**Biographical Sketch**

**Oswaldo Villena**

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#### Professional Preparation

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| **College/University** | **Major** | **Degree & Year** |
| University of San Agustin, Arequipa, Peru | Agriculture Sciences | B.S., 1999 |
| National Agrarian University La Molina, Lima, Peru | Agrarian Innovation for Rural Development | M.S., 2008 |
| Towson University, Maryland | Environmental Science | M.S., 2010 |
| University of Maryland College Park, Maryland | Marine Estuarine & Environmental Sciences | PhD, 2017 |

##### **Academic/Professional appointments**

Sep. 2022 – Current: Fellow Researcher The Earth Commons Institute, Georgetown

University

Jul. 2021 – Aug. 2021: Postdoctoral Researcher USGS-Pacific Island Ecosystem Research Center

Oct. 2018 – Jun. 2021: Postdoctoral Researcher Virginia Tech, Department of Statistics

Jan. 2018 – Aug. 2018: Laboratory Instructor University of Maryland College Park

Biology Department

Jan. 2013 – Jan. 2017: Teaching Assistant University of Maryland College Park

Biology Department

May – October of 2015 and 2016: University Park Town, Maryland

Mosquito Control Program Coordinator

Jul. – Aug. 2016,2018,2020, and 2022: National Agrarian University “La Molina”,

Visiting Professor Lima, Peru

April 2014 – June 2015: Student contractor USGS-Patuxent Wildlife Research Center, Maryland

1. **PRODUCTS**
2. **Villena, O.C.**, Ryan, S.J., Murdock, C.C., Johnson, L.R. 2022. Temperature impacts the environmental suitability for malaria transmission by Anopheles gambiae and Anopheles stephensi. Ecology. <https://doi.org/10.1002/ecy.3685>
3. Leisnham, P.T., LaDeau, S.L., Saunders, M.E., and **Villena, O.C.** 2021. Condition-specific competitive effects of the invasive mosquito *Aedes albopictus* on the resident *Culex pipiens* among different urban container habitats may explain their coexistence in the field. Insects. 12(11), 993. <https://doi.org/10.3390/insects12110993>
4. Miazgowicz, K.L., Shocket, M.S., Ryan, S.J., **Villena, O.C.**, Hall, R.J., Owen, J., Adanlawo, T., Balaji, K., Johnson, L.R., Mordecai, E.A., Murdock, C.C. 2020. Age influences the thermal suitability of *Plasmodium falciparum* transmission in the Asian malaria vector *Anopheles stephensi*. Proceedings of the Royal Society B. 287(1931), <https://doi.org/10.1098/rspb.2020.1093>
5. Mordecai, E., Caldwell, J., Grossman, M., Lippi, C., Johnson, L., Neria, M., Rohr, J., Ryan, S., Savage, V., Shocket, M., Sippy, R., Stewart, A., Thomas, M., **Villena, O**.**C.** 2019. Thermal biology of mosquito-borne disease. Ecology Letters. 22:1690-1708

<https://onlinelibrary.wiley.com/doi/full/10.1111/ele.13335>

1. **Villena, O.C.**, Momen, B., Sullivan, J., and Leisnham, P.T. 2018. Effects of ultraviolet radiation on metabolic rate and fitness of *Ae. albopictus* and *Cx. pipiens* mosquitoes. PeerJ 6:e6133 <https://doi.org/10.7717/peerj.6133>
2. **Villena, O.C.**, Terry, I., Iwata, K., Landa, E.R., LaDeau, S.L., and Leisnham, P.T. 2017. Effect of tire leachate on the invasive mosquito *Aedes albopictus* and the native congener *Aedes triseriatus*. PeerJ 5:e3756 <https://doi.org/10.7717/peerj.3756>.
3. **Villena, O.C.,** J.A. Royle, L.A. Weir, T.M. Foreman, K.D. Gazenski, and E.H. Campbell Grant. 2016. Southeast regional and state trends in anuran occupancy from calling survey data (2001-2013) from the North American Amphibian Monitoring Program. Herpetological Conservation and Biology 11(2):373-385.
4. Weir, L.A., J.A. Royle, K.D. Gazenski, and **O.C. Villena**. 2014. Northeast regional and state trends in anuran occupancy from calling survey data (2001-2011) from the North American Amphibian Monitoring Program. Herpetological Conservation and Biology 9:223-245.
5. **Villena, O.C.**, B.D. Fath. 2010. Assessing the environmental impacts of urban growth using land use/land cover, water quality and health indicators: A case study f Arequipa, Peru. American Journal of Environmental Sciences 7: 90-101.
6. SYNERGISTIC ACTIVITIES

*Community outreach:* During the summers of 2015 and 2016 I worked as the Mosquito Control Program Coordinator at University Park Town in a program focused on reducing mosquito populations through education and the reduction of water holding containers that could be used by mosquitoes to reproduce and without the use of pesticides. I raised awareness among community residents on medical and veterinary risks related to mosquitoes and ways to reduce their population through the elimination of water holding containers, pruning of bushes, covering of tree holes, and the use of traps. I also educated the children of the community through training events at the elementary school for grades 3,4, and 5 where I showed mosquitoes at the different life stages (e.g., egg, larvae, pupae, adult), and talked about mosquitos as vectors for disease and how to control them eliminating water holding containers. Furthermore, with volunteers and students, we did a community cleanup of University Park Town of water holding containers.

*Volunteering:* In 2012 and 2013, I was a volunteer intern with the Baltimore Park and Recreations department to do the tree inventory of the Southeast of Baltimore (number of trees, species, and condition) and the updating of the city tree map using GIS and Remote Sensing. I also was a volunteer intern with the Baltimore County Environmental Department where I did GIS mapping for the Water, Soils, and Environmental Health units.

*Teaching:* I taught Advanced Methods for Data analysis using R software for students of the Master Program “Agrarian Innovation for Rural Development” in 2016. I was also a Teaching Assistant for the laboratory sessions of Principles of Biology during six semesters at the University of Maryland College Park.