

The "Environmental Microbiology" Group at CIBNOR

Final 2015

(Numbers in parenthesis adjacent a journal's name are the impact factor, 2014)

SUMMARY

- Original publications in peer-reviewed journals with Impact factor	
- Published and "in press" -	7
- Submitted papers -	8
- Publications of chapters in books -	5
- Publication in national journal	1
- Final technical reports for funding agencies	2
- Invited presentations at conferences/seminars	12
- Voluntary presentation at conferences	3
- Active projects	6
- Submitted new projects	5
- Review of manuscripts for international and national journals and funding agencies	70

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- Total productivity (without conferences, reviews, and reports) for 2015: 22

- **Average "Impact Factor" of all published papers in 2015: 2.577**

Published and "in press" publications in peer-reviewed journals having an impact factor: 7

1. Meza, B., de-Bashan, L.E., and Bashan, Y. 2015. Involvement of indole-3-acetic acid produced by *Azospirillum brasilense* in accumulating intracellular ammonium in *Chlorella vulgaris*. **Research in Microbiology 166**: 72-83 (2.705)
2. Meza, B., de-Bashan, L.E., Hernandez, J.-P., and Bashan, Y. 2015. Accumulation of intra-cellular polyphosphate in *Chlorella vulgaris* cells is related to indole-3-acetic acid produced by *Azospirillum brasilense*. **Research in Microbiology 166**: 399-407 (2.705)
3. Leyva, L.A., Bashan Y., and de-Bashan, L.E. 2015. Activity of acetyl-CoA carboxylase is not directly linked to accumulation of lipids when *Chlorella vulgaris* is co-immobilised with *Azospirillum brasilense* in alginate under autotrophic and heterotrophic conditions. **Annals of Microbiology 65**: 339-349 (0.99)
4. Bashan Y., Lopez, B.R., Huss, V.A.R., Amavizca, E. and de-Bashan, L.E. 2015. *Chlorella sorokiniana* (formerly *C. vulgaris*) UTEX 2714, a non-thermotolerant microalgal species useful for biotechnological applications and as a reference strain. **Journal of Applied Phycology** (in press) DOI: 10.1007/s10811-015-0571-z (2.559)

5. Palacios, O.A., Bashan, Y., Schmid, M., Hartmann, A., de-Bashan L. E. 2015. Enhancement of thiamine release during synthetic mutualism between *Chlorella sorokiniana* and *Azospirillum brasilense* growing under stress conditions **Journal of Applied Phycology** (in press) DOI 10.1007/s10811-015-0697-z (2.559)
6. Pereg, L., de-Bashan, L.E., and Bashan, Y. 2015. Assessment of affinity and specificity of *Azospirillum* for plants. **Plant And Soil**, doi: 10.1007/s11104-015-2778-9 (in press)(2.952)
7. Bashan, Y., Kloepper, J.W., de-Bashan, L.E., and Nannipieri, P. 2015. A need for disclosure of the identity of microorganisms, constituents, and application methods when reporting tests with microbe-based or pesticide-based products. **Biology and Fertility of Soils** (accepted)(3.396)

Chapters in books: 5

8. de-Bashan, L.E., Hernandez, J.-P., and Bashan, Y. 2015. Interaction of *Azospirillum* spp. with microalgae; a basic eukaryotic–prokaryotic model and its biotechnological applications. In: **Handbook for *Azospirillum*. Technical issues and protocols**. Cassán F.D., Okon Y., Creus C.M. (Eds). Springer, international publishing, Switzerland, pp. 367-388.
9. Bashan, Y., and de-Bashan, L.E. 2015. Inoculants for *Azospirillum*. In: **Handbook for *Azospirillum*. Technical issues and protocols**. Cassán F.D., Okon Y., Creus C.M. (Eds). Springer, international publishing, Switzerland, pp. 469-485.
10. Perez-Garcia, O., and Bashan, Y. 2015. Microalgal heterotrophic and mixotrophic culturing for bio-refining: From metabolic routes to techno-economics. In: **Algal Biorefineries. Vol. 2: Products and Refinery Design**. Prokop, A., Bajpai, R., Zappi, M. (Eds). Springer International Publishing Switzerland, pp. 61-131.
11. de-Bashan, L. E., and Bashan, Y. 2015. Microorganisms used for recovery of eroded soils and degraded ecosystems in Mexico. [Microorganismos utilizados en la recuperación de suelos erosionados y ecosistemas degradados en México.]. In: **Microbial biodiversity in Mexico [Biodiversidad Microbiana de México]**. (Eds): Álvarez Sánchez J., Rodríguez Guzmán, P. and Alarcón, A. Chapter 24. Published by: Editorial Trillas, Mexico City, Mexico. (In Spanish) (in press)
12. Bashan, Y., de-Bashan, L.E. and Prabhu, S.R. 2015. Superior polymeric formulations and emerging innovative products of bacterial inoculants for sustainable agriculture and the environment. In: **Agriculturally Important Microorganisms: Commercialization and Regulatory Requirements in Asia**. (eds.): Singh H. B., Sarma B. K. and Keswani C. Published by: Springer, Singapore (accepted)

Scientific national reviewed journal

13. López-Cortés, A., de-Bashan, L. E., Bacilo Jiménez, M. and Bashan Y. 2015. La Investigación en Microbiología Ambiental en Baja California: Importancia y Usos. **Recursos Naturales y Sociedad**, Vol. 1 (1): (In press) DOI:10.18846/RENAYSOC.2015.01.01.01.0007

Final technical reports for funding agencies: 2

1. Bashan, Y., Heil, M., Gonzalez de-Bashan, L.E., and Olmedo Alvarez, G. 2015. **Project:** Physiological and genetic mechanisms in the establishment and maintenance of mutualisms of plants with different partners. **Final report**, Project No. CONACYT CIENCIA BASICA 130656. Presented to: The National Science and Technology Council of Mexico (CONACYT) (Mexico), Text: 35 pages and 22 published articles as supporting documents.
2. de-Bashan, L.E. and Yoav Bashan. 2015. **Project:** Asociación microalga- bacterias promotoras de crecimiento vegetal—Efecto de la ficosfera y exudados bacterianos en el establecimiento y mantenimiento de la interacción cuando están inmovilizadas en esferas de alginato. **Final report**, Project No. CONACYT CIENCIA BASICA 164548. Presented to: The National Science and Technology Council of Mexico (CONACYT) (Mexico), Text: 9 pages and 11 published articles, submitted papers 5; and 2 chapters in books as supporting documents.

Submitted publications: 9

Scientific international reviewed journals

1. Palacios, O.A., Choix, F.J., Bashan, Y., de-Bashan, L.E. 2015. Indole-3-acetic acid produced by *Azospirillum* spp. affects activity of the main enzymes of starch metabolism in *Chlorella vulgaris* under heterotrophic conditions. **Research in Microbiology** (2.705)
2. Amavizca, E., Bashan, Y., Ryu, C.-M., Farag, M.A., Bebout, B.M., and de-Bashan, L.E. 2015. Remote effects of the plant growth-promoting bacteria *Azospirillum brasilense* and *Bacillus pumilus* on the microalgae *Chlorella sorokiniana*. **Journal of Applied Phycology** (2.559)
3. Lopez-Lozano, N.E., Carcaño-Montiel, M.G., and Bashan, Y. 2015. Using native trees and cacti to improve soil potential nitrogen fixation during long-term restoration of arid lands. **Plant And Soil** (2.952)
4. de-Bashan L.E., Mayali, X., Bebout, B.M., Weber, P.K., Detweiler, A., Hernandez, J.- P., Prufert-Bebout, L., and Bashan, Y. 2015. Establishment of stable synthetic mutualism without co-evolution between microalgae and bacteria demonstrated by mutual transfer of metabolites (NanoSIMS isotopic imaging) and persistent physical association (Fluorescent in situ hybridization). **Algal Research** (5.014)
5. Palacios, O.A., Gomez-Anduro, G., Bashan, Y., de-Bashan, L.E. 2015. Exudates produced by *Chlorella sorokiniana* induce Indole-3-acetic acid production by *Azospirillum brasilense* during in synthetic mutualism. **Algal Research** (5.014)
6. Vital-López, L., Cruz-Hernández, M.A., Ortiz-Pérez, E.L., de-Bashan, L.E., Segoviano-Ramírez, J.C., Mendoza-Herrera, A. 2015. Conventional and genetically modified maize: rhizobacterial communities and spatial distribution of *Azospirillum brasilense* in their rhizosphere. **Biology and Fertility of Soils** (3.396)

7. Herrera, H., Valadares, R., Contreras, D., Bashan, Y., and Arriagada, C. 2015. Root-endophytic fungi of orchids in the coastal and Andean mountains in central-southern Chile. **Mycorrhiza** (3.459)

Scientific industrial newsletter

8. Bashan, Y., and de-Bashan, L.E. 2015. Present and future in encapsulated formulations for microorganisms in agriculture and the environment. **Bioencapsulation Innovations** (Under review).

Presentations at conferences: 15 (the invitee and the presenter = in bold)

1. Weber, P. K., de-Bashan, L.E., Bashan, Y., Arandia, N., Bebout, B., Pett-Ridge, J., and Mayali, X. 2015. The use of NanoSIMS isotope imaging to investigate algal-bacterial interactions in biofuel-producing communities. In: 2015 DOE Genome Science Grantee Workshop, February 23-25, 2015, Washington DC, USA
2. **de-Bashan, L.E., and Bashan, Y.** 2015. Encapsulation in polymers of microalgae growth-promoting bacteria; a useful technology for wastewater treatment and also as a delivery system for probiotics and vaccines. Seminar of the School of Fisheries, Aquaculture & Aquatic Sciences. March 6, 2015, Auburn University, Alabama, USA (**Shared invited lecture**)
3. **de-Bashan, L.E., and Bashan, Y.** 2015. Uso y aplicaciones de algas inmovilizadas en el tratamiento de aguas contaminadas. Seminar of the Center of Biotechnology, April 1. 2015, University of Concepcion, Chile. (**Invited lecture**)
4. **Bashan, Y., and de-Bashan, L.E.** 2015. Advanced inoculants for plant growth-promoting bacteria aimed for the 21st century Colombian agriculture. Nation-wide seminar of the Colombian Research Institute for Agriculture (CORPOICA), April 16, 2015. Bogota, Colombia (**Key-note lecture**).
5. **Bashan Y.** and de-Bashan L.E. 2015. Inoculant formulations for plant growth-promoting bacteria. 4th Asian PGPR conference. May 3-6, 2015. Hanoi, Vietnam. (**Invited lecture**).
6. **de-Bashan L.E., Amavizca, E., Hernandez, J. P., Lopez, B. R., Palacios, O. and Bashan, Y.** 2015. Interaction of Plant Growth-Promoting Bacteria and microalgae: from basic studies of plant–bacteria interaction to potential biotechnological applications. 4th Asian PGPR conference. May 3-6, 2015. Hanoi, Vietnam. (**Invited lecture+ chairman of a session**).
7. Posada, U. L.F., Villegas-Escobar, V., Álvarez, J.C., Romero T. M., Bashan, Y. and de-Bashan, L. E. 2015. Description of the tomato root colonization by *Bacillus subtilis* EA-CB0575 using fluorescence *in situ* hybridization (FISH) and scanning electron microscope (SEM). In: Rhizosphere 4, 21-25.6.2015, Maastricht, the Netherlands.
8. López-Caraballo, A.A., Detweiler, A., Everroad, C., Bashan, Y., de-Bashan, L. E., Bebout, B. 2015. Evaluation of a new biological system (*Chlorella sorokiniana* – *Azospirillum brasilense*) for

spaceflight experiments. In: NASA-Ames Summer Symposium, August 6, 2015, Ames, California, USA.

9. **Bashan, Y.** and de-Bashan, L.E. 2015. Bacterial inoculants: present and future. In: Seminar at Symbiota Inc., September 16, 2015, Boston, Massachusetts, USA. **(Invited lecture)**.
10. **de-Bashan, L.E.** and **Bashan, Y.** 2015. Plant growth-promoting bacteria for environmental sciences. In: Departmental seminar. Department of entomology and plant pathology, Auburn University, October 5, 2015, Auburn, Alabama, USA **(Shared invited lecture)**.
11. **Bashan, Y.** 2015. Who is an author or co-author of a scientific paper? In: Special seminar, Joined groups of molecular environmental microbiology and biocontrol of pathogens, Auburn University, October 27, 2015, Auburn, Alabama, USA **(Invited lecture)**.
12. **de-Bashan, L.E.** 2015. Search for endophytes in wild plants. In: Special seminar, Joined groups of molecular environmental microbiology and biocontrol of pathogens, Auburn University, November 17, 2015, Auburn, Alabama, USA **(Invited lecture)**.
13. **Bashan, Y.,** and de-Bashan, L.E. 2015. Inoculant formulations are essential for successful inoculation with plant growth-promoting bacteria. In: miCROPe 2015 – Microbe-assisted crop production: opportunities, challenges and needs, 23–25. 11. 2015, Vienna, Austria. **(Key-note lecture and Chairman of the session)**.
14. **de-Bashan, L.E.** and Bashan, Y. 2015. Creation of synthetic mutualism between microalgae and bacteria to understand plant-bacteria interaction. In: Institutional seminar of the Institute of Environmental Biotechnology at Graz University of Technology, 29.11-4.12.2015. Graz, Austria **(Invited lecture)**.
15. **Bashan, Y.,** and de-Bashan, L.E. 2015. Restoration of eroded desert lands with plant growth-promoting bacteria. In: Institutional seminar of the Institute of Environmental Biotechnology at Graz University of Technology, 29.11-4.12.2015. Graz, Austria **(Invited lecture)**.

Domestic outreach and community services

1. **Strategic line of research of CIBNOR.** The use of plant growth-promoting bacteria to solve environmental problems in the desert. (Prof. Yoav Bashan, Dr. Luz de-Bashan, and Dr. Macario Bacilio; Dr. Alejandro Lopez-Cortes) (CIBNOR internal code: P.C. 6.0)

Scientific recognition and international services

2. **Asian PGPR Society of Sustainable Agriculture.** Founder and Secretary (Dr. Luz de-Bashan).
3. **Recognition by scientific social network.** Listed as the most cited researcher from Mexico in August 2015. (According to Research Gate, September 2, 2015; Prof. Yoav Bashan).

4. **Recognition by the home institute.** Recognized as the most published scientist of CIBNOR, La Paz, Mexico in its last 40 years. (October 30, 2015; Prof. Yoav Bashan).
5. **Review of manuscripts for journals, funding agencies and foreign universities: Total: 70**

Reviewer	Journal, University or Funding Agency	Country	Number of manuscripts
Yoav Bashan	Water Research	The Netherlands	3
	Antonie van Leeuwenhoek J. Microbiology	The Netherlands	1
	Applied Energy	The Netherlands	2
	Applied Soil Ecology	The Netherlands	1
	Scientia Horticulturae	The Netherlands	2
	European Journal of Wood and Wood Products	The Netherlands	1
	Plant and Soil	Germany	15
	Biology and Fertility of Soils	Germany	8
	Acta Physiologiae Plantarum	Germany	2
	AMB Express	Germany	1
	Environmental Technology	UK	2
	International Journal of Phytoremediation	UK	2
	PlosOne	USA	1
	Desalinization and Water Treatment	USA	1
	Brazilian Journal of Microbiology	Brazil	1
	Indian Journal of Phytopathology	India	1
	Journal of Zhejiang University	P.R. China	1
	Chinese Academy of Forestry	P.R. China	1
Luz de-Bashan	Biology and Fertility of Soils	Germany	3
	Journal of Applied Phycology	Germany	3
	Plant and Soil	Germany	8
	Chemical and Biological Technologies in Agriculture	Germany	1
	Botany	Canada	1
	Algal Research	The Netherlands	3
	Bioresource Technology	The Netherlands	1
	European Journal of Soil Biology	The Netherlands	2
	Current Biotechnology	USA	1
	Arabian Journal of Chemistry	Saudi-Arabia	1
	Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales	Colombia	1
	CONACYT-Basic science	Mexico	1

External research projects: 6

(total: \$ 8,854,000 pesos) (= US\$ 520,823) (17 Mexican pesos = 1 USD).

“Physiological and genetic mechanisms in the establishment and maintenance of mutualisms of plants with different partners.”

Funding: MN\$4,380,000; Funded by CONACYT (investigacion basica)

Duration: Four years (2011–2015).

PI: Prof. Yoav Bashan
 Co-PI: Dr. Luz E. de-Bashan and Prof. Martin Heil (CINVESTAV, Irapuato)
 Participants: Dr. Gabriela Olmedo, CINVESTAV, Irapuato
 Dr. Blanca Lopez, CIBNOR

"Asociación microalga- bacterias promotoras de crecimiento vegetal—Efecto de la ficosfera y exudados bacterianos en el establecimiento y mantenimiento de la interacción cuando están inmovilizadas en esferas de alginato."

Funding: MN\$650,000; Funded by CONACYT (investigacion basica)

Duration: 3 years (2012–2015)

PI: Dr. Luz de-Bashan

Co-PI: Prof. Yoav Bashan

"Searching for bacteria living in the rhizosphere of native desert plants in the Sonoran Desert that restore soil fertility to degraded land in Baja California".

Funding: MN\$307,000. Funded by UC-Mexus

Duration: 18 months (July 2013–June 2015)

PIs: Dr. Luz de-Bashan (Mexico); Prof. Ann Hirsch (UCLA, USA)

Co-PI: Prof. Yoav Bashan

"Extending shelf life of bacterial inoculant".

Funding: 37,850 US\$. Funded by: Laboratorio Farroupilha. Brazil

Duration: 1.5 year (2014-2015)

PI: Dr. Luz de-Bashan and Prof. Yoav Bashan

Participant: M.Sc. Juan-Pablo Hernandez; Dr. Francisco Choix

"Pilot plant for validation of biotechnological platform of microencapsulation of bio-drugs against viral diseases in aquaculture".

Funding: MN\$ \$2,995,000; Funded by CONACYT (Fondo sectorial de innovación, FINNOVA)

Duration: 2 years (2014–2016)

PI: Dr. Luz de-Bashan

Co-PI: Prof. Yoav Bashan; Dr. Humberto Mejia.

Participants: Dr. Blanca Romero Lopez, MSc. Juan Pablo Hernandez

"Cooperación técnica México-Colombia: Mejoras en los procesos de producción de biofertilizantes aplicados en cultivos de interés agroindustrial en Colombia"

Funding: USD 21,540. Funded by: Agencia Mexicana de Cooperación Internacional para el Desarrollo, Secretaria de Relaciones Exteriores. Agencia Presidencial de Cooperación Internacional de Colombia.

Duration: 2 years (2014-2016).

PI: Prof. Yoav Bashan

Co-PI: Dr. Luz de-Bashan

Submitted projects: 5

"Establishment and functional optimization of natural and synthetic mutualisms". Convocatoria CONACYT Investigación Científica Básica 2015 – Continuación de Proyecto de Grupo Consolidado –

PI: Dr. Yoav Bashan

Co-Pi: Dr. Martin Heil CINVESTAV- Irapuato, Dr. Luz de-Bashan
 Participantes: Dra. Gabriela Olmedo CINVESTAV- Irapuato, Dra. Blanca Lopez CIBNOR, M.Sc Juan Pablo Hernandez CIBNOR.

“Endophytic bacteria of the woolly moss (*Racomitrium lanuginosum*): biogeography, ecology and geomicrobiology”.

Funding agency: Icelandic Research Fund (IRF) 2015

PI: Dr. Oddur Vilhelmsson, University of Akureyri, Iceland

Co-PI: Prof. Yoav Bashan, Dr. Luz E. de-Bashan

“Inoculante microbiano basado en un complejo alga-bacteria para mejorar la calidad de suelos degradados”

Funding agency: CONICYT – Chile, Proyectos Internacionales de Investigacion

PI: Dr. Cristian Agurto – Universidad de Concepcion, Chile

Co-PI: Prof. Yoav Bashan, Dr. Luz E. de-Bashan

“Desarrollo de una formulación inmovilizada a partir de hidrogeles y consorcio alga-bacteria para recuperar suelos degradados y aumentar la retención de agua en áreas agrícolas de baja productividad”

Funding agency: Fundación para la Innovación Agraria, Ministerio de Agricultura, Chile.

PI: Dr. Mauricio Schoebitz, Universidad de Concepcion, Chile

Co-PI: Prof. Yoav Bashan, Dr. Luz E. de-Bashan

“Establishment and function of synthetic mutualism in a microalgae-bacteria association”

Funding agency: National Science Foundation (NSF), USA

PI: Dr. Luz de-Bashan

Co-PI: Prof. Yoav Bashan, Dr. David Blersch Auburn University

Participante: Dr. Blanca Lopez

Personnel in 2015

(SNI-National academic ranking according to the National Research System of Mexico; Candidate<1< 2< 3; H-index and citations according to Google Scholar, January 5, 2016)

Researchers (full time)

1. Dr. Luz Gonzalez de-Bashan (SNI level 2; H-index-31; Citations- 5,002; life-time, average Impact factor_{52 publication}- 3.084)
2. Prof. Yoav Bashan (SNI level 3; H-index-61; Citations- 14,658; last 10 years, average Impact factor_{60 publication}- 3.002)
3. Dr. Macario Bacilio (SNI level 1)

Research Associates (full time)

4. Dr. Blanca Lopez (SNI level 1, H-index-6; Citations- 126)

Research staff (full-time)

5. M.Sc. Juan-Pablo Hernandez (SNI level 1; H-index-17; Citations- 1,310)
6. M.Sc. Manuel Moreno (H-index-10; Citations- 796)
7. M.Sc. Edgar Amavizca (to June 2015)

Graduate students (Research, full time)

1. Dr. Oskar Palacios. **Graduated October 16, 2015.** ([CIBNOR](#)) La Paz, Mexico. (With Prof. Yoav Bashan and Dr. Luz de-Bashan).
2. Cristina Galaviz. **M.Sc. Graduated February 26, 2015** ([CIBNOR](#)), La Paz, Mexico. (With Prof. Yoav Bashan).
3. Edisa Garcia. **M.Sc. Graduated February 27, 2015** ([CIBNOR](#)), La Paz, Mexico (With Prof. Yoav Bashan).
4. Edgar Gonzalez. **B.Sc. Graduated June 12, 2015** ([Universidad del Bosque](#)), Bogota, Colombia (With M.Sc. Juan-Pablo Hernandez)
5. Biol. Paulina Adams. **M.Sc student since 2013.** ([CIBNOR](#)), La Paz, Mexico. (With Dr. Luz de-Bashan).
6. M.Sc. Alejandro Figueroa. **D.Sc. Student, since 2013.** ([CIIDIR-IPN](#)), Guasave, Sinaloa, Mexico (With Dr. Luz de-Bashan).

Webmasters

- M.Sc Juan-Pablo Hernández (Webmaster-in-Chief)
- M.Sc. Edgar Amavizca (assistant webmaster to June 2015)
- M.Sc. Edisa Garcia (assistant webmaster)

International and national collaborations in 2015

(in: [projects, publications and supervising of graduate students](#) in chronological order of cooperation)

1. **Prof. Hani Antoun.** Laval University, Quebec ([Canada](#)). Water Bioremediation. (not active in 2015)
2. **Dr. S.R. Prabhu,** TerraBioGen Technologies. Vancouver ([Canada](#)). Diazotrophic bacteria.
3. **Prof. Anton Hartmann and Dr. Michael Schmid.** German Research Center for Environmental Health, München, ([Germany](#)). FISH and plant-bacteria interactions.
4. **Prof. Martin Heil,** CINVESTAV (Guanajuato, [Mexico](#)). Mutualism between microalgae and bacteria.
5. **Dr. Alberto Mendoza-** CBG-IPN, Reynosa, Tamaulipas ([Mexico](#)). Colonization of *Azospirillum*.
6. **Prof. Gustavo Hernandez-Carmona,** IPN-CICIMAR, La Paz, ([Mexico](#)). Alginate formulations. (not active in 2015)
7. **Prof. Joseph Kloepper, M.Sc. John McInroy and Dr. Ping Huang,** Auburn University, Auburn ([USA](#)). PGPB/PGPR.
8. **Prof. Gabriela Olmedo,** CINVESTAV (Guanajuato, [Mexico](#)). Mutualism between microalgae and bacteria.
9. **Dr. Fabricio Cassan.** University of Rio Cuarto, ([Argentina](#)). Attachment process in plant growth-promoting bacteria.
10. **Dr. Gracia Gomez –** CIBNOR ([Mexico](#)). Genetic manipulation of microalgae.
11. **Prof. Ann Hirsh,** University of California-Los Angeles ([USA](#)). Microorganisms of the desert.
12. **Dr. Choong-Min Ryu.** Korean Institute of Bioscience and Biotechnology, Daejeon, ([Korea](#)). Volatiles in *Azospirillum*.
13. **Dr. S. Y. Park.** Korean Institute of Bioscience and Biotechnology, Daejeon, ([Korea](#)). Molecular biology of desert bacilli. (not active in 2015)

14. **Prof. Rainer Borriss**. Humboldt University ([Germany](#)). Molecular biology of desert bacilli. (not active in 2015)
15. **Dr. Alan Pamella**. Laboratorio Farroupilha. ([Brazil](#)). Improvements of commercial inoculants.
16. **Dr. Cesar Arriagada**. University of la Frontera ([Chile](#)). Endophytic microfungi.
17. **Dr. Lily Pereg**. University of New England, ([Australia](#)). Specificity and affinity of *Azospirillum* for plants.
18. **Dr. Valeska Villegas Escobar**. Universidad EAFIT, Medellín ([Colombia](#)). Detection of *Bacillus subtilis* by FISH.
19. **Dr. Brad Bebout**. NASA-Ames, California ([USA](#)). Interactions among microalgae and bacteria.
20. **Dr. Xavier Myali**. Lawrence Livermore National Laboratory, California ([USA](#)). Study of microalgae-bacteria interaction using nanoSIMS.
21. **Dr. Peter Weber**. Lawrence Livermore National Laboratory, California ([USA](#)). Study of microalgae-bacteria interaction using nanoSIMS.
22. **Dr. Octavio Perez-Garcia**. University of Auckland, ([New Zealand](#)). Heterotrophic and Mixotrophic growth of microalgae; metabolic modeling
23. **Dr. Volker Huss**. University of Erlangen-Nürnberg ([Germany](#)). Systematics of *Chlorella*.
24. **Dr. Cristian Agurto**. University of Concepcion. ([Chile](#)). Biotechnology of microalgae.
25. **Eng. Jorge Farias**. ([Chile](#)) University of Concepcion. Biotechnology of microalgae.
26. **Prof. Roberto Riquelme** ([Chile](#)) University of Concepcion. Modeling of microalgae growth.
27. **Dr. Mauricio Schoebitz** ([Chile](#)) University of Concepcion. Restoration of forests.
28. **Dr. Ruth Bonilla**, CORPOICA ([Colombia](#)). Improvement of bacterial inoculants.
29. **Dr. Oddur Vilhelmsson** ([Iceland](#)) University of Akureyri. Endophytes from extreme environments.
30. **Dr. David Blerch** ([USA](#)) Auburn University. Mutualism microalgae-bacteria
31. **Prof. Gabriele Berg**, ([Austria](#)). Technical University of Graz. Endophytic bacteria.(new)
32. **Dr. Henri Müller** , ([Austria](#)). Technical University of Graz. Formulations for inoculants. (new)
33. **Dr. Armin Erlacher**, ([Austria](#)). Technical University of Graz. FISH and 3D modeling.(new)