ALICE ALONSO

Ph.D.

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Land & Water Resources in Coupled Natural and Human Complex Systems

PROFESSIONAL TRAINING

Education

Ph.D. in Hydrologic Sciences — December 2016
Dept. of Agricultural and Biological Engineering
University of Florida (UF), Gainesville, FL, USA
Advisor: Dr. Rafael Muñoz-Carpena. GPA: 3.7/4.0.

B.S. and M.S. in Bioscience and Agricultural Engineering, Soil and Water Resources — 2010
Université catholique de Louvain (UCL), Belgium
Graduated Cum Laud (Magma Cum Laud for the last year)

Erasmus Exchange Program — 2009
Universidad de Córdoba, Spain

Short Courses

Remote Sensing and Hydrology Workshop — 2016
NASA and Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI). Biosphere 2, AZ, USA

Google Earth Engine User Summit — 2015
Google Headquarters, Mountain View, CA, USA

Graduate Coursework (Selection)

General Hydrology; Soil Physics; Hydraulics ; Soil and Water Environmental Degradation: Causes, Processes and Controls; Soil Management and Conservation; Hydraulic Engineering Applied to Irrigation Systems; Integrated Water Resources Management; Stochastic Subsurface Hydrology; Data Diagnostic; Wetland Ecology; Data Analysis Techniques for Coastal and Ocean Engineers; Grant Writing.

PROFESSIONAL EXPERIENCE

Teaching and Research Appointments

Teaching Assistant and Lab Instructor: Land and Water Resources Engineering undergraduate course — 2014
Dept. of Agricultural and Biological Engineering, University of Florida
Teaching, training, and mentoring of students

Teaching Assistant and Lab Instructor: Soil and Water Resources Management Graduate Program — 2011-2012
Dept. of Agricultural and Biological Engineering, Université catholique de Louvain (Belgium)
Teaching, training, and mentoring of students for the courses of Integrated Water Resources Management; Introduction to Hydrology; Vadose Zone Hydrodynamic; Material Resistance.

Position part-time coupled with research attributions (0.5 / 0.5)

Research Associate 2011-2012

Earth and Life Institute – Environmental Sciences, Université catholique de Louvain (Belgium)
INFOSOL project: Development of Indicators of Soil Hydrological Functions
Comparison of comprehensive in-situ and lab measurements to characterize diverse agricultural soils with transect-scale, long-term water fluxes modeled with HYDRUS 2D. Derivation of indicators of soil functioning to support a rigorous yet more easily implementable assessment of agricultural soil quality (Collaborative project).

Mentorship and Training

Master Student Mentorships 2013-2015

Supervisory committee member of Nicolas Stipo (Université catholique de Louvain, 2014-2015). Thesis title: Characterization and modeling of water infiltration in a swelling soil in the Palo Verde National Park, Costa Rica.
Mentor of Carlos García de Vinuesa Llamas (Université catholique de Louvain and Universidad Politécnica de Madrid, 2013 - 2014): Modeling of Tempisque river watershed in NW Costa Rica using transfer function models.

Training of the Organization for Tropical Studies – Palo Verde Research Station Scientific Staff (Costa Rica) 2013 - 2016

Installation and maintenance of a hydrological instrumentation network, monthly data upload, quality assurance and control, and storage on a web-based server.

Internships

2009

Intern at the Eastern Observatory of Water and Environment, Université Mohammed I, Oujda, Morocco. (1.5 month)
Surveyed with farmers, collected water samples and conducted physico-chemical analysis for master thesis project.

2007

Intern at the Malagasy Farming Association Fekritama
Antananarivo, Tsiroanomandidy and Ambararatabe, Madagascar.
One-month undergraduate program internship.
Accompanied a farmer and active member, including administrative tasks and meetings at the regional and national headquarters, outreach meetings in local communities, and field work.

PUBLICATIONS

Peer-Reviewed Journal Articles

Alonso, A., Muñoz-Carpena, R., Robert, K., and Murcia, C. 2016. Wetland landscape spatio-temporal degradation dynamics using the new Google Earth Engine cloud-based platform: opportunities for non-specialists in remote sensing. Trans. ASABE 59(4). doi:10.13031/trans.59.11608

Alonso, A., Muñoz-Carpena, R., Robert, K., and Murcia, C. 2017. A hydro-meteorological and ecological database to unravel the effects of an inter-basin water transfer project on the Tempisque watershed and downstream Palo Verde wetland. Scientific Data. (In preparation, to be submitted by February 2017)

Alonso, A., Muñoz-Carpena, R, Kaplan, D. 2017. Coupling ground monitoring with MODIS to fathom wetland water dynamics and reconstruct spatiotemporal hydroperiod history. (In preparation, to be submitted by February 2017)

Alonso, A., Muñoz-Carpena, R., and Valle-Levinson, A. 2017. Paradoxical evidence of increase in flooding in a coastal wetland caused by upland overuse and drying of a river. (In preparation, to be submitted by February 2017)

Scientific and Technical Reports (non-refereed)

Alonso, A. 2013: Palo Verde National Park hydrological instrumentation network: Guide for field data collection and upload on the Hydrobase server. Spanish version only.

Bielders, C., Alonso, A., Germeau, M., Laloy, E., Matern, S., Javaux, M., Roisin, C., Vanclooster, M. 2013. Towards indicator of soil functioning: Methodological approach for soil hydric regulation and plant physical support. 102 p. French version only.

Master Thesis (non-refereed)

Alonso, A., 2010: Assessing water quality and pollution origin of the Bou-Areg aquifer (NE Morocco). Advisor: Dr. Marnik Vanclooster. Rewarded for best master thesis by the DeVuys – CERA price. French version only.

HONORS & AWARDS

Traveling and Field Research Grants: CUAHSI Instrumentation Discovery Travel Grant ($1,000; 2016); CUAHSI Student Travel Grant ($500, 2016); Fellow for the Google Earth Engine Summit (2015); Office of Research Graduate Student Travel funds (2 x $400; 2015 & 2016); Organization for Tropical Studies Research Fellowship Recipient ($2,600; 2014); Tropical Conservation and Development Field Research Grant Fellow ($1,500; 2014)

University of Florida – Dept. of Agricultural and Biological Engineering Graduate Student Assistantship. $22,000/year and tuition waiver for four years (2012-2016)

Let's Talk About Water. $6,000 including matching funds by Consortium of Universities for the Advancement of Hydrologic Science, Inc. and University of Florida Water Institute. Team award. (2015)

American Water Resources Association Annual Conference Poster Symposium. 1st place ($250; 2015)

2015 Annual UF-ABE Department Poster Symposium. 1st place ($250; 2015)

R. A. Herbert Scholarship (American Water Resources Association) for excellence in research in water resources ($2,000; 2015)

S.N. Young Scholarship (Florida Section of American Water Resources Association) for excellence in research in water resources ($2,000; 2015)

McNair Bostick Scholarship for research in Agricultural and Natural Resource Systems ($500; 2014)

2014 Annual UF-ABE Department Poster Symposium. Honorable mention.

W.V. Storch Award (Florida section of American Water Resources Association) for Research in Water Resources ($1500; 2014)

Grinter Fellowship Award. ($3,600/year; 2013 & 2014)

DeVuyst-CERA price. Best Master Thesis Award. Université catholique de Louvain – Bioscience and Agricultural Engineering Department (€1,000; 2010)

Forem TransEurop Grant Fellow for an abroad internship ($3,000; 2010)

PROFESSIONAL LEADERSHIP, SERVICES & SYNERGISTIC ACTIVITIES

Assistant to the Editor-in-Chief of the Journal of Hydrology: Regional Studies for the Americas (Elsevier). Handling of manuscripts, including initial triage, reviewer assignments, and revisions (2016)

UF - Let's Talk About Water event. Initiator and Coordinator. Documentary and debate with a panel of experts to raise awareness and encourage campus-wide discussion about water issue challenges. Sponsored by CUAHSI Let's Talk About Water Challenge Grants program and UF-Water Institute (February 2016)

American Water Resources Association - UF Chapter. President (2014-15); Vice-President (2013-14)

Mentor-Mentee Program at the UF-ABE Dept. Initiator team member and chair (2014)

Community Support Agriculture "GAC'ôté de chez Vous". Treasurer. Louvain-la-Neuve (Belgium, 2011)

Volunteer Trainee in and Vegetable and Citrus Organic Farm. Fellow of the TransEurop Grant. Murcia, Spain (4 months, 2010)

Nonprofit Association Ave Planète Terre. Active member. Louvain-la-Neuve (Belgium, 2008-2010)

Numerous and varied remunerated student jobs during weeks, WE and holidays (baby-sitting, bakery saleswoman, restaurant waitress and trilingual touristic guide mainly) (2002 – 2010)

Youth Organization Les Scouts. Leader. Belgium (2005 – 2008)

NGO Damien Foundation. Volunteer for the fundraising and building of a community clinic in India (1 month, 2005)

TECHNICAL SKILLS

Programming Languages

Matlab and some of R, Unix, Python and JavaScript

GIS and Remote Sensing

ArcGIS and Google Earth Engine

Field and Lab Work

Three projects with strong field work components:

- Sub and Surface Water in Morocco (Master thesis, 2010): synoptic sampling for physico-chemical and nitrate isotopic analysis (isotopic analysis conducted by a specialized lab)
- Soils in Belgium (INFOSOL project, 2011 – 2012): synoptic soil sampling and lab analysis for textural, structural and hydraulic properties (infiltrometer, sand bed / pressure pan, suction cups, Multi-Step Outflow)
- Water and meteorology in Costa Rica (Ph.D. project, 2012 – 2016): design, installation and supervision of instrumentation network for rainfall and hydrological variables (multi-parameter self-contained sensors and wireless cellular data loggers; 12 stations, 110+ sensors currently in site). Three+ years of continuous monitoring. Bi-annual field visits, and continuous communication with in-situ research station staff for data transmission and rapid response in the event of detected malfunctions. Synoptic sampling for physico-chemical lab analysis and flow profiling, including tidal rivers salinity longitudinal and transversal profiling, and continuous tidal rivers velocity 2D transects during a 12-hour tidal cycle.

Others

LaTex, Modflow, Caterpillar, Hydrus 1D/2D, iMovie, +

Languages

French (native), English and Spanish (professional working proficiency), Dutch (limited proficiency)

PRESENTATIONS

Platform Presentations (Selection)

Alonso, A.; Muñoz-Carpena, R.: Google Earth Engine: An unprecedented tool to study spatiotemporal landscape dynamics. ASABE Annual International Meeting. Orlando, FL, July 2016.

Alonso, A.; Muñoz-Carpena, R., Valle-Levinson, A.: Can upstream anthropogenic activities reshape the tidal influence on a Downstream Wetland? ASABE Annual International Meeting, Orlando, FL, July 2016.

Alonso, A.; Muñoz-Carpena, R., Kennedy R., Murcia C.: Google Earth Engine: an unprecedented tool to study spatiotemporal landscape dynamics. Introduction for and by non-specialists in remote sensing. AgSystems Seminar series, UF-ABE, Gainesville, FL, May 2016. Invited.

Alonso, A.; Muñoz-Carpena, R., Valle-Levinson, A.: Can upstream anthropogenic activities reshape the tidal Influence on a downstream wetland? South Florida Water Management Annual Conference, Ft Myer, FL, January 2016. Invited.

Alonso, A.; Muñoz-Carpena, R.: Underlying dynamics of a complex engineered watershed and downstream degraded wetland to inform sustainable water management. FASABE Annual Conference. Ponte Vedra, FL, June 2015.

Alonso, A.; Muñoz-Carpena, R.; Campo-Bescós, M.A.; Huffaker, R.: Towards sustainable management of water resources in complex engineered water systems: a case study in a NW Costa Rican Watershed. FASABE Annual Conference. Naple, FL. June 2014.

Alonso, A.; Bielders, C.; Germeau, M. et al. Soil functioning indicators (INFOSOL): a methodological approach for developing and assessing dynamic soil functions within the soil protection strategy context. 4th International Congress EUROSOIL, Bari, Italy. July 2012.

Poster Presentations (Selection)

Alonso, A.; Muñoz-Carpena, R., Valle-Levinson, A., Murcia, C.; Can flow alteration in a tidal river redefine the structure of the Palo Verde Marsh? 5th UF Water Institute Symposium: Trends, Cycles and Extreme Events. February 2016, Gainesville, FL.

Alonso, A.; Muñoz-Carpena, R.; Kennedy, R.E.; Murcia, C.: Google Earth Engine: an unprecedented tool to study Spatiotemporal Landscape Dynamics. UF- ABE Department Poster Symposium. Gainesville, FL. October 2015 & AWRA Annual Conference. Denver, CO. 2015.

Alonso, A.; Muñoz-Carpena, R.; Campo-Bescós, M.; Murcia, C.; Sasa, M.: Hydrological data collection in a Costa Rican watershed and its downstream remote wetland: Challenges, methodology and lessons learned. UF- ABE Department Poster Symposium. Gainesville, FL. October 2014 & Virtual Workshop on Field Data Management Solutions by CUAHSI. October 2014.

Alonso, A.; Muñoz-Carpena, R.; Campo-Bescós, M.A.; Kiker, G.A.; Huffaker, R. Unintended consequences of complex engineered water systems: A case study in a NW Costa Rican watershed. UF Water Institute Symposium: Water supply planning in a non-stationary world. Gainesville, FL. Feb. 2014.

Alonso, A.; Muñoz-Carpena, R.; Campo-Bescós, M.A.; Kiker, G.A. Towards a sustainable management of water resources: Understanding the interactions between anthropogenic activities and natural systems: a case study in the Tempisque-Bebedero watershed, NW Costa-Rica project overview and first steps. FASABE Annual Conference. St-Augustine, FL. June 2013.

Alonso, A.; Bielders, C.; Germeau, M. et al. INFOSOL Project: towards the development of soil functioning indicators. EGU General Assembly, Vienna, Austria. April 2011.

Alonso, A.; Sbaa, M.; Vanclooster. M. Assessing water quality and pollution origin of the Bou-Areg aquifer (north east Morocco). EGU General Assembly, Vienna, Austria. April 2011.