Suite
 - Tanner Tools L-Edit
 - Quartus II
 - NI MultiSim
 - Cadence PSPICE
- OPERATING SYSTEM:
- Linux
 - Windows
- RESEARCH EXPERIENCE:**
- Graduate Researcher, Doctor of Philosophy at Virginia Tech** *January 2010 to Present*
Virginia Tech, Blacksburg, Virginia
Research Mentor: Louis Guido, PhD
- Project: Fabrication and Characterization of GaN Power Devices
 - Simulate various semiconductor device structures with CrossLight software
 - Process GaN material structures in a standard cleanroom environment
 - Utilize various electrical testing equipment to characterize GaN Power devices
- Summer Intern, Electronic Systems Sector at Northrop Grumman** *May 2010 to August 2010*
Northrop Grumman Advanced Technology Labs, Baltimore, MD
Internship Mentors: Monica Lilly and Joe Payne, PhD
- Project: Optimization of Raith E-Beam Tool for High Resolution CNTFET Applications
 - Created high resolution Raith E-Beam lithography process to minimize CNTFET channel
 - Worked on side projects including creating a DUV process for higher resolution photolithography and assisting employees with SEM imaging
 - Passed knowledge on to employees for later implementation
- Undergraduate Researcher, NNIN REU Program at Cornell NanoScale Facility** *May 2008 to August 2008*
Cornell University, Ithaca, NY
Research Mentor: Mr. Donald Tennant
- Project: “Using Near-field Holography to Investigate Super Hydrophobic Surfaces”
 - Created high resolution resist process for near-field holography system in the attempt to study its application for super hydrophobic surfaces
 - More information: http://www.nnin.org/nnin_2008reu.html
- Undergraduate Researcher, Georgia Tech Research Institute Nanotechnology Lab** *August 2007 to May 2009*
Georgia Institute of Technology, Atlanta, Georgia
Research Mentor: W. Jud Ready, PhD
- Project: “Correlation of Design Parameters in Carbon Nanotube-Based Supercapacitors”
 - Structured the use of carbon nanotubes in electro-chemical double layer capacitors in such a way that will improve modern supercapacitors
 - More information: <http://nano.gtri.gatech.edu/index.html>

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TEACHING EXPERIENCE:

Instructor, Electrical Engineering Department at Virginia Tech

Summer II 2015

Course Titles: (ECE 2204) Electronics

- Introduced concepts of non-linear electronic devices including theory, biasing and circuit design.

Teaching Assistant, Electrical Engineering Department at Virginia Tech

Summer I 2012

Course Titles: (ECE 2504/3544) Intro. To Computer Engineering / Digital Design I

Instructor: Jason Thweatt

- Provided support for two courses answering questions, validating lab assignments and grading homework's, tests and projects

Teaching Assistant, Electrical Engineering Department at Virginia Tech

Fall 2011

Appointment: Electronics/Circuit Support Group

Spring 2012

Advisor: Dennis Sweeney, PhD

- Fielded questions pertaining to 7 undergraduate circuit analysis and electronics courses along with providing support for the MATLAB and PSPICE software packages

Graduate Mentor, Electrical Engineering Department at Virginia Tech

Spring 2012

Student: Evan Clinton (ECE Junior)

Fall 2012

- Mentor undergraduate student in the area of semiconductor characterization techniques
- Guide student in the practices of IV, IVT, and CV electrical measurements along with the data analysis for characterizing Gallium Nitride Schottky diodes
- Advise student on final presentation encompassing work done during the semester

Instructor, Engineering Education Department at Virginia Tech

Summer II 2011⁽¹⁾

Course Title: (ENGE 1104) Exploration of Digital Future

Summer II 2012

- Took sole responsibility of instructing both lecture and laboratory sections
- ⁽¹⁾Successfully introduced the use of LabVIEW myDAC as a tool for teaching basic electric circuit theory and computer programming
- ⁽²⁾Designed and implemented Arduino-based microcontroller workshops as a means for introducing basic embedded programming and circuit design

Spring 2013

Summer I 2013⁽²⁾

Summer I/II 2014

Teaching Assistant, Engineering Education Department at Virginia Tech

Fall 2012

Course Title: (ENGE 1024) Engineering Exploration

Instructors: Jaime De La Reelopez, PhD / Kacie Hodges, PhD / Holly Matusovich, PhD

- Instructed three lab sections used to supplement lecture portion of the course
- Introduced students to basic engineering principles including the engineering design process, the scientific method and professional ethics and applications

Student Worker, Engineering Education Department at Virginia Tech

Summer I/II 2011

Advisor: Tom Walker

- Employed by Engineering Education Department to create LabView myDAC projects used to demonstrate different Electrical and Computer Engineering practices
- Projects Included:
 - Wii remote controlled balancing table game
 - Semiconductor curve tracer
 - DTMF tone filter and number identifier

Teaching Assistant, Engineering Education Department at Virginia Tech

Spring 2011

Course Title: (ENGE 1104) Exploration of Digital Future

Instructor: Tom Walker

- Introduced students to computer and software based technologies in a lab setting
- Received highest evaluation as a teaching assistant during semester

AWARDS & ACTIVITIES:

- Bradley Department of ECE Bradley Fellowship Award, Spring 2015
- Engineering Education Teach Talks Scholarship, Spring 2013
- Electrical Engineering Department Fellowship Award, Spring 2011
- ETA KAPPA NU (HKN) Electrical and Computer Engineering Honor Society, February 2010
- Member, IEEE, January 2007 - Present
- Presidential Undergraduate Research Award, UROP, August 2008
- PURA Travel Award, UROP, March 2008/February 2009
- Poster Presentation at Annual TMS Conference, March 2008/February 2009
- Intel Diversity Summit 2008, Intel Foundation, August 2008
- Intel 2008 REU Fellow, Intel Foundation, May 2008