

Rafael Muñoz-Carpena, Ph.D., Professor

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(a) Professional Preparation

<i>Universidad Politécnica Madrid</i>	<i>Madrid, Spain</i>	<i>Agricultural Engineer</i>	<i>B.Sc./M.S. 1989</i>
<i>North Carolina St. University</i>	<i>Raleigh, NC</i>	<i>Biological & Agricultural Engineer</i>	<i>Ph.D. 1993</i>

(b) Appointments

2011-pres Full Professor, Agricultural & Biological Engineering, University of Florida
2010-2011 Professor in Residence, CEMAGREF (now Irstea), Lyon, France
2006-2011 Associate Professor, Agricultural & Biological Engineering, University of Florida
2001-2006 Assistant Professor, Agricultural & Biological Engineering, University of Florida,
2000-2001 Tenured Researcher, Canary Islands Agricultural Research Institute, Spain.
1993-2000 Engineering Researcher, Canary Islands Agricultural Research Institute, Spain.
1994-2001 Adjunct Professor, University of La Laguna, Spain.

(c) Specialization

Water quality and hydrological modeling; water conservation, surface contaminant transport through vegetation. Complex natural human coupled systems analysis; environmental modeling system integration; global sensitivity and uncertainty of environmental models.

(d) Publications

(i) Impact (Google Scholar, <http://goo.gl/8OMS7s>): citations= 4400+, h-index= 36, i-index= 99

(ii) Sample Products (*Graduate student chair; **Postdoc mentored).

- Nelson, N.*, R. Muñoz-Carpena, P. Neale, M. Tzortziou, J. Megonigal. 2017. Temporal variability in the importance of hydrologic, biotic, and climatic descriptors of dissolved oxygen dynamics in a shallow tidal-marsh creek.. *Water Resour. Res.* 53, doi: 10.1002/2016WR020196
- Rodea-Palomares, I**, M. González-Pleiter, S. Gonzalo, R. Rosal, F. Leganés, M. Casellas, R. Muñoz-Carpena, F. Fernandez-Piñas. 2016. Hidden drivers of low-dose pharmaceutical pollutant mixtures revealed by the novel GSA-QHTS screening method. *Science Adv.* (AAAS) 2(9):e1601272. doi: 10.1126/sciadv.1601272.
- Huffaker, R., R. Muñoz-Carpena, M. Campo-Bescos and J. Southworth. 2016. Demonstrating correspondence between decision-support models and dynamics of real-world environmental systems . *Env. Modeling & Soft.* 83:74-87, doi:10.1016/j.envsoft.2016.04.024
- Campo-Bescós**, M.A., R. Muñoz-Carpena, G.A. Kiker, B.W. Bodah, J.L Ullman. 2015. Improved watering or buffering? Runoff and sediment pollution control from furrow irrigated fields in arid environments. *Agric., Ecosyst. Environ.* 205(1):90–101. doi:10.1016/j.agee.2015.03.010
- Muñoz-Carpena, R. A. Ritter, G.A. Fox and O. Perez-Ovilla. 2015. Does mechanistic modeling of filter strip pesticide mass balance and degradation affect environmental exposure assessments? *Chemosphere* 139:410-421. doi:10.1016/j.chemosphere.2015.07.010
- Khare*, Y.P., R. Muñoz-Carpena, R.W. Rooney. and C.J. Martinez. 2015. A multi-criteria trajectory-based parameter sampling strategy for the screening method of elementary effects. *Environmental Modelling & Software* 64:230-239. doi:10.1016/j.envsoft.2014.11.013.
- Shrivastava*, V., W.D. Graham, R. Muñoz-Carpena and R. Maxwell. 2014. Insights on geologic and vegetative controls over hydrologic behavior of a large complex basin - Global Sensitivity Analysis

of an Integrated Parallel Hydrologic Model. *J. of Hydrology* 519(B):2238–2257.

- Chu-Agor**, M.L., J.A. Guzman, R. Muñoz-Carpena, G.A. Kiker, I. Linkov. 2014. A simplified approach for simulating changes in beach habitat due to the combine effects of long-term sea level rise, storm erosion, and nourishment. *Env. Model. & Software* 52:111-120.
- Ritter, A. and R. Muñoz-Carpena. 2013. Predictive ability of hydrological models: objective assessment of goodness-of-fit with statistical significance. *J. of Hydrology* 480(1):33-45.
- Chu-Agor**, M.L., R. Muñoz-Carpena, G. A. Kiker, M. Aiello-Lammens, R. Akçakaya, M. Convertino, I. Linkov. 2012. Simulating the fate of Florida Snowy Plovers with sea-level rise: exploring potential population management outcomes with a global uncertainty and sensitivity analysis perspective. *Ecol. Modelling* 224(1):33-47. doi:10.1016/j.ecolmodel.2011.10.021.
- Kaplan*, D.A. and Muñoz-Carpena, R. 2011. Complementary effects of surface water and groundwater on soil moisture dynamics in a degraded coastal floodplain forest. *J. of Hydrology* 398(3-4):221-234. doi:10.1016/j.jhydrol.2010.12.019.
- Chu-Agor**, M.L., R. Muñoz-Carpena, G. Kiker, A. Emanuelsson and I. Linkov. 2011. Exploring sea level rise vulnerability of coastal habitats through global sensitivity and uncertainty analysis. *Env. Model. & Software* 26(5):593-604. doi:10.1016/j.envsoft.2010.12.003.

(e) Awards and Honors

- 2017 UF Term Professorship (2017-2020)
- 2017 UF/IFAS High Impact Research Publication Award. *Science Adv.* doi: 10.1126/sciadv.1601272
- 2016 UF Postdoc Mentoring Award, UF Office of Postdoctoral Affairs.
- 2016 FL-ASABE Distinguished Achievement Award (Amer. Soc. of Agric. & Biological Engineers)
- 2015 Royal Academy of Engineers of Spain, Foreign Member (<http://raing.es>)
- 2015 Fellow of the ASABE (American Society of Agricultural and Biological Engineers)
- 2015 ASABE ADS/Hancor Soil Water Engineering National Award.
- 2013 UF Water Institute Faculty Fellow (<http://waterinstitute.ufl.edu/people/facultyfellows.html>)
- 2013 National Postdoctoral Association (NPA) Mentoring Award, <https://goo.gl/PVBh1y>
- 2013 EWRI-ASCE Best Paper Award, *J. Irr. and Drain. Eng.*
- 2011 UF Research Foundation Professor
- 2010 Junior Faculty Award of Merit Gamma Sigma Delta, Honor Society of Agriculture
- 2009 FL-ASABE Special Recognition Award (American Society of Agric. & Biological Engineers)
- 2008 UF/IFAS LEAD Diploma
- 2008 UF/IFAS International Achievement Award
- 2008 Teacher's College Diploma, College of Agriculture and Life Sciences (CALs)
- 2003 Certificate of Appreciation, USDA-Foreign Agricultural Service
- 1999 Paper of ASAE Award, Hydrology Mini-Symposium.

(f) Other Synergistic Activities:

1. *Journal and Book Editor:* Editor-in-Chief, Elsevier's *Journal of Hydrology Regional Studies*; Associate Editor, 2004-2010 *Transactions of ASABE* and *Applied Engineering in Agriculture*; Associate editor for 3 special issues of peer-reviewed journals (*Vadose Zone Journal*, *Trans. of ASABE*, *Physics and Chemistry of the Earth, Part B*); Co-editor of CRC/Lewis book with 53 international contributors
2. *NSF Funded Student development:* NSF GRF doctoral advisor, Ms. N. Nelson (started Fall 2012); NSF-REU Program, Summer 2012, faculty mentor for Wen Yang; Advisory Board 2009-2012, NSF-Innov. through Institutional Integration (I3); 2007-2011 NSF IGERT doctoral advisor, A.C. Linhoss
3. *Federal Projects Panelist:* NSF, USDA/ARS, USDA/NRI; USDA/ARS.

4. *Research Advisory Board Membership*: 2009-2012, UF Water Institute (campus wide); 2002- , Spanish Unsaturated Studies group ZNS, Spain; 2012-2014, UF/IFAS Dean of Research; UF/IFAS International Programs; 2008-, High Performance Computing Center, University of Florida (Campus wide); Ext. Advisory Board, 2015-2018, Instit. for Earth System Research (IISTA), Spain
5. *Scientific and Professional Societies*: American Society of Agricultural and Biological Engineers (ASABE), Fellow ASABE, 2015-, Member Engineer, 1993-, Chair Natural Resources and Environmental Systems Division NRES-02, NRES-21 Hydrology Chair, 2008-2009, Member, SW-5, Publications Review Committee, 2004-; Member, American Geophysical Union (AGU), 1993-.