

Tiziana Centofanti

Contact

[Alchemia-nova GmbH](#), Institute for innovative phytochemistry & closed loop processes
Baumgartenstrasse 93, 1140 Vienna, Austria
Email: tiziana.centofanti@alchemia-nova.net
Phone: +43-1-810-1000-1

Education

Ph.D. Environmental Sciences
Swiss Federal Institute of Technology Zurich (ETHZ), Switzerland
2001-2005

M.Sc. Agricultural Sciences (with distinction)
Marche Polytechnic University, Ancona, Italy
1998-1999

B.Sc. Agricultural Sciences
Marche Polytechnic University, Ancona, Italy
1996-1999

Employment

Environmental Scientist and Project Manager
Alchemia-nova GmbH, Vienna, Austria
September 2020 - present

Develop, led, and manage research projects in the area of nature-based solutions for environmental pollution, circular economy, bio-based industry, sustainable building, and sustainable product design; prepare project proposals, reports, and scientific publications; train and supervise undergraduate students and lab technicians; liaise with national/international cooperators and project partners.

Researcher
Center for Irrigation Technology, California State University Fresno (CA), USA
2012-2015

Developed and managed projects related to the eco-physiological responses of crops (including neglected crops) to soil and water degradation; studied the use of specific agronomic practices for the enrichment of food with selenium; prepared project proposals, reports, and scientific publications; trained and supervised undergraduate

students and lab technicians. This work has been developed in cooperation with *Dr. Gary Bañuelos* (U.S. Department of Agriculture, Parlier, CA)

Researcher

Dept. of Civil and Environ. Engineering, U. of Maryland, College Park (MD), USA
2007-2012

Carried out a series of studies on phytoextraction of heavy metals, food-chain transfer of Cd, and soil remediation of Superfund sites which have been barren for decades; trained and supervised graduate students; prepared project proposals, reports, and scientific publications. This work has been developed in cooperation with *Dr. Rufus Chaney* (U.S. Department of Agriculture, Beltsville, MD)

Post-doctoral Fellow

Soil and Agrifood Institute, Cranfield University, United Kingdom
2006-2007

Developed representative agronomic scenarios that characterise the critical factors that control pesticide fate across Europe; prepared reports, and scientific publications; liaised with international cooperators and project partners.

Research Assistant

Marche Polytechnic University, Italy
1999-2001

Supported research on eco-physiological adaptation of berries to Mediterranean climate; carried out field and laboratory trials; analysed datasets.

Academic Cooperation

Adjunct Professor

Dept. of Environ. Sciences and Policy, Central European University, Vienna, Austria
April 2016 - present

Teach courses on environmental pollution, phyto- and bio-remediation, and sustainability of food production systems.

Research Affiliate

Environmental Social Science Research Group, Budapest, Hungary
July 2018 - present

Professional Service

Invited Panelist. The Future of Food in Hungary, Plenary Discussion and Roundtable, Karl Polanyi Research Center for Global Social Studies (September 2020)

Invited lecturer. EIT Climate-KIC Catapult Programme. Delivered a lecture on *Food Policy* (November 2018 & September 2019)

Invited lecturer. Regional Academy of the United Nations. Delivered a lecture on *Climate-smart agriculture and gendered impact of climate change* (September 2019)

Member of the organising committee for the International Workshop: *Rhizosphere, preferential flow and bioavailability. A holistic view of soil-to-plant transfer?*. September 21-26, 2002, Ascona, Switzerland.

Mentoring

List of students that I have mentored and trained for internship or thesis

Alice Al-Baghdadi - Student, M.Sc. in Environmental Sciences, Central European University, 2018-2019

Shynuga Thirukeswaran - Student, M.Sc. in Environmental Sciences, Central European University, 2018-2019

Estefania Rubiniak - Student, MA in Public Policy, Central European University, 2017-2018

Justin King - Laboratory and research assistant, California State University Fresno, 2012-2015

Christian Garcia - Intern for Project SEED program sponsored by American Chemical Society, 2014

Abigal Vidrio - Intern for USDA Agricultural Ambassadors Program sponsored by USDA Hispanic Serving Institutions National Program, 2014

Guido Fellet - Visting Ph.D. student, 2008

Maribel Cabello-Conejo - Visting Ph.D. student, 2010

Teaching

Current courses:

Central European University, Vienna, Austria

Environmental Pollution and Biological Remediation Methods (2016, 2017, 2018, 2019, 2020)

Past courses:

Central European University, Hungary

Global Environmental Change, Health, and Policy (2019 & Fall 2019)

Science, Society, and Environmental Policy (2017 & 2018)

Agroecology and Organic Farming Systems (2018, 2019, 2020, co-taught with Guntra Aistara)

Food Policy and Politics (2018, 2019, 2020)

Szent Istvan University, Hungary

Environmental Management (co-taught with Gyorgy Vegvari, Fall 2016)

California State University Fresno

Plant Nutrition and Soil Chemistry (co-taught with Gary Bañuelos, Winter 2014)

Research Grants & Scholarships

Using drainage water to grow an alternative salt and boron tolerant crop-guayule- that produces natural latex and resin for the westside of the San Joaquin Valley in Central California. Funded by California Department of Water Resources. Co-investigator (with Gary Bañuelos), total budget \$250,000 (2020-2022)

Visiting Scholar Grant to the Erasmus Mundus Masters Program in Environmental Sciences, Policy and Management (MESPOM) (February-June/2019)

Greening the Margin: Building Cooperation and Public Goods among Roma and Non-Roma communities in Slovakia and Hungary. Funded by Central European University Research Grant. Co-Principal Investigator (with Anand Murugesan), total budget €10,000 (2018-2019)

Integrating economic and ecological experiments to examine environmental conservation norms. Funded by Central European University Research Grant. Co-Principal Investigator (with Anand Murugesan), total budget €5,000 (2016-2018)

Investigation of halophyte *Salsola soda* as an alternative salt-tolerant crop for phytomanagement of salt-affected soils and waters high in boron and selenium. Funded by California Department of Water Resources. Co-principal Investigator (with Gary Bañuelos), total budget \$250,000 (2015-2017)

Determining nutritional quality in sustained deficit irrigated grapes. Funded by California Table Grape Commission. Co-Investigator (with Gary Bañuelos), total budget \$19,000 (2013-2014)

In situ remediation of DDT and Dieldrin residues in old orchard soils at Beltsville Agricultural Research Center. Funded by U.S. Environmental Protection Agency. Co-Investigator (with Rufus Chaney), total budget \$200,000 (2011-2013)

Erasmus Mundus European Scholarship (exchange student). University of Hohenheim, Germany (January-June/1998)

Leonardo da Vinci European Scholarship (intern). East Malling Research Station, Kent, United Kingdom (April-September/1997)

Publications

Peer-reviewed journal articles

Zhu H., Bañuelos G.S., Centofanti T. 2019. Feasibility of growing halophyte *agretti* (*Salsola soda*) as an alternative boron-tolerant food crop in unproductive boron-laden regions. *Plant and Soil*. 445:323-334.

- Centofanti T., Bañuelos G.S., Ayars J.E. 2019. Fruit nutritional quality under deficit irrigation: the case of table grapes in California. *Journal of the Science of Food and Agriculture*. 99(5):2215-2225.
- Centofanti T., Bañuelos G.S., Wallis C. E. 2018. Fruit quality of pomegranate grown in arid environment and irrigated with saline water. *Sustainable Water Resources Management*. 4(4):951-964
- Centofanti T., Bañuelos G.S., Zambrano M.C., Wallis C. E. 2017. Desert plant for saline and drought-stricken farmland: assessment of *Opuntia* cactus nutritional characteristics. *Journal of Environment and Bio Resources*. 1(1):1-8.
- Centofanti T., Bañuelos G.S., Wallis C. E., Ayars J.E. 2017. Deficit irrigation strategies and their impact on yield and nutritional quality of pomegranate fruit. *Fruits, The International Journal of Tropical and Subtropical Horticulture*. 72:47-54.
- Centofanti T., McConnell L.L., Chaney R.L., Beyer N.W., Davis A.P., Jackson D. 2016. Assessment of trace element accumulation by earthworms in an orchard soil remediation study using soil amendments. *Water, Air & Soil Pollution*. 227:1-14.
- Centofanti T., Andrade N.A., McConnell L.L., Chaney R.L., Hapeman J.C., Torrents A., Beyer N.W., Nguyen A., Anderson M.O., Novak J.M., Jackson D. 2016. Organic amendments for risk mitigation of organochlorine pesticide residues in old orchard soils. *Environmental Pollution*. 120:182-191.
- Centofanti T. and Bañuelos G.S. 2015. Evaluation of the halophyte *Salsola soda* as alternative crop for saline soils high in selenium and boron. *Journal of Environmental Management*. 157:96-102.
- Andrade N.A., Centofanti T., McConnell L.L., Hapeman J.C., Torrents A., Nguyen A., Beyer N.W., Chaney R.L., Novak J.M., Anderson M. O., Cantrell K.B. 2014. Utilizing thin-film polymer solid-phase extraction to assess the effect of organic carbon amendments on the bioavailability of DDT and dieldrin to earthworms. *Environmental Pollution*. 185:307-313.
- Centofanti T., Sayers Z., Davis A.P., Sicher R.S., Cabello-Conejo M.I., Kidd P.S., Kakei Y. Nishizawa N.K., Chaney R.L. 2013. Xylem composition and root-to-shoot Ni translocation in *Alyssum* species. *Plant and Soil*. 373:59-75.
- Cabello-Conejo M.I., Centofanti T., Kidd P.S., Prieto-Fernandez A., Chaney R.L. 2012. Evaluation of plant growth regulators to increase Ni phytoextraction by *Alyssum* species. *International Journal of Phytoremediation*. 15:365-375.
- Centofanti T., Siebecker M.G., Chaney R.L., Davis A.P., Sparks D.L. 2012. Hyperaccumulation of nickel by *Alyssum corsicum* is related to solubility of Ni mineral species. *Plant and Soil*. 359:71-83.
- Centofanti T., Tappero R.V., Davis A.P., Chaney R.L. 2011. Chelator-buffered nutrient solution is ineffective in extracting Nickel from seeds of *Alyssum*. *International Journal of Phytoremediation*. 13:434-440.
- Chaney R.L., Fellet G., Torres R., Centofanti T., Green C. E., Marchiol L. 2009. Using chelator-buffered nutrient solution to limit Ni phytoavailability to the Ni hyperaccumulator *Alyssum murale*. *Northeastern Naturalist*. 16 (special Issue 5):215-222.
- Fellet G., Centofanti T., Chaney R.L., Green C.E. 2009. NiO(s) (bunsenite) is not available to *Alyssum* species. *Plant and Soil*. 319:219-223

- Centofanti T., Hollis J.M., Blenkinsop S., Fowler H.J., Truckell I., Dubus I.G. and Reichenberger S. 2008. Development of agro-environmental scenarios to support pesticides risk assessment in Europe. *Science of the Total Environment*. 407:574-588.
- Centofanti T., Flühler H., Frossard E. 2007. Time-dependent distribution of surface-applied radionuclides and their recovery in maize during the growing season. *Journal of Environmental Quality*. 36:280-290.
- Centofanti T. and Frossard E. 2006. Uptake and translocation of ^{134}Cs by maize roots as affected by heterogeneous distribution of ^{134}Cs . *Plant and Soil*. 284:293-303.
- Centofanti T., Penfield R., Albrecht A., Pellerin S., Flühler H. Frossard E. 2005. Is the transfer factor the relevant tool to assess the soil-to-plant transfer of radionuclides under field conditions? *Journal of Environmental Quality*. 34:1972-1979.

Book chapters

- Vasconcelos MW, Grusak MA, Pinto E, Gomes A, Ferreira H, Balazs B, Centofanti T, Ntatsi G, Savvas D, Karkanis A, Williams M. 2020. The Biology of Legumes and Their Agronomic, Economic, and Social Impact. *In: The Plant Family Fabaceae*. Hasanuzzaman, M., Araujo, S. and Gill, S.S. (eds.) Springer, Singapore.
- Centofanti T., Bañuelos G.S. 2019. Practical uses of halophytic plants as a source of food and fodder. *In: Halophytes and Climate Change: Adaptive Mechanisms and Potential Uses*. Hasanuzzaman M., Shabala S. and Fujita M. (eds.) CABI, Wallingford, UK. pp:324-342.
- Centofanti T. 2015. Phytoextraction of trace metals - principles and applications. *In: Environmental Sustainability: the role of green technology*. Thangavel P. and Sridevi G. (eds.) Springer Publishing. New York, USA. pp:217-227.
- Chaney R.L., Baklanow I.A., Centofanti T. Broadhurst C.L., Baker A.J.M, Reeves R.D., van der Ent A., Roseberg R.J. 2014. Phytoremediation and phytomining: Using plant to remediate contaminated or mineralized environments. *In: Plant Ecology and Evolution in Harsh Environments*. Rajakaruna N., Boyd R. and Harris T. (eds.) Nova Science Publishers, Inc. NY, USA. pp:365-392.
- Chaney R.L., Broadhurst C.L., Centofanti T. 2010. Phytoremediation of soil trace elements. *In: Trace elements in soils*. Hooda P.S. (eds.). John Wiley & Sons, Ltd. Chichester, UK. pp:311-339.

Conference papers

- Balasz B., Kelemen E., Centofanti T. 2019. New governance solutions for legume-based food systems. European Conference on Crop Diversification. Spetember 18-21, 2019. Budapest, Hungary (HU). *Invited*.
- Centofanti T. 2018. Soybean production in Italy: agronomy, economics, and policy. 2nd TRUE LIN Workshop for the Continental Region. September 11-13, 2018, Budapest (HU). *Invited*.
- Anderson M.O., Hapeman C.J., Jackson D., McConnell L.L., Nelson Beyer W., Chaney R.L., Centofanti T., Green C. E., Jennings C., Nygyen A., LaChance T., Torrents A. Decreasing bioavailability of organochlorine pesticides in historical orchard soils.

- Society of Environmental Toxicology and Chemistry (SETAC) North America 37th Annual meeting, November 6-10, 2016, Orlando (FL), USA. *Invited*.
- Hapeman J.C., Centofanti T., Andrade N.A., McConnell L.L., Torrents A., Beyer N.W., Chaney R.L., Nguyen, A., Novak J.M., Anderson M. O., Cantrell K.B., Jackson D. Assessing risk mitigation strategies of DDT and dieldrin residues in historical orchard soil. American Chemical Society, August 16-20, 2015, Boston, MA. *Invited*.
- Rodriguez A., Zoldoske T., Centofanti T., Bañuelos G.S. Discovering potential nutraceuticals in drought and salt tolerant pomegranates grown with poor quality water in central California. 2013 Water resources and Policy Initiatives Conference, June 20-22, 2013, Long Beach, CA.
- Andrade N.A., Centofanti T., McConnell L.L., Hapeman J.C., Torrents A., Beyer N.W., Chaney R.L., Novak J.M., Anderson M. O., Cantrell K.B. Utilizing thin-film polymer solid-phase extraction to assess the effect of organic carbon amendments on the bioavailability of DDT and dieldrin to earthworms. Society of Environmental Toxicology and Chemistry (SETAC) North America 32nd Annual Meeting, November 13-17, 2011, Boston, MA. *Invited*.
- Centofanti T., Sayers Z., Cabello-Conejo M.I., Kidd P.S., Davis A.P., Sicher R.C., Chaney R.L. Determination of nickel chelators in xylem sap of Alyssum at steady-state nickel uptake. 11th International Conference of the Biogeochemistry of Trace Elements (ICOBTE), July 3-7, 2011, Florence, Italy.
- Centofanti T., Siebecker M.G., Davis A.P., Sparks D.L., Chaney R.L. Phytoavailability of Ni Compounds to Alyssum Species. 6th International Phytotechnology Conference, December 1-4, 2009, St. Louis, MO.
- Centofanti T., Hollis J., Truckell I., Fowler H., and Blenkinsop P. Identification of Agro-environmental scenarios characterizing European Agriculture. XIII Symposium on Pesticide Chemistry, September 3-6, 2007, Piacenza, Italy. *Invited*.
- Centofanti T. and Frossard E. Uptake and translocation of ^{134}Cs by a fraction of the root system of maize as affected by K supply. International Plant Nutrition Colloquium, September 14-19, 2005, Beijing, China.
- Centofanti T., Penfield R., Albrecht A., Flühler H. and Frossard E. Uptake of ^{134}Cs by a small fraction of maize root growing in ^{134}Cs enriched areas. RHIZOSPHERE Congress 2004, September 12-17, 2004, Munich, Germany.
- Centofanti T., Penfield R., Albrecht A., Kulli B., Flühler H., Frossard E. Factors controlling ^{54}Mn , ^{65}Zn , ^{57}Co and ^{134}Cs uptake by maize. 7th International Conference of the Biogeochemistry of Trace Elements (ICOBTE), June 15-19, 2003, Uppsala, Sweden.
- Centofanti T., Penfield R., Albrecht A., Kulli B., Flühler H., Frossard E. Effects of soil structure on the displacement of surface-applied radionuclides and root distribution. International workshop: Rhizosphere, preferential flow and bioavailability. A holistic view of soil-to-plant transfer?, September 21-26, 2002, Ascona, Switzerland.
- Centofanti T., Penfield R., Albrecht A., Flühler H. and Frossard E. ^{65}Zn , ^{54}Mn , ^{57}Co and ^{134}Cs uptake by maize grown under field and pot conditions. Preliminary results. Society of Environmental Toxicology and Chemistry (SETAC) Europe 12th Annual meeting, May 12-16, 2002, Vienna, Austria.

Multimedia

- Centofanti T., Bañuelos G.S., Wallis C., Ayars J.E. 2015. Deficit irrigation: is it impacting yield and nutritional quality of fruits? *New Ag International Magazine*, English edition, March-April 2015, pp: 54-56. *Invited paper*.
- Kohkha S. October 20, 2014. [Drought-stressed crops may be better for you](#). The California Report Statewide Radio Program/KQED Public Radio. *Invited interview*.

Refereeing

- Acta Agriculturae Scandinavica (2016)
- Agriculture, Ecosystems and Environment (2011, 2018, 2019)
- Annals of Botany PLANTS (2014)
- Antioxidants (2014)
- Applied Soil Ecology (2019, 2020)
- Chemoecology (2015)
- Chemosphere (2016, 2018)
- Current Analytical Chemistry (2017)
- Environmental Pollution (2016, 2017)
- Environmental Science & Technology (2010)
- Fruits, The International Journal of Tropical and Subtropical Horticulture (2020)
- International Journal of Phytoremediation (2012, 2014, 2017, 2019)
- Journal of Arid Land (2016)
- Journal of the Science of Food and Agriculture (2017, 2019)
- Land Degradation and Development (2017)
- Plant Growth Regulation (2013)
- Science of the Total Environment (2011, 2019, 2020)
- Natural Resources Forum (2020)

Skills

- ArcGIS, R, LaTeX, MS Office
- Italian (Native), English (C2), German (B2), French & Hungarian (A1)
- Laboratory and Analytical (Plant and Soil Science)

Professional Mememberships

- American Chemical Society (2014 - present)