

PERSONAL DATA:

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RESEARCH ACTIVITY

- Plant-Fungi associations (fungal stem endophytes/mycophyllas, arbuscular mycorrhizas and dark septate endophytes, ectomycorrhizal ecology)
 - Environmental Microbiology (plant and soil microorganism interactions in highlands, stressed, arid and semi-arid native, agronomic ecosystems, and secondary communities).
 - Mycology, fungal diversity

SCIENTIFIC TECHNIQUES AND SKILLS

- Methodologies applied to plant-microorganism interactions, morpho-anatomical techniques to study taxonomy and systematic of arbuscular mycorrhizal fungi, microbiology laboratory methods and field sampling methods.

OTHER SKILLS

- Work in multidisciplinary research groups
 - Peer Reviewer for Applied and Environmental Microbiology, Microbial Ecology, FEMS Microbiology Ecology, Leeuwenhoek International Journal of General and Molecular Microbiology, Symbiosis, Fungal Ecology, Intropica, Ciencia del Suelo, Bol. Soc. Argen. Bot.

CURRENT POSITION:

- Adjunct professor, Effective, semi-exclusive dedication, Ecology area, Biology Department, Faculty of Chemistry, Biochemistry and Pharmacy (FQBYF), National University of San Luis (UNSL). Responsible Professor of Vegetal diversity I, Plant-Fungi interactions: Mycophyllas and Mycorrhizas, Phycoflora of serrano environments workshop and Mycology (Bachelor of Biological Sciences) and collaborator of Fungi and Vegetal Systematic (Professorate in Biological Sciences).
 - CONICET Adjunct Researcher
 - Director of the Micoteca de Diversity and Fungal Interactions (MICODIF) of the National University of San Luis (Argentina)-Unidad 266-360 of SNDB (National System of Biological Data, Argentina).

EDUCATION:

-Perito Mercantil. National college "Marcos Sastre". Tigre. Buenos Aires Province. 1981.
 -Biological Science Bachelor. Exact and Natural science faculty. University of Buenos Aires. 27-12-90.
 -PhD in Biological Science from Natural, Physical and Exact Sciences Faculty, National University of Córdoba. 28-4-99. Thesis topic: Seasonal changes in endomycorrhizas grasses (Poaceae) C3 y C4 under different grazing intensities in high grassland of the center of Argentina.

TEACHING POSITIONS:**Teaching positions:**

1. Biology professor. INSTITUTION: Colegio Nacional Nicolás Avellaneda, Capital. PERIOD: May of 1989 - September of 1992.
2. Biology professor. INSTITUTION: Instituto River Plate, Capital. PERIOD: October of 1990- February of 1991.
3. Second Assistant, Cathedra II of Biology. INSTITUTION: University of Buenos Aires. PERIOD: April of 1990 - March of 1992.
4. First Assistant (Exclusive). Cathedra: Introduction to the Morphological Botany of Cryptogamic Plants. INSTITUTION: University of Buenos Aires.

PERIOD: September of 1992- March 1994.

5. Professor assistant (Semi-exclusive). Cathedra: Vegetal diversity II. INSTITUTION: Natural, Physical and Exact Sciences Faculty, (National University of Córdoba). PERIOD: September of 2000- March of 2001.
6. Teaching assistant (Exclusive). Cathedra: Botany. INSTITUTION: Chemistry, Biochemistry and Pharmacy faculty, UNSL PERIOD: March of 2001- November of 2003.
7. Associate Professor (Semi-exclusive). Cathedra: Cellular plants/ Vegetal diversity I, Diversidad Vegetal I, Phycoflora serrano environments, Plant- Fungi interactions: Mycophyllas and Mycorrhizas, and Biology of Protists and Fungi (September 2014- 2017). INSTITUTION: Chemistry, Biochemistry and Pharmacy, UNSL PERIOD: November of 2003- Nowadays.
8. Associate Professor (Semi-exclusive). Cathedra: Introduction to the biology and General biology. INSTITUTION: Chemistry, Biochemistry and Pharmacy Faculty, UNSL PERIOD: February of 2003- April of 2004.
9. Professor Adjunct (semi-exclusive). Course of Introduction to the biology. INSTITUTION: Faculty of Chemistry, Biochemistry and Pharmacy, UNSL PERIOD: First Primer bimester of 2004.
10. Professor Adscripto. Cathedra: Vegetal diversity II. INSTITUTION: Natural, Physics and Exact Sciences Faculty (National University of Córdoba). PERIOD: September 2005-Nowadays.

Degree courses dictated (in the last 5 years):

1. Collaborating Professor in "Fungi and vegetal systematic". Chemistry, Biochemistry and Pharmacy Faculty, UNSL Topic: Systematic and fungi and algae diversity. November of 2005-Nowadays.
2. Responsible professor of the degree optative course: "Plant-fungi interactions: Mycophyllas and mycorrhizae". Chemistry, Biochemistry and Pharmacy Faculty, UNSL 2007, 2009, 2012 and 2013.
3. Responsible professor of the degree optative course: "Phycoflora of mountain environments". Chemistry, Biochemistry and Pharmacy faculty, UNSL 2011.

Post-graduate courses dictated (in the last 5 years):

1. "Plant-fungi interactions: Myphyllas and mycorrhizas" 40 hs. University of Magdalena, Basic Sciences University, Colombia. 2014.

SERVICES AND EXTENSION (in the last 5 years)**Extension courses dictated (in the last 5 years):**

1. "Mushrooms: general characteristics, ecological, collection and conservation", as a part of the project "Diversity and Fungi interactions" (PROICO 2-0203, CYT-FQBYF-UNSL). 09-11/2013.
2. "Ecosystem Services of Argentina Native Forests". 2018, 2019.

Panelist in extension conferences and seminars:

1. First provincial seminar of biodiversity. Biodiversity conservation problems. Conference topic: Registration and inventory of fungal species in San Luis. 2011, San Luis, Argentina.
2. Days of Young researchers and extension workers. San Luis University Federation, FM- Faculty of Chemistry, Biochemistry and Pharmacy-UNSL. Poster: Extension project: Native forests of San Luis: providers of services and self-sustainability eco system for the improvement of the quality of life. Exhibitors: MA Lugo, H. Iriarte, E. Ontivero, E. M. Crespo. November 8, 2018. Block 1, PB, National University of San Luis, Argentina.

Teaching materials (Total teaching publications 12, in the last 10 years):

1. Practical work guide. 2011. Vegetal diversity I. Authors: Mónica A. Lugo, Esteban M. Crespo and Eugenia Menoyo. Teaching series, New university editorial, UNSL, San Luis, Argentina. ISBN 978-987-1595-563, pages. 1-126.
2. ANEXO Practical work guide, Vegetal diversity I, 2011. Dichotomous key and taxonomic position of the available materials in the practical works of algae, fungi, lichens and bryophytes. (1-24 pages). Authors: Mónica A. Lugo, Esteban M. Crespo and Eugenia Menoyo.
3. Practical work guide. 2013. Extension Course: "Mushrooms: general characteristics, ecological, harvesting and conservation. Authors: Dra. Mónica Lugo, Biól. Esteban M. Crespo y Ricardo A. Paez, pages. 1-10.
4. Practical work guide and theoretical complement. Biology of Protist and Fungi. 2015. Authors: Mónica A. Lugo, Esteban M. Crespo, Eugenia Menoyo and Tomás Pedernera. Teaching series of Faculty of Chemistry, Biochemistry and Pharmacy. New university editorial, UNSL, San Luis, Argentina. pages. 1-159.
5. Practical work guide and theoretical complement Protist and fungi biology. 2016. Authors: Mónica A. Lugo, Esteban M. Crespo, Eugenia Menoyo and Tomás Pedernera. Teaching series of Faculty of Chemistry, Biochemistry and Pharmacy. New university editorial, UNSL, San Luis, Argentina. ISBN 978-987-733-032-8, pages 1-190.

HUMAN RESOURCES TRAINING (in the last 5 years):**Scholarship:**

1. Director of CONICET Type I and Type II. Scholarship holder: Biologist Eugenia Menoyo. Subject: Molecular characterization of arbuscular mycorrhizal fungi associated with grasses in high altitud environments. 2009-2011.
2. Director of CONICET Type I Scholarship. Scholarship holder: Lic. en Biología Molecular Leonardo Salvarredi. Subject: Protective effect of arbuscular mycorrhizal fungi (AMF) natives of the Puna against root pathogens in native and agricultural plants of interest in the area. 2009- 2010.
3. Director of stimulus Scholarship (FQBYF-UNSL). Scholarship holder: María Soledad Rivero Mega. Subject: Determination of the molecular diversity of arbuscular mycorrhizal fungi (AMF) of the Argentina Puna. 2014-2015. I
4. Co-director of internal post-doctoral scholarship CONICET. Scholarship holder: Dra. Eugenia Menoyo. Subject: Pine Invasions in the Sierras of Córdoba province, the role of mycorrhizal fungi. 2015.
5. Director of stimulus Scholarship (FQBYF-UNSL). Scholarship holder: María Luz Torres. Subject: Mycorrhizal status and effect of arbuscular mycorrhizal fungi on *Anemia tomentosa* (Savigny) Sw. var. *anthriscifolia* (Schrad.) Mickel (Schizaeaceae) growth of mountain populations in San Luis, Argentina. 2015-2016.
6. Director of internal post-doctoral scholarship CONICET. Scholarship holder: Dra. Lucia Risio. Subject: Changes in coverage and land use in Argentina's arid Chaco: impact assessment on the arbuscular mycorrhizal fungi (HMA) community diversity in order to generate applicable information management models and sustainable management practices. 2016-2018.

Directed research internship (in the last 5 years):

1. Trainee: María Soledad Rivero Mega (Student of biological sciences, FQBYF-UNSL). Subject: Glomeromycota differential diversity in the rhizosphere of bromeliads of the National park Sierra de las Quijadas (San Luis); ¿it is related with the different arbuscular mycorrhizal colonizations? 2011.
2. Trainee: María Soledad Rivero Mega (Student of biological sciences, FQBYF-UNSL) Subject: DNA extraction and determination at genus level of arbuscular mycorrhizal fungi (HMA) in soils of the argentinean Puna. 2012-2013.
3. Trainee: Raúl Maximiliano Quiroga Valdez (Student of biological sciences, FQBYF-UNSL) Subject: Digitization of the collection of images, entry, classification and registration to the Micoteca de Diversity and Fungal Interactions (MICODIF). 2019-2020.
4. Trainee: Lourdes Díaz (Student of molecular biological sciences, FQBYF-UNSL). Subject: Quantification of colonization of arbuscular mycorrhizal fungi (AMF) in natural ecosystems of San Luis. 2019-2020.

Bachelor's final works directed (in the last 5 years):

1. Student: María Soledad Rivero Mega. Subject: Determination of the molecular diversity of arbuscular mycorrhizal fungi (AMF) of the Argentinean Puna. Director: Mónica A. Lugo. Co-Director: Fernanda Covacevich (INTA Balcarce). September 2013- July 2015).
2. Student: María Luz Torres. Subject: Mycorrhizal status and effect of arbuscular mycorrhizal fungi on the growth of *Anemia tomentosa* (Savigny) Sw. var. *anthriscifolia* (Schrad.) Mickel (Schizaeaceae) of mountain populations of San Luis, Argentina. Director: Mónica A. Lugo. Co-Director: Cecilia Carosio (ÁREA ECOLOGÍA-FQBYF-UNSL). May 2015- August 2016.

Direction Doctoral Thesis (in the last 5 years):

1. Director of Doctoral Thesis: Biologist Eugenia Menoyo. Topic: Arbuscular mycorrhizal mycelia and bacteria associated in grasslands of the Puna Province. PhD in Biological Sciences, National University of Tucumán, Argentina. Finalized. oral defense: April 26, 2013.
2. Director of Internal Doctoral Scholarship. Scholarship holder: Biology Bachelor Emanuel Ontivero. Topic: Diversity of arbuscular mycorrhizal fungi in Espinal: search for indicators of agro-ecosystem health (CONICET-National Council of Scientific and Technical Research). 1-4-2016/ 31-3-2021.

Direction of teacher training of student ad honorem (in the last 5 years):

1. Student: Ricardo Andrés Paez. Topic: "Fungi: general characteristics, ecological importance, collection and conservation." Period: 13 February 2013 to 12 February 2014. FQByF-UNSL, Argentina
2. Student: Ricardo Andrés Paez. Topic: "Fungi: general characteristics, ecological importance, collection and conservation." Period: 2014-2015. FQByF-UNSL, Argentina
3. Student: Tomás Ezequiel Pedernera. Topic: "Plant Diversity I and Biology of Protists and Fungi". Period: 2014-2015 FQByF-UNSL, Argentina

Ad honorem graduates of teacher training internships Director:

1. Trainee: Eugenia Menoyo. Topic: Mycology: collaboration in the complementary degree courses developed in the Chair of Cellular Plants in topics related to Macromycetes, Micromycetes and plant-fungal interactions. Period: 08/01/05 to 10/02/06. Resols CD 187-05, 939-06 and 1111-06, FQBYF-UNSL.

Director of teacher training internships:

1. Trainee: Hebe Jorgelina Iriarte Microbiologist. 440 hours Period: 04/11/2019 to 04/11/2020, FQBYF-UNSL.

Monitoring Committees Doctoral Theses (in the last 5 years):

1. Member of the Monitoring Committee Thesis Bqca. S. Ferrari (Resol. CD 137/06). 2006-2013.
2. Member of the Monitoring Committee Thesis Bqca. Sansone, María G. (Resol. CD 842/07). Octubre 2007-2012.
3. Member Advisory Commission Thesis. Biologist Gabriel Grilli, UNC (Resol. Decano FCFyN-UNC 001573-T-09). Since August 2009 to March 27, 2013.
5. Member Advisory Commission Thesis. Biologist Noelia Cofré, UNC (Resol. Decano FCFyN-UNC 000838T-10). From May 2010 to June 2014.
6. Member Advisory Commission Thesis. Biologist . Florencia Soteras, UNC (Resol. Decano FCFyN-UNC 1283-T-2010). Since 10 September 2010 to 1 November 2013.
7. Member of the Monitoring Committee Thesis of Bachelor of Molecular Biology Jorge Gastón Fernández (Resol. Decano 675/15). Since 2014 until today.
8. Member of the Monitoring Committee Thesis of Bachelor of Science Biological Patricia Laura Colombetti (Resol. Decano 1233 /15). Since October 2015 until today .

Postgraduate Admission Commission:

1. Member of the Admission Committee of the aspirant to PhD in Biology Valeria Paula Villareal, FQByF-UNSL (Resol. Decano FQByF-UNSL 1209-14). October 2014.

Tribunal Doctoral Thesis (in the last 5 years):

1. Thesis holder tribunal Biologist Gabriel Grilli. Topic: "arbuscular mycorrhizal fungi in forest Chaqueño fragments : diversity and effects on the development of native plants and exotic invasive". National University of Córdoba (Resol. CD 000237-T-2013), March 27, 2013.
2. Thesis holder tribunal Biologist. Florencia Soteras. Topic: "Diversity of Fungi Arbuscular mycorrhizal in *Polylepsis australis* Bitt forests, and effectiveness of mycorrhizal inoculum for restoration in degraded areas of the Sierras Grandes de Córdoba". National University of Córdoba (Resol. Decano FCFyN-UNC 001613-T-2013), November 1, 2013.
3. Thesis holder tribunal Biologist Noelia Cofré, UNC. Topic: "Native communities Arbuscular mycorrhizal Fungi: response to various agricultural practices and effects on growth of *Glycine max* (L.) Merrill". National University of Córdoba (Resol. Decano FCFyN-UNC EN TRÁMITE-2014), June 24, 2014.

SCIENTIFIC ACTIVITIES:

Congress presentations (in the last 3 years):

1. XXV Congreso Argentino de la Ciencias del Suelo. Río IV, Argentina. 27 - 30 de junio de 2016. Comunicación presentada: Status micorrícico de *Anemia tomentosa* var. *anthriscifolia* (Anemiaceae) de poblaciones serranas de San Luis, Argentina. Autores: María Luz Torres; Mónica Lugo; María Soledad Rivero Mega; María Cecilia Carosio. Libro de resúmenes, p. 116. ISBN 978-987-688-170-8 Editorial UniRío Editora.
2. XXV Congreso Argentino de la Ciencias del Suelo. Río IV, Argentina. 27 - 30 de junio de 2016. Comunicación presentada: Diversidad de esporas de hongos micorrícicos arbusculares en ambientes áridos del centro de Argentina. Autores: Risio, L., M.A. Lugo, E.M. Crespo, E. Menoyo, S. Ballesteros. Ciencia del Suelo (Suplemento). Libro de resúmenes, p. 127. ISBN 978-987-688-170-8 Editorial UniRío Editora.
3. XXV Congreso Argentino de la Ciencias del Suelo. Río IV, Argentina. 27 - 30 de junio de 2016. Comunicación presentada: Caracterización genética por SSCP de hongos micorrícicos arbusculares nativos de la Puna argentina. Autores: Fernanda Covacevich; Keren Hernández Guijarro; Esteban M. Crespo; M. Soledad Rivero Mega; Mónica A. Lugo. Libro de resúmenes, p. 126. ISBN 978-987-688-170-8 Editorial UniRío Editora.
4. XXV Congreso Argentino de la Ciencias del Suelo. Río IV, Argentina. 27 - 30 de junio de 2016. Comunicación presentada: Caracterización de Glomeromycota punenos mediante la aplicación de metodologías moleculares. Autores: Rivero Mega M. S., F. Covacevich, K. Hernández Guijarro, María Luz Torres y M. A. Lugo. Libro de resúmenes, p. 117. ISBN 978-987-688-170-8 Editorial UniRío Editora.
5. International Workshop: Mycorrhizal Symbiosis in the Southern Cone of South America. Valdivia, Chile. 6 - 9 de marzo de 2017. Institución organizadora: Universidad Austral de Chile, Universidad de la Frontera, Universidad de Concepción, Centros de Estudios Avanzados en Fruticultura, EarthShape Project. Comunicación presentada Poster (P21): Land use and cover changes: winners and losers in the Arbuscular Mycorrhizal Fungi soil community of Argentinean Arid Chaco. Autores: Risio, L., M.A. Lugo, R.E. Ontivero, N. Cofré, F. Castellarini. Abstract Book, p. 63 (<https://mycorrhizal.wordpress.com/>).
6. International Workshop: Mycorrhizal Symbiosis in the Southern Cone of South America. Valdivia, Chile. 6 - 9 de marzo de 2017. Institución organizadora: Universidad Austral de Chile, Universidad de la Frontera, Universidad de Concepción, Centros de Estudios Avanzados en Fruticultura, EarthShape Project. Comunicación presentada Oral (O14): Mycorrhizas in natural environments and bioregions of South America: "write a book" is the next challenge for South American mycorrhizologists! Autores: M.A. Lugo, Risio, L., R.E. Ontivero, E. Crespo. Abstract Book, p. 42 (<https://mycorrhizal.wordpress.com/>).
7. XXXVI Jornadas Argentinas de Botánica-XXVIII Reunión Anual de la Sociedad de Botánica de Chile-II Reunión Científica de la Asociación Micológica Carlos Spegazzini. Mendoza, Argentina. 16 - 22 de septiembre de 2017. Institución organizadora: sociedad Argentina de Botánica, Sociedad de Botánica de Chile y Asociación Micológica Carlos Spegazzini. Comunicación presentada (Panel): Micoteca de Diversidad e Interacciones Fúngicas (MICODIF), FQBYF-UNSL, Unidad 266-360 DEL SNDB. Autores: Lugo M.A. y Crespo E. M. Bol. Soc. Argent. Bot. 52 (Supl.) 2017, p. 46. ISSN: 0373-580 X.
8. XXXVI Jornadas Argentinas de Botánica-XXVIII Reunión Anual de la Sociedad de Botánica de Chile-II Reunión Científica de la Asociación Micológica Carlos Spegazzini. Mendoza, Argentina. 16 - 22 de septiembre de 2017. Institución organizadora: sociedad Argentina de Botánica, Sociedad de Botánica de Chile y Asociación Micológica Carlos Spegazzini. Comunicación presentada (Oral): Endófitos fúngicos en raíces de helechos de la Sierra de San Luis, centro-oeste de Argentina Autores: Torres M.L.; Lugo M.A.; Carosio M.C. Bol. Soc. Argent. Bot. 52 (Supl.) 2017, ps. 313-314. ISSN: 0373-580 X.
9. XIII Congreso Argentino de Microbiología General (SAMIGE). San Luis, Argentina. 8 - 10 de agosto de 2018. Institución organizadora: Asociación Civil de Microbiología General. Comunicación presentada (Poster): The feces of mares (*Dolichotis patagonum*, Cavidae, Rodentia) as dispersion agents of arbuscular mycorrhizal fungi and dark septate endophytes in the National Park Sierra de Las Quijadas, San Luis (Argentina). Autores: Rivero Mega M. S., Lugo M. A., Iriarte H. J., Crespo E. M., Gatica A. Libro de resúmenes 2018, ps. 62-63.
10. XIII Congreso Argentino de Microbiología General (SAMIGE). San Luis, Argentina. 8 - 10 de agosto de 2018. Institución organizadora: Asociación Civil de Microbiología General. Comunicación presentada (Poster): Diversity of Arbuscular Mycorrhizal Fungi in the Caldenal, San Luis (Argentina). Autores: Ontivero R. E., L. V. Risio Allione, E. M. Crespo, M. A. Lugo. Libro de resúmenes 2018, p. 63.
11. II International Workshop: Mycorrhizal Symbiosis in the Southern Cone of South America. Bariloche, Argentina. 6 - 8 de marzo de 2019. Institución organizadora: Universidad Nacional del Comahue, Universidad Austral de Chile. Comunicación e-poster: A first snapshot on arbuscular mycorrhizal fungi in soils of different crops farming in the Puna. Autores: M. A. Lugo, R.E. Ontivero, L. V. Risio Allione, V. Bianciotto, E. Lumini. Abstract Book, p. 42 (<https://mycorrhizal.wordpress.com/>).
12. II International Workshop: Mycorrhizal Symbiosis in the Southern Cone of South America. Bariloche, Argentina. 6 - 8 de marzo de 2019. Institución organizadora: Universidad Nacional del Comahue, Universidad Austral de Chile. Comunicación e-poster: Spores abundance and diversity of arbuscular mycorrhizal fungi in the Caldenal Forest, Argentina. Autores: R.E. Ontivero, L.V. Risio Allione, M.A. Lugo. Abstract Book, p. 42 (<https://mycorrhizal.wordpress.com/>).
13. 5th International Conference on Microbial Diversity. Catania, Italia. 25- 27 de septiembre de 2019. Institución organizadora: FOOD FOR GOODS, Universidad de Catania, Italia, Universidad Austral de Chile Palermo, FEMS, INRA, CREA, ICFMH-IUMS. Comunicación: Arbuscular mycorrhizal fungi diversity in soils of different crops farming in the Puna (North Argentina). Autores: E. Ontivero RE., Voyron, S. , Risio Allione LV., Bianciotto V., Lugo, MA., Lumini, E. Microbial Diversity 2019, Microbial Diversity as a source of novelty: function, adaptation and exploitation. Catania, Italy, 25-27/09/2019. PS2-36, pp 228-228 Scientific Programme ISBN 9788894601014 (Poster).
14. XXXII Jornadas Argentinas de Mastozoología. Puerto Madryn, Argentina. 12 - 15 de noviembre de 2019. Institución organizadora: SAREM. Comunicación: Programa de Pesquisas en Biodiversidad Argentina: una propuesta para la articulación de investigaciones Autores: Ochoa A. C., Gatica A., Martínez Retta L., Castillo L., Gómez Vinassa L., Carrizo C., Denkiewicz N., Rivadeneira F., Pardo V. M., Lemanich G., Huerta M. E., Tarabaray San Martín M., Quatrochi M., De Giuseppe C., Bravo B., Puegher D., Jofre L. E., Rueda C., Neme A., Rueda M. P., Araujo P. A., Lugo M. A., Crespo E., Risio L., Ontivero E., Enrici M. C., Bergallo H. LIBRO DE RESUMENES: Orales libros, pág. 92.

Dictated conferences

1. Symposium: Mitigation of the adverse environmental impact on the agroecosystem, contribution of Biological Sciences. Dissertation: "Mitigation: help rooted in the ground" (pp. 18-19, book of abstracts). XXXIV Scientific Meeting of the Soc de Biología de Cuyo, Mendoza, Argentina. December 2-3, 2016. Author: M. Lugo.
2. Conference: Mycorrhizae: mutualism and something else ...Facultad de Ciencias Básicas, Universidad del Magdalena, Santa Marta, Colombia. 26 of March 2014.
3. Conference : Mycorrhizae: only mutualism?. Symposium: "Biodiversidad del Bosque Seco Tropical de Colombia". Facultad de Ciencias, Universidad del Magdalena, Santa Marta, Colombia. 4 - 17 of December 2011.
4. Conference: Mycorrhizae: a plant-fungal association. Conferencias por el 80º aniversario del Fallecimiento del Dr. Miguel Lillo y creación de la Fundación Miguel Lillo. Fundación Miguel Lillo, San Miguel de Tucumán, 14 October 2011.

Scientific publications:

1. LUGO M. A., E. MENOYO, L. RISIO ALLIONE, M. A. NEGRITTO, J. A. HENNING AND A. M. ANTON. 2018. Arbuscular mycorrhizas and dark septate endophytes associated with grasses from the Argentine Puna. *Mycologia* 110 (4): 654–665. <https://doi.org/10.1080/00275514.2018.1492846>
2. MENOYO E., M. A. LUGO, F. P. TESTE, M. A. FERRERO. 2017. Grass dominance drives rhizospheric bacterial communities in a desertic shrub and grassy steppe highland. *Pedobiologia*. 62: 36-40. <http://dx.doi.org/doi:10.1016/j.pedobi.2017.04.004>. ISSN: 0031-4056.
3. RIVERO MEGA M. S., F. COVACEVICH, K. HERNÁNDEZ GUIJARRO, MARÍA LUZ TORRES Y M. A. LUGO. 2016. Caracterización de Glomeromycota punenos mediante la aplicación de metodologías moleculares. Actas del XXV Congreso Argentino de Ciencias del Suelo. Ciencia del Suelo (Suplemento) págs: 1-17. ISSN 0326-3169 (print). ISSN 1850-2067 (electronic).
4. LUGO M. A., K. O. REINHART, E. MENOYO, E. M. CRESPO AND C. URCELAY. 2015. Plant functional traits and phylogenetic relatedness explain variation in associations with root fungal endophytes in an extreme arid environment. *Mycorrhiza* 25: 85-95. DOI 10.1007/s00572-014-0592-5. ISSN 0940-6360.
5. RIVERO MEGA M. S., E. M. CRESPO, M. G. MOLINA Y M. A. LUGO. 2014. Diversidad diferencial de esporas de Glomeromycota en la rizosfera de bromeliáceas nativas del Parque Nacional Sierra de las Quijadas (San Luis, Argentina). *Bol. Soc. Argent. Bot.* 49: 317-325. ISSN: 0373-580 X.
6. LUGO M. A., E. M. CRESPO, M. CAFARO Y L. JOFRÉ. 2013. Hongos asociados con dos poblaciones de *Acromyrmex lobicornis* (Formicidae) de San Luis, Argentina. *Bol. Soc. Arg. Bot.* 48 (1): 5-15. ISSN: 0373-580 X.
7. LUGO M.; A. NEGRITTO; M. JOFRÉ; A. ANTON AND L. GALETTO. 2012. Colonization of native Andean grasses by arbuscular mycorrhizal fungi: a matter of altitude, host photosynthetic pathway and host life form?. *FEMS Microbial Ecology* 81: 455–466. DOI: 10.1111/j.1574-6941.2012.01373.x. ISSN: 1574-694.
8. LUGO M. A.; E. M. CRESPO; K. HOSAKA A and L. S. DOMÍNGUEZ. 2012. *Broomeia congregata* Berk., 1844 (Agaricales: Broomeiaceae): new distribution record for San Luis, Argentina. *Check List* 8(3): 531-533. ISSN: 1809-127 X1
9. LUGO M. A.; P. G. GIORDANO; C. URCELAY Y E. M. CRESPO. 2011. Colonización radical por endófitos fúngicos en *Trithrinax campestris* (Arecaceae) de ecosistemas semiáridos del centro de Argentina. *Bol. Soc. Arg. Bot.* 46 (3-4): 213-222. ISSN: 0373-580 X

10. SALVARREDI L. A.; E. M. CRESPO; E. MENOYO; E. FILIPPA; G. BARBOZA; M. A. LUGO. 2010. Micorrizas arbusculares y endófitos septados oscuros en *Gentianaceae* nativas de la Argentina. *Bol. Soc. Argent. Bot.* 45: 223-229. ISSN: 0373-580 X.
11. FERRERO MARCELA A.; E. MENOYO; M. A. NEGRITTO; M. A. LUGO; M. E. FARIAS; A. M. ANTON; F. SIÑERIZ. 2010. Molecular characterization and in situ detection of bacterial communities associated to rhizosphere soil of high altitude native Poaceae from Andean Puna region. *Journal of Arid Environment* 74:1177-1185 (doi:10.1016/j.jaridenv.2010.04.008). ISSN 0140-1963.
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21. CABRAL, D., M. CAFARO, P. V. REDDY, M. A. LUGO, M. & J. F. WHITE Jr. 1999. Evidence supporting the occurrence of a new species of endophyte in some of South American grasses. *Mycologia*, 91 (2):315-325. ISSN: 0027-5514.
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23. LUGO, M. A., A. M. ANTON y L. DOMÍNGUEZ DE TOLEDO. 1997. Seis especies de Glomales (Zygomycetes) en Gramíneas (Poaceae) argentinas. I. *Kurtziana*, 25: 187-204. ISSN: 0075-7314
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Books:

1. LUGO, M. A.; H. J. IRIARTE, E. M. CRESPO, M. L. TORRES, R. E. ONTIVERO, L. V. RISIO, E. MENOYO, S. I. BALLESTEROS. 2018. MANUAL DE METODOLOGÍAS PARA EL TRABAJO CON HONGOS Y SUS SIMBIOSIS (Handbook of Methodologies for Work with Fungi and its Symbiosis). Micoteca de Diversidad e Interacciones Fúngicas MICODIF-Grupo de Investigación MICODIF. 1a ed. Nueva Editorial Universitaria - UNSL, San Luis, Argentina. ISBN 978-987-733-152-3, pp. 70.
2. PAGANO, M. C., M. A. LUGO (Eds.). 2019. Mycorrhizal Fungi in South America. Life Science Series. Fungal Biology. Springer, Switzerland, ISBN 9783030152277, pp. 374.

Book chapters:

1. LUGO M. A., PAGANO, M. C. 2019. Chapter 1: Overview of the Mycorrhizal Fungi in South America. In: (Pagano, M. C. & M. A. Lugo, Eds.). Mycorrhizal Fungi in South America. Life Science Series. Fungal Biology. Springer, Switzerland, pp. 1-27. ISBN 9783030152277
2. COFRÉ N., SOTERAS F., IGLESIAS M. del Rosario, VELÁZQUEZ S., ABARCA Camila, RISIO L., ONTIVERO E., CABELLO M., DOMÍNGUEZ L.S., LUGO M. A. 2019. Chapter 3: Morphospecies biodiversity of Arbuscular Mycorrhizal Fungi in South America. A review. In: (Pagano, M. C. & M. A. Lugo, Eds.). Mycorrhizal Fungi in South America. Life Science Series. Fungal Biology. Springer, Switzerland, pp. 49-72. ISBN 9783030152277
3. LUGO, M. A., MENOYO E. 2019. Chapter 12: Southern Highlands: Fungal Endosymbiotic Associations. In: (Pagano, M. C. & M. A. Lugo, Eds.). Mycorrhizal Fungi in South America. Life Science Series. Fungal Biology. Springer, Switzerland, pp. 217-255. ISBN 9783030152277
4. LONGO, S., N. COFRÉ, F. SOTERAS, G. GRILLI, M. LUGO, C. URCELAY. 2015. Chapter: Taxonomic and functional response of arbuscular mycorrhizal fungi to land-use change in central Argentina. In: Springer. Pp: 21.
5. PAGANO, M. C., M. A. LUGO, F. S. ARAÚJO, M. A. FERRERO, E. MENOYO, D. STEINAKER. 2012. Chapter 1: Native Species for Restoration and Conservation of Biodiversity in South America. In: (L. Marin and D. Kováč Eds.) Native Species: Identification, Conservation and Restoration. NOVA Science Publishers, New York. ISBN: 978-1-61209-226-3, pp. 1-55.
6. LUGO, M. A., A. G. BECERRA, E. R. NOUHRA AND A. C. OCHOA. 2012. Chapter 10: Mycorrhizal diversity in native and exotic willows (*Salix humboldtiana* and *S. alba*) in Argentina. In: Pagano M.C. (Ed.) Mycorrhiza: Occurrence in Natural and Restored Environments. NOVA Science Publishers, Hauppauge, NY. ISBN: 978-1-61209-226-3, pp. 201-222.

Published sequences in: <http://blast.ncbi.nlm.nih.gov/Blast.cgi>:

Puna salto-jujeña Glomeromycota, 2016:

BankIt1864635 ML1-LM2 KT950811; BankIt1864635 ML2-L11a3 KT950812; BankIt1864635 ML3-L11a2 KT950813; BankIt1864635 ML7-L11a1 KT950814; BankIt1864635 ML8-L4 KT950815

POSTGRADUATE COURSES REALIZED (in the last 5 years):

- 1-"Normativa legal vigente en Argentina sobre biodiversidad silvestre, aplicable a la docencia e investigación científica" dictated by Phd. C. Carmarán, Phd. A. Ribichich (University of Buenos Aires) y Mg. Inés Kasulin (National secretary of environment and sustainable development). Exact and Natural Sciences Faculty, University of Buenos Aires. 3-7 August 2015. 25 hs.
- 2-"Nuevas perspectivas en la enseñanza y la evaluación de la Ciencia Naturales" dictated by Phd. A. Revel Chion (University of Buenos Aires) in the Chemistry, biochemistry and Pharmacy faculty, National University of San Luis. 19-22 August 2015.

FOREIGN INTERNSHIPS (in the last 5 years):

- Topic: Mycorrhizas and Micophyllas. Invited as a **Lecture Researcher** for academic and researcher in collaboration with the research group of "Manejo y Conservación de Flora, Fauna y Ecosistemas Estratégicos, MIKU" of the Magdalena University (Santa Marta, Colombia). Period: 4-30 March 2014.
- Topic: Micorrizas. Invited as a **Lecture Researcher** for academic and researcher in collaboration with the research group of "Manejo y Conservación de Flora, Fauna y Ecosistemas Estratégicos, MIKU" of the Magdalena University (Santa Marta, Colombia) (undergraduate and graduate teacher of: "Arbuscular mycorrhizal fungi: diversity, ecology and uses", in the Research group "Manejo y Conservación de Flora, Fauna y Ecosistemas Estratégicos, MIKU". Period: 2-27 July 2019.
- Topic: Project: Ecological characterization of Arbuscular Mycorrhizal Fungi communities as ecosystem indicators for arid and semiarid Argentinean soils. CNR-CONICET. Bilateral Cooperation Programs Level I (PCB I) CONICET-CNR. Destination: UOS Turin of the Institute of Sustainable Plant Protection (IPSP-CNR), Department of Life Sciences and System Biology of the University of Turin (DiBIOS) (Turin, Italia). Period: 7/10-1/11/2019.

PARTICIPATION IN PROJECTS (in the last 5 years):

1. Project: "Ten-Year Plan for Management of Tropical Dry Forest (Bs-T) Nature Reserve of the University of Magdalena, Colombia". Directed by Dr. Mary A. Negritto (Sciences Faculty, Biology Program). University of Magdalena, Colombia. 2011-2021.
2. Project: "Evaluation of bioinoculants composed PGPR and HMA in corn of the Province of Tucuman, in field conditions". Directed by Dra. Marcela A. Ferrero (PROIMI-CONICET, UNT). PIP 112-201201-00470 CO. 2013-2015.
3. Project: Responsible Group Member PICT-E. 2014. STRENGTHENING OF RESOURCES FOR RESEARCH AND INSTITUTIONAL IMBIO-SL. Responsible: Sergio Alvarez (\$ 1,000,000).

DIRECTOR OF RESEARCH PROJECTS (in the last 5 years):

- Interactions between Arbuscular Mycorrhizal Fungi (AMF), Rhizosphere Bacteria (RB) and phosphorus solubilizing (BSP) in the Puna Argentina. PICT-2008-0781 (Resol. Agency Directory N° 343-09 Open Topics-Type D). 2011-2015.
- Diversity and fungal interactions. SECyT (Science and Technology Agency)-UNSL (National University of San Luis, Argentina), PROICO 2-0203 (22/Q040). 2010-2013 (Resol. CS 217/2010).
- Diversity and fungal interactions. SECyT (Science and Technology Agency)-UNSL (National University of San Luis, Argentina), PROICO 2-2214. 2014-2017 (Resol. CS 179/2014).
- Mycology, Diversity and Fungal interactions. SECyT (Science and Technology Agency)-UNSL (National University of San Luis, Argentina), PROICO 02-2718 (22/Q840). 2018-2021 (Resol. CS 126/2018).

LANGUAGES:

- English. Portuguese. Italian.
- Extracurricular English courses (Centre for the Study of Foreign Languages-CELEX-UNSL). Courses Spectrum 3A, 3B, 4A and 4B (levels VII, VIII, IX and X). 2002 and 2003. 240 course hours each. Approved.
- English Course for Science: development of written and oral skills. Second semester 2012. 120 hs. Approved.
- Extracurricular Italian courses (Centre for the Study of Foreign Languages-CELEX-UNSL). Italian Courses A1, A2, and B1. 240 course hours each. Approved. 2016-2019.

MEMBER OF COMMISSIONS (in the last 5 years):

Court of seminars:

Holder evaluator Court Final Work to qualify for the Bachelor of Biological Sciences. FQByF-UNSL

Commissions Monitoring and Evaluation of Final work for Bachelor of Biological Sciences:

1. Head of the Commission for Monitoring and Evaluation of Final Work of Bachelor in Biological Sciences (Resol. Decano FQByF-UNSL 1544-11) to qualify for the Bachelor of Biological Sciences student Andrea Maribel Ray. Thesis title: "Kinetic study, production of photosynthetic pigments and molecular characterization of Nostoc minutum in the presence of Arsenic (V)". CHEMISTRY, BIOCHEMISTRY AND PHARMACY FACULTY, UNSL. December 2011 to December 2012.
2. Head of the Commission for Monitoring and Evaluation of Final Work of Bachelor in Biological Sciences (Resol. Decano FQByF-UNSL 1310-11) to qualify for the Bachelor of Biological Sciences student Sandra Díaz. Thesis title: "Paraheliotropism in leaves of jarilla north-south (Larrea cuneifolia). Effects of water stress and orientation of the leaves". Biochemistry and Biological Sciences Department, CHEMISTRY, BIOCHEMISTRY AND PHARMACY FACULTY, UNSL. November 2011-2013.

Concourse Jury:

Titular member of the jury for the position of Assistant Professor, Assistant First, Associate Professor. Acting bound to AREA OF BIOLOGY, ZOOLOGY, ECOLOGY issues related to Cell, Biology, Biodiversity, Biogeography, Biochemistry and Biological Sciences Departments, Chemistry, Biochemistry and Pharmacy Faculty, UNSL. 2014.

Internship Evaluation Committees:

1. Member of Evaluation Committee of the Internship Teaching. Intern: Prof. Diana A. Giorno. Topic: in vitro cultivation of plants. CHEMISTRY, BIOCHEMISTRY AND PHARMACY FACULTY, UNSL (Resol. Dean 1597-1515). 2015-continues.

EVALUATOR SPECIALIST FOR CONICET, UBA and AGENCY- FONCYT (in the last 5 years):

Topics: Mycology. Stem fungal endophytes. Phenology and habit of macromycetes (Ascomycota and Basidiomycota) in the phytogeographic Yunga. Interaction plant-arbuscular mycorrhizal fungi and dark septate fungi in an extreme environment; their use in sustainable agricultural development and possible application in expanding cultivated areas.
 Evaluator Specialist of: applicants to Entry and to Change of Category to Career of Scientific and Technological Researcher (CONICET); Research projects PICT, National Science and Technology Agency-FONCYT; Research projects, National University of Buenos Aires; Research project PICT YOUNG RESEARCHERS, National Science and Technology Agency-FONCYT, among others.

MANAGEMENT (in the last 5 years):

- 1- ECOLOGY AREA Coordinator, Biochemistry and Biological Sciences Department, FQByF, UNSL. 2017-2019.
- 2- Member headline of the Council of ECOLOGY AREA, Biology Department, FQByF, UNSL. 2019-2021.
- 3- Member of the Council of Biology Department, FQByF, UNSL. 2019-2021.
- 4- Alternate member of Scientific Committee of the Graduate Program in Biochemistry and Biological Sciences, FQByF, UNSL. 2014-2017
- 5- Headline member of Scientific Committee of the Doctoral Program in Biological Sciences, FQByF, UNSL. 2019-2021.