Keegan Lane

Campus Address: 204 N. Lincoln Ave. ● Urbana, IL 61801 ● keeganlane@gmail.com ● (302) 494-1281
Permanent Address: 13 Perkins Ave. ● Wilmington, DE 19809

Education

University of Illinois at Urbana-Champaign May 2016
Bachelor of Science in Chemical Engineering GPA: 3.52/4.00
- James Scholar Fall 2012-Spring 2013
- Fred S. Bailey Scholar Fall 2015-Spring 2016
- Notable Coursework: *Legal Issues in Engineering Entrepreneurship, Engineering Law, Material Selection for Sustainability, Finance for Engineering Management*

Leadership and Experience

FMC Health and Nutrition *Newark, DE*
Quality Engineering Intern Summer 2015
- Worked closely with QC and led projects to improve quality plant wide utilizing the Kaizen philosophy

Fujifilm Imaging Colorants (FFIC) *New Castle, DE*
Process Engineering Intern Summer 2014
- Implemented projects including a density meter installation, spectrophotometer validation, and remediation of a pH monitoring system

Kenis Research Group, Department of Chemical and Biomolecular Engineering *Urbana-Champaign, IL*
Undergraduate Researcher Fall 2014 – Spring 2016
- Kumar V, Whittenberg JJ, Lane K, Verma S, Patel H, Kenis PJA. Design and characterization of a scaled-up millifluidic grove mixer for nanoparticle synthesis.

IBN Solar Design Company *Urbana-Champaign, IL*
Founding Partner August 2015-Present
- More information on the project at our website, ibnhomes.com
- Cozad New Venture Competition and Think Chicago participant; invited to interview with Y Combinator

Boy Scouts of America, Troop 99 *Wilmington, DE*
Eagle Scout Spring 2012

Haiti Clean Stove Project (HCSP) *Urbana-Champaign, IL*
Information Lead Fall 2015 – Spring 2016
President Fall 2014 – Spring 2015
- Defined project focus and led relations with the University and our Haitian partner organization

Vice President Spring 2014
Emissions Team Lead Fall 2013-Spring 2014
- Headed emissions and efficiency research for prototype stoves in Dr. Tami Bond's lab

American Institute of Chemical Engineers (AIChE) *Urbana-Champaign, IL*
Six Sigma Green Belt Certification October 17th, 2014
AIChE General Member Fall 2012 – Spring 2016

LAS Leaders Fall 2013 – Spring 2016
Treasurer Spring 2015 – Spring 2016
- Represented the college of Liberal Arts and Sciences (LAS) as a student alumni ambassadors

Computer Skills

- *VBA, MS Office, CHEMCAD, ImageJ, Polymath, Chem 3D Pro, MestReNova, SketchUp, Inkscape, Introductory Python, Introductory C++*

Eric Seabron

(443) 622-6103, ericseabron@gmail.com

501 West Fairlawn Drive, Urbana, IL

Current Positions

Chief Executive Officer of Inspired by Nature Startup Venture. September 2015 - Present

Outreach Coordinator for the St. Elmo Brady STEM Academy at Booker T Washington Middle School, Urbana-Champaign, IL. September 2014 - Present

Research Assistant at the Fredrick Seitz Materials Research Laboratory at the University of Illinois, Urbana-Champaign, IL. June 2013 - Present

Past Positions

Product Development Intern at Horizon Hobby, Champaign, IL. April 2014 - August 2014

Student Researcher at the Center of Microwave, Satellite, and RF Engineering (COMSARE) at Morgan State University, Baltimore, MD. October 2010 - May 2013

Math and Physics Tutor, Algebra I - Calculus III & Differential Equations, General Calculus Based Physics, Solid State Physics. Community College of Baltimore County Catonsville (2008-2009), DuSable High School (2009), Morgan State University CASA Program (2010 - 2012).

Education

University of Illinois, Urbana Champaign, IL
PhD Candidate in Materials Science and Engineering, May 2015 - Present
MS in Material Science and Engineering, August 2013 - May 2015

Morgan State University, Baltimore, MD
BS in Electrical Engineering, July 2010 - July 2013

Research Interests

Low Dimensional Materials, Light-Matter Physics, Scan Probe Characterization, Nanotechnology, High- frequency Microwave and Terahertz devices, Renewable Energy (i.e. photovoltaic technology), Sustainable Infrastructure, Appliance Scale Thermal Systems, STEM Education.

Current Research

Electrical Properties and Band Structure Characterization of Nanoscale Materials using a novel Near-Field Scan Probe Techniques. Dr. William Wilson, Dr. John Rogers, Dr. Xuling Li, Dr. Kimani Toussaint, Scott MacLaren.

Honors and Awards

- Won 4th place and best presentation at the OFC innovation and entrepreneurship competition for Makedu website, Atlanta GA. April 17 -21, 2013 □
- Won 1st place for at the Innovative STEM Conference (ISC Science Fair) for research on Simulation of Dipole Antennas for Carbon Nanotube Purification, Hunt Valley MD. March 2013 □
- Won 1st place for Best Undergraduate Research Project for RF Amplifier Research at the Mae P. Claytor Undergraduate Research Symposium, Morgan State University, April 24, 2012 □
- Invited to the Dr. Wesley Harris Society Conference, Princeton University, March 4-6, 2012 □
- American Physics Society (APS) Undergraduate Scholar. 2009 - 2013 □
- Selected for the University of Michigan CERN REU program, Geneva Switzerland. June 11, 2011 - August 14, 2011

Notable Presentations

- "Exploring Doping Dynamics of Laterally-Grown p-n Junction GaAs Nanowires Using Scan-Probe Microscopy Techniques", MRS Spring, San Francisco CA, April 2015 □
- "Microwave Impedance Microscopy (MIM) of Aligned Single Walled Carbon Nanotubes: Imaging Electronic Nanotube Character at the Nanoscale", SPIE International Optics Conference, San Diego CA, August 2014 □
- "Novel Design of a Tunable Low Noise Amplifier for Software Defined Radios", NASA site review, Morgan State University, May 2013 □
- "Analysis of Gain-Noise Tradeoffs in Cascaded LNA Designs", CAARMS 18 poster presentation, Prince- ton University, June 2012 □
- "End-Cap Extension Muon Drift Chamber Commissioning Overview", CERN REU final Presentation, Site de Meyrin (ATLAS site) in Geneva Switzerland, August 2011 □

Publications

- "Scanning Probe Microwave Reflectivity of Aligned Single-Walled Carbon Nanotubes: Imaging of Electronic Structure and Quantum Behavior at the Nanoscale", ACS Nano, December 2015 □
- "Exploring Nanoscale Characterization of Low Dimensional Electronic Materials", Master's Thesis, March 2015 □
- "Direct current injection and thermocapillary flow for purification of aligned arrays of single-walled carbon nanotubes", Journal of Applied Physics, February 2015 □
- "Microwave purification of large-area horizontally aligned arrays of single-walled carbon nanotubes", Nature Communications, November 2014 □

Additional Skills □

Software Experience: Ansoft's COMSOL Multiphysics, LTspice, Agilent's Advanced Design System (ADS), Ansys High Frequency Simulation Software (HFSS), Engineering Equation Solver (EES), AutoCAD, GIMP, Microsoft Programs (i.e. Excel, Word, etc.), Google Sketchup, Adobe Premier (Film Editing), Prezi Presentation Editor, Wordpress (web design). □

Computer Programming Experience: Python, Igor, C++, LaTeX, MATLAB, CRAN or R (statistics). □

Specialized Engineering Skills: RF Circuit Design, Digital Circuit Design, Thermal System Optimization, Oscilloscope, Soldering Iron, Microcontroller and Microprocessors (Arduino), Vector Network Analyzer (VNA). □

Microfabrication and Analysis Experience: Electron Microscopy, Atomic Force Microscopy, Raman Spectroscopy, Photolithography, Carbon Nanotube Growth via Chemical Vapor Deposition, Plasma Etching, Ultra-fast Laser Spectroscopy techniques. □

References Available Upon Request

Brayden Turner

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PROFILE

I work hard both inside and outside of my jobs to improve myself and what I know. I spend a lot of my time learning new skills or working on projects like the solar company I started with friends to push myself above the rest. I can operate within teams as well as alone on problems across many different fields which I have gained from my experiences.

EDUCATION

B.S., Engineering Physics, Minor in Computer Science, Concentration in Technology Entrepreneurship
University of Illinois Urbana-Champaign – 2016

EXPERIENCE

Inspired by Nature (October 2015 – Current)

- Founded solar startup acting as Chief Technology Officer with friends/classmates.
- Designed/coded website, www.ibnhomes.com, from scratch and hosted it on a server I built.
- Built tiered, self-cleaning/cooling solar prototype structure that increased solar output per square footprint for use on rowhomes.
- Chosen to interview with Y Combinator Accelerator.

Wolfram Research Inc. Internship (May 2014 – August 2015)

- Increased readability of technical documentation across different departments for use by non-technical employees for products such as Wolfram Cloud.
- Curated documentation to secure contracts for companies sharing external data with Wolfram Research.
- Partnered with the events department to organize and help work company picnic.

Entrecorps (January 2015 – January 2016)

- Improved marketability of the product Wolfram Alpha for Wolfram Research Inc. by conducting surveys and formal market research.
- Provided a rising wearables startup with market insights and guidance though consultation work.

Physics Student Advisory Board (August 2014 – May 2016)

- Facilitated the development of improvements around the physics department.
- Hosted four successful town hall meetings between students and faculty members to voice comments and concerns.

State of Illinois Student Council President (May 2011 – May 2012)

- Executed state wide service project to provide under privileged teenagers with clothing where over 80 high schools participated.
- Planned and headed state convention over three days attended by roughly 1000 high school students across the state.

Skills

Python	**Javascript**
C/C++	**HTML/CSS**
Java	**Unix**
Gimp	**Inkscape**

Relevant Courses

Systems Programming
Completed individual projects regarding MapReduce, TCP/UDP networking, and parallel processing as well as programming extensively in the Unix environment.

Artificial Intelligence
Implemented projects with team members in areas such as neural networks, naïve Bayes classification, and machine learning.

Statistics in Computer Science
Worked with large datasets and wrote algorithms for k-means clustering, Markov Chains, stochastic gradient descent, Bayesian interference, etc. and worked with traditional statistical methods such as p-value, distributions, and hypothesis testing.

Data Structures
Learned structures like hash maps, graphs, AVL trees, etc.

Engineering/Startup Law
Learned law/business practices within the engineering field heavily regarding contracts and intellectual property.

Electricity & Magnetism
Worked on challenging problems and gained knowledge on fundamental electrical systems and mathematical techniques.

Languages

English (Native)
Spanish (Intermediate)