Noah P. Allen

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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 EQUIPTMENT:
- Oscilloscope
- DMM
- IV Curve Tracer
- Logic Analyzer
- Signal Generator
- Probe Station

LANGUAGES:
- C/XC
- VHDL
- Java
- Matlab
- LabView
- 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

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 — ***Spring 2013***
- [(1)]Successfully introduced the use of LabVIEW myDAC as a tool for teaching basic electric circuit theory and computer programming — ***Summer I 2013*** [(2)] ***Summer I/II 2014***
- [(2)]Designed and implemented Arduino-based microcontroller workshops as a means for introducing basic embedded programming and circuit design

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