

# DAVID ALEXANDER CARROLL II

Doctoral Student in Agriculture, Food, and Environment

## Address

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PhD student with research interests in climate-smart agriculture, climate change adaptation and mitigation in smallholder agricultural systems, water resources management, and the interface between agricultural production and ecological conservation. BS and MS degrees in Environmental Science with three years of experience working in research, project implementation, and education in the agriculture, nutrition, and environment sectors in Haiti. Fluent in English, Haitian Creole, French, Antillean Creole, and Spanish.

## EDUCATION

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### **PhD Student – Agriculture, Food, and Environment - The Friedman School of Nutrition Science and Policy – Tufts University, Boston, MA**

*September 2018 – Present*

Advisor: Dr. Timothy Griffin

Research Focus: Adoption of climate change adaptation and mitigation strategies and technologies for sustainable management of forests and agroecosystems in the Caribbean basin

### **Master of Science – Environmental Science – Brigham Young University, Provo, UT**

*September 2013 – August 2015*

GPA: 4.00

Thesis Title: Drought and Nitrogen Effects on Maize Canopy Temperature and Stress Indices.

Advisor: Dr. Neil C. Hansen

Minor: Social Innovation

### **Bachelor of Science – Environmental Science – Brigham Young University, Provo, UT**

*September 2006 – August 2013*

GPA: 3.93

Minor Degrees: International Development, French

Special Certificate: French Language, Mastery Level – ACTFL proficiency guidelines and supporting coursework

## RESEARCH EXPERIENCE

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### **Doctoral Research Assistant**

The Friedman School of Nutrition Science and Policy at Tufts University – Boston, MA

*September 2018 – Present*

- Research on climate change mitigation and adaptation in relation to agricultural development and on management of agroecosystems in the Caribbean and Latin America
- Econometric analysis of climate effects on household water sources in Sub-Saharan Africa using USAID Demographic and Health Survey (DHS) and climatic data
- Geographic Information Systems (GIS) modeling and analysis for sustainable forest management

### **Agriculture Research and Extension Program Coordinator**

Meds & Food for Kids – Quartier Morin, Haiti

*November 2015 – September 2017*

- Worked collaboratively with faculty from University of Florida, University of Georgia, and Cornell University on the USAID/Feed the Future Peanut & Mycotoxin Innovation Lab (PMIL) project
- Designed and implemented 30 peanut agricultural field studies in Quartier Morin and Mirebalais, Haiti
- Assisted with data collection and measurement, data entry, statistical analysis, and interpretation and presentation of results
- Presented results of peanut variety trial at 48<sup>th</sup> Annual Meeting of the American Peanut Research and Education Society in Clearwater, Florida – July 2016
- Supervised training of 28 Haitian undergraduate agronomy student interns completing end of studies theses on PMIL field trials
- Worked with PMIL staff on writing a Haiti PMIL technical research report for publication
- Participated in development of ongoing participatory aflatoxin research project in conjunction with Laval University and the International Development Research Centre (IDRC) of the Canadian government

### **Graduate Research Assistant**

**Brigham Young University Plant and Wildlife Sciences Department – Provo, UT**

*September 2013 – August 2015*

- Conducted field research and statistical analysis of water and nitrogen status in irrigated maize under arid and semi-arid conditions
- Managed field and greenhouse studies, including planting, plot maintenance, data collection, data entry and analysis, and harvesting

### **Laboratory Research Technician**

**Brigham Young University Environmental Analytical Lab – Provo, UT**

*October 2011 – May 2013*

- Performed analysis of soil, plant, water, and other environmental samples for clients in academia, government and private research institutions, the agriculture industry, and construction

## **TEACHING AND MANAGEMENT EXPERIENCE**

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### **Graduate Teaching Assistant**

The Friedman School of Nutrition Science and Policy at Tufts University – Boston, MA

*January 2020 – present*

- Assist professor in teaching graduate agriculture science and policy course
- Correct and provide feedback on science policy briefs and other assignments
- Meet with students outside of class time to provide feedback, mentoring, and answer questions

**Program Manager**

Immigrant Family Services Institute, Inc. – Boston, MA

*October 2018 – present*

- Plan and host community-building conferences and symposiums on support of immigrant communities
- Development of online immigrant navigation services provisioning platform
- Development of strategic partnerships with other immigrant services providers
- Support for academic and enrichment programs for youth from immigrant communities
- Organize and support immigrant advocacy and rights educational campaigns and awareness programs

**Institution Director**

Centre d'Agriculture Saint Barnabas – Terrier-Rouge, Haiti

*October 2017 – September 2018*

- Obtention and management of contracted sub-award with USAID Haiti Reforestation Project entitled “Development of the Wood Energy and the Beekeeping Sectors in Terrier-Rouge”
- Ensuring successful academic operations through hiring, training, and communication with school administration and faculty
- Writing project proposals and seeking partnerships with international and Haitian government institutions to participate in agricultural development and natural resources management programs
- Monitoring of curriculum, teaching, field experiments, and testing
- Establishment of farm production and services program to meet school income requirements
- Counseling for students wishing to pursue higher level university education
- Preparation and submission of financial and activities reports

**Agriculture Research and Extension Program Coordinator**

Meds & Food for Kids – Quartier Morin, Haiti

*November 2015 – September 2017*

- Supervised and trained multiple cohorts of Haitian undergraduate agronomy students completing end of studies theses with MFK, including providing individual mentorship
- Mentored and trained two entry-level Haitian agronomists working at MFK as their first professional job experience, leading on development of agriculture extension, research, and local peanut procurement programs
- Conducted trainings with multiple groups of 30 Haitian smallholder peanut farmers (460 farmers in total), using the FAO Farmer Field School methodology

- Participated with University of Florida and University of Georgia faculty in a training session targeting approximately 40 Haitian agronomists, researchers, and professionals working in peanut agriculture and the peanut value chain
- Trained six local support staff on surveying and data entry for a CTA-funded agricultural extension project in Northeast Haiti

### **Adjunct Faculty – Haitian Creole Instructor**

Brigham Young University Center for Language Studies – Provo, UT

*September 2014 – December 2018*

- Launched Haitian Creole second language study program at Brigham Young University in 2014
- Developed curriculum for first year and second year language courses (101, 102, 201, 202), Advanced Language through Cultural Studies (330), and Introduction to Haitian Creole Literature (340)
- Taught classes and corrected homework, compositions, exams, and other assignments
- Provided feedback and individual mentoring to students

### **Student Navigator**

Brigham Young University Ballard Center for Economic Self-Reliance – Social Enterprise Academy – Provo, UT

*September 2014 – August 2015*

- Provided project consultation services to groups of university students researching and developing their own social ventures

### **Graduate Teaching Assistant**

Brigham Young University Plant and Wildlife Sciences Department – Provo, UT

*September 2013 – August 2015*

- Assisted with curriculum development, teaching classes, and grading assignments for Soil and Water Conservation course
- Developed geographic information systems (GIS) curriculum for in-course lab and trained students on basic tenets of ArcGIS

### **Refugee Employment Counselor**

International Rescue Committee – Salt Lake City, UT

*January 2012 – April 2012*

- Taught a weekly employment skills class for refugees from diverse locations in East Africa, South Asia, and the Middle East
- Served as a personal job counsellor for recently resettled refugees, assisting with applications, job solicitation, interviews, pre-hiring processes, and orientations

## **PUBLICATIONS**

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Macdonald GE, Brenneman TB, Kemerait RC, Rhoads JA, Fulmer AM, Carroll DA, Macajoux RJ, Faroutine G, Sheard WA, Laforest D, Dorzin P. 2018. Haiti Peanut Research Report – Efforts to improve peanut production in Haiti by investigating management options for foliar diseases, low soil fertility, and other yield-limiting agronomic issues. University of Georgia Extension / Feed the Future Innovation Lab for Collaborative Research on Peanut Productivity and Mycotoxin Control (Peanut & Mycotoxin Innovation Lab).

Available:

[https://secure.caes.uga.edu/extension/publications/files/pdf/B%201499\\_1.PDF](https://secure.caes.uga.edu/extension/publications/files/pdf/B%201499_1.PDF)

- Carroll DA, Hopkins BG, DeJonge K, Hansen, NC. 2017. Leaf temperature of maize and Crop Water Stress Index with controlled deficit irrigation and variable nitrogen supply. *Irrigation Science* 35(6):549-560. doi:10.1007/s00271-017-0558-4
- Wood M, Taylor S, Carroll A, Hansen NC. 2017. Surveying employment listings to inform curricula of environmental science degree programs. *Journal of Environmental Studies and Sciences* 7:346-354. doi:10.1007/s13412-016-0401-x
- Fulmer AM, Brenneman TB, Kemerait RC, Rhoads JA, Faroutine G, Carroll DA II, Sheard WA, MacDonald GE. 2016. Evaluation of improved Valencia cultivars with and without fungicide for peanut production in Haiti. American Peanut Research and Education Society. 48th Proceedings of the APRES Annual Meeting: 12-14 July 2016.
- Carroll, DA, Lindsey C, Baker J, Hopkins BG, Hansen NC. 2015. Drought and nitrogen stress effects on maize canopy temperature. *Proceedings of the Western Nutrient Management Conference* 11:84-89.
- Carroll DA, Hansen NC, Hopkins B, Terry RE. 2014. Nitrogen management and water productivity of limited irrigation corn. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America. 2-5 November, Long Beach, CA. AnMtgAbsts 311-8.

## **CONFERENCE PRESENTATIONS**

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### **Oral Presentations:**

- Carroll DA II, Fulmer AM, Kemerait RC, Brenneman TB, Rhoads JA, MacDonald GE. May 3<sup>rd</sup>, 2018. Peanut agronomic research internships for training undergraduate agronomy students in Haiti to facilitate the end of studies thesis. Innovation in Agricultural Education Conference – Feed the Future AREA Project (Appui à la recherche et au développement agricole). Port-au-Prince, Haiti.
- Carroll DA II. October 11<sup>th</sup>, 2016. Aflatoxin control: revamping smallholder groundnut production. AU-PACA and CTA Roundtable on Engaging the Private Sector for Aflatoxin Control in Africa. 2<sup>nd</sup> Partnership for Aflatoxin Control in Africa (PACA) Partnership Platform Meeting. Entebbe, Uganda.

### **Poster Presentations:**

- Carroll DA II, Fulmer AM, Brenneman TB, Kemerait RC, Rhoads JA, Faroutine G, Sheard WA, MacDonald GE. July 14<sup>th</sup>, 2016. Evaluation of improved Valencia cultivars with and without fungicide for peanut production in Haiti. 48<sup>th</sup> Annual Meeting of the American Peanut Research and Education Society (APRES). Clearwater, FL, USA.
- Carroll DA, Hansen NC, Hopkins B, Terry RE. November 5<sup>th</sup>, 2014. Nitrogen management and water productivity of limited irrigation corn. American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA) 2014 Annual Meeting. Long Beach, CA, USA.

## **CURRENT RESEARCH INTERESTS**

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- Climate effects on access to improved sources of household water in Sub-Saharan Africa
- Factors affecting adoption of best agricultural and natural resource management practices by smallholder farmers in developing countries.
- Reforestation, agroforestry, soil conservation, and environmental restoration of degraded natural and agroecosystems in developing countries.
- Climate change adaptation and climate-smart agriculture in smallholder agricultural systems
- Optimization of water, nutrient, and other resource inputs for increasing sustainability and climate change readiness in agroecosystems.

## **HONORS AND AWARDS**

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- Tufts Institute of the Environment Fellowship, 2019-2020
- Provost Fellowship, Tufts University, 2018-2020
- International Plant Nutrition Scholar Award. 2015
- Clinton Global Initiative University Delegate. 2013, 2014, and 2015
- International Agriculture Scholarship, Brigham Young University. 2014
- Garry M. and Sharra L. Booth Graduate Assistantship. 2014
- Phi Kappa Phi Honor Society. 2013
- Robert N. Anderson Graduate Assistantship. 2013
- Magna Cum Laude, Brigham Young University. 2013
- BYU Office of Research and Creative Activities (ORCA) Grant Recipient. 2013 Grant Title: Using Agricultural Byproducts in the Effort to Restore Haiti's Forests Composted Sugarcane Bagasse as a Soil Amendment in Haitian Silviculture.
- National Merit Scholarship. 2006-2012
- Eagle Scout, Boy Scouts of America. 2004

## **LANGUAGES**

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### **Haitian Creole (C2)**

- ACTFL Oral Proficiency Interview (OPI) – Superior (2014)

### **French (C1)**

- Diplôme approfondie de la langue française (DALF) Level C1 – 76/100 (2018)
- ACTFL Oral Proficiency Interview (OPI) – Advanced High (2013)
- ACTFL Writing Proficiency Test (WPT) – Advanced High (2013)

### **Lesser Antillean Creole French (C1)**

- French lexifier creole language spoken in Dominica, St. Lucia, Martinique, Guadeloupe, and to a lesser extent in Grenada and Trinidad & Tobago

### **Spanish (B2)**

## **VOLUNTEER AND OTHER EXPERIENCE**

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**CASB Support Group, Ltd. – Boston, MA, USA**

**Board of Directors President (2018-present)**

- Coordinate fundraising and grant applications for agricultural technical college in Haiti (Centre d'Agriculture Saint Barnabas)
- Provide technical and academic support to CASB administration
- Work with USAID and Chemonics International on creation of a Rural Sustainable Development Center (*Centre rural de développement durable* – CRDD)

**Freelance Translator and Interpreter**

**Self-employed (2013-Present)**

- Translation of legal documents, educational and promotional materials, and official/personal correspondence between English, Haitian Creole, and French for various service providers
- Simultaneous and consecutive interpretation between French, Haitian Creole, and English

**Haiti Health Initiative – Orem, UT, USA and Léogâne, Haiti**

**Board of Directors Member (2014-2017)**

- Coordinate development, implementation, and evaluation of agricultural projects
- Serve as team leader for mobile medical and dental clinics in Léogâne, Haiti

**Church of Jesus Christ of Latter-day Saints – Salt Lake City, UT, USA**

**Volunteer Interpreter (2013-2015)**

- Interpreted conferences and other live events from English to Haitian Creole

**Sustain Haiti – Provo, UT, USA and Léogâne, Haiti**

**Director of Agricultural Operations (2011-2013)**

- Developed and implemented community garden and agroforestry projects
- Managed teams of local and international volunteers in agriculture project activities.
- Conducted analysis and evaluation of agricultural projects and submitted reports to US-based management team

**Church of Jesus Christ of Latter-day Saints – Boston, MA, USA**

**Volunteer Representative (2007-2009)**

- Taught family life principles to community groups and taught Haitian Creole language skills to volunteers in Boston, Massachusetts