

BIODIVERSITY PROJECTS

PONTIFICIA UNIVERSIDAD JAVERIANA

Topic	Water
Project	Study of the generation of energy using waves, tides and ocean currents (2006-2007). Result: evaluated the potential energy of the Colombian coastal region and identified the technical, regulatory and environmental aspects necessary to develop project to generate energy using waves, tides and ocean currents.
Contact	Andres Torres
Area	Hydrologic and Hydraulic Modeling: Environmental Fluid Mechanics
Telephone	3208320 ext. 5553
E-mail	andres.torres@javeriana.edu.co
Observations	Created in 1999, this project conceives of, promotes and develops basic and applied research as well as develops, validates and transfers technology to contribute to the training of qualified human resources with adequate tools for maximizing and conserving water resources in Colombia.

Topic	Water
Project	Microbiological characterization and evaluation of bioassays in production waters at the Caño Limón field.
Contact	Claudia Campos
Area	Microbiology
Telephone	3208320 ext 4138
E-mail	campos@javeriana.edu.co

Topic	Water
Project	Elaboration of TiO₂ films for the inactivation of E. coli in an effluent from an impoundment lake system.
Contact	Aura Marina Pedroza Rodríguez
Area	Domestic waste water treatment
Telephone	3208320 ext 4110
E-mail	apedroza@javeriana.edu.co
Observations	Develop a system for the growth of titanium dioxide film for use as a post-treatment of domestic waste water that has pass through an optional impoundment system. Showing that they were highly efficient for the inactivation of total coliforms and Escherichia coli.

Topic	Water
Project	Hydrodynamic characterization of contaminant charges in sanitation hydrosystems (2010 –)
Objetive	To develop and validate a methodology to characterize and model the hydrodynamic and the concentrations of SST and COD by high frequency on line measurements in operating urban sanitation hydrosystems.
Contact	Andres Torres
Area	Treatment and Reuse of Waste Water
Telephone	3208320 ext. 5553
E-mail	andres.torres@javeriana.edu.co
Observations	Created in 1999, this project conceives of, promotes and develops basic and applied research as well as develops, validates and transfers technology to contribute to the training of qualified human resources with adequate tools for maximizing and conserving water resources in Colombia.

Topic	Water
Project	Modeling Geosystems-Large City Interaction (2008 –)
Objective	Consolidate a simulation system for evaluating the geosystems-large cities interaction and that integrates modeling the atmosphere, hydric resources, contamination processes and the intensification dynamics of territory use on decision-making processes.
Contact	Andres Torres
Area	Geosciences Modeling
Telephone	3208320 ext. 5553
E-mail	andres.torres@javeriana.edu.co
Observations	Created in 1999, this project conceives of, promotes and develops basic and applied research as well as develops, validates and transfers technology to contribute to the training of qualified human resources with adequate tools for maximizing and conserving water resources in Colombia.

Topic	Water
Project	Monitoring and diagnosis of water quality in the Bogotá River analyzing biological aspects of its impact on the health of surrounding communities.
Contact	Claudia Campos
Area	Microbiology
Telephone	3208320 ext 4138
E-mail	campos@javeriana.edu.co

Topic	Water
Project	Statistical characterization of a precipitation series in Bogota looking at the implementation of mathematical model to complete missing data (2010 –)
Objectives:	
	<ol style="list-style-type: none"> 1. Establish the character of the linear and non-linear elements of a precipitation series at different time resolutions. 2. Identify the deterministic or stochastic nature of the dynamic systems which generate observables. 3. Identify and associate methods to complete missing data according to the dynamic and non-linear characterization of a series of observables.
Contact	Andrés Torres
Area	Hydrology and Mathematical Modeling of Complex Systems
Telephone	3208320 ext. 5553
E-mail	andres.torres@javeriana.edu.co
Observations	
	<p>Created in 1999, this project conceives of, promotes and develops basic and applied research as well as develops, validates and transfers technology to contribute to the training of qualified human resources with adequate tools for maximizing and conserving water resources in Colombia.</p>

Topic	Water
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Project	Evaluation of a non-conventional biological system using a fungal consortium for treatment of waste water from the textile industry.
Contact	Aura Marina Pedroza Rodríguez
Area	Industrial waste water treatment
Telephone	3208320 ext 4110
E-mail	apedroza@javeriana.edu.co
Observations	
<p>A fungal consortium of white-rot fungus was developed with the capacity for adsorption and production of ligninolytic enzymes for the treatment of colored waste water with elevated charges of COD (chemical oxygen demand) and BOD5 (biochemical oxygen demand) under alkaline conditions. The system removed 80% of the color and more than 60% of the COD and BOD5. It was stable for 18 days of continuous operation and demonstrated changes in the toxicity of the effluent to value the treated water in model organisms such as Lactuca sativa and Hydra attenuata.</p>	

Topic	Water
Project	White-rot fungus and homogeneous photocatalysis with TiO₂ as alternatives for the removal of reactive black 5.
Contact	Aura Marina Pedroza Rodríguez
Area	Treatment of waste water
Telephone	3208320 ext 4110
E-mail	apedroza@javeriana.edu.co
Observations	
<p>The sequential high-efficiency treatment made up of Trametes versicolor immobilized in loofah and photocatalysis with TiO₂, was evaluated as an alternative for the removal and detoxification of the azoic colorant. Showing that the implementation of the two systems removed 100% of the colorant and that the toxicity diminished notably with respect to the initial colorant.</p>	
Topic	Water
Project	White-rot fungus and the removal of cadmium, nickel and lead.

Contact	Aura Marina Pedroza
Area	Treatment of industrial waste water
Telephone	3208320 ext 4110
E-mail	apedroza@javeriana.edu.co
Observations	
	A laminate BioPort was developed based on P, chrysosporium hypertolerant to heavy metals, for the waste water treatment contaminated with cadmium, nickel and lead. Showing that the biomaterial removed 90% of the three metals and accumulated to wall level.

Topic	Water
Project	Evaluation of ecotoxicity tests in the municipal water of Mosquera.
Contact	Claudia Campos
Area	Microbiology
Telephone	3208320 ext 4138
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Topic	Water
Project	Evaluation of the usefulness of bacteriophages as model microorganisms for the assessment of water treatment processes and water quality
Contact	Claudia Campos
Area	Microbiology
Telephone	3208320 ext 4138
E-mail	campos@javeriana.edu.co
Topic	Water
Project	Water as a contamination source of Rotavirus, Astrovirus and calicivirus in the town of Facatativa.

Contact **María Fernanda Gutierrez**

Area **Virology**

Telephone **3208320 ext 4102**

E-mail **mfgutier@javeriana.edu.co**

Observations

1. Gutiérrez, M.F., Alvarado, M.V., Martinez, E., Ajami, N. Presence of viral proteins in drinkable water. Sufficient condition to consider water a vector of viral transmission? Water Research 41 (2007). p. 373-378 ISSN: 0043-1354.

Topic **Water**

Project **Detection of enteric viruses as a parameter of quality evaluation of drinking water in Quibdo, Chocó.**

Contact **María Fernanda Gutierrez**

Area **Virology**

Telephone **3208320 ext 4102**

E-mail **mfgutier@javeriana.edu.co**

Observations

Moreno, S. Alvarado, M. Bermúdez, A. Gutierrez, MF. Phylogenetic analysis of the strains of the rotavirus and hepatitis A virus found in drinking water in the town of Quibdó, Chocó. Biomédica Vol. 29, No 2. Junio 2009 p. 209-217. ISSN 0120-4157.

Topic **Water**

Project **Detection of enteric viruses as an evaluating parameter of drinking water quality in the town of Quibdó, Chocó.**

Contact	María Fernanda Gutierrez
Area	Virology
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E-mail	mfgutier@javeriana.edu.co
Observations	
<p>Moreno, S. Alvarado, M. Bermúdez, A. Gutierrez, MF. Phylogenetic analysis of the strains of the rotavirus and hepatitis A virus found in drinking water in the town of Quibdó, Chocó. Biomédica Vol. 29, No 2. Junio 2009 p. 209-217. ISSN 0120-4157.</p>	

Topic	Medicinal Plants
Project	Determination of the molecular markers related to drug resistance to human tumor cells and the evaluation of an extract of Petiveria alliacea and Caesalpinia spinosa in the modulation of this resistance.
Contact	Susana Fiorentino
Area	Immunology
Telephone	3208320 Ext 4149/4103
E-mail	susana.fiorentino@javeriana.edu.co
Observations	
<p>Project financed by the Academic Vice President of Javeriana University for a value of US \$52,000.</p>	

Topic	Water
Project	Enteric viruses as water contaminants in the UDCA (University of Applied and Environmental Science)

Contact	María Fernanda Gutierrez
Area	Virology
Telephone	3208320 ext 4102
E-mail	mfgutier@javeriana.edu.co

Topic	Medicinal Plants
Project	Obtaining a semipreparative scale of a bioactive normalized fraction of <i>Petiveria Alliacea</i>.
Contact	Susana Fiorentino
Area	Immunology
Telephone	3208320 Ext 4149/4103
E-mail	susana.fiorentino@javeriana.edu.co
Observations	Project financed by COLCIENCIAS and by Javeriana University for the value of US \$315,000. The first phase was financed by the Call for Innovation and Development, Banco Santander and Javeriana University. The value of the project is US \$29,000.

Project	Evaluation of the antibacterial activity of extracts and fractions obtained from two species of the Rubiaceae family: <i>Isertia laevis</i> y <i>laeleagia utilis</i>.
Contact	Dr. ALBA NOHEMI TELLEZ A.
Area	Phytochemistry
Telephone	3208320 Ext.4034
E-mail	ntellez@javeriana.edu.co
Topic	Medicinal Plants
Project	Establishing a supply chain of <i>Petiveria alliacea</i> and <i>Caesalpinia spinosa</i> in market conditions equal to that for the production of an antitumor

phytomedication that meets the Agricultural and Collection Best Practices and the Manufacturers Best Practices.

Contact Susana Fiorentino
Area Immunology
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E-mail susana.fiorentino@javeriana.edu.co

Observations

Call for Innovation and Development 502 COLCIENCIAS. Research and development program for financing the month of September. Total value of the project US \$2,312.00. Request to COLCIENCIAS: US \$1,263.00.

Topic Medicinal Plants
Project "Evaluation of the relationship between the classic antitumor therapy and the natural adjuvants in inducing an antitumor response.

Contact Susana Fiorentino
Area Immunology
Telephone 3208320 Ext 4149
E-mail susana.fiorentino@javeriana.edu.co

Observations

Financed by the COLCIENCIAS health program and by Javeriana University for a total of US \$300,000. The travel costs for the student and researcher for working in collaboration with France are financed by the ECOS Nord program (*France-Latin American Scientific Cooperation*) for an approximate value of US \$ 14,000.

Topic Medicinal Plants
Project Development of conservation alternatives in 100% natural herbal medicine products.

Contact	Dr. JULIO ARMANDO PEDROZO PEREZ
Area	Phytochemistry
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Topic	Medicinal Plants
Project	The chemical composition and variability of the essential oils obtained by the Siparuna sessiliflora species from both wild and cultivated collections, and the evaluation of its antioxidant and antibacterial activity.
Contact	Dra. ELIZABETH GIL ARCHILA
Area	Phytochemistry
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E-mail	egil@javeriana.edu.co

Topic	Medicinal Plants
Project	Isolation and identification of glycosides which are transporters of active principles present in leaf and flower extracts of the Pentacalia ledifolia y P.corymbosa.
Contact	Dr. JULIO ARMANDO PEDROZO PEREZ
Area	Phytochemistry
Telephone	3208320 Ext.4034
E-mail	julio.pedrozo@javeriana.edu.co
Topic	Medicinal Plants