CURRICULUM VITAE

Ole Wendroth
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Department of Plant & Soil Sciences
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EDUCATION

2001 Habilitation (*venia legendi*), Technical University of Berlin, Germany
1990 PhD (Dr. sc. agr.), University of Goettingen, Germany
1987 Diploma Degree in Agricultural Sciences/Agronomy and Soil Science, Germany
1982 Practical Farming Degree after two-year-apprenticeship, Germany

PROFESSIONAL CAREER

Since 2012 Professor, University of Kentucky, Department of Plant and Soil Sciences
2004-2012 Associate Professor, University of Kentucky, Department of Plant and Soil Sciences
1992-2004 Research Scientist at Center of Agricultural Landscape and Land Use Research, Muencheberg, Germany
1991-1992 Post-Graduate Research Scientist, Department of Land, Air and Water Resources, University of California, Davis, Mentor: Donald R. Nielsen
1990-1991 Scholarship of German Academic Exchange Service (DAAD), Post Graduate Researcher, Department of Land, Air and water Resources, University of California, Davis, Mentor: Donald R. Nielsen
1987-1990 Graduate Student Assistantship at Georg-August-University of Goettingen, Germany, Institute of Agronomy and Plant Breeding, Advisor: Wilfried Ehlers

RESEARCH GOALS

My overall goal is to enhance and contribute knowledge beneficial to Kentucky agriculture for sustained economic and environmental conditions, and simultaneously contribute to national and global food security and environmental quality. Each day I commit myself to appreciate, interact and share my thoughts with faculty, graduate students and staff of the University and members of the agricultural community of Kentucky and neighboring states.

The answers to the following four specific questions are my immediate goals

1. What are the cornerstones in modern landscape and land management research? – New measurement technologies in combination with physically-based state-space models.
2. How can observations of indicative variables taken at the land surface be integrated in order to contribute to better understanding of biomass production, the heterogeneity of fluxes and variation of water balance in order to support management decisions?
3. How does biomass production vary across the landscape, is this variation related to soil properties, and how is it predictable in order to apply variable amounts of nitrogen fertilizer, water, and other soil amendments for increased and environmentally sustainable food production?
4. Land management and cultivation intensity – what are challenging issues for maintaining soil functions in farmers' fields and other landscape ecosystems?

SCIENTIFIC CAREER ACCOMPLISHMENTS

- Sampling for field scale solute transport across the landscape. Spatial representativity of solute concentration and its covariance behavior across different soil depths.
- First application of an additive state-space approach to quantify spatially changing treatment response in heterogeneous soil landscapes.
- Co-authoring the text book: "Spatial and Temporal Statistics – Sampling Field Soils and their Vegetation" by D.R. Nielsen and O. Wendroth.
- Expanding the pedo-transfer concept to improved field-scale spatial estimation of soil hydraulic properties through consideration of spatial covariance relations (VZJ).
- Impact of rainfall intensity, amount and solute application time delay on solute leaching depth identified at the field scale.

- Spatial representativity of mineral soil nitrogen and how to improve sampling efforts.
- Scale-variance of soil water content-soil texture relationships.
- Deriving profile-average field saturated hydraulic conductivity from observations of land surface drainage.
- Hydraulic function coefficients derived from a Kalman-filtering analysis of field drainage observations at different soil depths.
- Improving a simple evaporation method for rapid measurement of soil water retention and unsaturated hydraulic conductivity, and applying it in field spatial variability studies.
- Space-time behavior of field soil water status, deriving space-time semivariograms for the estimation of the space-time field of soil water with considering the changing spatial variability structure of soil water status in time.
- Describing crop yield of a legume and reference crop using various plant available nitrogen components as an autoregressive state-space process across the field.
- Deriving zones of varying yield response to remote-sensing and soil observations.
- Characterizing soil structural properties from water and gas transport functions.
- Land surface water content observations in time improve the state--space prediction of soil water status throughout the soil profile.
- Spatial crop yield prediction based on remote sensing in farmers' fields.
- Limitations of ANOVA and its false conclusions in treatment experiments, and opportunities of on-farm research and spatial covariance analysis to identify response in farmers' fields in Kentucky.
- Soil structural variation across a catena and coincidence between CT images and unsaturated hydraulic conductivity distribution.
- Combined tension permeameter and evaporation experiments for deriving soil hydraulic properties between water saturation and 0.5 bar pressure head and their application in spatial variability landscape studies.
- Landform and its impact on yield components.
- Improving crop simulation through including variable solar radiation into a crop growth model.
- Analytical approaches for sampling field soils and their vegetation.
- Deriving the impact of soil tillage tool width and size on the spatial pattern of solute transport.

- MOSAIC research project: Establishing and managing a long-term on-farm research project for studying crop yield, remote sensing of crop indices, soil properties including soil nitrogen for describing spatio-temporal soil and crop processes in stochastic and deterministic models.
- Contribution from a soils' perspective to a white paper on "Enhanced Water Cycle Measurements for Watershed Hydrologic Sciences Research" for NSF/CUAHSI.
- Helping the Kentucky Horse Industry to identify an appropriate a race track material for Keeneland.
- Spatial covariance of soil properties and eco-hydrological controls on soil moisture and hydraulic conductivity within Pinyon-Juniper Woodland.
- Impact of pasture grazing management on the spatial variability structure of remotely sensed crop reflection and indices. Grazing frequency causes a systematic spatial variability pattern and structure of remotely sensed NDVI.
- Diagnosis of field soil processes through the analysis of their spatial and temporal distribution (Contributions in various book chapters).
- Describing spatial processes of soil properties across landscapes based on their spatial and temporal covariance structure.
- Co-organizing several scientific symposia during ASA/SSSA meetings.

AWARDS AND RECOGNITION

A) AWARDS

2021	Past-President of the Soil Science Society of America
2020	President of the Soil Science Society of America.
2019	Honorary Professor of the National Institute of Black Land Modernization, China Agricultural University, August 2019.
2019-2020	President-elect of the Soil Science Society of America.
2018	Incoming President-elect of the Soil Science Society of America.

2017 2017-2019 Heick Professor of Soil Science – College of Agriculture Food, and Environment, University of Kentucky.

2017 2017-2018 University Research Professor of the College of Agriculture, Food and Environment of the University of Kentucky, Office of the Vice President for Research, University of Kentucky.

2014 Outstanding Reviewer Award, Vadose Zone Journal. Soil Science Society of America.

2013: Guest Professor University of Life Sciences, Prague, Czech Republic

2013: The 2012 Outstanding Associate Editor Award for Soil Science Society of America Journal

2011: Western Association of Agricultural Experiment Station Directors 2011 Award for Excellence as Member of the Technical Committee for W-2188 "Characterizing Mass and Energy Transport at Different Vadose Zone Scales"

2010: Southern Regional Soil Physics Research Committee – Best Presentation Award

2009: Fellow of the Soil Science Society of America

2008: Fellow of the American Society of Agronomy

2007: The 2006 Outstanding Associate Editor Award for the Journal of Environmental Quality

2007: CSREES Partnership Award for Mission Integration, Wheat Science Group, University of Kentucky

B) EDITORIAL RESPONSIBILITIES

Since 2016 Associate Editor Journal of Hydrology and Hydromechanics

Since 2013	Editor-in-Chief SOIL & TILLAGE RESEARCH
since 2013	Editorial Board Member of GEODERMA
2008-2009:	Technical Editor, AGRONOMY JOURNAL, Div. A-3
2008-2014:	Associate Editor, SOIL SCIENCE SOCIETY OF AMERICA JOURNAL, Div. S-1
2004-2008:	Associate Editor, JOURNAL OF ENVIRONMENTAL QUALITY
2004-2008:	Associate Editor, AGRONOMY JOURNAL
2003-2011:	Associate Editor, VADOSE ZONE JOURNAL
2000-2004:	Editorial Board, SCIENTIA AGRICOLAE
2000-2016:	Editorial Board, JOURNAL OF PLANT NUTRITION AND SOIL SCIENCE
1997-2003:	Associate Editor, JOURNAL OF ENVIRONMENTAL QUALITY
since 1996:	Editorial Board, SOIL & TILLAGE RESEARCH

C) INVITED PRESENTATIONS

2021 Invited Presentation at Texas Tech University, Department of Plant and Soil Science on "Diagnostic Opportunities for Water and Solute Transport in Agricultural Landscapes", March 25, 2021.

2019 Invited Presentation at the Seminar on "Key to Land Conservation and Sustainability in Agriculture: Soil Health Practices and Managements". Ole Wendroth, Yang Yang, Javier Reyes, Xi Zhang, and Sleem Kreba. 2019. Exploring Spatial and Temporal Variability of Soil and Crop Processes for Irrigation Management. China Agricultural University, College of Land Science and Technology; August 26, 2019.

2019 Invited keynote presentation at the 2019 International Top-level Forum on Land Conservation and Sustainable Agriculture in the Black Soil Region of Northeast China; Changchun and Lishu, China; August 22-25, 2019. Organized by the Chinese Academy of Engineering, Ministry of Agriculture and Rural Affairs, State Government of Jilin Province, China Agricultural University. Wendroth, O., Y. Yang, J. Reyes, X. Zhang, R. Armindo, S. Shahadha, and S. Kreba. Challenges and Opportunities for Soil Research Towards Sustainability Development and Conservation Goals. Travel Stipend from Host Organization China Agricultural University.

2019 Invited keynote presentation at the 5th Brazilian Soil Physics Meeting, May 26-29, 2019; University of Lavras, Brazil: Wendroth, O., Y. Yang, J. Reyes, and X. Zhang. Diagnosing Field-scale Soil Variability for Irrigation Management.

2019 Invited Shortcourse on "Spatial and Temporal Statistics", University of Lleida, Spain, 01/19/19 – 01/30/19. Travel grant.

2019 Invited panel member of the session "Leadership Panel - a Science and an Art!" at the Annual meeting of the Soil Science Society of America, Jan. 05-10, 2019, San Diego, CA.

2018 Wendroth, O. Invited Shortcourse, "Spatial and Temporal Statistics," University of Parana, Curitiba, Brazil, August 8-10, 2018).

2018 Wendroth, O., Workshop, "Shortcourse on Spatial and Temporal Statistics," Yunnan University, Kunming City, China. (September 11-13, 2018).

2018 Invited seminar at Beijing Normal University: "Unravelling Soil Processes at Different Scales Through Fourier-Based and State-Space Analysis" Wendroth, O., Y. Yang, J. Reyes, and X. Zhang; Sept. 10, 2018; Faculty of Geographical Science.

2018 Invited teaching at Central University of Ecuador in Quito; one-week workshop on "Spatial and Temporal Statistics" to audience from Agricultural, Geo-, Economic and Medical Sciences. Quito, January 22-26, 2018. 35 participants.

2017 Invited presentation at Meeting of the Canadian Soil Science Society; O. Wendroth, J. Reyes, X. Zhang, and Y. Yang. Soil and crop sensing for diagnosing spatio-temporal variability of field soils and management decisions. Peterborough, ON, Canada, June 10-14, 2017.

2017 Invited presentation at the Annual Meeting of the American Society of Agronomy; Ole Wendroth, Yang Yang, Javier Reyes, and Xi Zhang. New paradigms for Environmental and Agronomic Research and Education. Tampa, FL, Oct. 22-25, 2017.

2017 Invited presentation at Austral University, Valdivia, Chile. "Opportunities in Agro-Ecological Research and Associated Needs in Education". Department of Soil Sciences, open to the University public.

2017 Invited teaching at Austral University, Valdivia, Chile. One-week class on Spatial and Temporal Statistics, to be taken for credit, Jan. 16-20, 2017, Travel and lodging grant from Austral University, Valdivia.

2016 Invited keynote lecture at the 21st Latinamerican Congress of Soil Science Ole Wendroth, Yang Yang, José Dörner, Quirijn de Jong van Lier, Robson André Armindo, Marcos Ceddia, Luís Carlos Timm, Javier Reyes, and Xi Zhang "Opportunities for Agro-Ecosystem Research: Lessons from Spatio-Temporal Field Observations", Oct. 24-28, 2016, Quito, Ecuador. Lodging grant from Latinamerican Soil Science Society.

2016 One-day workshop on Spatial data analysis, Central University of Quito, Ecuador, Oct. 28, 2016.

2016 Invited keynote lecture at EMBRAPA Institute of Agrobiology, Seropedica, May 17, 2016, "State-Space and Other Analytical Opportunities in Agronomic Research"; Travel grant from CAPES (Brazilian governmental funding agency) for 17 days in Brazil.

2015 Invited lecture at Beijing Normal University, School of Geography, Beijing, September 11, 2015. "Emerging Challenges and Opportunities in Soil Physics - Linking between Scales and Disciplines". Travel grant for 9 days in China.

2014 Invited teaching at University of Rio de Janeiro, Brazil Universidade Federal Rural do Rio de Janeiro (UFRRJ), Departamento de Solos, Seropédica, June 17-23, 2014 during 16-days research visit. Travel grant.

2014 Invited teaching at Austral University, Valdivia, Chile. One-week workshop on Spatial and Temporal Statistics, Jan. 13-17, 2014 during two-weeks research visit. Travel grant.

2013 Invited keynote presentation, with international travel and accommodation support, 2nd BRAZILIAN SOIL PHYSICS MEETING, May 6-10, 2013, Rio de Janeiro, Brazil; Wendroth, O. and Y. Yang. "State-space Analysis in Soil Physics." Travel grant.

2013 Invited keynote presentation at DAGSTAT (German Society for Statistics), Annual Meeting at University of Freiburg,

Mar. 18-22, 2013, Wendroth, O., Y. Yang and A. Schwen. "Frequency domain approach for scale-dependent design and analysis of agricultural experiments", Freiburg, Germany. Travel Grant.

2013 Invited oral presentation to "Soil Fertility Workshop", Arkansas State University, "Spatial Field Soil Variability – Obstacle or Opportunity? Analytical Tools Help Make Sense out of Your Data.", Jonesboro, Arkansas. Travel Grant.

2012 Invited oral presentation to Monsanto Fellows Symposium "Genome to Phenome", St. Louis, MO, Nov. 28-29, 2012; "Crop Sensing Technology for Nitrogen Application in Heterogeneous Field Soils", 2-day symposium including travel grant.

2012 Appointment by the Senate of the University of Natural Resources and Life Sciences, Vienna, Austria as guest professor for the summer term 2012; Workshop on Spatial and Temporal Statistics in Soil Physics; one full week with all-day lectures. For details, see
http://www.boku.ac.at/18615.html?&tx_bokubooverkal_pi2%5Bva_id%5D=26966
Travel and accomodation support, honorarium.

2011 Invited Oral Keynote Presentation with International Travel and Accomodation Support, BRAZILIAN SOIL PHYSICS MEETING, September 12 -16, 2011, Department of Biosystems Engineering, Luiz de Queiroz College of Agriculture, University of São Paulo ESALQ – USP, Piracicaba – SP, Brazil "Spatio-temporal soil water and related processes"

2011 Plenary session presentation, oral, at 8th European Conference on Precision Agriculture, Prague, Czech Republic, July 10-13, 2011: Wendroth, O., G.Schwab, and L. Murdock. "How close is close enough?"

2011 Guest lecturer: Workshop on Spatial and Temporal Statistics. Dept. of Water Resources, Faculty of Agrobiology, Food and

Natural Resources, Czech University of Life Sciences. July 14-15, 2011.

2009 Invited Oral Keynote Presentation at the A-3 Symposium "Enhancing and Facilitating Use of Agricultural System Models in Field Research", Annual Meeting, ASA-CSSA-SSSA, Nov. 1-5, 2009, Pittsburgh, Pennsylvania, "Field sampling for agricultural model input and parameterization."

2009 Invited Oral Keynote Presentation at the S-1 Symposium "Application of Soil Physics to Resolving Environmental Problems: Honoring the Impact of M.Th. van Genuchten", Annual Meeting, ASA-CSSA-SSSA, Nov. 1-5, 2009, Pittsburgh, Pennsylvania, "Spatio-temporal soil water processes at the field scale."

2007 Invited Oral Keynote Presentation at the C5/C6 Symposium "Evaluating Grasslands with Remote Sensing and Georeferenced Sampling", Annual Meeting ASA-SSSA-CSA, Nov. 4-8, 2007, New Orleans. "Determining Spatial and Temporal Processes from Georeferenced Sampling and Land Surface Observations."

2006: Research Institute Juelich, Germany. Invited Presentation with Travel Grant. Wendroth, O. 2006. "New Challenges and Opportunities in Soil Landscape Research." May 29, 2006.

2004: Invited Oral Keynote Presentation at the S-1 "Symposium on Landscape Research" Annual Meetings American Society of Agronomy (ASA-CSSA-SSSA), Seattle, Washington, USA, Oct. 31-Nov. 04, 2004. "Spatial Processes of Soil Hydraulic Properties in a Moraine Landscape."

2003: Invited Lecturer at the Easter School of Soil Physics, University of Hannover, Germany.

2003: Invited Oral Keynote Presentation at the 4th European Conference on Precision Agriculture, Berlin, Germany, June

15-18, 2003, "Opportunities for the statistical analysis of spatial and temporal crop and soil processes".

2002: Invited Oral Keynote Presentation at "Precision Agriculture Workshop", March 13-15, 2002, Bonn, Federal Department of Consumer Protection, Nutrition, and Agriculture, "Räumliche Variabilität von Boden- und Pflanzenbestandseigenschaften in landwirtschaftlich genutzten Flächen – Änigma oder Grundlage zur spezifischen Bewirtschaftung?"

2001: "Spatial Statistics Workshop", Lecturers: Donald R. Nielsen and Ole Wendroth, July 9-10, 2001, Robert Lascano, Texas A&M Research and Extension Center, Lubbock, Texas, USA.

2000: Invited Oral Keynote Presentation "First Kirkham Conference", honoring Don Kirkham, November 2-3, 2000, Ames, Iowa, USA, "Space-time behavior of crop biomass, soil moisture and soil nitrogen."

1998: "State space analysis and its application to precision agriculture", Short course, Lectureres: Donald R. Nielsen and Ole Wendroth, Nov. 30 - December 2, 1998, Robert Lascano Texas A&M Research and Extension Center, Lubbock, Texas, USA.

1995: Invited Oral Keynote Presentation at the "Vadose Zone Conference – Cutting Across Disciplines", honoring Jim Biggar and Donald R. Nielsen, September 6-8, 1995, Davis, USA, Guest lecture, organized by Jan W. Hopmans and Marc B. Parlange, "Site-specific management of flow and transport in heterogeneous and structured soils."

RESEARCH

A) GRANTS

The total funding amount of projects with my involvement (only in Kentucky) has been $1,442,330. The amount entirely allocated to my program (only in Kentucky) is $838,571 ($603,759 to other programs).

a) *Funded*

i) National – Competitive

1. 1.USDA-AFRI Foundational Knowledge of Agricultural Production Systems. 2020-2025 "Evaluating cover crop mixtures as precision nitrogen management tools" ($502,916)
   Investigators: Hanna Poffenbarger (PI), Montserrat Salmeron Cortasa, Ole Wendroth

2. USDA-CREES NRI Competitive Grants Program, Program 25.0 Soil Processes. 2008-2011, no cost extension to 2012.
   Dynamics of Soil State Variables and Related Processes Across a Land Use Gradient in Spatial and Temporal Transition, $324,255 (applied), funded: $324,000 (entirely to my program).
   Sponsor: USDA-NRI
   Investigators: Ole Wendroth (PI), Mark S. Coyne, Rebecca L. McCulley, Anastasios D. Karathanasis, John H. Grove

3. USDA-AFRI Competitive Grants Program, Renewable Energy, Natural Resources, and Environment (RENRE); Soil, Air, and Water Processes in Agroecosystems – Program Area Code – A1401, 2013-2017
   Toward Sustainable Nitrogen and Carbon Cycling on Diversified Horticultural Farms Serving Community Food Systems,
   $495,000
   Sponsor: USDA-AFRI
   Investigators: Krista Jacobsen (PI), Ole Wendroth (Co-PI), John Schramski (Co-PI, University of Georgia)

ii) College of Agriculture - Competitive

4. Sustainable Resources Management for Winter Wheat – Approach to Optimizing Water Supply and Avoiding Nitrogen Losses, 2020-2022
   $40,000
   Sponsor: Siemer Milling through AES, University of Kentucky, CAFE.
   Investigator: Ole Wendroth (PI)

5. Enhancing Wheat Yield, Water and Nitrogen Use Efficiency Through Irrigating Winter Wheat, 2019-2021
   $45,000
   Sponsor: Siemer Milling through AES, University of Kentucky, CAFE.
   Investigator: Ole Wendroth (PI)

6. **Equipment Grant for wireless soil moisture observation network**, 2015-2016, $25,000
   Sponsor: SB 271 Water Quality Program, College of Agriculture, University of Kentucky
   Investigator: Ole Wendroth (PI)
7. **Impact of Application Timing and Rainfall Intensity on Leaching of Nitrate and Agrochemicals**, 2006-2009, $95,500 (entirely to my program)
   Sponsor: SB 271 Water Quality Program, College of Agriculture, University of Kentucky
   Investigators: Ole Wendroth (PI)

8. **Understanding and Predicting Field-Scale Spatial Variability of Wheat Growth and Yield**, 2005-2008, $74,993 (entirely to my program)
   Sponsor: PRM (Precision Resource Management Steering Committee), College of Agriculture, University of Kentucky
   Investigators: Ole Wendroth (PI), Dennis Egli (Co-PI), Eugenia Pena-Yewtukhiv (Co-PI), Greg Schwab (Co-PI), Tom Mueller (Collaborator)

9. **Enhancing the Capability of a Mobile, High-Clearance Remote Sensing Platform.** 2007, $53,400.- (entirely to my program)

Sponsor: Application for Precision Resource Management Enhancement Grants 2007, College of Agriculture, University of Kentucky
Investigators: Ole Wendroth, Greg Schwab, John Grove

10. **Impact of Land Management on Vadose Zone Drainage Water Entering the Groundwater Body.** 2006-2007, $9,562 (entirely to my program)
Sponsor: SB 271 program within the College of Agriculture; State of Kentucky
Investigators: Ole Wendroth (PI), Alan Fryar (Co-PI)

11. **Defining Soil Resource Management Areas Causing Watershed P Loss**. 2005-2008, $61,259 (none to my program)
Sponsor: PRM (Precision Resource Management Steering Committee), College of Agriculture, University of Kentucky
Investigators: John H. Grove (PI), Eugenia M. Pena-Yewtukhiw (Co-PI), Ole Wendroth (Co-PI), Elisa M. D'Angelo (Co-PI), Brian Lee (Co-PI)

12. **Soil water quality and relevant transport processes at different spatial and temporal scales.,** 2010-2012, $33,000 (entirely to my program)
Sponsor: SB 271 Water Quality Program, College of Agriculture, University of Kentucky
Investigators: Ole Wendroth (PI)

13. Hatch:
Water and Solute Transport Processes in the Vadose Zone of a Hillslope in a Karst Landscape Towards a Sink Hole

14. Regional:

14.1 Western Regional Soil Physics Research Committee W1188: **Characterizing Mass and Energy Transport at Different Scales (2005-2009)**

14.2 Western Regional Soil Physics Research Committee W2188: **Characterizing Mass and Energy Transport at Different Vadose Zone Scales (2009-2013)**

14.2.1 Application for the 2010 Experiment Station Section Award for Excellence in Multistate Research (2010/2011), revised and resubmitted (Eventual Funds will be available to W2188, not to my program)

14.3 Western Regional Soil Physics Research Committee W3188: **Soil, Water, and Environmental Physics Across Scales (2014-2016)**

14.4 Southern Regional Soil Physics Research Committee S1048: **Assessment of the Carbon Sequestration Potential of Common Agricultural Systems on Benchmark Soils Across the Southern Region Climate Gradient**

14.5 Western Regional Soil Physics Research Committee W3188: **Soil, Water, and Environmental Physics Across Scales (2016-2019**

14.6 Western Regional Soil Physics Research Committee W4188: **Soil, Water, and Environmental Physics to Sustain Agriculture and Natural Resources** (2020-2022)

iii) State Commodity Boards – Competitive

15. **Towards variable rate irrigation in Kentucky**
2021-2022, $ 16,500
Sponsor: Kentucky Soybean Board
Investigator: Ole Wendroth

16. **Evaluating an On-Farm Variable Rate Irrigation System – Environmental Stewardship through High-Tech Irrigation**
2020-2021, $6,000
Sponsors: Kentucky Corn Growers' Association
Investigator: Ole Wendroth (PI), Carrie Knott, Chad Lee, and Hanna Poffenbarger

17. **On-Farm Variable Rate Irrigation for Sustainable Water Management**
2020-2021, $14,500

Sponsors: Kentucky Corn Growers' Association
Investigator: Ole Wendroth (PI), Chad Lee, Carrie Knott, and Hanna Poffenbarger

18. **Field-scale Characterization of Soil Structure and Hydraulic Properties for Variable-Rate Irrigation**
    2019-2021, $7,000
    Sponsors: Kentucky Small Grain Growers' Association
    Investigator: Ole Wendroth (PI)

19. On-Farm Characterization of Soil Spatial Variability for Model-Based Site-Specific Management
    2018-2019, $10,000
    Sponsors: Kentucky Small Grain Growers' Association
    Investigator: Ole Wendroth (PI), Hanna Poffenbarger (Co-PI)

20. **Irrigating the Soil to Maximize the Crop - An Approach for Corn, Wheat and Soybean to Efficient and Environmentally Sustainable Irrigation Water Management in Kentucky**
    2014-2017, $160,526 (entirely to my program)
    Sponsors: Kentucky Soybean Board (25%), Kentucky Corn Growers' Association (50%), Kentucky Small Grain Growers' Association (25%)
    Investigator: Ole Wendroth (PI), Chad Lee (Co-PI)

21. **Challenges in Soybean Irrigation - Soil and Crop Irrigation Management (SCIM)**
    2014, $8,090
    Sponsor: Southern Soybean Research Program
    Investigators: Ole Wendroth (PI), Co-PI's: Scientists from four south-eastern states: Chad Lee, Carrie Knott, Lloyd Murdock (Kentucky); George Vellidis, Wesley Porter (Georgia), Brian Leib, David Verbree (Tnnessee); Joe Henggeler (Missouri)

22. **Spatial and Temporal Development of Wheat Biomass in a Farmer's Field: Can we predict the Spatial Grain Yield Pattern?**,
    2005-2006, $4,000 (entirely to my program)
    Sponsor: Kentucky Small Grain Promotion Council
    Investigators: Ole Wendroth (PI), Dennis Egli (Co-PI), Greg Schwab (Co-PI)

23. **In-season observation of Wheat growth status for yield prediction: Do different optical sensors give us the same answer?** 2006-2007, $4,000 (entirely to my program)
    Sponsor: Kentucky Small Grain Promotion Council
    Investigators: Ole Wendroth (PI), Greg Schwab (Co-PI), Dennis Egli (Co-PI), Saratha Kumudini (Co-PI), Tom Mueller (Co-PI), Lloyd Murdock (Co-PI)

24. **In-season observation of Wheat growth status in a farmer's field: Continuous change of nitrogen application rate across the landscape as an alternative to small plot research.** 2007-2008, $4,000 (entirely to my program)
    Sponsor: Kentucky Small Grain Promotion Council
    Investigators: Ole Wendroth (PI), Greg Schwab (Co-PI), Dennis Egli (Co-PI), Lloyd Murdock (Co-PI)

25. **Soil Mineral Nitrogen and Crop Biomass Dynamics of Winter Wheat in Space and Time in a Farmer's Field.** 2008-2009, $4,500 (entirely to my program)
    Sponsor: Kentucky Small Grain Promotion Council
    Investigators: Ole Wendroth (PI), Greg Schwab (Co-PI), Dennis Egli (Co-PI), Lloyd Murdock (Co-PI)

26. **Wheat Yield Response to Old Corn Rows. 2008-2009.** $10,000 (none to my program)
    Sponsor: Kentucky Small Grain Promotion Council
    Investigators: Chad Lee (PI), Ole Wendroth (Co-PI), Greg Schwab Co(PI)

27. **Winter Wheat Development, Grain Yield and Soil Water and Nitrogen Dynamics in a Farmer's Field in Western Kentucky.** 2009-2010. $6,000 (entirely to my program)
    Sponsor: Kentucky Small Grain Promotion Council
    Investigators: Ole Wendroth (PI), Greg Schwab (Co-PI), Dennis Egli (Co-PI), Lloyd Murdock (Co-PI)

28. **Farm Test of Crop Sensing for Site-Specific Nitrogen Fertilizer Application in Winter Wheat.** 2010-2011. $6,500 (entirely to my program)

Sponsor: Kentucky Small Grain Promotion Council
Investigators: Ole Wendroth (PI), Greg Schwab (Co-PI), Lloyd Murdock (Co-PI), Dennis Egli (Co-PI).

29. **Wheat Crop Sensing in Spring: On-Farm Comparison of Uniform, On-the-go, and Antecedent Scanning**, 2011-2012, $6,500.
Sponsor: Kentucky Small Grain Promotion Council
Investigators: Ole Wendroth, Lloyd Murdock, Dennis Egli.

30. **Managing Within-Field Variability of Winter Wheat: Transect to Field**, 2012-2013, $6,500.
Sponsor: Kentucky Small Grain Promotion Council
Investigators: Ole Wendroth, Lloyd Murdock, Dennis Egli, Chad Lee, Adam Hendricks

31. **Developing Irrigation Management Strategies for Soybean Production in humid regions of the Southern US,** 2016-2017, $50,000 ($12,500 to UK).
Sponsor: Southern Soybean Research Program
Investigators: Ole Wendroth, Mike Sama, Chad Lee, Carrie Knott, Lloyd Murdock (UK); George Vellidis, Wes Porter (UGA); Brian Leib (UT); Brenda Ortiz, Thorsten Knappenberger (Auburn Univ.)

32. **Developing Irrigation Management Strategies for Soybean Production in humid regions of the Southern US (Year 2),** 2017-2018, $50,000 ($12,500 to UK).
Sponsor: Southern Soybean Research Program
Investigators: Ole Wendroth, Mike Sama, Chad Lee, Carrie Knott, Lloyd Murdock (UK); George Vellidis, Wes Porter (UGA); Brian Leib (UT); Brenda Ortiz, Thorsten Knappenberger (Auburn Univ.)

iv) National – Competitive in Germany

33. European Union, International Research Project (Internationally competitive)
Analysis and improvement of existing models of field-scale solute transport through the vadose zone of differently

textured soils with special reference to preferential flow, approximately $190,000 (entirely to my program), $570,000 to other investigators' programs
Sponsor: European Union
Investigators: Coen J. Ritsema, (ALTERRA (Winand Staring Centre), Wageningen, The Netherlands), Nick Jarvis (Swedish University of Agricultural Sciences, Uppsala, Sweden), Ole Wendroth (ZALF Muencheberg, Germany), Jean Paul Gaudet (INRA Grenoble, France).

34. German Research Foundation (Nationally competitive)
Analysing spatial variability of selected soil and crop properties and their association within arable fields for supporting site specific management decisions, approximately $260,000 ($130,000 to my program)
Sponsor German Research Foundation DFG, Bonn.
Investigators: O. Wendroth, K.C. Kersebaum (ZALF Müncheberg, Germany), P. Jürschik, D. Ehlert (ATB Potsdam, Potsdam).

35. German Research Foundation (Nationally competitive)
Determining spatial distribution of soil properties using geoelectrical resistance tomography in a moraine landscape of north-eastern Germany, $105,000 ($30,000 to my program)
Sponsor: German Research Foundation DFG, Bonn.
Investigators: S. Koszinski, O. Wendroth, (ZALF, Müncheberg).

v) Industry-funded in Germany

36. Industry: Südzucker AG (South-German Association for sugar beet growers, private stock company), Agrocom-KG (private company for computer applications in on-farm agriculture)
MOSAIC: precision agriculture; soil and crop state variables for understanding and predicting crop yield variability in the loessial regions of the Federal State of Saxony, Lüttewitz, approximately ($80,000) ($40,000 to my program)
Sponsor: Südzucker AG und Agrocom.-KG
Investigators: O. Wendroth, K.C. Kersebaum (ZALF Müncheberg, Germany), P. Jürschik, D. Ehlert (ATB Potsdam, Potsdam).

vi) Travel-Grants from German Research Foundation

37. Between 1992 and 2003, nine travel grants from German Research Foundation for attending the Tri-Society Meetings in the United States; each travel grant in the order of $2,000.

b) ***Pending***

c) ***Proposals submitted as professor at University of Kentucky – Not Funded***

38. Natural Resources Conservation Service (NRCS); On-Farm Data Guided Variable-Rate Irrigation and Nitrogen Management Strategies: Environmental and Economic Impacts. $$639,147, 5 years
    Investigators: Ole Wendroth (PI), Hanna Poffenbarger, Carrie Knott, Carl Dillon

39. Foundation for Food and Agriculture Research (FFAR); Maximizing Farm Profitability and Environmental Quality through Precision Resources Management. $371,015, 4 years.

40. Natural Resources Conservation Service (NRCS); Soil Organic Carbon Processes Across Scales: A Functional Carbon Inventory for Kentucky. $299,285, 3 years
    Investigators: Ole Wendroth (PI), Maheteme Gebremedhin, George Antonious, Mark Coyne, Ken Bates, Jeremy Sandifer

41. National Science Foundation NSF, INFEWS program, **Integrating ecological and technical innovations for improved nitrogen management in topographically-heterogeneous Corn Belt.** 2,495,872, 5 years.
    Investigators: Hanna Poffenbarger, Wei Ren, Montse Salmeron Cortasa, Christopher Shepard, Ray Smith, Carl Dillon, Mike Sama, Ole Wendroth

42. **SMART FARM – Agricultural Water Management for the Right Amount and Quality of Water Entering and Leaving the Farm**, 2017-2022, $ 5Mio.
    Sponsor: USDA-AFRI (NIFA). Competitive Grants Program, Integrated Project, CAP Grant; Water for Agriculture Challenge Area
    Investigators: Joe Dvorak, Ole Wendroth, Dwayne Edwards, Carrie Knott, Mike Sama, Jordan Shockley

43. **Challenges in Soybean Irrigation – Soil and Crop Irrigation Management (SCIM): DEVELOPING IRRIGATION MANAGEMENT STRATEGIES FOR SOYBEAN PRODUCTION IN HUMID REGIONS OF THE SOUTHERN US. A Four-State Initiative in the Southern-U.S.: Kentucky – Georgia – Tennessee – Missouri**. Ole Wendroth (PI, KY), Mike Sama, Chad Lee, Carrie Knott, Lloyd Murdock, Brian Leib (TN), George Vellidis (GA), Wesley Porter, Gene Stevens (MO), Kelly Nelson, Pat Guinan, Earl Vories, Ken Sudduth
    Sponsor: Southern Soybean Research Program
    $776,131, distributed among KY, TN, GA, MO (plus $154,774 if Alabama joins).

44. **Nitrogen, Carbon and Soil Water Dynamics in Grazed Pasture Systems – Small-Scale Heterogeneity Protects Water Quality and Reduces Nitrogen Losses**
    Sponsor: USDA-AFRI Competitive Grants Program, Renewable Energy, Natural Resources, and Environment (RENRE); Soil, Air, and Water Processes in Agroecosystems – Program Area Code – A1401, 2014-2018; $495,427 – re=submitted
    Investigators: Ole Wendroth, Ben Goff

45. **Estimating Soil Phosphorus Pools from Multiple Soil Extractable Phosphorus.**
    Sponsor: USDA-AFRI, A1421 program
    Investigators: Xiufu Shuai (PI, University of Hawaii), O. Wendroth (Co-PI).

46. **Zero-tillage makes soils better organic sinks than intensive tillage – fact or fallacy?**
    Sponsor: USDA-AFRI, A1421 program, 2011 – 2014, $499,407.

Investigators: Ole Wendroth, Rebecca McCulley, John Grove, Mark Coyne and Christopher Matocha, University of Kentucky.

47. **Understanding The Tile Drainage Role in Carbon Cycling and Fluxes in Managed Agroecosystems.** 2011-2014. $728,781 (approx. $100,000 to my program)
Sponsor: NASA Roses-10 Program
Investigators: Mark Coyne (PI), Carmen Agouridis (Co-PI), John Grove (Co-PI), Lloyd Murdock (Co-PI), Chris Romanek (Co-PI), Ole Wendroth (Co-PI)
Not Funded

48. **Assessment of Carbon Storage and Sequestration Potential of Common Agricultural Systems on Benchmark Soils Across the Southern Region Climate Gradient – UK-Subcontract: Organic carbon status in Kentucky soils and soil organic carbon dynamics in two selected soils.** 2011-2016. Total $4,920,083, UK-UK-Subcontract: $459,878 (entirely to my program)
Sponsor: USDA-AFRI, Climate Change Program
Investigators: Kris Brye, University of Arkansas (PI), UK-Subcontractors: Ole Wendroth (KY-SC), Mark Coyne (KY-SC)
Not Funded

49. **Toward Sustainable Bioenergy Production Systems in the Southeastern U.S.** (Dr. Paul Bertsch PI)
– Sub-Proposal: **Soil Hydraulic Properties in the Core Sites** $277,269 (entirely to my program), submitted in 2010.
Sponsor: USDA-AFRI, Climate Change Program
Investigator in Sub-Proposal: Ole Wendroth
Not Funded

50. HYDROLOGIC SCIENCES Program Solicitation NSF-545 NATIONAL SCIENCE FOUNDATION Directorate for Geosciences Division of Earth Sciences
Soil Water and Solute Transport across different scales and land use systems, $453,415; submitted in 2008.
Sponsor: NSF
Investigators: Ole Wendroth, Christopher Matocha
Not Funded

51. AFRI – USDA, Soil Processes Program
    Environmental Spill or Natural Protection System? – Water, Nitrogen, and Biomass Dynamics of Hummocks Grazed by Livestock, $314,753, submitted in 2009.
    Sponsor: USDA
    Investigators: Ole Wendroth, Rebecca McCulley, Charles Dougherty, Greg Schwab.
    Not Funded

52. United States Department of Agriculture, Cooperative State Research, Education, and Extension Service
    Nitrous Oxide Production in Fragipan Soils: Biotic and abiotic Production and Regulation in Subsurface Environments, $497,244, submitted in 2010
    Sponsor: USDA-CSREES
    Investigators: Mark Coyne, Christopher Matocha, Lloyd Murdock, Ole Wendroth
    Not funded

53. HYDROLOGIC SCIENCES Program Solicitation NSF-545 NATIONAL SCIENCE FOUNDATION Directorate for Geosciences Division of Earth Sciences
    Soil Water and Solute Transport at Different Spatial and Temporal Scales and Across Boundaries of Ecosystem Compartments, $657,737, submitted in 2007
    Sponsor: NSF
    Investigators: Ole Wendroth, Christopher Matocha
    Not Funded

54. ENVIRONMENTAL PROTECTION AGENCY (EPA) REGION 4, Regional Environmental Priority Projects (REPP): EPAR4OPM0701
    Improving Water Quality through Sustainable Agricultural Practices, submitted 2007
    Sponsor: EPA
    Investigators: Ole Wendroth, Elisa D'Angelo, Mark Coyne, William Witt, John Grove
    Not Funded

55. Kentucky Water Resources Research Institute (KWRRI)

Soil Water Processes Along a Hillslope in a Karst Landscape – Establishing a Long-Term Study on Water and Solute Transport Towards a Sink Hole, $24,180 (only federal, total: $48,360), submitted 2004
Sponsor: Kentucky Water Resources Research Institute (KWRRI)
Investigators: Ole Wendroth, Mark Coyne, Jim Dinger (Head, Water Resources Section, KGS), John Grove, Eugenia Pena-Yewtukhiv
Not Funded

56. Regional Environmental Monitoring and Assessment Program Research Projects, EPA/ORD/NHEERL/MED-FY2005-01-05
Water and Solute Transport Processes in the Vadose Zone of a Hillslope in a Karst Landscape Towards a Sink Hole, $191,421, submitted 2005
Sponsor: U.S. Environmental Protection Agency
Investigators: Ole Wendroth, Mark Coyne, John Grove, Eugenia Pena-Yewtukhiv
Not Funded

57. Environmental Protection Agency, Pesticide Environmental Stewardship Program [OPP-2005-0137; FRL-7715-3]
Improving Soil Management to Reduce Pesticide Leaching in Well-Drained Agricultural Soils, $46,993, submitted 2005.
Sponsor: Environmental Protection Agency (EPA), EPA-PESP
Investigators: Ole Wendroth, Elisa D'Angelo, Mark Coyne, William Witt, John Grove
Not Funded

58. U.S. Environmental Protection Agency, Region 4, Air Pesticides and Toxics Management Division, Pesticides Section, Strategic Agricultural Initiative – Food Quality Protection Act (FQPA)
Reducing Pesticide Leaching Risk in Well-Drained Agricultural Soils to Increase Food and Water Quality, $100,000, submitted 2005
Sponsor: Environmental Protection Agency (EPA), EPA-FQPA
Investigators: Ole Wendroth, Elisa D'Angelo, William Witt, Mark Coyne, John Grove
Not Funded

59. **Effects of Antibiotics in Poultry Litter on Antibiotic Resistant Bacteria, Bacterial Diversity, and Nitrogen Cycling in Soils**, $499,990, submitted 2006
Submitted to: USDA-NRI, Soils, Water, and Global Change
Investigators: Elisa M. D'Angelo, Ole Wendroth, Anasthasios Karathanasis, Mark Coyne, John Grove
Not funded

60. **Soil Hydraulic Processes Along a Spatial Gradient Crossing Different Land Use and Soil Mapping Units**, $72,676, submitted 2006.
Submitted to: PRM (Precision Resource Management Steering Committee)
Investigators: Ole Wendroth, Anastasios Karathanasis
Not funded

61. **Field Scale Indicators of Soil Water and Solute Transport in a Karst Landscape**, 2008-2011, $74,110Z, submitted 2008.
Sponsor: PRM (Precision Resource Management Steering Committee), College of Agriculture, University of Kentucky
Investigators: Ole Wendroth (PI)
Not funded

State – Competitive

62. **Evaluation of Biomass Cropping Systems for Co-Firing Applications – University of Kentucky.** (2013-2018), $1.543 M, $394,907 K to my program.
Sponsor: Kentucky Energy and Environment Cabinet, Department for Energy Development & Independence
Investigators: Montross, M., De Boldt, S., Smith, R., Mark, T.B., McCulley, R., Wendroth. O.

63. **The Influence of Land Use and Climate on Coupled Hydrobiogeochemical Processes in Karst Systems: A Proposal to Establish a Karst Critical Zone Observatory.**
Sponsor**:** National Science Foundation; $20,000 to my program.
My role: Senior personnel/investigator

B) **PUBLICATIONS**

(* denotes a graduate student who graduated or will graduate in my program)

a) ***publications in refereed journals and books***

A141) Leuthold, S.J., M. Salmerón, O. Wendroth, and H. Poffenbarger. Cover crops decrease maize yield variability in sloping landscapes through increased water during reproductive stages. Vield Crops Research 10811, https://doi.org/10.1016/j.fcr.2021.108111.

A140) Wendroth O., S. Bradford, and T. Harter. 2021. Transdisciplinary contributions and opportunities in soil physical hydrology. Vadose Zone J. 2021;e20114. https://doi.org/10.1002/vzj2.20114

A139) Zou, Y., Q. Saddique, W. Dong, Y. Zhao, X. Zhang, J. Liu, D. Ding, H. Feng, O. Wendroth, K.H.M. Siddique. 2021. Quantifying the compensatory effect of increased soil temperature under plastic film mulching on crop growing degree days in a wheat–maize rotation system. Field Crops Res. 260: 107993; doi.org/10.1016/j.fcr.2020.107993.

A138) Franzluebbers, A.J., O. Wendroth, N.G. Creamer, and G.G. Feng. 2020. Focusing the future of farming on agroecology. Agric. Environ. Lett. 5:e20034. doi.org/10.1002/ael2.20034.

A137) Natalie Henkhaus. Madelaine Bartlett. David Gang, Rebecca Grumet, Ingrid Jordon-Thaden, Argelia Lorence, Eric Lyons, Samantha Miller, Seth Murray, Andrew Nelson, Chelsea Specht, Brett Tyler, Thomas Wentworth, David Ackerly, David Baltensperger, Philip Benfey, James Birchler, Sreekala Chellamma, Roslyn Crowder, Michael Donoghue, Jose Pablo Dundore-Arias, Jacqueline Fletcher, Valerie Fraser, Kelly Gillespie, Lonnie Guralnick, Elizabeth Haswell, Mitchell Hunter, Shawn Kaeppler, Stefan Kepinski, Fay-Wei Li, Sally Mackenzie, Lucinda McDade, Ya Min, Jennifer Nemhauser, Brian Pearson, Peter Petracek, Katie Rogers, Ann Sakai, Delanie Sickler, Crispin Taylor, Laura Wayne, Ole Wendroth, Felipe Zapata, and David Stern. 2020. Plant science decadal vision 2020–2030: Reimagining the potential of plants for a healthy and sustainable future. Plant Direct 4(8), https://doi.org/10.1002/pld3.252.

A136) Hamidisepehr, A., M.P. Sama,* J.S. Dvorak, O. Wendroth, and M.D. Montross. 2020. Classifying reflectance targets under ambient light

conditions using passive spectral measurements. Sensors 20, 5375; doi:10.3390/s20185375

A135) Reichert, J.M., V.R. da Silva, G.O. Awe,*, O.O. Wendroth, R. Srinivasan. 2020. Defining tillage need for edible bean production under no-tillage: Classical and time series analyses. Soil Till. Res. 202: 104671. doi.org/10.1016/j.still.2020.104671

A134) Gonçalves-Maduro, L., R.A. Armindo, M.E. Turek, and O. Wendroth. 2020. Soil water and fuel permeability of a Cambisol in southern Brazil and its spatial behavior: A case study. Vadose Zone J. DOI: 10.1002/vzj2.20035.

A133) Centeno, L.N., L.C. Timm, K. Reichardt, and O. Wendroth. 2020. Identifying regionalized co-variate driving factors to assess spatial distributions of saturated soil hydraulic conductivity using multivariate and state-space analyses. Catena 191: 104583.

A132) Bravo, S., M. González-Chang, D. Dec, S. Valle, O. Wendroth, F. Zúñiga, and J. Dörner. 2020. Using wavelet analyses to identify temporal coherence in soil physical properties in a volcanic ash-derived soil. Agric. Forest Meteorol. 285-286: 107909.

A131) Zhang, X., O. Wendroth, C.J. Matocha, J. Zhu, and J. Reyes. 2020. Assessing field-scale variability of soil hydraulic conductivity at and near saturation. Catena 187: 104335; doi.org/10.1016/j.catena.2019.104335

A130) Zhang, X., O. Wendroth, C.J. Matocha, and J. Zhu. 2019. Estimating soil hydraulic conductivity at the field scale with a state-space approach. Soil Sci. 184: 101-111.

A129) Zhang, X., J. Zhu, O. Wendroth, C. Matocha, and D. Edwards. 2019. Effect of macroporosity on pedotransfer function estimates at the field scale. Vadose Zone J. 18:180151. doi:10.2136/vzj2018.08.0151.

A128) Armindo, R.A., and O. Wendroth. 2019. Alternative approach to calculate soil hydraulic-energy-indices and -functions. Geoderma 355, https://doi.org/10.1016/j.geoderma.2019.113903

A127) Shahadha, S.S., O. Wendroth. J. Zhu, and J. Walton. 2019. Can measured soil hydraulic properties simulate field water dynamics and crop

production? Agric. Water Manage. 223: doi.org/10.1016/j.agwat.2019.05.045

A126) Shrestha, D., O. Wendroth, and K.L. Jacobsen. 2019. Nitrogen loss and greenhouse gas flux across an intensification gradient in diversified vegetable rotations. Nutr. Cycl. Agroecosyst. Doi.org/10.1007/s10705-019-10001-8

A125) Yang Y.*, O. Wendroth, S. Kreba, and B. Liu. 2019. Estimating near-saturated soil hydraulic conductivity based on its scale-dependent relationships with soil properties. Vadose Zone J. 18:180217. doi:10.2136/vzj2018.12.0217.

A124) Yang, Y., L. Wang, O. Wendroth, B. Liu, C. Cheng, T. Huang, Y. Shi. 2019. Is the laser diffraction method reliable for soil particle size distribution analysis? Soil Sci. Soc. Am. J. 83:276-287. Doi: 10.2136/sssaj2018.07.0252.

A123) Yang Y., X. Jia, O. Wendroth, B. Liu, Y. Shia, T. Huang, and X. Bai. 2019. Noise-assisted Multivariate Empirical Mode Decomposition of Saturated Hydraulic Conductivity along a South-North Transect across the Loess Plateau of China. Soil Sci. Soc. Am. J. 83:311–323. doi:10.2136/sssaj2018.11.0438.

A122) Reyes, J.*, O. Wendroth, C.J. Matocha, and J. Zhu. 2019. Delineating Site-Specific Management Zones and Evaluating Soil Water Temporal Dynamics in a Farmer's Field in Kentucky. Vadose Zone J. 18:180143. doi:10.2136/vzj2018.07.0143

A121) Turek, M.E., R.A. Armindo, O. Wendroth, and I. Dos Santos. 2018. Criteria for the estimation of field capacity and their implications for the bucket type model. Europ. J. Soil Sci. 70:278-290 doi: 10.1111/ejss.12747.

A120) Arias, N., I. Virto, A. Enrique, P. Bescansa, R.J. Walton, and O. Wendroth. 2019. Effect of stoniness on the hydraulic properties of a soil from an evaporation experiment using the Wind and inverse estimation methods. Water 11:440; doi:10.3390/w11030440.

A119) He, M., H. Shen, Z. Li, L. Wang, F. Wang, K. Zhao, X. Liu*, O. Wendroth, and J. Xu. 2019. Ten-year regional monitoring of soil-rice grain contamination by heavy metals with implications for target remediation

and food safety. Environ. Poll. 244:431-439. https://doi.org/10.1016/j.envpol.2018.10.070

A118) K.C. Kersebaum, E. Wallor, K. Lorenz, N. Beaudoin, J. Constantin, and O. Wendroth. 2018. Modeling cropping systems with HERMES – Model capability, deficits and data requirements. In: Wendroth, O., R.J. Lascano, and L. Ma (Eds.) Bridging among disciplines by synthesizing soil and plant processes. Advances in Agricultural Systems Modeling, Volume 8: 103-126, ASA, CSSA, SSSA, Madison, WI 53711-5801, USA.

A117) Wendroth, O., R.J. Lascano, and L. Ma (Eds.) Bridging among disciplines by synthesizing soil and plant processes. Advances in Agricultural Systems Modeling, Volume 8: 103-126, ASA, CSSA, SSSA, Madison, WI 53711-5801, USA.

A116) Reyes*, J., O. Wendroth, C. Matocha, J. Zhu, W. Ren, and A.D. Karathanasis. 2018. Reliably mapping clay content coregionalized with electrical conductivity. Soil Sci. Soc. Am. J. 82:578-592. doi:10.2136/sssaj2017.09.0327.

A115) Yang Yang, Xiaoxu Jia, Ole Wendroth, and Baoyuan Liu. 2018. Estimating saturated hydraulic conductivity along a south-north transect in the loess plateau of China. Soil Sci. Soc. Am. J. 82:1033-1045. doi:10.2136/sssaj2018.03.0126

A114) Shuai, X., L. Ma, and O. Wendroth. 2018. Unified Weak and Strong Soil Tests to Estimate Intrinsic Plant Available Phosphorus Pools. Agron. J. 110:859-867, doi:10.2134/agronj2017.11.0650

A113) Dörner, J., R. Horn, D. Dec, O. Wendroth, H. Fleige, and F. Zunigaugalde. 2017. Land-use-dependent change in the soil mechanical strength and resilience of a shallow volcanic ash soil in southern Chile. Soil Sci. Soc. Am. J. 81:1064-1073.

A112) Hamidisepehr, A., M.P. Sama, A.P. Turner, and O.O. Wendroth. 2017. A method for reflectance index wavelength selection from moisture-controlled soil and crop residue samples. ASABE 60:1479-1487.

A111) Wendroth, O. 2017. Wilfried Ehlers – Agronomist and Soil Physicist. Editorial. Soil Till. Res. 171:A1-A2,

http://dx.doi.org/10.1016/ j.still.2017.04.005.

xA110) Kreba*, S.A., O. Wendroth, M.S. Coyne, and R.J. Walton. 2017. Soil Gas Diffusivity, Air-filled Porosity, and Pore Continuity: Land Use and Spatial Patterns. Soil Sci. Soc. Am. J. 81:477-489.

A109) Armindo, R.A., and O. Wendroth. 2016. Physical Soil Structure Evaluation based on Hydraulic Energy Functions. Soil Sci. Soc. Am. J. 80:1167–1180, doi:10.2136/sssaj2016.03.0058

A108) Yang, Y.*, O. Wendroth, and R.J. Walton. 2016. Temporal dynamics and stability of spatial soil matric potential in two land use systems. Vadose Zone J. 15, doi:10.2136/vzj2015.12.0157.

A107) Xi Liang, Vasilis Liakos, Ole Wendroth, and George Vellidis. 2016. Using the Van Genuchten Model for Irrigation Scheduling. Agricultural Water Management 176:170-179.

A106) Shuai, X., X. Li, R. Yost, and O. Wendroth. 2016. State-space estimation of the intrinsic soil Phosphorus pools from Mehlich-3 Test. Comm. Soil Sci. Plant Anal. 47:1058-1068, DOI: 10.1080/00103624.2016.1166244.

A105) Daehyun Kim, D.R. Hirmas, R.W. McEwan, T.G. Mueller, S.J. Park, P. Šamonil, J.A. Thompson, and O. Wendroth. 2016. Predicting the Influence of Multi-Scale Spatial Autocorrelation on Soil–Landform Modeling. Soil Sci. Soc. Am. J. 80:409-419, doi:10.2136/sssaj2015.10.0370.

A104) De Jong van Lier, Q., and O. Wendroth. 2016. Reexamination of the field capacity concept in a Brazilian Oxisol. Soil Sci. Soc. Am. J. 80:264-274, doi:10.2136/sssaj2015.01.0035.

A103) Wendroth, O. 2015. Book review on: Preferential Flow: Stokes approach to infiltration and drainage. Europ. J. Soil Sci. 66:1075.

A102) Ceddia, M.B., A.L.Oliviera Villela, E.F. Machado Pinheiro, and O. Wendroth. 2015. Spatial variability of soil carbon stock in the Urucu river basin, Central Amazon-Brazil. Sci. Total Environ. 536:58-69.

A101) De Jong van Lier, Q., O. Wendroth, and J.C. van Dam. 2015. Prediction of winter wheat yield with the SWAP model using pedotransfer functions: An

evaluation of sensitivity, parameterization and prediction accuracy. Agric. Water Management 154:29-42.

A100) Awe, G.O., J.M. Reichert, and O. Wendroth. 2014. Temporal variability and covariance structures of soil temperature in a sugarcane field under different management practices in southern Brazil. Soil Till. Res. 150:93-106.

A99) Awe, G.O., J.M. Reichert, L.C. Timm, and O. Wendroth. 2014. Temporal processes of soil water status in a sugarcane field under residue management. Plant & Soil, doi 10.1007/s11104-014-2304-5.

A98) Rienzi, E.A.*, C.J. Matocha, J.H. Grove, O. Wendroth and J.F. Fox. 2015. Enrichment ratio of poorly crystallized iron mobilized with clay/silt-sized particles released via interrill erosion. Catena 124: 130-137.

A97) Schwen, A., J. Backus, Y. Yang[1], and O. Wendroth. 2014. Characterizing land use impact on multi-tracer displacement and soil structure. J. Hydrol. 519:1752-1768.

A96) Wendroth, O. 2014. Who will take back the bicycle? (Editorial in honor of Mirek Kutilek). Soil & Tillage Res. doi.org/10.1016/S0167-1987(14)00069-5

A95) Karathanasis, A.D., J.L. Ghezzi, O. Wendroth, C.J. Matocha, J. Unrine, and Y.L. Thompson. 2014. Subsurface transport of As, Se, Cu, and Pb contaminants with soil and biosolid nano- and macro-colloid fractions. Austin J. Hydrol. 1: 13-25.

A94) Wendroth, O., Y. Yang*, and L.C. Timm. 2014. State-space analysis in soil physics. In: W.G. Teixeira, M.B. Ceddia, M. Vasconcelos Ottoni, and G. Kangussu Donnagema (Eds.) Application of soil physics in environmental analyses – Measuring, modelling and data integration. Springer, New York, pp. 53-74.

A93) Yang*, Y., O. Wendroth, and R.J. Walton. 2014. Field-scale water and Bromide transport during and after simulated rain. Soil Sci. Soc. Am. J. 78: 1224-1238.

A92) Yang*, Y., and O. Wendroth. 2014. State-space approach to analyze field-scale bromide leaching. Geoderma 217-218:161-172, doi.org/10.1016/j.geoderma.2013.11.013.

A91) Wendroth, O. 2013. Soil variability. In: Lazarovitch, N., and A.W. Warrick (Eds.), Exercises in Soil Physics. GeoEcology Textbook, Catena Verlag GmbH, Reiskirchen, Germany, pp. 292-332.

A90) Shuai, X., R.S. Yost, and O. Wendroth. 2014. State-space estimation of the intrinsic soil Phosphorus pools from soil Phosphorus tests. Geoderma 214-215:239-245.

A89) Kreba*, S.A., M.S. Coyne, R.L. McCulley, and O. Wendroth. 2013. Spatial and temporal patterns of CO2 flux in crop and grass land-use systems. Vadose Zone J. doi:10.2136/vzj2013.01.0005.

A88) Schwen, A., Y. Yang and O. Wendroth 2013. State-space models describe the spatial variability of bromide leaching controlled by land use, irrigation and pedologic characteristics. Vadose Zone J. doi:10.2136/vzj2012.0196.

A87) Yang*, Y., O. Wendroth, and R.J. Walton. 2013. Field-scale bromide leaching as affected by land use and rain characteristics. Soil Sci. Soc. Am. J. doi:10.2136/sssaj2013.01.0018.

A86) Wendroth, O., S. Nambuthiri*, and R.J. Walton. 2013. Accounting for soil spatial variability in soil water capacitance probe calibration. Vadose Zone J. 12: 2: -doi:10.2136/vzj2012.0182.

A85) Schwen, A., Y. Yang*, R.J. Walton, and O. Wendroth. 2012. A new spatial experimental design reveals the impact of land use and irrigation properties on water infiltration and bromide leaching. Vadose Zone J. 11: doi:10.2136/vzj2012.0077.

A84) Wendroth, O., V. Vasquez*, and C.J. Matocha. 2011. Field experimental approach to bromide leaching as affected by scale-specific rainfall characteristics. Water Resour. Res. 47, W00L03, doi: 10.1029/2011WR010650.

A83) Wendroth, O.*, K.C. Kersebaum, G. Schwab, and L. Murdock. 2011. Spatial relationships of soil properties, crop indices and N application pattern with wheat growth and yield in a field. In: Ahuja, L., and L. Ma (Eds.) Methods of Introducing System Models in Field Research, Volume 2 in the Advances in Agricultural System Modeling Series, ASA-SSSA-CSSA, Madison, WI. p. 229-259. [A83]

A82) Wendroth, O., L. Murdock, and G. Schwab. 2011. How close is close enough? In: Stafford, J.V. (Ed.). Precision Agriculture 2011. Proc. 8th Europ. Conf. Prec. Agric., Prague, Czech Republic, p. 17-28. [A82]

A81) Wendroth, O., S. Koszinski, and V. Vasquez*. 2011. Soil spatial variability. p. 10-1-10-25. In: Huang, P.M., Y.C. Li, and M.E. Sumner (Eds.) Handbook of Soil Science, 2nd ed., CRC Press. [A81]

A80) Wendroth, O., E.L. Ritchey, S. Nambuthiri*, J.H. Grove, and R.C. Pearce. 2011. Spatial variability of soil physical properties. p. 827-839. In: Gliński, J., J. Horabik, and J. Lipiec (Eds.), Encyclopedia of Agrophysics. Springer, Heidelberg, Germany. [A80]

A79) Miller, J.O.[2], A.D. Karathanasis, and O.O.B. Wendroth. 2010. In-situ colloid generation and transport in 30 year old mine soil profiles receiving biosolids. Intl. J. Mining, Reclam. Environ. 24:95-108.

A78) Shuai, X., O. Wendroth, C. Lu, and C. Ray. 2009. Reducing the complexity of Time Domain Reflectometry waveforms. Soil Sci. Soc. Am. J. 73: 28-36.

A77) Wendroth, O. and D.A. Robinson. 2008. Scaling Processes in Watersheds. Encyclopedia of Water Science, Second Edition, 1:1,1024-1028. [A77]

A76) Robinson D.A., C.S. Campbell, J.W. Hopmans, B.K. Hornbuckle, S.B. Jones, R. Knight, F. Ogden, J. Selker, and O. Wendroth. 2008. Soil moisture measurement for ecological and hydrological watershed-scale observatories: A review. Vadose Zone J. 7:358-389 (doi:10.2136/vzj2007.0143). [A76]

A75) Flynn, E.S., C.T. Dougherty, and O. Wendroth. 2007. Assessment of Grassland Condition with the Normalized Difference Vegetation Index. Agron. J. 100:114-121 (doi:10.2134/agronj2006.0363).

A74) Kersebaum, K.C., H.I. Reuter*, K. Lorenz, and O. Wendroth. 2007. Model-based nitrogen fertilization considering agro-meteorological data. In: Bruulsema (ed.) Proc. Symposium "Integrating weather variability into nitrogen recommendations", Soil Science Society of America, Indianapolis, IN, Publ.: International Plant Nutrition Institute.

A73) Hyatt, J., O. Wendroth, D.B. Egli, and D.M. TeKrony. 2007. Soil Compaction and Soybean Seedling Emergence. Crop Sci. 47:2495–2503.

A72) Lebron, I., M.D. Madsen, D.G. Chandler, D.A. Robinson, O. Wendroth, and J. Belnap. 2007. Ecohydrological controls on soil moisture and hydraulic conductivity within Pinyon-Juniper Woodland. Water Resour. Res. 43, W08422, doi:10.1029/2006WR005398.

A71) Wendroth, O., and N. Wypler. 2007. Unsaturated hydraulic properties: Laboratory evaporation. In: M.R. Carter and E.G. Gregorich (Eds.) Soil sampling and methods of analysis. Canadian Society of Soil Science, 2nd ed., CRC Press, Boca Raton, FL, pp. 1089-1106.

A70) Loescher, H.W., J. Jacobs, O. Wendroth, D.A. Robinson, G.S. Poulos, K. McGuire, P. Reed, B.P. Mohanty, J.B. Shanley, W. Krajewski. 2007. Enhancing Water Cycle Measurements for Future Hydrologic Research, Bulletin of American Meteorological Society (BAMS) 88:669-676. DOI:10.1175/BAMS-88-5-669.

A69) Reuter*, H.I., O. Wendroth, and K.C. Kersebaum. 2006. Optimisation of relief classification for different levels of generalization. Geomorphology 77:79-89.

A68) Jacobs, J., W. Krajewski, H. Loescher, R. Mason, K. McGuire, B. Mohanty, G. Poulos, P. Reed, J. Shanley, O. Wendroth, and D.A. Robinson. 2006. Enhanced Water Cycle Measurements for Watershed Hydrologic Sciences Research. A Report to the Consortium of Universities for the Advancement of Hydrologic Sciences, CUAHSI, Inc., 69 pp.

A67) Koszinski, S., V. Quisenberry, H. Rogasik, and O. Wendroth. 2006. Spatial variation of tracer distribution in a structured clay field soil. J. Plant Nutr. Soil Sci. 169:25-37, DOI: 10.1002/jpln.200521694.

A66) Giebel, A, O. Wendroth, H.I. Reuter, K.C. Kersebaum, and J. Schwarz. 2006. How representatively can we sample soil mineral nitrogen? J. Plant Nutr. Soil Sci. 169:52-59, DOI: 10.1002/jpln.200521755.

A65) Wendroth, O., S. Koszinski, and E. Pena-Yewtukhiv. 2006. Spatial association between Soil hydraulic properties, soil texture and geoelectrical resistivity. Vadose Zone Journal 5:341-355.

A64) Reuter*, H.I., A. Giebel, and O Wendroth. 2005. Can landform stratification improve our understanding of crop yield variability? Precision Agriculture 6:521-537.

A63) Reuter*, H.I., K.C.Kersebaum, and O.Wendroth. 2005. Spatial and temporal variability of soil properties with respect to relief information. In: Stafford, J.V. (Ed.). Precision Agriculture '05. Proc. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, pp. 433-440.

A62) Kersebaum, K.C., H.I. Reuter*, K. Lorenz, and O. Wendroth. 2005. Long term simulation of soil/crop interactions to estimate temporal stability of potential management zones and consequences for site specific nitrogen management considering water protection and/or yield production. In: Stafford, J.V. (Ed.). Precision Agriculture '05. Proc. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, pp. 795-802.

A61) Pena-Yewtukhiw, E.M., G.J. Schwab, O. Wendroth, L.W. Murdock, and T. Stombaugh. 2005. Change in spatial variability structure of NDVI readings related to observation scale. In: Stafford, J.V. (Ed.). Precision Agriculture '05. Proc. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, pp. 353-359.

A60) Schwab, G.J., E. Pena, T.S. Stombaugh, O. Wendroth, and L.W. Murdock. 2005. Wheat Yield Population Response to Variable Rate N Fertilization Strategies Using Active NDVI Sensors. In: Stafford, J.V. (Ed.). Precision Agriculture '05. Proc. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, pp. 235-242.

A59) Wendroth, O., A. Giebel, E. Pena-Yewtukhiw, K.C. Kersebaum, G.J. Schwab, H.I. Reuter*, L.W. Murdock, and T.S. Stombaugh. 2005. Spatial Relation between NDVI and Grain Yield: Impact of Spatial Resolution and Measurement Device. In: Stafford, J.V. (Ed.). Precision Agriculture '05. Proc. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, pp. 731-739.

A58) Kersebaum, K.C., K. Lorenz, H.I. Reuter*, J. Schwarz, M. Wegehenkel, O. Wendroth. 2005. Operational use of agro-meteorological data and GIS to derive site specific nitrogen fertilizer recommendations based on the simulation of soil and crop growth processes. (Special Issue Agrometeorology, Ed. Z. Dunkel) Physics and Chemistry of the Earth: 30/1-3: 59-67.

A57) Reuter*, H.I., Kersebaum,K.C., Wendroth, O. 2005. Modelling of solar radiation influenced by topographic shading - evaluation and application for precision farming. (Special Issue Agrometeorology, Ed. Z. Dunkel) Physics and Chemistry of the Earth: 30/1-3: 143-149.

A56) Wendroth, O. 2004. Book review on "Computer-based environmental management", by R. Seppelt. J. Plant Nutrition and Soil Sci. 167:764-765.

A55) Wendroth, O. 2004. Book review on "Multivariate Analysis of Ecological Data using CANOCO", by JAN LEPS and PETR SMILAUER. Cambridge University Press, Cambridge CB2 2RU, UK. 2003, Vadose Zone J. 3: 1057.

A54) Poulsen, T.G., P. Moldrup, O. Wendroth, and D.R. Nielsen. 2003. Estimating saturated hydraulic conductivity and air permeability from soil physical properties using state-space analysis. Soil Sci. 168:311-320.

A53) Rogasik, H., I. Onasch, J. Brunotte, D. Jegou, and O. Wendroth. 2003. Assessment of soil structure using X-ray computed tomography. In: Mees, F., R. Swennen, M. van Geet, and P. Jacobs (eds.). Applications of X-ray Computed Tomography in Geosciences. Geological Society, London, Special Publication 215:151-165.

A52) Wendroth, O. K.C. Kersebaum, H.I. Reuter*, A. Giebel, N. Wypler, M. Heisig, J. Schwarz, and D.R. Nielsen. 2003. MOSAIC: Crop Yield Prediction – Compiling Several Years' Soil and Remote Sensing Information. In: Stafford, J.V. and A. Werner (Eds.). Precision Agriculture '03. Proc. 4th Europ. Conf. Prec. Agric., Berlin, Germany, pp. 723-729.

A51) Reuter*, H.I., O.Wendroth, K.C.Kersebaum, and J. Schwarz. 2003. MOSAIC: Crop Yield Observation – Can landform stratification improve our understanding of crop yield variability? In: Stafford, J.V. and A. Werner (Eds.). Precision Agriculture '03. Proc. 4th Europ. Conf. Prec. Agric., Berlin, Germany, pp. 579-584.

A50) Kersebaum, K.C., K. Lorenz, H.I. Reuter*, O.Wendroth, A. Giebel, and J. Schwarz. 2003. Site specific nitrogen fertilisation recommendations based on simulation. In: Stafford, J.V. and A. Werner (Eds.). Precision Agriculture '03. Proc. 4th Europ. Conf. Prec. Agric., Berlin, Germany, pp. 309-314.

A49) Wendroth, O., H.I. Reuter*, and K.C. Kersebaum. 2003. Predicting yield of barley across a landscape: a state-space modeling approach. J. Hydrology 272:250-263.

A48) Nielsen, D.R., and O. Wendroth. 2003. Spatial and temporal statistics – sampling field soils and their vegetation. Catena, Reiskirchen, Germany, 416 pp.

A47) Baveye, P., H. Rogasik, O. Wendroth, I. Onasch, and J.W. Crawford. 2002. Effect of sampling volume on the measurement of soil physical properties: simulation with x-ray tomography data. Meas. Sci. Technol. 13:775-784.

A46) Kersebaum, K.C., H.I. Reuter*, K. Lorenz and O. Wendroth. 2002. Modeling crop growth and nitrogen dynamics for advisory purposes regarding spatial variability. *In*: L.R. Ahuja (Hrsg.), Agricultural System Models in Field Research and Technology Transfer. CRC Press. Boca Raton , FL p 230-252.

A45) Wendroth, O. and D.R. Nielsen. 2002. Time and Space Series. In: G.C. Topp, and J.H. Dane, Methods of Soil Analysis, 3d ed., Chapter 1, Soil sampling and statistical procedures. ASA-CSSA-SSSA monograph, Madison, WI, USA, pp. 119-137.

A44) Reuter*, H.I., O. Wendroth, K.C. Kersebaum, and J. Schwarz. 2001. Solar radiation modelling for precision farming – a feasible approach for better understanding variability of crop production. In: Grenier, G., and S. Blackmore (Eds.). ECPA 2001. Proc. 3rd Europ. Conf. Prec. Agric. Montpellier, France. pp. 845- 850.

A43) Schwarz, J., K.C. Kersebaum, H.I. Reuter*, O. Wendroth, and P. Jürschik. 2001. Site-specific fertiliser application with regard to soil and plant parameters. In: Grenier, G., and S. Blackmore (Eds.). ECPA 2001. Proc. 3rd Europ. Conf. Prec. Agric. Montpellier, France. pp. 713-718.

A42) Kersebaum, K.C., K. Lorenz, O. Wendroth, H.I. Reuter*, J. Schwarz. 2001. Effects of site-specific nitrogen fertilization on nitrogen leaching – comparison of different strategies in arable fields based on observations and simulations. In: Grenier, G., and S. Blackmore (Eds.). ECPA 2001. Proc. 3rd Europ. Conf. Prec. Agric. Montpellier, France. pp. 683-688.

A41) Simunek, J., O. Wendroth, N. Wypler, and M.T. van Genuchten. 2001. Non-equilibrium water flow characterized by means of upward infiltration experiments. Europ. J. Soil Sci. 52:13-24.

A40) Stevenson, F.C., J.D. Knight, O. Wendroth, C. van Kessel, and D.R. Nielsen. 2001. A comparison of two methods to predict the landscape-scale variation of crop yield. In: Van Kessel, C. and O. Wendroth (Eds.) Special issue: Landscape Research - Exploring Ecosystem Processes and their Relations at different Scales in Space and Time. Soil Till. Res. 58:163-181.

A39) Wendroth, O., P. Jürschik, K.C. Kersebaum, H. Reuter*, C. Van Kessel, and D.R. Nielsen. 2001. Identifying, understanding, and describing spatial processes in agricultural landscapes - four case studies. In: Van Kessel, C. and O. Wendroth (Eds.) Special issue: Landscape Research - Exploring Ecosystem Processes and their Relations at different Scales in Space and Time. Soil Till. Res. 58:113-128.

A38) Wendroth, O. 2000. Book review on: Fehlerquellen in raumbezogenen Informationssystemen. Jan Sbresny, herausgegeben von der Bundesanstalt für Geowissenschaften und Rohstoffe und den Staatlichen Geologischen Diensten in der Bundesrepublik Deutschland. Arch. Acker-, Pflanzenbau, Bodenkunde 45:593-594.

A37) Wendroth, O. 2000. Stochastische Verfahren zur Identifikation räumlicher und zeitlicher Prozesse in Agrarökosystemen. - In: Barsch, H., K. Billwitz & H.-R. Bork [Eds.]: Arbeitsmethoden in Physiogeographie und Geoökologie: 546-557; Gotha (Klett-Perthes) (Perthes GeographieKolleg).

A36) Cassel, D.K., O. Wendroth, and D.R. Nielsen. 2000. Assessing spatial variability in an agricultural experiment station field: opportunities arising from spatial dependence. Agronomy J. 92:706-714.

A35) Wendroth, O. 2000. Book-Review on "Soil and Water Quality at Different Scales" by Finke, P.A., J. Bouma, and M. Hoosbeck (Eds.), 324 p. J. Environ. Qual. 29:349.

A34) Simunek, J., O. Wendroth, and M. Th. Van Genuchten. 1999. Estimating unsaturated soil hydraulic properties from laboratory tension disc infiltrometer experiments. Water Resour. Res. 35:2965-2979.

A33) Rogasik, H., J.W. Crawford, O. Wendroth, I.M. Young, M. Joschko, and K. Ritz. 1999. Discrimination of soil phases by Dual Energy X-ray tomography. Soil Sci. Soc. Am. J. 63:741-751.

A32) Wendroth, O. and J. Simunek. 1999. Soil hydraulic properties determined from evaporation and tension infiltration experiments and their use for modeling field moisture status. In: Van Genuchten, M.Th. and F.J. Leij (Eds). Proc. Int. Workshop on "Characterization and measurement of the hydraulic properties of unsaturated porous media", Riverside, California, pp. 737-748.

A31) Simunek, J., O. Wendroth, and M. Th. van Genuchten. 1999. Soil hydraulic properties from laboratory evaporation experiments by parameter estimation. In: Van Genuchten, M.Th. and F.J. Leij (Eds). Proc. Int. Workshop on "Characterization and measurement of the hydraulic properties of unsaturated porous media", Riverside, California, pp. 713-724.

A30) Mulla, D.J., A.P. Mallawatanari, O. Wendroth, M. Joschko, H. Rogasik, and S. Koszinski. 1999. Site-specific management of flow and transport in heterogeneous and structured soils, in: Hopmans, J.W. and M.B. Parlange (eds.): Vadose Zone Hydrology, pp. 396-417.

A29) Wendroth, O., P. Jürschik, and D.R. Nielsen. 1999. Spatial crop yield prediction from soil and land surface state variables using autoregressive state-space approach. In: Stafford, J.V. (Ed.). Precision Agriculture '99. Proc. 2nd Europ. Conf. Prec. Agric. Odense, Denmark. pp. 419-428.

A28) Jürschik, P., A. Giebel, and O. Wendroth. 1999. Processing of point data from combine harvesters for precision framing. In: Stafford, J.V. (Ed.). Precision Agriculture '99. Proc. 2nd Europ. Conf. Prec. Agric. Odense, Denmark. pp. 297-307.

A27) Wendroth, O., P. Jürschik, A. Giebel, and D.R. Nielsen. 1999. Spatial statistical analysis of on-site crop yield and for site-specific management. In: Robert, P.C., R.H. Rust, and W.E. Larson (Eds.), Proc. 4th International Conference on Precision Agriculture, Minneapolis, MI, p. 159-170.

A26) Nielsen, D.R., O. Wendroth, and F.J. Pierce. 1999. Emerging concepts for solving the enigma of precision farming research. In: Robert, P.C., R.H.

Rust, and W.E. Larson (Eds.), Proc. 4th International Conference on Precision Agriculture, Minneapolis, MI. p. 303-318.

A25) Wendroth, O., H. Rogasik, S. Koszinski, C.J. Ritsema, L.W. Dekker, and D.R. Nielsen. 1999. State-space prediction of field-scale soil water content time series in a sandy loam. Soil Till. Res. 50:85-93.

A24) Ludwig, R., H.H. Gerke, and O. Wendroth. 1999. Describing water flow in macroporous field soils using the modified MACRO model. J. Hydrology 215:135-152.

A23) Wendroth, O, W. Pohl, S. Koszinski, H. Rogasik, C.J. Ritsema, and D.R. Nielsen. 1999. Spatio-temporal patterns and covariance structures of soil water status in two Northeast-German Field Sites. J. Hydrology 215:38-58.

A22) Dekker, L.W., C.J. Ritsema, O. Wendroth, N. Jarvis, K. Oostindie, W. Pohl, M. Larsson, and J.P. Gaudet. 1999. Moisture distributions and wetting rates of soils at experimental fields in the Netherlands, France, Sweden and Germany. J. Hydrology 215:4-22.

A21) Wendroth, O. 1999. Book-Review on "Phosphorus loss from soil to water" by Tunney H. and O.T. Carton (Eds.), 467 p. J. Environ. Qual. 28:1041-1042.

A20) Hui, S., O. Wendroth, M.B. Parlange, and D.R. Nielsen. 1998. Soil variability – Infiltration relationships of agroecosystems. Journal of Balkan Ecology, 1: 21-40.

A19) Parlange, M.B., A.T. Cahill, D.R. Nielsen, J.W. Hopmans, and O. Wendroth. 1998. Review of heat and water movement in field soils. Soil Till. Res. 47:5-10.

A18) Simunek, J., O. Wendroth, and M.Th. Van Genuchten. 1998. Parameter estimation analysis of the evaporation method for determining soil hydraulic properties. Soil Sci. Soc. Am. J. 62:894-905.

A17) Nielsen, D.R., J.W. Hopmans, M. Kutilek, and O. Wendroth. 1997. A brief review of soil water, solute transport and regionalized variable analysis. Sci. Agric., Piracicaba, 54 (Special issue):89-115.

A16) Nielsen, D.R., M. Kutilek, O. Wendroth, and J.W. Hopmans. 1997. Selected research opportunities in soil physics. Sci. Agric., Piracicaba, 54(Special issue):51-77.

A15) Wendroth, O., G. Kühn, P. Jürschik, and D.R. Nielsen. 1997. State-space approach for site specific management decisions. In: Stafford, J.V. (ed.). Precision Agriculture. Proc. First European Conference on Precision Agriculture, Warwick, UK. BIOS Scientific publishers, pp. 835-842.

A14) Domsch, H. and O. Wendroth. 1997. On-site diagnosis of soil structure for site specific management. In: Stafford, J.V. (ed.). Precision Agriculture. Proc. First European Conference on Precision Agriculture. Warwick, UK. BIOS Scientific Publishers pp.95-102.

A13) Wendroth, O. 1997. Book review on "Untersuchungen zur Modellierung der Bodenneubildungsrate auf Opalinuston des Basler Tafeljura (Switzerland)" by Schwer, P., 1994, Physiogeographica, 190pp. Soil Technology 10:167-168.

A12) Nielsen, D.R., O. Wendroth, P. Jürschik, G. Kühn, and J.W. Hopmans. 1997. Precision agriculture: Challenges and opportunities of instrumentation and field measurements. In: P.E. Cruvinel, S. Crestana, L.M. Neto, L.A. Colnago, and L.H.C. Mattaso (eds.): Simposio Nacional de Instrumentacao Agropecuaria - SIAGRO, EMBRAPA, CNPDIA, Sao Carlos, Brazil, pp. 65-80.

A11) Wendroth, O., W.D. Reynolds, S.R. Vieira, K. Reichardt, and S. Wirth. 1997. Statistical approaches to the analysis of soil quality data. in: Gregorich, E.D. and M.R. Carter (Eds.). Soil quality for crop production and ecosystem health. Elsevier, Amsterdam. pp. 247-276.

A10) Koszinski, S., O. Wendroth, and J. Lehfeldt. 1995. Field scale heterogeneity of soil structural properties in a moraine landscape of north-eastern Germany. Int. Agrophysics 9:201-210.

A09) Nielsen, D.R., O. Wendroth, and M.B. Parlange. 1995. Opportunities for examining on-farm soil variability. in: Robert, P.C., R.H. Rust, and W.E. Larson (Eds.) Site Specific Management for Agricultural Systems. SSSA, pp. 95-132.

A08) Ehlers, W., O. Wendroth, and F. de Mol. 1995. Characterizing pore organization by soil physical parameters. in: Hartge, K.H. and B.A. Stewart, Soil structure - Its development and function. Adv. Soil Sci. pp. 257-275.

A07) Eching, S.O., J.W. Hopmans, and O. Wendroth. 1994. Unsaturated hydraulic conductivity from transient multistep outflow and soil water pressure data. Soil Sci. Soc. Am. J. 58:687-695.

A06) Wendroth, O., G.G. Katul, M.B. Parlange, C.E. Puente, and D.R. Nielsen. 1993. A nonlinear filtering approach for determining hydraulic conductivity functions in field soils. Soil Sci. 156:293-301.

A05) Katul, G.G., O. Wendroth, M.B. Parlange, C.E. Puente, and D.R.Nielsen. 1993. Estimation of in situ hydraulic conductivity function from nonlinear filtering theory. Water Resour. Res. 29: 1063-1070.

A04) Wendroth, O., W. Ehlers, J.W. Hopmans, H. Kage, J. Halbertsma, and J.H.M. Wösten. 1993. Reevaluation of the evaporation method for determining hydraulic functions in unsaturated soils. Soil Sci. Soc. Am. J. 57:1436-1443.

A03) Ahuja, L.R., O. Wendroth, and D.R. Nielsen. 1993. Relationship between initial drainage of surface soil and average profile saturated conductivity. Soil Sci. Soc. Am. J. 57:19-25.

A02) Kamgar, A., J.W. Hopmans, W.W. Wallender, and O. Wendroth. 1992. On plotsize and sample number for neutron probe measurements in small field trials. Soil Sci. 156:213-224.

A01) Wendroth, O., A.M. Al-Omran, C. Kirda, K. Reichardt, and D.R. Nielsen. 1992. State-space approach to spatial variability of crop yield. Soil Sci. Soc. Am. J. 56:801-807.

b) ***Non-Refereed Publications (Not Including Abstracts)***

41) Wendroth, O., K. Reichardt, J.W. Hopmans, and R. van Genuchten. 2020. In Memoriam – Donald Rodney Nielsen. CSA-News 65(9): 29. DOI: 10.1002/csan.20248

40) Wendroth, O. 2020. SSSA President's Message - New Advances, Opportunities Call Us to Action. CSA News 65(7): 22-24.

39) Wendroth, O. 2012. Crop sensor identifies soil spatial variability and indicates where in the field how much fertilizer is needed. Newsletter, Kentucky Small Grain Growers' Association.

38) Wendroth, O., G. Schwab, D.B. Egli, and L. Murdock. 2008. In-season observation of Wheat growth status in a farmer's field: Continuous change of nitrogen application rate across the landscape as an alternative to small plot research. Wheat Science Annual Research Report, published online: http://www.ca.uky.edu/ukrec/RR%202007-08/Contents%202007-08.htm [B38]

37) Schwarz, J., K.C. Kersebaum, O. Wendroth und H. Reuter. 2003. Teilflächenspezifisches Stickstoffmanagement. Landtechnik 4/2003:246-247. [B37]

36) Schumann, D., H. Miller, P. Jürschik, J. Schwarz, K.C. Kersebaum, H.I. Reuter, A. Giebel, and O. Wendroth. 2003. MOSAIC – On-farm monitoring, geo-spatial analysis, and determinsitic geo-referenced modelling as an approach for spatial crop yield variability and site-specific management decisions. In: Werner, A. and A. Jarfe (Eds.). Program book of the joint conference ECPA - ECPLF, Berlin, Germany, pp. 567-568. [B36]

35) Giebel, A., O. Wendroth, H.I. Reuter, K.C. Kersebaum, and J. Schwarz. 2003. MOSAIC: Spatial representativity of mineral soil nitrogen monitoring. In: Werner, A. and A. Jarfe (Eds.). Program book of the joint conference ECPA - ECPLF, Berlin, Germany, pp. 409-410. [B35]

34) Schwarz, J., K.C. Kersebaum, H.I. Reuter, and O. Wendroth. 2003. Stickstoff aus dem Rechner – Wie gut sind Rechenmodelle für die N-Teilflächendüngung. Neue Landwirtschaft 3(2003):49-51. [B34]

33) Simunek, J. und O. Wendroth. 2002. Bodenhydraulisches Ungleichgewicht bei aufwärtsgerichteter Wasserinfiltration. Mitt. Dtsch. Bodenkdl. Ges. 101:47-48. [B33]

32) Kersebaum, K.C., A. Giebel, P. Jürschik, H.I. Reuter, J. Schwarz und O. Wendroth. 2002. Modellierung von N-Dynamik und Pflanzenwachstum auf der Basis räumlich variabler Standortdaten zur Ableitung einer teilflächenspezifischen N-Düngung. In: P. Schröder, B. Huber, J.C. Munch (Hrsg.), FAM-Bericht 55, p. 96. [B32]

31) Wendroth, O., K.C. Kersebaum, H.I. Reuter und D.R. Nielsen. 2002. Bodenkundliche und sensorbasierte Information zur räumlichen Ertragsvorhersage von Sommergerste: ein autoregressives State-space-Verfahren. In: P. Schröder, B. Huber, J.C. Munch (Hrsg.), FAM-Bericht 55, p. 95. [B31]

30) Kersebaum, K. C., H. I. Reuter, J. Schwarz und O. Wendroth. 2002. Vergleich unterschiedlicher Strategien für teilflächenspezifische und schlageinheitliche Düngung auf Basis von Messungen und Simulationsrechnungen. Berichte der GIL 15: 230 - 233. 86). [B30]

29) Wendroth, O., H.I. Reuter, K.C. Kersebaum, P. Jürschik und J. Schwarz. 2002. Räumliche Variabilität von Boden- und Pflanzenbestandseigenschaften in landwirtschaftlich genutzten Flächen – Änigma oder Grundlage zur spezifischen Bewirtschaftung? KTBL-Sonderveröffentlichung 038. Tagungsband Precision Agriculture Tage, 13.-15. März 2002, Bonn, pp. 21-23. [B29]

28) Reuter, H. I., K.-C. Kersebaum, J. Schwarz und O. Wendroth. 2001. Einstrahlungsmodellierung - ein Ansatz zum Verständnis der Ertragsvariabilität innerhalb von Praxisflächen?. Mitt. Dtsch. Bodenkdl. Ges. 96: 109-110. [B28]

27) Reuter, H.I., K.C. Kersebaum und Wendroth. 2001. Einstrahlungsmodellierung – ein Ansatz zum Verständnis der feldskaligen Ertragsvariabilität? In: Beierkuhnlein (Hrsg.), Landschaften als Lebensraum, Tagungsband zur 2. Jahrestagung der IALE-Region Deutschland, p. 47-49. [B27]

26) Koszinski, S. und O. Wendroth. 2001. Geoelektrische Widerstandstomographie – Raum-zeitliches Verhalten von Messungen und ihr Bezug zu Bodeneigenschaften. Mitt. Dtsch. Bodenkdl. Ges. 96:99-100. [B26]

25) Schwarz, J., K.C. Kersebaum, H. Reuter und O. Wendroth. 2001. Stickstoff gezielt einsetzen. Landtechnik 56(5): 320-321. [B25]

24) Wendroth, O., 2001. Precision Agriculture. Agrarmarkt (2), 2001:76-77. [B24]

23) Koszinski, S., V. Quisenberry, H. Rogasik, O. Wendroth, and K. Seidel. 2000. Chloride and dye tracer transport in a differently tilled heavy clay soil. Mitt. Dtsch. Bodenkdl. Ges. 93:208-211. [B23]

22) Rogasik, H., O. Wendroth, E. Borg, S. Koszinski, and I. Onasch. 2000. Assessment of morphological properties based on calculation of internal and external heterogeneity. Mitt. Dtsch. Bodenkdl. Ges. 93:212-215. [B22]

21) Rogasik, H., O. Wendroth, J. Brunotte, M. Joschko, M. Kainz und I. Onasch. 2000. Kombination morphologischer und funktioneller

Untersuchungsmethoden zur Beurteilung des Bodengefüges. Mitt. Dtsch. Bodenkdl. Ges. 92:237-240. [B21]

20) Schwarz, J., A. Giebel, M. Heisig, K. Ch. Kersebaum, H. Reuter, und O. Wendroth. 2000. Teilflächenspezifische Düngung unter Berücksichtigung der räumlichen und zeitlichen Stickstoffvariabilität. VDI Tagung Landtechnik, Münster, 2000, pp. 307-312. [B20]

19) Jürschik, P., A. Giebel, M. Heisig und O. Wendroth. 1999. Analyse der räumlichen Stickstoffverteilung für die teilflächenspezifische Düngung. VDI-Berichte 1999:193-198. [B19]

18) Kersebaum, K.C., P. Jürschik und O. Wendroth. 1999. Modellierung der schlaginternen Ertragsvariabilität auf der Basis räumlich variabler Bodenkennwerte am Beispiel eines Lößschlages. Mitt. Dtsch. Bodenkdl. Ges. 91:799-802. [B18]

17) Koszinski, S., O. Wendroth und G. Peschel. 1999. Geoelektrische Widerstandstomographie und räumliche Variabilität von Bodeneigenschaften. Mitt. Dtsch. Bodenkdl. Ges. 91:1273-1276. [B17]

16) Jürschik, P., O. Wendroth und A. Giebel. 1998. Beziehungen zwischen lokalen Ertragsdaten und Fernerkundungsdaten. Agrartechnische Forschung 4(2):1-9. [B16]

15) Jürschik, P., A. Giebel und O. Wendroth. 1998. Verarbeiten von Ertragsdaten aus Mähdreschern. VDI-Berichte 1998:215-221. [B15]

14) Wendroth, O., W. Pohl, S. Koszinski, and D.R. Nielsen. 1998. Field-scale soil water and solute transport in sandy and clayey soils. Proc. 16th Conf. ISSS. [B14]

13) Koszinski, S., O. Wendroth, and J. Lehfeldt. 1997. Field scale heterogeneity of soil structural properties in a moraine landscape of north-east Germany. In: Wendroth, O. and D.R. Nielsen (Ed.). 1997. Land Surface Processes - Sampling the Landscape and Analyzing and Modeling Spatio.Temporal Patterns. Proc. of a Workshop, Müncheberg, June 1995. ZALF-Bericht 31, pp 39-46. [B13]

12) Cassel, D.K., O. Wendroth, and D.R. Nielsen. 1997. Soil and wheat yield variability on a renovated agricultural research station. In: Wendroth, O. and D.R. Nielsen (Eds.). 1997. Land Surface Processes - Sampling the Landscape and Analyzing and Modeling Spatio.Temporal Patterns. Proc. of a Workshop, Müncheberg, June 1995. ZALF-Bericht 31, pp 15-28. [B12]

11) Wendroth, O., and D.R. Nielsen (Eds.). 1997. Land Surface Processes - Sampling the Landscape and Analyzing and Modeling Spatio.Temporal Patterns. Proc. of a Workshop, Müncheberg, June 1995. ZALF-Bericht 31, 102pp. [B11]

10) Wendroth, O. 1997. Ansätze zur statistischen Auswertung raum-zeitlicher Erhebungen in der landschaftsökologischen Forschung. In: Meister, R. und H. Weiß (Hrsg.). Statistische Methoden in der experimentellen Forschung. Kurzfassungen von Kolloquiumsvorträgen der Wintersemester 1995/96 und 1996/97, Technische Universität Berlin, pp. 185-194. [B10]

9) Wendroth, O., P. Jürschik und D.R. Nielsen. 1996. Beiträge geostatistischer Methoden für die Planung und Auswertung teilflächenspezifischer Felduntersuchungen unter Praxisbedingungen. VDI-Berichte 1297:171-175. [B09]

8) Koszinski, S., M. Dannowski, R. Ellerbrock, A. Gorny, K. Helming, A. Höhn, M. Joschko, H. Rogasik, K. Seidel, O. Wendroth, S. Wirth und S. Kofalk. 1995. Bodenökologische Eigenschaften und Funktionen einer Catena im nordostdeutschen Jungmoränengebiet. Mitt. Dtsch. Bodenkdl. Ges. 76:1101-1104. [B08]

7) Pacholsky, A., O. Wendroth, M. Joschko, D. Söndgerath und M. Frielinghaus. 1995. Räumliche Verteilung der Enchytraeiden-Dichte in landwirtschaftlich genutzten Böden. Mitt. Dtsch. Bodenkdl. Ges. 76:685-688. [B07]

6) Nielsen, D.R., G.G. Katul, O. Wendroth, M.V. Folegatti, and M.B. Parlange. 1994. State-space approaches to estimate soil physical properties from field measurements. Proc. 15th Conf. ISSS, Vol. 2a:61-85. [B06]

5) Joschko, M., O. Wendroth, H. Rogasik, and K. Kotzke. 1994. Earthworm activity and functional and morphological characteristics of soil structure. Proc. 15th Conf ISSS, Vol. 4a:144-162. [B05]

4) Wendroth, O. und D.R. Nielsen. 1994. State Space Analyse: Interpolation zur Identifizierung von Prozessen in Raum und Zeit. Mitt. Dtsch. Bodenkdl. Ges. 74:243-246. [B04]

3) Nielsen, D.R., O. Wendroth, and M.B. Parlange. 1994. Developing site-specific technologies for sustaining agriculture and our environment. In: G. Narayanasamy (ed) Management of Land and Water Resources for Sustainable Agriculture and Environment. Diamond Jubilee Symposium, Indian Society of Soil Science. New Delhi. pp42-79. [B03]

2) Wendroth, O., W. Ehlers und J.W. Hopmans. 1993. Evaluierung einer Evaporationsmethode zur Bestimmung hydraulischer Kennfunktionen von Böden. Mitt. Dtsch. Bodenkdl. Ges. 71:181-184. [B02]

1) Wendroth, O. und W. Ehlers. 1989. Wassertransportparameter als Kenngrößen des Bodengefüges. Mitt. Dtsch. Bodenkdl. Ges. 59:261-266. [B01]

c) ***Reviewed Extension Publications***

1) Wendroth, O., X. Zhang, J. Reyes, and C. Knott. 2018. Irrigation basics and principles of an approach involving soil moisture measurements. In: A Comprehensive Guide to Soybeam management in Kentucky. ID-249. University of Kentucky, College of Agriculture, Food and Environment; Cooperative Extension Service. p. 76-82.

Presentations at Scientific Conferences, Workshops and Symposia, presented as professor at UK

(The following symbols indicate my role as presenter*, mentor to postdoctoral scholar[1], or supervisor or co-advisor to graduate student[2]. **Invited presentations are marked bold**, non-invited presentations regular font. Presentations at Regional Meetings and USDA-NIFA Project Directors' Meetings are not listed here.)

136) Xi Zhang, and Ole Wendroth. 2019. Estimating Soil Hydraulic Conductivity across a Field with a State-Space Modeling Approach, Oral. Annual Meeting, ASA-CSSA-SSSA, Nov. 10-14, 2019, San Antonio, Texas.

135) Ole Wendroth, Jin Cho, Nerea Arias, Iñigo Virto and Jason Walton. 2019. Soil Hydraulic Properties of Stony Soils. Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 10-14, 2019, San Antonio, Texas.

134) Sam J Leuthold, Hanna Poffenbarger, Montserrat Salmeron Cortasa, Ole Wendroth and Erin Haramoto. 2019. Interactions between Cover Crops and Complex Agricultural Terrain in Southeastern Maize Systems. Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 10-14, 2019, San Antonio, Texas.

133) Sam J Leuthold, Hanna Poffenbarger, Montserrat Salmeron Cortasa, Ole Wendroth and Erin Haramoto. 2019. Interactions between Cover Crops and Complex Agricultural Terrain in Southeastern Maize Systems.

132) Keegan P. Smith, David H. McNear Jr., Ole Wendroth, Michael A. Winkler, and Christopher J. Matocha 2019. "The Impact of Ryegrass on a Fragipan Soil", Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 10-14, 2019, San Antonio, Texas.

131) David D. Baltensperger, Natalie Henkhaus, Seth C. Murray, Ole Wendroth, Shawn M. Kaeppler, Samantha Shoaf Miller, and Mitch C. Hunter. 2019. "Re-Imagining the Potential of Plants for a Healthy Future: The Plant Science Decadal Vision (2020-2030), an Overview of Where We Are in Process", Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 10-14, 2019, San Antonio, Texas.

130) Wendroth, O., Yang Yang, Javier Reyes, Xi Zhang, and Sleem Kreba. 2019. Exploring Spatial and Temporal Variability of Soil and Crop Processes for Irrigation Management. Invited Presentation at the Seminar on "Key to Land Conservation and Sustainability in Agriculture: Soil Health Practices and Managements". China Agricultural University, College of Land Science and Technology; August 26, 2019.

129) Wendroth, O., Y. Yang, J. Reyes, X. Zhang, R. Armindo, S. Shahadha, and S. Kreba. 2019. Challenges and Opportunities for Soil Research Towards

Sustainability Development and Conservation Goals. Invited keynote presentation at the 2019 International Top-level Forum on Land Conservation and Sustainable Agriculture in the Black Soil Region of Northeast China; Changchun and Lishu, China; August 22-25, 2019.

128) Wendroth, O., Y. Yang, and J. Reyes. 2019. Identifying Scale-Specific Spatial and Temporal Soil-Water Relationships Using Fourier Transformation. Poster presentation; Annual meeting of the Ecological Society of America (ESA); Louisville, KY, Aug. 11-16, 2019.

127) Invited keynote presentation at the 5th Brazilian Soil Physics Meeting, May 26-29, 2019; University of Lavras, Brazil: Wendroth, O., Y. Yang, J. Reyes, and X. Zhang. Diagnosing Field-scale Soil Variability for Irrigation Management.

126) Shahadha, S.S., and O. Wendroth. 2018. Modeling Nitrogen Management Impacts on Soil Water Dynamics and Wheat Evapotranspiration. First prize-awarded poster. Annual Meeting, ASA-CSSA, Nov. 4-7, 2018, Baltimore, Maryland.

125) Kersebaum, K.C., E. Wallor, and O. Wendroth. 2018. Model Sensitivity to Spatial Variability: Capabilities and Challenges. Invited oral keynote presentation. Annual Meeting, ASA-CSSA, Nov. 4-7, 2018, Baltimore, Maryland.

124) Wendroth, O.*, J. Reyes, and X. Zhang. 2018. Exploring Spatial and Temporal Variability of Soil and Crop Processes for Irrigation Management. Invited Lecture, Yunnan Academy of Tobacco Agricultural Sciences, Kunming City, Sept. 14, 2018

123) Wendroth, O.* 2018. Spatial and Temporal Statistics. Invited Shortcourse, Yunnan University, Kunming City, China, Sept. 11-12, 2018.

122) Wendroth, O.*, Y. Yang, J. Reyes, and X. Zhang. 2018. Unravelling Soil Processes at Different Scales Through Fourier-Based and State-Space Analysis. Invited Oral Presentation, Beijing Normal University, Faculty of Geographical Science, Sept. 10, 2018.

121) Wendroth, O.*, Y. Yang, J. Reyes, X. Zhang, R. Armindo, and J. Dörner. 2018. Untangling of Spatio-Temporal Soil Processes at Different Scales Through Fourier-Based and State-Space Analysis. Oral presentation. International Union of Soil Science IUSS, 21st World congress, Rio de Janeiro, Brazil, Aug. 12-17, 2018.

120) Wendroth, O.* 2018. Spatial and Temporal Statistics. Invited Shortcourse, University of Parana, Curitiba. Aug. 8-10, 2018.

119) Zhang, X., and O. Wendroth. 2018. Spatial Characterization of Soil Saturated and Near-Saturated Hydraulic Conductivity at the Field Scale.

Poster. Kentucky Water Resources Annual Symposium. Lexington, KY. March 19, 2018.

118) Wendroth, O. 2018. Spatial and Temporal Statistics. Invited Course, Central University of Quito, Ecuador, Jan. 22-26, 2018.

117) Yang. Y.*, X. Jia,. and O. Wendroth. 2017. Estimating saturated hydraulic conductivity along a 860 km transect in the loess plateau of China. Poster. Annual Meeting, ASA-CSSA-SSSA, Oct. 22-25, 2017, Tampa, Florida.

116) Shahadha, S.S.*, and O. Wendroth. 2017. Crop evapotranspiration and crop coefficients – sources of uncertainty. 2017. Poster, awarded with third place. Annual Meeting, ASA-CSSA-SSSA, Oct. 22-25, 2017, Tampa, Florida.

115) Zhang, X.*, J. Reyes, and O. Wendroth. 2017. Soil water movement as affected by hydraulic conductivity, initial soil moisture and irrigation intensity. Oral presentation. Annual Meeting, ASA-CSSA-SSSA, Oct. 22-25, 2017, Tampa, Florida.

114) Reyes, J.*, and O. Wendroth. 2017. Temporal dynamics of soil water among delineated management zones. Lightening Oral and Poster. Annual Meeting, ASA-CSSA-SSSA, Oct. 22-25, 2017, Tampa, Florida.

113) Wendroth, O.*, Y. Yang, J. Reyes, X. Zhang, and S. Shahadha. 2017. New paradigms for agronomic research and education. Invited oral presentation at the symposium "Beyond RCBD: Experimental design for spatial variability. Annual Meeting, ASA-CSSA-SSSA, Oct. 22-25, 2017, Tampa, Florida.

112) Wendroth, O.* 2017. Opportunities in Agro-Ecological Research and Associated Needs in Education. Invited presentation at Austral University, Valdivia, Chile, Department of Soil Sciences, open to the University public.

111) Wendroth, O.* 2017. One-week class on "Spatial and Temporal Statistics", to be taken for credit, Jan. 16-20, 2017, Invited teaching at Austral University, Valdivia, Chile.

110) Wendroth, O.* 2016. Workshop on spatial and temporal statistics in agro-ecological research. Invited guest lecture. Central University of Ecuador. Oct. 28, 2016.

109) Wendroth, O.* Yang Yang, José Dörner, Quirijn de Jong van Lier, Robson André Armindo, Marcos Ceddia, Luís Carlos Timm, Javier Reyes, and Xi Zhang. 2016. Opportunities for Agro-Ecosystem Research: Lessons from Spatio-Temporal Field Observations. Invited keynote lecture, 21st Latin American Soil Science Congress, Quito, Ecuador. Oct. 24-28, 2016

108) Reyes, J., and O. Wendroth[1]. 2016. Use of Soil and Remote Sensing Variables to Explain Spatial Differences in Corn Yield. Oral Presentation. Annual Meeting, ASA-CSSA-SSSA, Nov. 6-9, 2016, Phoenix, Arizona.

107) Zhang, X., J. Reyes, and O. Wendroth[1]. 2016. Measuring and Estimating Soil Hydraulic Properties in a Farmer's Field, Western Kentucky. Oral Presentation. Annual Meeting, ASA-CSSA-SSSA, Nov. 6-9, 2016, Phoenix, Arizona.

106) Reyes, J., and O. Wendroth[1]. 2016. Soil Texture Characterization Using Apparent Electrical Conductivity through Kriging and Cokriging Analysis. Oral Presentation. Annual Meeting, ASA-CSSA-SSSA, Nov. 6-9, 2016, Phoenix, Arizona.

105) Wendroth, O.*, J. Reyes, and X. Zhang. 2016. Applying the RZWQM2 in a Spatial Variability Study of a 4-Year Crop Rotation. Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 6-9, 2016, Phoenix, Arizona.

104) Wendroth, O.*, 2016. State-Space and Other Analytical Opportunities in Agronomic Research. Keynote lecture at EMBRAPA Institute of Agrobiology, Federal Rural University of Rio de Janeiro, Seropedica; May 17, 2016.

103) Wendroth, O.* and Y. Yang. 2015. Precipitation and redistribution impact on soil water dynamics and their variation characteristics. Oral Presentation. Annual Meeting, ASA-CSSA-SSSA, Nov. 15-18, 2015, Minneapolis, Minnesota.

102) De Jong van Lier, Q., and O. Wendroth[1]. 2015. A whole-soil modeling approach for field capacity assessment. Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 15-18, 2015, Minneapolis, Minnesota.

101) Reyes, J., and O. Wendroth[1]. 2015. Irrigation in Western Kentucky: Initial results on soil and crop spatial variation to improve water management. Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 15-18, 2015, Minneapolis, Minnesota.

100) Da Mata, M.G.F., M.B. Ceddia, J.G.M. Guerra, E. Pinheiro, and O. Wendroth[1]. 2015. Spatial and temporal dynamics of soil organic carbon in an organic vegetable production. Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 15-18, 2015, Minneapolis, Minnesota.

99) Neves, H., M.B. Ceddia, D. Fonseca de Carvalho, and O. Wendroth[1]. 2015. Spatial and temporal patterns of soil water content in organic vegetable production. Poster. Annual Meeting, ASA-CSSA-SSSA, Nov. 15-18, 2015, Minneapolis, Minnesota.

98) Wendroth, O. 2015*. How to publish your research in a top journal? Oral presentation, Author session at ISTRO Conference 2015, International Soil & Tillage Research Organization. Sept. 14-18, 2015.

97) Wendroth, O.* and Y. Yang. 2015. Space-time Processes of Soil Water Storage in a Farmer's Field under No-Tillage. Oral presentation at ISTRO

Conference 2015, International Soil & Tillage Research Organization. Sept. 14-18, 2015.

96) Wendroth, O.* 2015. Invited lecture at Beijing Normal University, School of Geography, Beijing, September 11, 2015. "Emerging Challenges and Opportunities in Soil Physics - Linking between Scales and Disciplines". Travel grant for 9 days in China.

95) Quirijn de Jong van Lier and Ole Wendroth[1]. 2015. Reexamination of the field capacity concept in a Brazilian oxisol. Oral presentation. European Geosciences Union, General Assembly 2015, Vienna, Austria, April 12-15, 2015.

94) Yang Yang, and Ole Wendroth[1]. 2015. Space-time behavior of soil water status measured across two land use systems. Oral presentation. Annual Symposium of the Kentucky Water Resources Research Institute. March, 09, 2015, Lexington, KY.

93) Wendroth, O. and Y. Yang. 2014. Spatio-Temporal Processes of Soil Water Storage in a Farmers' Field. Oral presentation. Annual Meeting, ASA-CSSA-SSSA, Nov. 2-5, 2014, Long Beach, California.

92) Yang, Y., O. Wendroth[1], and R.J. Walton. 2014. Temporal Dynamics and Stability of Spatially Measured Soil Water Status in Crop and Grass Systems. Poster presentation. Annual Meeting, ASA-CSSA-SSSA, Nov. 2-5, 2014, Long Beach, California.

91) Wendroth, O.* 2014. Invited teaching at University of Rio de Janeiro, Brazil Universidade Federal Rural do Rio de Janeiro (UFRRJ), Departamento de Solos, Seropédica, June 17-23, 2014 during 16-days research visit. Travel grant.

90) Wendroth, O.* 2014. Don't be late – Crop irrigation from a soils perspective. Annual Wheat Field Day, Princeton, KY, May 13, 2014.

89) Schwen, A., J. Backus, Y. Yang, and O. Wendroth[1]. 2014. 3D dye patterns and physical soil properties under two contrasting land uses: Anisotropic variance structures and its influence on solute leaching. EGU General Assembly, Vienna, Austria, 04, 28 – 05, 02, 14.

88) Wendroth, O.* 2014. Field-scale soil water processes in presence of agricultural crops. Third In-Situ and Remote Sensing Soil Moisture Sensing Technology Conference. March 12-14, 2014, Houston, TX.

87) Wendroth, O.* 2014. Workshop on Spatial and Temporal Statistics. Austral University, Valdivia, Chile. Jan. 13-17, 2014

86) Yang, Y., O. Wendroth[1], and R.J. Walton. 2013. Field-scale bromide leaching as affected by land use and rainfall characteristics. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Nov. 3-6, 2013, Tampa, Florida.

85) Wendroth, O.*, Y. Yang, and R.J. Walton. 2013. Spatial range of representativity complements physical sphere of influence of soil water content sensor in spatially variable field soils. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Nov. 3-6, 2013, Tampa, Florida.

84) Schwen, A., J. Backus, R.J. Walton, Y. Yang, and O. Wendroth[1]. 2013. A multi-tracer field leaching experiment reveals macropore structures and its influence on solute leaching under two contrasting land uses. Poster, Annual Meeting, ASA-CSSA-SSSA, Nov. 3-6, 2013, Tampa, Florida.

83) Wendroth, O.*, Y. Yang, and A. Schwen. 2013. Space-time Processes of Water and Solute Transport at Different Scales. Oral Presentation, 10th Annual Meeting Asia Oceania Geosciences Society, Brisbane, Australia, June 24-28, 2013.

82) Wendroth, O.*, and Y. Yang. 2013. State-space Analysis in Soil Physics. Invited keynote presentation, 2nd BRAZILIAN SOIL PHYSICS MEETING, May 6-10, 2013, Rio de Janeiro, Brazil.

81) Wendroth, O.*, Y. Yang and A. Schwen. 2013. Frequency domain approach for scale-dependent design and analysis of agricultural experiments, Invited keynote presentation at DAGSTAT (German Society for Statistics), Annual Meeting at University of Freiburg, Mar. 18-22, Freiburg, Germany.

80) Wendroth, O.* 2013. Spatial Field Soil Variability – Obstacle or Opportunity? Analytical Tools Help Make Sense out of Your Data. Invited keynote presentation to "Soil Fertility Workshop", organized by Dr. Leo Espinoza, Arkansas State University, Jonesboro, Arkansas.

79) Wendroth, O.*, L. Murdock, and D, Egli. 2012. "Crop Sensing Technology for Nitrogen Application in Heterogeneous Field Soils" Monsanto Fellows Symposium, Nov. 28-29, 2012, St. Louis, MO.

78) Lloyd Murdock, O. Wendroth[1], D. Call, and J. James. 2012. Variable rate nitrogen on wheat. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 21-25, 2012, Cincinnati, Ohio.

77) Ole Wendroth*, S. Nambuthiri, and R.J. Walton. 2012. Soil water sensor calibration and soil water processes in a farmer's field. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 21-25, 2012, Cincinnati, Ohio.

76) Amanda Gumbert, M. Coyne and O. Wendroth[2]. 2012. Influence of riparian buffer management on soil structural properties and hydraulic conductivity. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 21-25, 2012, Cincinnati, Ohio.

75) Yang Yang, O. Wendroth[1], and R.J. Walton. 2012. Spatial variability of soil moisture and its correlation with texture as affected by land use. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 21-25, 2012, Cincinnati, Ohio.

74) Andreas Schwen, Y. Yang, R.J. Walton, and O. Wendroth[1]. 2012. State-space modeling allows the separation of small- and large-scale variability components of a field solute leaching experiment. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 21-25, 2012, Cincinnati, Ohio.

73) Eduardo Rienzi, C. Matocha, O. Wendroth[1], and J. Grove. 2012. Enrichment ratio in iron and total iron delivery mobilized with clay-silt sized particles released in interrill erosion. Poster presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 21-25, 2012, Cincinnati, Ohio.

72) Sleem Kreba, O. Wendroth[1], and M. Coyne. 2012. Soil gas diffusivity and air-filled porosity and their spatial patterns in crop and grass systems. Poster presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 21-25, 2012, Cincinnati, Ohio.

71) Sleem Kreba, O. Wendroth[1], M. Coyne and R. McCulley. 2012. Spatial and temporal patterns of CO_2 flux in crop and grass systems. Poster presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 21-25, 2012, Cincinnati, Ohio.

70) Andreas Schwen, K. Madry, M. Zimmermann, O. Wendroth[1], and S. Matula. 2012. Spatial variations of soil hydraulic properties within two soil profiles and its relevance for soil water simulations: a hydropedological approach. Oral presentation. Exploring Frontiers in Soil Physics, Kirkham Conference, 28-30 November 2012. Massey University, Palmerston North, New Zealand.

69) Leffew, B., O.O. Wendroth[2], R.L. McCulley, Jim Nelson, Elizabeth Carlisle, and Don Pelly. 2012. Efficacy of Cool-Season Pasture Renovation to Native Prairie in the Bluegrass Region of Central Kentucky. Poster presentation at the Eastern Native Grass Symposium at Virginia Tech University, Charlottesville, VA, October 1-4, 2012

68) Schwen, A., O. Wendroth[1], R.J. Walton, and Y. Yang. 2012. Separating small- and large-scale variability components of solute leaching using state-space modeling. Poster presentation at the 2nd International Conference on Hydropedology. July 22-27, 2012, Leipzig, Germany.

67) Wendroth, O. [1], S. Kreba, R.L. McCulley, and M.S. Coyne. 2012. Space-time field of soil carbon respiration in two land-use systems. Oral presentation at the 2nd International Conference on Hydropedology. July 22-27, 2012, Leipzig, Germany.

66) Wendroth, O.*, C.J. Matocha, and L. Murdock. Why inherent soil variability is not an obstacle but a great opportunity in soil, environmental and agronomic research. Poster presentation at the South Regional NCSS Work Planning Conference, Bowling Green, KY, May 22-25, 2012.

65) Wendroth, O.* Guest lecture on "Spatial and temporal statistics in soil science". Five days, 7 hours each. University of Natural Resources and Life Sciencesw (BOKU), Vienna, Austria, April 16-20, 2012.

64) Wendroth, O.*, Matocha, C.J., and V. Vasquez. Scale-specific field Bromide transport and identification of leaching at different scales. Oral presentation at the European Geosciences Union, General Assembly 2012, Vienna, Austria, April 22–27, 2012.

63) Schwen, A.[2], Yang, Y.[2], Walton, R.J., and O. Wendroth[1]. An innovative experimental design reveals the spatial correlation between landuse, irrigation properties, and bromide leaching. Poster presentation at the European Geosciences Union, General Assembly 2012, Vienna, Austria, April 22–27, 2012.

62) Wendroth, O.* 2012. Additive state-space model – A promising approach to water-quality-related treatment experiments in heterogeneous landscapes. Oral presentation at the Annual Symposium of the Kentucky Water Resources Research Institute, Lexington, KY, March 03, 2012.

61) Wendroth, Ole*, Lloyd Murdock, Greg Schwab and Dennis Egli. 2012. Variable Rate Nitrogen II - 6 Years of Crop Sensor Field Experiments in Kentucky. Oral presentation at the Winter Wheat Meeting, Wheat Science Group, University of Kentucky, Hopkinsville, Kentucky, January 10, 2012.

60) Nambuthiri, Susmitha, R. Jason Walton, Ole Wendroth*. 2012. Field Calibration of Soil Water Capacitance Probe and Space-Time Field of Soil Water Storage in a Farmer's Field. Oral presentation at the Joint Meeting of the Second International Soil Sensing Technology Conference, the Soil Physics Technical Committee Annual Meeting, and the ASA Sensor-based Water Management Community, January 3-7, 2012, Honolulu, Hawaii.

59) Rienzi, E., J. Fox, O. Wendroth[1], and J.H. Grove. Temporal Sediment Particle Size Distribution and Organic Carbon Release with Low and High Kinetic Energy Wetting In Interrill Erosion. Poster, Annual Meeting, ASA-CSSA-SSSA, Oct. 16-19, 2011, San Antonio, Texas.

58) Ritchey, E.L., J.H. Grove, R.C. Pearce, and O. Wendroth[2]. Spatial analysis as an alternative strategy for interpreting penetrometer resistance data. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 16-19, 2011, San Antonio, Texas.

57) Kreba, S., O. Wendroth[1], and R. McCulley. 2011. Temporal stability of soil water storage, carbon dioxide, and nitrous oxide flux. Poster, Annual Meeting, ASA-CSSA-SSSA, Oct. 16-19, 2011, San Antonio, Texas.

56) Kreba, S., O. Wendroth[1], and M. Coyne. 2011. Land use impact on soil structure. Poster, Annual Meeting, ASA-CSSA-SSSA, Oct. 16-19, 2011, San Antonio, Texas.

55) Yang, Y., and O. Wendroth[1]. 2011. Spatial variability of wet-range soil hydraulic conductivity as affected by land use. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 16-19, 2011, San Antonio, Texas.

54) Wendroth, O.*, C.J. Matocha, and L. Murdock. 2011. Additive State-Space Model for Decomposing Variation at Different Scales: Opportunities for Experiments in Variable Landscapes. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 16-19, 2011, San Antonio, Texas.

53) Wendroth, O.* 2011. Spatio-temporal soil water and related processes. Invited Keynote Lecture. Brazilian Soil Physics Meeting, September 12 -16, 2011, Department of Biosystems Engineering, Luiz de Queiroz College of Agriculture, University of São Paulo. ESALQ - USP, Piracicaba - SP, Brazil

52) Andreas Schwen and Ole Wendroth[1]. 2011. Spatial variability of macropore structures in soils under different land use. Oral presentation, Annual Meeting German Soil Science Society, Sept. 3.-9., Berlin, Germany.

51) Wendroth, O.*, G.Schwab, and L. Murdock. "How close is close enough?" Oral plenary session presentation, 8th European Conference on Precision Agriculture, Prague, Czech Republic, July 10-13, 2011.

50) Wendroth, O.*, V. Vasquez, and C.J. Matocha. 2010. Spatial variation scales of rainfall characteristics and bromide leaching. Poster, AGU Fall Meeting 2010, American Geophysical Union, San Francisco, Dec. 13-17, 2010.

49) Wendroth, O.* 2010. Combined Space-Time State Space Model for Field Soil Water Storage. Oral Presentation, Annual Meeting, ASA-CSSA-SSSA, Oct. 31 - Nov. 3, 2010, Long Beach, California.

48) Wendroth, O.*, C.J. Matocha, and V. Vasquez. 2010. Field-Scale Bromide Transport as a Function of Rainfall Amount, Intensity and Application Time Delay. Poster. 19th World Congress of Soil Science, IUSS, Brisbane, Australia, Aug. 01-06, 2010.

47) Wendroth, O.*, R.L. McCulley, M.S. Coyne, A. Karathanasis, and J.H. Grove. 2010. Dynamics of Soil State Variables and Related Processes Across a Land Use Gradient in Spatial and Temporal Transition. Poster, 15th Annual KY EPSCoR Conference, Science's Grand Challenges, May 24, 2010, Lexington, KY.

46) Wendroth, O.*, V. Vasquez, and C.J. Matocha. 2010. Impact of rainfall amount, intensity, and time lag on leaching behavior of a surface-applied Bromide tracer. Oral Presentation. Kentucky Water Resources Annual Symposium, March 22, 2010, Griffin Gate Marriott Resort, Lexington, KY

45) El-Naggar, E.M., M. Coyne, and O. Wendroth[2]. 2009. Spatial variability of soil properties under different pasture grasses in West and Central Kentucky. Poster, Annual Meeting, ASA-CSSA-SSSA, Nov. 1-5, 2009, Pittsburgh, Pennsylvania.

44) Rienzi, E., O. Wendroth[1], and J. Grove. 2009. Changes in total organic carbon in sediment produced via interrill erosion at low and high kinetic energy. Poster, Annual Meeting, ASA-CSSA-SSSA, Nov. 1-5, 2009, Pittsburgh, Pennsylvania.

43) Wendroth, O.*, G. Schwab, L. Murdock, and K.C. Kersebaum. 2009. Field sampling for agricultural model input and parameterization. Invited Oral Keynote Presentation at the Symposium "Enhancing and Facilitating Use of Agricultural System Models in Field Research", Annual Meeting, ASA-CSSA-SSSA, Nov. 1-5, 2009, Pittsburgh, Pennsylvania.

42) Wendroth, O.*, R.J. Walton, and S. Nambuthiri. 2009. Spatio-temporal soil water processes at the field scale. Invited Oral Keynote Presentation at the Symposium "Application of Soil Physics to Resolving Environmental Problems: Honoring the Impact of M.Th. van Genuchten", Annual Meeting, ASA-CSSA-SSSA, Nov. 1-5, 2009, Pittsburgh, Pennsylvania.

41) Schwab, G., and O. Wendroth. 2008. Active and passive canopy sensor for wheat and corn production. 2008 Southern Plant Nutrient Management Conference on "Nitrogen Management Systems and Lime Buffer Methods for Crop Production", Mississippi State University, Nov. 4-5, 2008.

40) Nambuthiri, S., R.J. Walton, and O. Wendroth[1]. 2008. Temporal stability of soil water storage along a transect in a farmer's corn field. Poster, Annual Meeting, ASA-CSSA-SSSA, Oct. 5-9, 2008, Houston, TX.

39) Walton, R.J., O. Wendroth[1], and J.H. Grove. 2008. Hydraulic conductivity measurements close to water saturation for soil structural evaluations. Poster, Annual Meeting, ASA-CSSA-SSSA, Oct. 5-9, 2008, Houston, TX.

38) Wendroth, O.*, R.J. Walton, G. Schwab, L. Murdock, and D.B. Egli. 2008. Frequency domain analysis of remotely sensed vegetation indices and crop yield after sinusoidal nitrogen application. Poster, Annual Meeting, ASA-CSSA-SSSA, Oct. 5-9, 2008, Houston, TX.

37) Vasquez, V., and O. Wendroth[1]. 2008. Spatial scale of bromide leaching into initially dry and wet soil. Poster, Annual Meeting, ASA-CSSA-SSSA, Oct. 5-9, 2008, Houston, TX.

36) Miller, J.O., A.D. Karathanasis, O.O. Wendroth[2], C.J. Matocha and C.D. Barton. 2008. In-Situ Colloid Mobilization and Metal Transport within Biosolid Amended Soils Following Coal Mine Reclamation. Oral, National Groundwater Association NGWA/U.S. EPA: Remediation of Abandoned Mine Lands Conference, Denver, CO, Oct. 2-3, 2008.

35) Wendroth, O.*, V. Vasquez, and C.J. Matocha. 2008. How close do we need to sample for appropriate solute transport characterization through the vadose zone? Oral, Kentucky Water Resources Research Institute Annual Symposium 2008, March 17, 08, Lexington, KY.

34) Miller, J., A.D. Karathanasis, and O. Wendroth[2]. 2007. Variability in colloid elution and metal transport in reclaimed soils following coal mining. Poster, Annual Meeting, ASA-CSSA-SSSA, Nov. 4-8, 2007, New Orleans, LA.

33) Wendroth, O.*, X. Shuai, and R.J. Walton. 2007. Salt movement in a Karst soil – First experiences with a transfer function approach. Poster, Annual Meeting, ASA-CSSA-SSSA, Nov. 4-8, 2007, New Orleans, LA.

32) Flynn, E.S., C.T. Dougherty, and O. Wendroth[2]. 2007. Application of remote sensing in pasture evaluation. Invited oral presentation, Annual Meeting, ASA-CSSA-SSSA, Nov. 4-8, 2007, New Orleans, LA.

31) Wendroth, O.*, G. Schwab, R.J. Walton, and S. Flynn. 2007. Determining spatial and temporal processes from georeferenced sampling and land surface observations. Invited keynote lecture, Annual Meeting, ASA-CSSA-SSSA, Nov. 4-8, 2007, New Orleans, LA.

30) Shuai, X., C. Ray, O. Wendroth[1], and R. Yost. 2007. Measuring dielectric permittivity of tropical soils under different pH condition by time domain reflectometry. Oral presentation, Annual Meeting, ASA-CSSA-SSSA, Nov. 4-8, 2007, New Orleans, LA.

29) Wendroth O.* 2007. Impact of application timing and rainfall intensity on leaching of nitrate and agrochemicals. Oral presentation, Pesticide Working Group, KY Department of Agriculture, Frankfort, May 8, 2007.

28) Wendroth, O.*, X. Shuai, R.J. Walton, J. Dinger, J. Currens, D. Edwards, M.S. Coyne, J. Grove, and S. Higgins. 2007. Salt Movement Through the Vadose Zone of a Karst Soil First Experiences with a Transfer Function Approach. Oral presentation, Kentucky Water Resources Annual Symposium, March 26, 2007, Lexington, KY.

27) Wendroth, O.*, G. Schwab, D. Egli, and L. Murdock. 2007. Spatial and Temporal Development of Wheat Biomass: Can We Predict the Spatial Grain Yield Pattern? Annual winter Meeting of the University of Kentucky Wheat Science Group, Jan. 9, 2007, Hopkinsville, KY.

26) Miller, J., A. Karathanasis, and O. Wendroth[2]. 2006. Heavy metal transport mediated by mineral and organic colloids in soils following coal mining. Poster, 70th Annual Meeting, ASA-CSSA-SSSA, Nov. 12-16, 2006, Indianapolis, IN.

25) Walton, R.J., J.H. Grove, and O. Wendroth[2]. 2006. Soil structure and bimodal pore size distribution influence on soil water retention curves. Poster, 70th Annual Meeting, ASA-CSSA-SSSA, Nov. 12-16, 2006, Indianapolis, IN.

24) Wendroth, O.*, I. Lebron, M. Madsen, D.A. Robinson, J. Belnap, and D. Chandler. 2006. Spatial process of soil hydrological state variables in

Pinyon-Juniper woodland. Poster, 70th Annual Meeting, ASA-CSSA-SSSA, Nov. 12-16, 2006, Indianapolis, IN.

23) Shuai, X., R.J. Walton, and O. Wendroth[1]. 2006. Modeling soil complex dielectric permittivity via frequency domain analysis of time domain reflectometry (TDR) waveforms. Oral presentation, 70th Annual Meeting, ASA-CSSA-SSSA, Nov. 12-16, 2006, Indianapolis, IN.

22) Flynn, E.S., C.T. Dougherty, and O. Wendroth[2]. 2006. Using NDVI as a pasture management tool. Oral presentation, 70th Annual Meeting, ASA-CSSA-SSSA, Nov. 12-16, 2006, Indianapolis, IN.

21) Kersebaum, K.C., K. Lorenz, H.I. Reuter and O. Wendroth. Modeling soil-crop interactions for site specific decision support in nitrogen management concerning aspects of yield production and water protection. Poster. 18th World Congress of Soil Science, Philadelphia, Pennsylvania, U.S.A., July 9-15, 2006.

20) Wendroth, O.*, and D.R. Nielsen. 2006. Space-time variance propagation of biophysical processes. Oral presentation and Poster. 18th World Congress of Soil Science, Philadelphia, Pennsylvania, U.S.A., July 9-15, 2006.

19) Miller, J., A. Karathanasis, and O. Wendroth[2]. 2006. Colloid mobilization and heavy metal transport in reclaimed soils following coal mining. Poster. 18th World Congress of Soil Science, Philadelphia, Pennsylvania, U.S.A., July 9-15, 2006.

18) Wendroth, O.*, D. Egli, K.C. Kersebaum, and D.R. Nielsen. 2006. Spatial and temporal variance of biomass development. Poster. 18th World Congress of Soil Science, Philadelphia, Pennsylvania, U.S.A., July 9-15, 2006.

17) Pena-Yewtukhiv, E., G.J. Schwab, L.W. Murdock, and O. Wendroth[2]. 2006. Spatial structure of NDVI permits large reduction in canopy sensor cost. Poster. 18th World Congress of Soil Science, Philadelphia, Pennsylvania, U.S.A., July 9-15, 2006.

16) Wendroth, O.* 2006. New Challenges and Opportunities in Soil Landscape Research. Invited Oral Presentation. Research Centre Juelich, Germany, May 29, 2006.

15) Flynn, S.E., C.T. Dougherty, and O. Wendroth[2]. 2006. Using NDVI as a pasture management tool. Oral presentation, Proc. 8th International Conference on Precision Agriculture, Minneapolis, July 2006.

14) Wendroth, O.*, A. Giebel, K.C. Kersebaum, G. Schwab, and E. Pena-Yewtukhiw. 2005. Crop Sensor Observation Scale and Implications for the Prediction of Yield. Poster. Annual Meetings American Society of Agronomy (ASA-CSSA-SSSA), Salt Lake City, Utah, USA, Nov. 6 - Nov. 10, 2005.

13) Reuter,H.I., K.C.Kersebaum, and O.Wendroth[1]. 2005. Spatial and temporal variability of soil properties with respect to relief information. Oral presentation. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, June 9-12, 2005.

12) Kersebaum, K.C., H.I. Reuter, K. Lorenz, and O. Wendroth. 2005. Long term simulation of soil/crop interactions to estimate temporal stability of potential management zones and consequences for site specific nitrogen management considering water protection and/or yield production. Oral presentation. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, June 9-12, 2005.

11) Pena-Yewtukhiw, E.M., G.J. Schwab, O. Wendroth[2], L.W. Murdock, and T. Stombaugh. 2005. Change in spatial variability structure of NDVI readings related to observation scale. Oral presentation. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, June 9-12, 2005.

10) Schwab, G.J., E. Pena, T.S. Stombaugh, O. Wendroth, and L.W. Murdock. 2005. Wheat Yield Population Response to Variable Rate N Fertilization Strategies Using Active NDVI Sensors. Oral presentation. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, June 9-12, 2005.

9) Wendroth, O.*, A. Giebel, E. Pena-Yewtukhiw, K.C. Kersebaum, G.J. Schwab, H.I. Reuter[2], L.W. Murdock, and T.S. Stombaugh. 2005. Spatial Relation between NDVI and Grain Yield: Impact of Spatial Resolution and Measurement Device. Oral presentation. 5th Europ. Conf. Prec. Agric., Uppsala, Sweden, June 9-12, 2005.

8) Akhwale, M.[2], T.W. Pfeiffer, O. Wendroth[2], and R.J. Walton. 2005. Comparison of two techniques of measuring soil water content in the field (Poster presentation). Kentucky Water Resources Annual Symposium, Lexington, March 3, 2005.

7) Walton, R.J., J.H. Grove, E. Pena-Yewtukhiv, and O. Wendroth[2]. 2005. Poultry litter contribution to soil water retention for soils under no-till management (Oral presentation). Kentucky Water Resources Annual Symposium, Lexington, March 3, 2005.

6) Wendroth, O.*, S. Koszinski, and E. Pena-Yewtukhiv. 2005. Spatial process of soil physical properties along a transect in a moraine landscape (Oral presentation). Kentucky Water Resources Annual Symposium, Lexington, March 3, 2005.

5) Wendroth, O.*, S. Koszinski, and E. Pena-Yewtukhiw. 2004. Spatial Processes of Soil Hydraulic Properties in a Moraine Landscape (Invited oral presentation). Annual Meetings American Society of Agronomy (ASA-CSSA-SSSA), Seattle, Washington, USA, Oct. 31-Nov. 04, 2004.

4) Wendroth, O.*, and S. Koszinski. 2004. Spatial Association between Soil Hydraulic Properties, Soil Texture and Geoelectrical Resistivity. Poster, Annual Meetings American Society of Agronomy (ASA-CSSA-SSSA), Seattle, Washington, USA, Oct. 31-Nov. 04, 2003.

3) Lapen, D.R., Wendroth, O., Gregorich, E.G., McLaughlin, N.B. and Topp, G.C. 2004. Cash and livestock corn production systems, Ontario, Canada: spatial relationships between soil physical/chemical variables and yield. Poster. Eurosoil, Freiburg, Germany, Sept. 5 – 10.2004.

2) K.C.Kersebaum, K. Lorenz, H.I. Reuter, O.Wendroth. 2004. Modelling effects of spatial variability of soil properties and terrain on crop growth and consequences for site specific nitrogen management considering aspects of crop production and water protection. Oral presentation. Eurosoil, Freiburg, Germany, Sept. 5 – 10.2004.

1) Koszinski, S. and O. Wendroth. 2004. Mapping spatial variation of soil texture by coregionalisation with electrical resistivity. Oral presentation. Eurosoil, Freiburg, Germany, Sept. 5 – 10.2004.

I was presenter or co-author on 103 other presentations at scientific meetings prior to my appointment at the University of Kentucky (1992-2004)

TEACHING AND ADVISING

A) GOALS

My overall teaching and advising goal is to inform, explain and discuss with students about the best, most up-to-date information possible underpinned by university research and historical social experiences related to my own specific academic, professional and personal activities. Furthermore, I keep abreast of course content and curricula in my department, the college and the campus as well as such information in other land grant universities and national and international educational institutions.

My main teaching responsibilities are related to the graduate student education in Soil Physics. Moreover, I have meanwhile established a graduate-level course on Spatial and Temporal Statistics (PLS655) as a regular course. It will soon become part of the new expected Integrated Plant & Soil Sciences Curriculum. In the following, my main teaching goals are listed which are described in detail in the Teaching Portfolio.

a) ***Soil Physics PLS 575***

- Students from different academic backgrounds achieve knowledge of soil physical properties and processes, and their relevance for various agricultural, environmental, and urban problems.
- Students learn how soil physical properties and processes are determined and measured in the laboratory and in the field.
- Students learn different ways of analyzing and interpreting measurements of soil physical properties in relation to chemical and biological processes important for agricultural production and sustaining the quality and diversity of environmental landscape resources.
- Students learn when and where to measure soil properties to better understand and manage processes occurring at different scales of space and time within the landscape.
- Students achieve experience with concepts and simple field observations applicable as efficient indicators of various soil processes related to the science and technology of managing and sustaining the quality of soil and water resources.

b) ***Soil Physics Lab PLS 576***

- Students from different academic backgrounds achieve methodological skills for the measurement of soil physical properties and processes.
- Students learn how these properties and processes are determined and measured in the laboratory and in the field.
- Students learn when and where to measure soil properties to better understand and manage processes occurring at different scales of space and time within the landscape.

c) ***Spatial and Temporal Statistics PLS 655***

- Students from different academic backgrounds learn basic concepts of spatial and temporal statistics as a analytical tools for a better understanding of physical, chemical and biological processes in agricultural landscapes and in the environment.
- Students learn a variety of analytical tools applicable to on-site observations from experimental fields with or without treatments.
- Students learn how to analyze real-world situations manifested in observations taken across landscapes, in farmers' fields, and other spatio-temporal domains at different scales.
- Students learn to ask questions that do not demand an experiment with randomized replicates of treatments.
- Students learn to put out experiments and sampling designs focused on the analysis of spatial or temporal processes without randomized replicates of treatments.
- Students achieve experience in computing spatial dependence between observations of one or several variables, spatial interpolations of variables, and uncertainty components in process models.
- Students apply concepts of spatial and temporal statistics in their specific fields and discipline.

B) GRADUATE STUDENT ADVISING

a) *Major Advisor*

- Hannes I. Reuter (2004, Ph.D., University of Hannover, Germany)
- Susmitha Surendran (Advisor, Ph.D., 2006-2010, completed in 2010)
- Eduardo Rienzi (Advisor, Ph.D., since 2006, completed in 2010)
- Vicente Vasquez (Advisor, M.Sc., 2007-2010, completed in 2010)
- Sleem Kreba (Advisor, Ph.D., since 2009, co-advised by Dr. Mark S. Coyne, completed in December 2013)
- Yang Yang (Scholar of Chinese Scholarship Council, Advisor, Ph.D., 2010-2014, completed in April 2014)
- Javier Reyes, 2014-1018, completed in July 2018
- Saadi Satahar (2015-2018), completed in December 2018
- Debendra Shrestha (2014-2018, co-advisor with Dr. Krista Jacobsen), completed December 2018
- Xi Zhang, completed in March 2019

b) *Committee Member*

i) Completed

- Diana Ebersberger (Diploma, University of Trier, Germany)
- Edward Garlinski (B.Sc., University of Manitoba, Canada)
- Alexander Stephan (Diploma, University of Potsdam, Germany)
- Susan Liefold, (Diploma, Free University of Berlin, Germany)
- Michael Akhwale (2006, M.Sc., Advisor: Dr. Todd Pfeiffer)
- Jessica E. Hyatt (2006, M.Sc., Advisor: Dr. Dennis Tekrony)
- Scott Flynn (2007, M.Sc., Advisor: Dr. Charles Dougherty)
- Andres Nunez (2008, Ph.D., Advisor: Dr. Elisa D'Angelo)
- Jarrod Miller (2008, Ph.D., Advisor: Dr. Anasthasios Karathanasis)
- Brian Belcher (2008, Ph.D., Advisor: Dr. James Fox), Outside Examiner in the Department of Civil Engineering (Thesis: Vortex Model of Open Channel Flows with Gravel-Beds)
- Riley J. Walton (M.Sc., Advisor: Dr. John Grove)
- Amanda Gumbert (Ph.D., Advisor: Dr. Mark Coyne)
- Prakash, Dhakal (Ph.D., Advisor: Dr. Chris Matocha)
- Martin Battaglia (M.S., Advisor: Dr. Chad Lee)

- Zheng Wang (Ph.D., Advisor: Timothy Coolong)
- Congming Zou (Ph.D., Advisor: Robert Pearce)
- Katie Russell (Ph.D., Advisor: Dave van Sanford)
- Eric Green (Ph.D., Advisor: Reginald Souleyrette, Department of Civil Engineering)
- Ali Hamidisepehr (Ph.D., Advisor: Mike Sama, BAE)
- Sneha Roy (Ph.D., Gregory Erhardt, UK Department of Civil Engineering)
- Cintia Sciarresi (M.S., Montserrat Salmeron Cortasa, UK Department of Plant & Soil Sciences)
- Li-Chih Hsu (Ph.D., Jon Stallins, UK Department of Geography)
- Tasnuba Jerin (Ph.D., Advisor: Jonathan Phillips, UK Department of Geography)
- Keegan Smith (M.S., Advisor: Christopher J. Matocha, UK Department of Plant & Soil Sciences)

ii) In Progress

- Brian Brady (M.S., Advisor: Dr. Carrie Knott)
- Joey van Noy (M.S., Advisor: Dr. Mark Coyne)
- Gaspard Guetchine (Ph.D., Advisor: Jon Stallins, UK Department of Geography)
- Sam Leuthold (M.S., Advisor: Hanna Poffenbarger, UK Department of Plant & Soil Sciences)
- Shawn O'Neal (M.S., Advisor: Michael Sama, UK Department of Biosystems and Agricultural Engineering)
- Jonathan Brantley (M.S., Advisor: Carmen Agouridis, UK Department of Biosystems and Agricultural Engineering)
- Toby Adjuk (PhD; Advisor: Sue Nokes, UK Department of Biosystems and Agricultural Engineering)
- Saeid Nazari (PhD; Advisor: William Ford, UK Department of Biosystems and Agricultural Engineering)

C) EXTERNAL REFEREE

- 2018: External Examiner for Ph.D. Thesis, Han Xiao, Gottfried Wilhem Leibniz University Hanover, German, Advisor: Professor Jürgen Böttcher.
- 2017: External Examiner for M.S. Thesis, Maria Eliza Turek, Federal University of Parana, Advisor: Robson Armindo.

- 2017: External Examiner for Ph.D. Thesis, Nerea Arias, University of Navarra, Spain, Advisor: Iñigo Virto
- 2017: External Examiner for Ph.D. Dissertation, Dan Karup, Aarhus University, Denmark, Advisors: Lis Wollesen De Jonge and Per Moldrup; invited with full travel grant.
- 2015: Committee member for Ph.D. Dissertation, Marcela Müller, University of Sao Paolo, Piracicaba, Brazil, Advisor: Durval Durado-Neto.
- 2012: Outside Examiner for Ph.D. Dissertation, Sarah Bennett, The University of Sydney, Australia, Advisor: Willem Verfoort.
- 2011: Outside Examiner for Ph.D. Dissertation, Andreas Schwen "Agricultural Impacts on Soil Hydraulic Properties: Measurements and Simulations", University of Natural Resources and Life Sciences, Vienna, Willibald Loiskandl.

D) VISITING SCIENTIST ADVISING

- Dr. Dianyuan Ding, Yangzhou University, China; Stipend from China Scholarship Council, December 2019 – November 2020, one year, visiting postdoctoral scientist.
- Dr. Zhuoyi, School of Ecology and Environment of Inner Mongolia University, Stipend from China Scholarship Council, October 2018 – September 2019, one year, visiting postdoctoral scientist.
- Jackellyne Bruna Sousa, University of Sao Paolo, Piracicaba, Scholarship from CAPES, October 2018 – April 2019, six months, Doctorate Sandwich Program, co-advised with Dr. Montse Salmeron Cortasa.
- Fernando Gimenes, September 2015 – August 2016, University of Sao Paolo, Piracicaba; Visiting Graduate Student.
- Robson Armindo, August 2015 – July 2016, University of Parana, Brazil; Professor on Sabbatical Leave.
- Nerea Arias, March 2015 – June 2015; University of Navarra, Spain, Visiting Graduate Student.
- Gabriela Ferreira da Mata, Feb. 2015 – January 2016, University of Rio de Janeiro, Seropedica, Visiting Graduate student.
- Hugo Neves, Feb. 2015 – January 2016, University of Rio de Janeiro, Seropedica, Visiting Graduate student.
- Quirijn de Jong van Lier, June 2014 – January 2015, University of Sao Paolo, Piracicaba; Professor on Sabbatical Leave)
- Nerea Arias, September – December 2014; University of Navarra, Spain, Visiting Graduate Student.

- Jose Marcos Beraldo, October 2013 – February 2013. University of Sao Carlos.
- Andreas Schwen, April 2013 – June 2013, Characterizing paths of bromide and dye tracer transport under different land use. Postdoc Scientist, University of Vienna, Austria.
- Marcela Müller, April 2012 – December 2012, Measuring and Modeling wheat development in a farmer's field under precision Nitrogen management. Ph.D. candidate, University of Sao Paolo, Piracicaba, Brazil,
- Andreas Schwen, March 2011 – June 2011, Bromide transport in different land use systems and under different rainfall boundary conditions. Ph.D. candidate, University of Vienna, Austria.
- Dr. Xiufu Shuai, Feb. 2006 – Feb. 2007, Field-Scale Soil Water and Solute Transport – Implementation of TDR-techniques
- Carine Mallier, 2002, visiting student, University of Applied Science Institut National Agronomique Paris-Grignon, France
- Luís Carlos Timm, 2000, visiting scientist, University of Sao Paolo, Piracicaba, Brazil
- Alice Stodolovska, 1996, visiting scientist Technical University of Prague, Czech Republic, Department of Drainage and Irrigation

E) HIGH SCHOOL STUDENT ADVISING

2016-2018: Jin Cho, P.L. Dunbar High School, Lexington, KY; Impact of City Development on Soil and Environmental Quality (1st prize in Science Fair Competition in the Environmental Sciences Area, Feb. 11, 2017); Impact of stones on soil hydraulic properties and processes.

2014-2016: Lucy Yang, P.L. Dunbar High School, Lexington, KY; Soil thermal properties; Crop evapotranspiration, Computer simulation.

F) COURSES TAUGHT

Fall 2004:

- PLS 575 Soil Physics, 11 graduate students enrolled.
- PLS 576 Soil Physics Lab, 11 graduate students enrolled.

Fall 2005:

- PLS 575 Soil Physics, 6 graduate students enrolled (peer-reviewed by Dr. D. Egli and Dr. C. Matocha for improvement of teaching).
- PLS 576 Soil Physics Lab, 4 graduate students enrolled.

Fall 2006:
- PLS 597 Spatial and Temporal Statistics, Special Topics Course, 9 graduate students enrolled, 4 graduate students and faculty auditing.

Spring 2007
- 2-Day Short Course on Spatial and Temporal Statistics, voluntary basis, 10 graduate graduate students, and 2 faculty.

Fall 2007:
- PLS 575 Soil Physics, 7 graduate students enrolled.
- PLS 576 Soil Physics Lab, 7 graduate students enrolled.

Fall 2008:
- PLS 597 Spatial and Temporal Statistics, special topics course, 7 graduate students enrolled, 2 students auditing.

Fall 2009:
- PLS 575 Soil Physics, 5 graduate students enrolled, 1 Postdoc auditing.
- PLS 576 Soil Physics Lab, 5 graduate students enrolled, 1 Postdoc auditing.

Fall 2010:
- PLS 655 Spatial and Temporal Statistics, 10 graduate students enrolled.

Fall 2011:
- PLS 575 Soil Physics, 11 graduate students enrolled.
- PLS 576 Soil Physics Lab, 9 graduate students enrolled.

Fall 2012:
- PLS 655 Spatial and Temporal Statistics, 7 graduate students enrolled.

Fall 2013:
- PLS 575 Soil Physics, 4 graduate students enrolled.
- PLS 576 Soil Physics Lab, 4 graduate students enrolled.

Fall 2014:

- PLS 655 Spatial and Temporal Statistics, 7 graduate students enrolled.

Fall 2015:
- PLS 575 Soil Physics, 9 graduate students enrolled.
- PLS 576 Soil Physics Lab, 8 graduate students enrolled.
- PLS 468G Soil Use and Management, 50%, co-taught with John Grove, 10 students enrolled.

Fall 2016:
- PLS 655 Spatial and Temporal Statistics, 12 graduate students enrolled.
- PLS 468G Soil Use and Management, 50%, co-taught with Mark Coyne, 7 students enrolled.

Fall 2018:
- PLS 655 Spatial and Temporal Statistics, 8 graduate students enrolled.
- PLS 468G Soil Use and Management, 50%, co-taught with Mark Coyne, 5 students enrolled.

Fall 2019:
- PLS 575 Soil Physics, 5 graduate students and 1 undergraduate student enrolled.
- PLS 576 Soil Physics Lab, 3 graduate students enrolled.
- PLS 468G Soil Use and Management, 50%, co-taught with Mark Coyne, 7 students enrolled.

Fall 2020:
- PLS 655 Spatial and Temporal Statistics, 2 graduate students enrolled.
- PLS 468G Soil Use and Management, 50%, co-taught with Mark Coyne, 1 student enrolled.

G) ACTIVITIES TO DEVELOP TEACHING AND LEARNING

- Peer review of my course PLS 468G "Soil Use and Management" by Dr. Brad Lee in the fall semester of 2019.
- Peer review of my course PLS 655 "Spatial and Temporal Statistics" by my colleagues Dr. Chris Matocha and Dr. Elisa D'Angelo in the fall semester of 2016

- Teaching peer evaluation for Dr. Anastasios Karathanasis, Department of Plant & Soil Sciences on the Course PLS 573 "Soil Morphology and Classification", Fall Semester 2011
- Teaching peer evaluation for Dr. Chris Matocha, Department of Plant & Soil Sciences on the Course GEN 100-009, "Issues in Agriculture: The Development of Modern Agriculture", Fall Semester 2009
- Teaching peer evaluation of PLS 650 Soil-Plant Relationships, Instructor: Frank Sikora, Fall Semester 2006
- Attending the Young faculty orientation workshop, Aug. 16 and 17, 2004.
- Attending the teaching portfolio workshop, October 19, 2004 (TASC).
- Attending the USDA Southern Region Teaching Workshop, August 8, 9, 10, 2005 (UK College of Agriculture and TASC).
- Peer review of PLS 575 by my colleagues Dr. Dennis B. Egli and Dr. Christopher J. Matocha in the fall semester of 2005.
- Attending the New Teaching Faculty Member Luncheon in the College of Agriculture, organized by Dr. Mike Mullen, on May 11, 2006.
- Attending the College of Agriculture Teaching workshop, August 16, 2006, organized by Dr. Mike Mullen.
- Attending the College of Agriculture Teaching workshop, August 18, 2008, organized by Dr. Mike Mullen.

SERVICE

A) INTERNATIONAL AND NATIONAL SCIENTIFIC COMMUNITY (See also Editorial Responsibilities)

2021 Secretary of the ACSESS Board

2020 President of the Soil Science Society of America

2019 President-elect of the Soil Science Society of America. Co-Organization of SSSA-part of the Tri-Society (ASA-CSSA-SSSA) conference in San Antonio, TX, 2019.

2018 Co-organizing (with Dr. Christian Kersebaum and Saseendran Anapalli) Symposium: How suitable Are Models to Reflect Spatially Variable Field Conditions? Annual Meeting ASA-CSSA, Nov. 4-8, 2018, Baltimore, MD

2018 Co-organizing (with Dr. Christian Kersebaum and Saseendran Anapalli) Poster Session with Graduate Student Poster Competition: How Can Field Research and Measurements Improve Modeling of Site-Specific Soil and Plant Processes. Annual Meeting ASA-CSSA, Nov. 4-8, 2018, Baltimore, MD

2018 Co-organizing (with Dr. Christian Kersebaum and Saseendran Anapalli) Oral Session: How Can Field Research and Measurements Improve Modeling of Site-Specific Soil and Plant Processes. Improve Modeling of Site-Specific Soil and Plant Processes. Annual Meeting ASA-CSSA, Nov. 4-8, 2018, Baltimore, MD

2018 Elected to President Elect of the Soil Science Society of America

2017 Co-organizing (with Saseendran Anapalli) and moderating of oral session: Examples of Model Applications in field Research. Annual Meeting, ASA-CSSA-SSSA, Oct. 22-25, 2017, Tampa, Florida.

2017 Vice Chair and Incoming Chair for the "Applications of Models in Field Research Community", American society of Agronomy

2017: Outside examiner of Dan Karup, University of Aarhus, Denmark.

2016: Reviewing candidates for a faculty position Dept. of Agroecology, Aarhus University, Denmark.

2016: Co-organization of a special symposium "Honoring the contributions of Laj Ahuja: Building bridges among disciplines by synthesizing and quantifying soil and plant processes for whole systems modeling", Tri-Soceity Meetings, Phoenix, Arizona; hosted by ASA (Agroclimatology and Ag-systems modeling community) and SSSA (Division of Soil Physics and Hydrology), Organizers: Ole Wendroth, Robert Lascano, Liwang Ma.

2014: Co-organization and co-chairing of SSSA symposium "Relating soil structure and biophysicochemical functions at different scales", Annual Meeting, ASA-CSSA-SSSA, Nov. 2-6, 2014, Long Beach, California, Organizers: Tim Green, Ole Wendroth, and Henry Lin.

2013: Co-organization and co-chairing of SSSA symposium "Soil Hydrology - Patterns and Process Interactions in Space and Time", Annual Meeting, ASA-CSSA-SSSA, Nov. 3-6, 2013, Tampa, Florida, Organizers: Markus Tuller, Lis Wollesen De Jonge, Ole Wendroth, and Andreas Schwen.

Since 2013 Member of the Soil Science Distinguished Service Award Committee, Soil Science Society of America, Madison, WI.

2012-2015: "Fundamental Soil Science Group" Board Representative at the Soil Science Society of America, Madison, WI.

2012: Presiding Chairman of two sessions at the Annual Meeting of the Soil Science Society of America, Cincinnati, Oct. 21-25,

2012; "Water Management and Conservation I", oral session in S06; "General Soil Physics II", oral session in S01.

2012: University of Natural Resources and Life Sciences, Vienna, Austria as guest professor for the summer term 2012; Workshop on Spatial and Temporal Statistics in Soil Physics; April 16-20, 2012.

2011: Outside Examiner for Ph.D. Dissertation, Sarah Bennett The University of Sydney, Australia.

2011: Outside Examiner for Ph.D. Dissertation, Andreas Schwen "Agricultural Impacts on Soil Hydraulic Properties: Measurements and Simulations", University of Natural Resources and Life Sciences, Vienna.

2011: Presiding Chairman on two sessions, i.e., "Management Zones" and "Economics and Modelling" at the 8th European Conference on Precision Agriculture, Prague, Czech Republic, July 10-13, 2011.

2011 Workshop on Spatial and Temporal Statistics in Soil Physics. Dept. of Water Resources, Faculty of Agrobiology, Food and Natural Resources, Czech University of Life Sciences. July 14-15, 2011.

2010 Core group member of four scientists who compiled a letter to the NIFA Director (Dr. Beachy) on behalf of nation-wide soil process investigators in response to the recent AFRI RFP in which Soil Process Research (former NRI Soil Processes) was not anymore considered as a national challenge area.

2010 Core group member of four scientists who developed the application for "2010 Experiment Station Section Award for Excellence in Multistate Research" on behalf of the W2188 Regional Soil Physics Research Group.

2010-2011 Chair of the Don & Betty Kirkham Soil Physics Award Committee, Soil Science Society of America.

2009-2011 Member of the Don & Betty Kirkham Soil Physics Award Committee, Soil Science Society of America.

2009-2012 Committee for S-1 Early Career Award, Soil Science Society of America

2009 Co-organization and co-chairing of SSSA symposium "Spatial and temporal dynamics of soil water and their relations to biotic and abiotic processes at different scales", Annual Meeting, ASA-CSSA-SSSA, Nov. 1-5, 2009, Pittsburgh, Pennsylvania, Organizers: Robert Schwartz, Tim Green, Robert Lascano, and Ole Wendroth.

2008-2009 Core group member of six scientists who developed the application for the next 3-year period of the W1188 Regional Soil Physics Research Group.

2008 Secretary and incoming chair of Regional Soil Physics Research Group W 1188. Editing of the Annual Report of Research Activities for the year 2007 (105 pp).

2008-2009 Chair of the Western Regional Soil Physics Group W1188

2007-2008 Secretary of the Western Regional Soil Physics Group W1188

2006 **Enhanced Water Cycle Measurements for Watershed Hydrologic Sciences Research,** Working Group for a White-Paper Report to the Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. CUAHSI, NSF, HMF (Hydrologic Measurement Facility, telephone conferences, and travel grants for 2 meetings.

2005/06: Member of the American Society of Agronomy Fellowship Awards Committee: A441 ASA Fellows

2005: Presiding Officer S-1 session on "Water Quality/Transport Modeling", Annual Meetings of the Soil Science Society of America, Salt Lake City, UT, Nov. 6-10, 2005.

2002: Coorganization of a symposium on "Aspects of Spatio-Temporal Variability of Soil Processes at different scales" in the frame of the Geo-Conference 2002, Planet Earth: Past, Development and Future. Symposium of 13 geoscientific societies, 1.-5.10.2002 in Würzburg, Germany (Organizers: Prof. J. Böttcher, University of Hannover, Ole Wendroth ZALF Müncheberg, Prof. Stefan Gäth, Universtiy of Giessen).

2001: "Donald R. Nielsen Symposium", Annual meeting of the ASA-SSSA-CSSA, Charlotte, NC, USA. Organizers: Jan W. Hopmans, Peter Nkedi-Kizza, Ole Wendroth. From this symposium, a special issue of Journal of Hydrology appeared in 2003, Vol. 272, Issues 1-4, guest editors: Jan W. Hopmans, University of California Davis, Peter Nkedi-Kizza, University of Florida and Ole Wendroth, ZALF Müncheberg.

2001 & 2002: Short Courses for Graduate Students and Scientists, organized by German Soil Science Society "Methods for quantifying and analysing variability phenomena of data series", March 20-22, 2001, February 26-28, 2002, Waldsieversdorf, Lecturers: Prof. J. Böttcher, University of Hannover, O. Wendroth, ZALF Müncheberg.

2000: First Joint Conference of the Soil Science Society of America and German Soil Science Society, September 18-23, 2000, Osnabrueck, Germany. Organising: Monika Frielinghaus, Klaus Mueller, Lutz Huischen, Ole Wendroth, Donald Sparks, Donald Nielsen.

1999: "Landscape-scale level research" symposium during the Annual meeting of the American Society of Agronomy (ASA-CSSA-SSSA), Oct. 31- Nov. 04, 1999, Salt Lake City, USA; Organizers: Chris van Kessel and Donald R. Nielsen, University of California, Davis, and Ole Wendroth, ZALF Müncheberg. From this symposium, a special issue of Soil and Tillage Research appeared in March 2001, Vol 58, Issues 3-4, guest editors: Chris van Kessel, University of California, Davis, Ole Wendroth, ZALF Müncheberg.

1995: "Land Surface Processes – Sampling the landscape and analysing and modeling spatio-temporal patterns", International Workshop, 13. Juni, 1995, ZALF Müncheberg.

a) ***Reviewer for Scientific Journals and Books***

- Soil Technology,
- Soil and Tillage Research,
- Water Resources Research,
- Research in Hydrology and Water Resources,
- Journal of Contaminant Hydrology,
- Journal of Environmental Quality
- Soil Science Society of America Journal,
- Application of GIS, Remote Sensing, and Solute Transport Modeling to the Assessment of Nonpoint Source Pollution in the Vadose Zone
- Archiv Acker-, Pflanzenbau, Bodenkunde
- Journal of Plant Nutrition and Soil Science.
- Vadose Zone Journal
- Scientia Agricola
- Australian Journal of Soil Research
- Scientific Assessment Panel for "Precision Agriculture '99". Proc. 2nd Europ. Conf. Prec. Agric. Odense, Denmark.
- Scientific Assessment Panel for "Precision Agriculture '01". Proc. 3rd Europ. Conf. Prec. Agric. Montpellier, France.
- Journal of Hydrology
- Soil Science
- Scientific Assessment Panel for "Precision Agriculture '03". Proc. 4th Europ. Conf. Prec. Agric. Berlin, Germany.
- Agronomy Journal
- Journal of Arid Environments
- Hydrological Sciences Journal
- Encyclopedia of Hydrological Sciences
- "Geographic Information Technologies for Environmental Soil-Landscape Modeling" (Editor: Sabine Grunwald & Mary Collins) [Marcel Dekker Publ.].
- Agriculture, Ecosystems & Environment
- Hydrological Processes

- Scientific Assessment Panel for "Precision Agriculture '05". Proc. 5th Europ. Conf. Prec. Agric. Uppsala, Sweden.
- Geoderma
- Canadian Journal of Soil Science
- Scientific Assessment Panel for "Precision Agriculture '07". Proc. 6th Europ. Conf. Prec. Agric. Skiathos, Greece.
- Anais da Academia Brasileira de Ciências
- Proceedings of the National Academy of Sciences
- Applied and Environmental Soil Science
- Hydrology and Earth System Sciences
- Env. Modelling & Software
- Journal of Soils and Sediment
- Journal of the American Society of Mining and Reclamation
- Canadian Geographer
- Pedosphere
- Chemical Engineering Communications
- Journal of Agricultural Education and Extension
- Catena
- Journal of Photogrammetry and Remote Sensing
- Environmental Earth Sciences
- Field Crops Research
- Soil Use and Management
- Frontiers of Earth Science
- Land Degradation and Development

since 2005: 5 peer reviews for USDA publications prior to manuscript submission.

b) ***Reviewer for Research Proposals***

- BARD: Research proposal within an Israel-U.S.A. cooperation programm.
- NWO –Council Earth and Life Sciences, Den Haag, The Netherlands.
- NSF – Grant Proposal submitted to the National Science Foundation.
- NSERC/CRSNG Natural Sciences and Engineering Research Council of Canada.

- NSF – Grant Proposal submitted to the National Science Foundation, Division of Earth Sciences, Hydrologic Sciences Program (2005: 1; 2006: 1, 2007: 2, 2008: 1).
- University of Wisconsin Water Resources Institute (WRI) (2007, 2009, 2010).
- Czech Science Foundation (GACR)
- NWO, Dutch Council for the Earth and Life Sciences (ALW), 2011.
- DFG, Deutsche Forschungsgemeinschaft (NSF in Germany), 2011.
- FREP, Fertilizer Research and Education Program, California Department of Agriculture, 2013, and 2015.
- NSF, Proposal review in the EAR program. November 2013.
- NERC – Science Foundation, United Kingdom. February 2016.
- FWF – Austrian Science Fund, August 2016.
- Independent Research Fund Denmark, Ministry of Higher Education and Science, 2020.

c) ***Institutional Reviewer***

2018 Water Research Center for Agriculture and Mining, University of Concepcion, Chile. Funded by CONICYT (National Commission for Investigations in Science and Technology) / FONDAP; on-site visit and writing of review report; full travel grant from FONDAP, Chile. October 6-13, 2018.

2017 Water Research Center for Agriculture and Mining, University of Concepcion, Chile. Funded by CONICYT (National Commission for Investigations in Science and Technology) / FONDAP; Written annual progress report (no site visit).

2016 Water Research Center for Agriculture and Mining, University of Concepcion, Chile. Funded by CONICYT (National Commission for Investigations in Science and Technology) / FONDAP; on-site visit and writing of review report; full travel grant from FONDAP, Chile. April 16-23, 2016.

d) ***Outside Examiner for the University of the West Indies, Trinidad***

(As an outside examiner, I receive 20 to 40 exams per course, and it is my role to evaluate the teaching of the course, i.e., review the quality of exam questions, evaluate how the students' answers were graded, and what questions were generally answered well by the class and which ones not to help identify topics that need to be explained more thoroughly in class.)

Spring 2009:

- AGSL 3004 "Integrated Watershed Management"
- AGSL 3010 "Geophysical and Environmental Soil Sensing"

Fall 2009:

- AGSL 2001 "Soil and Water Management"
- AGSL 3001 "Irrigation and Drainage Technology"

Spring 2010:

- AGSL 2000 "Soil Fertility and Fertilizer Technology"
- AGSL 3004 "Integrated Watershed Management"
- AGSL 3010 "Geophysical and Environmental Soil Sensing"

Fall 2010:

- AGSL 2001 "Soil and Water Management"
- AGSL 3001 "Irrigation and Drainage Technology"
- AGSL 3002 "Soil Survey and Land Evaluation"

Spring 2011:

- AGSL 3010 "Geophysical and Environmental Soil Sensing"

Fall 2011:

- AGSL 3001 "Irrigation and Drainage Technology"
- AGSL 3004 "Non-Ruminant Production"

Spring 2012:

- AGSL 3004 "Integrated Watershed Management"
- AGSL 3010 "Geophysical and Environmental Soil Sensing"

B) UNIVERSITY

2018 Chair of Academic Area Advisory Committee, Extension Title Series.

2017	Academic Area Advisory Committee, Extension Title Series.
2013-2014	Appointed to Hearing Committee, chaired by the Dean of Student affairs)
2012 - 2015	Member of the Graduate Council.
2006	Academic Scholarship Reader, 2006, Sandy Copher, Director of Academic Scholarship Programs.

C) COLLEGE

2018-2019:	Chair of the Chellgren Endowed Professorship Committee.
2016-2018:	Member of the Agricultural Faculty Council in the College of Agriculture, Food and Environment.
2014-2015	Member of the College's Strategic Plan (2015-2020) Development Team, member of the writing team, member of action team.
2009-2010	Chair of the Precision Resources Management Steering Committee, College of Agriculture, University of Kentucky.
2008-2009	Member of the Precision Resources Management Steering Committee, College of Agriculture, University of Kentucky.
2006-2008	Member of the Agricultural Faculty Council in the College of Agriculture since fall 2006.

D) DEPARTMENT

2020	Spring semester; Peer review teaching evaluation for Dr. Elisa D'Angelo, PLS 104 "PLANTS, SOILS, AND PEOPLE: A SCIENCE PERSPECTIVE"
Since 2018	Faculty Mentor for Dr. Hanna Poffenbarger

Since 2016	Faculty Mentor for Dr. Montserrat Salmeron Cortasa
Since 2015	Faculty Mentor for Dr. Wei Ren
2015-2020	Faculty Mentor for Dr. Erin Haramoto
Since 2015	Chair of the departmental proposal review committee.
2015	Chair of Faculty Search Committee for the assistant professor position in Agroclimatology and Ag Systems Modeling
2013-2018	Faculty Mentor for Dr. Carrie Knott
2011	Teaching peer evaluation for Dr. Anastasios Karathanasis, Department of Plant & Soil Sciences on the Course PLS 573 "Soil Morphology and Classification"
2010-2014	Service on the Departmental Advisory Board
2010-2014	Service on the Departmental Promotion and Evaluation Committee
2009-2012	Faculty Mentor for Dr. Nadine Kabengi
2009	Teaching peer evaluation for Dr. Chris Matocha, Department of Plant & Soil Sciences on the Course GEN 100-009, "Issues in Agriculture: The Development of Modern Agriculture", Fall Semester 2009
2008-2009	Department of Plant and Soil Sciences, Chair of the Social Committee.
2006-2009	Department of Plant and Soil Sciences, Project Proposal Review Committee.
2006	Teaching peer evaluation of PLS 650 Soil-Plant Relationships, Instructor: Frank Sikora, Fall Semester 2006
2006	Department of Plant and Soil Sciences, Library Committee.

E) EXTENSION

- Spatial analysis of Greenseeker data compiled with my colleagues Dr. Greg Schwab and Dr. Eugenia Pena-Yewtukhiv is relevant for extension, was published in a refereed proceedings article and presented at the 5th European Conference on Precision Agriculture in Uppsala, Sweden.
- Presentation at the 2007 University of Kentucky Winter Wheat Meeting, January 9, 2007, Christian County Extension Office, Hopkinsville, KY; Oral presentation on "Spatial and Temporal Development of Wheat Biomass: Can We Predict the Spatial Grain Yield Pattern?", Ole Wendroth, Greg Schwab, Dennis Egli, Lloyd Murdock
- Presentation at Wheat Field Day 2008, University of Kentucky Research and Education Center, Princeton, "On-The-Go Crop Sensing and its Relevance for Farming and Research", May 20, 2008.
- Presentation at Princeton Field Day 2009
- TV contribution on remote sensing-based optimization of nitrogen fertilizer application in "Growing Kentucky", September 2009.
- Wheat Field-Day, Princeton Kentucky, 2011, "How close is close enough?" Ole Wendroth, Lloyd Murdock, Greg Schwab, R. Jason Walton.
- Oral presentation at the Winter Wheat Meeting, Wheat Science Group, University of Kentucky, Hopkinsville, Kentucky, January 10, 2012. "Variable Rate Nitrogen II - 6 Years of Crop Sensor Field Experiments in Kentucky." Wendroth, Ole, Lloyd Murdock, Greg Schwab and Dennis Egli. 2012.
- Midamerica Farmer Grower. Sensors Gauge Nitrogen Needs. Cover page article on our on-farm crop sensing work in Western KY. Vo. 32, No. 8, Febr. 24, 2012.
- Oral presentation at the Wheat Field Day, University of Kentucky, Princeton, "Don't be late – Crop irrigation from a soils perspective". May 13, 2014.
- Presentation with Javier Reyes and Xi Zhang at Corn, Soybean and Tobacco Field Day, University of Kentucky, Princeton, "Soil Water, Crop & Remote Sensing Measurements for Irrigation Management", July 28, 2016

- Presentation at Wheat Field Day, University of Kentucky, Princeton, "Mapping Farmers' Fields and Delineating Management Zones for Precision Management Irrigation", Ole Wendroth, Javier Reyes, Xi Zhang and Jason Walton; May 14, 2019.

F) PUBLIC

2019-2021	Mentoring a high school students from Paul Laurence Dunbar (Tharanie Subramaniam) in science projects.
2018	Mentoring a Middle School Student, Maddi Rose Carter, SCAPA, 7th grade science project on the effect of nitrogen fertilizer on plant growth.
2016	Hosting a field day with "hands-on exercises on soil and crop measurements" for Robinson Scholars; Visiting High School students at the University of Kentucky, June 28, 2016.
2014-2018	Mentoring two high school students from Paul Laurence Dunbar (Lucy Yang, Jin Cho; teacher: Karen Young) in science projects with multiple regional and national awards.
2008-2021	Fayette County Science Fair judge annually (except 2020) at school and at regional levels
2011-2012	Lafayette High School, Lexington, KY, taught 2 units on Soil and Water to approximately 180 students of the Earth Science Class (Teacher: Susan McLaughlin) in six sessions, May 9 and 10, 2011, March 26 and 27, 2012.
2012	Lafayette High School Students at Spindletop Farm, May 7, 2012.