

CURRICULUM VITA

NAME: Mark C. Siemens

ADDRESS: 6425 W. 8th St.
Yuma, AZ 85364

CONTACT: (928) 782-3836
siemens@cals.arizona.edu

EDUCATION:

- Ph.D. Agricultural and Biosystems Engineering, University of Arizona; 1996
Dissertation Title: Cable Drawn Farming - System Analysis and Control Development
- M.S. Mechanical and Industrial Engineering, University of Illinois, 1990
Thesis Title: Computer Model to Predict the Hydraulic Pump Requirements of Backhoe Type Excavators
- B.S. Mechanical and Industrial Engineering, University of Illinois, 1988, Honors

EMPLOYMENT RECORD:

- 2008-Present **Associate Professor/Extension Specialist** – Agricultural and Biosystems Engineering Department and Yuma Agricultural Center, University of Arizona
- 1999-2008 **Agricultural Engineer**, USDA-ARS Columbia Plateau Conservation Research Center, Pendleton, OR
- 1997-1998 **Assistant Professor/Extension Engineer**, Department of Biological and Agricultural Engineering, University of Georgia
- 1990-1996 **Graduate Teaching/Research Assistant**, Agricultural and Biosystems Engineering Department, University of Arizona
- 1988-1990 **Graduate Teaching Assistant**, Department of Mechanical and Industrial Engineering, University of Illinois
- 1989-1990 **Research Engineer**, Caterpillar Inc., Peoria, IL (3 months)
- 1984-1988 **Cooperative Education Student Engineer**, General Electric Company, Cleveland, OH (4 semesters)

AWARDS AND HONORS:

- USDA-ARS Certificate of Merit for Superior Performance in Planning and Conducting Research, Resource Management, Representing Agency and Program Development, Mar. 2006.
- 2005 ASABE Superior Paper Award - “Development and Evaluation of a Residue Management Wheel for Hoe-Type No-Till Drills”, July 2005
- 2004 ASABE Standards Developers Award for Outstanding Service for Major Contributions in the Development of Standards, July 2005
- Manchester Who’s Who Among Executives and Professionals, Honors Edition, 2005/2006
- USDA-ARS Certificate of Merit for Outstanding Technology Transfer of Conservation Farming Systems, Mar. 2004
- USDA-ARS Certificate of Merit for Outstanding Engineering Contributions, Feb. 2003
- Agricultural Machinery Conference Certificate of Service in Recognition of Leadership and Service to the Conference, May 2001
- USDA-ARS Certificate of Merit for Superior Effort, Feb. 2001

AWARDS AND HONORS (cont.):

University of Illinois List of Undergraduate Teachers Rated Excellent by their Students - four semesters, 1988-1990
University of Illinois Mechanical Engineering Department Machine Design Award for Proficiency in Machine Design, 1988
American Institute of Plant Engineers Award for Academic Achievement, 1988
Graduation with Honors, University of Illinois, 1988
Golden Key Honor Society, Tau Beta Pi, Alpha Epsilon, Pi Tau Sigma

PUBLICATIONS:

Refereed Publications and Patents

- Siemens, M.C. and D. Jones. 2008. Segregation of soft white wheat by density for improved quality. *Transactions of the ASABE*. Submitted.
- Siemens, M.C. and D.E. Hulick. 2008. Reaper/flail based cereal grain harvesting system for single pass grain harvest, biomass collection, crop residue sizing and grain segregation. *Transactions of the ASABE*. Submitted.
- Williams, J.D., M.C. Siemens, D.S. Long, H.T. Gollany and S.A. Albrecht. No-till and inversion tillage practices effect on crop yields and soil and water conservation in the rainfed croplands of north-central Oregon. *Journal of Soil and Water Conservation*. Submitted.
- Long, D.S., M.C. Siemens and R. Engle. 2008. Measuring grain protein concentration with in-line near infrared reflectance spectroscopy. *Agronomy Journal* 100(2):xxx-xxx (accepted).
- Siemens, M.C., D.E. Hulick and B. Jepsen. 2007. Development of a trigger-on indicator for a weed sensing spray unit. *Crop Management*. Online Peer Reviewed Journal of Applied Crop Science doi:10.1094/CM-2007-0515-01-BR.
- Siemens, M.C., T.J. Darnell and D.E. Hulick. 2007. Technical Note: Performance of two hoe-type air drills seeding green peas in a conservation tillage system. *Applied Engineering in Agriculture*. 23(1):23-29.
- Siemens, M.C. 2006. Effect of guard spacing, guard attachments, and reel type on chickpea harvesting losses. *Applied Engineering in Agriculture*. 22(5):651-657.
- Machado, S., R.W. Smiley, C.D. Humphreys, J.A. Goullie, S.A. Easley, R.G. Whitaker, K.Rhinhart, and M.C. Siemens. 2006. Paraplow effects on diseases and grain yield of spring wheat and chickpea. *Biological and Cultural Tests for Control of Plant Diseases* Vol. 21:FC057. St. Paul, Minn.: The American Phytopathological Society. Available at: <http://www.plantmanagementnetwork.org/pub/trial/bctests/vol21/>.
- Siemens, M.C. and D.E. Wilkins. 2006. Effect of residue management methods on no-till drill performance. *Applied Engineering in Agriculture*. 22(1):51-60.
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2004. Development and evaluation of a residue management wheel for hoe-type no-till drills. *Transactions of the ASAE*. 47(2):397-404.
- Wilkins, D.E., M.C. Siemens and S.L. Albrecht. 2002. Changes in soil physical characteristics during transition from intensive tillage to direct seeding. *Transactions of the ASAE*. 45(4):877-880.
- Siemens, M.C., R.F. Correa and D.E. Wilkins. 2002. Flexible ground-driven residue management wheel. United States Patent No. US 6,345,671 B1.
- Siemens, M.C. and W.E. Coates. 2000. Control system for the mobile truss of a cable drawn farming system. *Applied Engineering in Agriculture*. 16(3):211-216.

Non-Refereed Publications

- Siemens, M.C. and D.E. Hulick. 2008. A new grain harvesting system for single pass grain harvest, biomass collection, crop residue sizing and grain segregation. In *Proc. 11th Annual Directs Seed Cropping Systems Conf.*, pp. 12. Moscow, Idaho: Pacific Northwest Direct Seed Association.
- Siemens, M.C. and D.E. Hulick. 2007. Development of an alternative, reaper/flail based harvesting system for no-till farming - 2nd year. In *Electronic-only Proc. Intl Conf. on Crop Harvesting and Processing*. ASABE Publ. Number 701P0307e, 12pp. St. Joseph, Mich.: ASABE.
- Siemens, M.C. and D.E. Hulick. 2006. Development of an alternative, reaper/flail based harvesting system for no-till farming. ASAE paper No. 06-1032, 16pp. St. Joseph, Mich.: ASABE.
- Siemens, M.C. and D.S. Long. 2005. Improving wheat quality consistency by density segregation. ASAE paper No. 05-1028, 1 p. St Joseph, Mich.: ASAE.
- Siemens, M.C., M.K. Corp and R.F. Correa. 2004. Effects of header modifications on garbanzo bean harvesting losses. ASAE Paper No. PNW04-1012, 10 pp. St. Joseph, Mich: ASAE.
- Corp, M.K., D.A. Ball and M.C. Siemens. 2004. Wheat straw management and its effects on weed populations, stand establishment and yield in direct-seed chickpea. In *Proc. 57th Meeting of the Western Society of Weed Science*, 57:20 (abstr.). Colorado Springs, Colo., Mar. 9-11. Newark, Calif: Western Society of Weed Science.
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2003. Residue management wheel for hoe-type no-till drills. ASAE paper No. PNW-03-103, 6 pp. St Joseph, Mich.: ASAE.
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2003. Development and evaluation of a residue management wheel for no-till drills. ASAE paper No. 03-1019, 10 pp. St Joseph, Mich.: ASAE.
- Siemens, M.C., D.E. Wilkins and S.B. Wuest. 2000. Managing and distributing residue for conservation tillage in the Pacific Northwest. ASAE Paper 00-1005, 14 pp. St. Joseph, Mich.: ASAE.
- Wilkins, D.E., S.L. Albrecht and M.C. Siemens. 2000. Effect of tillage and fallow on soil organic carbon in the Columbia Plateau. In *Proc. Soil Tillage Research Organization International Conf.*, 9 pp. July 2-7. Ft. Worth, Tex: ISTRO.
- Wilkins, D.E., M.C. Siemens and S.L. Albrecht. 1999. Changes in soil physical characteristics during transition from intensive tillage to direct seeding. ASAE Paper No. 99-1060, 10 pp. St Joseph, Mich.: ASAE.
- Siemens, M.C. and W.E. Coates. 1997. System analysis of four types of cable drawn farming systems. ASAE Paper No. 97-1029, 25 pp. St Joseph, Mich.: ASAE.
- Siemens, M.C. and W.E. Coates. 1996. Control system for the mobile truss of a cable drawn farming system. ASAE paper No. 96-1101, 12 pp. St Joseph, Mich.: ASAE.
- Siemens, M.C. and C.S. Larson. 1990. Model to predict hydraulic pump requirements for an off-road vehicle. SAE Paper No. 90-1622, 7 pp. Salem, Mass.: SAE

Outreach Publications

- Siemens, M.C. and D.E. Hulick. 2008. A new harvesting system for single pass grain harvest, biomass collection, crop residue sizing and grain segregation. In *Proc. 11th Annual Direct Seed Cropping Systems Conf.*, 12 pp. Moscow, Idaho: Pacific Northwest Direct Seed Association.
- Smiley, R.W., M.C. Siemens, T.M. Gohlke and J.K. Poore. 2005. Small grain acreage and management trends for eastern Oregon and Washington. In *2005 Dryland Agricultural Research Annual Report*, 30-50. D.S. Long, S.E. Petrie and P.M. Frank, eds. SR 1061. Corvallis, Ore.: Oregon State University Agric. Exp. Station in cooperation with USDA-Agric. Res. Service, Pendleton, Ore.
- Corp, M.K., S. Machado, D.A. Ball, R.W. Smiley, S.E. Petrie, M.C. Siemens and S.O. Guy. 2004. Chickpea production guide. Oregon State University Extension Service Bulletin EM 8791-E. Corvallis, Ore.: Oregon State University.
- Siemens, M.C. 2003. Chopping pays off in heavy stubble - US results. *Australian Farm Journal* 13(10):50-51. Melbourne, Victoria, Australia: Agricultural Publishers Pty Ltd.

- Siemens, M.C., D.E. Wilkins, R.F. Correa and S.B. Wuest. 2003. Residue management strategies for direct seeding. In Proc. *Reduced Tillage LINKAGES Direct Seeding Advantage Workshop*, 18-26. Nisku, Alberta, November 18-19. Edmonton, Alberta: Reduced Tillage LINKAGES.
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2003. Residue wheel improves crop establishment. *Australian Farm Journal* 13(5):37-38. Melbourne, Victoria, Australia: Agricultural Publishers Pty Ltd.
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2003. Machinery & stubble management. South Australia No-Tillage Farmers Assoc. Newsletter 2(5):76. Clare, South Australia: SANTFA.
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2003. Residue managers improve crop establishment in heavy residues. South Australia No-Tillage Farmers Assoc. Newsletter 2(5):77-78. Clare, South Australia: SANTFA.
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2003. Machinery and stubble management. In Proc. *11th Annual Western Australian No-Tillage Farmers Association Conf.*, 27-28. Perth, Western Australia, March 4-7. Belmont, Western Australia: WANTFA.
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2003. Residue managers improve crop establishment in heavy residues. In Proc. *11th Annual Western Australian No-Tillage Farmers Association Conf.*, 9-12. Perth, Western Australia, 4-7 March. Belmont, Western Australia: WANTFA.
- Siemens, M.C., D.E. Wilkins, R.F. Correa and S.B. Wuest. 2003. Effects of the residue management wheel and other residue management strategies on direct seed drill performance. In Proc. *Northwest Direct Seed Cropping Systems Conf. and Trade Show*, 75-89. Pasco, Wash., 8-10 Jan. Moscow, Idaho: University of Idaho, Pacific Northwest STEEP III Conservation Farming Research and Education.
- Siemens, M.C., M.K. Corp and R.F. Correa. 2002. Effects of header modifications on garbanzo bean harvesting losses. In 2002 Columbia Basin Agricultural Research Center Annual Report, 37-43. A. Bechtel, H.S. Oviatt and P.M. Frank, eds. SR 1040. Corvallis, Oreg.: Oregon State University Agric. Exp. Station in cooperation with USDA-Agric. Res. Service, Pendleton, Oreg.
- Wilkins, D.E., D.J. Wysocki, M.C. Siemens, S.M. Ott, R.F. Correa and T.R. Johlke. 2002. Fertilizer placement in annual crop direct-seeded canola. In 2002 Columbia Basin Agricultural Research Center Annual Report, 76-80. A. Bechtel, H.S. Oviatt and P.M. Frank, eds., SR 1040. Corvallis, Oreg.: Oregon State University Agric. Exp. Station in cooperation with USDA-Agric. Res. Service, Pendleton, Oreg.
- Wilkins, D.E. and M.C. Siemens. 2001. Machinery and crop residue management. In *Retooling Agriculture - A Report on Direct-Seed Cropping Systems Research in the Pacific Northwest*, PNW553, pp. 22-23. Pullman, Wash.: Pacific Northwest Extension Publications
- Siemens, M.C., D.E. Wilkins and R.F. Correa. 2001. Evaluation of a residue management wheel for hoe-type no-till drills. In 2001 Columbia Basin Agricultural Research Center Annual Report, 61-64. A. Bechtel and P.M. Frank, eds., SR1026. Corvallis, Oreg.: Oregon State University Agric. Exp. Station in cooperation with USDA-Agric. Res. Service, Pendleton, Oreg.
- Wilkins, D.E., D.J. Wysocki and M.C. Siemens. 2001. Effect of fertilizer placement and soil water on emergence of yellow mustard. In 2001 Columbia Basin Agricultural Research Center Annual Report, 77-83. A. Bechtel and P.M. Frank, eds., SR 1026. Corvallis, Oreg.: Oregon State University Agric. Exp. Station in cooperation with USDA-Agric. Res. Service, Pendleton, Oreg.
- Siemens, M.C. and B. Crabtree. 2000. New residue manager has good promise. Western Australia No-Tillage Farmers Assoc. Newsletter 8(4):365. Belmont, Western Australia: WANTFA.
- Siemens, M.C., D.E. Wilkins and S.B. Wuest. 2000. Managing and distributing residue for direct seed systems. In Proc. *Northwest Direct Seed Cropping Systems Conf. and Trade Show*, 101-109. Pendleton, Oreg., 4-6 Jan. Moscow, Idaho: University of Idaho, Pacific Northwest STEEP III Conservation Farming Research and Education.
- Siemens, M.C. 1998. Grading green peanuts. In 1997 Georgia Peanut Res.-Extension Rpt. University of Georgia Cooperative Res.-Extension Pub. No. 98-2, 20-28. Athens, Ga.: University of Georgia Cooperative Research Extension.

- Siemens, M.C. 1998. Digging losses associated with various harvesting speeds. In 1997 Georgia Peanut Res.-Extension Rpt. Univ. of Georgia Cooperative Res.-Extension Pub. No. 98-2, 16-19. Athens, Ga.: University of Georgia Cooperative Research Extension.
- Siemens, M.C. 1997. Getting the peanut dryer ready to go. University of Georgia Cooperative Research Extension Radio Release X-624. Athens, Ga.: University of Georgia Cooperative Research Extension.
- Siemens, M.C. 1997. Getting the peanut harvester ready to go. University of Georgia Cooperative Research Extension Radio Release X-623. Athens, Ga.: University of Georgia Cooperative Research Extension.
- Siemens, M.C. 1997. Details on peanut harvesting and curing clinics. University of Georgia Cooperative Research Extension Radio Release X-622. Athens, Ga.: University of Georgia Cooperative Research Extension.
- Bader, M.J., J. Baldwin and M.C. Siemens, M.C. 1997. Digger blade comparison. In 1996 Georgia. Peanut Res.-Extension Rpt. University of Georgia Cooperative Res.-Extension Pub. No. 97-2, 21-22. Athens, Ga.: University of Georgia Cooperative Research Extension.

Popular Press Publications

- Dietz, J. 2007. Stripper Combines. *Successful Farming*. September Issue, p. Bonus. Des Moines, Iowa: Meredith Corporation
- Bordeau, P. 2006. Une autre façon de moissonner. *Journal Entraïd*. October Issue, p. 44. Mignaloux-Beauvoir, France: Entraïd.
- Massey, K. 2006. New harvester developed by USDA scientist. *Capital Press – The West's Ag Website*. 3 pp. Salem, Oregon: Press Publishing Co. Available at: <http://www.capitalpress.info/main.asp?SectionID=93&SubSectionID=800&ArticleID=27772>. Accessed 11 October 2006.
- Spencer, J. 2006. Reaping the bit that matters. *Farmer's Weekly*. September Issue, p. 60. Johannesburg, South Africa: Caxton Magazines.
- Tokarz, L. 2006. Reducing high harvest costs. *Agricultural Research* 54(7): 23. Beltsville, Md.: USDA-ARS.
- Preusse, T. 2006. Phantasie kennt keine Grenzen. *DLG Mitteilungen*. July Issue, pp. 48-49. Frankfurt, Germany: Deutsche Landwirtschafts-Gesellschaft e.V.
- Bron: USDA-ARS. 2006. Eerst maaien, dan dorsen. *Landbouwmecanisatie* 57(5):13. Wageningen, Netherland: AgriMedia B.V.
- Dunn, N. 2006. New Cereal Harvester Developed by US Department of Agriculture. *Farmers Weekly*. August Issue, p. 69. Sutton, Surrey, UK: Reed Business Information Limited. Available at: www.fwi.co.uk/Articles/2006/08/10/96986/New+cereal+harvester+developed+by+US+department+of+agriculture.htm. Accessed 15 August 2006.
- McGinnis, L. 2006. Going Against the Grain: A New Take on Harvesting. *Resource* 13(2):5. St. Joseph, Mich.: ASABE.
- Anonymous. 2006. A Simple Way of Harvesting Grain. *Implement & Tractor*. January/February Issue, p. 24. <http://www.implementandtractor.com>. Accessed 10 March 2006.
- Hildegrant. 2006. End of the Combine for Small Grain Harvest. *Midwest Messenger Around the Web*. <http://www.ledgeronline.com/cgi-bin/artman/exec/view.cgi?archive=9&num=4086>. Accessed 26 January 2006.
- Anonymous. 2006. New Way to Harvest Wheat Uses Two Machines at Lower Cost. *FarmAssist US Market News*. <http://www.farmassist.ca/alerts/details.asp?type=USnews&alerted32685>. Accessed 26 January 2006.
- Coffman, B. 2006. Wheat Harvesting: A New Twist. *An AgWeb.com Farm Equipment Special*. http://www.agweb.com/get_article.asp?src&pageid=123717. Accessed 26 January 2006.

- Anonymous. 2006. Scientist Develops New Wheat-Harvest System. *Grainnet*, http://www.grainnet.com/info/articles_print.html?ID=30150. Accessed 10 January 2006.
- Robison, L. 2006. Agricultural Engineers in Pendleton, OR Are Looking Back in Time for Wheat Harvesting Solutions.
- Yates, S. 2006. Building a Better Combine? Engineer Designs Machine to Harvest Only Wheat Heads. *Capital Press* 79(2): 4. Salem, Oreg.: Press Publishing Co.
- McGinnis, L. 2006. Going Against the Grain: A New Take on Harvesting. *Agri-Times* 22(17):1, 8.
- Smith, D. 2006. New Harvesting System. *Farm Journal*, February Issue, p. 36. Mexico, Mo.: Farm Journal, Inc.
- McGinnis, L. 2005. Going Against the Grain: A New Take on Harvesting. *USDA-ARS News and Events*. USDA-ARS. Washington, D.C.: USDA Agricultural Research Service. Available at www.ars.usda.gov/News/docs.htm?docid=1261. Accessed 22 December 2005.
- Smith, D. 2004. Research Develops New Crop Varieties and New Harvest Methods. *Pacific Northwest Direct Seed Association Newsletter - Direct Link* 5(7):2-3.
- McMenamin, H. 2004. Residue Managers Ease No-Till Seeding Problems. *Irrigating Alberta* 8(1):24-25. Lethbridge, Alberta: Farm Press Ltd.
- Rupp, V. 2003. Managing Residue. *Agri-Times* 20(5):1. June 6, p. 1. Pendleton, Oreg.: Agri-Times Northwest.
- Ingram, S. 2003. Local Engineer's Invention Earns a Trip Down Under. *East Oregonian*. Apr., 25. p. 5. Pendleton, Oreg.: East Oregonian.
- Burnham, T.J. 2003. Tackling Residue. *Western Farmer Stockman*. 126(5):58. Carol Stream, Ill: Farm Progress Companies Inc.
- Ingram, S. 2003. Engineer Wheels His Way Down Under. Feb. 24, p. 1. *East Oregonian*. Pendleton, Oreg.: East Oregonian.
- Anonymous. 2002. Walk Through Trash. *Farm Journal* 125(4):Special feature page. Philadelphia, Pa.: Farm Journal Corporation.
- Siemens, M.C. 2001 and M.K. Corp. Improving Garbanzo Bean Harvesting Efficiency. *Cereals Newsletter*. Umatilla County Office, Vol. XIV, No. 7 pp. 1-2. Corvallis, Oreg.: Oregon State University Umatilla County Extension.
- Bechman, T.J. 2001. Resolute in Residue! New, Western-Style Residue Wheel Shows Promise. *Indiana Prairie Farmer* 173(4):42. Carol Stream, Ill.: Farm Progress Companies Inc.
- Smida, J. 2001. Eliminate Plugging With New Wheel. *No-Till Farmer* 30(4):16. Brookfield, Wis.: Lessiter Publications, Inc.
- Allen, S. 2001. Residue Wheel Favored. *Agri-Times Northwest*. Jan. 19, p. 11. Pendleton, Oreg.: Agri-Times Northwest.
- Schmitz, J. 2001. No-till Drill Fits Narrow Rows. *Capital Press*. Jan. 12, p. 21. Salem, Oreg.: Capital Press Agriculture Weekly.
- Barry-Stelljes, K. 2001. New Tool Improves No-Till Seeding. *Resource* 8(1):3. St Joseph, Mich.:ASAE.
- Anonymous. 2000. Innovative Drill Attachment Aids No-Till Seeding. *The Sunflower* 26(7):14. Bismarck, N. Dak.:Natl. Sunflower Assoc.
- Siemens, M.C. 2000. Residue Management Wheel Evaluation. *Pacific Northwest Direct Seed Association Newsletter - Direct Link* 1(2):2.
- Barry-Stelljes, K. 2000. New Tool Improves No-Till Seeding. ARS press release. November, 21.

GRANTS:

Grants Awarded - (Comprehensive List; \$302,000 Total)

\$210,000 NRCS Technical Assistance Grant; *Enhancing USDA-NRCS Conservation Programs through USDA-ARS Research and Technical Assistance*; 2006; co-P.I. (\$35,000 to Siemens)

\$59,000 Oregon Department of Agriculture Specialty Crops Grant; *Developing Chickpea Production in Oregon*; 2002; co-P.I. (\$10,000 to Siemens)

\$5,000 Georgia Peanut Commission; *Developing calibration procedure for a peanut digger-shaker-inverter*; 1997; P.I.

\$28,000 Arizona Department of Environmental Quality; *Development of a Machine to Separate Bindings and Covers from Recyclable Paper*; 1996; co-P.I.

PROFESSIONAL SOCIETIES:

American Society of Agricultural and Biological Engineers
World Association of Soil and Water Conservation
Pacific Northwest Direct Seed Association

PROFESSIONAL REGISTRATION AND LICENSES:

Engineer-in-Training, 1988
Public Pesticide Applicator, 2004-2008
Certified Forklift Operator, 2006-present