LUZ-ESTELA GONZALEZ DE-BASHAN

CURRICULUM VITAE

(January 1, 2012)

Professional preparation:

Undergraduate institution			
Department of Biology, Pontificia Universidad Javeriana, Bogota, Colombia.	Biology, B.Sc.		1990
Graduate institutions			
- Department of Biology, National University of Colombia, Bogota, Colombia Systematics of microalgae,	M.Sc.		1995
- Department of Soils and Food Engineering, Laval University, Quebec City, Quebec, Canada	Microbiology,	Ph.D.	2006
Postdoctoral Institute			
Department of Water, Soil and Environmental Science The University of Arizona, Tucson, USA	Phytoremediation,	April 2007-Aug	2008

Positions:

2003 – present. **Scientist-in-Residence**; The Bashan foundation, Corvallis, Oregon, USA. **Main position.**

2011 – **Assistant Professor,** Environmental Microbiology Group, The Northwestern Center for Biological Research (a Federal Government Research Institute), La Paz, BCS, Mexico (*With tenure*), **Main position.**

2000 – 2010. **Research Scientist**, Environmental Microbiology Group, The Northwestern Center for Biological Research (a Federal Government Research Institute), La Paz, BCS, Mexico (*With tenure*).

2000 – Present. **Honorific Professor-Researcher**. Department of Biology, Faculty of Science, Pontificia Universidad Javeriana, Bogota Colombia.

1994-2000. **Assistant Professor-Researcher**. Department of Biology, Faculty of Science, Pontificia Universidad Javeriana, Bogota Colombia.

1995- 2000. **Coordinator** of the Program of Sanitation and Environmental Biotechnology. Faculty of Science, Pontificia Universidad Javeriana, Bogota Colombia.

Main research field:

1994-Present- Use of microalgae and bacteria for environmental bioremediation mainly wastewater treatment and bioremediation of water and eroded soils.

Honors and awards:

1. 2011- Invited to serve as member of the Steering Committee of The Bioencapsulation Research Group. An international scientific organization (over 9000 members) with headquarters in Nantes, France.
2. 2008- 2010. Nominated as a sponsored, foreign member to the New York Academy of Sciences.
3. 2007 - Evaluator of the international award in Applied Microbiology “Elizabeth Grose” that was presented at the 6th Simposio Latinoamercano de Biodeterioro y Biodegradation. Bogota, Colombia, April 30, 2007
4. 2006 - Ph.D. Graduation with High Distinction (Thesis defense evaluation, “A+”, 97/100; average Ph.D. studies, “A+”) at Laval University, Quebec, Canada.

5. 2005-2011. Ad-hoc reviewer for scientific peer-reviewed journals: **76** manuscripts (to December 20, 2011) for 24 journals. Editorial board member of one journal.
6. 2002-2013 (four times). Selected as member of the Sistema Nacional de Investigadores (SNI), Mexico (National Researcher level 1)
7. 2005 - National recognition of project. The Project “Bioremediation of wastewater” was recognized by the Ministry of Ecology of Mexico as exemplary, and was selected as a “success case” of applied research to be presented to the President of Mexico (5.8.2005).
8. 2005. Recognized by the “Sistema Nacional de Investigadores” (National Research System, SNI), Mexico as a scientist with high quality and high impact publications.
9. 2004 - A top download article. The paper on removing of phosphorus from wastewater (Water Research 38: 4222-4246) originated from the project “Bioremediation of wastewater” reached the first place in number of worldwide downloads in the “Top 25 articles” of the high impact journal “Water Research”. (ScienceDirect.com; October-December, 2004)
10. 2001 – 2004. Received 3 merit scholarships (annually), as a foreign student, from the Provincial Government of Quebec, Canada to conduct Ph.D. studies.
11. 2000 - Received the title “Honorific Professor-Researcher”, from the Department of Biology, Faculty of Science, Pontificia Universidad Javeriana, Bogota Colombia, allowing regular academic and research activities within the university from abroad without a salary.
12. 1999 - My Research group (two researchers, one technician and three students) was selected as Category “B” (from 6 possible categories) by the national evaluation of research groups of COLCIENCIAS, Colombia (National Science Foundation of Colombia), based on productivity and quality of the research.

SCIENTIFIC PRODUCTIVITY:

- Original publications in peer-reviewed, scientific journals (ISI-listed with an impact factor)	
Published and "in press" -	36
Submitted papers -	2
- Publication of a scientific book	1
- Publications of chapters in books -	26
- Publications in languages other than English and popular scientific publications	17
- Publications in websites (scientific)	3
- Total number of scientific papers - (published, "in press" and submitted)	85

Others:

- Theses (B.Sc., M.Sc., Ph.D.)	3
- Technical reports for funding agencies	2
- Presentations in scientific conferences	77

PUBLICATIONS:

Peer-reviewed journal	No. Publications	Impact factor*
Water Research	5	1.611 - 4.546
Canadian Journal of Microbiology	4	1.071 - 1.118
Journal of Phycology	4	2.239 - 2.811
Applied and Environmental Microbiology	3	3.389 – 3.801
Bioresource Technology	3	0.417 - 4.453
Environmental and Experimental Botany	2	2.699
Applied Microbiology and Biotechnology	2	1.641 – 3.28
Advances in Agronomy	1	3.64
Applied Soil Ecology	1	2.399
Biology and Fertility of Soils	1	2.156
Enzyme and Microbial Technology	1	1.897
European Journal of Plant Pathology	1	1.475
European Journal of Soil Biology	1	1.247
FEMS Microbiology Ecology	1	2.787
Microbial Ecology	1	2.875
Natural Areas Journal	1	0.452
Naturwissenschaften	1	2.021
Plant Biology	1	1.352
Science of the Total Environment	1	2.359
Soil Biology & Biochemistry	1	2.414

*Range of impact factor (Journal Citation Reports®, Thomson Reuters) at the time of publication

Accumulative impact of all papers in refereed journals: 84.862

Average "Impact Factor" of refereed papers: 2.357
Citations in peer-reviewed Journals and books (to December 2009): 413

Citations: 2000-2009 - 413 citations in international journals and books.
Invited lectures in scientific, national and international conferences: **28** (to December 2011)
Editorial board member: Wildflower, 2001-2004 (Canada).
Referee of international journals and funding agencies: Total: 76 manuscripts (24 journals).

Grants: (Not included grants and salaries assigned by the Mexican Federal Government):
1,128,000 U$S.

Advisor (director) of graduate student's theses- 15
Diploma; and M.Sc., 9 completed until December 2011.
Graduate students in process: 6 (M.Sc. and Doctorate)

Supervision of visiting researchers from other countries: 10

Cooperation with commercial companies: 2

Peer reviewed publications (last 5 years, impact factor in parenthesis)**:**

1. Covarrubias, S.A., **de-Bashan, L.E**., Moreno, M., and Bashan, Y. 2012. Alginate beads provide a beneficial physical barrier against native microorganisms in wastewater treated with immobilized bacteria and microalgae. **Applied Microbiology and Biotechnology (**3.28**)**(in press)
2. **de-Bashan, L.E**., Hernandez, J.-P., and Bashan, Y., 2012. The potential contribution of plant growth-promoting bacteria to reduce environmental degradation-a comprehensive evaluation. **Applied Soil Ecology**. (2.399)(in press)
3. Trejo, A., **de-Bashan, L.E**., Hartmann, A., Hernandez, J.-P., Rothballer, M., Schmid, M., and Bashan Y. 2012. Recycling waste debris of immobilized microalgae and plant growth-promoting bacteria from wastewater treatment as a resource to improve fertility of eroded desert soil. **Environmental and Experimental Botany** (in press) doi:10.1016/j.envexpbot.2011.08.007 (2.699)
4. **de-Bashan, L.E.,** Schmid, M., Rothballer, M., Hartmann, A., and Bashan Y., 2011. Cell-cell interaction in the eukaryote-prokaryote model using the microalgae *Chlorella vulgaris* and the bacterium *Azospirillum brasilense* immobilized in polymer beads. **Journal of Phycology 47:**1350-1359 (2.239)
5. Bashan Y., Trejo, A., and **de-Bashan, L.E.** 2011. Development of two culture media for mass cultivation of *Azospirillum* spp. and for production of inoculants to enhance plant growth. **Biology and Fertility of Soils 47:** 963-969 (2.156)
6. Perez-Garcia, O., Escalante, F.M.E., **de-Bashan L.E**., and Bashan, Y. 2011. Heterotrophic cultures of microalgae: Metabolism and potential products**. Water Research 45:** 11-36 (4.355)
7. Perez-Garcia, O., **de-Bashan, L.E.,** Hernandez, J.-P., and Bashan, Y. 2010. Efficiency of growth and nutrient uptake from wastewater by heterotrophic, autotrophic, and mixotrophic cultivation of *Chlorella vulgaris* immobilized with *Azospirillum brasilense*. **Journal of Phycology** 46: 800-812 (2.270)
8. Bashan, Y., and **de-Bashan, L.E**. 2010. How the plant growth-promoting bacterium *Azospirillum* promotes plant growth – a critical assessment. **Advances in Agronomy 108:** 77-136 (3.8).
9. **de-Bashan, L. E.,** Hernandez, J.-P., Nelson, K.N., Bashan, Y., and Maier, R. M. 2010. Growth of quailbush in acidic, metalliferous desert mine tailings: effect of *Azospirillum brasilense* Sp6 on biomass production and rhizosphere community structure. **Microbial Ecology** 60: 915-927.
10. **de-Bashan, L.E**., Hernandez, J.-P., Bashan, Y., and Maier, R. M. 2010. *Bacillus pumilus* ES4*:* Candidate plant growth-promoting bacterium to enhance establishment of plants in mine tailings. **Environmental and Experimental Botany 69:** 343–352 (3.164)
11. **de-Bashan, L.E**., and Bashan, Y. 2010. Immobilized microalgae for removing pollutants: Review of practical aspects. **Bioresource Technology 101:** 1611–1627 (4.253)
12. Hernandez, J.-P., **de-Bashan, L.E.,** Rodriguez, D.J., Rodriguez, Y., and Bashan, Y. 2009. Growth promotion of the freshwater microalga *Chlorella vulgaris* by the nitrogen-fixing, plant growth-promoting bacterium *Bacillus pumilus* from arid zone soils. **European Journal of Soil Biology 45**: 88-93 (1.247)
13. **de-Bashan L.E**., Trejo A., Huss V.A.R., Hernandez J.-P. and Bashan, Y. 2008. *Chlorella sorokiniana* UTEX 2805, a heat and intense, sunlight-tolerant microalga with potential for removing ammonium from wastewater. **Bioresource Technology** 99: 4980-4989 (4.453).
14. **de-Bashan, L.E**., Antoun, H., and Bashan Y. 2008. Involvement of indole-3-acetic-acid produced by the growth-promoting bacterium *Azospirillum* spp*.* in promoting growth of *Chlorella vulgaris*. **Journal of Phycology 44**: 938–947 (2.811)

15. **de-Bashan, L.E.,** Magallon, P., Antoun, H, and Bashan, Y. 2008. Role of glutamate dehydrogenase and glutamine synthetase in *Chlorella vulgaris* during assimilation of ammonium when jointly immobilized with the microalgae-growth-promoting bacterium *Azospirillum brasilense*. **Journal of Phycology** 44: 1188–1196 (2.811)
16. **de-Bashan, L.E**., and Bashan Y. 2008. Joint immobilization of plant growth-promoting bacteria and green microalgae in alginate beads as an experimental model for studying plant-bacterium interactions. **Applied and Environmental Microbiology 74:** 6797–6802 (3.801).
17. Hernandez, J.-P., **de-Bashan, L.E.** and Bashan Y. 2006. Starvation enhances phosphorus removal from wastewater by the microalga *Chlorella* spp. co-immobilized with *Azospirillum brasilense.* **Enzyme and Microbial Technology** 38: 190-198 (1.897)
18. Holguin, G., Gonzalez-Zamorano P., **de-Bashan L.E**., Mendoza, R., Amador E. and Bashan, Y. 2006. Biological and physicochemical indicators in healthy arid mangroves facing urban development encroachment to establish 'natural' baselines for management - a case study. **Science of the Total Environment 363:** 260-274 (2.359)
19. Bashan, Y., Vierheilig, H., Salazar, B., and **de-Bashan, L.E.** 2006. Primary colonization and breakdown of volcanic rocks by the endemic elephant tree (*Pachycormus discolor*) of Baja California deserts. **Naturwissenschaften 93**: 344–347 (2.021)