

Annette BERARD

Doctorate in Hydrobiology
Microbial Ecology (water and soil)
Microbial Ecotoxicology
ICPEF (expert)

Born: 24/01/64 at Saint Maurice (94) France
Children: 3

Present position: UMR INRAE/AU 1114 EMMAH – SWIFT team
Mediterranean Environment and Modelling of AgroHydrosystems
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QUALIFICATIONS

- 2002 HDR, Accreditation to supervise research** in life sciences, Avignon University
- 1993 PhD**, in Hydrobiology at the Paris Natural History Museum. Thesis: *Effects of high organic nitrogen fertilizers on trophic interactions (bacteria, phytoplankton, zooplankton) in a fish-farming pond*. Grade - Highly Commended.
- 1989 Engineer qualification in Agronomy** from the Ecole Nationale Supérieure des Sciences Agronomiques Appliquées (Dijon, France).
- 1988 Engineer qualification in Agronomy** from the Ecole Nationale Supérieure des Sciences Agronomiques

DISTINCTIONS

Silver Medal - Académie de l'Agriculture de France

PROFESSIONAL EXPERIENCE

- Since 2007 INRAE** research supervisor senior at Avignon, topic: **Soil microbial communities in the context of** climatic changes, impact of heat wave/drought episodes - interactions with plants through rhizosphere and agricultural practices. Microbial ecotoxicology in soil ecosystems.
- Since 2018** Contribution to Studies/Expertise for DEPE-INRAE (Study AE2050, ESCo PestiEcotox)
- 2012-2016** Sustainable Development Officer INRA Provence-Alpes-Côte d'Azur
- 2066-2007** Research supervisor senior at Cemagref (IRSTEA-Lyon), topic: River biofilms and ecotoxicology. Development of microbial bioindicators.
- 2003-2006** National and European expert in ecotoxicology for the "Commission d'étude de la toxicité des produits antiparasitaires à usage agricole" (French Ministry of Agriculture)
- 1994-2001** Scientist at the Dynamics and Evolution of Algal Communities Laboratory of the INRA of Thonon (UMR CARTELL INRA-University of Chambéry), leader of the Algal Ecotoxicology team. Development of biological indices of the contamination of aquatic and soil ecosystems (PICT method, and soil algae).
- 1990-1993** Doctoral student at the Cemagref microbial ecology laboratory (IRSTEA) in Lyon. Microbial ecology.

SCIENTIFIC MANAGEMENT and SUPERVISORY POSITIONS

- Co-animation of the SWIFT team (Soil, Water, Interaction & transFert Team) of the UMR EMMAH

- Selection and recruitment of scientists in the Institute INRAE
- Reviewing national and international research projects
- Reviewing of manuscript in 20 different scientific reviews
- PhD thesis committees
- Supervisory of technician, engineer, Master, PhD students and Post-Doctoral young scientists.

RESEARCH CONTRACTS

- 2019 Project TERSYS :** Exopolysaccharides in rhizospheric soils, how to extract and characterize them?
- 2017-2018 Project INRAE-EA inter unités : SALSA -** Agroforestry Systems and their Sub-Arboreal Linear - levers of interactions between plant and subterranean biodiversity for the sharing of resources under hydric constraint. Coord : UMR ECO&Sol
- 2016-2018 Project EcoSerV 2 :** Physical and biological interactions in the rhizosphere: a role to play in regulating soil water storage and supply? Application to drought tolerance of microflora and plants. Collaboration with UMR GDEC 1095.
- 2010-2014 European Project EURoot :** Enhancing resource Uptake from Roots under stress in cereal crops. FP7-KBBE-2011-5. KBBE.2011.1.2-05: Root signalling, growth and development under abiotic stress conditions. Coord : Dr. Emmanuel Guiderdoni.
- 2012-2016 Project ANR AZODURE** Inoculation of cereal seeds with a natural strain of Azospirillum for sustainable and resilient agriculture, coordinated by Laurent Legendre (Univ. Lyon1) - programme AGROBIOSPHERE
- 2013 Project INRAE-SPE COMIPHO:** Microbial PHOtotrophs (cyanobacteria and microalgae) in agricultural soils as bioindicators of herbicide exposure and impact.

RECENT and RELEVANT SCIENTIFIC PUBLICATIONS (H Index = 23)

- De Oliveira A.B., Cantarel A.A.M., Seiller M., Florio A., **Bérard A.**, Hinsinger P., Le Cadre E., 2020. Short-term plant legacy alters the resistance and resilience of soil microbial communities exposed to heat disturbance in a Mediterranean calcareous soil. *Ecological Indicators* 108 - 105740.
- Florio A, Brefort C, Gervais J, **Bérard A.**, Le Roux X, 2019. The responses of NO₂⁻ and N₂O- reducing bacteria to maize inoculation by the PGPR *Azospirillum lipoferum* CRT1 depend on carbon availability and determine soil gross and net N₂O production. *Soil Biology and Biochemistry* in press.
- Crouzet O., Consentino L., Petraud J.P., Marraud C., Aguer J.P., Bureau S., Le Bourvellec C., Touloumet L., **Bérard A.**, 2019. Microalgae mediated soil aggregation in agricultural temperate soils: Influence of cropping systems and an herbicide. *Frontiers in Microbiology* doi: 10.3389/fmicb.2019.01319.
- Florio A, Pommier T, Gervais J, **Bérard A.**, Le Roux X, 2017. Maize inoculation by the plant growth promoter *Azospirillum lipoferum* influences N-cycling microbial communities depending on soil C and N statuses. *Scientific Reports*. 7: 8411 | DOI:10.1038/s41598-017-08589-4
- Erel R, **Bérard A.**, Capowiez L, Doussan C, Arnal D, Souche G, Gavaland A, Fritz C, Visser E.J.W., Salvi S, Le Marie C, Hund A, Hinsinger P., 2017. Soil type determines how root and rhizosphere traits relate to phosphorus acquisition in field-grown maize genotypes. *Plant & Soil* 412: 1-2. DOI 10.1007/s11104-016-3127-3-
- Bulot A., Potard K., Bureau F., **Bérard A.**, Dutoit T, 2016. Ecological restoration by soil transfer: impacts on restored soil profiles and topsoil functions. *Restoration Ecology*. DOI: 10.1111/rec.12424.
- Bérard A.** Capowiez L., Mombo S., Schreck E., Dumat C., Deola F., Capowiez Y., 2016. [Soil microbial respiration and PICT responses to an industrial and historic lead pollution: a field study.](#) *Environmental Science and Pollution Research* 23:4271-5089 - DOI 10.1007/s11356-015-5089-z
- Bérard A.**, Ben Sassi M, Kaisermann A, Renault P, 2015. Soil microbial community responses to heat wave components: drought and high temperature (review). *Climate Research*. 66: 243-264.
- Tlili A, **Bérard A.**, Blanck H, Bouchez A, Cassio F, Eriksson Km, Morin S, Montuelle B, Navarro E, Pascoal C, Pesce S, Schmitt-Jansen M, Behra R, 2015, Pollution-induced community tolerance (PICT): towards an ecologically relevant risk assessment of chemicals in aquatic systems, *Freshwater Biol.* online: 8 APR 2015. <http://dx.doi.org/10.1111/fwb.12558>
- Bérard A.**, Mazzia C., Sappin-Didier V., Capowiez L., Capowiez Y., 2014. Use of the MicroResp™ method to assess Pollution-Induced Community Tolerance in the context of metal soil contamination. *Ecological Indicators* 40: 27-33.
- Ben Sassi M., Dolinger J., Renault P., Tlili A., **Bérard A.**, 2012. The FungiResp method. an application of the MicroResp™ method to assess fungi in microbial communities as soil biological indicators. *Ecol. Ind.* 23 : 482-490.
- Bérard A.**, M. Ben Sassi, P. Renault, R. Gros, 2012. Severe drought-induced community tolerance to heat wave. An experimental study on soil microbial processes. *Journal of Soils and Sediments*. DOI 10.1007/s11368-012-0469-1

- Bérard A.**, T. Bouchet, G. Sévenier, A.L. Pablo, R. Gros, 2011. Resilience of soil microbial communities impacted by severe drought and high temperature in the context of Mediterranean heat-waves. In press : *European Journal of Soil Biology*. 47 : 333-342. doi:10.1016/j.ejsobi.2011.08.004
- Tlili A., Marechal M., Montuelle B Volat B., Dorigo U., **Bérard A.**, 2011. Use of the Microresp™ method to assess Pollution-Induced Community Tolerance for lotic biofilms *Environmental Pollution*. 159-1: 18-24.
- Berard A.**, C. Leboulanger & T. Pelte, 1999. Tolerance of *Oscillatoria limnetica* Lemmermann to atrazine in natural phytoplankton populations and in pure culture : Influence of Season and Temperature. *Arch. Environm. Contam. Toxicol.* 37-4 : 472-479
- Berard A.**, T. Pelte & J.C. Druart, 1999. Seasonal variations in the sensitivity of Lake Geneva phytoplankton community structure to atrazine. *Arch. Hydrobiol.* 145-3: 277-295.