

Curriculum Vitae

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DINA:

https://dina.concytec.gob.pe/appDirectorioCTI/VerDatosInvestigador.do?id_investigador=13510

Google Scholar:

<https://scholar.google.com/citations?user=OPdCH14AAAAJ&hl=en>

ResearchGate:

https://www.researchgate.net/profile/Jorge_Abad2

RESUME

Dr. Abad is the Provost of the University of Engineering and Technology (UTEC), the Executive Director of the Center for Water Research and Technology (CITA) at the University of Engineering and Technology (UTEC), and the Advisor of the Peruvian Ministry of International Affairs. Dr. Abad is the author of 3 book chapters, more than 34 publications in international journals and more than 65 conference articles, and has extensive experience in fluid mechanics, geomorphology and sediment transport research, specializing in Andean and Amazonian rivers. These studies have been recognized in specialized magazines, such as Discovery, EcoAméricas, and Mongabay. Dr. is also the Academic Director of CREAR (Center for Research and Education of the Amazonian Rainforest).

Dr. Abad is constantly collaborating in the formulation and execution of several multidisciplinary projects with internationally recognized institutions, such as MIT, Harvard, Cornell University, Florida International University, The Nature Conservancy and Wildlife Conservation Society, in the areas of Landscape mapping, Materials Science, Ecology, among others. Recently, he has collaborated with MIT in the digital and photogrammetric mapping of Inca ancestral structures, as part of the initiative of the Ancestral Engineering Research Center at UTEC. The most recent project in the Peruvian Amazon "Scientific Assessment of River Form and Flow: Baseline Information for Infrastructure Guidelines in the Peruvian Amazon" is funded by the Gordon and Betty Moore Foundation, will allow to understand the evolution of Amazonian rivers and develop mathematical morphodynamic models to predict their natural evolution and how anthropogenic effects could induce river patterns disturbance, therefore, newly formed habitats and significant changes in biodiversity.

EDUCATION

PhD, May 2008, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA. Advisor: Marcelo H. Garcia

M.S., December 2002, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA. Advisor: Marcelo H. Garcia

B.S., July 1997, Department of Civil Engineering, National University of Engineering, Lima, PERU.

PROFESSIONAL POSITIONS

Committee member, Centro de Innovación Tecnológica de la Madera – CITEMadera, Centro de Innovación Productiva y Transferencia Tecnológica Forestal Pucallpa – CITEforestal Pucallpa y Centro de Innovación Productiva y Transferencia Tecnológica Forestal Maynas– CITEforestal Maynas, PERU, November 2018-present.

- Designed as a representative of the private sector linked to the production chain. <https://busquedas.elperuano.pe/normaslegales/designan-miembros-del-comite-directivo-del-citemadera-citef-resolucion-ministerial-n-490-2018-produce-1710199-1/>

Provost, University of Engineering and Technology (UTEC), PERU, October 2018-present

Advisor, Ministry of Foreign Affairs, PERU, June 2017-present.

- Specialized consultancy for the realization of Hydraulic and Sedimentological Modeling. Professional specialist in the area of fluid mechanics, sediment transport, morphodynamics, river dynamics and topics related to the Amazonian rivers. <https://busquedas.elperuano.pe/normaslegales/designan-asesor-ad-honorem-de-la-direccion-general-de-sobera-resolucion-ministerial-no-0460re-2017-1536733-3/>

Professor and Chair, Department of Civil and Environmental Engineering, University of Engineering and Technology (UTEC), PERU, June 2016-October 2018

- Responsible for all educational and administrative aspects of the Department related with Teaching, Research and Service. Developer of capacities in students to lead economically viable engineering projects that promote the conservation of the environment and, therefore, of humanity. Promotion of research related to the use of renewable energies and the care of the atmosphere and water and geographic resources.

Executive Director, CITA (Centro de Investigación y Tecnología del Agua – Water Research Center), University of Engineering and Technology (UTEC), PERU, June 2016-present

- Project Manager and researcher in projects related to hydraulics, sedimentology, river morphodynamics, and more.
- The Water Research and Technology Center (CITA, in Spanish) has born from the concept of promoting, developing and communicating the research carried out in our country, with respect to the priority resource: water.

The CITA seeks to become the axis and producer of information based on the study of water, under different social and environmental perspectives. Based on this, the center reinforces its capabilities through constant communication and academic collaboration with academic and research entities. Its capacities include the development of studies in research areas such as Mechanics of environmental fluids, Hydraulics and Sediment Transport, Geomorphology, Geographic Information Systems, Hydrology and Hydroclimatology, Biodiversity and Aquatic Ecosystems, Hydrochemistry, Ecohydrology and Ecosystem Management, Hydrogeology, Treatment wastewater, and also its relationship with the technological progress that responds to current needs and education, a fundamental aspect for decision making. CITA is currently collaborating with different types of organizations: governmental and non-governmental, with strategic partners in Peru and abroad, local communities and authorities, as well as with academic institutions. More information in: <https://cita.utec.edu.pe/>

Assistant Professor, Department of Civil and Environmental Engineering, University of Pittsburgh, PA, USA, October 2009-May 2016.

- Teaching and research in undergraduate and postgraduate level.

Secondary Appointment, Department of Geology and Planetary Sciences, University of Pittsburgh, USA, Fall 2011 – May 2016.

Director of the Environmental Fluid Mechanics (EFM) Laboratory, University of Pittsburgh, PA, USA, October 2009-May 2016.

- This laboratory is used by the Earth Processes and Environmental Flows (EPEF) group to conduct environmental and geophysical research experiments (e.g. fluid flow, sediment transport, morphodynamic) for both subaerial and submarine environments. The EFM Lab has several hydraulic flumes with recirculation systems for water and sediment. The EFM Lab has a state-of-the-art set of acoustic and laser instruments for laboratory and field measurements. The EFM Lab was built and is maintained by EPEF group members and CEE (Civil and Environmental Engineering) staff. More information in: <http://www.engineering.pitt.edu/efml/>

Co-founder and Academic Director, Center for Research and Education of the Amazonian Rainforest. (CREAR). November 2011-present.

- The Center for Research and Education of the Amazonian Rainforest (CREAR) was created as an umbrella organization to develop educational and research activities in the Peruvian Amazonian Rainforest. Peruvian charter member institutions are crossing boundaries and initiating wide collaboration on topics such as hydrology, climate change, fluvial hydraulics, geomorphology, social aspects, health issues, navigation, ecology, and economy, among others. The main objective of CREAR is to enhance and promote research by Peruvian and international scientists, engineers, educators, and NGOs. More information in: www.creamazonia.org.

Core faculty, Center for Simulation & Modeling, University of Pittsburgh, PA, USA, October 2009-May 2016.

- The mission of the Center for Research Computing is to increase the research productivity of Pittsburgh faculty through the use of advanced computing. We fulfill this mission by providing our community access to cutting-edge computer hardware and software for enabling transformative research, providing our community training workshops to educate users how to utilize the computing resources effectively, providing extended personalized consultation for improving researchers' computational workflow and code performance through selection of better algorithms, parallelization techniques, improved use of input-output strategies, etc. More information in: www.sam.pitt.edu

Core faculty, Center for Latin American Studies, University of Pittsburgh, PA, USA, October 2009-May 2016.

- The mission of CLAS is to expand and enrich academic resources relating to Latin America and the Caribbean (LAC) at the University of Pittsburgh. These resources provide the means for students to become experts about LAC and for faculty to pursue research, enhance their expertise, and disseminate new knowledge on the region. CLAS also shares its resources locally, nationally, and internationally with members of the academic community as well as with public and private sector organizations and the general public. More information in: www.ucis.pitt.edu/clas/

Postdoctoral Research Associate, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, IL, USA. June 2008 - September 2009. Supervisor: Marcelo H. Garcia

Visiting professor, short course on "Shallow water flows: basic physics and models". Department of Mathematics and Computation, University of Sao Paulo, San Carlos, Brazil. August 2008.

Graduate Research Assistant, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, IL, USA. August 2000 - May 2008.

ACADEMIC HONORS AND AWARDS

AWARDS/HONORS MADE TO DR. ABAD

1. **Santiago Antúnez de Mayolo Gomero Distinction**, received in December 2018 by CONCYTEC (Peruvian National Research Funding - Consejo Nacional de Ciencia, Tecnología e Innovación Tecnológica). This award is given to the researcher who contributes to science in Peru. <http://portal.concytec.gob.pe/index.php/noticias/1620-investigador-cientifico-jorge-abad-cueva-recibe-distincion-del-concytec-santiago-antunez-de-mayolo-gomero-2018>
2. **Dr. Honoris Causa Distinction**, received in October, 2017 by the Universidad Nacional Hermilio Valdizán (UNHEVAL) from Huánuco. This award was given because of his scientific contribution. <https://www.unheval.edu.pe/viceacademico/wp-content/uploads/2018/12/Res.-Consejo-Universitario->

[N%C2%B0-3561-2017.pdf](#)

3. **2015 Willi H. Hager Best Reviewer Award**, Journal of Hydraulic Research, International Association for Hydro-Environmental Engineering (IAHR).
<https://www.iahr.org/site/cms/contentCategoryView.asp?category=260>
4. **The Lorenz Straub Award, St. Anthony Falls Laboratory** (received in October, 2012 at University of Minnesota, Minneapolis, MN, USA). This Award is given for the most meritorious PhD dissertation in hydraulic engineering, ecohydraulics, or related field for the year in which the recipient's dissertation was completed (2008). <http://www.safl.umn.edu/about/awards/lorenz-straub/winners>
5. **Co-recipient of the BSG (British Society for Geomorphology)'s Willey Blackwell Award 2012** (received at BSG annual meeting, Nottingham, UK, June 25-27, 2012). The Award is given to the best paper published in the BSG's Journal Earth Surface Processes and Landforms, <http://www.geomorphology.org.uk/award/6/winner/77>.
6. **Co-recipient of the Wesley W. Horner Award, American Society of Civil Engineers 2011** (received at ASCE-EWRI conference 2012, Albuquerque, NM, USA, May 20-24, 2012). The Award recognizes papers that have contributed to the areas of hydrology, urban drainage, or sewerage, <http://www.asce.org/Content.aspx?id=17486>.
7. **2012 Outstanding Reviewer**, Journal of Hydraulic Engineering, American Society of Civil Engineers, ASCE.
1. **2017: Tania Rojas**, Student travel grant (American Geophysical Union, 2017) to give poster presentation in the AGU Fall Meeting 2017. New Orleans, LA, USA.
2. **2016: Adrian Garcia**, Summer research fellowship, Massachusetts Institute of Technology (MIT).
3. **2014: Adrian Garcia**, University of Michigan Graduate Engineering Symposium Travel Grant.
4. **2014: Kristin Dauer**, CLAS (Center for Latin American Studies, University of Pittsburgh) Fellowship to carry out field measurements in the Amazon River, Peru.
5. **2013: Kristin Dauer**. Student travel grant (American Geophysical Union, 2013) to give an oral presentation in the AGU Fall Meeting 2013. San Francisco, CA, USA.
6. **2013: Kristin Dauer**, CLAS (Center for Latin American Studies, University of Pittsburgh) Fellowship to carry out field measurements in the Amazon River, Peru.
7. **2013: Kristin Dauer**, ASCE Freeman Travel Fellowship, ASCE, <http://www.asce.org/Student-Organizations/Scholarships-and-Fellowships/2012-National-Scholarship-and-Fellowship-Winners/>
8. **2012: Ronald Gutierrez**, ASCE Freeman Travel Fellowship, ASCE, <http://www.asce.org/Student-Organizations/Scholarships-and-Fellowships/2012-National-Scholarship-and-Fellowship-Winners/>
9. **2011: Ronald Gutierrez**. Student travel grant (American Geophysical Union, 2011) to give an oral presentation in the AGU Fall Meeting 2011. San Francisco, CA, USA.
10. **2010: Ronald Gutierrez**, International Student Fund Scholarship (Center for International Studies of the University of Pittsburgh, 2010) to carry out one-month preliminary fieldwork in the Amazon River, Peru.
11. **2011: Christian Frias, best TA**, Department of Civil and Environmental Engineering, University of Pittsburgh
12. **2010: Christian Frias**, International Student Fund Scholarship (Center for International Studies of the University of Pittsburgh, 2010) to carry out one-month field measurements in the Amazon River, Peru.
13. **2011: Ross Volkwein, Best technical paper, undergraduate competition**, The World Environmental & Water Resources Congress, American Society of Civil Engineers, 2011 EWRI-ASCE (<http://www.engineering.pitt.edu/News.aspx?id=2147484396>).

**AWARDS/HONORS
MADE TO
GRADUATE/
UNDERGRADUATE
/HIGH SCHOOL
ADVISEES**

IN THE NEWS

1. **[October/2018]. Dr. Abad** was featured and interviewed by the Discover Magazine, <http://discovermagazine.com/2018/oct/a-river-runs-through-it>
2. **[March/2017]. Dr. Abad** was featured and interviewed by the main Peruvian newspapers and news TV programs covering the 2017 ENSO phenomenon, <https://sites.google.com/utec.edu.pe/portal-desastres-sig/noticias>
3. **[09/02/2015]. Dr. Abad** was the Chairman of the 2015 RCEM Conference, Iquitos, Peru, <http://diariolaregion.com/web/cientificos-del-mundo-reunidos-en-iquitos/>
4. **[01/14/2015]: Dr. Abad** has given a presentation at the Peruvian National Authority of Water, <https://www.youtube.com/watch?v=1g703Q50VcA>. The presentation involved some guidelines on how to perform baseline characterization of the rivers in the Amazon basin for future intervention.
5. **Dr. Abad** was interviewed by the magazine EcoAmericas on topics related to river morphodynamics and the interaction with Hydrovias and dams in the Amazon basin. January issue, 2015, <https://www.ecoamericas.com/issues/article/2017/3/965206E5-5476-42C4-9E50-8FD16CB4E499>
6. **[06/03/2010], Dr. Abad** delivered a talk at the Scientific University of Peru (UCP), Iquitos, Peru. <http://diariolaregion.com/web/especialista-de-universidad-de-pittsburg-dictara-conferencia-sobre-dinamica-de-rios-amazonicos/>

PUBLICATIONS

SUMMARY

Dr. Abad has 3 book chapters, 34 published journal articles, 2 newsletter articles, 6 journal articles under review, 18 journal articles in preparation, 69 conference articles, 75 conference abstracts, and 5 reports. **Dr. Abad** has 67 invited presentations around the world.

REFEREED
PUBLICATIONS:
BOOK CHAPTERS

1. Rhoads, B. L., García, M. H., Rodriguez, J., Bombardelli, F., **Abad, J. D.** and Daniels, M. (2008). “*Methods for evaluating the geomorphological performance of naturalized rivers: examples from the Chicago metropolitan area*”. In *Uncertainty in River Restoration*, edited by David Sears and Steve Darby, John Wiley & Sons, UK.
2. Odgaard, A. J., **Abad, J. D.** (2008). “*Chapter 8: River meandering and channel stability*”. In *ASCE Manual of Practice 110: Sedimentation Engineering*, M.H. Garcia (ed), Reston, VA, USA, pp. 439-459.
3. Rhoads, B. L., Engel, F. L. and **Abad, J. D.** (2011). “*Pool-Riffle Design Based on Geomorphological Principles for Naturalizing Straight Channels*”, In *Stream Restoration in Dynamic Fluvial Systems: Scientific Approaches, Analyses, and Tools*, edited by Simons, A., Bennett, S. J., and Castro, J. M., Geophysical Monograph Series, Vol. 194, 544 pp.

REFEREED
PUBLICATIONS:
JOURNAL
ARTICLES
(Published)
(* Undergraduate
student
(**) Graduate student
(***) Postdoc

Dr. Abad has published in different journals (**impact factor**) such as: *Science* (**33.6**), *Geophysical Research Letters* (**4.196**), *Journal of Geophysical Research–Earth Surface* (**3.621**), *International Journal of Coal Geology* (**3.157**), *Water Resources Research* (**3.149**), *Advances in Water Resources* (**2.78**), *Sedimentary Geology* (**2.564**), *Geomorphology* (**2.552**), *Hydrological Processes* (**2.497**), *Earth Surface Processes and Landforms* (**2.49**), *Journal of Sedimentary Research* (**2.33**), *Water Resources Management* (**2.259**), *Computers & Geosciences* (**1.992**), *Journal of Hydro-Environment Research* (**1.961**), *Journal of Hydraulic Engineering* (**1.862**), *Ocean Engineering* (**1.448**), *Journal of Environmental Engineering* (**1.31**).

1. Gutierrez, R. R., Mallma, J.A., Francisco Núñez-González, O., **Abad, J. D.** (2018). “Bedforms-ATM, an open source software to analyze the scale-based hierarchies and dimensionality of natural bed forms”, *SoftwareX*, (7) 184-189
2. Konsoer, K., Rhoads, K., Best, J. L., Langendoen, E., **Abad, J. D.**, Parsons, D. R., Garcia, M. H. (2016). “*Three-dimensional flow structure and bed morphology in large elongate meander loops with different outer bank roughness characteristics*”. *Water Resources Research*, 52 (12), 9621-9641.
3. Mendoza, A. (***) **Abad, J. D.**, Langendoen, E., Wang, D., Tassi, P., Abderrezzak, E. K. (2016) “*Effect of sediment transport boundary conditions on the numerical modeling of bed morphodynamics*”, accepted, *Journal of Hydraulic Engineering*.
4. Vermeulen, B., Holtink, T., Zolezzi, G., **Abad, J. D.**, Aalto, R. (2016) “*Multi-scale structure of meanders*”, *Geophysical Review Letters*, 43: 3288–3297
5. Mendoza, A. (***) **Abad, J. D.**, Frias, C. E. (**), Collin, O. (*), Paredes, J., Montoro, J., Vizcarra, J., Simon, C. (**), Soto-Cortes, G. “*Planform dynamics of the Iquitos anabranching structure in the Peruvian Upper Amazon River*”. *Earth Surface Processes and Landforms*, 41 (7): 961-970.
6. Konsoer, K., Rhoads, K., Best, J. L., Langendoen, E., Ursic, M., **Abad, J. D.**, Garcia, M. H. (2016) “*Spatial variability in floodplain resistance to erosion on a large meandering, mixed bedrock-alluvial river*”. *Geomorphology*, 252: 80-97.
7. Langendoen, E., Mendoza, A. (***) **Abad, J. D.**, Tassi, P., Wang, D., Ata, R., El Kadi Abderrezzak, K., Hervouet, J-M. (2016) “*Improved numerical modeling of morphodynamics of rivers with steep banks*”. *Advances in Water Resources*, 93 (A): 4-14.
8. Frias, C. E. (**), Mendoza, A. (***) **Abad, J. D.**, Paredes, J., Ortals, C. (*), Montoro, H. (2015) “*Morphodynamic stages of the anabranching in the upper Amazon River basin*”, *Water Resources Research*, 10.1002/2014WR015836, AGU.
9. Gutierrez, R. (**), **Abad, J. D.**, Choi, M. (*), Montoro, H. (2014) “*On the morphodynamics of free meanders confluences at the Upper Amazon Basin*”, *Geomorphology*, 220: 1-14.
10. Gutierrez, R. (**), **Abad, J. D.**, (2014) “*On the analysis of the medium term planform dynamics of meandering rivers*”, *Water Resources Research*, AGU, 50, doi:10.1002/2012WR013358.
11. Motta, D., Langendoen, E. J., **Abad, J. D.**, Garcia, M. H. (2014) “*Meander migration in horizontally and vertically heterogeneous floodplains: how and why bank mass failure process matter*”, *Journal of Geophysical Research-Earth Surface*, AGU, 119, doi:10.1002/2013JF002952.
12. El Kadi Abderrezzak, K., **Abad, J. D.**, Langendoen, E. (2014) “*Moveable-bed models*”, *Journal of Hydro-Environment Research*, 8 (2): 75-76.
13. Latrubesse, E., Wilkinson, J. **Abad, J. D.** (2014) “*Large rivers and megafans*”. *Sedimentary Geology*, 301: 91-92.
14. Brantley, S. L., Yoxthimer, D., Arjmand, S. (**), Grieve, P., Vidic, R., **Abad, J. D.**, Simon, C. (**), Pollak, J. (2014) “*Using publicly available data to assess water resource impacts during unconventional shale gas development: the Pennsylvania experience*”, *Journal of Coal Geology*, 10.1016/j.coal.2013.12.017.
15. Frias, C. (**), **Abad, J. D.** (2013). “*Mean and turbulent flow structure during the amalgamation process in fluvial bed forms*”, *Water Resources Research*, 49: 6548–6560, doi:10.1002/wrcr.20456.
16. **Abad, J. D.**, Frias, C. (**), Buscaglia, G., Garcia, M. (2013). “*Modulation of the flow structure by progressive bedforms in the Kinoshita Meandering channel*”, *Earth Surface Processes and Landforms*, 38: 1612–1622.

17. Gutierrez, R. (**), **Abad, J. D.**, Parsons, D. R., Best, J. L. (2013) "*Discrimination of bedforms scales using robust spline and wavelet transforms: methods and application to Synthetic Signals and the Parana River, Argentina*", Journal of Geophysical Research-Earth-Surface, 118: 1400-1419, doi:10.1002/jgrf.20102.
18. Vidic, R., Brantley, S. L., Vandenbossche, J. M., Yoxtheimer, D., **Abad, J. D.** (2013). "*Impact of Shale Gas Development on Regional Water Quality*". Science, 340, 1235009, doi: 10.1126/science.1235009.
19. Catano, Y., Landry, B. L., **Abad, J. D.**, Garcia, M. H. (2013). "*Experimental and numerical study of the flow structure around two partially buried objects on a deformed bed*". Journal of Hydraulic Engineering, 139 (3): 269-283.
20. Motta, D., **Abad, J. D.**, Langendoen, E. J., Garcia, M. H. (2012). "*The effects of floodplain soil heterogeneity on meander planform shape*", Water Resources Research, 48, W09518, 17 pp.
21. Guneralp, I., **Abad, J. D.**, Zolezzi, G., Hooke, J. (2012). "*Advances and challenges in meandering channels research*", Geomorphology, 163-164: 1-9.
22. Motta, D., **Abad, J. D.**, Langendoen, E. J. and Garcia, M. H. (2012). "*A simplified 2D model for long-term meander migration with physically-based bank evolution*", Geomorphology, <http://dx.doi.org/10.1016/j.geomorph.2011.06.036>, 163-164: 10-25.
23. **Abad, J. D.**, Sequeiros, O. E., Spinewine, B., Pirmez, C., García, M. H. and Parker, G. (2011) "*Secondary current of saline underflow in a highly meandering channel: experiments and theory*". Journal of Sedimentary Research, 81 (11): 787-813.
24. Parker, G., Shimizu, Y., Wilkerson, G. V., Eke, E. C. **Abad, J. D.**, Lauer, J. W., Paola, C., Dietrich, W. E. and Voller, V. R. (2011). "*A new framework for modeling the migration of meandering rivers*". Earth Surface Processes and Landforms, 36: 70-86.
25. Motta, D., **Abad, J. D.** and Garcia, M. H. (2010). "*A modeling framework for organic sediment resuspension and oxygen demand: the case of Bubbly creek in Chicago, Illinois*", Journal of Environmental Engineering, 136 (9): 952-964.
26. Catano, Y., **Abad, J. D.** and Garcia, M. H. (2009). "*Characterization of bedform morphology using wavelet analysis*". Ocean Engineering, 36: 617-632, doi:10.1016/j.oceaneng.2009.01.014.
27. **Abad, J. D.**, and M. H. Garcia (2009), "*Experiments in a high-amplitude Kinoshita meandering channel: 1. Implications of bend orientation on mean and turbulent flow structure*", Water Resources Research, 45, W02401.
28. **Abad, J. D.**, and M. H. Garcia (2009), "*Experiments in a high-amplitude Kinoshita meandering channel: 2. Implications of bend orientation on bed morphodynamics*", Water Resources. Research, 45, W02402.
29. **Abad, J. D.**, Rhoads, B. L., Guneralp, I., García, M. H. (2008) "*Flow structure at different stages in a meander-bend with bendway weirs*". Journal of Hydraulic Engineering, 138 (8): 1052-1053.
30. **Abad, J. D.**, Buscaglia, G. and Garcia, M. H. (2008) "*2D Stream Hydrodynamic, sediment transport and bed morphology model for engineering applications*". Hydrological Processes, 22: 1443-1459.
31. Muller, D., **Abad, J. D.**, Garcia, C., Gatner, J. W. and Garcia, M. H. (2007) "*Errors in Acoustic Doppler Velocity measurements caused by flow disturbance*". Journal of Hydraulic Engineering, 133 (12): 1411-1420.
32. **Abad J. D.** and García, M. H. (2006). "*RVR Meander: A toolbox for re-meandering of channelized streams*". Computers & Geosciences, 32: 92-101.
33. **Abad, J. D.** and García, M. H. (2006). Discussion of "*Efficient algorithm for Computing Einstein Integrals by Junke Guo and Pierre Y. Julien*" (Journal of Hydraulic Engineering, Vol. 130, No. 12, pp. 1198-1201, 2004). Journal of Hydraulic Engineering, ASCE, 132 (3): 332-334, 2006.
34. Rodriguez, J. F., Bombardelli, F. A., García, M. H., Frothingham, K., Rhoads, B. L., **Abad, J. D.** (2004). "*High-resolution numerical simulations of flow through a highly sinuous river reach*". Water Resources Management, 18: 177-199, Kluwer Academic Publishers.

REFEREED
PUBLICATIONS:
NEWSLETTER
ARTICLES

REFEREED
PUBLICATIONS:
JOURNAL
ARTICLES
(In review)
(* Undergraduate
student
(**) Graduate student
(***) Postdoc

1. **Abad, J. D.**, Montoro, H., Latrubesse, E. (2013). "*TROPICAL RIVERS 2012: IGCP Annual Symposium, August 8 to August 12 of 2012*", EOS, AGU, 94 (3), pp. 32.
2. Brantley, S.L., Wilderman, C., **Abad, J.D.** (2012), "*Workshop Discusses Database for Marcellus Water Issues*", EOS, 93 (34), pp. 328.
1. Frias, C. E. (**), **Abad, J. D.**, Konsoer, K. Best, J., Rhoads, B., Langendoen, E., "*Modulation of the flow structure by progressive bedforms at field scale, the Wabash River*". In review, Water Resources Research.
2. Simon, C. (**), Langendoen, E., **Abad, J. D.**, Mendoza, A. (***). "*On the governing equations for vertical versus horizontal coupling of one- and two-dimensional open channel flows*", in review, Journal of Hydraulic Research.
3. Li, Z. (**), Mendoza, A. (***), **Abad, J. D.**, Smallidgem C. (*), Endreny, T., Han, B. "*Representing river and floodplain morphodynamics in simulation of meander cutoff and paleo-channel formation*". In review, Nature-Geosciences
4. Shan, J., **Abad, J. D.**, Li, Z., Pan, R. "*Planform and structure of subsurface paleo-meandering channels reconstructed based on dense well net pattern*". In review, Sedimentology.
5. Dominguez, L., Szupiany, R. J., **Abad, J. D.**, Ramonell, C. "*The Middle Parana River system, the formation of finite meandering secondary channels*", In preparation, Journal of Geophysical Research-Earth Surface, AGU.
6. Konsoer, K. M., Rhoads, B. L., Best, J. L., Langendoen, E. J., Abad, J. D., Parsons, D. R., Garcia, M. H. "*Three-dimensional flow structure and bed morphology in large elongate meander loops*". In review, Water

Resources Research.

REFEREED
PUBLICATIONS:
JOURNAL
PUBLICATIONS
(In preparation, to be
submitted in 2016
academic year)
(HS) High school
(*) Undergraduate
student
(**) Graduate student
(***) Postdoc

1. Han, Y. (**), Arjmand, S. (**), **Abad, J. D.**, Wilderman, C., Brantley, S. L., Fu, C., Simon, C. (**), Vidic, R. “*Developing an approach for characterizing watersheds that are most vulnerable to the effects of accidental spills from unconventional drilling sites*”. In prep., Journal of Environmental Quality.
2. Dauer, K. (**), **Abad, J. D.**, Torres, Z., Bardales, J., Montoro, H., Vizcarra, J. “*How can river migration impact the town of Jenaro-Herrera?, Peru*”. In preparation, River Research and Applications.
3. Simon, C. (**), Neal, A., **Abad, J. D.**, Brantley, S., “*Application of In-Situ Spectrophotometry for Water Quality Analysis*”. In submission.
4. **Abad, J. D.**, Li, Z. (**), Mendoza, A. (***), Ortals, C. (*). “*Upstream and downstream effects of neck cutoffs processes*”. In preparation, Geophysical Research Letters, AGU.
5. Tassi, P., Wang, D., El Kadi Abderrezzak, K., Mendoza, A. (***), **Abad, J. D.**, Langendoen, E. “*Flow and bed morphology in large-amplitude meanders, comparison of two and three-dimensional numerical models*”. In preparation, Advances in Water Resources.
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14. **Abad, J. D.**, Ortals, C. (*), Paredes, J., Vizcarra, J. (2014). “*The Birthplace of the Amazon River, the Confluence of the Marañon and Ucayali*”. AGU Fall Meeting, San Francisco, USA, December 2014.
15. Gutierrez, R. (**), Choi, M. (*), **Abad, J. D.**, Montoro, H. (2014). “*Characterization of confluences of free meander trains at the upper Amazon basin*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
16. Gutierrez, R. (**), **Abad, J. D.** (2014). “*Temporal frequency balance and classification of meandering channels*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
17. **Abad, J. D.**, Frias, C. (**), Langendoen, E., Best, J., Rhoads, B., Konsoer, K., Garcia, M. H. (2014). “*Modulation of the flow structure by progressive bed forms in the Meandering Wabash River*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
18. Torres, Z. (*), Dauer, K. (**), Bardales, J., Montoro, H., Vizcarra, J., **Abad, J. D.** (2014). “*How can river migration impact the twon of Jenaro-Herrera?*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
19. Dauer, K. (**), **Abad, J. D.**, Frias, C. (**), Paredes, J., Vizcarra, J., Holguin, C. (2014). “*Morphodynamics of the Ucayali River*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
20. Dauer, K. (**), **Abad, J. D.**, Espinoza, J. C., Lavado, W. (2014). “*Can we observe a morphodynamic signature due to changes in Hydrology along the Amazonian Rivers?*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
21. Dominguez, R. L., Szupiany, R., **Abad, J. D.**, Ramonell, C., Farias, H. D. (2014). “*Flow structure, bed morphology and sediment transport in a large meandering river*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
22. Garcia, K. (*), Dauer, K. (**), Vargas, J., Vizcarra, J., **Abad, J. D.** (2014). “*Impacts of alluvial gold mining in the Putumayo River Basin*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
23. Mendoza, A. (***), Frias, C. (**), **Abad, J. D.**, Garcia, A. (*), Paredes, J., Vizcarra, J., (2014). “*Iquitos anabranching structure in the Peruvian Amazon River – bed morphology modeling*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
24. Frias, C. (**), Garcia, A. (*), Vizcarra, J., Paredes, J., **Abad, J. D.** (2014). “*On the baseline characterization of the anabranching structures along the upper Peruvian Amazon River*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
25. Frias, C. (**), Mendoza, A. (***), Dauer, K. (**), Garcia, A. (*), **Abad, J. D.** (2014). “*Experimental study of bed form dynamics on anabranching structures and its importance to the Amazon river evolution*”. World’s Large Rivers, Manaus, Brazil, July 21-25, 2014.
26. Frias, C. E. (**), **Abad, J. D.**, Konsoer, K., Best, J., Rhoads, B., Langendoen, E., Garcia, M. H., Fazio, D. (2014). “*Modulation of bank shear stresses due to bedforms in a meandering river: field scale results from the Wabash River, IL-IN, USA*”, Geology Society of America, North-Central Sectional Meeting, Lincoln, Nebraska, April 24-25.
27. Langendoen, E. J., **Abad, J. D.**, Frias, C. E. (***), Mendoza, A. (***), Ata, R., Abderrezzak, K., Hervouet, J.-M., Tassi, P., Wang, D. (2014). “*Improved numerical modelling of river morphodynamics near actively eroding streambanks*”. European Geophysical Union, April 27 – May 2, Vienna, Austria.
28. Neal, A., Mendoza, A., Simon, C., **Abad, J. D.**, Vidic, R., Yoxtheimer, D., Vastine, J., Wilderman, C., Brantley, S. (2013) “*Using the NSF-funded Shale Network Database and Critical Zone Observatories to Assess Water Quality Concerns in Areas of Shale-Gas Development*”, AGU Science Policy Conference, Washington, DC, June 24-26.
29. Konsoer, K., Rhoads, B. L., Best, J., Langendoen, E., Ursic, M., **Abad, J. D.**, Garcia, M. H. (2013). “*Scales of form roughness on riverbanks with different riparian vegetation*”. AGU Fall Meeting, San Francisco, USA, December 2013.
30. Rhoads, B. L., Konsoer, K. M., Best, J., Garcia, M. H., **Abad, J. D.** (2013). “*Planform dynamics of a mixed*

- bedrock-alluvial meandering river". AGU Fall Meeting, San Francisco, USA, December 2013.
31. Latrubesse, E., Bonthuis, C., **Abad, J. D.**, Stevaux, J., Filizola, N., Frias, C. E. (*) (2013). "Morphodynamics and anabranching patterns generated in the Madeira River, Brazil". AGU Fall Meeting, San Francisco, USA, December 2013.
 32. Brantley, S., Yoxtheimer, D., Arjmand, S. (**), Grieve, P., Vidic, R., **Abad, J. D.**, Simon, C. (**), Pollar, J. (2013). "Water resource impacts during unconventional Shale Gas development: The Pennsylvania Experience", AGU Fall Meeting, San Francisco, USA, December 2013.
 33. **Abad, J. D.**, Frias, C.(**), Langendoen, E., Best, J., Rhoads, B., Konsoer, K., Garcia, M. H. (2013). "Bed forms modulating temporal peaks on near-bank shear stresses, the Wabash River case". AGU Fall Meeting, San Francisco, USA, December 2013.
 34. Mendoza, A. (***), Frias, C. (**), Langendoen, E. J., **Abad, J. D.** (2013). "Bank erosion modulated by exposed roots from riparian vegetation in small gravel-bed streams". AGU Fall Meeting, San Francisco, USA, December 2013.
 35. Frias, C. (**), Mendoza, A. (***), Dauer, K. (**), **Abad, J. D.**, Montoro, H., Paredes, J., Vizcarra, J. (2013). "Study of the anabranch dynamics for different sinuosity stages in the Upper Amazon River basin". AGU Fall Meeting, San Francisco, USA, December 2013.
 36. Dauer, K. (**), Frias, C. (**), **Abad, J. D.**, Paredes, J., Vizcarra, J., Holguin, C., (2013). "How do morphodynamic signatures vary along the Ucayali, a large transitional river?". AGU Fall Meeting, San Francisco, USA, December 2013.
 37. Arjmand, S. (**), **Abad, J. D.**, Brantley, S. (2013). "Assessment and design of water quality monitoring networks with respect to Shale gas activities in Pennsylvania". AGU Fall Meeting, San Francisco, USA, December 2013.
 38. Langendoen, E. J., **Abad, J. D.**, Motta, D., Frias, C. (**), Wong, M., Barnes, B. J., Anderson, C. D., Garcia, M. H., MacDonald, T. E. (2013). "Designing and assessing restored meandering river planform using RVR Meander", AGU Fall Meeting, San Francisco, USA, December 2013.
 39. Simon, C. A. (*), Arjmand, S. (**), **Abad, J. D.**, Vidic, R. D., Brantley, S. L., Yoxtheimer, D. (2013) "*Shale Gas Contamination – Water Quality Monitoring Network in the Tennile Creek Watershed*". 2013 Shale Network Workshop, State College, PA, USA. May 19-20.
 40. Arjmand, S. (**), **Abad, J. D.** (2013) "*Groundwater Contamination Problems Associated with the Shale Gas in Pennsylvania*". 2013 Shale Network Workshop, State College, PA, USA. May 19-20,
 41. Arjmand, S. (**), **Abad, J. D.** (2013) "*Shallow Groundwater Contamination–Major Environmental Concerns associated with Unconventional Gas Drilling Activities*". Pennsylvania Groundwater Symposium, Penn State University, State College, PA, USA, May 8.
 42. Frias C. (**), **Abad J.D.** (2012). "*Turbulence characterization on the ripple dune Amalgamation stage: importance for bed Morphodynamics patterns*", in AGU fall meeting, San Francisco, USA. December 2012.
 43. Gutierrez, R. R. (**) and **Abad, J. D.** (2012). "*Statistical analysis of meandering rivers using wavelet transforms and principal component analysis*", American Geophysical Union (AGU), Fall Meeting 2012, San Francisco, USA. December 2012.
 44. Arjmand, S. (**), **Abad, J. D.** (2012) "*Application of a Coupled Flow and Contaminant Transport Model to Investigate the Environmental and Health Effects of Unconventional Gas Drilling Activities in Southwestern Pennsylvania*", ShaleGas-2012 Health Effects of Shale Gas Extraction, Pittsburgh, November 9, 2012
 45. Arjmand, S. (**), **Abad, J. D.**, Liang, X. (2012). "*Shallow Groundwater Contamination Risks of Toxic Elements and Dissolved Methane from Gas Drilling Activities in the Marcellus Shale*", WaterQUEST-2012 State of the Monongahela River Research Symposium, Pittsburgh, PA, USA, November 8, 2012.
 46. Gutierrez, R. R. (**), Mendoza, A. (***), **Abad, J. D.**, Frias, C. (*), Simon, C. (*) (2012). "*Baseline characterization of streamflow at Fonner and Bates Creeks*", WaterQUEST-2012 State of the Monongahela River Research Symposium, Pittsburgh, PA, USA, November 8, 2012.
 47. Gutierrez, R. R. (**) and **Abad J. D.** (2012). "*Statistical analysis of meandering rivers using wavelet transforms and principal component analysis*", Tropical Rivers Conference, Iquitos, Peru, August 2012.
 48. **Abad, J. D.**, Peralta, B., Paredes, B., Frias, C. (**), Gutierrez, R. R. (**), Montoro, H. (2012). "*Cyclic adaptation of a large meandering channel, from cutoff to planform migration*". American Association of Geographers, AAG Annual Meeting, New York, New York, USA. February 24-28.
 49. **Abad, J. D.**, Parker, G., Sequeiros, O., Spinewine, B., Garcia, M. H., Pirmez, C. (2011). "*Flow structure in submarine meandering channels, a continuous discussion on secondary flow*". AGU Fall Meeting, San Francisco, CA, USA..
 50. Motta, D., **Abad, J. D.**, Langendoen, E., Garcia, M. H. (2011). "*Meander migration in horizontally and vertically heterogeneous floodplains*". AGU Fall Meeting, San Francisco, CA, USA.
 51. Gutierrez, R. R. (**), **Abad, J. D.**, Parsons, D. (2011). "*On the separation of bedforms by using robust spline filters and wavelet transform, application on the Parana River, Argentina*". AGU Fall Meeting, San Francisco, CA, USA.
 52. **Abad, J. D.**, Peralta, B., Paredes, J., Frias, C. (**), Gutierrez, R. (**), Montoro, H. (2011). "*Self-adaptive planform patterns in the meandering Ucayali river*", AGU Fall Meeting, San Francisco, CA, USA.
 53. Frias, C. (**), **Abad, J. D.** (2011). "*Turbulence characterization on the ripple-dune amalgamation stage: importance of bed morphodynamic patterns*", AGU Fall Meeting, San Francisco, CA, USA.
 54. Catano-Lopera, Y., **Abad, J. D.** (2011). "*Unsteady characteristics of the flow structure around a partially buried object and surrounding bedforms in a river bed*". AGU Fall Meeting, San Francisco, CA, USA.
 55. Volkwein, M. (*), **Abad, J. D.**, Engel, F., Rhoads, B. (2011). "*Comparison and analysis of hydrodynamic*

- models for restoration projects: the case of pool-riffle structures*". Mid-Atlantic Stream Restoration Conference, Washington, is this Washington, MD, November 15-17.
56. Gianvito, J. (**), **Abad, J. D.** (2011). "*Minimizing land disturbance through efficient sewage pump station design*". Engineering Sustainability Conference, Pittsburgh, PA, USA. April 10-12.
 57. **Abad, J. D.**, Paredes, J. R., Montoro, H. (2011). "*Similarities and differences between a large meandering river and an anabranching river: the Ucayali and Amazon River cases*". International Conference on the status and future of the World's Large Rivers, Vienna, Austria. April 11-14.
 58. **Abad, J. D.**, Motta, D., Langendoen, E., Garcia, M. H. (2011). "*Restoration of meandering channels: the need for the development of physically-based mathematical GIS platforms*", International Conference on the status and future of the World's Large Rivers, Vienna, Austria April 11-14.
 59. **Abad, J. D.**, Sequeiros, O., Spinewine, B., Pirmez, C., Garcia, M. H., Parker, G. (2010). "*Flow structure in submarine meandering channels created by turbidity currents*". Geological Society of America (GSA) Annual Meeting, Denver, CO, USA. , October 31-November 3.
 60. Volkwein, M. (*), **Abad, J. D.** (2010). "*Comparison and analysis of hydrodynamic models for restoration projects: the case of pool-riffle structures*", Science 2010-Transformations, University of Pittsburgh, October 7-8, Pittsburgh, PA, USA.
 61. **Abad, J. D.**, Paredes, J. R., Montoro, H. (2010). "*Similarities and differences between a large meandering river and an anabranching river: the Ucayali and Amazon River cases*". AGU Fall Meeting, San Francisco, CA, USA.
 62. **Abad, J. D.**, Parker, G., Sequeiros, O., Spinewine, B., Garcia, M. H., Pirmez, C. (2010). "*Flow structure in submarine meandering channels created by turbidity currents*". XXXI Iberian-Latin-American Congress on Computational Methods in Engineering, November 15-18, Buenos Aires, Argentina.
 63. Motta, D., **Abad, J.D.**, Langendoen, E.J., Garcia, M.H., (2010). "*Physically-based bank evolution and long-term meander migration: a computational platform*". AGU Meeting of The Americas, Foz do Iguassu, Brazil. August 8-12.
 64. **Abad, J. D.**, Gutierrez, R. R. (**), Guneralp, I. (2010). "*Analysis of bend migration patterns of meandering channels using Wavelets*". 2010 Annual Meeting, Association of American Geographers, Washington, DC, USA. April 14-18.
 65. Frias, C. E. (**) and **Abad, J. D.** (2010). "*Comparación de Modelos Numéricos de Turbulencia LES*". 2nd Congreso Nacional del Agua, National University of Engineering, Lima, PERU, April 7-9. In Spanish.
 66. Gutierrez, R. R. (**), **Abad, J. D.** (2010). "*Aplicación de Wavelets en el estudio de ríos meandricos*". 2nd Congreso Nacional del Agua, National University of Engineering, Lima, PERU, April 7-9. In Spanish.
 67. Motta, D., **Abad, J.D.**, Langendoen, E.J., Garcia, M.H., (2009). "*A simplified 2D model for long-term meander migration with physically-based bank evolution*". AGU Fall Meeting, San Francisco, CA, USA.
 68. **Abad, J.D.** (2009). "*Planform dynamics of meandering channels based on Wavelet analysis*". AGU Fall Meeting, San Francisco, CA, USA.
 69. Cataño-Lopera, Y.A., **Abad, J.D.**, and García, M.H., (2009). "*Statistical Analysis of Bedforms.*" I Symposium on Experimental Methods in Hydraulics, Villa Carlos Paz, June 3-5, Cordoba, Argentina.
 70. **Abad, J.D.**, Cataño-Lopera, Y.A., and García, M.H., (2009). "*Flow Structure and Hydraulic Capacity of Dropshafts: Application to Tunnel and Reservoir Plan Project, Chicago, Illinois.*" UCOWR/NIWR Annual Conference, Urban Water Management: Issues and Opportunities, July 7-9, Chicago, IL, USA.
 71. **Abad, J. D.**, and Garcia, M. H. (2008) "*Bedforms in high-amplitude meandering channels*". European Geophysical Union (EGU). Vienna, Austria, April 13-18.
 72. **Abad, J. D.**, Guneralp, I., Garcia, M. H. and Rhoads, B. L. (2005) "*Two case studies in river naturalization: planform migration and bank erosion control*". AGU Joint Assembly, New Orleans, LA, USA. May 23-27.
 73. **Abad, J. D.** "*Exploratory study of the influence of the wake produced by hydroacoustic instruments (ADCP) on the water velocities within control volume*". (2004). Hydroacoustics workshop. March 22-26, San Diego, CA, USA.
 74. **Abad, J. D.**, Guneralp, I., Bombardelli, F., Garcia, M. H. and Rhoads, B. (2004). "*Bank erosion control by bendway weirs*". Joint International Geomorphology Conference. Glasgow, Scotland. August 17-20.
 75. **Abad, J. D.**, Bombardelli, F., Garcia, M. H., Rhoads, B. and Guneralp, I. (2004) "*Numerical experiments on the mechanics of flow in bendway weirs*". World Water & Environmental Resources Congress, Salt Lake City, UT, USA. June 27-July 1.

INVITED TALKS

Dr. Abad has given invited presentations in several **countries** (Argentina, Brazil, Canada, Chile, China, France, Italy, Mexico, Peru, Spain, United Kingdom, Uruguay, and USA) **and institutions** (University of British Columbia, University of Trento, University of Padua, Duke University, University of Texas at Austin, Mexican Institute of Water Technology, University of Cantabria, Saint-Venant Laboratory for Hydraulics, Peruvian National Authority of Water, Massachusetts Institute of Technology, National Autonomous University of Mexico, University of Minnesota, Texas A&M University, University of Leeds, University of California, Berkeley, Virginia Tech and Pennsylvania State University among others).

[11/29/2018] Conference Speaker: "*Investigación en temas del agua en el Perú*". Workshop de Monitoreo y Modelación del agua, **Pontificia Universidad Javeriana, COLOMBIA.**

[09/18/2018] Conference Speaker: "*Los ríos como responsables primarios de la biodiversidad amazónica*". XXVIII Congreso Latinoamericano de Hidráulica 2018, Buenos Aires, **ARGENTINA.**

- [02/19/2018] **Seminar Speaker:** “Los ríos, sus poblaciones y la biodiversidad: por qué conservar el ecosistema”. YPN PUCP, Pontifical Catholic University of Peru, **PERU**.
- [09/01/2017] **Seminar Speaker:** “Patterns and dynamics of Amazonian rivers, are they in risk due to mega-projects at the Amazon Basin?”. Department of Earth & Environment, School of Environment, Arts and Society, Florida International University, **USA**.
- [05/26/2017] **Keynote Speaker:** “El Fenómeno del Niño del 2017: la ingeniería necesita más de la ciencia”, V Simposio regional diseño estructural y prevención de desastres. Colegio de Ingenieros del Perú, Chimbote, **PERU**.
- [12/01/2016] **Seminar Speaker:** “Modelamiento hidrodinámico y morfodinámico de migración de ríos meandricos incluyendo cortes de meandros”, Universidad Nacional Mayor de San Marcos, Lima, **PERU**.
- [10/27/2016] **Panel Speaker:** “La Navegabilidad del Rio Amazonas”, Pontificia Universidad Católica del Perú, Lima, **PERU**.
- [10/26/2016] **Panel Speaker:** “Aportes para el funcionamiento multisectorial de la Autoridad Nacional del Agua”, Sociedad Peruana de Minería, Petróleo y Energía, Lima, **PERU**.
- [08/15/2016] **Seminar Speaker:** “Investigación en Ríos de la Amazonia y perspectivas de aplicación para el rio Chira”, Universidad Nacional de la Frontera, Sullana, **PERU**.
- [24/03/2016] **Seminar Speaker:** “Ríos Amazónicos y su relación con Hidrovías e Hidroeléctricas”, Department of Civil Engineering, Scientific University of Peru. Iquitos, **PERU**.
- [03/24/2016] **Seminar Speaker:** “The Journey of the Amazon River, from the Andes to the Atlantic”, Department of Civil and Environmental Engineering, University of Maine. **USA**.
- [01/25/2016] **Seminar Speaker:** “River Research and Education Experience in the Upper Amazon River”, Department of Civil and Environmental, Duke University. **USA**.
- [11/04/2015] **Keynote lecturer:** “River Research and Education Experience in the Upper Amazon River”, VII Regional Symposium on River Hydraulics, Fluid Mechanics and Environmental Institute, University of the Republic, Montevideo, **Uruguay**. <https://www.fing.edu.uy/imfia/rios2015/>
- [10/31/2015] **Invited speaker:** “Do we have enough sensor data for detecting stream contaminations for Marcellus Shale Spills?”, Society for Advancing Hispanic, Chicanos and Native Americans into Science (SACNAS), Washington DC, **USA**. <http://sacnas.confex.com/sacnas/2015/webprogram/Session3640.html>
- [08/23/2015] **CE Seminar:** “River Research and Education Experience in the Upper Amazon River”, Pontifical Catholic University of Peru, Lima, **Peru**.
- [05/15/2015] **Keynote lecturer:** “River Research and Education Experience in the Upper Amazon River”, Earth Surface AMTRAK club meeting, University of Delaware, **USA**. <http://www.ceoe.udel.edu/our-people/profiles/pizzuto/2015-amtrak-club-meeting>
- [03/25/2015] **Keynote lecturer:** “River Modeling for Engineering and Geological Applications”, Ciencias Básicas e Ingeniería, Universidad Autónoma Metropolitana (UAM), Mexico DF, **Mexico**.
- [03/19/2015] **Seminar’s speaker:** “River Research and Education Experience in the Upper Amazon River”, Department of Geography, The University of British Columbia, Vancouver, **Canada**. <http://www.geog.ubc.ca/community/events/>
- [01/14/2015] **Invited speaker:** “Podemos caracterizar los cambios antropogénicos en los ríos amazónicos?”, Peruvian National Authority of Water, Lima, **Peru**. <https://www.youtube.com/watch?v=1g703Q50Vca>
- [11/18/2014] **Keynote lecturer:** “Interaction of hydrodynamics, sediment transport and morphodynamics for understanding river dynamics”, III Regional Congress and I international Conference, Civil Engineering, Department of Civil Engineering, Senor de Sipan University, Chiclayo, **Peru**. http://www.uss.edu.pe/uss/eventos/Congreso_Regional_Internacional_Civil/ponentes.html
- [10/24/2014] **Keynote lecturer:** “Morphodynamic modeling of fluvial systems”, Workshop on Hydrography and Navigation, organized by International Hydrographic Association (IHO) and Peruvian Navy, Iquitos, **Peru**.
- [09/02/2014] **Seminar speaker:** “Research experiences in the Upper Peruvian Amazon River”, Department of Civil and Environmental Engineering, University of Padova, **Italy**.
- [09/01/2014] **Seminar speaker:** “Research experiences in the Upper Peruvian Amazon River”, Department of Civil and Environmental Engineering, University of Trento, **Italy**.
- [06/13/2014] **Invited speaker:** “Experiences on field and numerical modeling of large river systems”, Universidad Juárez Autónoma de Tabasco, Villahermosa, **Mexico**.
- [04/17/2014] **Invited speaker:** “The Amazon River: the dynamic political boundaries of Peru, Colombia and Brazil”, Workshop on “Current Watershed Management Issues in Brazil: An Overview of River and Water Resources Research Needs and Applications”, Brazilian Center-Teresa Lozano Institute of Latin American

Studies-LLILAS, The University of Texas at Austin, Texas, **USA**.

[04/11/2014] Seminar speaker “*Research Experience in the Upper Peruvian Amazon River*”, Department of Civil and Environmental Engineering, University of Pittsburgh, Pittsburgh, PA, **USA**.

[03/18/2014] Invited speaker: “*River bedforms, characterization and modeling of large scale dunes*”, Paul Rizzo Associates, Inc., Pittsburgh, PA, **USA**.

[02/19/2014] Invited speaker: “*The Amazon basin: a place for large river systems*”, Taylor Allderdice High School, Pittsburgh, PA, **USA**.

[10/25/2013] Invited speaker: “*Modelación Numérica y Física del Meandro de Ríos*”, IV Seminario de Potamología “José Antonio Maza Álvarez”, Mexican Institute of Water Technology (IMTA), Morelos, **México**.

[10/24/2013] Invited speaker: “*Morfología y procesos fluviales: estudios en la Cuenca del Amazonas*”, IV Seminario de Potamología “José Antonio Maza Álvarez”, Mexican Institute of Water Technology (IMTA), Morelos, **México**.

[10/03/2013] Invited speaker: “*The Marcellus Shale Research Network: A collaboration between research and citizen science to collect and share data around Marcellus Shale and fracking*”, Society for Advancing Hispanic, Chicanos and Native Americans into Science (SACNAS), San Antonio, Texas, **USA**.

[08/20/2013], Keynote lecturer: “*Variabilidad en los patrones geomorfológicos de los ríos en la Cuenca amazónica*”, XX CONEIC, Congreso de Estudiantes de Ingeniería Civil, Universidad Nacional del Centro del Peru, Huancayo, Junin, **Peru**.

[06/11/2013], Keynote lecturer: “*Channel pattern variability, hydrodynamics and morphodynamics of the Upper Amazon System*”, 8th River Coastal and Estuarine Morphodynamics (RCEM) conference, University of Cantabria, Santander, **Spain** (<http://www.rcem2013.com/>)

[06/06/2013], Seminar speaker: “*Research experience in meandering and anabranching channels in the Upper Amazon basin*”, Saint-Venant Laboratory for Hydraulics, Electricity of France (EDF), Chatou, **France**.

[05/13/2013], Seminar speaker: “*Research experience in meandering and anabranching channels in the Upper Amazon basin*”, Dept. of Civil Engineering, University of Santa Maria, Valparaiso, **Chile**.

[03/13/2013], Seminar speaker: “*Computational Fluid Dynamics (CFD) applied to Hydraulics*”, KHL consultant company, Pittsburgh, PA, **USA**.

[03/05/2013], Seminar speaker: “*Channel pattern variability and morphodynamics of the Upper Amazon System, a place for meandering and anabranching structures*”, Dept. of Civil and Environmental Engineering, Massachusetts Institute of Technology (MIT), Boston, **USA**.

[02/22/2013], Invited speaker: “*Experiencias de investigación y educación en ríos amazónicos*”, Colegio de Ingenieros del Peru (CIP), Lima, **Peru**.

[02/01/2013], Seminar speaker: “*Channel pattern variability and morphodynamics of the Upper Amazon System*”, Dept. of Civil and Environmental Engineering, Univ. of Texas at San Antonio, Texas, **USA**.

[01/23/2013], Seminar speaker: “*Dinámica de Ríos Amazónicos*”, Mexican Institute for Water Technology (IMTA), Cuernavaca, **Mexico**.

[01/22/2013] Seminar speaker: “*Dinámica de Ríos Amazónicos*”, University of Queretaro, Queretaro, **Mexico**.

[01/17/2013] Short course and seminar speaker: “*RVR Meander: modelando migración de ríos en múltiples escalas*”, National Autonomous University of Mexico (UNAM), **Mexico**.

[12/06/2012] Invited speaker: “*Experiments in meandering and anabranching channels*”, AGU session on Advances in Experimental Earth Surface Processes, AGU Fall 2012, San Francisco, **USA**.

[11/12/2012] Keynote lecturer: “*Monitoring river systems, from satellite images to hydrodynamic and morphodynamic field measurements*”, Inland ENC Harmonization Group (IEHG) Meeting, organized by Peruvian Navy. <http://www.hydro-international.com/news/id5879-Fluvial-Hydrography-Workshop-in-Peru.html>, Iquitos, **Peru**.

[11/09/2012] Invited speaker: “*Mediciones de campo y aplicación de modelos numéricos en hidrología fluvial en los ríos de la Amazonia peruana*”, Directorate of Hydrography and Navigation, Peruvian Navy, Lima, **Peru**.

[10/19/2012] Invited speaker: “*Hydrodynamics and morphodynamics in Kinoshita meandering channels*”, Saint Anthony Falls Laboratory, University of Minnesota, **USA**.

[10/12/2012] Invited speaker: “*The Marcellus Shale Research Network: organizing, collecting and interpreting water data to track potential impacts of Marcellus Shale Activity*”, Society for Advancing Hispanic, Chicanos and Native Americans into Science (SACNAS), Seattle, **USA**.

[06/25/2012], Invited speaker: “*Hidrodinámica, morfodinámica de ríos: desde mediciones a modelamiento matemático*”, Instituto de Investigaciones de la Amazonia Peruana (IIAP), Iquitos, **Peru**.

- [03/28/2012], **Seminar speaker:** “*Secondary flows in submarine meandering channels and its importance for subaqueous bed morphodynamics*”, Dept. of Civil and Environmental Engineering, University of Pittsburgh, PA, **USA**.
- [03/14/2012], **Invited speaker:** “*Secondary flows in submarine meandering channels and its importance for subaqueous bed morphodynamics*”, Workshop on Environmental and extreme multiphase flows, University of Florida, Gainesville, FL, **USA** (<http://conferences.dce.ufl.edu/flow/>).
- [03/09/2012], **Invited speaker:** “*CREAR y sus trabajos de investigación para entender la dinámica de los ríos de la Amazonia Peruana*”, Dept. of Fluid Mechanics, Universidad Nacional Mayor de San Marcos, Lima, **Peru**.
- [03/08/2012], **Invited speaker:** “*CREAR y sus trabajos de investigación para entender la dinámica de los ríos de la Amazonia Peruana*”, Dept. of Civil Engineering, National University of Engineering, Lima, **Peru**.
- [12/09/2011], **Invited speaker:** “*Flow structure in submarine meandering channels, a continuous discussion on secondary flow*”, AGU session on Submarine Meandering Channels, AGU Fall 2011, San Francisco, CA, **USA**.
- [11/22/2011], **Invited speaker:** “*Dinámica de ríos amazónicos, importancia para el desarrollo nacional*”, Semana de la Ingeniería Civil, Colegio de Ingenieros del Perú, Lima, **Peru**.
- [10/28/2011], **Invited speaker:** “*Morphodynamics and river modeling*”, CSDMS 2011: Impact of time and process scales, University of Colorado, Boulder, CO, **USA** (http://csdms.colorado.edu/wiki/CSDMS_meeting_2011).
- [09/30/2011], **Keynote lecturer:** “*Importancia del estudio de la dinámica de ríos amazónicos*”, XVIII CONIC, Colegio de Ingenieros del Perú (National Engineering Association), Cajamarca, **Peru**.
- [08/10/2011], **Keynote lecturer:** “*La ingeniería Hidráulica, aplicaciones no convencionales en áreas no convencionales, avances en métodos experimentales, mediciones de campo y modelamiento matemático*”, VII COINEIC, XIX CONEIC, Universidad San Antonio de Abad, Cusco, **Peru**.
- [02/24/2011], **Seminar speaker:** “*Flow structure in submarine meandering channels created by turbidity currents*”, Dept. of Civil and Environmental Engineering, Texas A&M University, College Station, TX, **USA**.
- [02/22/2011], **Seminar speaker:** “*Channel pattern variability and morphodynamics of the Upper Amazon System*”, Dept. of Geography and the Environment, University of Texas at Austin, TX, **USA**.
- [08/12/2010], **Invited speaker:** “*Modelamiento matemático y su aplicación para resolver problemas ambientales*”, Mesa de Concertación para la lucha contra la pobreza, Huancayo, **Peru**.
- [06/21/2010], **Invited speaker:** “*Morfología de ríos amazónicos, trabajos desarrollados con el SHNA y proyecciones*”, Seminar at Anniversary of DHN, Peruvian Navy, Iquitos, **Peru**.
- [06/04/2010], **Invited speaker:** “*Investigaciones sobre la dinámica de los ríos amazónicos y su implicancia para el desarrollo regional*”, Dept. of Civil Engineering, Universidad Científica del Peru, Iquitos, **Peru**.
- [06/04/2010], **Invited speaker:** “*Experiencias de modelamiento para ríos meandrícos (2D y 3D)*”, Instituto de Investigaciones de la Amazonia Peruana, Iquitos, **Peru**.
- [10/29/2009], **Seminar speaker:** “*Morphodynamics of transitional meandering channels: a closer look into planform evolution*”, Dept. of Geology and Planetary Sciences, University of Pittsburgh, PA, **USA**.
- [03/20/2009], **Invited speaker:** Directorate of Hydrography and Navigation, *Peruvian Navy*, Lima, **Peru**.
- [03/02/2009], **Seminar speaker:** Dept. of Civil and Environmental Engineering, *University of Pittsburgh*, PA, **USA**.
- [02/18/2009], **Seminar speaker:** Dept. of Civil and Environmental Engineering, *Auburn University*, Auburn, AL, **USA**.
- [02/09/2009], **Seminar speaker:** Dept. of Civil and Environmental Engineering, *Texas A&M University*, College Station, TX, **USA**.
- [11/18/2008], **Seminar speaker:** School of Earth and Environment, *University of Leeds*, **UK**.
- [11/10/2008], **Seminar speaker:** Dept. of Civil Engineering, *Universidad Nacional Federico Villarreal*, Lima, **Peru**.
- [11/07/2008], **Seminar speaker:** Dept. of Agricultural Engineering, *Universidad Nacional Agraria La Molina*, Lima, **Peru**.
- [11/04/2008], **Seminar speaker:** Dept. of Civil Engineering, *National University of Engineering*, Lima, **Peru**.
- [05/28/2008], **Seminar speaker:** National Sedimentation Laboratory, *United States Department of Agriculture*, USDA, **USA**.
- [02/28/2008], **Seminar speaker:** Dept. of Civil and Environmental Engineering, *University of California at Berkeley*, CA, **USA**.
- [02/25/2008], **Seminar speaker:** Dept. of Civil and Environmental Engineering, *Virginia Tech.*, Blacksburg,

VA, USA

[04/04/2007], **Seminar speaker:** Dept. of Civil and Environmental Engineering, *Pennsylvania State University, State College, PA, USA.*

[Feb 2005], **Seminar's speaker:** Dept. of Civil and Environmental Engineering, *University of Illinois at Urbana-Champaign, USA.*

TECHNICAL REPORTS

(*) Graduate student
(*U) Undergraduate student
(**) Postdoc

1. Gutierrez R. R. (*) and **Abad J. D.** (2012). “*Statistical Analysis of Meanders of the Red River and Its Tributaries*”. Report to Barr Engineering Co. for the US Army Corps of Engineers.
2. Waratuke, A. R., **Abad, J. D.**, Barnas, C., Garcia, M. H. (2009). “*Design and modeling of a combined canoe chute/fish passage for the North Branch Dam, Chicago, Illinois*”. Civil Engineering Studies, Hydraulic Engineering Series No. 93.
3. **Abad, J. D.**, Waratuke, A. R. and García, M. H. (2006). “*Numerical simulation of the Telegraph Drop-shaft – Baumgartner Tunnel System*”, St. Louis, MO, USA.
4. **Abad, J. D.**, Bombardelli, F. A., Waratuke, A. R. and García, M. H. (2004) “*Modeling and alternative analysis for SEPA Station No. 3*”. In report “SEPA Station No. 3, Siltation Alleviation Study “from Greeley and Hansen LLC to Metropolitan Water Reclamation District of Greater Chicago, IL, USA.
5. García, M. H., Niño, Y., **Abad, J. D.**, Cantero, M., León, A., Mangini, S., Sequeiros, O. (2003). “*Sedimentation management in combined sewer overflow storage reservoirs using water jets*”. Metropolitan Water Reclamation District of Greater Chicago, IL, USA.

FUNDING

EXTERNALLY FUNDED RESEARCH PROPOSALS: FUNDED & PEER-REVIEWED @UTEAC

1. **(PI @ UTEC, 2018-2021).** “ePIURA: enfoque multidisciplinario para el Planeamiento de la Infraestructura Urbana, mapeando el Riesgo Ambiental”, S/ 350,000. **World Bank, Fondecyt. Co-PI: Dr. Pedro Rau Lavado and Dr. Daniel Horna @ UTEC**
Summary: *Storms and river floods caused by the El Niño phenomenon can have devastating effects on urbanized and rural areas and have a high cost of recovery. Coastal cities, especially urbanized areas that have grown informally, are undoubtedly vulnerable to this type of event. The floods caused by these events seriously affect the urban space and impact on the economic and social systems of the city. Faced with the uncertainty that exists about what will be the specific impacts that climate change will continue to generate in cities, along with the national and global trend towards a continuous urbanization of the territory, it is imperative to investigate the ways in which El Niño affects cities in Peru, in its most relevant areas, as well as proposing new strategies that minimize or mitigate the future impacts of coastal storms and floods in coastal areas. In partnership with Kawsay and the National University of Frontera (Piura), UTEC proposes a multidisciplinary research project to quantify the effects of the El Niño in communities in the metropolitan area of the Piura river basin. UTEC will lead the work of identifying the localized climatic, geomorphological and pluvial processes that increase the risk of extreme events in the riverside communities of the city of Piura. The different elements of urban vulnerability and the sociodemographic and economic characteristics of the most vulnerable populations will be analyzed, as part of the process of urban growth patterns. The economic costs associated with affecting the urbanized environment will also be identified in the face of the occurrence of an extreme event and the impact generated by the type of existing urban planning, in collaboration with local universities. Finally, the research team will develop recommendations and multidisciplinary action tools for this type of urban environment.*
<http://cienciactiva.gob.pe/convocatorias/investigacion-cientifica/investigacion-aplicada-y-desarrollo-tecnologico>
2. **(PI @ UTEC, 2018-2020).** “Scientific Assessment of River Form and Flow: Baseline Information for Infrastructure Guidelines in the Peruvian Amazon”, \$ 2’055,000. **Gordon and Betty Moore Foundation.**
Summary: *The general objective is to understand the dynamics of water and sediment transport for the morphological description of Amazonian rivers and their interrelation with biodiversity and Amazonian communities. The specific objectives are: 1] Characterization of the multitemporal and spatial dynamics of the Huallaga, Marañón, Ucayali and Amazonas rivers; 2] Development of BMP (Best Management Practices) or guides to characterize the planimetric dynamics by means of the remote sensing technique (satellite images) to describe the evolution of the Mendric (Huallaga and Ucayali) and multichannel rivers (Marañón and Amazonas); and 3] Development of BMP or guides to quantify and characterize the structure of the water flow, sediments and how the morphology of the Amazonian rivers develops.*
<https://www.moore.org/grantee-detail?granteeId=3250>
3. **(PI @ UTEC, 2018-2019).** “Diseño e implementación de dos sistemas de monitoreo hidrológico para la amuna Saywapata en San Pedro de Casta y las zanjas de infiltración en Canchamoya en San Mateo”, € 60,000. **The Nature Conservancy and Aquafondo. Co-PI: Dr. Pedro Rau Lavado @ UTEC.**
Summary: *The main objective of this project is to generate information on the hydrological system in the sub-basin of the Santa Eulalia River and to describe the efficiency of the hydraulic system of amunas and infiltration ditches, as part of conservation practices based on ecosystems that have a positive impact in the management and conservation of water sources for the use of the population. The project also includes the social participation component, which includes the organization of participatory workshops with community*

members, whose objective is to provide training on topics related to the quality and contamination of surface water, groundwater, bioindicators and hydrological monitoring. <https://aquafondo.org.pe/complementacion-de-sistemas-de-monitoreo-hidrologico-en-la-amuna-saywapata/>

4. **(PI @ UTEC, CIAT, 2018-2019).** “Portafolio de proyectos de servicios ecosistémicos para las cuencas de Lima: Chillón, Rímac, Lurín, y Alto Mantaro”, \$ 60,000. **The Nature Conservancy. Co-PI: Dr. Pedro Rau Lavado @ UTEC.**
Summary: *The main objective is the formulation of a portfolio of activities for the conservation and restoration of the green infrastructure of the Chillón, Rímac, Lurín and Alto Mantaro basins in order to maximize the supply of hydrological ecosystem services and the preparation of investment cards.*
5. **(PI @ UTEC, 2017-2018).** “Geomorphological Baseline Methodology for Amazonian Rivers considered in the “Hidroviás Amazónicas” Project”, \$ 150,000. **Gordon and Betty Moore Foundation.**
Summary: *The objective is to develop a methodology to generate a hydrogeomorphological baseline that includes studying variables such as: migration rate, sedimentation and erosion patterns, island patterns, suspended and bottom sediment transport, altimetric geomorphology and planimetry, frequency of floods. The case where the methodology was applied is the Huallaga River, from Yurimaguas to the beginning of the Marañón River. The experiences and knowledge generated during the execution of this project will be applicable to the other rivers included in the “Hidroviás” Project. More information in: <http://cita.utec.edu.pe/amazon-basin/>*
6. **(PI @ UTEC, 2017).** “Estimation of rivers flows using LSPiV methodology”, \$ 27,220. **SENAMHI-PERU.**
Summary: *The project proposes the development of an integrated station, which will collect water level data, with previously calibrated field images; surface velocities that serve to calibrate liquid flows and concentration and estimation of suspended sediment load. The proposed station for the measurement of water levels and speeds is non-intrusive; that is, it does not obstruct or affect the flow at any time. This station allows capturing the natural conditions of the flow and its variations. The information recorded by the station will serve many purposes, the main one being to collect information for the calibration of numerical models that allow us to understand the behavior of the ocean surface and, to make projections of the hydraulic dynamics of the marine currents. The main purpose of obtaining surface velocities when traditional measurement techniques are not possible is to verify theoretical measurements and to support direct measurements of the flow through a video. This project was carried out in collaboration with the Center for Water Studies and Technology (CETA, in Spanish) of the Universidad Nacional de Córdoba, Argentina.*
7. **(PI @ UTEC, 2017).** “Hydraulic modeling and its applications for SENMAHI studies”, \$ 2,300. **SENAMHI-PERU.**
8. **(PI @ UTEC, 2016-2017).** “The role of vegetation to stabilize islands in anabranching systems”, \$ 30,000. **MISTI funding. Co-PI: Dr. Heidi Nepf from CEE@ MIT.**
Summary: *In 2017, the Peruvian government initiated a dredging project in the Peruvian Amazon basin to provide access to the river flow for large ships, which will create more economic opportunities and fewer accidents along the waterway. However, dredging the river can change the velocity in the channel and sediment transport in the channel, both of which can further affect the ecosystems along the river. It is important for us to understand how the existing river channel evolved, so that we can anticipate the potential change in channel morphology after dredging. Vegetation is thought to play a role in determining the shape of a river channel, and in particular the formation and stability of islands within the channel.*
9. **(PI @ UTEC, 2016-2017).** “Gestión integrada de recursos hídricos en las cuencas de Chancay (Lambayeque) y del Huatanay (Cusco)”, \$ 373,240. **SNMPE (Sociedad Nacional de Minería, Petróleo y Energía).**
Summary: *The project was based on the application of new basin studies methodologies that cover all institutional and social aspects, taking in consideration technical studies to understand the physical patterns of the water sources (lagoons, wetlands, rivers, among others). As a result, physical, chemical and biological data were centralized and collected in the Chancay-Lambayeque and Huatanay basins to develop participatory workshops and participatory technical monitoring for the management and proper use of water. The participation of the communities in the scientific monitoring was a key point for the development of economic and conservation activities, as well as to promote the culture of water.*
10. **(PI @ UTEC, 2016-2017).** “Promoting marine and run or river energy to increase energy diversity in Peru”, € 5,075.5. **Aquatera and UK Embassy.**
Summary: *This project describes a methodology to estimate the hydrokinetic potential in various sectors of the Peruvian territory. The methodology is mainly based on obtaining data that allow us to estimate the speed, transversal geometry, slopes and geomorphological parameters of the main rivers in several basins that do not have available hydrological information. For that reason, an estimate is provided based on studies and data from the National Water Authority (ANA, in Spanish), satellite images and statistical calculations to determine the theoretical hydrokinetic potential.*

1. **(co-PI @ Univ. of Pittsburgh, 2015-2017).** “High-resolution field hydrodynamic measurements and CFD analysis of the Inca’s channels”, \$ 70,000.
Summary: This proposal was submitted with colleagues at the University of San Antonio Abad in Cuzco, Peru. This funding will allow us to understand the channels in the Tipon Complex System (Inca Empire) in collaboration with the Peruvian Ministry of Culture and the National Museum in Cuzco.
2. **(PI @ Univ. of Pittsburgh).** (2012-2014) “Collaborative Research: Morphodynamics of the Madeira River: An Amazonian Anabranching Mega River Facing Imminent Disruption”, **NSF-GLD (Geomorphology and Land Use Dynamics) No. 1147722**, \$ 29,868. More information in: http://www.nsf.gov/awardsearch/showAward?AWD_ID=1147722.
An NSF collaborative research project among different institutions has a PI at each university, thus, another separate NSF-GLD Project 1147954 (\$70,036) was given to PI: Latrubesse at the University of Texas at Austin, http://www.nsf.gov/awardsearch/showAward?AWD_ID=1147954.
Summary: The Madeira River, the largest tributary in water discharge and sediment transport of the Amazon basin is center to a controversial political and environmental discussion because the Brazilian government is constructing huge hydropower sequential plants that, irremediably, will produce river regulation. We propose to collect hydrogeomorphologic and hydraulic information before and immediately after human intervention. Our main objectives are: a) to analyze the fluvial morphodynamics to understand the mechanism controlling the development of anabranching patterns in this megariver. This information will serve as baseline for further discussion of the anthropogenic effects; b) to identify the geoenvironmental mosaic of the floodplain and the morphosedimentary processes controlling its evolution and architectural style, c) to provide predictive mathematical tools and to generate new concepts for anabranching river managements in terms of morphodynamics and river environmental engineering. The project is also relevant for this program at NSF because of the needs to develop fieldwork in sites that will be irreversibly impacted and the mega-scale environmental consequences than can be triggered because the regulation of this giant fluvial system. Considering that it is expected that the hydro-powers plants will begin functioning by the end of 2012, this is a unique and last opportunity researchers would have to study this key fluvial system before direct human intervention. Additionally, the modeling component will allow us generating geomorphic scenarios to discuss the anthropogenic effects on megarivers due to dam construction.
3. **(co-PI @ Univ. of Pittsburgh).** (2011-2015). “The Marcellus Shale Research Network”. \$270,000 (from a join total of \$ 750,000). **NSF-Research Coordination Networks (RCN) No. 1140159**. PI: Susan Brantley (PSU), co-PI: Kathryn Brasier (PSU), Richard Hooper (CUASHI), Candie Wilderman (Dickinson College). http://www.nsf.gov/awardsearch/showAward?AWD_ID=1140159
Summary: We will focus on the research hypothesis: Sustainable development of the Marcellus Shale will be enabled by creation of a database of geochemistry and hydrology developed by watershed groups, government agencies, industry stakeholders, and universities working together to document natural variability and potential environmental impacts. With the proposed funding, we will investigate this hypothesis in Pennsylvania, the site of the largest new shale gas play in the United States. The network will be led by two research universities, Penn State and Pitt, and a private liberal arts college, Dickinson, in collaboration with the Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI).
4. **(Co-PI @ Univ. of Pittsburgh).** (2011-2012) “Marcellus Shale Baseline Study: Monitoring bathymetric and flow field characteristics to develop predictive hydrodynamics and bed morphodynamic models in a reach scale”. **Heinz Foundation**, \$40,411. PI Dan Voltz (University of Pittsburgh)
Summary: Continuous measurements of bed morphology, sediment transport and flow field characteristics (e.g. water discharge, velocity magnitude) is necessary to understand changes on the river parameters that could affect resuspension of finer contaminated sediments into the water column, modification of geomorphic features, among others. These continuous measurements (monitoring) will also provide data for proper validation of the predictive numerical models. This study was performed for performing baseline studies due to Marcellus Shale activities.
5. **(Co-PI @ Univ. of Pittsburgh).** (2012-2013) “Marcellus Shale Baseline Study: Monitoring bathymetric and flow field characteristics to develop predictive hydrodynamics and bed morphodynamic models in a reach scale”. **Heinz Foundation**, \$44,335. PI John Stolz (Duquesne University).
Summary: Additional funding to continue the project funded in 2011.
6. **(PI @ Univ. of Pittsburgh).** (2010-2014) “Collaborative Research: Morphodynamics of complex meander bends on large rivers”. **NSF-GLD (Geomorphology and Land Use Dynamics), No. 0952065**, \$68,052, http://www.nsf.gov/awardsearch/showAward?AWD_ID=0952065.
An NSF collaborative research proposal among different institutions has a PI at each university, thus, another separate NSF-GLD Project No. 0952242 (\$306,271) was given to PI: James Best (University of Illinois at Urbana-Champaign), co-PI: Marcelo H. Garcia, Bruce Rhoads (University of Illinois at Urbana-Champaign),

http://www.nsf.gov/awardsearch/showAward?AWD_ID=0952242.

Summary: *The proposed research will achieve a step-change in our understanding of the morphodynamics of large complex river meanders by exploring the interactions among three-dimensional flow structure, sediment transport, bed morphology and bank erosion within several complex meander loops along the Wabash River on the border of Indiana and Illinois. The study will employ state-of-the-art field measurement techniques to capture, in unprecedented levels of detail, how the flow and bed dynamically interact with one another over a range of formative flow events, and how these interactions influence rates and patterns of bank erosion and migration. The focus will be not only on interactions within a bend, but also between bends to explore the influence of inherited flow structure on bend dynamics. The study will also use and develop state-of-the-art 3-D computational fluid dynamics modeling techniques to simulate flow-bed-bank interactions. The field data will be used to condition and validate the performance of the computational models. The validated and fully tested model will then provide an advanced theoretical tool for predicting meander dynamics along alluvial rivers over an extended range of boundary conditions.*

7. **(PI)**. (2009-2013) “High-resolution computations of natural meandering channels”, National Center of Supercomputers Applications (NCSA). Computational hours.
Summary: *30,000 computational hours for performing high-performance computations in the NCSA clusters.*
8. **(PI @ Univ. of Pittsburgh)**. (2013-2015) “Modeling the evolution of meandering channels, a cutoff-migration cyclic connection”, **Electricite de France (EDF)**, France, \$ 90,000.
Summary: *The proposed study seeks to understand and predict the formation of complex meander bend shapes and patterns. The research will advance the understanding of the role of hydrodynamics, bed morphodynamics, and bank erosion and their interactions in both the formation of meander shapes and their migration patterns. The proposed model will be used to identify the modulation of planform shape by the proximate geological structure (e.g., bedrock or other cohesive substrate, lateral confinement between bedrock walls, or freely meandering in alluvium). Long-term research goals involve: [1] Description of the spatial distribution of sediments across the floodplain, [2] Description of the sedimentological patterns resulting from the sorting of sediments across the main channel and floodplains for different meander planform shapes, and [3] Description of planform meander shapes for different geological conditions*
9. **(PI @ Univ. of Pittsburgh)**. (2010-2014) “Enhancement of the channel evolution model CONCEPTS for predicting the water quality benefits of retention of riverine sediments by floodplains”. Agriculture Research Service, **United States Department of Agriculture (ARS-USDA)**. \$ 103,000
Summary: *The goal of this research is to maximize floodwater retention on the floodplain for a given discharge. It should be designed for: overbank elevation, streambed elevation, channel alignment, floodplain topography, vegetation distribution, etc. 1D models are efficient at simulating in-stream hydrodynamics and sediment transport for long reaches and time periods, however they cannot simulate overbank flow accurately. 2D models can simulate flow and sediment transport accurately both in the stream and on the floodplain, however they may not be very efficient for long reaches and long time periods, primarily because of the required mesh resolution in the stream. A mixed 1D-2D approach in which the 1D model simulates the processes in the stream and the 2D model simulates the processes on the floodplain therefore provides the best of both worlds.*
10. **(PI @ Univ. of Pittsburgh)**. (2010-present) “Field measurements in the Amazon Basin”. Service of Hydrography and Navigation of the Amazon, **Peruvian Navy**. \$ 300,000 (estimated based on the number of field campaigns supported).
Summary: *The Peruvian Navy has been supporting my field research at least two campaigns per year. Each campaign includes technicians, instrumentations (ADCP, Multi beam, Single beam, vessels, and other field instruments). Each campaign might cost \$30,000. Besides the field campaigns that my research group leads, I am interacting with the Peruvian Navy to extend my collaboration along the coastal Peruvian region and the Titicaca Lake. Furthermore, the educational activities that I developed in the Amazon basin are fully supported by the Peruvian Navy.*
1. **(Co-PI)** (2018) “Análisis del sistema hidráulico de la red de canales y estanques en el Acllawasi del complejo de Pachacámac” Office of Research Seed Funding (UTEC). \$4,550.
2. **(PI)**. (2017-2018) “Base de datos para el Fenómeno de El Niño”. **Office of Research** (UTEC). \$4,550.
1. **(PI)**. (2015-2016) “Scientific research and citizen participation as drivers for viability of infrastructure projects: a study in the Peruvian Upper Amazon Basin”. **Center for Industry Studies** (Department of Industrial Engineering-University of Pittsburgh). \$3,000, co-PI Marcela Gonzalez (GSPIA).
2. **(PI)**. (2013) “Political boundary between countries, Peru and Colombia”. **Center for Latin American Studies** (CLAS-University of Pittsburgh). \$4,000
11. **(PI)**. (2012) “Morphodynamics of the Madeira River: An Amazonian Anabranching Mega River Facing Imminent Disruption”, **Office of Research**, University of Pittsburgh, \$ 16,000.
12. **(PI)**. (2011) “Dynamics of the Upper Amazon River”. **Center for Latin American Studies** (CLAS-University of Pittsburgh). \$4,000
13. **(Co-PI)**. (2010) “A GIS-based model coupling watershed- and reach-scale transport models for toxic

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metals/elements associated with Marcellus Shale flowback and produced water; it's applications to human exposure and risk assessment". **Pittsburgh Toxic Metals Program**, \$25,000. PI: Dr. Xu Liang.

14. (PI). (2010) "Dynamics of the Amazon River near Iquitos city, PERU". **Center for Latin American Studies** (CLAS-University of Pittsburgh). \$4,000

TEACHING

COURSES TAUGHT @ Univ. of Pittsburgh

- 1) **BUSSPP0037/ENGR0023** – Undergraduate level (~ 15-20 students). International, interdisciplinary freshman undergraduate elective course offered in Engineering and Business Colleges, Plus3 Chile Program (<http://www.chileplus3.pitt.edu/>, <http://plus3chile2011.blogspot.com/>, <http://plus3chile2012.blogspot.com/>, <http://plus3chile2013.blogspot.com/>). This course includes pre-departure workshops at the University of Pittsburgh, a two-week field trip to Valparaiso, Chile and a post-field trip component in which the students write a research-type article and give presentations. *This course was offered during Summer 2011, 2012, and 2013.*
- 2) **ENGR1623/2623: Engineering for a Better Environment: Brazil** – Undergraduate/graduate level (~ 15-20 students). This course investigates renewable energy sources through exploration of Brazil's utilization of sustainable and clean power. The course is preparatory to a 10-day capstone study abroad field experience during August of each year in Brazil. The field experience will provide students with the opportunity to engage in dialogue with Brazilian leaders in sustainable energy development as well as experience Brazil through a variety of cultural and historical activities. Blogs for this course are found at: <http://enr-brazil-2014.blogspot.com/>, <http://enr-brazil-2015.blogspot.com/>. *This course was offered during Summer 2014 and Summer 2015.*
- 3) **CEE 1402: Fluid Mechanics** – undergraduate level (~ 50 students/semester). *This course was offered in Spring 2016. Dr. Abad has developed the lecture notes for this course.*
- 4) **CEE 1401/2401: Open Channel Hydraulics** – undergraduate/graduate level (~ 50 students/semester). *This course was offered in Spring 2011, 2012, 2013, 2014, 2015 and 2016. Dr. Abad has developed the lecture notes for this course.*
- 5) **CEE 1410/2410: Water Resources Engineering** – undergraduate (~ 60 students/semester). *This course was offered in Fall 2013.*
- 6) **CEE 3408: Advanced Environmental Fluid Mechanics** – graduate level (~ 10 students/semester). *This course was offered in Fall 2011, 2012, Spring 2013, Fall 2013, Fall 2014 and Fall 2015. Dr. Abad has developed the lecture notes for this course.*
- 7) **CEE 2416: Sediment Transport** – undergraduate/graduate level (~10 students/semester). *This course was offered in Spring 2010, Fall 2014 and Fall 2015. Dr. Abad has developed the lecture notes for this course.*
- 8) **CEE 3416: River Mechanics and Morphodynamics** – graduate level (~10 students/semester). *This course was offered in Fall 2012. Dr. Abad has developed the lecture notes for this course.*
- 9) **CEE 0085: Sophomore Seminars** – undergraduate level (~ 80 students/semester). *This course was offered in Fall 2014 and Fall 2015.*
- 10) **CEE 3485: CEE Graduate Seminars.** Dr. Abad has organized joint seminar among CEE, Geology and Planetary Sciences and the Center for Simulation and Modeling.

COURSES TAUGHT @ Peruvian Naval Academy

- 1) **River Hydraulics** – (~ 40 students/year). This is a summer two-week short course offered to Naval officers from Peru and other South American countries. This summer course includes lectures on theory related to rivers and the Amazon basin and field trips to perform hydrodynamic and bed morphodynamic measurements along the Amazonian rivers. Officers from Colombia, Ecuador, Peru and Venezuela have taken this course. *This course was offered in Summers 2010, 2011, 2012, 2013, 2014, 2015, 2018. Dr. Abad has developed this course. <http://www.creamazonia.org/education/crear-ed-spa/>*

SHORT- COURSES/ADDITI ONAL LECTURES

Dr. Abad has given short courses in different countries such as: **Argentina, Brazil, China, Mexico, Peru, and USA.**

Lecturer, "RVR Meander: a toolbox for river planform evolution and design", 10th Federal Interagency Sedimentation Conference, 5th Federal Interagency Hydrologic Modeling Conference, Reno, Nevada, April 19-23, 2015. In collaboration with Eddy Langendoen (ARS-USDA), <http://www.sedhyd.org/2015/wp-content/uploads/SEDHYD-program-for-web-040215.pdf>

Lecturer, "Assessment and Modeling of River Migration: Introducing a GIS-based Toolbox for River Restoration", Workshop at the Department of Biosystems and Agricultural Engineering, Oklahoma State University, April 10-11, 2015. In collaboration with Eddy Langendoen (ARS-USDA), **Oklahoma,**

USA.

- Lecturer**, “**Morfología y procesos fluviales**” y “**Modelación numérica y física del flujo en cauces**”, short-course at IMTA (Mexican Institute of Water Technology), October 22 and 23, 2013, Jiutepec, Morelos, **Mexico**.
- Lecturer**, “**Modeling of River Migration at Multiple Scales: A GIS-based toolbox for river restoration**”, short-course given at UNAM (National Autonomous University of Mexico), In collaboration with Eddy Langendoen (ARS-USDA) and Alejandro Mendoza (University of Pittsburgh), January 16-18, 2013, Mexico City, **Mexico**.
- Lecturer**, “**Modeling of River Migration at Multiple Scales: A GIS-based toolbox for river restoration**”, short-course presented to USDA Forest Service, In collaboration with Eddy Langendoen (ARS-USDA), Davide Motta, Roberto Fernandez and Marcelo H. Garcia (University of Illinois at Urbana-Champaign). December 12-14, 2011. <http://rvrmeander.org/shortcourses/2011/TAHOE/Presentations.html>, Lake Tahoe, NV, **USA**.
- Lecturer**, “**Modeling of River Migration at Multiple Scales**”, pre-course at RCEM Conference, 2011, In collaboration with Eddy Langendoen (ARS-USDA), Davide Motta, Roberto Fernandez and Marcelo H. Garcia (University of Illinois at Urbana-Champaign). September 3-5, 2011. <http://www.rvrmeander.org> and <http://sklhse.tsinghua.edu.cn/rcem2011/rcem2011.html>, Tsinghua University, Beijing, **China**.
- Lecturer**, “**Assessment and Modeling of River Migration: Introducing a GIS-based toolbox for river restoration**”, pre-course at World Environmental & Water Resources Congress, ASCE 2011, In collaboration with Eddy Langendoen (ARS-USDA), Davide Motta, Roberto Fernandez and Marcelo H. Garcia (University of Illinois at Urbana-Champaign). May 22, 2011, Palm Springs, CA, **USA**.
- Lecturer**, “**Modelamiento Hidráulico, evolución de ríos**”, pre-course at II National Peruvian Water Congress, 2010. In collaboration with Eddy Langendoen (ARS-USDA), Davide Motta and Marcelo H. Garcia (University of Illinois at Urbana-Champaign). National University of Engineering (in Spanish), April 5-6, 2010. Lima, **Peru**.
- Lecturer**, “**Modelamiento Hidráulico, evolución de ríos**”. Short course, in collaboration with Eddy Langendoen (ARS-USDA), Davide Motta and Marcelo H. Garcia (University of Illinois at Urbana-Champaign). Universidad Nacional San Antonio de Abad (in Spanish), April 9-10, 2010, Cusco, **Peru**.
- Lecturer**, “**Modeling of river meandering and streambank erosion**”, pre-course in River Coastal and Estuarine Morphodynamics (RCEM) conference, 2009. In collaboration with Eddy Langendoen. (http://info.rcem.serfe.com/pc_activities.html), September 15-17, 2009, Santa Fe, **Argentina**.
- Invited instructor**, “**Low-slope sand-bed rivers course**”, May 2006, Johns Hopkins University, National Center for Earth-surface Dynamics (http://www.nced.umn.edu/Low_Slope_rivers_06.html), MD. **USA**.
- Substitute lecturer**, “**GEOG 595/GEOL 593: Alluvial Boundary Layer Processes and Deposits**”, Instructors: Jim Best and Bruce Rhoads, Department of Geography and Department of Geology, University of Illinois at Urbana-Champaign, USA, Fall 2008, Illinois, **USA**.
- Substitute lecturer**, “**CEE 598, GEOL 593: Turbidity currents: morphodynamics and deposits**”, Instructor: Gary Parker, Department of Civil and Environmental Engineering and Department of Geology, University of Illinois at Urbana-Champaign, USA, Fall 2008, Illinois, **USA**.
- Substitute lecturer**, “**CEE459: Sediment Transport**”, Instructor: Marcelo H. García, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Fall 2004, Illinois, **USA**.
- Lecturer**, “**Hidráulica de Canales y Ríos: Teoría y Modelamiento Matemático**”. Department of Civil Engineering, National University of Engineering, January, 2004 (In Spanish), Lima, **Peru**.

**CONTRIBUTIONS
TO NON-
CLASSROOM
TEACHING**

CREAR-ED-SPA: Ciencia y Tecnología para el conocimiento de la Amazonia (two-week short course in Spanish), organized by CREAR, <http://creamazonia.org/education/crear-ed-spa/> in Iquitos, Peru. This course is organized for Peruvian and international students (with emphasis on Latin American students). *This course was offered in Summer 2011, 2012, 2013, 2014 and 2015.*

AMAZONIAN RESEARCH EXPEDITION (under development): two-weeks in the Pacaya-Samiria National Reserve, Peru. Dr. Abad is planning to have this expedition sponsored by National Geographic and the Peruvian Navy. In summer 2016, there will be an exploratory trip to the Pacaya-Samiria region to finalize the planning. *Dr. Abad is developing this initiative together with scientists from the Peruvian Navy, Wildlife Conservation Society and other Peruvian Institutions.*

CURRENT RESEARCH GROUP MEMBERS @ UTEC**Summary**

Note: Dr. Abad has mentored 2 postdocs, already graduated 2 PhDs and several MSc students. Dr. Abad has also mentored several undergraduate and high-school students.

RESEARCH ASSISTANTS

1. Leo Guerrero
2. Tania Rojas
3. Luciana Vásquez
4. Gabriela Flores
5. Yulissa Estrada
6. Henry Valverde
7. Hernán Chicchón

UNDERGRADUATES

8. José Velarde
9. Lynn Marin
10. Mireya Quintana
11. Bárbara López
12. Gerardo Valencia
13. Jaime Del Alcázar

At UTEC

1. Gaviota Tello (UTEC)
2. Víctor Chuquihuaccha Hernández (UTEC)
3. Lorena Salazar Ferreyros (UTEC)

FORMER RESEARCH GROUP MEMBERS @ UTEC**Summary****At CITA-UTEC****VISITING SCHOLARS**

1. Wan Chantavilasvong (Urban Planning Master Graduate at MIT), July to August 2018
2. Ellie Simonson (Graduate at MIT), July to August 2018
3. Rebecca Gracia (Graduate at Harvard University), July 2018
4. Camilo Sanchez-Castellanos (Undergraduate at Harvard University), July 2018
5. Lucas Ruben Domínguez (Postdoctoral Student University of Litoral, Argentina), July 2018
6. Kensuke Naito (Postdoctoral Student at University of Illinois at Urbana-Champaign), June 2018
7. Leticia Ortega (Undergraduate at Harvard University), June to August 2017

RESEARCH ASSISTANTS

1. Hugo Montoro, January 2017 to December 2018
2. Mishel Meléndez Bernardo (National University of Engineering), May 2017 to August 2018
3. José María Muñoz Huamán (UTEC), January 2017 to June 2018
4. Yoch Ponte Torres (UNMSM), July 2017 to November 2017
5. José Paredes Santur (UTEC), July to November, 2017
6. Sofia Valdivia (Ricardo Palma University), May to August, 2017
7. Raul Tupac Yupanqui (National University of Engineering), November to March, 2017
8. Diego Freitas, July to August, 2016

FORMER RESEARCH GROUP MEMBERS @ Univ. of Pittsburgh**Summary**

Note: Dr. Abad has mentored 2 postdocs, already graduated 2 PhDs and several MSc students. Dr. Abad has also mentored several undergraduate and high-school students.

VISITING SCHOLARS

1. J ingfu Shan (Associate Professor, College of Geoscience, Yangtze University). January-June 2016.
2. Lucas Dominguez Ruben (PhD candidate at University of Litoral, Santa Fe, Argentina). Advisor: Dr. Szupiany. January-August 2015.
3. Leo Guerrero (Professor, University of Piura, Piura, Peru) – February 2012-May 2012.
4. Zhi Li (currently PhD student at University of Illinois)

(POSTDOCS/GRADUATES)

1. Alejandro Mendoza (PhD, 2011, UNAM-Mexico) – Postdoc - Feb 2012-Sept. 2014. Support by Conacyt, Mexico. Sept. 2014-present. Funded by Electricity of France (EDF) project. Dr. Mendoza will join the Department of Basic Sciences (Hydraulics) at the Autonomous Metropolitan University of Mexico as an assistant professor.
2. Cesar Simon (PhD student) – Expected to graduate: Fall 2016. MSc in CEE (2013), MSc in Mathematics (2014). Funding from NSF: The Marcellus Shale Research Network.
3. Meng Zhang (MSc) - Graduated: Spring 2015.
4. Di Jin (MSc) – Graduated: Spring 2015.

5. Jiaoli Ren (MSc) – Graduated: Spring 2015. Christian Frias (MSc. 2011, PhD 2013) – Funding from NSF: Collaborative Research: Morphodynamics of the Madeira River: An Amazonian Anabranching Mega River Facing Imminent Disruption and NSF: Collaborative Research: *Morphodynamics of complex meander bends on large rivers*.
6. Christian Frias (Postdoctoral research associate, January-September 2014). Funded by Electricity of France (EDF) project. Now Water Resources Specialist at Barr Engineering Co. (Minnesota)
7. Christian Frias (MSc, PhD, September 2009 to August 2014). Funded by NSF, USDA.
8. Kristin Dauer (MSc student) – Graduated Summer 2014. *Funded by project with Electricity of France (EDF) and NSF: Collaborative Research: Morphodynamics of the Madeira River: An Amazonian Anabranching Mega River Facing Imminent Disruption*.
9. Gutierrez, R. R. (MSc 2011, PhD 2013) – Assistant Professor, Department of Civil Engineering, Pontifical University Catholic of Peru, Lima, Peru. <http://www.pucp.edu.pe/ronald-gutierrez-lantoy/publicacion/>. Funding from Heinz project 2012 and 2013.
10. Sina Arjmand (MSc 2014) - Funding from TAs, and Heinz Foundation.
11. Yue Han (MSc 2014) – 75% own funding, 25% funded by NSF: The Marcellus Shale Research Network.
12. Ran Huang (PMS. 2013), working at LEED Green Associates.
13. Volkwein, Ross (PMS, 2011), funding from TAs, and Heinz Foundation, working at KLH INC. Company.
14. Adam Sam (PMS 2010), working at GAI Consultants, Inc.

(UNDERGRADUATES)**At University of Pittsburgh**

1. Renee Corbett (CEE Senior). *She will be a co-author of two papers to be sent to Water Resources Research and Computers & Geosciences*.
2. Adrian Garcia (CEE Junior). *He will be a co-author of a publication to be sent to Geomorphology*.
3. Collin Ortals (CEE Senior). *He is already a co-author of a publication in Water Resources Research (Frias et al, 2015), and he is also a co-author of a paper under review in Earth Surface Processes and Landforms*.
4. Catalina Escobar (CEE Senior). *She will be a co-author of a paper to be submitted to National Geographic or Nature-Geosciences*.
5. Chris Smallidge (CEE Senior). *He will be a co-author of a paper to be sent to Water Resources Research*.
6. Janet D'Anna (CEE Senior)
7. Rachel Asit Upadhyay (CEE Senior)
8. Emily Zapinski (CEE freshman, junior, 2014)
9. Jessica Garcia (CEE junior, 2013-2014)
10. Sara Watte (CEE senior, 2014)
11. Tolulope Dayo (CEE senior, 2014)
12. Brian Hone (CEE senior, 2013) – working at The Gateway Engineers, Inc., Greentree, PA.
13. Amira Aouni (CEE Senior, 2011-2012) – working in consultant company, Washington DC.
14. Marianne Choi (CEE senior, 2011) – (MSc., 2014), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Illinois, USA.
15. Volkwein, Ross (CEE senior, 2010) – working at KLH consultant company
16. Bradley J. Harken (CEE Senior, 2010) – studying PhD at University of California, Berkeley
17. Greg Turko (CEE Senior, 2010)
18. Zach Rinker (CEE Senior, 2010)

(HIGH-SCHOOL)**At University of Pittsburgh**

1. Zoe Legarrec (Senior, Taylor Allderdice High School, Pittsburgh, PA) – Fall 2014-present.
2. Philipp Reihl (Senior, Taylor Allderdice High School, Pittsburgh, PA) – Fall 2015-present.
3. Emily Zapinski (Senior, Taylor Allderdice High School, Pittsburgh, PA) – Fall 2013, Spring 2014
4. Avi Grinberg (Senior, Taylor Allderdice High School, Pittsburgh, PA) – Spring 2014

PROFESSIONAL SERVICE ACTIVITIES**SERVICE AT UTEC**

1. Member, UNESCO working group: Andes-Amazon. <https://en.unesco.org/themes/water-security/hydrology>

SERVICE AT UNIVERSITY OF PITTSBURGH

1. External reviewer, essay for Public Health MPH Students, Environmental & Occupational Health, University of Pittsburgh. Dr. Jim Peterson.
2. Member of Advisory Board, Center for Latin American Studies (CLAS), University of Pittsburgh, 2012-2014.
3. Member of Graduate Student Field Research Grants Committee, Center for Latin American Studies (CLAS), University of Pittsburgh, 2012-present.
4. Academic Advisor, Plus3 Chile Program (2011, 2012, 2013), <http://www.chileplus3.pitt.edu/>. Freshman international elective course between Engineering and Business schools, University of Pittsburgh.
5. Academic Advisor, ENGR 1623/2623: Engineering for a Better Environment: Brazil (2013).

**SERVICE AT
DEPARTMENT OF
CIVIL AND
ENVIRONMENTAL
ENGINEERING**

6. Academic Advisor, Summer 2014, Pitt Summer Excel program, College of Engineering, University of Pittsburgh – Adrian Garcia
7. Academic Advisor, College of Engineering Summer Fellowships, Ross Volkwein (2011), Brian Horne (2013), Catalina Escobar (2014), Collin Ortals (2014).

1. (**Member**), undergraduate committee, CEE
2. (**Advisor**), undergraduate students, CEE
3. (**Founder Faculty Advisor**), Student Chapter of International Association for Hydro-Environmental Research (IAHR, <http://www.pitt.edu/~sorc/iahr/>).
4. (**Founder Faculty Advisor**), Student Chapter of Environmental Water Research Institute, American Society of Civil Engineers (EWRI, <https://sites.google.com/site/ewriupitt/>). The EWRI and IAHR student chapters have organized the workshop on using HEC-HMS and HEC-RAS, March 29, 2014.
5. (**Organizer**), CEE Graduate Seminar, Spring 2011
6. (**Host**), CEE Graduate Seminar, Several speakers per each year.
7. (**Organizer**), IRIC River Modeling short course, Hokkaido University and USGS, April 10-12, 2012. (<http://i-ric.org/en/index.html>). Short-course on river modeling organized at the University of Pittsburgh. Prof. Shimizu and his research group from Hokkaido University (Japan) and Dr. Nelson from USGS. Participants included students and faculty from the University of Pittsburgh, and personnel from USGS and US Army Corps of Engineers and local consultant companies.
8. (**Sponsor**), Seminars given by Rolf Aalto (*University of Exeter*), Doug Jerolmack (*University of Pennsylvania*), Panos Diplas (*Lehigh University*), Alan Howard (*University of Virginia*), Heidi Nepf (*Massachusetts Institute of Technology*), Edgardo Latrubesse (*University of Texas at Austin*), Anthony Ingrafea (*Cornell University*), Robert Anthony Dalrymple (*Johns Hopkins University*), Hugo Montoro (*Peruvian Navy*), Jim Best (*University of Illinois at Urbana-Champaign*), Gary Parker (*University of Illinois at Urbana-Champaign*), Michael Lamb (*Caltech*), Dan Parsons (*University of Leeds, UK*), Eddy Langendoen (*USDA*).
9. (**Organizer**), 2011, 2012 and 2013. Graduate Orientation Workshop for incoming students.
10. (**Organizer**), 2012 CEE Faculty Candidate visits.
11. (**Organizer**), 2010 and 2011 Meeting of Assistant Professors with the CEE Chair
12. (**Organizer**), sophomore seminars CEE0085 – 2014-2015.
13. (**Presenter**), Sophomore Seminar on “Water Resources Group”, Fall 2011, Fall 2013 (CEE0085 & CEE1085)

**CHAIRMAN OF
INTERNATIONAL
CONFERENCES
AND MEMBER OF
THE LOCAL
ORGANIZING
COMMITTEE
(LOC)**

1. (**Member: President of the International Scientific Committee, LOC**). “2016 Latin American Hydraulics Conference”, International Association for Hydro-Environment Research (IAHR), Lima, Peru, <http://ladhi2016.org/>.
2. (**Chairman, organizer**). “2015 River Coastal and Estuarine Morphodynamics (RCEM)”, Iquitos, Peru. This conference has been previously organized in Italy (University of Genova), Japan (Hokkaido University), Spain (University of Catalunya, University of Cantabria), USA (University of Illinois at Urbana-Champaign), The Netherlands (University of Twente), Argentina (University of Litoral, Santa Fe), and China (Tsinghua University). This conference will be organized by CREAM and the University of Pittsburgh, www.creamamazonia.org/rcem2015/
3. (**Member, LOC**), “2013 Fluid Dynamics Meeting”, Pittsburgh, PA, USA, American Physical Society, organized by the University of Pittsburgh, Carnegie Mellon University and other institutions. <http://www.apsdfd2013.pitt.edu/>
4. (**Chairman, organizer**). “2012 Tropical Rivers conference”, International conference partially funded by UNESCO (United Nations Educational, Scientific and Cultural Organization) and organized by CREAM, (<http://www.creamamazonia.org/tropicalrivers2012/index.html>), August 8-11, Iquitos, Peru.

**MEMBER OF THE
INTERNATIONAL
SCIENTIFIC
COMMITTEE AND
CHAIR OF
SESSIONS**

1. (**Member, International Scientific Committee**). “13th International Symposium on River Sedimentation”, September 19-22, Stuttgart, Germany. <http://www.isrs2016.de/committees/>
2. (**Member, International Scientific Committee**). “River Flow 2014”, September 3-5, Lausanne, Switzerland, <http://riverflow2014.epfl.ch/>.
3. (**Member, International Scientific Committee**). “Latin American Hydraulic Conference”, August 25-28,

2014, Santiago de Chile, Chile, <http://www.hidrolatam2014.com/>

4. **(Member, International Scientific Committee)**, “Sexto Simposio Regional sobre Hidráulica de Ríos (Ríos 2013)”, November 6-8, 2013, Santa Fe, Argentina, <http://fich.unl.edu.ar/rios2013/>
5. **(Chair)**. Session on “*Fluvial Morphodynamics, Channel Patterns, and Beyond*”. American Geophysical Union (AGU), fall meeting in San Francisco, CA, December 2015.
6. **(co-Chair)**. Session on “*Multiscale and Multidisciplinary Fluvial Research in Tropical Regions*”. American Geophysical Union (AGU), fall meeting in San Francisco, CA, December 2015.
7. **(Chair)**. Session on “*Fluvial Morphodynamics, Channel Patterns, and Beyond*”. American Geophysical Union (AGU), fall meeting in San Francisco, CA, December 2014.
8. **(co-Chair)**. Session on “*Multiscale and Multidisciplinary Fluvial Research in Tropical Regions*”. American Geophysical Union (AGU), fall meeting in San Francisco, CA, December 2014.
9. **(Chair)**. Session on “Large River Systems, a place for interaction of several disciplines and its importance for earth’s conservancy and sustainability”. Annual Meeting, Society for Advancing Hispanics, Chicanos & Native Americans into Science (SACNAS), San Antonio, October 3-6, 2013.
10. **(Chair)**. Session on “River Research Theory and its Importance for River Restoration Practices”. Annual Meeting, Society of Hispanic Professional Engineers (SHPE), Indianapolis, IN, October 30-November 3, 2013.
11. **(Chair)**. Session on “*Fluvial Morphodynamics, Channels Patterns: How do River Patterns Come to be Different?*”. American Geophysical Union (AGU), fall meeting in San Francisco, CA, December 2012.
12. **(Chair)**. Session on “*Lowland Rivers*”. Association of American Geographers (AAG) annual meeting, February. 2012, New York, New York, USA.
13. **(Chair)**. Session on “*Fluvial Morphodynamics, Channels Patterns, and Megafans*”. American Geophysical Union (AGU), fall meeting in San Francisco, CA, USA, December, 2011.
14. **(Chair)**. Session on “*Challenges on Scaled Physical Modeling of Sediment Transport*”. American Geophysical Union (AGU), fall meeting in San Francisco, CA, USA, December, 2011.
15. **(Chair)**. Session on “*Fluvial Geomorphology: Progress and Challenges in River Meandering*”. Association of American Geographers (AAG), annual meeting, Washington, DC, USA, April. 2010.
16. **(Chair)**. Session on “*Meandering rivers, advances in research*”. American Geophysical Union (AGU), fall meeting in San Francisco, CA, USA, December, 2009.
17. **(Chair)**. Session on “Turbulence in open channel flows”. American Society of Civil Engineers (ASCE). Every year, EWRI Conference.

MEMBER OF NATIONAL AND INTERNATIONAL COMMITTEES

1. **(Alternate representative)**, University of Pittsburgh in the Consortium of Universities for the Advancement of Hydrological Sciences, Inc. (CUAHSI), 2010-Present
2. **(Chair, 2015-2017)**, Computational Hydraulics Committee, American Society of Civil Engineers, ASCE
3. **(Secretary, Vice-chair, 2010-2013: 2013-2015)**, Computational Hydraulics Committee, American Society of Civil Engineers, ASCE
4. **(Vice-president, 2012-2013)**, Computational Hydraulics Committee, American Society of Civil Engineers, ASCE
5. **(Member, 2013-present)**, Hydraulics and Waterways Council, American Society of Civil Engineers, ASCE
6. **(Member, Fluvial Hydraulics committee)**, International Association for Hydro-Environment Research, IAHR, 2010-present.
7. **(Secretary of the International Advisory Committee)**, River Coastal and Estuarine Morphodynamics, RCEM, 2011-present.

EDITOR - SPECIAL ISSUES IN INTERNATIONAL JOURNALS

1. **(Editor)**. Special Issue on “River Morphodynamics”, *Geomorphology Journal*, Elsevier 2015-2017. *Guest Editors: Jorge D. Abad, Edgardo Latrubesse, Journal Impact Factor: 2.552.*
2. **(Editor)**. Special Issue on “Tropical Rivers”. *Earth Processes and Surface Landforms*, Wiley, 2015-2017. *Guest Editors: Jorge D. Abad, Eddy Langendoen, Marcelo H. Garcia. Journal Impact Factor: 2.49.*
3. **(Editor)**. Special Issue on “Fluvial Morphodynamics, Channel Patterns”. *Earth Processes and Surface Landforms*, Wiley, 2012-2013. *Status: last stage of reviews for two papers. Seven other papers have been already accepted. Journal Impact Factor: 2.49.*
4. **(Co-editor)**. Special Issue on “Large Rivers and Megafans”. *Sedimentary Geology*, Elsevier, 2012-2013. *Status: in production. Journal Impact Factor: 2.564.*

**PROPOSAL
REVIEWER
AND
PANEL MEMBER**

5. **(Co-editor)**. Special Issue on “Moveable-bed models”. Journal of Hydro-Environment Research, Elsevier, 2012-2013. *Status: in production. Journal Impact Factor: 1.961.*
6. **(Editor)**. Special Issue on “Meandering channels”, Geomorphology Journal, Elsevier 2010-2012. *Status: published. Guest Editors: Jorge D. Abad, Inci Gunalp and Guido Zolezzi, Vol 163-164, <http://www.sciencedirect.com/science/journal/0169555X/163-164>. Journal Impact Factor: 2.552.*
1. **(Reviewer)** Peruvian National Research Funding - Consejo Nacional de Ciencia, Tecnología e Innovación Tecnológica (CONCYTEC): “Organización de Eventos en CTI 2018-01”, and “SENCICO II - Proyectos de Investigación Aplicada en Saneamiento y Construcción SENCICO 2018-01”, PERU.
2. **(Reviewer)** Natural Environment Research Council (NERC), UK.
3. **(Reviewer)** Swiss National Science Foundation (SNSF) Mathematics, Physical and Engineering Sciences Division, Switzerland.
4. **(Reviewer)** NOW (Netherlands Organization for Scientific Research) Council for Earth and Life Sciences, The Netherlands. NWO funds thousands of top researchers at universities and institutes and steers the course of Dutch science by means of subsidies and research programs. NWO promotes quality and innovation in science.
5. **(Reviewer)** NSF (National Science Foundation), Geomorphology and Land Use Dynamics, USA. Geomorphology and Land-use Dynamics supports innovative research into processes that shape and modify landscapes over a variety of length and time scales.
6. **(Reviewer)** NSF, Hydrologic Sciences, USA. The Hydrologic Sciences Program focuses on the fluxes of water in the environment that constitute the water cycle as well as the mass and energy transport function of the water cycle in the environment. The Program supports studying processes from rainfall to runoff to infiltration and streamflow; evaporation and transpiration; as well as the flow of water in soils and aquifers and the transport of suspended, dissolved and colloidal components.
7. **(Reviewer)** NSF, Education and Human Resources, EAR, USA.
8. **(Reviewer)** NIWR (National Institute of Water Resources, USGS). Managing this critical resource is increasingly important, given the challenges from mankind and Mother Nature. That’s where the National Institutes for Water Resources (NIWR) plays a major role, by providing a national platform for research, training and collaboration needed to manage our water resources. Housed in the country’s top land-grant universities, NIWR’s institutes are uniquely positioned to assist state and federal governments in advancing sustainable management of our water supply.
9. **(Reviewer)** Chilean National Research Funding, Comisión Nacional de Investigación Científica y Tecnológica (CONICYT), Chile.
10. **(Reviewer)** Internal Funding, Pontifical Catholic University of Peru (PUCP), Peru.
11. **(Member, Panel 2012-2013)** NSF, Geomorphology and Land Use Dynamics.

**JOURNAL
REVIEWER**

[1] Advances in Water Resources, [2] Canadian Journal of Civil Engineering, [3] Continental Shelf Research, [4] ACS Environmental Science and Technology, [5] ACS Photonics, [6] Earth Interactions, AGU, [7] Earth Surface Processes and Landforms, [8] Engineering Geology, [9] Environmental Fluid Mechanics, [10] Environmental Modeling & Software, [11] Environment International, [12] Environmental Geology, [13] European Journal of Fluid Mechanics, [14] Flow measurement and Instrumentation, [15] Geomorphology, [16] Geophysical Research Letters (AGU), [17] International Journal of Multiphase Flow, [18] International Journal of Sediment Research, [19] International Journal of River Basin Management, [20] Journal of Hydraulic Engineering, [21] Journal of Hydrologic Engineering, [22] Journal of Energy Engineering, [23] Journal of Engineering Mechanics, [24] Journal of Fluid Mechanics, [25] Journal of Geophysical Research – Earth Processes, [26] Journal of Hydraulic Research, [27] Journal of Hydro-Environmental Engineering, [28] Journal of Hydrology, [29] Journal of Natural Gas Science and Engineering, [30] Journal of Sedimentary Research, [31] Journal of South American Earth Sciences, [32] Journal of Visualization, [33] Ocean Engineering, [34] PLOS ONE, [35] Proceedings of the National Academy of Sciences (PNAS), [36] Revista Tecnología y Ciencias del Agua, IMTA-Mexico, [37] River Research and Applications, [38] Sedimentology, [39] Stochastic Environmental Research & Risk Assessment, [40] Water Resources Research, [41] Water Resources Management, [42] Water, [43] Water Science and Engineering, [44] Wetlands Ecology and Management, [45] KSCE Journal of Civil Engineering, [46] United States Geological Survey (USGS)

CONTRIBUTIONS TO DIVERSITY

CHAIR OF SESSIONS IN CONFERENCES FOR UNDERREPRESENTED STUDENTS

1. **(Chair)**. Session on “*Large River Systems, a place for interaction of several disciplines and its importance for earth’s conservancy and sustainability*”. Annual Meeting, Society for Advancing Hispanics, Chicanos & Native Americans into Science (SACNAS), San Antonio, October 3-6, 2013. More than 3,000 underrepresented students attend to this conference that is funded by several agencies such as NSF.

PRESENTATION IN CONFERENCES FOR UNDERREPRESENTED STUDENTS

1. **(Invited speaker)**. Presentation on “The Marcellus Shale Network”. Annual Meeting, Society for Advancing Hispanics, Chicanos & Native Americans into Science (SACNAS), Washington DC., 2015, This session was organized by CUAHSI, <http://www.cuahsi.org/>.
2. **(Invited speaker)**. Presentation on “The Marcellus Shale Network: a collaboration between research and citizen science to collect and share data around Marcellus Shale and fracking”. Annual Meeting, Society for Advancing Hispanics, Chicanos & Native Americans into Science (SACNAS), San Antonio, October 3-6, 2013, <https://sacnas.org/civircrm/event/info?reset=1&id=60>. This session was organized by CUAHSI, <http://www.cuahsi.org/>.
3. **(Invited speaker)**. Presentation on “The Marcellus Shale Research Network: organizing, collecting and interpreting water data to track potential impacts of Marcellus Shale activity”. Annual Meeting, Society for Advancing Hispanics, Chicanos & Native Americans into Science (SACNAS), Seattle, October 11-14, 2012, <http://sacnas.org/news/sacnas-seattle-2012>. This session was organized by CUAHSI, <http://www.cuahsi.org/>.

MENTOR TO HIGH-SCHOOL/UNDERGRADUATE /GRADUATE WOMEN AND UNDERREPRESENTED STUDENTS

1. **(Mentor, NRMN)**. National Research Mentoring Network for underrepresented students.
2. **(Mentor, women)**. Dr. Abad has mentored a high-school woman student. Emily Zapinski (Senior, Taylor Allderdice High School) during the 2013 academic year. Emily was performing some research on understanding precipitation patterns in the Amazon basin. She was involved in a science elective class at her high school. Dr. Abad was highly involved in recruiting Emily Zapinski for attending undergraduate students at the University of Pittsburgh. Finally she is a PIT student. Currently Dr. Abad is mentoring high-school woman student Zoe Legarrec from Taylor Allderdice High School.
3. **(Mentor, women)**. Dr. Abad has mentored undergraduate women students from different ethnic groups. Marianne Choi (Asian-American), Amira Aouni (Arab), Kristin Dauer and Renne Corbett (American), Catalina Escobar (Hispanic), Tolulope Dayo (African American), Julissa Garcia (Hispanic).
4. **(Mentor)**. Dr. Abad has mentored undergraduate underrepresented student: Adrian Garcia (Hispanic).
5. **(Mentor, women)**. Dr. Abad has mentored graduate women students from different ethnic groups: Kristin Dauer (American), Nicole Anderson (African American), Yue Han (Asian), Meng Zhang (Asian).

EDUCATIONAL ACTIVITIES

1. **(Lecturer)** Dr. Abad has given presentations at Taylor Allderdice High School in February 2014 and February 2016. Dr. Abad’s talk was focused on research related to the Amazon basin, and several high-school students are interested for pursuing the elective class at their high school and interact with Dr. Abad.
2. **(Mentor)** Dr. Abad is the academic advisor for Plus3 Chile (2011, 2012, and 2013) and at least 50% of the students participating in this program (traveling to Chile) are women, and at least 10% of the total students are African Americans.
3. **(Organizer)**. Dr. Abad is the Director of CREAR, and the activities that this center is developing in the Peruvian Amazon include women from different universities. The courses are offered to all countries, especially those in South America.
4. **(Organizer)**. Dr. Abad has hosted Dr. Heidi Nepf from the Department of Civil and Environmental Engineering of MIT. She has visited the Univ. of Pittsburgh for a seminar and research discussion.

CONSULTANT ACTIVITY**NORTH DAKOTA**

AWD-0001 AMENDMENT 1: MEANDER BELT WIDTH ANALYSIS. Bars Engineers, Houston-Moore Group and the US Army Corps of Engineers funded this project. The project includes a low-flow channel (LFC) within a primary 36-mile North Dakota diversion channel. Under normal conditions the LFC would collect and convey drainage from stormwater and nearby agricultural runoff, ditches, etc. The cross section is designed such that sediment is effectively conveyed downstream, causing neither significant aggradation nor degradation. An additional goal of the LFC would be to mitigate the loss of approximately 5.5 miles of natural river reaches that will be cut off from their upstream watersheds at the diversion. This would be accomplished by constructing the LFC in a meandering pattern to mimic natural flow patterns and provide enhanced aquatic habitat. The environmental impact statement (EIS) proposed a target channel sinuosity of 1.5 for approximately 11 miles.

SUPPLEMENTARY INFORMATION

Google Scholar index
(accessed December,
2018)

	All	Since 2013
Citations	2563	2158
h-index	20	18
i10-index	33	27

ResearchGate
index (accessed
December, 2018)

RG score: 28.75

VISITING
FACULTY AND
SCIENTISTS

1. Shan Jingfu, Associate Professor, College of geoscience, Yangtze University, Hubei province, China – January –May 2016.
2. Lucas Dominguez, University of Litoral, Santa Fe, Argentina – January-August 2015.
3. Eddy Langendoen, USDA-ARS, several opportunities, 2009, 2010, 2011, 2012, and 2013.
4. Fabian Rivera, Juan Barajas, University of Tabasco, Mexico. March 30-April 4, 2014.

SHORT-TIME
VISITING
FACULTY AND
SCIENTISTS

1. Rolf Aalto, University of Exeter, UK
2. Doug Jerolmack, University of Pennsylvania, USA
3. Panos Diplas, Lehigh University, USA
4. Alan Howard, University of Virginia, USA
5. Heidi Nepf, Massachusetts Institute of Technology, USA
6. Edgardo Latrubesse, University of Texas at Austin, USA
7. Hugo Montoro, Peruvian Navy, Peru
8. Jim Best, University of Illinois at Urbana-Champaign, USA
9. Gary Parker, University of Illinois at Urbana-Champaign, USA
10. Michael Lamb, Caltech, USA
11. Dan Parsons, University of Leeds, UK
12. Guido Zolezzi, University of Trento, Italy

MSC/PHD
committee

1. Hector Clavijo (PhD student), Dept. of Civil Engineering, University of Pittsburgh. Advisor: Dr. Xu Liang.
2. Gricelda Jimenez Jaimes (PhD student), Dept. of Civil Engineering, University of Queretaro, Mexico. Advisor: Alfonso Gutiérrez López.
3. Edward Park (PhD student), Dept. of Geography and the Environment, University of Texas at Austin. Advisor: Dr. Latrubesse.
4. Gaston Priego (PhD student), Dept. of Civil Engineering, Univ. of Tabasco, Mexico. Advisor: Dr. Rivera.
5. German Villalba (PhD student), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2012). Advisor: Dr. Liang.
6. Leanna F. Seminsky (MSc student), Dept. of Civil and Environmental Engineering, University of Pittsburgh (2013). Advisor: Dr. Vallejo
7. Marina Moraiti (PhD candidate), Dept. of Mathematics, University of Pittsburgh (2013). Advisor: Dr. Leyton
8. Elisabetta Pistone (PhD student), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2013). Advisor: Dr. Rizzo
9. Sina Arjmand (PhD student), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2013). Advisor: Dr. Abad
10. Daniel Salas (PhD student), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2012). Advisor: Dr. Liang
11. Krissy Hopkins (PhD student), Dept. of Geology and Planetary Sciences, University of Pittsburgh. Advisor: Dr. Bain
12. Michaela Kubacki (PhD candidate), Dept. of Mathematics, Univ. of Pittsburgh (2012). Advisor: Dr. Leyton
13. Tyler Davis (PhD candidate, PhD defense), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2012). Advisor: Dr. Liang

14. Cesar Simon (PhD student), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2012).
Advisor: Dr. Abad
15. Christian Frias (PhD candidate), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2012).
Advisor: Dr. Abad
16. Ronald Gutierrez (PhD candidate), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2012). Advisor: Dr. Abad
17. Yi Xu (PhD candidate), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2012).
Advisor: Dr. Liang
18. Xiangyu Luo (PhD candidate), Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2012).
Advisor: Dr. Liang
19. Shugong Wang (PhD, defended 2011). Dept. of Civil and Environmental Engineering, Univ. of Pittsburgh (2010). Advisor: Dr. Liang
20. Davide Motta (PhD candidate). Dept. of Civil and Environmental Engineering, Univ. of Illinois at Urbana-Champaign, Illinois. Advisor: Dr. Garcia

**PROFESSIONAL
SOCIETY
MEMBERSHIPS**

American Geophysical Union (AGU)
American Society of Civil Engineers (ASCE), EWRI member.
International Association for Hydraulic Engineering and Research (IAHR).
Asociación Peruana de Hidráulica y Ambiental (APIHA)