

- Led the research team to increase productivity, optimize costs, and drive energy sustainability in agricultural operations
- Interventions led to a 75% reduction of required process chemicals through the utilization of previously discarded waste resulting in the improved sustainability of estate's production process
- Successfully engineered the innovative design of a Bioethanol Production Plant that utilized byproducts from sugar factories, which produces 99.8% ethanol from molasses
- Created and executed interdisciplinary training through collaborations with different sectors affiliated with the bioenergy field, which led increased awareness and advancement of skilled personnel
- Cultivated relationships with stakeholders and served as point person for communication, awareness and engagement in the agro-energy sector

Energy Bioscience Institute

Urbana, Illinois

Research Associate

Aug 2010 – May 2011

- Developed sustainable and cost-effective processes for harvesting and collecting biomass that improved the harvesting efficiency by over 45%, initiating new machine design
- Named point person for communication across cross-functional groups, with regard to modifications of biomass harvesting equipment required for best efficiency
- Identified energy input for harvest of biomass and targeted energy intensive areas for reduction
- Networked with equipment manufacturers and farmers relating functional challenges that informed common understanding

Graduate Research Assistant

Purdue University, West Lafayette, IN

Aug 2006 – Aug 2010

University of Illinois, Urbana-Champaign, IL

Aug 2004 – Aug 2006

- Identified factors affecting quality variability with regard to flow, discharge and handling characteristics of dried grains with soluble and establish the measures to mitigate these challenges
- Utilized evidence-based methods and research to improve the understanding of distillers grains, leading to increased productivity and enhanced management
- Engineered a design that successfully reduced 57% ergonomic issues related to sugarcane manual harvesting tools

TEACHING EXPERIENCE

Lecturer

Government Technical Institute, Georgetown, Guyana

Feb 2012 – June 2016

University of Southern Caribbean, Guyana Campus

Sept 2013 – June 2015

University of Guyana, Georgetown, Guyana

Aug 2000 – Aug 2004

- Tutored, mentored and advised aspiring engineers and technical professionals, introducing the principles of scientific analysis
- Arranged and conducted practical demonstrations that developed the student's critical thinking in STEM areas and guide Undergraduate student's research projects
- Synchronized course topics with continuous assessment to aid students with grasping concepts

ADDITIONAL LEADERSHIP POSITIONS

President, Excelcius Youth Federation, East Coast Demerara, Guyana

Jan 2015 – Dec 2016

Senator, Purdue Graduate Student Government

Aug 2008 – May 2010

Mentor, Department of Agricultural and Biological Engineering, Purdue University

July 2007 – Aug 2008

Vice-President, Caribbean Students Association, Purdue University

Jan 2007 – Dec 2007

HONORS AND AWARDS

College of Agriculture Research Team Award, Purdue University

2009

Hugh W. and Edna M. Donnan Scholarship, Purdue University

2009

SACNAS Regional Conference Poster Champion	2008
Purdue University Research Foundation Fellowship	2008
Alpha Epsilon & Gamma Sigma Delta Honor Society, University of Illinois	2005
Lewis Tyler Research Award, LASPAU Academic and Professional Programs for the Americas	2005
OAS Graduate Scholarship, LASPAU Academic and Professional Programs for the Americas	2004

PROFESSIONAL ORGANIZATIONS

Project Management Institute (PMI)	Dec 2013 – Present
American Society of Agricultural and Biological Engineers (ASABE)	Jan 2007 – Present
National Society of Black Engineers (NSBE)	Oct 2004 – Present
Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS)	Oct 2006 – Present

PUBLICATIONS

1. **Clementson, C.** and L. Gopaul. 2020. Laboratory study of the nutrient release rate for vinasse on sandy soil and three coastal clay soils of Guyana. *International Journal of Recycling of Organic Waste in Agriculture* 9:137-159.
2. **Clementson, C.** and L. Gopaul. 2020. Bioenergy potential, its effects on climate change and the economy: A review in the Guyana context. *Journal of Environment and Biotechnology Research* 9(1):1-12.
3. Cornette, J., **Clementson, C.** and D. Fredricks. 2018. Environmentally sustainable management of water hyacinth. *International Journal of Agriculture and Forestry* 8(1):4-9.
4. **Clementson, C.**, Abraham, B.N., Homenauth, O. and V. Persaud. 2016. An evaluation of ‘vinasse’ (Bio-ethanol effluent) and vermicompost as soil amendments for cash crop production. *Greener Journal of Agricultural Sciences* 6(9):256-261.
5. **Clementson, C.L.**, Abraham, B.N. and O. Homenauth. 2016. An investigation of the spatial variability of elements due to vinasse disposal in waterways at the Albion Bioethanol Plant, Berbice Guyana. *Greener Journal of Environmental Management and Public Safety* 5(3):074-087.
6. **Clementson, C.L.**, Wilson, D. and P. Ragobeer. 2016. The Bio-methane potential of the water hyacinth (*Eichhornia crassipes*). *Greener Journal of Agricultural Sciences* 6(5):180-185.
7. Abraham B.N., **Clementson, C.** and O. Homenauth. 2016. Assessment of the Potential Water Quality effects resulting from the release of vinasse, from the Bioethanol Demonstration Plant, into the surrounding waterway. *Greener Journal of Agricultural Sciences*, 6(3): 102-109, <http://doi.org/10.15580/GJAS.2016.3.022416043>
8. Abraham, B.N., **Clementson, C.** and O. Homenauth. 2015. An investigation into the potential impacts on air quality during operations of the Bioethanol Plant in Berbice, Guyana. *Global Scholastic Research Journal of Multidisciplinary* 1(13):1-8.
9. Probst, K., Ileleji, K.E., Kingsly, A.R., **Clementson, C.L.**, Garcia, A.A and C.A Ogden. 2013. The Effect of Condensed Distillers Solubles on the Physical and Chemical Properties of Maize Distillers Dried Grains with Solubles (DDGS) using Bench Scale Experiments. *Biosystems Engineering* 115(3):221-229.
10. Johnson, P. C., **C. L. Clementson**, S. K. Mathanker, A. C. Hansen, and T. E. Grift. (2012). Cutting energy characteristics of *Miscanthus x giganteus* stems with varying oblique angle and cutting speed. *Biosystems Engineering* 112(1):42-48.
11. **Clementson, C.L.**, and Ileleji, K.E. 2012. Particle Heterogeneity of Corn Distillers Dried Grains with Solubles (DDGS). *Bioresource Technology* 107: 213-221.
12. **Clementson, C.L.**, and Ileleji, K.E. 2010. Variability of bulk density variability of distillers dried grains with solubles (DDGS) during gravity-driven discharge. *Bioresource Technology* 101 (14): 5459-5468.

13. **Clementson, C.L.**, Ileleji, K.E., and Rosentrater, K.A. 2010. Evaluation of measurement procedures used to determine the bulk density of distillers dried grains with solubles (DDGS). *Transactions of the ASABE* 53(2): 485-490.
14. Kingsly, A.R.P., K.E. Ileleji, **C.L. Clementson**, A. Garcia, D.E. Maier, R.L. Stroshine, S. Radcliff. 2010. The Effect of Process Variables on the Physical and Chemical Characteristics of Corn Dried Distillers Grains with Solubles (DDGS) - Plant Scale Experiments. *Bioresource Technology* 101(1):193-199.
15. Ileleji, K.E., A. Garcia, A.R.P. Kingsly, and **C. L. Clementson**. 2010. A comparison of standard methods to determine the moisture content of corn distillers dried grains with solubles (DDGS). *Journal of AOAC International* 93(3): 825-832.
16. **Clementson, C.L.**, K.E. Ileleji, and R.L. Stroshine. 2009. Particle segregation within a pile of bulk distillers dried grains with soluble (DDGS) and variability of nutrient content. *Cereal Chemistry* 86(3):267-273.
17. **Clementson, C.L.** and A.C. Hansen. 2008. Pilot Study of Manual Sugarcane Harvesting Using Biomechanical Analysis. *Journal of Agricultural Safety and Health* 14(3): 309-320.
18. Ileleji, K.E., K.S. Prakash, R.L. Stroshine and **C.L. Clementson**. 2007. An Investigation of Particle Segregation in Corn Processed Dried Distillers Grains with Solubles (DDGS) induced by Three Handling Scenarios. *Bulk Solids and Powder Science and Technology* 2(2): 84-94.

CONFERENCE PRESENTATIONS

1. **Clementson, C.L.** 2017. Bioenergy potential in Guyana. A Regional Symposium on Renewable Energy, The emerging role of renewable energy in small developing nations. Regency Hotel, Georgetown, Guyana.
2. Abraham, N., **Clementson, C.L.** and O. Homenauth. 2014. An investigation into the potential impacts on air quality during operations of the Bioethanol Plant in Berbice, Guyana. National Agriculture Conference, Turkeyen, Guyana.
3. Johnson, P., **Clementson, C.L.**, Mathanker, S.K., Hansen, A.C., and T. E. Grift. 2011. Cutting Energy for Selected Bioenergy Plant Stalks. ASABE Paper No. 1110800. St. Joseph, Mich.: ASABE.
4. Johnson, P., **Clementson, C.L.**, A.C. Hansen, and T.E. Grift, 2011. Harvesting biomass feedstock as a source for energy. ASABE Meeting Paper No. 1110800. St. Joseph, Mich.: ASABE. ASABE Meeting Paper No. 1110800. St. Joseph, Mich.: ASABE.
5. **Clementson, C.L.**, K.E. Ileleji and K.A. Rosentrater. 2009. A comparison of measurement procedures used to determine the bulk density of Distillers Dried Grains with Solubles (DDGS). ASABE Paper No. 095761. St. Joseph, Mich.: ASABE.
6. **Clementson, C.L.** and K.E. Ileleji. 2009. Understanding bulk density variation of DDGS. ASABE Paper No. 095800. St. Joseph, Mich.: ASABE.
7. **Clementson, C.L.** and K.E. Ileleji. 2008. The Effect of Granulometric Properties on the Flow Properties of Distillers Dried Grains with Solubles (DDGS). Presented at the 2008 ASABE Conference, Providence, RI, USA.
8. **Clementson, C.L.** and Ileleji, K.E. 2008. The effect of granulometric properties on the flow properties of dried distillers grains with solubles (DDGS). In *Proceedings of the International Quality & Technology Congress*, 14-18 Jul., 2008, Chicago, USA.
9. **Clementson, C.L.**, K.E. Ileleji and R. Stroshine. 2008. Good sampling practices for dried distillers grains with solubles. Integrated Corn Ethanol Co-products Conference, Purdue University, West Lafayette, IN.
10. Ileleji, K.E., **C.L. Clementson** and A. Garcia. 2007. A comparison of standard methods to determine the moisture content of distillers dried grains with solubles (DDGS). ASAE Paper No 076254. St. Joseph, Mich.: ASAE.
11. **Clementson, C.L.**, K.E. Ileleji and R. Stroshine. 2007. Particle Segregation in Bulk Distillers Dried Grains with Solubles (DDGS) and its effect on Chemical Variability of Bulk. ASAE Paper No 076214. St. Joseph, Mich.: ASAE.

12. Ileleji, K.E., **C.L. Clementson**, and K.S. Prakash. 2007. Morphological characterization of distillers dried grains with solubles (DDGS) particles and their effect on chemical variation in the bulk product. 9th ICBMH 2007, Callaghan, Australia.
13. **Clementson, C.L.**, and A.C. Hansen. 2006. Biomechanical Analysis of Sugarcane Harvesting. ASAE Paper No 067046. St. Joseph, Mich.: ASAE.