



### SESSION #5C

CHAIR: Dr. Adriana Zuniga, *Assistant Research Scientist School of Landscape Architecture and Planning and Udall Center for Studies in Public Policy, University of Arizona*

## Hydrodiplomacy in Ambos Nogales: Lessons learned from binational water management

Friday, Oct. 25, 2019

11:00 am – 12:30 pm

### 1. Governance, Cooperation Requirements, and Challenges for a Binational Solution to Watershed Management

*Francisco Lara-Valencia, Associate Professor, School of Transborder Studies, Arizona State University*

### 2. Watershed Modeling in Ambos Nogales

*Laura Norman, Supervisory Research Physical Scientist United States Geological Survey*

### 3. The Role of Green Infrastructure in Watershed Management

*Joaquin Murrieta, Cultural Ecologist, Watershed Management Group*

### 4. Potential Sustainable Solutions to Water Resources Management Challenges

*Stephanie Buechler, Associate Research Professor, School of Geography and Development, and Udall Center for Studies in Public Policy, University of Arizona*

Abstract: The twin cities of Nogales, Sonora, and Nogales, Arizona, (or *Ambos Nogales*) are deeply interconnected as they share the same climate, hydrological cycle, and natural resources. Ecologically, whatever happens on one side of the border, directly affects the other side. This interconnection is most evident during storm events that result in periodic flooding on the Mexican side. Stormwater is combined with sewage and transported to the U.S. to be treated in Rio Rico, Arizona. Stormwater intrusion into the sewage system not only affects the operations of the plant, but also the health of the population because there are frequent sewage spills along the Nogales Wash, caused by the state of deterioration of the outdated conveyance system. This conveyance system desperately needs repairs, but these are so costly that there is no entity willing to pay for it. As flooding and water contamination in Ambos Nogales persist, Mexican effluent discharged into the Santa Cruz River provides multiple ecosystem services to upstream communities. Amidst bidirectional border environmental issues and significant political and economic barriers, there have been important efforts to solve these complex water-management challenges. In this session, we will hear from experts from academia (UA and ASU), a federal agency (USGS), and local environmental NGO (Watershed Management Group), who have been conducting studies and projects in these twin cities on these particular issues. They will give brief presentations about (1) governance, cooperation requirements, and challenges for a binational solution including the role of scientists and universities amidst the current political environment; (2) efforts to model runoff at the watershed scale regardless of political boundaries and the practical use of these outputs; (3) the implementation of green infrastructure in Nogales, Sonora, as a mitigation strategy for flooding and erosion and its influence in the development of the first green infrastructure regulation in Mexico; and (4) potential sustainable solutions that can reduce the burden on both sides of the border while enhancing environmental protection. In the context of drastic asymmetries in this border region, the