

# Hannah Akinosho

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## Education

### Georgia Institute of Technology, Atlanta, GA 30337

Candidate for Doctor of Philosophy in Organic Chemistry (emphasis in Paper Science and Engineering)  
Expected Graduation Date: Aug. 2016

### The University of Georgia, Athens, GA 30602

Bachelor of Science in Food Science: May 2008/GPA: 3.61/4.00

Master of Science in Food Science: Aug. 2012/GPA: 3.90/4.00

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## Work History

Georgia Institute of Technology, Atlanta, GA: August 2012 to present

### **Graduate Teaching Assistant**

- Led laboratory sessions for undergraduate students enrolled in general chemistry
- Supplemented lecture through recitation sessions to review material from class
- Handled and disposed of hazardous waste and materials

The University of Georgia, Athens, GA: January 2011 to August 2012

### **Graduate Teaching Assistant/Graduate Research Assistant**

- Presented lectures relating to the fundamental principles behind food chemistry labs
- Identified and resolved student difficulties in learning new concepts by providing out of the classroom help sessions
- Planned laboratory exercises and prepared reagents, instruments, and workspaces for students

Golden State Foods, Conyers, GA: January 2010 to January 2011

### **Quality Assurance Technician**

- Audited packaging and processing operations and decreased the volume of defective product exiting the plant
- Evaluated raw materials and finished goods analytically and qualitatively
- Calibrated, troubleshot, and repaired laboratory equipment

Naturally Fresh, Inc., College Park, GA: June 2008 to August 2009

### **Microbiologist/Quality Control Laboratory Technician/R&D Technician**

- Performed microbial tests on raw materials, finished products, and plant sanitation
- Adjusted 3000+ lbs batches of sauces and dressings that did not meet specifications
- Designed and executed experiments aimed at locating and eliminating unwanted microbes from finished products and the plant
- Prepared new formulations at the benchtop and led pilot plant scale up

## Analytical Lab Equipment (Industry and Academia)

Colorimeter	pH meter	Autotitrator	Spectrophotometer 20	Refractometer
Zetasizer	Mastersizer	Fluorolog-2	UV-Vis Spectrophotometer	Turbiscan Ma2000
FT-IR	Light Microscope	90Plus	Raman Spectroscopy	Aw Meter
Rheometer	DSC	Centrifuge	LC/MS	Bioplate Reader
Rota-Vap	NMR			

## Leadership and Instruction

The University of Georgia, Athens, GA: Summer 2011

### **Young Scholar Mentor**

The Comparative Analysis of the Emulsification Properties of Hydroxypropyl Methylcellulose, Sugar Beet Pectin, and Gum Acacia

- Designed and supervised a summer research project for a high school student
- Guided and trained the Young Scholar on food chemistry principles, laboratory equipment, and data analysis that were relevant to her project

- Conducted regular meetings to discuss and resolve problems as well as monitor the progress of the research experiments

### Research Projects (Biomedical Emphasis)

The University of Georgia, Athens, GA, The Department of Veterinary Medicine and the Department of Pharmacy: Summer 2012

#### **The Determination of Gentamicin Concentrations in Foal Plasma using Liquid Chromatography-Mass Spectrometry**

- Conducted protein precipitations and serial dilutions to prepare samples for testing
- Prepared and operated the LC-MS in the analysis of the concentration of gentamicin
- Troubleshoot and repaired the LC-MS issues with the pump, sensitivity, and leaks

The University of Georgia, Athens, GA, The Department of Pharmacy: Spring 2012

#### **CaCO-2 Cells as Models for the Uptake of Blueberry Antioxidants**

- Maintained CaCO-2 cell lines through regular media changes and subculture methods
- Extracted and solubilized antioxidants in freeze-dried blueberries
- Monitored antioxidant uptake using the MTT and SRB assays

The University of South Florida, Tampa, FL, Department of Chemical and Biomedical Engineering: Fall 2009

#### **CyQuant Cell Proliferation Assays**

- Developed methods for reagent preparation, fluorescence detection, and the proliferation of mammalian cells
- Measured fluorescence using a fluorescence microscope and BioKinetics plate reader to predict cell populations and viability
- Investigated the viability of two lines of mammalian cells by comparing initial cell numbers to numbers after 96 hours

### Research Projects (Food Science Emphasis)

The University of Georgia, Athens, GA, The Department of Food Science and Technology: Summer 2011- 2012

#### **The Characterization of Hydroxypropyl Methylcellulose (HPMC) through the Analysis of its Substituents**

- Determined that the percent hydroxypropylation is unrelated to the hydration/dehydration properties of HPMC using differential scanning calorimetry
- Established a linear relationship between the percentage of methylation from gas chromatography and the ratio of peak areas from FT-IR
- Assessed physical gel characteristics of HPMC based on substituent ratios using small amplitude oscillatory shear
- Related the relative crystallinities of HPMC to the hydroxypropyl contents using Raman peaks

The University of Georgia, Athens, GA, The Department of Food Science and Technology: Summer 2011-2012

#### **The Physical and Chemical Stabilities of Emulsions Stabilized with Hydroxypropyl Methylcellulose (HPMC)**

- Formed emulsions using high pressure homogenization and monitored stability over time
- Concluded that the chemical stability of an emulsion is independent of HPMC structure
- Related physical destabilization in an emulsion stabilized with the structure of HPMC

The University of Georgia, Athens, GA, The Department of Food Science: Spring 2011-Summer 2012

#### **The Preservation of Freshly-Squeezed Orange Juice through Nonthermal Processing**

- Conducted protein/enzyme extractions, fractionations, and purifications and prepared pectin solutions for enzyme inhibition assays
- Monitored the stability of the treated orange juice through particle size analysis and clarification studies
- Measured enzyme activity through titrimetric measurements

The University of Georgia, Athens, GA, The Department of Food Science: Spring 2008

### **The Retention of Quality Characteristics in Space Food**

- Processed and packaged space food under modified atmospheric conditions
- Tested quality characteristics such as color and particle size changes to attributes that may negatively impact consumer acceptability
- Organized and analyzed data

The University of Georgia, Athens, GA, The Department of Food Science: Spring 2008

### **The Inhibition of Pectin Methylesterase in Citrus Fruit**

- Researched cloudiness and flocculation in orange juice
- Carried out assays to confirm enzyme inhibition
- Prepared buffer solutions and orange juice for inhibition assays

## **Industry Projects**

Naturally Fresh, Inc., College Park, GA: Spring 2009

### **The Reduction of Microbial Counts in Tartar Sauce**

- Reduced microbial counts in fresh vegetables in tartar sauce through the implementation of a new GMP plan
- Conducted microbial tests on fresh vegetables as well as sampled the effectiveness of the current sanitation practices of surfaces and instruments
- Designed a manufacturing plan to maintain low microbial counts in tartar sauce

Naturally Fresh, Inc., College Park, GA: Fall 2008

### **The Use of Statistical Process Control in the Filling Process of Liquid Products to Reduce Profit Losses**

- Investigated and pinpointed the source of weight fluctuations in the filling process of several sauces
- Constructed control charts to illustrate the instability on the filling process
- Worked with management and maintenance to reduce the variation between fillers and within machines