

# Valerie C. Valerio

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## SUMMARY

Research Scientist interested in using novel analytical techniques, data synthesis and visualization to solve complex problems, especially to advance public health and food security. Quantitative scientist with proven communication, teamwork, and statistical modeling skills.

## SKILLS

Proficient in R, Git-GitHub, Statistical Machine Learning, Network and Time Series Analysis  
Knowledge of Python, Data Science, ArcGIS, HiPer Computing, Netlogo, ORA, SolidWorks  
Native Spanish proficiency, elementary French proficiency

## EDUCATION

- 2016 – current **PhD Candidate University of Florida**  
College of Engineering, Department of Agricultural and Biological Engineering  
Chairs: Dr. Greg Kiker and Dr. Rachata Muneeppeerakul  
Biological Systems Modeling Certificate  
Contributor to USAID's Feed the Future Livestock Systems Innovation Lab (LSIL)  
Research: *Systems Modeling of Livestock Value Chains in Sub-Saharan Africa*
- 2010 – 2014 **BSc Technological Institute of Santo Domingo (INTEC)**  
School of Engineering, Department of Industrial Engineering  
Selected courses: Industrial Processes and Automation, Quality Control, Operations Research, Design of Experiments (DOE), Thermodynamics, Materials Science  
*Summa Cum Laude* (3.8/4.0 GPA)

## WORK EXPERIENCE

- 2020 **Research (Data) Scientist – Surgo Ventures (Washington DC, USA)**  
Applies innovative data and geospatial science techniques to solve social and public health problems with precision  
Lead technical developer for a 670k Bill & Melinda Gates Foundation project to generate evidence on patterns of geospatial and racial vulnerability to adverse maternal mortality and morbidity
- 2016 **Manufacturing Engineer – West Ward Pharmaceuticals (NJ, USA)**  
Improved manufacturing processes to increase efficiency and lower production costs through modifications of standard technical principles  
Used good documentation practices, coordinated change controls, and revised batch records, Standard Operating Procedures (SOPs) and other quality documents  
Co-managed a project to transfer an injectables manufacturing line from another site  
Validated injectables production line and equipment validations
- 2014 – 2015 **Client Service Executive – Nielsen (ACNielsen Dominican Republic)**  
Consumer research account executive for food and beverage manufacturers  
Prepared and presented market reports used in key decision making by sr. executives  
Sought opportunities to increase the scope and revenue of business with existing and prospective clients  
Provided statistical training to multidisciplinary teams including sales, marketing, consumer research, and executive leadership personnel

2013            **Operations and Logistics Coordinator – Centro Cuesta Nacional (Dom. Rep.)**  
Coordinated logistics for the supermarket management of a large retail chain  
Developed a forecasting tool for own-label brand cheese production and distribution  
Managed inventory and logistics of end-of-gondola units and special exhibitions; supported procurement and planning during implementation of Forecast & Replenishment system

## **PUBLICATIONS**

*Peer reviewed – published*

**Valerio, V.C.**, Walther, O.J., Eilittä, M., Kiker, G.A., and Muneeppeerakul, R. (2020). Network analysis of regional livestock trade in West Africa. *PLoS ONE*.

Serra, R., Kiker, G.A., Minten, B., **Valerio, V.C.**, Padmakumar, V., and Wane, A. (2020). Filling Knowledge Gaps for Enabling Livestock Policies. *Global Food Security*.

*Others – published*

**Valerio, V.C.** (2020). Walther, O. (Eds.). The Structure of Livestock Trade in West Africa. *OECD West African Paper No. 29*.

**Valerio, V. C.** (2020). Mapping regional patterns of livestock trade in West Africa. *USAID Feed the Future Innovation Lab for Livestock Systems Infographic*.

*Peer reviewed – in preparation*

**Valerio, V.C.**, Kaplan, D., Muneeppeerakul, R., McKune, S., and Kiker, G.A. (expected 2020). Commercializing goats in Eswatini: a quantitative system dynamics value chain model.

**Valerio, V.C.**, Musumba, M., Kiker, G.A., and Palm, C. (expected 2020). Livestock ownership, livestock derived foods consumption and dietary diversity in the Millennium Villages.

## **CONFERENCE AND OTHER PRESENTATIONS**

May 2020            **The Network Structure of Livestock Trade in West Africa – YouTube video**  
Feed the Future Livestock Systems Innovation Lab (LSIL) Recorded Module

Apr 2020            **The Network Structure of Live Animal Trade in West Africa – Guest lecture**  
Dr. Olivier Walther's GEO3502 Economic Geography class

May 2019            **Mapping Regional Food Trade: The Structure of Live Animal Movements in West Africa**  
Contributed talk at the Food and Nutrition Satellite, NetSci 2019  
University of Vermont

Oct 2019            **Modeling livestock value chains in Sub-Saharan Africa – Invited presentation**  
CPET 2019 Food Security Day  
University of Florida

## **TEACHING EXPERIENCE**

Summer 2020        **Introduction to Agent-Based Modeling for Biological Systems**  
Co-developer of course curriculum  
Department of Agricultural and Biological Engineering, University of Florida

Fall 2018            **Biological Systems Modeling**  
Teaching Assistant  
Department of Agricultural and Biological Engineering, University of Florida

## AWARDS AND FELLOWSHIPS

- 2016 – 2020     **National Needs Fellow – Food Security**  
United States Department of Agriculture (USDA), University of Florida
- 2016             **Board of Education (BOE) Summer Fellow**  
University of Florida

## LEADERSHIP AND VOLUNTEERING

- 2019             **Volunteer Translator English – Spanish**  
Complexity Explained by De Domenico et al. (2019)
- 2018 – 2019     **Volunteer Reviewer and Copy Editor**  
UF Journal of Undergraduate Research (UFJUR), University of Florida
- 2018 – 2019     **Treasurer**  
Alpha Epsilon Honor Society  
Department of Agricultural and Biological Engineering, University of Florida
- 2016 – 2019     **Vice-president, Historian and Service Chair**  
Latino-Hispanic Organization of Graduate Students (LOGRAS)  
University of Florida
- 2017 – 2019     **Graduate Mentor**  
One (1) undergraduate Summer of Research at Florida (SURF) Program  
Two (2) graduate students  
Department of Agricultural and Biological Engineering, University of Florida

## SHORT COURSES/WORKSHOPS

- 2020             **Introduction to Spatial Agent-Based Modeling**  
National Socio-Environmental Synthesis Center (SESYNC)
- 2019             **Complex Networks Winter Workshop (CNWW)**  
University of Vermont and Université Laval  
Montreal, Canada
- 2019             **Network Modeling Tutorial**  
National Institute for Mathematical and Biological Synthesis (NIMBIOS)  
University of Tennessee – Knoxville
- 2018             **Introduction to Geospatial Analysis in R**  
Network Modeling Tutorial  
National Institute for Mathematical Modeling (NIMBIOS)  
University of Tennessee – Knoxville

## OTHER INTERESTS

The food system as a complex system, Machine Learning and time series analysis applications for sustainable development and public health, geospatial analysis, theoretical and applied network epidemiology, livestock disease transmission modeling.