

## *VITAE*

### **Jeffrey S. Strock**

**Assistant Professor and Soil Scientist  
Department of Soil, Water, and Climate and  
Southwest Research and Outreach Center  
University of Minnesota, St. Paul**

Dr. Jeffrey Strock's responsibilities are to develop and conduct relevant research and outreach activities in soil and water management as they relate to southwestern Minnesota cropping systems, including identifying, designing, conducting, and evaluating research and educational strategies that will enhance profitable crop production while maintaining soil and water resources. The central theme of his research program is nitrogen management for maximum productivity and efficiency and minimum adverse environmental impact. Dr. Strock's research program is multifaceted considering the management, conservation, fate and scale dependence (field, farm, watershed, basin) of nitrogen in terrestrial and aquatic ecosystems. His current research projects are focused on measuring crop response to nitrogen source, rate, and time of application; evaluating cover crops for establishment, residual soil nitrate reduction, and nitrate-nitrogen losses to surface water through subsurface drainage; and evaluating open-channel drainage systems to meet water quality goals.

#### **Professional Experience**

1999 - present Assistant Professor and Soil Scientist, University of Minnesota, Department of Soil, Water, and Climate, St. Paul, Minnesota and Southwest Research and Outreach Center, Lamberton, Minnesota.

#### **Education**

1989 - 1993 University of Wisconsin - Stevens Point, Stevens Point, WI  
B.S., Soil Science and Watershed Management  
1993 - 1995 Oregon State University, Corvallis, OR  
M.S., Soil Science (Soil Physics)  
1995 - 1999 North Carolina State University, Raleigh, NC  
Ph.D., Soil Science (Soil Physics)

#### **Professional Service**

2000 - present Associate Editor for Soil Science Society of America Journal

#### **Professional Certification**

2002 - present Certified Professional Soil Scientist - ARCPACS Certified - Cert. No. 06055.

**Jeffrey S. Strock – Publications and Grants Summary**

	<b>2003</b>	<b>Total</b>	
<b>Publications</b>			
<i>Refereed</i>			
Published	2	4	
In Press / Accepted	1	1	
Submitted	1	1	
In Preparation	2	2	
<i>Non-Refereed</i>			
Published	4	18	
In Press / Accepted	0	0	
Submitted	1	1	
In Preparation	1	1	
<b>Published</b>			
Journal Article	2	5	
Extension Article / Bulletin	1	1	
Ag. Experiment Station	0	1	
Chapter in a Conference, Symposium, or Workshop Proceedings	3	12	
Books / Book Chapters	0	1	
Miscellaneous	0	4	
Abstracts	8	25	
<b>Grants</b>			
		Prepared	Funded
Federal	1	11	3
State	0	4	2
University	0	5	2
Industry	0	2	2
Commodity	0	3	2
Other	0	1	1

## January, 1999 to December, 2003

### **Personal Data**

Name: Jeffrey S. Strock

Graduate Faculty Appointments: Soil, Water, and Climate - Associate graduate faculty member;  
Water Resources Science - Associate graduate faculty member.

### **Appointment**

Research / Teaching / Extension: 100 / 0 / 0

### **Teaching Activities**

#### **Guest lectures**

##### **2003**

2 lectures – AGUM 465 Crop Management Technologies. Southwest State University, Marshall, MN.

##### **2001**

1 lecture – AGUM 465 Crop Management Technologies. Southwest State University, Marshall, MN.

2 lectures – AGUM 353 Soil Conservation and Land Use Management. Southwest State University, Marshall, MN.

##### **2000**

Southwest State University Education Eisenhower Professional Development Workshop: 22 June, 2000. SW ROC, Lamberton, MN.

##### **1999**

1 lecture – AGUM 352 Plant Nutrients in the Environment. Southwest State University, Marshall, MN.

1 lecture – AGUM 251 Basic Soil Science. Southwest State University, Marshall, MN.

### **Outreach / Extension Activities**

#### **Public Presentations**

##### **2003**

Rock County Corn and Soybean Day – 24 February, 2002. Luverne, MN. Invited. Number of participants: 100. Evaluations: yes.

Certified Crop Advisers Spring 2003 Update – 19 March, 2003. Stearns County Soil & Water Conservation District, Elrosa, MN. Invited. Number of participants: 85. Evaluations: yes.

Lincoln-Pipestone Wellhead Protection Project Update – 27 March, 2003. Pipestone, MN. Invited. Number of participants: 25. Evaluations: no.

Cottonwood River Watershed Project Update – 29 March, 2003. Lamberton, MN. Invited.  
Number of participants: 22. Evaluations: no.

Summer Field Day – 18 June, 2003. SW ROC, Lamberton, MN. Number of participants:  
100. Evaluations: yes.

## **2002**

Winter Crops and Soils Day - 6 February, 2002. SW ROC, Lamberton, MN.

Certified Crop Advisers Spring 2002 Update – 19 March, 2002. Stearns County Soil &  
Water Conservation District, Elrosa, MN. (invited speaker)

Lincoln-Pipestone Wellhead Protection Project Update – 22 March, 2002. Lake Benton,  
MN.

Minnesota Land Improvement Contractors Association Annual Meeting – 26 March, 2002.  
Mankato, MN. (invited speaker)

Summer Field Day – 19 June, 2002. SW ROC, Lamberton, MN.

Agricultural Drainage Field Day – 14 August, 2002. SW ROC, Lamberton, MN.

## **2001**

Lincoln-Pipestone Wellhead Water Quality Protection Meeting – 14 March, 2001. Lake  
Benton, MN.

Summer field day – 20 June, 2001. SW ROC, Lamberton, MN.

Minnesota Local Water Planners Annual Conference – 27 June, 2001. Morton, MN.  
(invited speaker)

Minnesota Local Water Planners Annual Conference – 28 June, 2001. SW ROC,  
Lamberton, MN. (invited speaker)

Fall elementary field day – 12 and 13 September, 2001. SW ROC, Lamberton, MN.

## **2000**

Winter crops and soils day - 2 February, 2000. SW ROC, Lamberton, MN.

Corn and soybean days – March, 2000. Southwest Minnesota Counties. (invited speaker)

Summer field day – 21 June, 2000. SW ROC, Lamberton, MN.

Lincoln-Pipestone Wellhead Protection Project Update – 17-18, July, 2000. Lake Benton,  
MN.

Fall field day – 13 September, 2000. SW ROC, Lamberton, MN.

Fall elementary field Day – 20 and 21 September, 2000. SW ROC, Lamberton, MN.

### **1999**

Winter crops and soils day – 4 February, 1999. SW ROC, Lamberton, MN.

Summer field day – 23 June, 1999. SW ROC, Lamberton, MN.

Minnesota River Basin Joint Powers Board – State of the Minnesota River Summer Conference – 28-29 July, 1999. SW ROC, Lamberton, MN. (invited speaker)

Fall field day – 8 September, 1999. SW ROC, Lamberton, MN.

## **Workshops**

### **2003**

Agrilience Crop and Soil Management Update – 23 January, 2003. Mankato, MN. Invited. Number of participants: 20. Evaluations: yes.

South Dakota Water Conference – 12 March, 2003. Brookings, SD. Invited. Number of participants: 20. Evaluations: yes.

Farmland Drainage Management Workshop – 6 March, 2003. Mankato, MN. Invited. Number of participants: 30. Evaluations: yes.

Ag. Professional Field School – 15 -18 July, 2003. Rosemount, MN. Invited. Number of participants: 190. Evaluations: yes.

Minnesota Crop Production Retailers Ag. Short Course and Trade Show – 9 December, 2003. Minneapolis, MN. Invited. Number of participants: Evaluations:

### **2002**

Agrilience Crop and Soil Management Update – 22 January, 2002. Mankato, MN. (invited speaker)

Farmland Drainage Management Workshop – 6 March, 2002. Mankato, MN. (invited speaker)

Ag. Professional Field School – 16 -19 July, 2002. SW ROC, Lamberton, MN.

Workshop on the Science of Nutrient Cycling in Coupled Ecosystems – 23 Sept., 2002. University of Minnesota, St. Paul, MN.

Workshop on Stakeholder Views of Farm and Water Policies Affecting Nutrient Management – 16 Dec., 2002. University of Minnesota, St. Paul, MN.

### **2001**

Agrilience Crop and Soil Management Update – 6 February, 2001. Mankato, MN. (invited speaker)

Farmland Drainage Management Workshop – 6 March, 2001. Marshall, MN. (invited speaker)

Ag. Professional Field School – 25 -26 July, 2001. Rosemount, MN.

Agriculture, Food, Environment Capacity Area, Staff development Conference – 14 May, 2001. St. Paul, MN. (invited speaker)

Agrilience Fall Crop Scouting Clinic – 4 September, 2001. SW ROC, Lamberton, MN. (invited speaker)

### **2000**

Central Crop Consulting Nutrient Management Workshop. 18 February, 2000. Marshall, MN. (invited speaker)

Farmland Drainage Management Workshop – 2 March, 2000. Marshall, MN. (invited speaker)

Agrilience Crop Scouting Clinic – 30 June, 2000. SW ROC, Lamberton, MN. (invited speaker)

### **1999**

Ag. Professional Field School – 13 -16 July, 1999. SW ROC, Lamberton, MN.

## **Publications**

### **2003**

Randall, G., M. Schmitt, J. Strock, and J. Lamb. 2003. Validating N rates for corn on farmer fields in southern Minnesota. BU-07936-S. Univ. Minn. Ext. Serv., St. Paul, MN. (Awarded "Certificate of Excellence" by American Society of Agronomy).

## **Other Outreach Activities**

### **2002**

Association of Minnesota Counties District 8 Land Use and Environment Advisory Task Force – 11 Sept., 2002. Slayton, MN.

### **2000**

Minnesota-Iowa Drainage Research Forum – 23 March, 2000. Owatonna, MN.

Environmental Swine Tour – 26 July, 2000. SW ROC, Lamberton, MN.

### **1999**

United Soybean Board Annual Project Meeting – 25-26 March 1999. Indianapolis, IN.

## **Research Activities**

### **Refereed Publications**

#### ***Published***

- Mamo, M., G.L. Malzer, D.J. Mulla, D.J. Huggins, and J.S. Strock. 2003. Spatial and temporal variation in economically optimum N rate for corn. *Agron. J.* 95:958-964.
- Hansen, N.C., M.A. Schmitt, J.E. Anderson, and J.S. Strock. 2003. Iron deficiency of soybean in the upper Midwest and associated soil properties. *Agron. J.* 95:1595-1601.
- Strock, J.S., D.K. Cassel, and M.L. Gumpertz. 2001. Spatial variability of water and bromide transport through variably saturated soil. *Soil Sci. Soc. Am. J.* 65:1607-1617.
- Strock, J.S. and D.K. Cassel. 2001. Design, construction, and testing a system for unsaturated solute transport studies on large undisturbed soil blocks. *J. Soil and Water Conserv.* 56:32-39.

#### ***In Press / Accepted***

- Strock, J.S., P.M. Porter, and M.P. Russelle. Cover cropping to reduce nitrate loss through subsurface drainage in the northern Corn Belt. *J. Environ. Qual.* Accepted.

#### ***Submitted***

- Sands, G.R. and J.S. Strock. Design of a paired drainage channel research facility. *Appl. Eng. Agric.*

#### ***In Preparation***

- Strock, J.S., J.A.E. Molina, and D.R. Huggins. Nitrogen Fertilization effects on yield and simulated nitrogen budgets. (*Soil Sci. Soc. Am. J.*)
- Strock, J.S., J.D. Aplant, D. Bruening, D.J. Mulla, K.W. Easter, and P.H. Gowda. A farm management practices surveying for achieving water quality goals. (*J. Soil Water Conserv.*)

### **Non-Refereed Publications**

- Bloom, P.R., D. Mulla, H.H. Cheng, N. Eash, J. Strock, M. Schmitt, J. Moncrief, A. Lewandowski, H. Chester-Jones, D. Allan, N.C. Hansen, H.T. Gollany, and M. Zumwinkle. 1999. Generic environmental impact statement on animal agriculture: A summary of the literature related to soils. pp. 695-742. *In* Generic environmental impact statement on animal agriculture: A summary of the literature related to the social, environmental, economic, and health effects. University of Minnesota, St. Paul, MN.
- Feyereisen, G.W., A. Mendez, G.R. Sands, B.N. Wilson, P.M. Porter, and J.S. Strock. 2003. Probabilistic assessment of the potential for winter cereal rye to reduce field nitrate-nitrogen loss in southwestern Minnesota. ASAE Paper No. 032323. St. Joseph, MI

- Johnson, G., G. Rehm, J.S. Strock, N.S. Eash, B. Potter, J.A. Lamb, P. Porter, D. Hicks, and V. Eidman. 2000. An integrated approach to precision farming research. *In* Proceedings of the Fifth Int. Conf. on Precision Agriculture. P.C. Robert (ed.) Bloomington/Minneapolis, MN. July 17-19, 2000. ASA, CSSA, SSSA, Madison, WI.
- Moncrief, J.F., D. Ginting, M. Mozaffari, M.P. Russelle, P.R. Bloom, T.L. Richard, P.R. Goodrich, H. Chester-Jones, C.J. Clanton, D.J. Mulla, M.A. Schmitt, G.W. Randall, J.S. Strock, N.S. Eash, N.C. Hansen, C.J. Rosen, C.C. Schaeffer, A. DiCostanzo, and H.H. Cheng. 1999. Generic environmental impact statement on animal agriculture: A summary of the literature related to manure and crop nutrients. pp. 747-906. *In* Generic environmental impact statement on animal agriculture: A summary of the literature related to the social, environmental, economic, and health effects. University of Minnesota, St. Paul, MN.
- Montgomery, B., D. Mulla, J. Strock, and J. Zachmann. 2001. Chapter 9: Agricultural nutrients. pp. 1-57. *In* Nonpoint Source Management Program Plan 2001-2006. Minnesota Pollution Control Agency and Minnesota Department of Agriculture. St. Paul, MN.
- Porter, P., G. Malzer, D. Mulla, J. Strock, P. Robert, and M. Mamo. 2000. Corn oil, protein and starch variability as affected by yield, fertility and field position. *In* Proc. of the Fifth Int. Conf. on Precision Agriculture. P.C. Robert (ed.) Bloomington/Minneapolis, MN. July 17-19, 2000. ASA, CSSA, SSSA, Madison, WI.
- Randall, G., M. Schmitt, J. Strock, and J. Lamb. 2002. Optimum nitrogen rates for corn after soybeans using farmer's fields in southern Minnesota. *Minnesota Crop News*, MNCN67, May 15, 2002.
- Randall, G., M. Schmitt, J. Strock, and J. Lamb. 2003. Validating N rates for corn on farm fields in southern Minnesota. *Bull. BU-07936-S. Univ. Minnesota Ext.*, St. Paul, MN.
- Rolf, K.A., J.S. Strock, D.J. Mulla, and P.H. Gowda. 2003. Implications of conventional and organic farming practices on nonpoint source pollution and TMDLs. pp. 473-476. *In* Total Maximum Daily Load (TMDL) Environmental Regulations II. Proc. of the 2nd Conf. on Watershed Management to meet Emerging TMDL Environmental Regulations. Albuquerque, NM. Nov. 8-12. ASAE, St. Joseph, MI
- Schmitt, M.A., A.M. Cecchi, J.S. Strock, N.C. Hansen, and G.W. Randall. 2002. Fertilizer and manure management comparisons for corn-soybean rotations in Minnesota. pp. *In* Proc. 32<sup>nd</sup> North Central Extension – Industry Soil Fertility Conf., Des Moines, IA. 20-21 Nov. 2002.
- Strock, J.S. 2001. Landscape position and soil profile heterogeneity affects on solute transport. pp. 73-76. *In* Preferential flow: Water movement and chemical transport in the environment. Proc. of the Second Int. Symp. on Preferential Flow. Honolulu, HI. Jan. 3-5, 2001. ASAE, St. Joseph, MI.

- Strock, J.S., D.J. Mulla, P.H. Gowda, J.D. Aplan, K.W. Easter, and D. Bruening. 2003. Nonpoint source pollution and TMDLs in three geographically diverse watersheds. pp. 502-509. *In* Total Maximum Daily Load (TMDL) Environmental Regulations II. Proc. of the 2nd Conf. on Watershed Management to meet Emerging TMDL Environmental Regulations. Albuquerque, NM. Nov. 8-12. ASAE, St. Joseph, MI
- Strock, J.S. and D.K. Cassel. 1999. Preferential flow of bromide in unsaturated Piedmont soil as affected by landscape position. Soil Science Society of North Carolina Proceedings, Vol. XLII, Raleigh, NC.
- Strock, J.S. and D.K. Cassel. 1998. Spatial variability of water and bromide transport through undisturbed soil blocks from a Piedmont landscape. Soil Science Society of North Carolina Proceedings, Vol. XLI, Raleigh, NC.
- Strock, J.S., G.L. Malzer, and P.M. Porter. 2000. Spatial variability of corn affected by landscape position and mechanical impedance. *In* Proc. of the Fifth Int. Conf. on Precision Agriculture. P.C. Robert (ed.) Bloomington/Minneapolis, MN. July 17-19, 2000. ASA, CSSA, SSSA, Madison, WI.
- Strock, J.S. and G.R. Sands. 2002. Open-ditches for water quality and water quantity. pp. 36-42. *In* J.S. Strock and L. Everett (eds.). Proceedings of 1<sup>st</sup> Agricultural Drainage Field Day, 14 August, 2002. Univ. Minnesota, Southwest Research and Outreach Center, Lamberton, MN.
- Strock, J.S., N.S. Eash, and L.D. Klossner. 1999. Tillage management in corn-soybean rotations at the Southwest Research and Outreach Center. pp. 75-76. *In* Field Research in Soil Science in the Minnesota Agricultural Experiment Station. Minnesota Agric. Expt. Stn. Misc. Pub. 103-1999.
- Thoma D.P., S.C. Gupta, J.S. Strock, and J.F. Moncrief. 2002. Tillage and nutrient source effects on water quality from flat lands. p. 16-23. *In* J.S. Strock and L. Everett (eds.) Proceedings of 1<sup>st</sup> Agricultural Drainage Field Day, 14 August, 2002. Univ. Minnesota, Southwest Research and Outreach Center, Lamberton, MN.

### **Books / Book Chapters**

- Mulla, D.J. and J.S. Strock. Nitrogen transport processes in soil. 2004. *In* J.S. Schepers and R. Raun (eds.) Nitrogen in agricultural soils. Agron. Monogr. 22. ASA, CSSA, SSSA, Madison, WI. (accepted)

### **Abstracts**

#### ***Nitrogen Management***

- Strock, J.S., and D.R. Huggins. 2001. Yield variability from long-term nitrogen management in the northern corn belt, USA. p. 103. *In* Second Int. Nitrogen Conf. Conf. of Ecological Soc. Am., Potomac, MD. Oct. 14-18, 2001.

Strock, J.S., and G.L. Malzer. 2000. Spatial variability of corn yield affected by landscape position, nitrogen, phosphorus, and soil mechanical impedance. p. 103. Conference Abstracts, Fifth Int. Conf. on Precision Agriculture. Bloomington/Minneapolis, MN. July 17-19, 2000.

Strock, J.S., J.A.E. Molina, and D.R. Huggins. 2002. Nitrogen Fertilization Effects on Yield and Simulated Nitrogen Budgets. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

### ***Cover Cropping***

Feyereisen, G.W., A. Mendez, G.R. Sands, B.N. Wilson, P.M. Porter, and J.S. Strock. 2003. A probabilistic modeling study of the effectiveness of utilizing fall-planted cereal rye to improve water quality in southwestern Minnesota. ASAE Annu. Inter. Mtg., Las Vegas, NV. July 27-30, 2003.

Strock, J.S., M.P. Russelle, and P.M. Porter. 2001. Cover cropping and nitrate losses from subsurface drainage in a row crop system. *In* Fifth Int. Conf. on Diffuse/Non-point Source Pollution and Watershed Management. Conf. of Int. Water Assoc., Milwaukee, WI. June 10-14, 2001.

Strock, J.S., M.P. Russelle, and P.M. Porter. 2001. Environmental variability and cover crop capacity for reducing nitrate losses from tile drainage. p. 53. *In* Second Int. Nitrogen Conf. Conf. of Ecological Soc. Am., Potomac, MD. Oct. 14-18, 2001.

Strock, J.S., M.P. Russelle, and P.M. Porter. 2001. Nitrate loss through subsurface drainage affected by climate and cover cropping. p. 375. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

Strock, J.S., P.M. Porter, and M.P. Russelle. 2000. Reduced nitrate leaching from tile drainage using a rye cover crop. p. 323. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

### ***Drainage***

Strock, J.S., J.L. Anderson, J.D. Aplant, M. Dittrich, P.H. Gowda, J.A. Magner, W.B. Richardson, M.J. Sadowsky, G.R. Sands, and R.T. Venterea . 2003. Mitigation of agricultural runoff in open-ditch ecosystems. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

Strock, J.S., and G.R. Sands. 2002. Field Evaluation of Open-Ditches for Water Quality and Water Quantity. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

Thoma, D. S. Gupta, J. Moncrief, J. Strock. 2001. Tillage and nutrient source effects on drainage water quality in the Minnesota river basin. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

### ***Other Abstracts***

- Johnson, G., G. Rehm, J.S. Strock, N.S. Eash, B. Potter, J.A. Lamb, P. Porter, D. Hicks, and V. Eidman. 2000. An integrated approach to precision farming research. p. 10. Conference Abstracts, Fifth Int. Conf. on Precision Agriculture. Bloomington/Minneapolis, MN. July 17-19, 2000.
- Malzer, G.L., and J.S. Strock. 2000. Soil strength variability in an undulating glacial landscape. p. 328. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.
- Porter, P.M., G.L. Malzer, D.J. Mulla, P.C. Robert, and J.S. Strock. 2000. Corn oil and protein content across a southern Minnesota landscape. p. 147. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.
- Porter, P., G. Malzer, D. Mulla, J. Strock, P. Robert, and M. Mamo. 2000. Corn oil, protein and starch variability as affected by yield, fertility and field position. p. 28. Conference Abstracts, Fifth Int. Conf. on Precision Agriculture. Bloomington/Minneapolis, MN. July 17-19, 2000.
- Rolf, K., J.S. Strock. 2003. Implications of conventional and organic farming practices on nonpoint source pollution and TMDLs. Second Conf. on Watershed Management to meet Emerging TMDL Environmental Regulations. Albuquerque, NM. Nov. 8-12.
- Rolf, K., J.S. Strock, D.J. Mulla, and P.H. Gowda. 2003. Implications of conventional and organic farming practices on nonpoint source pollution and TMDLs *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.
- Ruark, M.D., J.A. Lamb, G.W. Rehm, and J.S. Strock. 2001. Phosphorus concentration in runoff as effected by sugar beet production systems. p. 377. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.
- Schmitt, M.A., N.C. Hansen, J.S. Strock, and J.E. Anderson. 2001. Soil and plant characteristics of 60 soybean fields surveyed for chlorosis. p. 227. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.
- Schmitt, M.A., J.S. Strock, N.C. Hansen, G.W. Randall, and A.M. Cecchi. 2002. Comparison of manure and fertilizer placement on corn and soybean yields and soil test P. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.
- Strock, J.S., D.J. Mulla, P.H. Gowda, J.D. Aplant, K.W. Easter, and D. Bruening. 2003. An integrated approach to nonpoint source pollution and TMDLs in a geographically diverse watershed. <http://www.usawaterquality.org/2003conference/default.html>.
- Strock, J.S., D.J. Mulla, P.H. Gowda, J.D. Aplant, K.W. Easter, and D. Bruening. 2003. An integrated approach to nonpoint source pollution and TMDLs. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

Strock, J.S., D.J. Mulla, P.H. Gowda, J.D. Aplan, K.W. Easter, and D. Bruening. 2003. Nonpoint source pollution and TMDLs in three geographically diverse watersheds in southern Minnesota. Second Conf. on Watershed Management to meet Emerging TMDL Environmental Regulations. Albuquerque, NM. Nov. 8-12.

Strock, J.S. and D.K. Cassel. 1999. Assessing and modeling bromide transport through undisturbed soil blocks. p. 260. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

Strock, J.S. and N.S. Eash. 1999. Long-term tillage and rotation effects on yield and selected soil properties. p. 188. *In* Agronomy abstracts. ASA-CSSA-SSSA, Madison, WI.

### **Research Grants**

[Title, Agency, PIs, your funds / total funds, Dates, funding status. (status: Awarded, Not Funded, and Submitted/In Review)]

#### ***Federal***

Analysis of nitrogen cycle processes in open-ditches: potential for mitigating agricultural runoff. USDA-CSREES Competitive Grants Program. National Integrated Water Quality Program. J.S. Strock, P.H. Gowda, J.A. Magner, W.B. Richardson, M.J. Sadowsky, and R.T. Venterea. Funds: \$230,000.00 / \$550,000.00. 2003-2006. Not funded.

Carbon and nitrogen dynamics: Storage and losses in Upper Midwest cropping systems. USDA-CSREES-NRI Competitive Grants Program. D.L. Allan, J. Bell, J. King, and J. Strock. Funds: \$62,000 / \$395,000. 2003-2007. Funded.

Estimating riverbank erosion using airborne laser altimetry and computer simulation models. National Institutes for Water Resources and U.S. Geological Survey. S.C. Gupta, D. Thoma, J.S. Strock, and A. Simon. Funds: \$0 / \$150,000. 2002-2004. Not Funded.

Nonpoint source pollution and TMDLs in a geographically diverse watershed. USDA-CSREES Competitive Grants Program. J.S. Strock, D.J. Mulla, and P.H. Gowda. Funds: \$460,000.00 / \$525,500.00. 2001-2004. Funded.

Field and watershed scale simulation modeling to predict surface water quality and flow. National Institutes for Water Resources and U.S. Geological Survey. J.S. Strock and D.J. Mulla. Funds: \$49,000/ \$49,000. 2001-2003. Not funded.

Landscape-specific cover cropping: Reducing risk, increasing adoption. USDA-Sustainable Agriculture Research and Education Competitive Grants Program. J.S. Strock, M.P. Russelle, and D. Archer. Funds: \$71,000.00 / \$94,000.00. 2001-2003. 2000. Not Funded.

Runoff water quality and crop response to variable manure application rates. National Institutes for Water Resources and U.S. Geological Survey. N.C. Hansen, S. Goyal, and J.S. Strock. Funds: \$0 / \$15,000.00. 2000-2001. Funded

Evaluation of strategies for minimizing non-point source pollution to the Minnesota River. USDA-CSREES-NRI Competitive Grants Program. S.C. Gupta, J.F. Moncrief, J.S. Strock, and N.S. Eash. Funds: \$45,000.00 / \$374,000.00. 2000-2004. Not funded.

Nonpoint source pollution and TMDLs in a geographically diverse watershed. USDA-CSREES-NRI Competitive Grants Program. J.S. Strock, D.J. Mulla, P.H. Gowda, B. Easter, and J. Apland. Funds: \$394,000.00 / \$464,000.00. 2000-2003. Not Funded.

Use of zone-tillage to reduce yield losses caused by soil compaction. Strock, J.S., J.E. Kurle, and N.S. Eash. USDA-CSREES-NRI Competitive Grants Program. Funds: \$36,000.00 / \$127,000.00. 2000-2003. Not Funded.

In-field evaluation of drainage system design for reduced sediment, nitrogen, and phosphorus in the Minnesota River. National Institutes for Water Resources and U.S. Geological Survey. J.S. Strock. Funds: \$45,000.00 / \$45,000.00. 2000-2002. Not funded.

### ***State***

Laser assessment of streambank erosion: Minnesota River Basin. Legislative Commission on Minnesota Resources. S.C. Gupta, J.S. Strock, N.C. Hansen, and M. Bauer. Funds: \$0 / \$200,000. 2003-2005. Funded.

Validation of fertilizer nitrogen rates for corn to meet increased economic and environmental pressures. Rapid Response Grant. G.W. Randall, M.A. Schmitt, J.A. Lamb, N.S. Eash, J.S. Strock, N.C. Hansen, and B. Montgomery. Funds: \$0 / \$200,000. 2001-2003. Not Funded.

Improving water quality in agricultural watersheds. Legislative Commission on Minnesota Resources. J.S. Strock, N.S. Eash, N.C. Hansen, S.C. Gupta, and J.F. Moncrief. Funds: \$200,000.00 / \$200,000.00. 2001-2003. Not funded.

Agricultural drainage, water quality, and flow. Minnesota State Legislature Appropriation. J.L. Anderson, J.S. Strock, L. Busman. Funds: \$150,000.00 / \$300,000. 2000-2003. Funded.

### ***University***

Nutrient Cycling in Minnesota Cropping and Livestock Systems. COAFES Priority Steering Committee. Improving Environmental Quality Implementation Team: Depts. of Soil, Water, and Climate, Biosystems and Ag. Engineering, Animal Science, Applied Economics, and Agronomy & Plant Genetics. Funds: \$0 / \$68,000. 2002-2003. Funded

Solute Leaching from Swine Manure Applied to a Sloping Landscape. Grant-in-Aid. J.S. Strock, . Funds: \$23,000.00 / \$23,000.00. 2001-2003. Funded.

Landscape-specific cover cropping to enhance sustainability in the corn-soybean rotation. Grant-in-Aid. E. Dyck, and J.S. Strock. Funds: \$10,000.00 / 18,500.00. 2001-2003. Not funded.

Drainage system design and agricultural management practices: Water quality impacts. Grant-in-Aid. J.S., Strock. Funds: \$27,000.00 / \$27,000.00 requested. 2000-2002. Not funded.

Tillage and manure management effect on surface and subsurface phosphorous transport. Grant-in-aid. J.S. Strock. Funds: \$25,000.00 / \$25,000.00. 1999-2001. Not funded.

### ***Industry***

Comparison of turkey manure ash and fertilizer on corn yield. Cargill. J.S. Strock. Funds: \$3,000.00 / \$3,000.00. 2002. Funded.

Effectiveness of Nitrapyrin with anhydrous ammonia for fall applied nitrogen in the fall chisel and strip-till planting systems. Dow Agro Sciences. N.S. Eash, J.S. Strock, J. Lamb, and G. Rehm. Funds: \$0 / \$3000.00. 1999. Funded.

### ***Commodity***

Tillage and cover crop contributions to phosphorus trading in sugar beet cropping systems. Southern Minnesota Beet Sugar Cooperative. J.A. Lamb, G.W. Rehm, and J.S. Strock. Funds: \$0 / \$35,000.00. 2000-2002. Funded.

Surveying, educating, and demonstrating soybean production options on high pH soils. Soybean Checkoff Education Funding. M.A. Schmitt, N.C. Hansen, and J.S. Strock. Funds: \$0 / \$5000.00. 2000. Funded.

Water quality protection through alternative agricultural drainage practices. Southern Minnesota Beet Sugar Cooperative. J.S. Strock. Funds \$190,000.00 / \$190,000.00. 2000-2003. Not funded.

### ***Other Grants***

Alternative surface inlet drainage design for water quality protection. Redwood County Comprehensive Local Water Plan. J.S. Strock. Funds: \$2,000.00 / \$2,000.00. 2000. Funded.

### **Other Research Activities**

Seminar - Nutrient management and water quality research at Lamberton and Morris. Nitrogen management, conservation, and transport in agricultural systems. 28 Oct., 2002. University of Minnesota, Dept. Soil, Water and Climate, St. Paul, MN.

Sun Grant Initiative Planning Conference. – 6 - 7 August, 2002. South Dakota State University, Brookings, SD.

## **Graduate Advising**

### **Graduate Advisees**

#### *Current*

Kari Rolf, MS (Water Resources Science)

### **Examining Committee Assignments**

#### *Current*

Jose Fernandez, Ph.D. (Soil, Water, and Climate)

Steffannie Guess-Murphy, Ph.D. (Agricultural Economics)

Gary Feyereisen, MS (Biosystems and Agricultural Engineering)

#### *Completed*

David Thoma, Ph.D. (Water Resources Science)

Jodi Elfering, MS (Water Resources Science)

## **Service**

### **College Committees**

Alternative Energy Working Group. August, 2002 – present.

Committee member, College of Agricultural, Food and Environmental Sciences: Priority Theme Implementation Working Group - Improving Environmental Quality. June, 2001 – present.

Committee member, College of Agricultural, Food and Environmental Sciences working group on “Improving Environmental Quality.” May, 2000 – May, 2001.

### **Departmental Committees**

Research & Outreach Center (ROC) Faculty Consultative Committee. November, 2002 – present.

Soil, Water, and Climate Faculty Consultative Committee, ROC representative, January, 2002 – present.

Soil, Water, and Climate, Social Committee,. January, 2002 – present.

Soil, Water, and Climate, Department head review. April, 2000 – October, 2000.

Soil, Water, and Climate, nutrient management committee. January, 2000 – February, 2000.

### **National Committees**

Associate Editor, Division S-6 Soil & Water Management and Conservation, of the Soil Science Society of America Journal (SSSAJ) and a member of the SSSAJ Editorial Board (January, 2000 – present).

Soil Science Society of America Journal Committee to develop Manuscript Tracker User's Guide. December, 2002 – February, 2003

### **State Committees**

Committee member, Minnesota Department of Agriculture, 2000 Nonpoint Source Management Program Plan. May, 2000 – May, 2001.

### **Administrative Functions**

SW ROC Management team (1/1-2002 – 1/1/2003)

### **Research Journal or Proposal Reviews**

Manuscripts reviewed – 12

Manuscripts processed as Associate Editor for *SSSAJ* – 18

## **Professional Development**

### **Professional Certification**

Certified Professional Soil Scientist – ARCPACS Certified – 28 October, 2002

### **Professional and Honorary Society Memberships**

American Society of Agronomy

Soil Science Society of America

ARCPACS - Associate Professional Soil Scientist

Soil and Water Conservation Society

American Society of Agricultural Engineers

Xi Sigma Pi

Gamma Sigma Delta

Sigma Xi

### **Professional Development Activities**

#### **2003**

National Science Foundation Grantsmanship Workshop, 12 February, 2003

#### **2002**

Laboratory Safety and Hazardous Waste Training. 20 June, 2002.

Latchat QuikChem 8000 FIA+ with Omnion 3.0 Training. 8-10 July, 2002.

#### **2001**

Collaborative Leadership and Civic Engagement. Northern Lights Leadership for Institutional Change. 18 May, 2001.

Managing Multiple Tasks Workshop. Employer Education Service – Carlson School of Management. 21 March, 2001.

Responsible Conduct of Research, part II. Center for Human Resources Development. 20 February, 2001.

**2000**

Creating a Quality Work Environment. Office of Human Resources. 26 January, 2000.

Responsible Conduct of Research, part I. Center for Human Resource Development. 30 March, 2000.

Supervisor Training. Office of Human Resources. 18 May, 2000.

**1999**

“Getting started as a successful grant writer” Grant Writing Workshop 3-4 March, 1999.