

1. Personal information

Family name, first name: Frossard Emmanuel
Researcher unique identifiers: Google scholar Emmanuel Frossard ETH
<https://scholar.google.ch/citations?user=EM56MhUAAAAJ&hl=de>
Date of birth: 09.08.1960
Nationality: Swiss and French
Web site: www.plantnutrition.ethz.ch



2. Education

1983 Ingénieur Agronome (MSc in agricultural sciences) Ecole Nationale Supérieure d'Agronomie et des Industries Alimentaires, Institut National Polytechnique de Lorraine (F)
1985 PhD agricultural sciences (soil science), Institut National Polytechnique de Lorraine (F)

3. Employment history including current position

1985-1987 Postdoctoral fellow at the Saskatchewan Institute of Pedology, University of Saskatchewan, Canada
1988-1994 Lecturer, Group of Crop Sciences, Ecole Nationale Supérieure d'Agronomie et des Industries Alimentaires, Nancy, France
1994-2000 Associate Professor and Head of the Group of Plant Nutrition, Institute of Plant Sciences, Department of Agronomy and Food Science, ETH Zurich
2000- now Full Professor and Head of the Group of Plant Nutrition, Institute of Agricultural Sciences, Department of Environmental Systems Science, ETH Zurich
January-June 2013 Sabbatical stay in the group of BioGeoChemistry of Prof. PM Vitousek, Stanford University (USA)
February-July 2020 Sabbatical stay in the research unit "recycling and risk" of CIRAD, La Réunion (F)

4. Institutional responsibilities

April 1998 - March 1999 Head of the Institute of Plant Sciences, ETH Zurich
October 2006 - July 2008 Head of the Department of Agronomy and Food Science, ETH Zurich
October 2006 - July 2008 Delegate for the Study Program in Agricultural Sciences, ETH Zurich
April 2009 - February 2010 Head of the Institute of Plant Sciences, ETH Zurich
February 2014 - January 2015 Head of the Institute of Agricultural Sciences, ETH Zurich
Since 2017 Member of the Strategic Planning Committee of the Department of Environmental Systems Science, ETH Zurich

5. Publication record

Total peer-reviewed articles: 267; peer-reviewed articles listed in the Web Of Science Core Collection: 258; sum of times cited in the Web Of Science 8965; h factor 52; peer-reviewed books: 4; peer-reviewed chapters: 24.

6. Research projects (ongoing or granted recently)

2017 Impacts of N/P inputs on organic P dynamics and P status in soils and plants along a nutrient gradient, funded by SNF within the frame of the SPP 1685 of the DGF (E Frossard PI).
2017 Biophysical, institutional and economic drivers of sustainable soil use in yam systems for improved food security in West Africa (YAMSYS, phase 2), funded by the R4D program of SNF/SDC (E Frossard PI).
2018 Study of plants culture on substrate of urine origin: Roots zone focus, funded by MeLISSA foundation (European Space Agency) (E Frossard coPI, A Oberson PI).
2019 Biochar as a soil amendment for sustainable yam systems in West Africa, funded by an Engineering for Development (E4D) doctoral scholarship of ETH (E Frossard PI).
2019 Delivering wheat (*Triticum aestivum*) with high zinc and low cadmium content for human nutrition through the addition of organic matter of agricultural origin and improved use of soil zinc, funded by the ETH research commission (E Frossard PI).
2020 New bio-based fertilisers from organic waste upcycling (FertiCycle), funded by H2020-MSCA-ITN-2019 (Marie Skłodowska-Curie Innovative Training Networks) (E Frossard coPI, A Oberson PI).
2020 Chemical compost, funded by an innocheck from innosuisse

7. Supervision of researchers at graduate and postgraduate level since 1994 (and their current position between parentheses when known)

Main supervisor of the following postdocs or senior scientists: Aciksöz SB (greenhouse manager, Green City Solutions GmbH, Berlin), Albrecht A (modeller, ANDRA, Paris), Bünemann EK (senior scientist, FiBL, Frick), Gaume A (head of research department crop protection, agroscope, Switzerland), Gamper H (lecturer, free university of Bolzano), Jansa J (senior scientist, The Czech Academy of Sciences), Jemo M (biotechnologist, OCP Africa), Kiba ID (maître de recherches, INERA, Burkina Faso), McLaren T (senior scientist in the group of plant nutrition ETH), Loup J, Mezaros E, Nanzer S (coordinator of the Eschikon plant research station of ETH Zurich), Oberson A (senior scientist in the group of plant nutrition ETH), Pistocchi C (associate professor, supagro, Montpellier), Sinaj S (head of plant nutrition at agroscope), Tamburini F (senior scientist in the group of plant nutrition ETH), Wiggerhauser M (postdoc fellow in the group of plant nutrition ETH), Yan BF (postdoc fellow, Sun Yat-Sen University, Guangzhou)

Main examiner of the following doctoral students Alvarez Salas MA (currently doing his PhD), Annaheim K, Bachelder J (currently doing her PhD), Bosshard C (cantonal office of the environment, St Gallen), Bühler S (head of pesticide registration for Switzerland, Syngenta Crop Protection), Bünemann EK (senior scientist, FiBL, Frick), Centofanti T (environmental scientist and project manager at alchemia-nova, Austria), Costerousse B, Daellenbach G (farmer, Switzerland), Defigueiredo Bongiovani P (currently doing her PhD), Demaria P (conference organizer), Diesing WE, Douxchamps S (forage program, CIAT, Vietnam), Dürr-Auster T (soil protection, canton of Fribourg), Ehlers K (rural development, agriculture and international soil protection, Umweltbundesamt, Germany), Fetzer J (currently doing her PhD), Frick H (currently doing her PhD), Gallet-Budynek A (ingénieure d'étude INRAe), Gaume A (head of research department crop protection, agroscope), Genenger M, Hammelehle A, Heim A, Helfenstein J (postdoc fellow at agroscope), Huguenin-Elie O (scientist agroscope), Jansa J (senior scientist, The Czech Academy of Sciences), Jarosch K (scientist at agroscope), Kulak M (sustainable investing analyst, Robeco, Zurich), Liebisch F (head of group water protection and substance flow, agroscope), Louw-Gaume AE, Mathimaran N (principal scientist, MS Swaminathan Research Foundation, Puducherry Area, India), Meller S, Nanzer S (coordinator of the Eschikon plant research station of ETH Zurich), Ndungu S (consultant IITA, Kenya), Nyfeler D (agriculture adviser, Arenenberg), Oehl F (scientist agroscope), Pfahler V, Ragot S, Ramoneda i Massagué J (post doc fellow at EAWAG), Reuss J (currently doing her PhD), Richter AK, Richter M, Schärer M (section head of swiss federal office of the environment), Schmautz Z (scientist at ZHAW, Wädenswil), Schneider M (scientist at agroscope), Schwer C, Senanayake RL (scientist department of agriculture, Sri Lanka), Shrestha J, Siegenthaler M (currently doing her PhD), Stevenel P (post doc fellow at FiBL Lausanne), Ström H (currently doing her PhD), Theis D, Thonar C (senior scientist, université de Liège), Traoré O (chef de la division de la promotion des filières agricoles, Union Economique et Monétaire Ouest Africaine), Ulrich AE, Vogt M (currently doing her PhD), von Sperber C (assistant professor, McGill university, Montreal), Vu MQ, Welc M (postdoc fellow, Swedish agricultural university, Uppsala), Wiggerhauser M (postdoc fellow in the group of plant nutrition ETH), Zemek O, Zimmermann P (co-founder and CEO at NEBION)

I was also supervisor for the following PhD students registered in universities of developing countries: LN Diby, Côte d'Ivoire, VK Hgaza, Côte d'Ivoire (Maitre assistant, université de Korhogo), L Ilboudo, Burkina Faso (currently doing her PhD), ID Kiba, Burkina Faso (Maître de recherches, INERA), N Pouya, Côte d'Ivoire (currently doing his PhD), L Randriamanantsoa Madagascar, AY Traoré, Burkina Faso (Chargé de recherche at INERA).

8. Teaching activities (summary information)

Current teaching activities include: introduction to plant nutrition (3rd semester), integrated nutrient management (6th semester with A Oberson), coordination and implementation of the interdisciplinary project work (8th semester), agriculture and water quality (8th semester with C Stamm, and H Singer), the chemical nature of nutrients and their availability to plants: the case of phosphorus (7th semester with T McLaren), current aspects of nutrient cycle in agroecosystems (7th Semester with A Oberson), and the soil science seminar (with R. Kretzschmar, D. Or, and J. Six). Beside this I am responsible for 3 excursions (one in the 2nd and two in the 4th semester) and contributes to other classes and excursions.

Responsible for students' exchange for the agricultural sciences curriculum since 2000

Member of the commission for the admission of students at the MSc level in agricultural sciences

Member of the teaching commission for agricultural sciences since 2018

Member of the board of the Hochstrasser foundation for delivering grants to students doing their BSc, MSc or internship abroad since 2011

As invited honorary professor at the department of crop sciences of the University of Peradeniya (Sri Lanka) I also hold a few lectures at this university since 2020 where I co supervise BSc and MSc students.

9. Memberships in panels, boards, etc., and individual scientific reviewing activities

Member of 15 professor-recruiting committees at ETH since 1994 (animal physiology, animal genetics, crop science,

Full curriculum vitae E. Frossard, ETH Zurich, March 2020

environmental physics, food biochemistry, food material science, grassland science, nutrition and chronic diseases, plant molecular breeding, physics of soils and terrestrial ecosystems, public nutrition and health, soil chemistry, soil physics, soil resources, sustainable agroecosystems).

Member of the advisory board of the Agroscope Reckenholz-Tänikon from 1996 to 2011

Member of the editorial board of the journal “agronomie” from 1997 until 2002

Member of the editorial board of the journal “nutrient cycling in agroecosystems” from 2000 until 2002

Swiss Coordinator of the European COST action 832 (Understanding the Role of Agriculture in Water Eutrophication) between 1997 and 2003

Member of the advisory board of the Hochstrasser foundation since 2002

Member of the evaluation committee of INRA scientists (Institut National de la Recherche Agronomique in the commission water, soil, and atmosphere) from 1999 to 2003 and of two INRA research groups (plant nutrition in Bordeaux in 2001, soil and environment in Nancy in 2001)

Chairperson of the Division 4 of the International Union of Soil Sciences between 2002 and 2006 (the Role of Soils in Sustaining the Society and the Environment)

Member of the Swiss Federal Commission for Biological Security from 2003 to 2007

Member of the board of the Swiss Society of Agronomists and Food Scientists (SVIAL) from 2004 to 2014

Member of the evaluation panel of the faculty of agriculture and forestry of the university of Helsinki (November 2005)

Member of the editorial board of Geoderma since 2007

Swiss Co-coordinator of the European COST action 869 (Mitigation options for nutrient reduction in surface water and groundwaters) between 2006 and 2011

Member of the board of the North South Centre of ETH from 2007 to 2010

Member of the evaluation committee of the department Agronomie-Environnement of INRA (January 2008)

Member of the scientific advisory board of AgroParisTech from 2007 to 2013

Member of the sub-Saharan Africa strategy board of the ETH from 2010 to 2013

Member of the evaluation committee of the “Laboratoire d’écophysiologie végétale et agroécologie” of the Ecole Supérieure d’Agriculture d’Angers (March 2011)

Member of the foundation council of the Swiss Center for Scientific Research in Côte d’Ivoire since 2011, President of the council since 2014

Member of the scientific advisory board of the Swiss Center for Scientific Research in Côte d’Ivoire since 2014.

Founding member and member of the steering board of the competence center of ETH World Food System Center since 2011

Vice President of the competence center of ETH World Food System Center from 2011 to 2013

Member of the scientific advisory board of the “Domaine d’Intérêt Majeur Agrosociences, Ecologie des Territoires, Alimentation” (DIM ASTREA, INRA) from 2012 to 2014

Member of the board of the program “Melissa food characterization phase 2: cultivar selection” (European Space Agency) 2013-2014

Member of the board of administration of AgroParisTech from 2013 to 2016

Member of the scientific advisory board of Rittmo (Colmar, France) since 2012, President of the scientific advisory board since 2014 till 2019

Member of the Programme committee of the SPP 1685 “ecosystem nutrition” of the German Science Foundation (<https://www.ecosystem-nutrition.uni-freiburg.de/personen>) since 2013

President of the steering committee of the Swiss national research program on soil (NRP 68), 2014-2019

Member of the Scientific Advisory Council of the Science Campus Phosphorus Research Rostock since 2014

Member of the Scientific Advisory Group of Agroscope’s “Production2020” research initiative from autumn 2015 to spring 2017

President of the evaluation committee of the “Laboratoire d’écophysiologie végétale et agroécologie” of the Ecole Supérieure d’Agriculture d’Angers (January 2016)

Member of the evaluation committee of the “dispositif de recherche et d’enseignement en partenariat (dP) sur les Systèmes de Production d’Altitude et Durabilité (SPAD) à Madagascar » (October 2016)

Member of the award committee of the Swiss Forum for International Agricultural Research (SFIAR) since July 2017

Member of editorial board for the journal “plants” 2018-2019

Associate editor for the special issue of the Journal of Environmental Quality “Celebrating the 350th Anniversary of Discovering Phosphorus—For Better or Worse” in 2019

Member of the Assembly of Mission Area Soil Health and Food for Horizon Europe since 2019

Member of the Advisory Board of the Swiss National Hub of the European Joint Program on Soil since 2020

Member of the management committee of the European COST action “Trace metal metabolism in plants” (PLANTMETALS) CA19116 since October 2020

Reviewer for journals, universities, and funding organizations

10. Active memberships in scientific societies, fellowships in renowned academies

Member of Swiss Society of Agronomists and Food Scientists (SVIAL)

Member of the Swiss Society of Soil Science (SSP)

Member of the Swiss Society of agronomy (SSA)

Corresponding member of the French Academy of Agriculture since 2002

11. Organisation of conferences

International meeting on the rhizosphere (Ascona, Switzerland, September 2002),

COST 832 meeting in Zurich (October 2002)

International meeting on organic phosphorus dynamics in the environment (Ascona, Switzerland, July 2003)

Symposium on carbon sequestration by soils at the American Society of Agronomy Congress (Denver, USA, November 2003)

Symposium on the role of soil for the society and the environment at the 32nd international geological congress (Florence, Italy, August 2004)

International meeting on nutrient balance as a tool for sustainable land management (Tirana, Albania, March 2005)

Symposium on soils and human health at the 18th world congress of soil science (Philadelphia, USA, July 2006)

Symposium on Swiss agriculture and sustainable development at the French academy of agriculture (Paris, France, March 2006)

The 1st International workshop on the crop physiology of yam (ETH Zurich, December 2008)

COST 869 meeting (Evaluation of projects in example areas: The Swiss Midland Lakes) (Notwil, June 2009)

Organization committee of the TropenTag, Zurich (14th to 16th of September 2010)

Symposium scientifique international sur la gestion durable des terres en zones soudano sahélienne: place et rôle des dispositifs de longue durée de suivi de la fertilité des sols, Ouagadougou, 20-24 Septembre 2010

Organization committee of the COST FA 0905 workshop “Mineral-enhanced food and feed: food processing and human nutrition” (Zurich, June 2012)

Conference “Development of Isotopic Tracers for a Better Understanding of the Phosphorus Cycle” (June 2012, Ascona, Switzerland)

Symposium “Through eye of the needle: the soil microbial biomass concept from nutrient cycling to global warming” organized at the conference EUROSOIL 2012 (Bari, July 2012)

Symposium on improved use efficiency of phosphate in Agroecosystems at the French academy of agriculture (Paris, France, October 2012)

Member of the International Scientific Advisory Board of the 8th International Phosphorus Workshop (IPW8), Phosphorus 2020 - Challenge for synthesis, agriculture & ecosystem, Rostock, September 2016

Co-chair of the organization committee of the International Conference on the Biogeochemistry of Trace Elements ICOBTE Zurich, July 2017

Co-organizer of the yam session at the international conference for research on development, Bern, September 2017

Member of the organization committee of the International Conference “Isocycles: reaching an integrated use of stable isotopes to constrain biogeochemical nutrient cycles” Ascona (CH) October 2017

Co-organizer of the summer school “Food systems in transition” (26 students) that took place in Yamoussoukro (Côte d’Ivoire) from the 27th of January 2018 to the 9th of February 2018 organized by the World Food System Center of ETH, the r4d project YAMSYS and the Centre Suisse de Recherches Scientifiques en Côte d’Ivoire.

Member of the scientific committee of the 1st joint AgroSpace-MELiSSA workshop, May 16-18, 2018 - Rome

Chair of the scientific committee of the 15th congress of the European Society for Agronomy, Genève, August 2018

Co-organizer of the ninth International Phosphorus Workshop (IPW9) in Zurich, July 2019

Co-organizer of the conference “comparing organic and conventional agricultural cropping systems - What can be learned from the DOK and other long-term trials?” Monte Verità, Ascona, Switzerland, October 2019

12. Prizes, awards, fellowships

Full curriculum vitae E. Frossard, ETH Zurich, March 2020

Fellowship from the National Council for Scientific Research of Canada 1985-1987

Honorary visiting Professor to the Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka since 2019

Recipient of the “10th CSRS-Fonds Eremitage award for research in partnership” together with VK Hgaza, S Ake, and LN Diby (Côte d’Ivoire), DI Kiba (Burkina Faso) and RL Senanayake (Sri Lanka) for the research linking yam crop physiology to the development of crop management practices in farmers’ fields in West Africa (November 28 2019)