

Manoj K. Shukla, PhD

Director ACES Global Initiatives Program and Aggies Go Global

Professor of Soil Physics

Plant and Environmental Sciences

New Mexico State University

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EDUCATION

1996-1998 University of Natural Resources and Applied Life Sciences Vienna, Ph.D., Agricultural Engineering (Major: Soil Physics; Minor: Hydraulics) (Collaborative program with UC Davis)

Title of Ph.D. Thesis: Solute transport in porous media with diffusion controlled and surface reaction rate laws: Worked on transport behaviors of solutes through different displacement lengths, optimized global estimates of transport parameters, developed relationship between pore water velocity and coupled diffusion-dispersion

1986-1988 J. N. Agriculture University, India, M.Tech., Soil and Water Engineering

Title of Master's Thesis: Seepage and waterlogging problems in command areas- A case study

1982-1986 J. N. Agriculture University, B-Tech., Agricultural Engineering

Title of Bachelor's Thesis: Evaluation of head losses due to foot valves

PROFESSIONAL EXPERIENCE

2018-date COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES, NEW MEXICO STATE UNIVERSITY, Las Cruces, New Mexico.

Director ACES Global Initiatives Program: Lead and manage ACES Global Initiatives for student and faculty, explore new opportunities including MOU with foreign Universities, research, teaching, extension and training collaboration

Director Aggies Go Global: Lead and manage AGG activities, allocate funds, approve budget and awards, supervise staff, and seek funding

IALC Executive Board Member: Lead and manage International Arid Lands Consortium initiatives, Lead Representative from NMSU, participate in executive meetings, set up agenda and direction

2005-date DEPARTMENT OF PLANT AND ENVIRONMENTAL SCIENCES, NEW MEXICO STATE UNIVERSITY, Las Cruces, New Mexico.

Professor of Soil Physics and Nakayama Professor: Lead and manage the soil physics program consisting of undergraduate, graduate students, and Postdocs. Currently supervising eight Ph.D. students, one each from CAU China, Turkey, and Mexico; 1 MS and 1 UG student; and a visiting Faculty from JAU, China. Mentoring five junior faculty and several UG students. Teaching undergraduate and graduate classes regularly. Serving on department, college, university, national and international committees.

Associate and Assistant Professor of Soil Physics: Graduate and undergraduate advising, teaching undergraduate and graduate classes, grant proposal writing, writing refereed Journal articles, serving on departmental, college, university committees, and society committees

2001-2005 SCHOOL OF NATURAL RESOURCES, THE OHIO STATE UNIVERSITY, Columbus, Ohio

Research Scientist: Co-Leader of a large grant on Soil C Sequestration from Department of Energy, supervised a technician hired through the grant, budget management, report writing, grant proposal writing, publishing, teaching advanced soil physics class and soil physics lab

2000-2001 SCHOOL OF NATURAL RESOURCES, UNIVERSITY OF ILLINOIS, Urbana-Champaign, Illinois

Post-doc Research Associate: conduct research, attend classes, write grant proposal and journal articles

1995-2000 DEPARTMENT OF HYDRAULICS, UNIVERSITY OF AGRICULTURAL SCIENCES, Vienna, Austria

Research Scientist (1999-2000): conduct research on solute transport, teach irrigation management class, write grant proposal, and journal articles

Graduate Research Assistant/ Teaching Assistant: conduct research on solute transport, TA a class on statistical analysis

1990-1995 NATIONAL INSTITUTE OF HYDROLOGY, INDIA

Scientist: conduct research work on soil water and drainage, report and journal article writing, organize and teach during training programs for state engineers, manage and work with ILRI the Netherlands

1989-1990 WATER AND LAND MANAGEMENT INSTITUTE, INDIA

Pool Officer: organize training workshop on water distribution, organize and teach during training programs for state engineers and farmers

ADMINISTRATIVE LEADERSHIP AND SERVICE

August 2018-date ACES Global Initiatives Program Coordinator

August 2018-date Executive Board Member of International Arid Lands Consortium

August 2018-date Member Association of Public Land Grant Universities (Commission on International Initiatives)

January 2019-date: Search Committee member for ACES, Associate Dean of Research

June 2018 Member Expert Review Panel for China Agricultural University's Agricultural Engineering Program

December 2018 Developing a program "Extension Education" for senior undergraduate students and training the trainers of agriculture in India

2014-2019 Member BHR Expert Panel: U.S. -México Border Health Commission

2014-date Member CHIWAHA group on desalination

2015-2019 Steering committee member for the NMSU Advancing Leaders Program

2016-2017 Member Review Committee for Renewal of John Clark Professorship and Foreman Chair in College of Engineering

2015-2017 University Research Council College of ACES Representative

2016-2017 Chair College of ACES P & T Committee
2015-2017 Member College of ACES P&T Committee
2014-date Member PES promotion and tenure committee
2017 Mentor (rep for Assoc. Dean Academics) Teaching Academy Workshop on P&T portfolio
2016 External Reviewer Plant and Soil Science Graduate Program, Texas Tech Univ., Lubbock
2015-2016 Chair multistate project group 3188
2014-2015 Chair Search Committee for Environmental Soil Microbiology
2012-2013 Chair multistate project group 3128
2009-2012 Chair Awards Committee
2007 Task force 4 coordinator for RGBI meeting
1992-1995 Executive Secretary of Indian Association of Hydrologists

RESEARCH LEADERSHIP AND SERVICE

2015-date Executive Committee member, Vadose Zone Journal
2015-date Book Review Editor, Vadose Zone Journal
2016-date Associate Editor, Soil Science Society America Journal
2015-date Member Unsaturated Zone technical committee, American Geophysical Union
2014-2017 Editor in Chief Journal of Environmental and Analytical Toxicology
2013-2015 Member L.R. Ahuja modeling awards committee of Soil Science Society America
2013-2016 Editorial Board member for NACTA Journal
2014-2015 Lead PI on EPSCoR Track II proposal
2015-2016 Lead PI on USDA-AFRI proposal
2011 Panel member for AFRI-USDA program in Washington DC
2010-2012 Organizer and Presiding Officer, Soil Science Society America International Meeting
2016-2008 External reviewer for DOE-NETL and NSF proposals
2010-date New Mexico State Representative Multistate Research Group on soil, water and environment physics at different scales 3188
2010-date New Mexico State Representative Multistate Research Group on microirrigation (W3128)
2010 Co-Convener of WCSS Symposium: Optimizing water use with soil physics for 19th World Congress of Soil Science, Brisbane, Australia
2005-date Member of Curriculum, Graduate studies committee of the PES Department
2010-date External reviewer for International doctoral dissertation and for promotion and tenure
2005-date Mentored AMP students and MARC program

INTERNATIONAL ACTIVITIES

- Austria (1995-2000)
 - Co-Instructor for the Irrigation Management course (545.009) at University of Agricultural Sciences Vienna
 - Co-Instructor for the Indirect Methods in Soil Physics (545.002) at University of Agricultural Sciences Vienna
- Australia (2010)
 - Co-Convener WCSS Symposium at 19th World Congress, Brisbane, Australia, Aug1-6, 2010
 - Served as External Reviewer of a PhD dissertation from the University of Western Australia
- China (2013-continue)
 - Dr. Yanbing Qi Northwest Agriculture and Forestry University, Yangling, Shaanxi is currently working on desertification and soil property interaction
 - Invited speaker at workshop on “Water and food security under changing environment”, June 1 to 7, 2015, China Agriculture University, Beijing
 - Guest lecture during summer school during June 2016 at CAU, Beijing
 - Hosted CAU scientists and organized a workshop at NMSU main campus in 2015
 - Invited speaker during 2016 Yangling International Agri-Science Forum, Nov. 5-7 at Northwest A&F University, Yangling
 - Invited speaker at the College of Resources and Environment, Northwest A&F Univ.
 - Guest lecture (two) to undergraduate students of Natural Resources class, 2016
 - Advised three faculty members from College of Urban and Rural Construction, Agricultural University of Hebei as visiting scholar during 2016-17
 - Organizing summer research training for undergraduate and graduate students from Northwest A& F University, China (2017-18)
 - Taught a class on Natural Resources at NWA&F University summer 2017 and 2018
 - Visited China Agricultural University, Beijing in June (2018; 19), taught in summer school
- Egypt (2008-2009)
 - Served as an external advisor to a graduate student at Desert Research Council
 - Served as a co-advisor of a student from Desert Research Institute
- India (1989-continue)
 - Served as executive secretary of Indian Association of Hydrologist
 - Served as Associate editor of Jal Vigyan Samachar (1993-1994)
 - Organized training workshops for engineers and growers on water management
 - Visited Agricultural University in India as part of recruiting activities in 2011
 - Attended a conference in Surat on Water Management 2014
 - Attended ISSS conference in Kolkata in Dec. 2017
 - MOU with IIT Kharagpur was signed and working on with other Universities
 - Organized and attended leadership conference in New Delhi during 26 April- May 1, 2018 for eight ACES students
 - Developing an extension training program for agriculture graduates of Andhra Pradesh

- Visited several Engineering and Agriculture Colleges in AP and Telangana India, talks, interactions with faculty, administrators and students Feb-March 2019
- Iran (2009)
 - Grant proposal to Iranian National Science Foundation
- Jordan (2019-continue)
 - Developing collaborations with The University of Jordan, MOU under discussion
- Latin America (2018-continue)
 - Developing collaborations with IICA and TEC and countries of Latin America
 - Several webinars with IICA staff on collaboration
 - Visited several Institutes and Universities in Argentina, Uruguay, Paraguay
 - Building collaborations with ministries, Universities, and farmer organizations
- Mexico (2006-continue)
 - MOU with City of Chihuahua and Foundation Produce in Chihuahua City Aug 16, 2019.
 - Visited Foundation Produce headquarter and met with the President and Secretary.
 - US-Mexico Border Health Commission meeting in Monterrey, Mexico, Oct. 19-22, 2015
 - Key-note speaker during Agronomy Week at University of Durango, Sept. 2015
 - Invited speaker at International Organic farming Conference at University of Durango, Venecia, Mexico, 2015
 - Member of organizing committee (Research tour to NMSU) for Mexican Soil Science Society meeting in Juarez, Mexico during 2014
 - Invited speaker during Agronomy Week at University of Durango, Venecia, Mexico, Sept. 3-5, 2012
 - Invited speaker during 37th International Soil Science Conference, Mexican Soil Science Society, Zacatecas, Mexico, 11-16 Nov., 2012
 - Invited speaker during International Conference at University of Juarez, 15 March, 2013 Collaborated on projects funded by SCERP, EPA and NMDOH
 - Served as co-advisor for four Masters/PhD students at University of Juarez
 - Proposals to EPA Border programs and Ciencia Básica
 - Hosted a faculty from University of Juarez, Mexico at NMSU during 2011-12
- Saudi Arabia (2019-continue)
 - Developing collaborations with King Abdulaziz University (KAU); MOU is under development

AWARDS RECEIVED

- Award “Leaders of Excellence” at the Annual WEF (2018)
- Award of Appreciation by Soil Science Society of America for serving as Book Review Editor for Vadose Zone Journal (2014-2017)
- National Water and Energy Conservation (Team) award (2017)
- Received Israel Faculty Fellowship (2017)
- Nakayama Research Excellence Professor (2014)
- Team Award for outstanding wastewater management integrated program (2014)

- Award of Excellence for Microirrigation multistate project (Team; W2128) (2014)
- Graduate Research Award of NMSU AES (2014)
- Key-note speaker Agronomy week in Durango, Mexico (2015)
- Nominated to Mahatma Gandhi Pravasi Samman London NRI Welfare Society of India (2013)
- Invited speaker at Mexican Soil Science Society meeting in Zacatecas, MX (2012)
- Award of Excellence for outstanding contribution to Western Regional Multistate Research (W-2188, 2011)
- Patricia Christmore Faculty Teaching Award (2009)
- North American Colleges and Teachers of Agriculture (NACTA) and ACES College Teaching Award (2009)
- Certificate of appreciation from NM Alliance for Minority Participation (2009)
- Water Resources Team Award for outstanding integrated program (2007)
- Soil Science Society America Journal Appreciation Award for serving as Associate Editor (2006)
- Nominated for Distinguished College Teaching Award (2008)
- Nominated for Distinguished College Research Award (2011)
- Nominated to *Gamma Sigma Delta*, Honor Society of Agriculture, NMSU Chapter (2005)
- Received *Certificate of Appreciation* for mentoring program at OSU (2005)
- Received *Certificate of Appreciation* for BAYOU mentoring program at OSU (2002)
- Invited Speaker *Soil and Water Resource Field Night* for farmers, Piketon, the Ohio State University (2003) and several conferences and meetings

LEADERSHIP WORKSHOP AND SERVICE

- Attended Administrators meeting with delegates from Costa Rico (Dec) 2018
- Attended Advancing Leadership Program (ALP) at NMSU during 2014-2015 (one year)
- Participated in other leadership workshops and invited lectures (2018-date)
- Leadership talks on “Dunning Kruger effect” (2016-17)
- Leadership talk on “how to start a talk” (2017-18)
- Served on several panels (forums) on a wide ranging leadership issues (2015-date)
- Leadership talk “Career readiness through Colleges: opportunity & challenges” (2018)

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- American Geophysical Union
- Soil Science Society of America
- American Society of Agricultural and Biological Engineering
- Gamma Sigma Delta: the Honor Society of Agriculture
- Indian Association of Hydrologists

TEACHING

International Teaching

- 2018-2017: Northwest A&F University, China: Natural Resources (July-August)
- 2018: China Agricultural University, summer school (June)
- 1998: Irrigation Management- 545.009 at Univ. of Agricultural Sciences Vienna (co-Instructor)
- 1998: Indirect Methods in Soil Physics-545.002 Univ. of Agric. Sciences Vienna (co-Instructor)
- 1999: Project Work on Irrigation- 545.001 Univ. of Agric. Sciences Vienna (Teaching Assistant)

At NMSU:

Teaching appointment averaged between 30% and 40% since 2005. Designed and taught three new classes. Teaching evaluations for most attributes ranged from 88-100%.SOILS 477- Environmental Soil Physics (3 Cr, Every Fall)

- SOILS 477+L- Environmental Soil Physics (3 Cr) +Lab (1 Cr) (Every Fall)
- SOILS 652- Advanced Soil Physics (3 Cr, Every Spring)
- SOIL 655- Contaminant Transport Modeling (3 Cr, Spring)
- SOIL 650- Spatial Variability Analysis (3 Cr, On Occasion)
- SOIL 598- Soil Physics Calculus (3 Cr, Spring 2011)
- ES/SOIL 370- Environmental Soil Science (3 Cr, Every Spring)
- ES 391- Internship (3 Cr, Fall, Spring)
- SOILS 252- Introductory Soils (3 +1 Cr, On Occasion)

At Ohio State University (2004-05):

- Soil Science- 871-Advanced Soil Physics at the Ohio State University (Instructor)
- Soil Science- 671- Soil Physics Lab at the Ohio State University (Instructor)

TEACHING PUBLICATION

Shukla M.K. and T. Sammis. 2012. Advanced soil physics class develops research and teaching skills. NACTA Journal. 56 (1): 2-7.

TEACHING PRESENTATIONS

Shukla M.K. 2016. Agriculture water management. Summer School, China Agriculture University, Beijing. June 5.

Shukla M.K. 2016. Agriculture water management. Northwest A&F University, Yangling, Nov. 8.

Shukla M.K. 2016. Soil erosion. Northwest A&F University, Yangling, Nov. 10.

Shukla M.K. 2018. How to prepare a manuscript. China Agricultural University

TEACHING SERVICE

Editorial Board member for NACTA Journal (2013-2016)

ADVISING:

- **Postdoc:** Dr. Amir Gonzalez, Postdoctoral Research Associate (2013-2016)
Dr. Sanjit Deb, Postdoctoral Research Associate (2009- 2013)
- **Scholar:** Dr. Yanbing Qi, Northwest A&F University, China (2013-2014)
Dr. Juan Pedro Flores Margez, University of Juarez, Mexico (2011-12)
Dr. Hui Xia, Agriculture University of Hebei, China (03/2016-09/2016)
Dr. Lili Sheng, Agriculture University of Hebei, China (03/2016-09/2016)
Dr. Gao Huiyan, Agriculture University of Hebei, China (11/2016-04/2017)
Dr. Li Peiling, Jiangxi Agriculture University, China (12/01/2017-11/30/2018)
- **Student:** Mr. Joel Hernandez, University of C. Juarez (9/01/16-11/30/16)
Ms. Hui Yang, China Agriculture University, China (10/01/2017-10/30/2018)
Mr. V. Bedirhanoglu, Ataturk University, Turkey (12/27/2017-06/05/2018)
Mr. Xingwang Wang, China Agriculture University (10/01/2018-10/30/2019)
Mr. Changian Ma, China Agriculture University (12/01/2018-12/31/2019)
Ms. Yin Zhou, China Agriculture University (10/05/2019-12/31/2020)
- **Faculty:** Blair Stringam, K.C. Carroll, Colby Brungard, Rajan Ghimire, PES
Dr. Nick Webb, PES/USDA; Dr. Hatim M.E. Geli, Animal and Range Science
- **Undergraduate Students:** Several undergraduate students of Environmental Science and Soil Science programs
- **Graduate Students:** Advised following students as the chair/co-chair of their graduate committees. Also, served on the committees of more than 28 more graduate students

	Name of Student	Degree	Year Completed	Advising as
1	Mike Babcock	M.Sc.	2007	Chair
2	Guillermo Ortiz	M.Sc.	2007	Chair
3	Tran Tri Dung (Civil Engg.)	M.Sc.	2007	Co-Chair
4	Parmodh Sharma	M.Sc.	2008	Chair
5	Pradip Adhikari	M.Sc.	2008	Chair
6	Amir Samani	M.Sc.	2010	Co-Chair
7	Bernice Hernandez (Univ. of Juarez)	UG Thesis	2010	Co-Chair
8	Ashraf El Sadek	Ph.D.	2011	Co-Chair
9	Amir Gonzalez	Ph.D.	2011	Chair
10	Parmodh Sharma	Ph.D.	2011	Chair
11	Pradip Adhikari	Ph.D.	2013	Chair
12	Ankit Bansal	M.Sc.	2011	Chair
13	Harmandeep Sharma	M.Sc.	2014	Chair
14	Joel Hernandez	M.Sc.	2014	Co-Chair
15	Mireya Rios, Mexico	M.Sc.	2014	Co-Chair
16	Janet Moncada, Mexico	UG Thesis	2014	Co-Chair
17	Nadia Rodriguez M	M.Sc.	2015	Co-Chair
18	Savitoz S. Sidhu	Ph.D.	2014	Co-Chair
19	Alison Flores	M.Sc.	2015	Chair

20	Darby Kellum	M.Sc.	2016	Chair
21	Gurjinder Singh	M.Sc.	2016	Chair
22	Omer F Ozturk	M.Sc.	2016	Chair
23	J. Fernandez	M.Sc.	2017	Chair
24	Saman Mostafazadeh	M.Sc.	2018	Co-Chair
25	Joel Hernandez	Ph.D.	2018	Co-Chair
26	Sarah Cerra	Ph.D.	On-going	Chair
27	Vanaja Kankarla	Ph.D.	On-going	Chair
28	Akram Ben-Ali	Ph.D.	On-going	Chair
29	Bauldwin Monie	M.Sc.	2018	Co-Chair
30	Darby Kellum	Ph.D.	On-going	Chair
31	Esmail Mokari	Ph.D.	On-going	Chair

RESEARCH

Research appointment has averaged between 60% and 70% from 2005. Following are the areas of research interest

- Use of unconventional waters (brackish groundwater and RO concentrate) for sustainable agriculture (Pecan, chile peppers, tomato, and halophytes), mechanisms and impacts on evapotranspiration, groundwater, soil contamination, and yields
- Measurement and modeling of isothermal and thermal water (liquid water, water vapor) and energy (heat) transport in unsaturated porous media for horticulture and tree crops
- Nitrate, chloride, herbicide transport, and irrigation efficiencies through unsaturated porous media under chile, onion, cotton, and pecan fields as well as in the greenhouse

RESEARCH FUNDING

Total funding received to date is more than \$3 million

- Carbon sequestration in reclaimed mined soils of Ohio; Department of Energy-NETL; 2003-2006; (co-PI with Lal) \$756,000
- Interactions of vadose zone properties at multiple scales in arid land soils, by USDA- HATCH Grant (PI) (\$50,000 for five years)
- Mapping of airborne particulate matter under agriculture and unpaved road, Southwest Consortium for Environmental Research and Policy (SCERP) (PI) (2007-2009 \$140,000)
- Killed Mulch Cover Crop Systems and Water Management in Southern NM: Irrigation Water Management for Monitoring and Modeling on Farm Soil Salinity- Rio Grande basin Initiative (RGBI) (PI) (\$62,500)
- Land application of industrial effluent on a Chihuahuan Desert ecosystem: Impact on soil physical and hydraulic properties. NMWRRRI 2006 Seed Money Research Program Award (PI) (\$67,000)
- Self-Sealing Liners for Desalination Evaporation Ponds. Sandia University Research Partnership (SURP) (PI) 2006 (\$40,000)
- Modeling the transport of DU particles by saltation mechanism, Physical Science Laboratory (PI) 2007 (\$5000)
- Evaluation of the ‘Pecanigator’ as an aide to irrigation scheduling for pecans in the Mesilla Valley and west Texas. White, Heerema, Sammis, Shukla, Mexal, Iglesias 2007 (\$8000)

- Soil Salinity Management and Onion Cultivar Screening for Salt Tolerance. Shukla and Cramer. NMDOC, March 2007 (\$22,500 for two years)
- Effect of salinity and crusting on hydraulic conductivity of soil. AES, February 2008, Equipment (\$5000)
- Advanced sensing and control technologies to optimize resource management in specialty crops. 2008. USDA-CSREES (NMSU, TAMU, UCDAVIS total about \$5 million) ~ (PI) 2M for NMSU; \$633K Shukla, Mexal) (2009-12)
- Soil Water Extraction and Rooting Patterns in Pecan Orchards. 2008. Shukla, Mexal, Heerema, USDA-ARS (\$29,000)
- Winter Production of Leafy Greens in the Southwestern USA using High Tunnels. Guldan, Uchanski, Falk, Shukla, Western SARE Competitive Grant (2009-13) (\$194,000)
- Land application of industrial effluent on a Chihuahuan Desert ecosystem: Impact on soil physical and hydraulic properties. Shukla, Mexal, WRRI, (PI) \$30,000 for 1 year (2009-10)
- Land-based Sources of Air Quality Contamination in the Binational Border Region of Southwestern New Mexico, Northwestern Chihuahua and West Texas. New Mexico Department of Health. Dubois, Wang, Shukla, Sammis, et al. 2010 (\$800K).
- Comparison of Gramineous crops for control of Verticillium in Chile. New Mexico Chile Commission. Sanogo, Idowu and Shukla 2010-11 (\$7500)
- Interactions of vadose zone properties at multiple scales in arid land soils, by USDA- HATCH Grant 2010-15 (\$50,000 for five years) (PI)
- VPR Research Grant and GREG Award Shukla Lambis, Bawazir (PI) 2011-12 (\$35K)
- Compensated Root Water Uptake and Transpiration in Pecans: Measurements and Modeling for Sustainable Irrigation, , Shukla, 2011-13 (PI) (\$22K)
- Soil properties at BRGNDRF, Bureau of Reclamation, 2013 (Co PI) (\$2500)
- Land-based sources of air quality contaminants in the Binational Border Region of Southwestern New Mexico, Northwestern Chihuahua and West Texas", NM Department of Health, (Co PI) 2013-14 (\$69,450.00) Total award: \$231,500.00.
- Desalination concentrate management for sustainable agriculture: a preliminary study on transport behavior and plant viability at BGNDRF, Bureau of Reclamation, Shukla, Ulery, Picchioni, Schutte, Rastegary 2013-14 (PI) (\$50K)
- Graduate Research Award. Effects of water and salinity stresses and yield and quality of New Mexico specialty crops. AES. 2014-16 (PI) (\$40K)
- Growth and Yield Responses to Irrigation Water Salinity for Drip Irrigated Chile. AES 2015-17 (\$16000).
- Leaching of Indaziflam in Sandy Loam Soil: Quantification and Management. Bayer CropScience, 2013-17 (\$180K)
- Assessment of water table and water quality variations with respect to river flow along Rio Grande River between Garfield NM and Fabens TX, NM WRRI Faculty Water Research Grant Program. 2014-15 (Co-PI) (\$48K)
- Soil Geomorphic Institute. USDA- NRCS workshop 2016-17 (\$40K)
- Determining Impacts of Long Term Use of RO Concentrate on *Atriplex* Species, Soil characteristics and Microbial Habitats. US Depart. Of Interior, Bureau of Reclamation, Hosler, Shukla, Cerra, 2017-19 (\$150K)

- Irrigation with brackish groundwater and concentrate: effect on soil microbial properties, plant uptake, and ion deposition, Shukla, Schutte, Picchioni, WRRRI-BOR, 2017-18 (\$74K)
- Commodity Exchange Market, Cochran Fellowship Program for Malawi, USDA FAS, Shukla (PI), Acharya, Townsend (AEAB), 2018 (\$75K).
- NMSU Mexico F2F Agriculture Volunteer Opportunity Project (AVOP) Small Grants Program, Gutierrez and Shukla, 2018 (\$720K)
- Shukla M.K. (Principal), W. Pedio, N. Flores, E. Delgado (FACS), R Acharya. 2018. Capacity Building of Risk-based SPS Systems and Trade Facilitation in Colombia. USDA-FAS, PI, \$286,000
- Acharya (PI), Shukla, Ghimire, Djaman 2018. Tunisia Market Reform within the Wheat Value Chain, Cochran Fellowship Program, USDA FAS, \$60K
- NMSU Costa Rica F2F Agriculture Volunteer Opportunity Project (AVOP) Small Grants Program, Gutierrez and Shukla, 2018 (\$720K)

Major Interdisciplinary/ Multi-institutional Grants Lead as PI

- Hydrology in Arid Regions: An Assessment of the Potential of GPS Surface Reflection to Detect Soil Moisture at Landscape Scale (PI)- NASA (\$98,000) Shukla, Bleiweiss, Schmutge, NMSU and Katzberg, NASA (2009)
- Shukla, M. K. (Principal), NMSU, KSU, TSU Sponsored Research, "Developing Decision Support Tools for Improving Nitrogen and Water Use Efficiency to Reduce Nitrous Oxide Gas Emissions in Cereal Crops", Sponsoring Organization: USDA/NIFA/ Agriculture and Food Research Initiative, Sponsoring Organization Is: Federal, Research Credit: \$1,977,738.36, PI Total Award: \$4,944,345.89.
- Shukla, M. K. (Principal), Sammis, T. W. (Principal), UCD, TAMU. Sponsored Research, "Advanced Sensing and Control Technologies to Optimize Resource Management in Specialty Crops: Studies of Water and Nitrogen Management in Deciduous Crops under Normal and Resource-Limited Conditions", Sponsoring Organization: University of California, Davis, Sponsoring Organization, Research Credit: \$381,465.20, PI Total Award: \$1,907,326.00.
- Shukla, M. K. (Principal), NMSU, TTU, UW, OSU. "RII Track-2 FEC: Infrastructure Development for Enhancing Arid and Semi-Arid Systems (IDEAS) for Food and Water Security", Sponsoring Organization: National Science Foundation, Sponsoring Organization, Research Credit: \$1,189,244.60, PI Total Award: \$5,946,223.00.
- Shukla, M. K. (Principal), NMSU, TTU, UCR, UW. Sponsored Research, "Use of nontraditional water resources for sustainable food security", Sponsoring Organization: USDA/NIFA/ Agriculture and Food Research Initiative, Sponsoring Organization Is: Other, Research Credit: \$1,495,130.80, PI Total Award: \$4,986,088.00.
- Shukla M.K. (Co-PI), Xu P. (Co-PI), others from USA and Israel. U.S. - Israel Center of Excellence in Energy, Engineering and Water Technology. 2019. Total Award \$20M

Consultancy

- Hydraulic conductivity of evaporation ponds. Sapphire Inc.
- Strategies for closure of Wingate evaporation pond, Animas Environmental Services
- Herbicide transport, Bayer Crop Sciences

- Saltation modeling project, through PSL for the DOE
- Meter Group sensor testing
- Local Pecan growers

PUBLICATIONS: (H index: 27; i10 index: 55)

Journal articles with a postdoc, graduate or undergraduate student as a co-author > 75
 Abstracts with a postdoc, graduate or undergraduate student as a co-author.....> 70

BOOKS:

1. Lal R. and M.K. Shukla. 2004. Principles of Soil Physics. Marcel Dekker Inc. New York, NY, USA, p716.
2. Shukla M.K. (Ed.) 2011. Soil Hydrology, Land Use and Agriculture: Measurement and Modeling. CAB International, UK 13:978 1 845937973, p434.
3. Shukla M.K. 2014. Soil Physics An Introduction. CRC Press, Boca Raton, FL, USA. ISBN 9781439888421, p478.
4. Shukla M.K. 2014. Soil Physics An Introduction, 2nd edition. CRC Press, Boca Raton, FL, USA (on-going)

REFEREED JOURNAL ARTICLES (120) *is a postdoc, graduate or undergraduate student

Published in Year 2019

1. *Xingwang W., M. Shukla, X. Wang, P. Guo, X. Xu, Z. Hoa, and G. Huang. 2019. Energy fluxes and evapotranspiration over irrigated maize field in an arid area with shallow groundwater. Ag Water Manag. (In Press).
2. *Chen S., S. Wang, M.K. Shukla, D. Wu, X. Guo, D. Li, and T. Du. 2019. Delineation of management zones and optimization of irrigation scheduling to improve irrigation water productivity and revenue in a farmland of Northwest China. Precision Agriculture, <https://doi.org/10.1007/s11119-019-09688-0>.
3. Qi Y., R. Wang, J. Wu, M.K. Shukla, and Q. Sun. 2019. Influence of the application of irrigated water-soluble calcium fertilizer on wine grape properties. PLOS ONE. doi: 10.1371/journal.pone.0222104
4. *Mokari E., *J. Fernandez, M.K. Shukla and J. Simunek. 2019. Modeling water and solute fluxes in a Pecan Orchard. Soil Science Society of America Journal. doi:10.2136/sssaj2018.11.0442
5. *Yang H, M. K. Shukla, X. Mao, K. Shaozhong, and T. Du. 2019. Interactive regimes of reduced irrigation and salt stress depressed tomato water use efficiency at leaf and plant scales by affecting leaf physiology and stem sap flow. Frontiers in Plant Science. <https://doi.org/10.3389/fpls.2019.00160>
6. *Yang H., T. Du, X. Mao, R. Ding, and M.K. Shukla. 2019. A comprehensive method of evaluating the impact of drought and salt stress on tomato growth and fruit quality. Ag Water Manage. 213: 116-127.

Published in Year 2018

7. Shukla M.K. 2018. Review of Field Hydrology: The Geological Field Guide Handbook. Vadose Zone Journal. doi:10.2136/vzj2018.05.0001br.

8. Ghimire, R., Ghimire, B., Mesbah, A., Idowu, O. J., O'Neill, M. K., Angadi, S., and Shukla M.K. (2018). Current status, opportunities, and challenges of cover cropping for sustainable dryland farming in the Southern Great Plains. *Journal of Crop Improvement*, 32, 579-598,
9. *Hooks T.N., G. A. Pichionni, B. J. Schutte, M.K. Shukla, and D. Daniel. 2018. Sodium chloride effects on seed germination, growth, and evapotranspiration of *Lepidium alyssoides*, *L. draba*, and *L. latifolium*: traits of resistance and implications for invasiveness on saline soils. *Rangeland Ecology & Management*. 71:433-442.
10. *Kellum D.S., M.K. Shukla, J. Mexal and S. Deb. 2018. Greenhouse gas emissions from pecan orchards in semi-arid southern New Mexico. *Hort Sci*. 53:704-709.
11. *Ozturk O., M.K. Shukla, B. Stringam and C. Gard. 2018. Irrigation water salinity induced changes in the evaporation, growth and ion uptake of two halophytes. *J Ag. Water Manag.* 195: 142-153.
12. Rahamati M et al., 2018. Development and analysis of the Soil Water Infiltration Global database. *Earth System Science Data*. 10:1237-1263. <https://doi.org/10.5194/essd-10-1237-2018>
13. Qi, Y., J. Pu, F. Yang, M. K. Shukla, and Q. Chang. 2018. Response of soil physical, chemical and microbial biomass properties to land use changes in fixed desertified land. *Catena*. 160: 339-344.
14. * Hooks T. N., Geno A. Picchioni, Brian J. Schutte, Manoj K. Shukla, David L. Daniel, and Jamshid Ashigh. 2018. Salinity an Environmental “Filter” Selecting for Plant Invasiveness? Evidence from the Indigenous *Lepidium alyssoides* on Chihuahuan Desert Shrublands. *Rangeland Ecology and Management*. 71: 106-114.

Published in Year 2017

15. *Gonzalez A., M.K. Shukla, D. Dubois, J. Margez, J. Hernandez and E Olivas. 2017. Microbial and size characterization of airborne particulate matter collected on sticky tapes along US-Mexico border. *J. Environmental Science*. 53: 207-216. DOI:[10.1016/j.jes.2015.10.037](https://doi.org/10.1016/j.jes.2015.10.037).
16. *Pinon-Villarreal, A., A. Bawazir, M.K. Shukla, A. Samani, and J.P. King. 2017. Modeling capillary rise in Clinoptilolite zeolite and riparian soils to sustain vegetation in water scarce areas. *J. Irrigation and Drainage ASCE*. 143 (11): DOI: [10.1061/\(ASCE\)IR.1943-4774.0001235](https://doi.org/10.1061/(ASCE)IR.1943-4774.0001235).
17. Shukla M.K., D. M. VanLeeuwen, B. Stringham, and *P. Sharma. Comparison of some approaches to determine spatial dependence of soil properties. *GSTF Journal on Agricultural Engineering (JAE)* 3:1, 10-23
18. *Gonzalez, A., M.K. Shukla, and B. Schutte. 2017. Effect of Indaziflam application and soil manipulations on Pecan evapotranspiration and gas exchange parameters. *Hort Science*. 52:910-915. doi: 10.21273/HORTSCI11905-17.
19. *Flores A., M.K. Shukla, B. Schutte, G. Picchioni, and D. Daniel. 2017. Physiologic response of six plant species grown in two contrasting soils and irrigated with brackish groundwater and RO concentrate. *Arid land Res. and Manag.* 31:182-203. <http://dx.doi.org/10.1080/15324982.2016.1275068>.
20. *Baath G. S., M. K. Shukla, P. W. Bosland, R. L. Steiner, and S. J. Walker. 2017. Irrigation Water Salinity Influences at Various Growth Stages of *Capsicum annuum*. *Ag Water Management*. 179: 246-253.

21. *Sharma P., M.K. Shukla, P. Bosland and R. Steiner. 2017. Soil moisture sensor calibration, actual evapotranspiration and crop coefficients for deficit irrigated greenhouse chile. *Ag Wat Manag.* 179: 81-91.
22. *Gonzalez, A., M.K. Shukla, J. Ashigh, and R. Purkins. 2017. Effect of application rate and irrigation on the movement and dissipation of indaziflam. *J. Environmental Science.* <http://dx.doi.org/10.1016/j.jes.2016.09.002>. 51:111-119.

Published in Year 2016

23. *Flores A., M.K. Shukla, D. Daniel, A. Ulery, B. Schutte, G. Pichionni and S. Fernald. 2016. Evapotranspiration Changes with Irrigation Using Saline Groundwater and RO Concentrate. *J. Arid Environments.* 131:35-45.
24. Schutte B. J., N. Klypina and M. K. Shukla. 2016. Influence of Irrigation Timing on Disturbance-Induced Reductions in Soil Seedbank Density. *Weed Science.* 64:613-623.
25. Shukla M.K. 2016. *Soil and Water Chemistry: An Integrative Approach*, Michael E. Essington, CRC Press (Taylor and Francis Group), second edition, 2015. Book Review *Vadoze Zone Journal.* (15:3 Published).
26. *Sharma, P., M. K. Shukla, B. Stringam and D. VanLeeuwen. 2016. Alternate Approaches to Determine Spatial Dependence of Some Soil Properties. *GSTF Journal on Agricultural Engineering.*

Published in Year 2015

27. *Deb S., *P. Sharma, M.K. Shukla, and J. Simunek. 2015. Numerical Evaluation of Nitrate Distributions in the Onion Root Zone under Conventional Furrow Fertigation. *Journal of Hydrologic Engineering ASCE.* DOI: [10.1061/\(ASCE\)HE.1943-5584.0001304](https://doi.org/10.1061/(ASCE)HE.1943-5584.0001304).
28. *Flores A., B. Schutte, M.K. Shukla, G. Pichionni and A. Ulery. 2015. Time-Integrated Measurements of Seed Germination for Salt-Tolerant Plant Species. *Seed Science and Technology.* 43:541-547 <http://dx.doi.org/10.15258/sst.2015.43.3.09>.
29. *Gonzalez A. M., M.K. Shukla, B. Stringam and M. Parsheh. 2015. Evaluation of Soil Compaction and Sealant Application for Compacted Earthen Liners. *J. Agricultural Engineering.* 2(1): 19-29. (Invited)
30. *Sharma P., M.K. Shukla, P. Bosland and R. Steiner. 2015. Physiological responses of greenhouse-grown drip irrigated Chile Pepper under partial root zone drying. *Hort. Science.* 50 (8): 1224-1229.
31. *Qi Y., F. Yang, M. K. Shukla, J. Pu, Q. Chang, and W. Chu. 2015. Desert soil properties changes after 30 years vegetation restoration in northern Shaanxi province. *Arid land research and Management.* 29(4): 454-472.
32. *Gonzalez A. M., J. Ashigh, M.K. Shukla, and R. Perkins. 2015. Mobility of indaziflam influenced by soil properties in a semi-arid area. *Plos One.* DOI:10.1371/journal.pone.0126100.
33. *Hernandez-Escamilla, J. Margez, and M.K. Shukla. 2015. Capture and Quantification in Natural and Anthropogenic sources. *Journal of Environmental & Analytical Toxicology.* dx.doi.org/104172/2161-0525.1000281.

Published in Year 2014

34. Shukla M.K. and J. P. Flores Margez. 2014. Particular matter emissions due to agricultural operations in Mesilla valley New Mexico. *Terra Americana.* 32(3)1-5.

35. *Adhikari P., M.K. Shukla, J. Mexal and D. Daniel. 2014. Irrigation with Treated Wastewater: Quantification of Changes in Soil Physical and Chemical Properties. *Irrigation and Drainage Systems Engineering*, 3(1) doi: [10.4172/2168-9768.1000117](https://doi.org/10.4172/2168-9768.1000117).
 36. *Singh S., K. Grover, S. Begna, S. Angadi, M. K. Shukla, R. Steiner and D. Auld. 2014. Physiological response of diverse origin spring Safflower genotypes to salinity. *Journal of Arid Land Studies*. 24: 169-174.
 37. Margez J. P., M.K. Shukla, and *S.K. Deb. 2014. Mapping of Airborne Particulate Matter Collected Using Two Sensors Along US-Mexico Border. *Journal of Environment and Analytical Toxicology* <http://dx.doi.org/10.4172/2161-0525.1000206>.
 38. *González-Delgado, A. M. and M. K. Shukla. 2014. Transport of Nitrate and Chloride in Variably Saturated Porous Media. *ASCE, Irrigation and Drainage Engineering*. 140 (5): 04014006.
 39. Mexal J. G., G. A. Picchioni, M. K. Shukla, A. L. Ulery, and W. C. Lindemann. 2014. Land application of municipal wastewater to desert ecosystems: case studies Identifying risks and opportunities. *Journal of Arid Land Studies*. 24-1 109-112.
- Published in Year 2013
40. *Deb S.K, P. Sharma, M.K. Shukla and T. W. Sammis. 2013. Drip-irrigated pecan seedling response to irrigation water salinity. *Hort. Science*. 48: 1548-1555.
 41. *Deb, S. K., M. K. Shukla, J. Šimůnek, and J. G. Mexal. 2013. Evaluation of spatial and temporal root water uptake patterns of a flood-irrigated pecan tree using the HYDRUS (2D/3D) model. *ASCE, Irrigation and Drainage Engineering*. 139: 599-611.
 42. *Piñón-Villarreal, A. R., A. S. Bawazir, M. K. Shukla and A. T. Hanson. 2013. Retention and transport of nitrate and ammonium in loamy sand and amended with Clinoptilolite zeolite. *ASCE, Irrigation and Drainage Engineering*. 139(9):755-765.
 43. *Ochoa C. G., A. G. Fernald, S. J. Guldán, V. C. Tidwell, M. K. Shukla. 2013. Shallow aquifer recharge from irrigation in a semi-arid agricultural valley in New Mexico, USA. *ASCE Journal of Hydrologic Engineering*. 18: 1219-1230.
 44. *Ochoa, C., S. Fernald, S. Guldán, M. K. Shukla and V. C. Tidwell. 2013. Deep percolation and water table fluctuations in response to irrigation inputs: field observation. *New Mexico Journal of Science*. 46: 89-104.
 45. *Margez J.P., C. V. Cordoba, P.O. Avila, B.C. Diaz, M.K. Shukla and E.S. Sosa. 2013. Soil texture and type of irrigation water on phosphorus availability from cow manure. *Terra Latinoamericana* 31: 211-220.
 46. *Hernandez Escamilla, J.A., J. P. F. Margez, M.F. Ramirez, N.R. Mendoza, M.D. Rios, M.K. Shukla and D. Dubois. 2013. Material particulado dispersado al aire en áreas sin asfalto en Ciudad Juarez. *Ciencia en la Frontera*. 11(2): 9-14.
 47. *Adhikari P., M.K. Shukla and J. Mexal. 2013. Treated wastewater application in southern New Mexico: effect on soil chemical properties and surface vegetation. *New Mexico Journal of Science*. 46: 105-120.
 48. Grover, K., M.K. Shukla, *S. Singh and *S. Deb. 2013. Salinity in agricultural soils under organic farming system. *Journal Science and Technology UACJ, Ciencia en la Frontera*. 11: 11-17.
 49. Margez J.P., J. Lopez, N. Assadian, D. Giovanni, Casio F.P. and M. K. Shukla. 2013. Heavy metals in oat and soil treated with lime-stabilized biosolids and reclaimed

wastewater. *Journal of Environment and Analytical Toxicology*. <http://dx.doi.org/10.4172/2161-0525.S6-001>.

50. *Nemmers S.J., A. L. Ulery and M.K. Shukla. 2013. Wastewater effluent effects on Arsenic sorption in New Mexico soils. *New Mexico Journal of Science*. 46: 137-148.
51. Sammis T., M.K. Shukla, J. Mexal, J. Wang and D. Miller. 2013. Pecan Research and Outreach in New Mexico: Logic Model Development and Change in Communication Paradigms. *Journal of Higher Education Outreach and Engagement*. 17(1) 27-41.
52. *Elsadek A., M.K. Shukla, M. Bleiweiss, S. Fernald and S. Guldan. 2013. Evaluating sensitivity analysis and auto-calibration of a semi-distributed hydrological model for two semiarid watersheds of New Mexico. *New Mexico Journal of Science*. 46: 65-88.
53. *Deb S.K., M.K. Shukla, * P. Sharma, and J.G. Mexal. 2013. Patterns of soil water depletion in irrigated mature pecans of arid southern New Mexico. *Irrigation Science*. 31:69-85.
54. *Samani A., M. Bleiweiss, D. Dubois, and M.K. Shukla. 2013. Estimation of the fractional canopy cover of pecan orchards using Landsat 5 satellite data, aerial imagery, and orchard floor photographs. *International Journal of Remote Sensing*. 34(16) 5937-5952.

Published in Year 2012

55. Shukla M.K. and T. Sammis. 2012. Advanced soil physics class develops research and teaching skills. *NACTA Journal*. 56 (1): 2-7.
56. Picchioni G., M.K. Shukla, J. Mexal, et al. 2012. Land application of treated industrial wastewater to a Chihuahuan Desert shrubland: four-year assessment of water quality and mineral deposition. *Arid Land Research and Management*. 26:3, 211-226.
57. *Sharma, P., M. K. Shukla, T. W. Sammis, R.L. Steiner and J. G. Mexal. 2012. Nitrate-Nitrogen Leaching from three Specialty Crops of New Mexico under Furrow Irrigation System. *Ag Water Management*. 109:71-80.
58. Picchioni, G.A., J.G. Mexal, M.K. Shukla, *A. Ruiz, *M. Babcock, D.L. Daniel, and D.S. Rodriguez. 2012. Land Application of Treated Industrial Wastewater on a Chihuahuan Desert Shrubland: Impacts on the Natural Vegetation. *Arid Land Research and Management*. 26:4, 312-327.
59. *Sharma, P., M. K. Shukla, T. W. Sammis and *P. Adhikari. 2012. Nitrate-Nitrogen Leaching from Onion Bed under Furrow and Drip Irrigation Systems. *Journal of Applied and Environmental Soil Science*. Vol. 2012, doi:10.1155/2012/650206.
60. *Adhikari P., M.K. Shukla and J. G. Mexal. 2012. Spatial variability of soil properties in an arid ecosystem irrigated with treated municipal and industrial wastewater. *Soil Science*. 177(7) 458-469.
61. *Deb, S. K., M. K. Shukla, and J. G. Mexal. 2012. Estimating midday leaf and stem water potentials of mature pecan trees from soil water content and climatic parameters. *Hort. Sci*. 47(7):907-916.
62. *Adhikari P., M.K. Shukla and J. Mexal. 2012. Spatial variability of Infiltration rate and sodium content of Desert soils: Implications for management of irrigation using treated wastewater. *Transactions of ASABE*. 55(5): 1711-1721.
63. Sammis T., P. *Sharma, M.K. Shukla et al. 2012. A water balance trickle irrigation scheduling model *Agricultural Water Management*. *Agricultural Water Management Journal*. 113: 30-37.
64. *Deb S. and M. K. Shukla. 2012. Variability of hydraulic conductivity due to multiple factors. *American Journal of Environmental Science*. 8(5) 489-502.

65. *Deb, S. K., M. K. Shukla, and J. G. Mexal. 2012. Simulating deep percolation in flood-irrigated mature orchards with RZWQM2. *Transactions of ASABE*. 55 (6) 2089-2100.
Published in Year 2011
66. *González-Delgado, A. M., M. K. Shukla, A. L. Ulery, A. S. Bawazir, and P. V. Brady. 2011. Saturated hydraulic conductivity of self-sealing lining materials for desalination evaporation ponds. *Desalination and Water Treatment*. 29:187-195.
67. *Ortiz G., M.K. Shukla, J. Mexal, D. VanLeeuwen and *Y. Ikemura. 2011. Physical and chemical soil properties in conventional and organic farms of southern New Mexico-a case study. *Comm. Plant and Soil Ana.* 42:1791-1808.
68. *Sharma P., M.K. Shukla, and J G. Mexal. 2011. Spatial Variability of soil properties in agricultural fields of southern New Mexico. *Soil Science*. 176(6):288-302.
69. Margez J.P.F., M. K. Shukla, and *J. Wang. 2011. Particulate matter emitted by vehicle running on unpaved roads in Juarez valley of Mexico. *TERRA LATINOAMERICANA*. 29: 23-34.
70. *Adhikari P., and M.K. Shukla. 2011. Spatial variability of electrical conductivity of desert soil irrigated with treated wastewater: Implications for irrigation management. *Applied Environmental Soil Science*. doi:10.1155/2011/504249.
71. *Adhikari P., M.K. Shukla and J. Mexal. 2011. Assessment of the soil physical and chemical properties of desert soils irrigated with treated wastewater using principle component analysis. *Soil Science*. 176(7):356-366.
72. *González-Delgado, A. M. and M. K. Shukla. 2011. Coupled transport of nitrate and chloride in soil columns. *Soil Science*. 176(7):346-355.
73. *Deb S.K., M. K. Shukla, *P. Sharma, and J. Mexal. 2011. Coupled liquid water, water vapor, and heat transport simulations in an unsaturated zone of a sandy loam field. *Soil Science*. 176(8):387-398.
74. *Deb, S. K., M. K. Shukla, and J. G. Mexal. 2011. Numerical modeling of water fluxes in the root zone of a mature pecan orchard. *Soil Sci. Soc. Am. J.* 75:1667-1680.
75. *Dung T., S. Bawazir and M.K. Shukla. 2011. Hydraulic properties of St. Cloud zeolite and zeolite soil mixtures. *Applied Engineering in Agriculture, ASABE*. 27(6): 955-967.
76. *Deb S.K. and M.K. Shukla. 2011. A review of dissolved organic matter transport processes affecting soil and environmental quality. *J Environment Analytic Toxicol* 1:106. doi:10.4172/2161-0525.1000106.
77. *Wang J., T. Sammis, et al. 2011. Simulate regional PM10 dispersion from agricultural tilling operations using HYSPLIT. *Transaction of ASABE*. 54(5): 1659-1667.
78. Jacinthe, P., M.K. Shukla and *Y. Ikemura. 2011. Carbon pools and soil biochemical properties in manure-based organic farming systems of semi-arid New Mexico. *Soil Use and Management*. doi: 10.1111/j.1475-2743.2011.00369.x. 27: 453-463.
Published in Year 2010
79. *Sharma P., M.K. Shukla and T. Sammis. 2010. Predicting soil temperature using air temperature and soil and meteorological parameters. *Applied Engineering in Agriculture*. 26(1):47-58.
80. *Elsadek A., M. Bleiweiss, M.K. Shukla, S. Guldán and S. Fernald. 2010. Alternative climate data sources for distributed hydrologic modeling on a daily time step. *Hydrological Processes Journal*. DOI: 10.1002/hyp.7917. 25(10): 1542-1557.

Published in Year 2009

81. *Babcock M, M.K. Shukla, G. Picchioni, J. Mexal, and D. Daniel. 2009. Chemical and physical properties of Chihuahuan desert soils irrigated with industrial effluent. *J. Arid land Research and Management*. 23:7-66.
82. Sammis T., M.K. Shukla, J. Mexal, P. Bosland and L. A. Daugherty. 2009. Case study on improving chile industry of New Mexico through industry, agriculture experiment station and cooperative extension services collaboration. *Journal of Extension*. 47:1-7.
83. *Ochoa C.G., A.G. Fernald, S.J. Guldan, and M.K. Shukla. 2009. Unsaturated zone soil water movement and shallow groundwater response after flood irrigation in a northern Rio Grande Valley. *Vadose Zone Journal*. 8:414-425.
84. *Ochoa C. G., M. K. Shukla and R. Lal. 2009. Macroaggregate-associated physical and chemical properties of a no-tillage chronosequence in a Miamian soil. *Can. J. Soil Sci.* 89:319-329.
85. *Ikemura Y. and M. K. Shukla. 2009. Soil quality in organic and conventional farms for an arid ecosystem of New Mexico. *J. Organic Systems*. 4(1) 34-47.

Published in Year 2008

86. *Ikemura Y., M. K. Shukla, *M. Tahboub, and B. Leinauer. 2008. Physical and chemical properties of soil in an age chronosequence of organic farms for a semi-arid ecosystem of New Mexico. *J. Sustainable Agriculture*. 31:4 149-170.
87. Shukla M.K., R. Lal, M. Ebinger and C. Meyer. 2008. Physical and chemical properties of soils under Pinon-Juniper-Oak canopies in a semiarid ecosystem in New Mexico- Reply to comments. *J. Arid Environ*. 72: 581-582.
88. *Williams D. S., M. K. Shukla and J. Ross. 2008. Particulate matter emitted by a vehicle running on unpaved road. *Atmospheric Environment*. 42:3899-3905.
89. *Nyamadzawo G., M. K. Shukla and R. Lal. 2008. Spatial variability of soil carbon and nitrogen stocks in reclaimed minesoils of southeastern Ohio. *Land Degrad. Develop*. 19(3):275-288.

Published in Year 2007

90. *Ochoa C.G., A.G. Fernald, S.J. Guldan, and M.K. Shukla. 2007. Deep percolation and its effects on shallow groundwater level rise following flood irrigation. *Transactions of ASABE*.50:73-81. 72:581-582.
91. Shukla, M.K., R. Lal and D. VanLeeuwen. 2007. Spatial variability of aggregate associated- carbon and nitrogen contents in the reclaimed minesoils of eastern Ohio. *Soil Sci. Soc. Am. J.* 71:1748-1757.

Published in Year 2006

92. Shukla M.K., R. Lal and M. Ebinger. 2006. Determining soil quality indicators by factor analysis. *Soil Till. Res.* 87:194-204.
93. Shukla M.K., R. Lal, M. Ebinger and C. Meyer. 2006. Physical and chemical properties of soils under Pinon-Juniper-Oak canopies in a semiarid ecosystem in New Mexico. *J. Arid Environ*. 66:673-685.
94. Shukla M.K. and T. Sammis. 2006. Book-review. "Development of pedotransfer functions in soil hydrology, Ya. Pachepsky and W.J. Rawls, editors. Elsevier, Amsterdam, Boston, 2004, xxix + 512 p. ISBN 0-444-51705-7. Hardcover. ISSN 0166-2481 (series). *Soil Sci. Soc. Am. J.* 70:708.

Published in Year 2005

95. Shukla M.K., R. Lal and M.H. Ebinger. 2005. Physical and chemical properties of an abandoned minespoil eight years after reclamation in Northeastern Ohio. *Soil Sci. Soc. Am. J.* 69:1288-1297.
96. Shukla M.K., and R. Lal. 2005. Erosional effects on soil properties in an on-farm study on Alfisol in west central Ohio. *Soil Sci.* 445-456.
97. Shukla M.K., and R. Lal. 2005. Soil organic carbon stock for reclaimed minesoils in Northeastern Ohio. *Land Degrad. Develop.* 16:377-386.
98. Shukla M.K., and R. Lal. 2005. Temporal changes in soil organic concentration and stocks in reclaimed minesoils of southeastern Ohio. *Soil Sci.* 170: 1013-1021.

Published before 2004

99. Shukla M.K., R. Lal, J. Underwood and M. Ebinger. 2004. Physical and hydrological characteristics of minesoils in Eastern Ohio. *Soil Sci. Soc. Am. J.* 68:1352-1359.
100. Shukla M.K., and R. Lal. 2004. Erosional effects on soil organic carbon stock in an on-farm study on Alfisols in West Central Ohio. *Soil Till. Res.* 81:173-181.
101. Shukla M.K., B. Slater, R. Lal and P. Cepuder. 2004. Spatial variability of soil properties and potential management classification of a Chernozemic field in Lower Austria. *Soil Sci.* 169(12):852-860.
102. Shukla M.K., R. Lal and M. Ebinger. 2004. Soil quality indicators for the Northern Appalachian experimental watersheds in Coshocton Ohio. *Soil Sci.* 169(3):195 – 205.
103. Shukla M.K., R. Lal and M. Ebinger. 2004. Principle component analysis for predicting corn biomass and grain yields. *Soil Sci.* 169(3):215 – 224.
104. Shukla M.K., R. Lal, and M. Ebinger. 2004. Soil quality indicators for reclaimed minesoils in southeastern Ohio. *Soil Sci.* 169(2):133-142.
105. Shukla M. K., R. Lal and M. Ebinger. 2003. Tillage effects on physical and hydrological properties of a typic Argiaquolls in central Ohio. *Soil Sci.* 168(11):802-811.
106. Shukla M. K., T.R. Ellsworth, R.J. Hudson and D.R. Nielsen. 2003. Effect of water flux on solute velocity and dispersion. *Soil Sci. Soc. Am. J.* 67(2):449-457.
107. Shukla M.K., R. Lal, L. B. Owens and P. Unkefer. 2003. Land use and management impacts on structure and infiltration characteristics of soils in the North Appalachian Region of Ohio. *Soil Sci.* 168(3):167-177.
108. Shukla M.K., R. Lal and P. Unkefer. 2003. Experimental evaluation of infiltration models for different land use. *Soil Sci.* 168(3):178-191.
109. Shukla M. K., F. Kastanek and D. R. Nielsen. 2002. Inspectional analysis of convective-dispersion equation and application on measured BTCs. *Soil Sci. Soc. Am. J.* 66(4):1087-1094.
110. Cepuder P., and M. K. Shukla. 2002. Groundwater nitrate in Austria: A case study in Tullnerfeld. *Nutrient Cycling in Agro ecosystems.* 64(3):301-315.
111. Shukla M. K., and P. Cepuder. 2000. Anion exclusion during transport of chloride through soil columns. *Transactions of ASAE.* 43(6):1425-1430.
112. Shukla M. K., F. Kastanek and D. R. Nielsen. 2000. Transport of chloride through water-saturated soil columns. *The Bodenkulture. Austrian Journal of Agriculture Research.* 51(4):235-246.

113. Shukla M. K., S. Klepsh and W. Loiskandl. 1998. Miscible displacement in porous media: Theoretical evaluation. *The Bodenkulture. Austrian Journal of Agricultural Research.* 50(2):91-107.
114. Shukla M. K., and G. Kammerer. 1998. Comparison between two models describing solute transport in porous media with and without immobile water. *Austrian Journal of Water Management.* 50(9/10):254-260.
115. Shukla, M.K. 1998. Recent research with soil erosion models. *Wiener Mitteilungen.* 151:111-136.
116. Tuller M., M. K. Shukla and W. Loiskandl. 1997. Measurement of volumetric soil water content under field conditions with TDR and gypsum blocks. *Austrian Journal of Water Management.* 49(3/4):64-69.
117. Jain S. K., and M. K. Shukla. 1995. Assessment of waterlogging problem in a command area. *GIS.* 4(2)-.
118. Shukla M. K., and M. K. Hardaha. 1995. Seepage and waterlogging problems in command areas – A Case study. *Journal of Institution of Engineers, Civil Engineering Division.* 76:65 -70.
119. Shukla M. K., and M. K. Hardaha. 1993. Evaluation of head losses due to foot valves. *Indian Journal of Agriculture Engineering.* 3(1/2):88-91.
120. Soni B., and M. K. Shukla. 1992. Effect of Urbanization on runoff – A review. *Hydrology Journal of IAH.* 25(3/4):14-28

IN REVIEW

1. Qi Y., T. Chen, Q. Chang, and M. K. Shukla. 2017. Identifying desert expansion types based on soil mineral elements in an agro-pastoral transitional zone of northern Shaanxi Province China. *Catena.*

BOOK-CHAPTERS

1. Shukla M. K. and R. Lal. 2006. Air permeability of soils. *Encyclopedia of Soil Science.* (Ed.) R. Lal. Marcel Dekker, Inc., 270 Madison Ave., NY, p. 60-63.
2. Shukla M. K. and R. Lal. 2006. Water infiltration in soils. *Encyclopedia of Soil Science* (Ed.) R. Lal. Marcel Dekker, Inc., 270 Madison Ave., NY, p. 1855-1857
3. *Deb S. and M.K. Shukla. 2011. An overview of some hydrological watershed models. (Ed.) M.K. Shukla, *Soil Hydrology, Land Use and Agriculture: Measurement and modeling.* CAB International, Wallingford, UK. p.5-116.
4. Shukla M.K. 2011 Introduction to soil hydrology. Ed. M.K. Shukla, *Soil Hydrology, Land Use and Agriculture: Measurement and modeling.* CABI, Wallingford, UK. p1-23.
5. *Deb S. and M.K. Shukla. 2011. Variability of hydraulic conductivity due to multiple factors. In *Tech Publishers.* P75-116.
6. Margez J.P.F., M. K. Shukla. 2012. Particle Matter Dispersed by Vehicles on Unpaved Roads. H. Knudsen and N. Rasmussen (Eds.): *Particulate Matter: Sources, Emission Rates and Health Effects.* Nova Science Publishers, Inc. p117-140.
7. Shukla M.K. and J. P. Margez. 2012. Organic Farming in Semi-Arid Southern New Mexico. *Organic Agriculture, Mexican Soil Science Society. Agricultura Organica.* 45-58.

8. Margez J.P.F., CV. Cordoba, P.O. Avial, B.C. Diaz, M. K. Shukla, E.S. Sosa. 2012. Soil texture and type of irrigation water in the availability of Phosphorus of cattle manure. *Organic Agriculture*, Mexican Soil Science Society (Accepted).
9. Shukla M.K. 2015. Sustainability of organic farms under different farming durations in semi-arid southern New Mexico. *Agricultura Organica en Mexico*. p411-428.

PROCEEDING PAPERS

- *Ikemura Y. and M.K. Shukla. 2006. Soil quality in a minimum tilled field in southern New Mexico. p.221-229 *In* R.C. Schwartz, R.L. Baumhardt, and J.M. Bell (eds.) Proc. 28th Southern Conservation Systems Conf., Amarillo, Texas. June 26–28, 2006, USDA-ARS Conservation and Production Research Laboratory Report No. 06-1, Bushland, TX.
- *Ochoa C. G. and M. K. Shukla. 2006. Macroaggregate associated available water and carbon In Alfisol fields. International Symposium Soil Physics and Rural Water Management, progress, needs and challenges. 28-29th Sept. 2006, Vienna, Austria, pp.57-61.
- *Deb S.K., M. K. Shukla, and P. Sharma. 2010. Numerical analysis of coupled liquid water, water vapor, and heat transport in a sandy loam soil. The 19th World Congress of Soil Science on “Soil Solutions for a changing a world”, International Union of Soil Science, August 1–6, 2010, Brisbane, Australia. 121-124.
- *Deb S.K., *P. Sharma, M. K. Shukla, J. G. Mexal, T. W. Sammis, and R. St. Hilaire. 2010. Patterns of soil moisture depletion in mature pecan orchards on the Rio Grande Plains, Las Cruces. American Society of Agricultural and Biological Engineers (ASABE) Annual International Meeting, June 20–23, 2010, Pittsburgh, PA. (Accepted).
- Maier B., M.P. Bleiweiss, D. W. DuBois, and M.K. Shukla. 2012. Wireless sensor technology for enhanced spatial and temporal knowledge of crop growing conditions. USCID Water Management Conference Proceedings. P105-114, Nov 13-16, Reno NV.
- Adhikari P., M. K. Shukla, and J. G. Mexal. 2012. Impact of wastewater application uniformity on spatial variability of hydraulic conductivity. USCID Water Management Conference Proceedings. P449-462, Nov 13-16, Reno Nevada.
- Deb S.K., M.K. Shukla, M.E. Uchanski, and P.W. Bosland. 2012. Evaluation of compensated root water uptake pattern of greenhouse drip irrigated chile. 2012 Irrigation Show & Education Conference, Agriculture Track-1, Nov. 2-6, Orlando, Florida.
- Schutte, B. J., N. Klypina, Shukla, M. K. 2013. Soil moisture effects on viability of physically dormant weed seeds (vol. 66). Proceedings of the Western Society of Weed Sci.
- *Sharma H., *S.K. *Deb, M.K. Shukla, P Bosland, B. Stringam and M. Uchanski. 2013. Chile root water uptake under partial root drying: a greenhouse drip irrigated study. 2013 Irrigation Show & Education Conference, Nov. 4-8, Austin, TX.
- *Sharma H., M.K. Shukla and *S.K. Deb. 2013. Water conservation using partial root drying for drip irrigated Chile. USCID Conference, October 22-25, Denver, Colorado.
- Shukla M.K. 2015. Water resource management for semi-arid areas: status, problems and opportunities. 27th International Agronomy Week, Sept. 7-11, Durango, Mexico.
- Stringam, B., D. Berg, M. Shukla, K. Grover. 2015. Using the TI 84 for irrigation scheduling training. Emerging Issues in Water Management Governance. *USCID Water Management Conference*. Albuquerque, New Mexico November 17-20, p. 69-76.

INVITED PRESENTATIONS

- Shukla M.K. 2019. Use of brackish water and concentrate for agriculture in arid areas. 2nd annual WIN workshop, BGNDRF, Alamogordo, Oct. 28-29.
- Shukla M.K. 2019. Irrigation with Brackish groundwater and RO. CAU, China.
- Shukla M.K. 2019. Salt tolerant crops. Two Nation One Water Conference, WRRI, Las Cruces.
- Shukla M.K. 2019. Irrigation scheduling. EBID workshop with growers, Las Cruces.
- Shukla M.K. 2018. ACES Global initiatives program. NTU, Crownpoint, Oct 2018.
- Shukla M.K. 2018. Sustainable management of soil water. China Agriculture University, June 2018.
- Shukla M.K. 2018. Sustainable management of soil salinity. China Agriculture University, June 2018
- Shukla M.K. 2017. Irrigation water management for water scarce New Mexico. Volcani Center, Israel, June 14.
- Shukla M.K. 2016. Managing our salt. Wells, Pumps, etc... Civil Engg. Department, March 11, 2017.
- Shukla M.K. 2016. Soil organic carbon under different land uses. Yangling International Agri-Science Forum, Northwest A&F University, Yangling, Nov. 5-7.
- Shukla M.K. 2016. Irrigation water management for semi-arid areas: opportunities for augmenting water resources and improving water use efficiency. College of Natural Resources and Environment, Northwest A&F University, Yangling, Nov. 8.
- Shukla M.K. 2016. Water management for semi-arid areas: opportunities for augmenting water resources. Using brackish water and RO concentrate. China Agricultural University, Beijing, June 5.
- Shukla M.K. 2015. Water resource management for semi-arid areas: status, problems and opportunities. 27th International Agronomy Week, Sept. 7-11, Durango, Mexico. (Key-note Address)
- Shukla M.K. 2015. Irrigation water management for water scarce semi-arid areas: opportunities for augmenting water resources and improving water use efficiency. Water and Food Security under Changing Environments. China Agricultural University, Beijing, China, June, 1-7.
- Shukla, M.K. 2015. Water balance in the rootzone of soil under contrasting texture. International Conference on organic farming. Torreon, Mexico, April 29-20.
- Shukla M.K. and J. P. Margez. 2012. Organic farming in New Mexico-sustainability based on soil properties. Organic Agriculture, Mexican Soil Science Society, November, 12-16, 2012.
- Shukla M.K. 2012. Sustainability of organic farming in New Mexico. 24th International Agronomy Week, University of Durango, Venecia, Mexico. Sept 4-6, 2012.
- Shukla, M.K. 2006. Variability of soil properties and processes at multiple scales: assessment and modeling: Mars Technical committee, October 3-4. Wooten Hall.
- Soil Physics Group, 2006. Soil physics and environmental quality. Poster presented at University Research Council (URC) Fair in Corbett Center.
- Shukla M.K. 2006. Modeling the transport of DU particles by saltation mechanism. Semi-annual review meeting, Picatinny Arsenal, Annual Review Meeting. 29-30 November.

- Shukla, M.K. 2007. Variability of vadose zone hydrological properties: assessment and modeling: NM tech, January 29. Socorro.
- Shukla M.K. 2007. Assessment and modeling of vadose zone properties at multiple scales. UTEP, March 23, El Paso.
- Shukla M.K., T.R. Ellsworth, R.J. Hudson and D.R. Nielsen. 2001. Dependence of dispersivity on average pore water velocity. 65th Annual SSSA meeting in Charlotte, North Carolina, Oct. 21-25.
- Shukla, M.K. 1998. Recent research with soil erosion models. International Conference on Experiences with Soil Erosion Models. Prague. 5-8 May.
- Shukla M.K. 1996. Estimation of saturated hydraulic conductivity. Preceding 6th ICID.CIID international workshop on Drainage and Environment. Ljubljana, Slovenia April 21-29.
- Shukla, M.K. and G.C. Mishra. 1994. Canal discharge and seepage relationships. Preceding of VI National Symposium on Hydrology at Shillong, Meghalaya, April 10 - 24, p. 263-279.

CONFERENCE PAPERS (INCLUDING ABSTRACT)

More than 80 (can be made available upon request)

RESEARCH REPORTS and MANUALS:

1. Shukla M.K. and A. Flores. 2015. Desalination Concentrate Management for Sustainable Agriculture: A Preliminary Study on Transport behavior and Plant Viability at BGNDRF, BOR DOI. Project Completion report
2. Stringam B., M. K. Shukla and B. N. Kuffour. 2015. Assessment of Water Table and Water Quality Variations with Respect to River Flow along Rio Grande between Garfield NM and Fabens TX. WRRI, NMSU. Project Completion Report.
3. Shukla M.K. and J. P. Margez. 2013. Final report for Particulate matter emission due to various land uses to SCERP.
4. Gonzalez, A. and M.K. Shukla. 2011. Final report for Sandia University Partner Project on Developing low cost self-healing liners for evaporation pond
5. Shukla M.K. 2007. Interactions of Vadose Zone Properties at Multiple Scales under Organic Farming in Arid Land Soils. CRIS report for 2005-13.
6. Shukla M.K. 2007. Interactions of Vadose Zone Properties at Multiple Scales under Organic Farming in Arid Land Soils. CRIS report for RCC W2128 2009.
7. Shukla M.K., J. Pedro-Margez. 2008. Pre-final SCERP report.
8. Shukla M.K. 2009. Mapping of airborne particle from two land uses. Final SCERP report.
9. Shukla M.K., J. Mexal, T. Sammis, M. Babcock and P., Adhikari. 2009. Effect of treated wastewater on soil properties. Final report to New Mexico WRRI.
10. Shukla M.K. 2005. Soil Physics- Laboratory manual for soil 477L.
11. O'Neil M., *K. Lombard, B. Onken, A. Ulery, M.K. Shukla. 2006. Power Plant Combustion Byproducts for Improved Crop Productivity of Agricultural Soils- Final report- June 2006. U.S. Department of Energy National Energy Technology Laboratory, The Combustion Byproducts Recycling Consortium.
12. Lab manual for SS-671 at Ohio State University.

13. Estimation of hydrological soil properties for design of drainage system for Bulandshahar (CS-94).
14. Effect of Urbanization on runoff (TN-93).
15. Status report on Urban Hydrology (SR-15).
16. Inter-comparison of Urban Watershed Model (TR-144).
17. Design of Surface Drainage for a command in Bulandshahr.
18. Soil salinization and reclamation in command areas.
19. Urban watershed modeling- A comparative study (CS/AR-140).
20. Estimation of soil hydrological properties of a doab in Narsingpur M.P. of Narmada river basin.
21. Effect of Urbanization on runoff hydrograph.
22. User's manual for design of sub-surface drainage system under unsteady and steady state conditions of recharge.
23. Interim report on Sub surface drainage investigations in stage II of IGNP at RD 838.

OTHER SPEECHES AND TALKS

1. Shukla M.K. 2018. ACES Global initiatives program. NTU, Crownpoint, Oct 17.
2. Shukla, M.K. 2006. Variability of soil properties and processes at multiple . scales: assessment and modeling: Mars Technical committee, October3-4. Wooten Hall.
3. Soil Physics Group, 2006. Soil physics and environmental quality. Poster presented at University Research Council (URC) Fair in Corbett Center.
4. Shukla M.K. 2006. Modeling the transport of DU particles by saltation mechanism. Semi-annual review meeting, Picatinny Arsenal, Annual Review Meeting. 29-30 Nov.
5. Shukla, M.K. 2007. Variability of vadose zone hydrological properties: assessment and modeling: NM tech, January 29. Socorro.
6. Shukla M.K. 2007. Assessment and modeling of vadose zone properties at multiple scales. UTEP, March 23, El Paso.
7. Shukla M.K. 2007. Task 4: On farm irrigation system management. 2007 Annual conference, Joint Rio Grande basin Initiative. South Padre Island; May 14-17.
8. Shukla M.K. 2007. Salinity management in onion research. Onion Field Day. May 23.
9. Shukla M.K. 2008. Soil salinity management and onion cultivar screening for salt tolerance. Annual Review Meeting of NM Onion Commission. March 04, 2008.
10. Shukla M.K. 2009-date. W-3128 meeting annual report presentation (every year Oct./Nov.).
11. Shukla M.K. 2010-date. W-3188 meeting annual report presentation (every year in January).

EXTENSION/ OUTREACH PUBLICATIONS

- Sammis T., M.K. Shukla, J. Mexal, J. Wang and D. Miller. 2013. Pecan Research and Outreach in New Mexico: Logic Model Development and Change in Communication Paradigms. *Journal of Higher Education Outreach and Engagement*. 17(1) 27-41.
- Sammis T., M.K. Shukla, J. Mexal, P. Bosland and L. A. Daugherty. 2008. Case study on Improving Chile Industry of New Mexico through Industry, Agriculture Experiment Station and Cooperative Extension Services Collaboration. *Journal of Extension*. 47:1-7.
- Shukla M.K. 2017. Pecan research at ACES-NMSU. University-Grower conference.

- Deb S.K., M.K. Shukla and J. Mexal. 2012. A peak at the other half of your orchard: The roots. 46th Annual Western Pecan Growers Association Conference. March 4-6, 2012 Hotel Encanto de Las Cruces, Las Cruces, NM.
- Sharma P. and M.K. Shukla. 2007. Monitoring soil moisture and soil salinity in agriculture fields under furrow and drip irrigation systems. October 15-18, Water Quality Conference, Fayetteville, Arkansas.
- Sharma, P., M. K. Shukla and T. Sammis. 2007. Predicting Soil Temperature from Air Temperature for Chile Crop. 2007 New Mexico Chile conference.
- Ikemura Y. and M.K. Shukla. 2006. Soil quality in a minimum tilled field in southern New Mexico. Southern Conservation Tillage Systems Conference. Bushland (Amarillo), Texas. June 26-28, 2006.
- Participates regularly in Field days organized by ACES in Las Cruces

RADIO TALK

Gave a talk on National Public Radio, KTEP 88.5 FM, in El Paso on Sunday, March 25 at 7:00 PM on Soil Physics. The talk was also streamed at www.ktep.org

YOUTUBE VIDEO

NMSU professor experiments with desalination concentrate, disposal.

<https://www.youtube.com/watch?v=BNmUAowyTxY>

NEWSPAPER ARTICLES

- NMSU researchers want to use satellites to help pecan groups. 2009. Las Cruces Sun News
- Regional project works on Microirrigation. 2014. Las Cruces Sun News
- Professor experiments with desalination concentrate disposal: 2015. Las Cruces Sun News
- Ag uses for highly saline water researched: 2015. Albuquerque Journal
- Is saline water an answer to drought: 2015. Las Cruces Bulletin
- Viable farming and water: 2015. Deming Headlight

LANGUAGES: English, German, and Hindi (speak and read all three well; write English)