



DIPGIS Newsletter

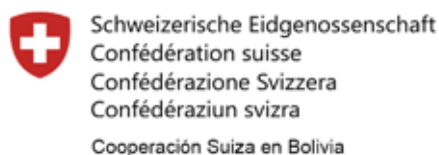
DEPARTMENT OF RESEARCH, POSGRADUATE AND SOCIAL INTERACTION

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Book Presentation: SIMOD Model applied to Evaluate quality of water in the Katari River

Contributes to the search for planned and sustained solutions for the integral management of the water resource.



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The Department of Research, Postgraduate and Social Interaction (DIPGIS) dependent on the Vice Rectorate of Universidad Mayor de San Andrés (UMSA). Is a strategic unit and reference that proposes, organizes, coordinates, monitors, controls, and evaluates policies and activities inherent in research, postgraduate and social interaction with a strong innovative component to strengthen local, national and international sustainable development. DIPGIS line of work is defined by the efficient and timely response that in these three areas UMSA must provide to the increasingly rigorous demands of regional, national institutions, as well as society itself. The management of research, postgraduate and social interaction, inserting innovation transversely through the products and results of knowledge and science generators, UMSA contributes to the construction of an inclusive, productive and competitive society, with sustainable development.



Book Presentation: SIMOD Model applied to Evaluate quality of water in the Katari River



The Universidad Mayor de San Andrés (UMSA) Rector, Waldo Albarracín Sánchez, presented the book "SIMOD Model applied to Evaluate quality of water in the Katari River" written by Engineer Waldo Vargas Ballester, Research, Postgraduate and Social Interaction Department Chief, which contributes to the search for planned and sustained solutions for the integral management of water resources.

"Research as valuable as that of the engineer Waldo Vargas, and I tell Waldo to Waldo are fundamental to neutralize the problem of pollution and the State must stop using the research potential of universities, the passenger bringing water consultants with millions of dollars, when there is talent and quality researchers ", said rector Waldo Albarracín.

In the act of book presentation, Deans, Vice-Deans, Institute Directors, UMSA Research Teachers, and the Executive Secretary of the Autonomous Binational Authority of the Water System of Lake Titicaca, Juan José Ocola Salazar, participated:

"It is time to act, to unite the experiences, to defend that natural resource called water and that hydrological symbol that unites Bolivia and Peru such as Lake Titicaca. I feel honored and grateful to the engineer Waldo Vargas and the rector, Waldo Albarracín, and I give them my commitment to continue working, not only with an investigation, but many more; because that is what we need, in a firm and convinced way, because time is killing us".



Referring to the work done by the author of the book, Jorge Quintanilla Aguirre, a research professor at the Institute of Chemical Research of the Faculty of Pure and Natural Sciences of the UMSA said:

“More than words of congratulation, words of praise, because through using these tools we can predict an effect that may be irreversible, and find solutions. We are living extreme events, such as fires in the east, but water pollution is not visible, it is imperceptible, so we must be careful, so these texts help us prevent events. Do not forget that the third world war is going to be for water, we must have a culture of water. A very good contribution and you have to have more research like that”.

The study of the quality of the waters of the Katari River, which transports wastewater from the cities of El Alto and Viacha to Cohana Bay on Lake Titicaca, emphasizes the optimal use of water quality assessment models, using a simple methodology consisting of sampling, laboratory analysis, calibration and validation runs, and sensitivity analysis with prediction runs.

Model analyzes data such as: Dissolved oxygen, temperature, altitude above sea level, average river speed, average flow, and average depth, among others.

“I am worried about the abstract of the text, because it is a conclusion of the research professor Waldo Vargas where he mentions that all the predictions about the solutions, extensions and improvements in the town of Puchocoyo, will not be enough to solve the problem of Cohana Bay , if it is not done simultaneously, with the total treatment of the remaining residual waters of El Alto, Viacha and Laja, if they are not treated before being discharged into the Katari river basin, ”added the Rector of the UMSA.

For his part, the author of the book commented: “The problem of pollution of rivers in the world worries because it is an unresolved problem, cause serious problems to health, biodiversity and especially to the hydrological cycle of water that is being seriously affected”.

“The efforts of the scientists date from the 30s years, when the first work was done in river modeling, that is to say, simulating the movement of rivers and the movement of pollutants that are released through discharges or solid waste through mathematical equations. I studied this problem in the Rio Grande on the border between Mexico and the United States on the Rio Grande, we developed this model that has been designed for countries like ours, where we have no information on water bodies, flows and less water quality. This book is dedicated to the country, Bolivia, so that it can be useful in any geographical area, will be used by professionals to plan and manage water resources management”

The computational model SIMOD (Dissolved Oxygen Simulator) was developed by Engineer Waldo Vargas Ballester, as a technical tool for the First Phase of the Study of Quality Water in the Rio Grande, between the United States and Mexico, sponsored by the Mexican Institute of Water Technology (IMTA) of the Ministry of Agriculture and Water Resources (SARH) and the National Council of Science and Technology (CONACYT). This scientific contribution was recognized by the Universidad Nacional Autónoma de México (UNAM), granting the Alfonso Caso Medal to engineer Vargas Ballester for being the most distinguished Graduate in the 1987 management of the Master’s Program by completing his master’s studies in the Section of Environmental Engineering of the Division of Postgraduate Studies of the Faculty of Engineering of the UNAM.



SISTEMA DE LA UNIVERSIDAD BOLIVIANA
COMITÉ EJECUTIVO DE LA UNIVERSIDAD BOLIVIANA
UNIVERSIDAD "AUTÓNOMA GABRIEL RENÉ MORENO"



Confiere el presente
CERTIFICADO

CARLA FABIANA CRESPO MELGAR

participación habiendo obtenido el **2do. LUGAR** en
co de la IV Feria Nacional de Ciencia y Tecnología
17, con el trabajo denominado: "Estrategias
ra el desarrollo de agentes bioactivos
ontrol de plagas que afectan a cultivos
económico", evento realizado en la Universidad
é Moreno, de la Ciudad de Santa Cruz de la
1 de agosto de 2019.

Santa Cruz de la Sierra, agosto de 2019



IANA
LIVIANA
MORENO"

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ontrol Pató

UMSA gets the second place at “Feria Buenas Ideas 2019”



The Project “Biotechnological strategies for the development of bioactive agents used in the control of pests that affect agricultural crops of economic interest” of the Biochemical Drugs Research Institute of UMSA obtained the second place in the IV National University Fair of Research, Science and System Technology of the Bolivian University “Buenas Ideas 2019”, held from August 22 to 24 at the Universidad Gabriel René Moreno of Santa Cruz, with the participation of 10 universities of the Bolivian University System and 36 research projects.

The project research team is made up of María Teresa Álvarez Ph.D, Carla Fabiana Crespo Melgar Ph.D., M.Sc. Marisel Mercedes Mamani Mamani and the thesisist Lilia Danitza Catacora Angulo.

In order to select the research projects that represented UMSA at the Feria Buenas Ideas 2019, an internal call approved by the University Academic Council was issued in which it was established that the projects should be delivered to Research, Postgraduate and Social Interaction Department (DIPGIS) until June 28, 2019.

Projects presented in DIPGIS:

- E• Biotechnological Strategies for the development of bioactive agents used in pest control that affect agricultural crops of economic interest - Biochemical Pharmaceutical Research Institute, Pharmaceutical and Biochemical Sciences Faculty.
- Study of hydroelectric potentials in the upper basin of the Pelechuco River and Design of an identified pilot hydroelectric power plant, Hydraulics and Hydrology Institute, Engineering Faculty.
- Diagnostic Strengthening in Leukemia, Molecular Biology Unit, Medicine Faculty.
- Projects presented at the UMSA Vice Rectorate:
- Program Integral Center of Equine Therapies “Mä Wawaki Sarañan”- Humanities and Education Sciences Faculty.
- Deconcentrated Academic Program Senior University Technician in Community Sociocultural Management (GESCO) - Humanities and Education Sciences Faculty.

The selection of these projects for participation in the Feria Buenas Ideas 2019, was carried out by the Evaluation Committee of the University Academic Council composed of the Vice-Deans of the Pure and Natural Sciences, and Humanities and Education Sciences Faculties, Rosa Flores y Mirka Rodríguez, respectively. The Academic Secretariat informed DIPGIS of the results of this evaluation by means of a note VICE / CITE / CAU / 463/2019:

Nº	Project's name	Score
1	Program Integral Center of Equine Therapies " <i>Mä Wawaki Sarañani</i> "- Humanities and Education Sciences Faculty.	96
2	Deconcentrated Academic Program Senior University Technician in Community Sociocultural Management (GESCO) - Humanities and Education Sciences Faculty.	90
3	Biotechnological Strategies for the development of bioactive agents used in pest control that affect agricultural crops of economic interest - Biochemical Pharmaceutical Research Institute, Pharmaceutical and Biochemical Sciences Faculty.	89

LCarla Crespo, researcher of the team of the project "Biotechnological Strategies for the development of bioactive agents used in pest control that affect agricultural crops of economic interest" awarded in IV National University Fair of Research, Science and Technology, commented: "Our participation in the Good Ideas Fair 2019 held in Santa Cruz has represented an opportunity to disseminate our research results on behalf of the UMSA. We have been able to interact with researchers from other universities in the country and be evaluated for the impact of our research. We are happy and we are motivated to continue developing high-level research with our students. We thank DIPGIS for the coordination to participate in this prestigious event."

This project, executed with resources from the Direct Tax on Hydrocarbons (IDH), aimed to study biotechnological strategies for the development of bioactive agents used in the control of fungal pests that affect mango cultivation in the community of La Plazuela - Irupana, Sud Yungas La Paz.

The results of the project identified five fungal phytopathogens: *Colletotrichum* sp, *Fusarium*

verticillioides, *Fusarium* sp, *Alternaria* sp and *Neopestalotiopsis* sp. The percent inhibition of these phytopathogens was 100% when the BOL 12QD biopesticide was used, and the genotoxicity and phytotoxicity tests performed with the BOL 12QD biopesticide showed no genotoxic or phytotoxic effects. Field trials on mangrove crops of the Creole and mango type, showed favorable results where production increased and the incidence of disease decreased significantly, in addition to presenting an insecticidal effect against the fruit fly (*Anastrepha fraterculus*).

Once the results are obtained, the transfer phase to the society corresponds to the application of results through the management of financial resources, interaction and strategic alliances with the State, departmental, municipal or communal institutions.

UMSA welcomes this award obtained by the research team of the Biochemical Pharmaceutical Research Institute under the Pharmacy and Biochemistry Faculty, in the IV National University Fair of Research, Science and Technology of the Bolivian University System.

UMSA Chemical Research Institute (IIQ) certified as Authorized Scientific Institution (ICA)



The Chemical Research Institute (IIQ) from the Faculty of Pure and Natural Sciences of the Universidad Mayor de San Andrés (UMSA) was certified as an Authorized Scientific Institution (ICA) by the Ministry of Environment and Water (MMAyA), for the execution of research projects in Biological Biodiversity.

The UMSA Rector, Waldo Albarracín Sánchez, presented the certificate No. 0343/2019 granted by the MMAyA as the National Competent Environmental Authority to the Director of the UMSA Chemical Research Institute, María Eugenia

García, on the occasion of the celebration of the Day of the Bolivian Chemist that is commemorated on August 24.

With this certification, the IIQ of the UMSA is a research center of Bolivia that is accredited in compliance with Article 12 of the Regulations for the Authorization of Scientific Research Projects in the Area of Biological Biodiversity. Consider ICA for any national agency responsible for developing, presenting, conducting and monitoring scientific research projects in the area of biological biodiversity in Bolivia.

Communication, Oratory, Marketing, Media Training and Storytelling Working Day

Organized by Research, Postgraduate and Social Interaction Department (DIPGIS), held the Day of Communication, Oratory, Marketing, Media Training and Storytelling, on August 29 in the Intercultural Hall of the Faculty of Law and Political Science of UMSA, with the aim of promoting in the students participating in the Es Tu Feria UMSA 2019, the reinforcement of skills for the visibility and appropriation of research results.

The Vice-Dean of the Faculty of Law and Political Sciences, Diego Murillo, the Director of the Law Degree, Edwin Machicado, the Executive Secretary of the Local University Federation (FUL), Álvaro Quelali, the DIPGIS Chief, Waldo Vargas Ballester, the president of the ASOCIEN / UMSA, Carla Ruiz and students of the 13 faculties of UMSA participated in the opening ceremony of the Communication Working day.

The content of the day was developed by social communicators of the Social Communication Career and DIPGIS to facilitate tools in communication, public speaking, media training, will be necessary for the presentation of projects and television interviews, and to "sell a business idea effectively in a few words".

In the Communication Working Day, Public Speaking, Marketing, Media Training and Storytelling, 200 students participated in the projects registered for the EsTu Feria UMSA / 2019. This Communication Day is held for the second consecutive year, in the framework of the preparatory activities of the student fair for research, social interaction and innovation.



EsTu Feria UMSA / 2019 Fourth Version: Conferences

With the presentation of the cycle of conferences, on September 2 and 3 at the University Auditorium, was started the fourth version of university fair of Research, Innovation and Social Interaction “EsTu Feria UMSA / 2019” began, with the participation of 60 projects and experiences in research of students of the thirteen Faculties of the Universidad Mayor de San Andrés (UMSA).

The UMSA Rector, Waldo Albarracín Sánchez, opened the conference cycle on Monday, September 2, with the participation of Research, Postgraduate and Social Interaction Department Chief (DIPGIS), Waldo Vargas Ballester and the Secretary Executive of the Local University Federation (FUL), Univ. Álvaro Quelali, research professors and students.

The conference cycle was held over two days, with 30 speakers per day, where students socialized the results of research, innovation and social interaction of projects that participate in the EsTu Feria UMSA / 2019.

According to the schedule of the Es Tu Feria UMSA / 2019, on Friday, September 6, the exhibition of Projects will be held in the Bicentenario Square, and on Tuesday, October 2, the Transfer Wheel.



UMSA researchers receiving international accreditation as Google educators



In the VICA world that we have to live we must acquire skills that help us face new challenges.

Research professors from the Universidad Mayor de San Andrés receive international accreditation as Google educators, as a result of the Workshop: Google Tools for Teaching and Research, organized by the Department of Research, Postgraduate and Social Interaction Dipgis, within the framework of the Honorable Council Resolution University student who approves the constitution of the Google Educators Community in Bolivia at the UMSA. Training that was supported by the Swedish International Development

Cooperation Agency (Sida) in the framework of capacity building and skills

Mr. Alejandro Mayori Machicao Dean of the Faculty of Engineering - UMSA understands very well the importance of having the digital skills currently required by an SXXI Teacher.

The Community of Google Educators in Bolivia Congratulates the Universidad Mayor de San Andres to DIPGIS and, of course, Mr. Alejandro Mayori for having been certified as GOOGLE EDUCATOR. being in this way an example for Teachers, Researchers and Students of this Superior House

DIPGIS in social networks
More information can be found at:
www.dipgis.umsa.bo
The UMSA DIPGIS closest to you



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