

Hosted by The US National Academy of Sciences
IANAS Water Program Focal Points Meeting & IANAS-UNESCO-IHP Workshop
Water Quality in the Americas
Arnold & Mabel Beckman Center Irvine, California. September 3-5, 2015

General Information

Welcome to all participants of the upcoming IANAS Meeting and IANAS-UNESCO Workshop. This meeting has been planned and organized with IHP UNESCO with the focus on Water Quality. We hope that many positive activities and publications will result from this event related to our objective of improving water quality in the Americas.

Travel

- Make copies of your passports and visa and print this Program.
- Prepare some amount of dollars for contingencies or personal expenses.
- Call your credit card company to inform about your travel plans. Credit cards are going to be requested at the Hotel for incidentals.
- If you are traveling with medicines, please bring the physician's prescription with you.
- The Hotel will have free Internet access.

Workshop

- Each presenter will have 20 minutes for presentation. A question and answer period will be placed at the end of each session.
- No translation service will be available.
- If possible, we recommend to plan your presentation in English since it will be recorded but feel free to present in Spanish but do not forget to prepare your Power Points Presentations in English.

About your power point presentation for the Workshop

- Please at the beginning of your presentation do not forget to put the title of the presentation, name of the presenter and country as well as the name of your main organization or institution.
- If you decide to use images for your presentation, please be sure that you are using only free public images and please at the bottom, put the source and link of the image. This is in order to avoid legal problems about intellectual property.
- Please be sure that the letters selected can be read at 20 mts of distance.
- At the end, do not forget to give credit to all people involved in your presentation or scientific work
- PLEASE prepare a USB with your presentation to be downloaded. The download will take place on September 2 in the computer of Adriana de la Cruz.
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Recording the Presentations for You Tube

The Workshop presentations are going to be recorded by a professional company and after some minimum post edition work, your talk along with the Power Point Presentations will be placed for free public access in You Tube, hence we kindly recommend you:

- To prepare all power point presentations in English and to be sure that you are in the planned frame of time (20 Minutes). If you extend your presentation, you may affect the presentation of the next presenter

- Men: The recording company suggested, light blue shirt and jacket and moderate pattern design for your tie to avoid distortions with the camera.
- Women the recording company suggested to avoid white colors or small or too big patterns in your clothes.

The Chairs for each session should give a short introduction to the special theme of their session and indicate that the Bios of each speaker are in the last section of their program. They will also be responsible for preparing in extra hours the conclusions of their session to be presented on the last day, Saturday Sept 5th in a 5 minutes presentation.

Program IANAS Water Focal Points Meeting and IANAS-UNESCO-IHP Workshop

	Tuesday September 1: Travel Day
	<p>Arriving to the Orange County Santa Ana Airport. Free Shuttle Airport-Hotel located at Taxis section. See map attached The shuttle runs every 30 min and guests will need to check to be on the appropriately timed shuttle Shuttle will always make sure that there is someone available to pick up and go early for all flights. Latest flight usually comes in about 10:30pm and our last shuttle is at 11:30 PM Lodging will be at the Irvine Hotel: 17900 JAMBOREE ROAD IRVINE, CALIFORNIA, USA, 92614 866.396.4201, Group NAS-IANAS</p> <p>If you are arriving from the LAX you will need to be prepare to cover a fee that may vary from company to company and it is desirable that you make a reservation in advance and pay in advance as well.</p> <p>Here are some companies but feel free to make search: http://shuttletolax.com/?gclid=CLnjiKeRxccCFRCEaQodt2kl5w http://www.primetimeshuttle.com/locations/airportshuttle_SNA.html?gclid=CImips6RxccCFQoKaQodezMKAg</p>
	For those arriving between 10:00 and 16:00, a box lunch will be delivered by NAS at 12:00 in your hotel
18:45	Meeting at the lobby of the hotel. Bus will be leaving at 19:00
19:00 to 21:00	Dinner at the Beckman Center
	For those arriving between 20:00 and 23:50, a box lunch will be delivered by NAS at 20:00 in your hotel

Program IANAS Water Focal Points Meeting

	<p>Wednesday September 2 IANAS Focal Points Meeting: Agenda Huntington Conference Room Occupancy expected; 30 people</p>
<u>7:30</u>	Meeting at the lobby and transportation to the Beckman Center, 100 Academy Dr., Irvine, CA 92617, (949) 721-2200, Bus will departing at 7:45 am
8:00 8:45	Breakfast at the Beckman
9:00	IANAS Water Program Focal Points Meeting (IANAS Business Meeting) Huntington Conference Room Welcome Words IANAS: Michael Clegg, IANAS Co-Chair
9:10 9:20	Presentation of participants and Presentation of the Agenda
9:20 10:00	Repercussions or impacts of the recent publishing of the Urban Water Book in the different countries and for IANAS. Katherine Vammen
10:00 11:00	<p>Reports from Workshop Planning Groups:</p> <ul style="list-style-type: none"> • Eutrophication of Lakes and Reservoirs in Central America and the Caribe, Gabriel Roldan and Manuel Basterrechea • Water and Energy, Marcos Cortesão • Climate change and extreme hydrometeorological events: a workshop for scientists and managers, Hugo Hidalgo.
11:00 11:15	Coffee Break
11:15 12:30	Continuation of Planning Groups Interchange over the three Workshop Proposals
12:30 13:30	Lunch at the Beckman
13:30 15:30	<p>Suggestions for new book publications:</p> <ul style="list-style-type: none"> • Quality of Water in the Americas: interrelations of Social, Economic and Human Health. José Galizia Tundisi • State of Eutrophication of reservoirs in the Americas: Sources and Mitigation Measures. Gabriel Roldan. <p>15 Minutes Brief reports of other events. NASAC, Food Security and others</p>
15:30 16:30	<p>Brief reports of other events. NASAC, Food Security and others</p> <p>Miscellaneous: Publication of country chapters from Urban Water book. Possibilities, Legal problems, etc.</p>
16:30 17:00	Coffee Break
17:00 18:00	Agenda and topic for IANAS meeting 2016 and location
18:00 19:30	Dinner at the Beckman
20:00	Transportation to the Hotel Bus will be departing at 20:00

Ask the Hotel for a Morning Call Just a comment. We could go back earlier I think if possible.
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Program IANAS-UNESCO Workshop Water Quality in the Americas

The IANAS Water Program incorporates 21 countries with experts (focal points) specialized in different aspects of water resources and their management. This Workshop in coordination with IHP of UNESCO is dedicated to one of the most important issues, Water Quality in the Americas, component determinant for proposing important management solutions for the present state of water resources

	Thursday September 3, Morning Session: Field Trip Orange County Water District Facility *
6:30	Meeting at the lobby and transportation to the Beckman Center. Bus will departing at 6:45 am
7:00	Breakfast at the Beckman
7:40	Meeting at the lobby of the Beckman Center
8:00	Transportation to the Orange County Water District Facility Orange County Water District 18700 Ward Street, Fountain Valley, CA 92708 tel: (714) 378-3362 email: bmudd@ocwd.com Becky Mudd Community Outreach & Education Coordinator
9:00 12:00	Visit to the OCWD Facility
12:00	Return to the Beckman Center and lunch
12:00 13:00	Lunch at the Beckman. Participants only
13:00 13:30	Public Registration Table for the Workshop. Free Access In the Welcome Notebook: Please write your name, organization and email, take your name tag and Q&A cards and please proceed to the Huntington Conference Rooms
	Thursday September 3, Evening Session: Opening and Workshop Huntington Conference Room Occupancy: 40 people <i>Important Notice: All presentations will be recorded. Once the doors are closed we will not open them until the next session. We apologize for this inconvenience About the Panel: Information about the participants at the end of the Program</i>
14:00 14:05	Welcome IANAS Co-Chair Michael T. Clegg Foreign Secretary of the US National Academy of Sciences (2010-2102), UCI Emeritus Professor and Co-Chair of IANAS
14:05 14:15	Opening of Workshop Katherine Vammen, IANAS Water Program Co-Chair and Blanca Jimenez, Director of the Division of Water Sciences Secretary of the UNESCO-IHP International Hydrological Program (Skype Presentation).

14:15 14:35	Expectations for this workshop and future projections for cooperation in the Americas Remarks Sarantuyaa Zandaryaa, Program Specialist at UNESCO- IHP and their activities related to Water Quality
15: 00 15:10	Session 1: The quality of surface and groundwater resources Chairs: José Tundisi (Brazil) and Ernesto González (Venezuela) (Please write your questions on the card)
15:10 15:30	“High rates of contamination by enteric viruses in surface water from Southern Brazil” Fernando Spilke (Brazil) Although neglected in routine analysis of water, enteric viruses are often found in surface hydric bodies. We have conducted large studies along the Sinos River Basin (SRB) and other watersheds in Southern Brazil investigating viral contaminants in water. Enteric viruses from different species were found in rivers and streams, indicating fecal contamination from different sources and proving the inefficiency of the wastewater treatment. No significant correlations between the concentrations of indicator bacteria and physicochemical pollutants and the concentrations of viruses were found. This situation is most likely found in many places of Latin America
15:30 15:50	“Climate Change, Water Pollution and Eutrophication in Brazil: Case Studies” José Tundisi (Brazil) The water scarcity in the southeast Brazil in the last two years, (2013. 2014) as a result of climate changes, de- forestation, impacts on the watersheds, enhanced a rapid deterioration of the water quality of surface waters, towards eutrophication. Increasing temperatures of surface waters and changing rainfall patterns resulted in the dominance of cyanobacteria in several reservoirs impairing sources of water supply increasing the cost of treatment and the vulnerability of the populations to toxicity of water. Case studies will be presented
15:50 16:15	“Eutrophication of reservoirs in Venezuela” Ernesto González (Venezuela) Venezuelan reservoirs showed different degrees of eutrophication, with the most enriched located in unprotected drainage basins. Systems could be separated according to low (<20µg/l) and high (>20µg/l) total phosphorus concentrations. Results showed a significant linear relationship between phytoplankton biomass and nutrients (phosphorus and nitrogen). Mitigation of eutrophication should be based on an improved management of the drainage basins, rather than simply that of the reservoirs themselves
16:15 16:30	Coffee Break
16:30 16:50	“Contamination of surface waterbodies due to storm water in extreme hydrological events in Panama: La Purisima Storm Case” José Fábrega (Panama) In recent years, stronger effects in water quality of extreme hydrological events on surface waterbodies have called the attention of scientists and public officials as well. A brief introduction of some hydrometeorological historical data, and projections for

	<p>Panama will be presented. Then, we will discuss the Pursisima case, a major storm that affected Panama in 2010. Finally, some conclusions and lessons learned will be discussed.</p>
<p>16:50 17:10</p>	<p>“The Present State of Application of Aquatic Macro-invertebrates as Bioindicators in the Americas” Gabriel Roldan (Colombia)</p> <p>The use of aquatic macro-invertebrates as bioindicators began in Europe in the decade of the 70’s. Its adaptation and application in Latin-American began in the 90’s. This presentation evaluates the current state of knowledge in these countries. All the countries show different levels of application, being most advanced Colombia and Central America.</p>
<p>17:10 17:30</p>	<p>“Threats to drinking water sources in Uruguay” Jimena Alonso (Uruguay)</p> <p>With 98% coverage of access to safe water supply, the Uruguayan population highly values the quality of drinking water. Therefore, public concern about the consequences of agricultural, industrial and urban activities on the trophic status of rivers and lakes, is gaining strength and -although to a lesser extent- also the presence of viral and bacterial contamination in groundwater.</p>
<p>17:30 18:00</p>	<p>Q&A Session. Please pass your written questions to the Chairs of the Session</p>
<p>18:00</p>	<p>End of the Session September 3rd The Workshop will continue working the following day: Friday September 4th at the Beckman at 9:00</p> <p>Please Visits: http://www.ianas.org/index.php/ianas-home For the publications in English and Spanish about Water such as</p> <p>“Urban Water Challenges in the Americas: A perspective from the Academies of Sciences” http://www.ianas.org/books/books_2015/water/urban_water_210315.pdf</p> <p>“Diagnosis of Waters in the Americas” http://www.ianas.org/water/book/Diagnosis_of_Water_in_the_Americas.pdf</p> <p>Please visit The UNESCO International Hydrologic Program http://www.unesco.org/new/en/natural-sciences/environment/water/ihp/about-ihp/</p> <p>Please visit: Urban Water Research Center/UCI Environment Institute http://environment.uci.edu/events/uwrc</p>

“Access to clean water and water scarcity requires: vigorous scientific, technological and managerial action in order to: adequately and better use the existing supplies; recover degraded surfaces and groundwater reserves; and secure for the future generations the necessary water resources” IANAS-Water Program

	<p>Friday September 4, Morning Session: Book Presentation and Conference Beckman Auditorium</p> <p><i>Important Notice: All presentations will be recorded. Once the doors are closed we will not open them until the next presentation. We apologize for this inconvenience About the Panel: Information about the participants at the end of the Program</i></p> <p>Occupancy: 60-70 people</p>
7:30	Meeting at the lobby and transportation to the Beckman Center, 100 Academy Dr., Irvine, CA 92617, (949) 721-2200, Bus will departing at 7:45 am
8:00 8:45	Breakfast at the Beckman for IANAS
8:00 8:45	Public Registration Table for the Workshop. Free Access Welcome Notebook: Please write your name, organization and email, take your name tag and Q&A cards and proceed to the Beckman Auditorium
9:00 9:20	Importance and Achievements of IANAS” José Tundisi (Brazil) Honnorary Co-Chair Water Program IANAS “Urban Water Challenges in the Americas. A Perspective from the Academies of Sciences” Katherine Vammen (Nicaragua) Co-Chair Water Program IANAS
9:30 10:20	“Lessons from the Great California Drought” Henry Vaux, Jr. (USA) California is suffering thru one of the severest droughts on record. The drought is worse than in the past partly by virtue of recent economic and demographic growth contributing to water use patterns that are probably not sustainable in any event. The persistent overdraft of ground water is one example. The lessons from this drought are not new but are more compelling due to increasing pressures on water supplies and water management practices that ignore the essential aridity that characterizes the state.
10:20 11:00	Q&A and Raffle of 10 IANAS Books
11:00 11:20	Coffee Break and Please proceed to the Huntington Conference Room
	<p><i>About IANAS www. ianas.org</i></p> <p><i>The Inter-American Academies of Sciences (IANAS) represents 24 Academies of Sciences and Regional Members, from Canada to the Patagonia the Caribbean included, and we work together to advice policy makers on issues as relevant as Water, Energy, Women for Science and Science Education.</i></p> <p><i>The IANAS Water Focal Points are scientists, academicians and researchers selected by the Academies of the Sciences of their countries to represent their country in the Americas. Their pro-bono contributions crystalized in different programs, publications and actions all for Free Public Access.</i></p>

	<p>Friday September 4, Morning Session: Workshop Huntington Conference Room</p> <p><i>Important Notice: All presentations will be recorded. Once the doors are closed we will not open them until the next presentation. We apologize for this inconvenience About the Panel: Information about the participants at the end of the Program</i></p> <p>Occupancy expected: 60 people</p>
11:30 11:40	<p>Session 2: Water pollution: effects, control and prevention Chairs: Katherine Vammen (Nicaragua) and Gabriel Roldán (Colombia) (Please write your questions on the card)</p>
11:40 12:00	<p>“The water crisis in Colombia: A chemical and biological perspective” Jesús Tadeo Olivero Verbel (Colombia)</p> <p>Water pollution and supply is a growing problem in Colombia. Global warming and deforestation threaten wa- ter resources, and pollution from mining, sewage and industries are compromising water quality. Government, academia and citizens must work together to improve this situation and preserve human health and the environment.</p>
12:00 12:20	<p>“Threat of pesticide contamination of water sources in Grenada and the wider Caribbean region” Martin Forde (Grenada)</p> <p>Within the Caribbean region, given the importance of the agricultural industry over the past 400 years and on into the present, many classes and types of pesticides have been extensively used for herbicide and insecticide control reasons. There is mounting evidence showing exposure to pesticides, however, the monitoring of water sources for pesticide contamination is currently not taking place</p>
12:30 13:00	<p>Box Lunch and Picture of the Group at the Garden: IANAS, UNESCO UCI Students</p>
13:10 13:30	<p>“Wastewater Treatment: Opportunities and Challenges” Banu Ormeci (Canada)</p> <p>This presentation will discuss the challenges we face in treating municipal and industrial wastewaters, and will also highlight the emerging technologies and approaches that can help to minimize environmental pollution.</p>
13:30 13:50	<p>“Impacts of climate change in a lake life expectancy due to sedimentation and prevention and control mea- sures: Lake Amatitlán, Guatemala” Manuel Basterrechea (Guatemala)</p> <p>Lake Amatitlán a highland lake (surface area 15 km², 1,188 masl) located south of Guatemala City, has been severely impacted by human activities and natural disasters. In 2010, during the tropical cyclone Agatha, two days after the explosion of Pacaya volcano, sediment loads increased two-fold. In 2012, a bathymetric survey was conducted and sediment cores were retrieved to better understand the sediment input and to estimate the lake’s loss in storage capacity over time. Climate change impacts will be exacerbated by increasing demographic pressures and unregulated settlements in the Lake Amatitlán watershed. Therefore, immediate management actions and adaptation strategies are urgently needed to protect the sedimentation and the disappearance of Lake Amatitlán.</p>

13:50 14:10	<p>“High Sewage Contamination of Dominican Urban Groundwater” Osiris de Leon (Dominican Republic)</p> <p>The lack of a sanitary sewage system in the city of Santo Domingo, has meant that for decades, groundwater from the large coral aquifer has been used as sanitary sewage which steadily increases the bacterial contamination in the subsoil turning it into a germ bomb that will eventually explode in the form of a waterborne disease epidemic.</p> <p>*SpP: Presentation will be in Spanish. Power Points will be in English</p>
14:10 14:30	<p>“Measures of adopted prevention and control of the quality of surface and groundwater in El Salvador” Julio Cesar Quiñonez (El Salvador)</p> <p>Effects on the quality of surface water and groundwater due to industrial and domestic wastewater, based on research and institutional monitoring programs, highlighting some measures and sanitation projects for adopted control, regulation and prevention, and a proposal for environmentally sustainable sanitation management.</p>
14:30 14:50	Coffee Break
14:50 15:00	<p>Session 3: Special water quality issues (natural contamination, emerging contaminants, mining and industrial pollution, contamination through oil sand mining) Chairs: Martin Forde (Grenada) and Banu Örmeci (Canada) (Please write your questions on the card)</p>
15:00 15:20	<p>“Occurrence and fate of emerging pollutants in Mexico City’s water sources and wastewater” José Elías Becerril Bravo (México)</p> <p>In recent years there has been increasing concern over the so called “emerging pollutants” such as pharmaceuticals and personal care products, surfactants, flame retardants, industrial additives, steroids and hormones and disinfection by-products. These substances have been shown to be released to the environment detected in the monitoring studies in fresh water, groundwater and drinking waters. These contaminants are not regulated but are candidates for future regulation depending on research on their potential health effects and monitoring data regarding their occurrence. In spite of the serious water problem of Mexico City (seepage in the sewerage system, importation of drinking water from other basins, aquifer overexploitation leading to soil subsidence), concentrations of the target emerging pollutants were not higher than reports for other urban areas in developed countries.</p> <p>*SpP: Presentation will be in Spanish. Power Points will be in English</p>
15:20 15:40	<p>“Waste, Water and Disease” Ricardo Izurieta (Ecuador)</p> <p>This presentation will share information related with emerging and reemerging water and waste water pathogens in the Americas. The most recent water-borne outbreaks will be discussed in the context of their environmental, cultural and socioeconomic determinants. Special emphasis will be placed in the lessons learned during the 1991 cholera epidemic in Latin America and the reemergence of this pathogen during the 2010 epidemic in Haiti.</p>

15:40 16:00	<p>“Lake Cocibolca (Nicaragua): Possible Impacts of the planned interoceanic canal on future potential uses” Katherine Vammen (Nicaragua)</p> <p>The interoceanic canal planned in the Central American country, Nicaragua, will cross the largest tropical lake of the American Hemisphere, Lake Nicaragua. The canal is being projected to traverse Lake Nicaragua as a 105km stretch of a total of 280km.planned. This presentation will explain the possible impacts of the canal on this frag- ile lake ecosystem and the potential of this resource for the future development of Nicaragua.</p>
16:00 16:20	<p>“Arsenic and Boron Natural Contamination of Rio Mauri (Bolivia and Peru)” Fernando Urquidi (Bolivia)</p> <p>The Mauri River is a 214.8 kilometers long watercourse that runs through Perú (97.8 km) and Bolivia (117 km), and has a 7,183 square kilometers watershed. There are evidences of heavy arsenic and boron natural contamination caused by several hot water springs which makes its water unfit for human consumption.</p>
16:20 16:40	<p>“Natural Contamination by Arsenic and other metals in Peru” Nicole Bernex (Peru)</p> <p>Outcomes of the Conference on water and natural arsenic organized by the National Academy of Sciences will be presented. The book brings together the results of the different studies carried out by 14 leading researchers, as well as the roundtable and the workshop results. The Conference helped to share knowledge and strengthen interdisciplinary working groups, in order to overcome gaps and difficulties in a so complex thematic as Arsenic, Water and Health in the Peru.</p>
16:40 17:10	<p>“Oil Sands: Development and Water Impacts” Banu Ormeci (Canada)</p> <p>Development of oil sands has rapidly increased in the past decade in Canada. The process of extracting, pro- cessing and transporting bitumen requires extremely large quantities of water. This presentation will cover the water and environmental impacts of oil sands development, and steps that are necessary to protect the quality and quantity of water resources.</p>
17:10 17:30	Q&A Session. Please pass your written questions to the Session’s Chairs
18:00	<p>End of the Session September 3rd The Workshop will continue working the following day: Friday September 4th at the Beckman at 9:00</p>
18:00	Dinner at the Beckman
20:00	Transportation to the Hotel

	<p>Saturday September 5, Morning Session: Workshop</p> <p><i>Important Notice: All presentations will be recorded. Once the doors are closed we will not open them until the next presentation. We apologize for this inconvenience</i> <i>About the Panel: Information about the participants at the end of the Program</i></p> <p>Occupancy: 35</p>
7:30	Meeting at the lobby and transportation to the Beckman Center, 100 Academy Dr., Irvine, CA 92617, (949) 721-2200, Bus will departing at 7:45 am
8:00 8:45	Breakfast at the Beckman for IANAS
9:00 9:10	Session 4: Institutional, economic and social aspects of water quality management Chairs: Nicole Bernex (Peru) and Henry Vaux (US)
9:10 9:30	<p>“Managing Water Quality: Lessons from Toronto” Michael D’Andrea (Canada)</p> <p>Development and urban growth within the City of Toronto and surrounding regions has resulted in intense pressure on the ecosystem, the alteration of the hydrologic cycle and impacts on the natural environment. The wet weather flow discharges from combined sewer overflows and storm sewers contributed to the designation of City of Toronto as a polluted “Area of Concern” in the Great Lakes Basin, in 1987 by the International Joint Commission. A comprehensive Wet Weather Flow Master Plan was developed to address these impacts. The watershed based Plan was developed using a hierarchical approach to stormwater management, starting with source, followed by conveyance and finally end-of-pipe controls. The presentation will include an overview of the Plan development, and the current status of its implementation.</p>
9:30 9:50	<p>“Aspects of the interjurisdictional management of water quality in a fluvial course and watershed in Argentina” Raul Lopardo (Argentina)</p> <p>The objective of this contribution is to comment the legal and institutional frame for the interjurisdictional management of water quality in Argentina, with particular emphasis in the River Plate local coast, taking into account its international condition, and the Matanza-Riachuelo Basin, under the responsibility of several jurisdictions (national, provincial and municipal) controlled by requirements from de Supreme Court of Justice.</p>
9:50 10:10	<p>“The New Standards of Environmental Quality for Watershed Management in Chile” James McPhee (Chile)</p> <p>“In 1994 Chile passed its first environmental protection legislation. Since then, the overall consensus is that the country’s environmental conditions have improved. However, the current knowledge of our environmental systems indicates that the prevailing approach of limiting emissions from individual polluters is insufficient for maintaining the health of our ecosystems. Recently, a series of “Secondary Standards”, or environmental quality standards, have been proposed for a few Chilean river watersheds. This presentation will review this change in paradigm and highlight the challenges associated with the new standards application.”</p>

10:10 10:20	Coffee Break
10:20 10:40	<p>“The social nature of water quality in Mexico” Maria Luisa Torregrosa (Mexico)</p> <p>We will address the issue of water quality in Mexico from the perspective of the social nature of water in the sense that society produces the quality of water with the culture, knowledge, practices, ideas, meanings, values and potentials that gives it, and confront it with the unilateral institutional construction of what is water quality.</p>
10:40 11:00	<p>“Water Quality Management in Honduras: Cultural, institutional, economic and social aspects” Marco Antonio Blair (Honduras)</p> <p>A quick focus on changing both institutional and legal frameworks, with emphasis on the management of water quality for human consumption, and its interaction to cultural, institutional, economic and social aspects, in Honduras. A case study.</p>
11:00 11:20	<p>“The Necessary Relationship between Terrestrial and Coastal Waters during the Maintenance of Environmental Services in Marine Ecosystems. An Economic Approach” Daniela de las Mercedes Arellano Acosta (Cuba)</p> <p>Management of surface and groundwater existing in watersheds that discharge in the sea and their impacts to coastal ecosystems like mangroves, seagrass beds and coral reefs. These ecosystems support important economic sectors in coastal communities. According to the terrestrial water availability for water users, managers of this resource must take into account the volume of water needed to be delivered to the coastal zones to maintain the needed environmental services of marine ecosystems.</p>
11:20 11:40	<p>“Pastaza, largest river wetland complex and Ramsar site, integrating statutory and customary law” Nicole Bernex (Peru)</p> <p>Rimachi Lake with over 790 km² belongs to the Pastaza River Wetland Complex (Loreto, Peru), the largest Ramsar Site in the entire Amazon. Nearly 30 000 indigenous people (mainly Kandoshi) are living there. At the end of the 1990, the lake was strongly affected by overfishing and climate change processes. The Peruvian government gave its management in concession to Kandoshi Communities. Primarily, they eliminated fishery activities of the Ministry of Fishing; secondly they banned fishing for 2 years. Consequently, the Rimachi has recovered its fish populations and actually, with the help of WWF, Kandoshi people protect their lake and organize their own fishing activities. Through a strong cooperation between indigenous authorities and public ones, the first indigenous fishing plan has been approved by the Peruvian Government.</p>
11:40 11:50	Q & A Session. Please pass your written questions to the Session’s Chairs
11:50 12:30	Closing (summary of discussions, conclusions, closing speeches, etc.) Chairs of all 4 sessions present already prepared summary and conclusions of their session of 5 minutes each.

	Recommendations and Future steps: Cooperation with UNESCO and preparation of the publication “Water Quality in the Americas” and other proposals.
13:00 14:00	Lunch at the Beckman
14:00	End of the Workshop Transportation to the Hotel
17:30 21:00	Meeting at the lobby of the Hotel Dinner TBC
21:00	Transportation to the Hotel Please checked with the hotel the schedule for the Shuttle to the airport
	Sunday September 6: Returning Day
7:00 9:00	Breakfast at the Hotel Room TBC Hotel check out at 10:00 am Have a safe trip back to home. IANAS

About the Participants Short Bios

The organization acknowledges and is grateful with the presence of UCI Graduate and Under-Graduate Students from the Outreach Research Training and Minority Science Programs (MSP) at the Ayala School of Biological Sciences, University of California Irvine.

Argentina

Raúl Antonio Lopardo Email: rlopardo@ina.gov.ar
BS in hydraulic engineering and civil engineering (National University of La Plata, Argentina).
PhD in physics from the University of Toulouse, France. President of the National Water Institute. Professor at the National University of La Plata School of Engineering. Full member of the National Academy of Exact, Physical and Natural Sciences, the National Academy of Engineering and the Academy of Engineering of the Province of Buenos Aires. National Focal Point of the InterAmerican Network of Academies of Sciences (IANAS) Water Program.

Bolivia

Fernando Urquidi-Barrau Email: erurquidi@gmail.com
BS in Geological Engineering. MS in Industrial Business Administration. MS in Security, Defense and Development. PhD in Applied Geo-Chemistry. Full Member of the National Academy of Sciences of Bolivia. National Focal Point for the InterAmerican Network of National Academies of Sciences (IANAS) Water Program.

Brazil

José Galizia Tundisi Email: tundisi@jie.com.br
is a retired full professor of Environmental Sciences at the University of Sao Paulo, São Carlos, campus, São Paulo State. He is at present, President of the International Institute of Ecology at São Carlos. He is a full Professor of Environmental Quality at the University Feevale, Novo Hamburgo, Rio Grande do Sul. He was President of the National Research Council of Brazil, (1995-1999); Member of the Scientific Committee of ILEC, (Japan) for 20 years; he is a mem-

ber of the staff of the Institute of Ecology Germany (Excellence in Ecology) since 1991. He was co-chair of the IANAS Water Programme (with Dr. Blanca Jimenez Cisneros) and chairman of the IAP Water Programme. He has 350 published papers and 35 books. He is a member of the Brazilian Academy of Sciences and a member of the Third World Academy of Sciences.

Fernando Rosado Spilki Email: fernandors@feevale.br

Holds a Veterinary degree (DVM , 2001) and Master's in Veterinary Sciences (2004) from the Federal University of Rio Grande do Sul, Brazil. He earned his PhD in Genetics and Molecular Biology from State University of Campinas (2006), Brazil. Dr. Spilki is now Professor at Feevale University, Novo Hamburgo, Brazil and his main research focus is on the detection and characterization of enteric viruses from human beings and domestic animals in water samples.

Canada

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Other Participants

NAS-IANAS-BECKMAN

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About the Minority Science Program (MSP) at UCI

The Outreach Research Training and Minority Science Programs (MSP) at the Ayala School of Biological Sciences, University of California Irvine, is an orchestrated effort by the National Institutes of Health (NIH) and the School to increase the number of US underrepresented groups (URM) in biomedical research careers. MSP students have received top national awards and academic distinctions.

MSP conceived a 'pipeline' approach, which identifies promising undergraduate students early in their academic careers to foster an interest in ultimately entering PhD programs in the biomedical sciences. MSP won the 2005 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM).

MSP participants benefit from early exposure, continuous research training and faculty mentoring. Support is also provided through paid summer and year-round research internships, access to the latest computer technology, tutoring, academic advising, scientific writing, participation at national conferences among many other research training and academic activities.

Furthermore, MSP has established a campus wide, regional and national network of committed faculty and resource programs to facilitate the transition from high school through community college, baccalaureate and master's degrees to Ph.D. careers in biomedical research. MSP also develops relationships with community colleges and K-12 schools and other institutions of higher education, to prepare prospective students for the educational opportunities offered by the School. MSP include, NIH Minority Biomedical Research Support (MBRS IMSD) NIH Maximizing Access to Research Careers (MARC) NIH Minority Health and Health Disparities International Research Training (MHIRT) NIH Bridges to Baccalaureate

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