

Microbial Ecology in Mexico

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Microbial Ecology in Mexico has a recent but productive history. In 2004, ISME -10 was held in Mexico in Cancun with over 2000 attendees. It was a joint event together with the National Congress of the Mexican Society for Microbiology whose official journal, *Revista Latinoamericana de Microbiología*, is 53 years old. The National Congress of the Mexican Society for Microbiology takes place every two years and has sessions on Microbial Ecology each time. In November 2007 Mexico City was the venue of the VI SIRGELAC, Symposium on Genetic Resources for Latin America and the Caribbean that holds sections on Microbial Resources. Subsequently a group of scientists leaded by Pilar Rodriguez from Colegio de Posgraduados Montecillo founded the SURNAGEM (Sistema Nacional de Recursos Genéticos Microbianos, <http://subnargem.com/frameset.php?url=/intro.html>) a national group to study and protect microbial resources from Mexico. In Mexico we do not have strict rules to protect biodiversity as in Brazil. Several regional symposia organized by SUBNARGEM allowed researchers to review Mexican projects. The aim of SUBNARGEM was to establish a National Microbial Collection in a newly built facility and to list all projects on the subject. A collective grant supported over 50 different projects. The MPMI (Plant Microbe Interaction) meeting was held in Merida, Mexico in December 2005 and it included sections on microbial ecology. Recently a new branch of the Mexican Biochemistry Society was established on Bacterial Molecular Biology that includes few works on microbial ecology. They gather every year. Contributions on Microbial Ecology are presented at the National Congress of the Mexican

Genetics Society that meets every year. Plant Molecular Biology meetings (some of them in conjunction with US academic societies) also include sessions on Microbial Ecology. The National Soil Science Congress also holds Microbial Ecology sessions. It seems that microbial ecologists report in very different meetings, from this analysis it seems that they could benefit by gathering in a single meeting, as happened during ISME-10.

There are several groups focusing on practical applications including bioremediation, biofertilizer production and production of novel enzymes or antibiotics from native bacteria or from metagenomic libraries. Guillermo Dávila and Victor González study *Rhizobium* phages and Ahide López-Merino *Brucella* phages. Few researchers study fungal ecology, among them Dra. Brenda Valderrama together with Jorge Folch studied fungi from different lakes and Ignacio Maldonado Mendoza, Ronald Ferrera Cerratos at Colegio de Posgraduados, Dora Trejo from Universidad Veracruzana and Javier Alvarez (from UNAM in Mexico City) study mycorrhiza. Most work of microbial ecology in Mexico is on bacterial diversity. There are still many groups that undertake diversity analysis using mostly traditional microbiological techniques. Few groups have incorporated molecular based analysis and only rarely genomic and metagenomic analysis, but the groups that do so are highly recognized internationally. Valeria Souza, Gabriela Olmedo, Otto Ortega Morales, Luis Maldonado, Juan Jose Peña Cabriaes, Yoav Basham, Alejandra Bravo, José López Bucio, Carlos Cervantes, César Hernández, Carmen Wachter, Pablo Vinuesa, Alfredo Herrera Estrella, Entao Wang, Jesús Caballero, Susana Brom and Esperanza Martinez among others have made valuable contributions on Microbial Ecology. It is remarkable that many of these scientists do not recognize themselves as microbial ecologists.

Additionally, young scientists that got their Ph. D in Mexico or abroad are starting a new generation of microbial ecologists in Mexico, such as Laila Partida, Luisa Falcon, Amanda

Castillo, Claudia Silva, Jesús Muñoz, Eduardo Valencia, Alejandro Alarcon, Claudia Martinez

Anaya, Luis Ernesto Fuentes, María del Carmen Villegas, Antonio Munive, Rafael Rojas,

Rodolfo Gómez Cruz, Aillen O'Connor Sánchez and others. It is interesting to note that they are in different places and institutes.

Among all fields in Microbiology it is Microbial Ecology that seems to be growing most in Mexico, some examples of papers on Microbial Ecology contributed by Mexicans are listed below. It is worth noting that there are many international collaborations.

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