

# CURRICULUM VITAE

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## 1. Education

Ph.D., 1988. Crop Production and Physiology, Iowa State University,  
 M.S., 1981. Soil Fertility, and Crop Production and Physiology; Iowa State University.  
 B.S., 1975. Agronomy and Animal Science, University of Uruguay.

## 2. Employment

2003-present. Professor, Soil Fertility. Agronomy Dep., Iowa State University.  
 1998-2002. Associate Professor, Soil Fertility. Agronomy Dep., Iowa State University.  
 1993-1997. Assistant Professor, Soil Fertility. Agronomy Dep., Iowa State University.  
 1989-1990. Postdoctoral Research Associate, Soil Fertility. Agronomy Dep., Iowa State Univ.  
 1991-1992. Assistant Scientist II (1992), Soil Fertility. Agronomy Dep., Iowa State University.  
 1981-1988. Associate Professor, Soil Fertility. Dep. of Soils, University of Uruguay.  
 1976-1980. Assistant Professor, Soil Fertility. Dep. of Soils, University of Uruguay.  
 1974-1975. Instructor (½ time), Soils. Dep. of Soils, Univ. of Uruguay.

## 3. Responsibilities at Iowa State University

### 3.1. Resident teaching (0%)

### 3.2. Research (50% estimated dedication)

The research program focuses on developing cost-effective and environmentally sound nutrient management practices for cropping systems in Iowa and the North Central region with emphasis on P, K, micronutrients, lime, manure P management, and management practices impacts on P loss with erosions, surface runoff, and subsurface tile drainage. The work has included field correlation and calibration of soil and tissue tests methods, evaluation of fertilizer and manure placement methods, assessing amounts and forms of P loss from fields through various pathways, development of tools to assess the risk of P loss from fields, and use of precision agriculture technologies for nutrient management. The program integrates conventional field plot and laboratory research with innovative on-farm research and demonstrations utilizing precision agriculture technologies or watershed research methods, and it is developed in cooperation with producers, agribusiness, and extension agronomists. From 1994 through present I had 51 graduate students, 17 PhD (16 graduated) and 34 MS (32 graduated).

### 3.3. Extension (40% estimated dedication)

Extension activities focus on issue related to crop production and environmental nutrient management mainly for areas emphasized by the applied research program and on supporting state-wide or regional extension programs. The effort involves outreach to producers and agribusiness, training of field extension agronomists, co-responsibility for establishing nutrient management guidelines, teaching continuing education courses. The activities include presentations in a variety of field days, conferences, and workshops in Iowa or in conferences of the North Central Region targeted to producers or agribusiness, on-farm demonstrations, preparing extension publications and newsletter articles, co-teaching of an annual continuing education soil fertility short-course (with Dr. John Sawyer), maintaining the ISU Extension Soil Fertility website (with Dr. John Sawyer), and organizing the North Central Region Soil and Plant Analyst's Workshop that is held in Iowa every two years.

### 3.4. Service (5% estimated dedication)

Current significant service to ISU and the State of Iowa have been developed mainly in the following areas: Co-responsibility for ISU Extension nutrient management guidelines for crops and P water quality

conservation, member of the multi-agency Science Team of the Iowa Nutrient Reduction Strategy, represent the Iowa Experiment Station since 1995 (Chair in two occasions) to the NIFA regional committee NCERA-13 (North-Central Extension-Research Committee for Soil Testing and Plant Analysis) and since 2000 to the NIFA national committee SERA-17/IEG (Minimizing Phosphorus Losses from Agriculture), and advise as required the Iowa Natural resources Conservation Service and the Iowa Department of Natural Resources in relation to agronomic and environmental nutrient management practices. In the past, major service activities included being chair and then member of the supervisory committee for the ISU Soil and Plant Analysis Laboratory until 2015, member of the multi-agency team that prepared the Iowa P Index for Iowa NRCS, and service to the profession included below in the section Professional Activities and Memberships.

### **3.5. International (5% estimated dedication)**

Activities have been suspended since February 2020 due to the COVID-19 pandemic. Until 2019, the effort involved collaborative outreach projects and advising to research project development with various research and education institutions and other organizations mainly in Argentina and Uruguay. The activities related to use of soil testing and plant analysis, improving soil fertility management for conservation tillage, use of precision agriculture technologies for nutrient management, and management practices impacts on P loss from fields. Serve as honorary member of the Graduate College of the University of Uruguay, and currently I am member of the PhD POS committee of two students who develop research for issues directly related to some of programs at ISU (one focuses on phosphorus management and water quality and the other on potassium dynamics and cycling in soils. These activities have resulted since 1995 in significant recognition for ISU in southern South America, the organization and development of a completed 5-year cooperation agreement between CALS and the Institute of Soils of Argentina, recruitment of numerous talented graduate students, and hosting several visiting scholars over the years.

## **4. Professional Activities and Memberships**

- Chair, NIFA regional committee NCERA-13 (soil testing and plant analysis) in 2016/2017 and in 1997/1998; chair or co-chair of the outreach subcommittee and member since 1994.
- Representative of the SSSA to the Oversight Committee for the North American Soil Testing Proficiency Testing Program (NAPT, S890), 2012-2015.
- Representative to the NIFA national committee SERA-17 (minimizing phosphorus loss from agriculture), organizer of the 2015 meeting and open conference, and member since 2009.
- Chair, Soil Fertility Division (S4), SSSSA, 2012.
- Honorary Member, Graduate Faculty, College of Agriculture, University of Uruguay since 2012.
- Member, Soil Science Society of America Applied Research Award Committee. 2011.
- Member, Werner L. Nelson Award Committee (A439) of the ASA. 2007.
- Associate Editor, SSSA Journal. 1999-2004.
- Associate Editor, Agronomy Journal. 2000-2005.
- Certified Professional Soil Scientist (SSSA, ARCPACS) since 1998.
- Member, Soil Science Society of Uruguay since 2000.
- Member, ASA since 1980.
- Member, SSSA since 1980.
- Member, CSSA since 1980.
- Gamma Sigma Delta Honor Society for Agriculture.
- Phi Kappa Phi Honor Society for Science.
- Sigma Xi Honor Society for Scientific Research.

## 5. Awards and Recognitions

- College of Agriculture (ISU) Outstanding Achievement Extension and Outreach Award. 2021.
- Extension ANR Virtual Field Day Series During A Pandemic Team Award (19 recipients). 2020.
- Extension ANR Derecho Windstorm Response Team Award (30 recipients). 2020.
- Invitation (declined) to give the 2020 Leo Walsh Soil Fertility Lecture at the SSSA annual meeting.
- Invitation (declined) to give the 2019 Leo Walsh Soil Fertility Lecture at SSSA annual meeting.
- Invitation (declined) to give the 2020 Leo Walsh Soil Fertility Lecture at SSSA annual meeting.
- Researcher of the Year Award, Fluid Fertilizer Foundation. 2018.
- Invitation (declined) to give the 2018 the Leo Walsh Soil Fertility Lecture at SSSA annual meeting.
- Invitation (declined) from Agronomy Awards Committee to apply to the Morrill Professor Award. 2018
- Outstanding Achievement in International Agriculture Award. College of Ag, Iowa State Univ. 2015.
- College of Agriculture (ISU) Dean's Citation for Extraordinary Contributions. 2013.
- Lee R. Kolmer Award for Excellence in Applied Research. Iowa State University. 2010.
- Fellow, Soil Science Society of America. 2007.
- Soil Science Society of America Applied Research Award. 2007.
- Fluid Fertilizer Foundation Werner L. Nelson Award. 2005.
- Fellow, American Society of Agronomy. 2005.
- Raymond Baker Award (ISU) for contributions to study of P environmental issues. 2004.
- USDA/ARS Secretary Group Award (for contributions to technology transfer). 2004.
- Certificate of Appreciation, Iowa State University Extension. 2003.
- USDA/ARS Secretary Group Award (for contributions to P index development). 2003.
- W. L. Nelson Award for Diagnosis of Yield-Limiting Factors, ASA. 2003.
- Extension Award, Iowa State University - Cooperative Extension Service. 1999.
- Award for Excellence in Graduate Research, Iowa State University. 1988.
- C. R. Weber Award for Excellence in Plant Science, Iowa State University. 1987.
- International Scholar Fellow, World Food Institute, Iowa State University. 1986.

## 6. Publications

### 6.1. Peer-reviewed journal articles, book chapters, and position papers

*[Asterisks identify Mallarino graduate students, postdocs, or research associates]*

#### a. Refereed journal articles (95)

- da Silva, R.C., F. Degryse, R. Baird, A.P. Mallarino, and M.J. McLaughlin. 2021. Screening fertilizers for their phosphorus runoff risk using laboratory methods. *J. Environ. Qual.* 50:955-966.
- Dougherty, B.W. C.H Pederson, A.P. Mallarino, D.S. Andersen, M.L. Soupir, R.S. Kanwar, and M.J. Helmers. 2020. Midwestern cropping system effects on drainage water quality and crop yields. *J. Environ. Qual.* 49:38-49.
- Ferrando, M.G. \*, M.M Barbazán, F.O. García, A.P Mallarino. 2020. Comparison of the ammonium acetate, Mehlich10 3, and sodium tetraphenylboron extractants to evaluate crop available potassium. *Communications in Soil Science and Plant Analysis*, 51(8):997-1005.
- Poffenbarger, H.J., D.C. Olk, C. Cambardella, J. Kersey, M. Liebman, A.P. Mallarino, J. Six, M.J. Castellano. 2020. Whole-profile soil organic matter content, composition, and stability under cropping systems that differ in belowground inputs. *Agric. Ecosyst. Environ.* 291:106810.
- Wade, J., S. Culman, J. Logan, H. Poffenbarger, M. Demyan, J. Grove, A. Mallarino, J. McGrath, M. Ruark, and J. West. 2020. Improved soil biological health increases corn grain yield in N fertilized systems across the Corn Belt. *Scientific Reports* 10:3917.
- Groenenboom, S.J. \*, and A.P. Mallarino. 2018. Potassium, sulfur, and liming value of ash co-product

- from corn stover processing for ethanol production. *Agron. J.* 110:115-126.
- Jones, J.D.\*, and A.P. Mallarino. 2018. Influence of source and particle size on agricultural limestone efficiency at increasing soil pH. *Soil Sci. Soc. Am. J.* 82:271-282.
- Stammer, A.J.\*, and A.P. Mallarino. 2018. Plant tissue analysis to assess phosphorus and potassium nutritional status of corn and soybean. *Soil Sci. Soc. Am. J.* 82:260-270.
- Baffaut, C., N.O. Nelson, J.A. Lory, G.M.M.M.A. Senaviratne, A.B. Bhandari, R.P. Udawatta, D.W. Sweeney, M.J. Helmers, M.W. Van Liew, A.P. Mallarino, and C.S. Wortmann. 2017. Multisite evaluation of APEX for water quality: I. Best professional judgement parameterization. *J. Environ. Qual.* 46:1323-1331.
- Nelson, N.O., C. Baffaut, J.A. Lory, G.M.M.M.A. Senaviratne, A.B. Bhandari, R.P. Udawatta, D.W. Sweeney, M.J. Helmers, M.W. Van Liew, A.P. Mallarino, and C.S. Wortmann. 2017. Multisite evaluation of APEX for water quality: II. Regional parameterization. *J. Environ. Qual.* 46:1349-1356.
- Walker, Z.T., J.A. Coulter, M.P. Russelle, R.T. Venterea, A.P. Mallarino, J.G. Lauer, and M.A. Yost. 2017. Do soil tests help forecast nitrogen response in first-year corn following alfalfa on fine-textured soils? *Soil Sci. Soc. Am. J.* 81:1640-1651.
- Enderson, J.T.\*, A.P. Mallarino, and M.U. Haq\*. 2015. Soybean yield response to foliar-applied micronutrients and relationships among soil and tissue tests. *Agron. J.* 107:2143-2161.
- Woli, K.P., D.A. Ruiz-Diaz, D.E. Kaiser\*, A.P. Mallarino, and J.E. Sawyer. 2015. Field-scale evaluation of poultry manure as a combined nutrient resource for corn production. *Agron. J.* 107:1789-1800.
- Pagani, A.\*, and A.P. Mallarino. 2015. On-farm evaluation of corn and soybean grain yield and soil pH responses to liming. *Agron. J.* 107:71-82.
- Oltmans, R.R.\*, and A.P. Mallarino. 2015. Potassium uptake by corn and soybean, recycling to soil, and impact on soil test potassium. *Soil Sci. Soc. Am. J.* 79:314-327.
- Dagna, N.E.\*, and A.P. Mallarino. 2014. Beef cattle manure survey and assessment of crop availability of phosphorus by soil testing. *Soil Sci. Soc. Am. J.* 78:1035-1050.
- Arnall, D.B., A.P. Mallarino, M.D. Ruark, G.E. Varvel, J.B. Solie, M.L. Stone, J.L. Mullock, R.K. Taylor, and W.R. Raun. 2013. Relationship between grain crop yield potential and nitrogen response. *Agron. J.* 105:1335-1344.
- Barbagelata, P.A.\*, and A.P. Mallarino. 2013. Field correlation of potassium soil test methods based on dried and field-moist soil samples for corn and soybean. *Soil Sci. Soc. Am. J.* 77:318-327.
- Clover, M.W.\*, and A.P. Mallarino. 2013. Corn and soybean tissue potassium content responses to potassium fertilization and relationships with grain yield. *Soil Sci. Soc. Am. J.* 77:630-642.
- Krueger, K., A.S. Goggi, A.P. Mallarino, and R.E. Mullen. 2013. Phosphorus and potassium fertilization effects on soybean seed quality and composition. *Crop Sci.* 53:602-610.
- Al-Kaisi, M.H., R.W. Elmore, J.G. Guzman, H.M. Hanna, C.E. Hart, M.J. Helmers, E.W. Hodgson, A.W. Lenssen, A.P. Mallarino, A.E. Robertson, and J.E. Sawyer. 2013. Drought impact on crop production and the soil environment: 2012 experiences from Iowa. *J. Soil Water Cons.* 68:19A-24A.
- Allen, B.L.\*, A.P. Mallarino, J.F. Lore, J.L. Baker, and M.U. Haq. 2012. Phosphorus lateral movement through subsoil to subsurface tile drains. *Soil Sci. Soc. Am. J.* 76:710-717.
- Beltrán, M, E. Rivero, G. Cruzate, T. Bosco, and A.P. Mallarino. 2012. Effect of phosphorus level on the availability of some micronutrients in Vertic Argiudoll soil under no-tillage system in Argentina. *J. Env. Sci. Eng.* 1(2A):202-208.
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- Pagani, A.\*, and A.P. Mallarino. 2012. Soil pH and crop grain yield as affected by the source and rate of lime. *Soil Sci. Soc. Am. J.* 76:1877-1886.
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- Ruiz Diaz, D.A., J.E. Sawyer, and A.P. Mallarino. 2011. On-farm evaluation of poultry manure as a nitrogen source for corn. *Sci. Soc. Am. J.* 75:729-737.
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- Ruiz Diaz, D.A., J.E. Sawyer, and A.P. Mallarino. 2008. Poultry manure supply of potentially available nitrogen with soil incubation. *Agron. J.* 100:1310-1317.
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