

**CCURRICULUM VITAE  
PATRICK M. CARR**

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**A. GENERAL INFORMATION**

**Education**

- 1989 Ph.D., Crop and Soil Science, Montana State University, Bozeman, MT  
*Dissertation Title: Farming soils, not fields: varying fertilizer and cultivars within fields to increase profitability and enhance environmental quality*
- 1986 M.S., Technology and Human Affairs, Washington University, St. Louis, MO  
*Research Project Title: Oilseed plants as potential sources of specialty chemicals in Montana*
- 1984 M.S., Natural Resources, Ball State University, Muncie, IN  
*Thesis Title: No and low cost energy conservation measures. The potential energy and economic savings from conservation among low and middle income homeowners within Delaware County, Indiana*
- 1982 B.S., Biology, magna cum laude, Saint Meinrad College, Saint Meinrad, IN  
*Undergraduate Thesis Title: Woody vegetation on seven strip mine spoils in Spencer County, Indiana*

**Professional Experience**

- 2016- Associate Professor (January) and Superintendent (July), Central Agricultural Research Center, Department of Research Centers, Montana State University
- 1994- Adjunct Professor, Department of Plant Sciences, North Dakota State University
- 2012-2015 Research Professor, North Dakota State University
- 1999-2015 Adjunct Professor, Dickinson State University
- 2003-2011 Experiment Station Specialist, North Dakota State University
- 1994-1999 Adjunct Assistant Professor, Dickinson State University
- 1992-2002 Experiment Station Associate Specialist, North Dakota State University
- 1989-1992 Post-doctoral Research Associate, North Dakota State University
- 1986-1989 Graduate Research/Teaching Assistant, Montana State University
- 1984-1986 Graduate Research Assistant, Washington University
- 1983-1984 Graduate Teaching/Research Assistant, Ball State University

**Professional Societies (current)**

American Society of Agronomy (29 years)  
Crop Science Society of America (26 years)  
Soil Science Society of America (24 years)  
Western Society of Crop Science (1 year)  
Western Society of Soil Science (1 year)  
Montana Organic Association (1 year)

**Honors/Recognition**

- 2015 Fellow Award, American Society of Agronomy
- 2007 Friend of the Farmer Award, Northern Plains Sustainable Agriculture Society
- 2002 Canadian Journal of Plant Science Editors' Citation for Excellence in Manuscript Review
- 2000 Agronomy Journal Editors' Citation for Excellence in Manuscript Review (Production Agriculture)
- 1997 Sigma Xi (elected member)
- 1993 Commendation Award, Soil and Water Conservation Society
- 1989 Outstanding Service Award, Gallatin County Cooperative Extension Service

*Nominations*

2015 A12, Section Representative, Board of Directors, American Society of Agronomy  
2013-2014 Organic Management Systems Community Award, American Society of Agronomy  
2008 A8, Division Representative, Board of Directors, American Society of Agronomy  
2007 Editor-in-Chief, Journal of Sustainable Agriculture  
2005 Faculty/Student Collaborative Research/Collaborative Scholarship Award, Dickinson State University

**Certifications**

2016- Montana Pesticide Applicator Licensure, Ag. Research and Demonstration

**B. SERVICE**

**Professional**

Committees/Boards

*National/International – Excluding Scientific Journals*

2018-2019 Vice-leader/Leader nominee, Semarid Drylands Community, American Society of Agronomy  
2017-2018 Vice-leader/Leader, Organic Management Systems Community, American Society of Agronomy  
2016-2017 S497, Gary “Pete” Peterson Dryland Soil Management Scholarship Committee, (Chair, 2017), Soil Science Society of America  
2015-2019 Advisory Committee, Farming Systems Trial (FST), Rodale Institute, Kutztown, PA  
2015-2016 A411, Fellows Committee, American Society of Agronomy (recused in 2015 since nominated for the award)  
2015-2016 C455, Fellows Committee, Crop Science Society of America  
2013- Member, Science Advisory Board, The Organic Center  
2010-2016 Southern Coordinating Committee SCC-83, Quantifying the Linkages among Soil Health, Organic Farming, and Food (writing team coordinator and committee chair, 2010-11)  
2013-2014 A112, Nominations Committee for Agronomic Production Systems Section Officers, Chair (2014), American Society of Agronomy  
2014 A101, Nominations Committee for President-Elect, American Society of Agronomy  
2014 A711, Program Planning Committee, American Society of Agronomy  
2013-2014 Vice-Chair & Chair, Agronomic Production Systems, A12 Section, American Society of Agronomy  
2010 Chair, Nominations Committee for Organic Management Systems Division – Provisional Officers, American Society of Agronomy  
2009-2010 Chair, A12 Division, Organic Management Systems – Provisional, American Society of Agronomy  
2008-2009 Board of Directors, Organic Crop Improvement Association Research and Education, Inc. (USA Research Representative), Lincoln, NE  
2007-2009 ACS538, Committee on Organic and Sustainable Agriculture (COSA), American Society of Agronomy  
2006-2008 Nominations Committee for Division A8, Chair (2007), American Society of Agronomy  
2006-2008 Chair-Elect, Chair, Past-Chair, A8 Division, Integrated Agricultural Systems, American Society of Agronomy  
2006-2008 C451, Crop Science Research Award Committee, Crop Science Society of America (Chair, 2008)  
2007 A101, Nominations for President-Elect Committee  
2007 Ad hoc Web Page Task Force, American Society of Agronomy  
2007 Ad hoc Improving Communications Task Force, American Society of Agronomy  
2007 ACS711, Program Planning Committee, American Society of Agronomy  
2005-2007 A446, Carl Sprengel Agronomic Research Award, American Society of Agronomy

- 2003 Executive Committee, Great Plains Cropping System Network (Integrated Crop-Livestock Systems Representative for North Dakota)
- 2003-2006 A731, Location of Meetings Committee, American Society of Agronomy
- 2002-2005 S201, Organization, Policy and Bylaws Committee, Soil Science Society of America
- 2002-2005 ACS526, Women in Agriculture Committee, American Society of Agronomy
- 2000-2004 Technical Committee, NC-225, Improving Grazing Systems for Beef Cattle Production
- 2002 Host Committee, Great Plains Population Symposium, Dickinson, ND
- 2001 ACS824, Forage, Grassland, and Range Resource Committee, American Society of Agronomy
- 1997-2000 USDA-SARE, North Central Region Administrative Council
- 1999 Ad hoc Northern Great Plains Cropping Systems Symposium Committee, American Society of Agronomy Annual Meeting, Salt Lake City
- 1993-1994 NCR 177, Non-herbicide Alternatives for Weed Management

*National/International – Scientific Journals*

- 2017 Guest Editor, Special Issue, Organic Conservation Tillage, Agriculture, Vol. 7(1)
- 2015-2019 Associate Editor, Agricultural & Environmental Letters, ACS330, American Society of Agronomy
- 2014-2018 Associate Editor, Crops and Soils A341
- 2012 Guest Editor, Special Issue, Organic Conservation Tillage, Renew. Agric. And Food Sys., Vol. 27(1)
- 2010-2012 Associate Editor, Canadian Journal of Plant Science
- 2008-2012 Associate Editor, Journal of Renewable Agriculture and Food Systems
- 2002-2007 Associate Editor, Agronomy Journal A302

*State/Regional*

- 2000-2002 NDSU Representative, North Dakota State Board of Agricultural Research and Education, Forages and Hay Subcommittee
- 1993-1995 Chair, HRM Task Force, Soil and Water Conservation Society, ND Chapter
- 1993-1995 Chair, Scholarship Committee, Soil and Water Conservation Society, ND Chapter
- 1990-1992 Chair, Newsletter Subcommittee, Soil and Water Conservation Society, ND Chapter

*University/Department*

Montana State University

- 2016-2018 College of Agriculture representative (1 of 3), Committee on Grievance Hearings
- 2016 Search Committee Chair, Research Assistant III, Central Agricultural Research Center, (October)
- 2016 Search Committee Chair, Assistant Professor of Soil Microbiology, Central Agricultural Research Center (September)
- 2016 Search Committee Chair, Research Associate, Central Agricultural Research Center
- 2016 Faculty Retention Review, Department of Research Centers, Jessica Torrior (September)
- 2016 Hatch Project Proposal Review, Gadi Reddy (April)

North Dakota State University

- 2015 Search Committee, Assistant/Associate Research Professor in Forages, Dickinson Research Extension Center
- 2015 Search Committee, Extension Cropping Systems Specialist, Dickinson Research Extension Center
- 2013-2016 AES Research Extension Center Promotion Committee (Senior Faculty Representative)
- 2009-2011 AES Off-Campus Faculty Representative, Agriculture Information Technology Advisory Committee
- 2006 Chair, Search Committee, Agricultural Research Specialist Position in Forages and Organic Agriculture, Dickinson Research and Extension Center
- 2004 AES Off-Campus Representative, Planning Committee, Joint AES/CES annual meeting
- 2003-2004 Research Extension Center Representative, Strategic Planning Committee, NDSU AES

- 1997 Search Committee, Extension Cropping Systems Specialist, Dickinson Research Extension Center
- 1997-1999 AES Hatch/State Project Review Committee (Research Extension Center Representative)
- 1994-1999 Extension Planning Team 13: Competitiveness and Profitability of Crop Production
- 1993-1997 Curriculum Council, Dickinson State University

Activities

*National/International – Excluding Reviews (selected since 2009)*

- 2015 Hosted Jan-Hendrik Cropp, German freelance journalist, on visit with selected organic no-till researchers in Canada and the U.S. (July 22)
- 2014 Co-organizer, Innovations in Organic Food Systems for Sustainable Production and Enhanced Ecosystem Services International Conference, held in conjunction with the American Society of Agronomy Annual Meeting, 1-2 November, Long Beach.
- 2014 Featured with Greta Gramig and Mark Liebig in International Innovations, Issue 155, for research on organic no-till systems
- 2014 Co-hosted New Zealand Farmer Group and discussed impact of long-term no-till on soil organic carbon content, Dickinson (18 July)
- 2012 Co-hosted French farmers interested in learning about conventional and organic no-till research at the Dickinson Research Extension Center (8 September)
- 2012 Co-organizer of Volume 27(1) Special Issue of Renewable Agriculture and Food Systems on conservation tillage in organic management systems in Asia, Europe, and North America
- 2010 Organizer of two symposia at the American Society of Agronomy Annual Meeting in Long Beach: Organic Zero-Till: Strategies for Removing Tillage From Organic Systems, and Organic Grain Production – Current Status and Future Opportunities.
- 2009 Gave presentation on organic zero-till to attendees at the Manitoba Ag Days in Brandon, Manitoba (20 January)

*National/International - Reviews*

- 2015 Review Panelist, USDA-NIFA
- 2014 Panel Manager, USDA-NIFA Organic Transitions Program
- 2010-2011 Panel Manager, USDA-NIFA Organic Agriculture Research and Extension Initiative
- 2009-2010 Technical Review Committee (1 of 3), Organic Science Cluster, Canadian Agri-Science Cluster Initiative, Agriculture and Agri-Food Canada
- 2004-2005 Technical Review Committee, USDA Cool Season Food Legume Research Program
- 2003 Technical Review Committee (1 of 3), Solutions to Environmental and Economic Problems (STEER) Grant Program
- 1993-2014 Ad hoc reviewer of 178 manuscripts submitted for publication in 26 refereed scientific journals (excludes those reviewed as an editorial board member until 2009), 10 manuscripts submitted for formal departmental review prior to journal submission, 9 manuscripts submitted for formal USDA-ARS review prior to journal submission, 5 refereed book chapters, 3 refereed extension publications, 4 refereed proceedings papers, and 1 technical book proposal

*State/Regional – Excluding Reviews*

- 1992-2014 Organizer of 68 summer field tours
- 2010 Trainer, Soil Health and Biology Workshops for Extension Educators and USDA-NRCS Resource Managers in North and South Dakota
- 1997 Trainer, 21<sup>st</sup> Century Agriculture: Reach a Sustainable Future Workshop for Extension Educators and USDA-NRCS Resource Managers

*State/Regional – Reviews*

Montana State University

- 2016 Hatch Project Review (G.V.P. Reddy)

North Dakota State University

2014 Promotion Review (NDSU)  
2013 Promotion Review (NDSU)  
2010 Promotion Review (South Dakota State Univ.)

Professional Development

2014 CommUniversity 4-wk Short Course, Botany for Gardening, Dickinson State University, Dickinson, ND  
2014 Precision Agriculture Action Summit, Jamestown, ND  
2013 Professionals Organic Farm Tour, American Society of Agronomy Annual Meeting, Tampa, FL  
2011 Attended American Society of Horticultural Science annual meeting to invite attendees to participation in SCC 083 and to begin networking and developing collaborations with horticultural researchers  
2010 Agricultural Statistics Short Course, Institute of Barley and Malt Sciences, Fargo, ND  
2007 Leadership Training, American Society of Agronomy Centennial Annual Meeting, New Orleans, LA  
2003 Professionals' Agroecosystems Tour, American Society of Agronomy Annual Meeting, Denver, CO  
2002 Leadership Training, Understanding Your Leadership Style, Southwest Workforce Training, Dickinson  
2002 Facilitator Training Workshop, Great Plains Population Symposium, Dickinson State University  
2000 Crop Management Field School, Carrington Research Extension Center  
Audit (4 classes), Technical Writing, Dickinson State University  
1999 Agricultural Ethics Workshop, American Society of Agronomy Annual Meeting, Salt Lake City, UT  
1995 Attended Third National Symposium in Indianapolis to present research results and collaborate/network with national/international colleagues  
1995 Conservation Tillage Educators Professional Development Workshop, Williston, ND  
1994 Certified Crop Advisor's Workshop, ND Chapter, Soil and Water Conservation Society  
1993 Certified Crop Advisor's Workshop, ND Chapter, Soil and Water Conservation Society  
1991 Field Scout Training School, Fargo, ND (1 cr)  
1988-2014 Attended ASA-CSSA-SSSA Annual Meetings to present research results and collaborate/network with national/international colleagues in all but 3 years (1989, 1995, and 1998)  
1987 Attended Second National Symposium in Indianapolis to present research results and collaborate/network with national/international colleagues

**Outreach (Formal Presentations)**

*Montana State University*

2016

1. My Journey in Organic Farming Research: Where I've Come From and Where I am Headed, 14<sup>th</sup> Annual Conference & Member Meeting, Flathead Valley Community College, 2 December (67 in attendance)
2. Organic Farming Research at the CARC, Kamut Grower Appreciation Dinner, Townhouse Inn Guest House, Havre, 27 October (44 farmers)
3. Diversification of Wheat-Based Cropping Systems in Central Montana, USDA-NRCS Soil Health Work Shop, Central Ag. Research Center, 26 August (33 farmers)
4. Warm Season Crops in a Wheat System, Central Ag Research Center Field Day, 21 June (57 farmers and ranchers)
5. Soil Acidification. Forage and Vertebrate Pest Workshop, Stanford and Fairfield, MT, 18 May (10 farmers/ranchers in Stanford and 5 in Fairfield)

*North Dakota State University*

*2015*

1. Impact of Long-Term No-Tillage on Soil Carbon, Graduate Student and Faculty Seminar, Department of Plant Sciences, University of Wyoming, Laramie, 11 August
2. Dryland Small-Grain Production Systems: What's Next?, James H. Hageman Sustainable Agriculture and Research Center, Lingle, WY, 10 August
3. Why We Do What We Do at an REC, Student Internship Lecture Series, Dickinson Research Extension Center, Dickinson, 17 June
4. Sustainable Forage Systems For The Arid and Semiarid West, Eastern Oregon University, La Grande, OR, 27 May
5. Selecting for Nutrition in Our Organic No-Till Garden, Dakota Garden Expo, Bismarck Civic Center, Bismarck, ND, 18 April
6. What's Up with Cover Crops? Radio Interview with Mick Kjar, Farm Director, AG News 890, Farm & Information Radio, Fargo, 15 April
7. Weed Control Options, North Dakota Farmers Market and Growers Association & Local Foods Conference, Baymont Inn & Suites, Mandan, ND, 6 February

*2014*

8. Economics of Small-Grain and Pulse Crops in Southwestern North Dakota, 31th Annual Western Dakota Crops Day, Armory, Hettinger, ND, 18 December
9. Organic Research in North Dakota: The First 15 Years, 12<sup>th</sup> Annual Conference and Member Meeting, Montana Organic Association, Airport Hosting Facility, Great Falls, MT, 6 December
10. Organic Wheat Research, 12<sup>th</sup> Annual Conference and Member Meeting, Montana Organic Association, Airport Hosting Facility, Great Falls, MT, 6 December
11. Filling the Tool Box: Integrated Weed Management Strategies in Organic Farming Systems, Dickinson Research Extension Center Advisory Board Fall Meeting, Dickinson Research Extension Center, Dickinson, ND, 13 October
12. Impact Of Long-Term No-Till On Soil Organic Carbon, New Zealand Farmer Group Summer Field Tour, Dickinson Research Extension Center, Dickinson, ND, 18 July
13. Cowpeas, Organic Summer Field Tour, Carrington Research Extension Center, Carrington, ND, 15 July
14. Twenty Years Of No-Till: Impacts On Soil Health, Summer Field Tour, Dickinson Research Extension Center, Dickinson, ND, 9 July
15. Impact of Previous Crop and Tillage on Small-Grain Crop Performance and Soil Organic Matter, The Best of the Best in Wheat Research and Marketing, Armory, Hettinger, ND, 18 February

*2013*

16. Cropping Systems Research, 30<sup>th</sup> Annual Western Dakota Crops Day, Armory, Hettinger, ND, 19 December
17. Barley 101, Current Research. North Dakota Barley Field School, Dickinson Research Extension Center, Dickinson, ND, 9 July
18. Barley Tillage, Previous Crop, and Organic Research, Barley Summer Field Tour, Dickinson Research Extension Center, Dickinson, ND, 10 July
19. Organic No-Till, Northern Plains Sustainable Agriculture Society, Sustainability for the Future Winter Conference, Ramkota Hotel and Conference Center, Aberdeen, SD, 25 January

*2012*

20. Barley Variety Performance Across Contrasting Tillage & Rotation Systems, 29th Annual Western Dakota Crops Day, Armory, Hettinger, ND, 13 December
21. Agronomic Research at the DREC, Field day for Montana County Extension Agents, Dickinson, ND, 27 July
22. State of Organic Research and Education at NDSU, and What Have We Dreamed? Carrington Research Extension Center annual field day, Carrington, ND, 17 July
23. Our Goal is OZ: Organic Zero-Till, Dickinson Research Extension Center annual field day, Dickinson, ND, 11 July
24. Cover Crop Challenges in Dryland Farming Systems. Cover crops: The Science Behind the Numbers Workshop, Burleigh County Extension Office, Bismarck, ND, 28 March
25. Adapting Cropping Practices and Systems for Co-Existence with Energy Development in Southwestern North Dakota, DREC Advisory Board winter meeting, Dickinson, ND, 20 February

26. Organic No-till and Cover Crop Cocktails: What Do We Know and What is There Left to Learn? Annual education session, OCIA ND Chapter 2 Meeting, Bismarck Public Library, Bismarck, ND 18 February
27. Variety Selection for Organic Environments. Northern Plains Sustainable Agriculture Society 2012 Healthy Soil – Healthy You Winter Conference, Ramkota Hotel and Conference Center, Aberdeen, SD, 27-28 January
28. Organic No-Till: What's been Learned and Where are We Headed? Northern Plains Sustainable Agriculture Society, Healthy Soil – Healthy You Winter Conference, Ramkota Hotel and Conference Center, Aberdeen, SD, 27-28 January
29. A New Look at Small Grains in a Crop Rotation, The Best of the Best in Wheat and Barley Research, Ramada Grand Dakota Lodge, Dickinson, 4 February and on 8 February at the Grand International in Minot, ND

2011

30. (Lack of) Impact of Tillage on Barley Performance, 28<sup>th</sup> Annual Western Dakota Crops Day, Armory, Hettinger, ND, 15 December
31. Organic Research at North Dakota State University, Organic Research Forum Panel Discussion, MOSES Conference, La Crosse, WI, 25 February
32. Zero-till (OZ) in Organic Production, The North Dakota Experience. Midwest Organic and Sustainable Education Service (MOSES) Conference, La Crosse, WI, 25-26 February

2010

33. Zero-till (OZ) in Organic Production. How to Avoid Tilling the Soil Without Chemicals, Sustainable U., Radisson Hotel, Bismarck, ND, 4 December
34. The Real Dirt on Soil Health and Organic Farming, Soil Health/Soil Biology Training for the Northern Great Plains, June 15-16 (Pierre, SD), June 17-18 (Mitchell, SD), June 28-29 (Carrington, ND), and June 30-31 (Bismarck, ND)
35. Organic Production Systems in the Northern Great Plains: Challenges and Opportunities, North Dakota Soil and Water Summit 3, Chieftain Hotel, Carrington, ND, 13 July
36. Organic Zero-Till in the Great Plains, FARRMS Organic Production NRCS Workshop, 27 July (Fargo), 03 August (Bismarck), and 10 August (Minot)
37. Crop Update, Agronomy Advisory Board, Dickinson Research Extension Center, Dickinson, ND, 12 January

2009

38. Organic No-Till: Experiences from North Dakota to Wisconsin, 9th Annual Iowa Organic Conference, Scheman Building, Ames, IA, 5 December
39. Organic Farming Research in North Dakota, AERO Summer Farm Tour, Quinn Farm, Big Sandy, MT, 22 July
40. Organic Farming Research at NDSU, Inaugural North Dakota State University Organic Farming Field Day, Dickinson Research Extension Center, ND, 14 July
41. Organic Weed Control Systems in Crops and Rangeland, North Dakota Weed Control Association Annual Meeting, Mandan, 14 February
42. Agronomy Research Program, Agricultural Experiment Station, NDSU Dickinson Research Extension Center, Agronomy Advisory Board Meeting, Grand Dakota Lodge, Dickinson, ND, 2 February
43. How to ZT and Organic Farm on the Great Plains, Manitoba Ag Days, Keystone Center Complex, Brandon, Manitoba, 20 January

2008

44. Cover Crops Research, 25th Annual Western Dakota Crops Day, Hettinger Armory, Hettinger, ND, 18 December
45. Roller/Crimper Demonstration, Forage Beef and Cover Crop Workshop, Dickinson Research Extension Center Ranch Location, Manning, ND, 18 December
46. Rolling and Crimping Cover Crops, Kentucky SCD Tour Group, Dickinson Research Extension Center Ranch Location, Manning, ND, 17 September
47. Small-Grain Crop Variety Trials, Glen Ullin, ND, 14 July
48. Organic No-Till Roller/Crimper Demonstration, Organic Field Day, University of Minnesota Southwest Research and Outreach Center, Lamberton, MN, 10 July

49. Sixty Years of Crop Yields in Small-Grain Crop Variety Trials at the Dickinson Research Extension Center, Summer Field Tour, Dickinson, ND, 9 July
50. Killing Cover Crops with the Roller Crimper, Summer Field Tour, Dickinson Research Extension Center, Dickinson, ND, 9 July
51. Emerging Organic No-Till Strategies, FARRMS No-Till Workshop, Medina, 11 March
52. Organic No-Till in North Dakota: Opportunities and Challenges, New York Certified Organic Discussion, Interactive Video Network Classroom, Dickinson Research Extension Center, Dickinson, ND, 19 February
53. Why Organic Farming? Extension Service Pre-Conference Training, Winter Annual Conference, Northern Plains Sustainable Agriculture Society, Seven Seas Hotel and Lodge, Mandan, ND, 8 February
54. Organic No-Till: Myth or Reality? Manitoba – North Dakota Zero Tillage Farmers Association 30th Annual Workshop and Trade Show, Riverside Holiday Inn, Minot, ND, 4-6 February
55. The Science Behind Integrated Crop-Livestock Systems: Benefits and Challenges, Manitoba – North Dakota Zero Tillage Farmers Association 30th Annual Workshop and Trade Show, Riverside Holiday Inn, Minot, ND, 4-6 February

2007

56. Organic Farming Research and Ley Farming, 24th annual Western Dakota Crops Day, Armory, Hettinger, ND, 20 December
57. Perspectives in Sustainable Agriculture, Sustainable Agriculture Seminar, North Central Research Extension Center, Minot, ND, 12 April
58. Adding Value to Field Peas: Understanding the Rotation Benefit, 7th Annual Mon-Dak Pulse Day, Airport International Inn, Williston, ND, 21 February
59. Pea-Wheat Rotation Study, Northern Pulse Growers Association 14th Annual Convention, Holiday Inn, Minot, ND, 22-23 January

2006

60. Crop Variety Updates and Highlights of Ongoing Crop Production Research. 23<sup>rd</sup> Annual Western Dakota Crops Day, Armory, Hettinger, ND, 17 December
61. Organic Farming at County Crop Improvement Association, County Meeting, Watford City and Killdeer, 10 October

2005

62. Crop Variety Updates and Highlights of Ongoing Crop Production Research, 22<sup>nd</sup> Annual Western Dakota Crops Day, Armory, Hettinger, ND, 15 December
63. Organic Variety Trials and the Farm Breeder Club, 26th Annual NPSAS Winter Conference, Aberdeen, SD, 12 February
64. Field Peas: Understanding the Rotation Effect, 1st annual ND Pulse Crop Research Forum, Comfort Inn, Bismarck, ND, 1 February

2004

65. Crop Variety Updates and Highlights of Ongoing Crop Production Research, 21<sup>st</sup> Annual Western Dakota Crops Day, Armory, Hettinger, ND, 16 December
66. Dry Peas in a Crop Rotation, Pulse Production Workshop, American Legion Building, Beach, ND, 5 March, and Regent, ND, 8 March
67. Reducing Input Costs, Crop Pest Management School, Montana State University, Bozeman, MT, 6 January

2003

68. Cropping Systems Research Update, 20<sup>th</sup> Annual Western Dakota Crop Day, Community Center, Reeder, ND, 18 December
69. Dickinson Research: Ley Farming, Forage Legume Trials, Long-term Organic and Tillage Systems Study, Organic Variety Trials Tour, NPSAS Annual Summer Symposium and OCIA #1 Summer Meeting, Dickinson Research Extension Center, Dickinson, and Duane and Chantra Boehm farm, Richardton, 18 July
70. Small Grain Varieties, Off-Station Twilight Tour at Glen Ullin, ND on 14 July, at Beulah, ND on 24 July, and at Hannover on 27 July
71. Annual Forage Management, Western Crop and Pest Management School, Travel Lodge Motel and Conference Center, Dickinson, 27 February



72. Crop Rotations, American Legion, Richardton, ND, 20 February
73. Alternative Legumes for Organic Systems, Northern Plains Sustainable Agriculture Society Winter Conference, Ramkota Inn and Conference Center, Aberdeen, SD, 1 February
74. Choosing Small Grain Varieties for Organic Production Systems, Northern Plains Sustainable Agriculture Society Winter Conference, Ramkota Inn and Conference Center, Aberdeen, SD, 30 January
75. Results and Observations of the Organic Variety Trials, Farmers Seed Breeding Symposium. Ramkota Inn and Conference Center, Aberdeen, SD, 30 January

2002

76. Cropping Systems Research, 19th Annual western Dakota Crop Day. Hettinger Armory, Hettinger, 19 December
77. Alternative Forage Opportunities, Joint NC-225/IRM conference, Double Wood Inn, Bismarck, ND, 18-19 November
78. Wheat, Barley, and Oat Variety Response in Organic Environments, Organic Plot Field Tour, Richardton, ND, 23 July
79. Small Grain Varieties, Off-Station Twilight Tour at Glen Ullin, ND on 15 July, at Beulah, ND on 25 July, and at Hannover on 24 July
80. Incorporating a Legume Pasture Phase into Crop Rotations, Field Crops Tour, Dickinson Research Extension Center, Dickinson, NDM 10 July
81. Crop Rotations, New CES Agent Training, Dickinson, ND, 11 June
82. Split-N Application in Canola, Canola Forum, Travel Lodge, Dickinson, ND, 22 February, 2002
83. Hard Red Spring Wheat and Oat Varieties for Organic Farms, Northern Great Plains Sustainable Agriculture Society Annual Meeting, Mandan, ND, 1 February

2001

84. Cropping Systems Research at the Dickinson Research Extension Center, Eighteenth Annual Western Dakota Crops Day, Armory, Hettinger, ND, 20 December
85. Wheat and Oat Variety Response in Organic Environments, Organic Plot Field Tour, Richardton, ND, 31 July
86. Wheat Variety Response Across Contrasting Crop Rotations, Off-Station Twilight Tour at Glen Ullin, ND on 16 July, at Beulah, ND on 18 July, and at Hannover on 1 August
87. Benefits of Tillage in Dry Years, Field Crops Tour, Dickinson Research Extension Center, Dickinson, ND, 11 July
88. Pea production overview, Spring Pulse Production Workshop, North Dakota Dry Pea and Lentil Association, Elks Lodge, Dickinson, ND, 27 March
89. Seeding Peas and Lentils, Scranton Institute, Community Center, Scranton, ND, 2 February
90. The Best Small Grain Varieties for Your Farm, Dunn County Ag Improvement Assoc., Buckspin Bar meeting room, Killdeer, ND, and Taylor Institute, Taylor, ND, 30 January
91. Rotation Considerations and Management Systems, Canola Forum. American Legion Hall, Regent, ND, 18 January

2000

92. Crop Rotation Research, Off-Station Twilight Tour at Glen Ullin, ND on 17 July, at Beulah, ND on 18 July, and at Hannover on 20 July
93. Cropping Systems Research at the Dickinson Research Extension Center, Organic Crop Improvement Association, ND Chapter 1 Summer Tour, Dickinson Research Extension Center, Dickinson, ND, 19 July
94. Benefits of Incorporating Forages into Rotations, Crop Management Afternoon Field Tour, Dickinson Research Extension Center, Dickinson, ND, 12 July
95. Impact of Eliminating Tillage on Canola, Pea, and Wheat, Crop Management Afternoon Field Tour, Dickinson Research Extension Center, Dickinson, ND, 12 July
96. Emerging Issues with Canola: Dormant Seeding, Seeding Rates and Seeding Dates, Crop Management Morning Field Tour, Summer Field Day, Dickinson Research Extension Center, Dickinson, ND, 12 June
97. Dryland Corn Production, New Opportunities in Dryland Cropping Systems Symposium, Montana Agricultural Business Association, Holiday Inn Convention Center, Billings, MT, 16-17 February

98. Flax: Rotation Benefits and Cultural Practices, New Opportunities in Dryland Cropping Systems Symposium, Montana Agricultural Business Association, Holiday Inn Convention Center, Billings, MT, 16-17 February
  99. Dickinson Research Extension Center Research Agronomy Program Update, Taylor Institute, Taylor, ND, 26 January
  100. Benefits of Incorporating Forages into Cropping Systems, Slope County Crop Improvement Association Meeting, Community Center, Amidon, ND, and Adams County Crop Improvement Meeting, Managing for Profitable Crop Production, Hettinger Res. Ext. Ctr., Hettinger, 25 January, and Hettinger County Crop Improvement Meeting, Legion Hall, Regent, ND, 26 January
- 1999
101. Dickinson Research Extension Center Research Agronomy Program Update, Sixteenth Annual Western Dakota Crops Day, Armory, Hettinger, ND, 16 December
  102. Barley vs. Oat: Which is the Superior Forage? 48th Annual Livestock Research Roundup, Agriculture Auditorium, Dickinson State University, Dickinson, ND, 30 September
  103. Preliminary Evaluation of Pasture Legumes in an Integrated Crop-Livestock Production System, 48th Annual Livestock Research Roundup, Agriculture Auditorium, Dickinson State University, Dickinson, ND, 30 September
  104. Crop Variety Highlights and Crop Rotation Experiments, Off-Station Twilight Tour at Glen Ullin, ND on 21 July, at Beulah, ND on 28 July, and at Hannover on 27 July
  105. Production of Cool and Warm Season Annual Forages, MPU Planning Meeting for County Extension Service Agents, Stark County Extension Service Office, Dickinson, ND, 17 March, and at Adams County Crop Improvement Meeting, Hettinger Research Extension Center, Hettinger, ND, 1 February
  106. Cool-Season Annual Forage Production, Dunn County Crop Improvement Association Meeting, County Courthouse, Killdeer, ND, 2 February
  107. Cool-Season Annual Forage Production, Taylor Institute, Taylor, ND, and at the Hettinger County Crop & Livestock Improvement Association Annual Meeting, American Legion Hall, Regent, ND, 3 February
  108. Agronomics of Annual Forages, 7th Annual State Line Ag & Trade Show, Community Hall, Golva, ND, and at the Slope County Crop Improvement Day, Community Center, Amidon, ND, 4 February
  109. Annual Forage Production in Southwest North Dakota. Scranton Agriculture Institute, Community Center, Scranton, ND, 12 February
  110. Feeding Value of Pea Straw, North Dakota Dry Pea and Lentil Association Annual Meeting, International Inn, Minot, ND, 20 January
- 1998
111. Hard Red Spring Wheat Grain Quality, Rotations, Alternative and Forage Crop Research. Fifteenth Annual Western Dakota Crops Day, Armory, Hettinger, ND, 17 December
  112. Annual Forages: A Missed Opportunity? 47th Annual Livestock Research Roundup, Dickinson Research Extension Center, Dickinson, ND, 9 October
  113. Small Grain Variety Trials, Off-Station Twilight Tour at Glen Ullin, ND on 21 July, at Beulah, ND on 19 July, and at Hannover on 22 July
  114. Weed Control with Crop Rotation, Minimum Till Meeting, Bowman, ND, 15 December
  115. Research on Peas as a Forage Source, Dry Pea and Lentil Feed and Forage Seminar, North Dakota Dry Pea and Lentil Association, Dickinson, ND, 26 March
- 1997
116. Dickinson Research Extension Center Crop Research Update, Fourteenth Annual Western Dakota Crops Day, Armory, Hettinger, ND, 18 December
- 1996
117. Crop Variety Updates at Beulah, Glen Ullin, and Hannover on July 15, 16, and 17, Off-Station Twilight Tour at Glen Ullin, ND on 16 July, at Beulah, ND on 15 July, and at Hannover on 17 July
  118. Soil Quality and Cropping Systems, Dickinson Research Extension Center Summer Field Tour, Dickinson, ND, 10 July
  119. Agronomy Program, NDSU CES Agents, Unit 9 and 10 Tour, Dickinson Research Extension Center, Dickinson, ND, 27 June

120. Small Grain Diseases and Their Management, No-till Informational Meeting, Bowman, ND, 25 January
121. Cropping Practices and Their Management, Certified Crop Advisor's Workshop, Bismarck, ND, 19 January
122. Cropping Systems and Rotations, Crop Improvement Association Meeting on 4 January in Beach, ND, and 10 January in Halliday, ND
- 1995
123. Crop Variety Updates, Off-Station Twilight Tour at Glen Ullin, ND on 17 July, at Beulah, ND on 18 July, and at Hannover on 19 July
124. Agronomy Program, Dickinson Research Extension Center Advisory Committee Meeting, Dickinson, ND, 17 July
125. Weed Control in Alternative Crops, Dickinson Research Extension Center Summer Field Tour, Dickinson, ND, 12 July
126. Oat-Pea Intercropping, Hettinger Research Extension Center Crops Field Tour, Hettinger, ND, 11 July
127. Dickinson Agronomy Program, NDSU CES Agents, Units 9 and 10 Field Tour, Dickinson Research Extension Center, Dickinson, ND, 6 July
128. Peas and Oats: An Old Forage Revisited. North Dakota Forage and Grasslands Council, Bismarck, ND, 23 March
129. Crop Variety Updates, 3rd Annual State Line Agriculture and Trade Show, Golvea, ND, 8 February
130. Cropping Systems and Rotations, Taylor Institute. Taylor, on 1 February
131. Crop Variety Updates and Highlights of Ongoing Crop Production Research, Eleventh Annual Western Dakota Crops Day. Hettinger, ND, 15 December
- 1994
132. Producing Calves on Annual Pastures and Growing Cereal Grains with Peas, Research Roundup and Beef Cattle Forum, Dickinson Research Extension Center, Dickinson, ND, 2 November
133. Crop Variety Updates and Cropping System Highlights of Ongoing Crop Production Research at the Dickinson Research Extension Center, Dickinson Research Extension Center Summer Field Tour, Dickinson, ND, 6 July
134. Managing Crop Residue, Perkins County SCD Crops Residue Field Day, Lodgepole, SD, 15 September
135. Annual Forage Options, Dickinson Research Center Forage Day, Dickinson, ND, 22 February, 1994
136. Crop Variety Options, Taylor Institute, Taylor, ND, 2 February
137. Crop Research Update at the Dickinson Research Center, Golden Valley Grower Meeting, Beach, ND, 2 January
- 1993
138. Crop Variety Highlights of Ongoing Crop Production Research, Tenth Annual Western Dakota Crops Day, Hettinger, ND, 16 December
139. Crop Variety Updates, Off-Station Twilight Tour at Glen Ullin, ND on 13 July, at Beulah, ND on 22 July, and at Hannover on 14 July
140. Barley Variety updates and Barley-Pea Intercrops, North Dakota Barley Council Summer Meeting, Dickinson, ND, 8 July
141. Crop Variety Updates, Dickinson Research Center Summer Field Tour, Dickinson, ND, 7 July
142. Oat/Pea Intercropping, Hettinger Research Center Summer Field Tour, Hettinger, ND, 6 July
143. Water Management Considerations in Conservation-Tillage Systems, Grant County SCD Annual Crop Residue Management Demonstration Tour, 3 June
- 1992
144. Crop Variety Highlights of Ongoing Crop Production Research, Tenth Annual Western Dakota Crops Day, Amory, Hettinger, ND, 3 December

## **C. RESEARCH**

### **Grants and Contracts**

Submitted

*Montana State University*

2017

1. Soil acidity management of long-term no-fill fields in Montana to prevent crop failure. R. Engel (PI), P.M. Carr (Co-PI), C. Jones (Co-PI), and S. Powell (Co-PI). \$264,015/\$61,016. (PENDING)

2016

1. USDA-NIFA OREI. Z. Miller (PI), F. Menalled, K. Fuller, A. Bekkerman, **P. Carr**, and J. Gaskin (Co-PIs). Integrated management of perennial field bindweed in organic production systems in the Northern Great Plains: evaluating agronomic, economic, and environmental outcomes. \$920,593. NOT FUNDED
2. USDA-NIFA. J. Sherman (PI), S.S. Briar, and **P. Carr**. Assessing the impact of barley cultivars and cropping sequences on nematode community structures. \$596,784. NOT FUNDED

Funded

*Montana State University*

2017

1. The Montana Wheat and Barley Committee. Assessing agronomic practices to advance cereal production in Montana. **P.M. Carr** (PI). \$35,000.
2. The Montana Wheat and Barley Committee. A stripper-header for use in low-disturbance, high-residue no-till farming systems. **P.M. Carr** (PI). \$10,000.
3. The Montana Wheat and Barley Committee. Using warm-season crops to enhance wheat-based cropping system resilience. **P.M. Carr** (PI) and D. Wichman (Co-PI). \$14,846.

*Internal Equipment Funds*

1. Stripper header. \$11,000. (MAES/COA Internal Equipment Grant)
2. Forklift. \$15,000. (MAES/COA Internal Equipment Grant)

2016

1. The Montana Wheat and Barley Committee. Using warm-season crops to enhance wheat-based cropping system resilience. **P.M. Carr** (PI) and D. Wichman (Co-PI). \$9658

*Non-OSP Grant Awards*

2. Montana Fertilizer Advisory Committee. Understanding acidity and management of Montana soils. R. Engel and **P. Carr** (Co-PI). \$6570

*North Dakota State University*

1. North Dakota Department of Agriculture – Specialty Crop Block Grant Program. FUN: Using fungi and no-till to enhance organic vegetable production in North Dakota. **P.M. Carr** (PI) and G. Gramig (Co-PI). \$31,442

2014

2. The CERES Trust Organic Research Initiative. Tillage and amf inoculant impacts on organic vegetable production in the upper Great Plains. G. Gramig (PI), and **P.M. Carr** (Co-PI). \$179,821
3. USDA-NIFA OREI. Building research knowledge and community through an international organic agriculture conference. E. Mallory (PI), K. Delate, **P. Carr**, and J. Heckman (Co-PIs). \$21,686

2012

4. USDA-NIFA OREI. Targeted grazing as a keystone ecological process to reduce tillage intensity and terminate cover crops. Environmental, ecological, and economical assessment of reintegrating animal and crop production in dryland organic systems. F. Menalled (PI), P. Hatfield, **P. Carr**, P. Miller, D. Weaver, M. Burrows, R. Engel, A. Bekkerman, J. Boles, Z. Miller, R. Quinn, L. Burkle, K. O'Neill, G. Gramig, and K. Ringwall (Co-PIs). \$1,499,815

2011

5. USDA-SARE. Increasing varietal suitability and availability of cowpea and forage radish cover crop seed for northern climates. K. Stroh (PI), S. Zwinger, T. Podoll, **P. Carr**, P. Sexton, E. Silva, J. Fuhrer, and E. Steigelmeier (Co-PIs). \$191,861

2009

6. The CERES Trust Organic Research Initiative. Organic crop variety selection for Great Plains states in the north central region. **P.M. Carr** (P.I.), G. Gramig, D. Hines, F. Kutka, Y. Lawley, K. McPhee, and S. Zwinger (Co-PIs). \$156,096

7. CSREES 5-State Ruminant Consortium Special Grants Program. Using annual forages in beef cattle production systems: Effects on agronomics, livestock performance, and soil quality. G. Lardy (PI), P. Burgener, **P. Carr**, F. Casey, D. Cash, E. Eriksmoen, H. Kandel, B. Nevell, L. Overstreet, J. Paterson, J. Ritten, K. Sedivec, and V. Owens (Co-PIs). \$120,000.
8. USDA-SARE. Cover crop selection and use in organic no-till farming. **P.M. Carr** (P.I.), K. Delate, M. Haar, and E. Silva (Co-PIs). \$155,730

2008

9. USDA-CSREES Organic Transitions Program. Developing carbon-positive organic systems through reduced tillage and cover crop-intensive crop rotation schemes. K. Delate (P.I.), C. Cambardella, **P. Carr**, M. Haar, J. Moyer, D. Mutch, E. Silva, S. Weyers (Co-PI). \$855,629
10. Organic Valley Coop., Farmers Advocating for Organics Committee. Variety screening for organic vegetable production. E.M. Silva (P.I.) and **P.M. Carr** (Co-PI). \$11,006

2007

11. Organic Farming Research Foundation. Seed we need. D. Christensen (P.I.) with M. Smith, **P. Carr**, D. Boehm, C. Boehm, M. Johnson, W. Goldstein, L. Niles, and R. Pratt (Co-PIs). \$11,950

2005

12. CSREES 4-State Ruminant Consortium Special Grants Program. Ley farming systems approach to integrating crop and livestock enterprises. **P.M. Carr** (P.I.) with W.W. Poland, J.M. Krall, and K. Kephart (Co-PIs). \$103,486
13. CSREES Special Grants Program. Integrating crop and livestock production with annual forages. **P.M. Carr** (PI) \$10,000
14. CSREES Special Grants Program. Adding value to field peas: understanding the rotational benefit. **P.M. Carr** (PI) \$30,353

2002

15. USDA-SARE. Bringing small grain variety development and selection onto organic farms. **P.M. Carr** (P.I.) with B. Brummond, H. Kandel, P. Porter, T. Haigh, and S. Zwinger (Co-PIs). \$72,740
16. State Board of Agricultural Research and Education (SBARE). Expanding annual forage production and use in the Northern Great Plains. W.W. Poland and **P.M. Carr** (Co-PI's) \$5185
17. State Board of Agricultural Research and Education (SBARE). Wheat variety trials in organic environments. **P. Carr** (PI) \$3000
18. Dickinson State University. Germination of organic seed in soils managed organically and conventionally. **P.M. Carr** and G. Halone (Co-PIs). \$500
19. Organic Farming Research Foundation. Small grain cultivar selection for organic systems. **P. Carr** (P.I.) with B. Brummond, H. Kandel, P. Porter, T. Podoll, G. Schroeder, and S. Zwinger (Co-PIs) \$7706.

2001

20. USDA-SARE. Enhancing grain production of Great Plains cropping systems with a legume-pasture phase. **P. Carr** (PI) with E. DeVuyst and W.W. Poland (Co-PIs). \$42,676
21. USDA-CSREES Special Grants Program. Improving profitability and resource efficiency of alternative and conventional crops with legume pasture in western North Dakota. **P. Carr** (PI) \$39,856
22. State Board of Agricultural Research and Education (SBARE). Improving forage-legume stand establishment with new seeding methods. **P. Carr** (PI) \$4484.
23. State Board of Agricultural Research and Education (SBARE) and Northern Canola Growers Association. Developing practices for optimum canola production in southwestern North Dakota. **P. Carr** (PI). \$10,169.
24. USDA-CSREES Special Grants Program. Evaluation of alternative cool-season pulse cultivars for adaptation in North Dakota. B.G. Schatz (PI) with **P.M. Carr**, E.D. Eriksmoen, M. A. Halvorson, B.K. Hanson, B.L. Johnson, N.R. Riveland, and S.F. Zwinger (Co-PIs) \$16,620

2000

25. Northern Canola Growers Association: Harrowing impact on canola survival of early-spring frost in high-residue environments. **P. Carr** (PI). \$4250
26. USDA-SARE: Using alternative forages on traditional small grain crop land in rotational grazing systems for the Northern Great Plains. W.W. Poland (PI) with **P.M. Carr** and D.J. Nudell (Co-PIs). \$36,670

27. State Board of Agricultural Research and Education (SBARE), Northern Canola Growers: The use of polymer coating for dormant canola seeding. **P. Carr**. \$13,346  
1999
28. SBARE: Inoculation and fertilization of field pea. **P. Carr** (PI) with B. Henson, G. Endres, and K. McKay (Co-PIs). \$23,207
29. USDA-CSREES Special Grants Program: Seeding rate response to various management factors in canola production. B. Hanson (PI) with B. Johnson, **P. Carr**, E. Eriksmoen, R. Henson, and N. Riveland (Co-PIs). \$39,950
30. USDA-CSREES Special Grants Program: New canola production practices challenge researchers to provide defined techniques to producers. B. Johnson (PI) with **P. Carr**, E. Eriksmoen, B. Hanson, and N. Riveland (Co-PIs) \$34,950
31. USDA-CSREES Special Grants Program: Regional evaluation of chickpea germplasm and planting technology. R. Henson (PI) with **P. Carr**, E. Eriksmoen, N. Riveland, and B. Johnson (R. Henson PI). \$20,000
32. North Dakota Agricultural Products Utilization Commission: Barley production for forage in North Dakota. P.M. Carr and W.W. Poland (Co-PI's). \$7083
33. North Dakota Barley Council: Replacing oat with barley acreage. **P.M. Carr** and W.W. Poland (Co-PI's). \$3300
34. Foundation for Agronomic Research: Fertilization strategies for western North Dakota. P.M. Carr (PI) \$5000
35. Northern Plains Sustainable Agriculture Society, Organic Crop Improvement Association: Organic farming systems. **P. Carr** (PI) \$1500
36. National Sunflower Association: Sunflower date of seeding study in western North Dakota. Co-PI with R. Ashley. \$2293  
1996
37. USDA-CSREES Special Grants Program: Integrating crop and livestock systems with pulses and cereal-pulse intercrops. **P.M. Carr** (PI) with W.W. Poland (Co-PI). \$47,172
38. Foundation for Agronomic Research: Chloride by variety trials. R.J. Goos (PI) with B.E. Johnson and **P. Carr** (Co-PIs). \$12,000
39. Manitoba-North Dakota Zero Tillage Farmers Association: Application of soil quality indicators in no-till cropping systems **P. Carr** (PI) \$12,645  
1995
40. Minn-Dak Growers, Ltd.: A comparison of the nitrogen and phosphorus requirements of spring wheat versus buckwheat. R.J. Goos (PI) with B.E. Johnson, J.C. Gardner, and **P.M. Carr** (Co-PIs). \$20,000  
1994
41. USDA-CSRS Special Grants Program: Strategic alliance for enhancing production, processing, and marketing of buckwheat in North Dakota. J.C. Gardner (PI) with S.E. Edwardson and **P. Carr** (Co-PIs) \$6000  
1993
42. USDA-CSRS Special Grants Program: Evaluation and commercialization of lupine in North Dakota. B.G. Schatz (PI) with G. Askland, D. Klinkebiel, A. Thilmony, and **P. Carr** (Co-PIs). \$42,000  
1991
43. USDA-CSRS Special Grants Program: Soil-enhancing aspects of alternative crops. **P. Carr** (PI) with J.C. Gardner, B.G. Schatz, and D.L. Klinkebiel (Co-PIs). \$50,000

*Miscellaneous small grants, contract fee testing, and contract teaching totaled \$139,624 from 1992 through 2002; non-competitive extramural funding has continued and increased but is no longer being tracked*

## **Publications**

### Refereed Book Chapters and Proceedings

1. **Carr, P.M.**, K. Delate, X. Zhao, C.A. Cambardella, J.R. Heckman, and P.L. Carr. 2013. Organic farming: Impacts on soil, food, and human health. p. 241-258. *In* E.C. Brevik and L. Burgess (ed.) *Soils and Human Health*. Taylor and Francis Group, CRC Press, Boca Raton, FL
2. **Carr, P.M.** 2004. Oilseeds. p. 480. *In* D.A. Wishart (ed.) *Encyclopedia of the Great Plains*. Center for Great Plains Studies, Univ. of Nebraska Press, Lincoln.
3. **Carr, P.M.**, E.O. Eriksmoen, G.B. Martin, and N.R. Olson. 1996. Grain yield of oat-pea intercrop. p. 240-243. *In* J. Janick (ed.) *Progress in New Crops. Proceedings of the Third National New Crops Symposium*, Indianapolis, IN, October 22-25, 1995. Amer. Soc. of Hort. Sci. Press, Alexandria, VA.
4. **Carr, P.M.** 1993. Potential of fanweed and other weeds as novel industrial crops. p. 384-388. *In* J. Janick and J.E. Simon (ed.) *New Crops: Exploration, Research and Commercialization. Proceedings of the Second National New Crops Symposium*, Indianapolis, IN, October 6-9, 1991. John Wiley and Sons, Inc., NY.
5. Gardner, J.C., V.L. Anderson, B.G. Schatz, **P.M. Carr**, and S.J. Guldán. 1991. Overview of current sustainable agriculture research. p. 77-91. *In* B. Rice (ed.) *Sustainable agricultural research and education in the field - 1990: a proceedings*. USDA and NRC Workshop, Washington, D.C., April 3-4, 1990. National Academy Press, Washington, D.C.

#### Refereed Journal articles

##### *Montana State University*

###### *In progress*

- Arnab Bhowmik, Ann-Marie Fortuna, Larry J. Cihacek, Shafiqur Rahman, Md Saidul Borhan, and Patrick M. Carr. Use of Laboratory Incubation Techniques to estimate Green House Gas footprints from Clean and No Tillage Organic Agroecosystems

###### *Published*

1. Bhowmik, A., A. Fortuna, L.J. Cihacek, A.I. Bary, P.M. Carr, and C.G. Cogger. Potential carbon sequestration and nitrogen cycling in long term organic management systems. *Renew. Agric. And Food Sys.* (in press)
2. Reeve, J.R., L. A. Hoagland, J.J. Villalba, **P.M. Carr**, A. Atucha, C. Cambardella, D.R. Davis, and K. Delate. 2016. Organic farming, soil health, and food quality: Considering possible linkages. *Advances in Agron.* 137:319-367. doi:10.1016/bs.agron.2015/17.003

##### *North Dakota State University*

3. **Carr, P.M.**, E. Brevik, R.D. Horsley, and G.B. Martin. 2015. Long-term no-tillage sequesters soil organic carbon in cool semi-arid regions *Soil Horizons* doi: 10.2136/sh15-07-0016.
4. **Carr, P.M.**, G.B. Martin, R.D. Horsley, and M.R. Hochhalter. 2014. Barley cultivar performance following canola, corn, pea, and spring wheat. *Crop Management* 13 doi: 10.2134/CM-2014-0056-RS.
5. **Carr, P.M.**, G.B. Martin, R.D. Horsley, and M.R. Hochhalter. 2014. Malt barley cultivar ranking under long-term tillage systems in a semiarid region. *Agron. J.* 106:2067–2074 doi:10.2134/agronj14.0316
6. **Carr, P.M.**, R.D. Horsley, J.J. Gunderson, T.J. Winch, and G.B. Martin. 2013. Weed growth and crop performance following hairy vetch, rye, and wheat cover crops in a cool semiarid region. *Organic Agric.* 3(3): 149-161. doi:10.1007/s13165-013-0057-8
7. **Carr, P.M.**, G.G. Gramig, and M.A. Liebig. 2013. Impacts of organic zero tillage systems on crops, weeds, and soil quality. Online. *Sustainability* 5: 3172-3201 (INVITED). doi: 10.3390/su5073172
8. **Carr, P.M.**, R.L. Anderson, Y.F. Lawley, P.R. Miller, and S.F. Zwinger. 2012. Organic zero-till in the northern U.S. Great Plains region: Opportunities and obstacles. *Renew. Agric. and Food Sys.* 27:12-20. (INVITED)
9. **Carr, P.M.**, P. Mäder, and N.G. Creamer. 2012. Editorial. Overview and comparison of conservation tillage practices and organic farming in Europe and North America. *Renew. Agric. and Food Sys.* 27:2-6. (INVITED)
10. Kandel, H.J., P.M. Porter, and **P.M. Carr**. 2009. Spring wheat cultivar harrowing evaluation in Minnesota. *Crop Management* doi:10.1994/CM-2009-0612-02-RS.

11. Carr, P.M., R.D. Horsley, and G.B. Martin. 2009. Impact of tillage on field pea following spring wheat. *Can. J. Plant Sci.* 89: 281-288.
12. Carr, P.M., R.D. Horsley, and G.B. Martin. 2008. Wheat grain quality response to tillage and rotation with field pea. *Agron. J.* 100:1594-1599.
13. Kandel, H.J., P.M. Porter, P.M. Carr, and S.F. Zwinger. 2008. Producer participatory spring wheat variety evaluation for organic systems in Minnesota and North Dakota. *Renewable Agric. Food Sys.* 23:228-234.
14. Walley, F.L., G.W. Clayton, P.R. Miller, P.M. Carr, and G.P. LaFond. 2007. Nitrogen economy of pulse crop production in the northern Great Plains. *Agron. J.* 99:1710-1718.
15. Carr, P.M., R.D. Horsley, and G.B. Martin. 2006. Impact of tillage and crop rotation on grain yield of spring wheat I. Tillage effect. Online. *Crop Management* doi:10.1094/CM-2006-1018-01-RS.
16. Carr, P.M., R.D. Horsley, and G.B. Martin. 2006. Impact of tillage and crop rotation on grain yield of spring wheat II. Rotation effect. Online. *Crop Management* doi:10.1094/CM-2006-1018-02-RS.
17. Carr, P.M., H.K. Kandel, P.M. Porter, R.D. Horsley, and S.F. Zwinger. 2006. Wheat cultivar performance on certified organic fields in Minnesota and North Dakota. *Crop Sci.* 46: 1963-1971. doi:10.2135/cropsci2006.01-0046
18. Carr, P.M., W.W. Poland, and L.J. Tisor. 2005. Natural reseeding of forage legumes following wheat in western North Dakota. *Agron. J.* 97: 1270-1277.
19. Carr, P.M., W.W. Poland, and L.J. Tisor. 2005. Forage legume regeneration from the soil seed bank in western North Dakota. *Agron. J.* 97:505-513.
20. Berdahl, J.D., A.B. Frank, J.M. Krupinsky, P.M. Carr, J.D. Hanson, and H.A. Johnson. 2005. Biomass, yield, phenology, and survival of diverse switchgrass cultivars and experimental strains in western North Dakota. *Agron. J.* 97:549-555. doi:10.2134/agronj2005.0549
21. Carr, P.M., W.W. Poland, and L.J. Tisor. 2004. Barley, oat, and cereal-pea mixtures as dryland forages in the northern Great Plains. *Agron J.* 96:677-684.
22. Carr, P.M., R.D. Horsley, and W.W. Poland. 2003. Tillage and seeding rate effects on genotypes in wheat-fallow monoculture I. Grain production. *Crop Sci.* 43:202-209. doi:10.2135/cropsci2003.2020
23. Carr, P.M., R.D. Horsley, and W.W. Poland. 2003. Tillage and seeding rate effects on genotypes in wheat-fallow monoculture II. Plant growth. *Crop Sci.* 43:210-218. doi: 10.2135/cropsci2003.2100
24. Entz, M.H., V. S. Baron, P.M. Carr, D.W. Meyer, S.R. Smith, Jr., and W.P. McCaughey. 2002. Potential of forages to diversify northern Great Plains cropping systems *Agron. J.* 94:240-250.
25. Goos, R.J., B.E. Johnson, and P.M. Carr. 2001. Establishment of *Bradyrhizobium japonicum* for soybean by inoculation of a preceding wheat crop. *Plant and Soil* 235:127-133.
26. Carr, P.M., G.B. Martin, and W.W. Poland. 2001. Grain yield and quality of hard red spring wheat cultivars following fallow and wheat. *Can. J. Plant Sci.* 81:399-404. doi:10.4141/P00-039
27. Carr, P.M., W.W. Poland, J.C. Caton, and G.B. Martin. 1998. Forage and N yield of barley-pea and oat-pea intercrop. *Agron. J.* 90:79-84.
28. Carr, P.M., G.B. Martin, and J.C. Harris. 1997. Postplant tillage provides limited weed control in flax, lentil, and spring wheat. *North Dakota Agric. Res.* [Online], 13 pages. Available: <http://www.ag.ndsu.nodak.edu/ndagres/fall97/arfall97.htm>.
29. Carr, P.M., J.C. Gardner, B.S. Schatz, S.F. Zwinger, and S.J. Guldán. 1995. Grain yield and weed biomass of a wheat-lentil intercrop. *Agron. J.* 87:574-579.
30. Carr, P.M., B.S. Schatz, J.C. Gardner, and S.F. Zwinger. 1993. Grain yield and returns from intercropping wheat and flax. *J. Prod. Agric.* 6:67-72.
31. Carr, P.M., B.S. Schatz, J.C. Gardner, and S.F. Zwinger. 1992. Intercropping sorghum and pinto bean in a cool semiarid region. *Agron. J.* 84:810-812.
32. Carr, P.M., J.S. Jacobsen, G.R. Carlson, and G.A. Nielsen. 1992. Influence of soil and N fertilizer on performance of barley and spring wheat cultivars. *Can. J. Plant Sci.* 72:651-662. doi: 10.4141/cjps92-081
33. Carr, P.M., G.R. Carlson, J.S. Jacobsen, G.A. Nielsen and E.O. Skogley. 1991. Farming soils, not fields: a fertilizer strategy for achieving maximum economic yield. *J. Prod. Agric.* 4:57-61.

Reviewed Proceedings

Montana State University



1. Briar, S.S., **P.M. Carr**, G.G. Gramig, F.D. Menalled, and P.R. Miller. 2016. Current status and soil biology impacts of organic conservation tillage in the U.S. Great Plains. International seminar on emerging trends in organic farming and sustainable agriculture to be held on 29, 30 and 31 December 2016, Mahatma Gandhi University, Kottayam, Kerala, India (Invited)

North Dakota State University

2. Goos, R.J., B. Johnson, E. Eriksmoen, J. Nelson, G. Martin, **P. Carr**, N. Riveland, and G. Bradbury. 2008. Calibration of the nitrate soil test for malting barley in western North Dakota. In Anonymous (ed.) *Great Plains Soil Fertility Conference*, March 4-5, Denver CO.
3. **Carr, P.M.** 2006. Crop rotation benefits of annual forages. In Anonymous (ed.) *Manitoba-North Dakota zero tillage workshop*, February 7-8, 2006, Bismarck, ND. Vol. 30. [CD-ROM computer disk]. Manitoba-North Dakota Zero Tillage Farmers Assoc.
4. **Carr, P.M.**, P.M. Porter, H.J. Kandel, B.T. Brummond, S.F. Zwinger, and T.R. Haigh. 2003. Moving small-grain variety testing onto organic farms. In *Organic Agriculture Symposium, 2003 Annual Meetings* [CD-ROM computer disk]. Minnesota Institute of Sustainable Agriculture, St. Paul, MN.
5. **Carr, P.M.**, and W.W. Poland. 2003. Reducing input costs with multiple enterprises. p. 124-132. In J.D. Hanson and J.M. Krupinsky (eds.) *Dynamic Cropping Systems: Principles, Processes, and Challenges*. August 4-7, Bismarck, ND.
6. **Carr, P.M.**, E.J. Deibert, Greg J. Endres, Robert A. Henson, Brian M. Jenks, Liebig, M.A., Dwain W. Meyer, Blaine G. Schatz, and James A. Staricka. 2002. Cropping Systems Research in North Dakota. p. 10-13. In M. Draper (ed.) *Four-State Cropping Systems Conference, Diversifying Rotations with Alternative Crops*, March 7-8, Pierre, SD.
7. **Carr, P.M.** 2002. The role of pulses in cropping systems. p. 129-132. In Anonymous (ed.) *Manitoba-North Dakota zero tillage workshop*, January 29-30, 2001, Minot, ND. Vol. 24.
8. **Carr, P.M.**, W.W. Poland, and L.J. Tisor. 2001. Nitrogen fertilizer does not enhance yield or quality of forage-pea in low-nitrogen environments. p. 248-251. In T. Terrill (ed.) *American Forage and Grasslands Council Annual Meeting*. Vol. 10. Georgetown, TX.
9. **Carr, P.M.** Dryland corn production. 2000. In Anonymous (ed.) *New Opportunities in Dryland Cropping Systems*, Montana Agricultural Business Association, Holiday Inn Convention Center, February 16-17, Billings. <http://Scarab.msu.montana.edu/DryCropSystem/>
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27. Schultz, E.G., Jr., **P.M. Carr**, L.J. Greer, and H.P. Draper III. 1986. Fuelwood substitutes for Third World drylands: seeds and dried roots of annual and perennial plants. *In* Anonymous (ed.) *Tenth Annual IGT Symposium on Energy from Biomass and Wastes*, Washington, D.C., April 7-10.
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Reviewed Abstracts (● invited symposia oral paper)

1. *Beamer, K.P., P.Carr, and G. Gramig. Vegetable crop performance, soil quality, and weed suppression as impacted by tillage system and AMF inoculant. MOSES*
2. **Carr, P.M.**, G.G. Gramig, and S. Hodgstad. Long-term organic zero-tillage challenges in the U.S. Great Plains. *In* 2016 Annual Meeting Abstracts, ASA, CSSA, and SSSA, Madison, WI.
3. Nielsen, D.C., M.F. Vigil, P.R. Miller, H. Cutforth, **P.M. Carr**, J.J. Halvorson, J.D. Holman, M.A. Liebig, P.C. Story, Future dryland cropping systems shifts for the US and Canadian Great Plains. *In* 2016 Annual Meeting Abstracts, ASA, CSSA, and SSSA, Madison, WI.
4. **Carr, P.M.**, E.C. Brevik, R.D. Horsley, and G.B. Martin. 2016. Sequestration of Soil Organic Carbon by Long-Term No-Tillage in a Cool Semi-Arid Region. *In* Geophysical Research Abstracts Vol. 18, EGU2016-1297, Vienna, Austria.
5. *Gramig, G. 2016. Mulch and biochar impacts on organic strawberry establishment*
6. *Gramig, G. 2016. Investigating the potential of hay mulch and AMF inoculant for small-scale organic vegetable crop production. Western Society of Weed Science.*

7. Carr, P.L. and **P.M. Carr**. Garden to table: A natural marriage between dieticians and crop scientists in the classroom. *In* 2015 Annual Meeting Abstracts, ASA, CSSA, and SSSA, Madison, WI.
8. **Carr, P.M.**, G.G. Gramig, and S. Hodgstad. Continuous zero-till organic wheat production: defining the limits. *In* 2015 Annual Meeting Abstracts, ASA, CSSA, and SSSA, Madison, WI.
9. **Carr, P.M.**, R.D. Horsley, E.C. Brevik, and G.B. Martin. Impacts of long-term no-tillage on soil organic carbon and pH in the northern Great Plains. *In* 2015 Annual Meeting Abstracts. ASA, CSSA, and SSSA, Madison, WI.
10. • **Carr, P.M.**, J.R. Reeve, A. Atucha, L.A. Hoagland, and J. Villalba. Linking soil quality to human nutrition: The organic farming connection. *In* 2015 Annual Meeting Abstracts. ASA, CSSA, and SSSA, Madison, WI.
11. Bhomik, A., A.M. Fortuna, L.J. Cihacek, A.I Bary, **P.M. Carr**, and C.G. Cogger. Potentail carbon sequestration and nitrogen cycling in long term organic management systems. *In* 2015 Annual Meeting Abstracts. ASA, CSSA, and SSSA, Madison, WI.
12. Bhomik, A., A.M. Fortuna, L.J. Cihacek, and **P.M. Carr**. Use of laboratory incubation techniques for estimate GHG footprints from clean and no-tillage organic agroecosystems. *In* 2015 Annual Meeting Abstracts. ASA, CSSA, and SSSA, Madison, WI.
13. Gramig, G.G., and **P.M. Carr**. 2015. Weed seed predation dynamics in no-till and tilled organic wheat, *Proceeding of the Western Society of Weed Science* 68:xx.
14. **Carr, P.M.**, and G.G. Gramig. Continuous organic zero-till: Elusive or illusory. *In* 2014 Annual Meeting Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
15. **Carr, P.M.**, R.D. Horsley, G.B. Martin, and M. Hochhalter. Barley cultivar ranking under long-term tillage systems in a semiarid region *In* 2014 Annual Meeting Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
16. Reeve, J.R., A. Atucha, C.A. Cambardella, **P.M. Carr**, D. Davis, K. Delate, L.A. Hoagland, J.M. Grossman, K. Jacobsen, and J. Villalba. Organic farming, soil health, and food crop quality: Considering possible linkages. *In* 2014 Annual Meeting Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
17. **Carr, P.M.**, G.B. Martin, R.D. Horsley, and M.R. Hockhalter. Barley cultivar performance following canola, corn, pea, and spring wheat. *In* 2013 Annual Meeting Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
18. Heckman, J.R., K. Delate, **P.M. Carr**, C.A. Cambardella, K. Leval, J. Sooby, A-M. Fortuna. Committee on organic and sustainable agriculture (COSA), accomplishments 2003 – 2013. *In* 2013 Annual Meeting Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
19. **Carr, P.M.**, G.B. Martin, R.D. Horsley, and M.R. Hockhalter. Barley cultivar ranking under contrasting tillage systems in a semiarid region. *In* 2012 Annual Meetings Abstracts [CD-ROM computer disk] . ASA, CSSA, and SSSA, Madison, WI.
20. **Carr, P.M.**, T. Winch, and G.B. Martin. Suppressing weeds with rolled-crimped cover crops in the northern Great Plains. *In* 2011 Annual Meetings Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
21. **Carr, P.M.** C.A. Cambardella, C.G. Cogger, K.M. Delate, W.B. Evans, J. Reeve, and X. Zhao. A new multi-state research coordinating committee for linking food quality to soil health benefits following adoption of organic management systems. *In* 2011 Annual Meetings Abstracts, American Society of Horticultural Science annual meeting, 21-25 September, Waikoloa Village, HI.
22. • **Carr, P.M.** R. Anderson, Y. Lawley, P. Miller, and S.F. Zwinger. Organic zero-till in the dryland U.S. plains region: Opportunities and obstacles. *In* 2010 Annual Meetings Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
23. • **Carr, P.M.**, Y. Lawley, R.S. Little, D. Lyon, P. Miller. and S.F. Zwinger. Organic grain production in the U.S. Great Plains: Challenges and Opportunities. *In* 2010 Annual Meetings Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
24. Silva, E., and **P. Carr**. Linking plant production traits with performance in organic systems. *In* 2009 Proceedings, ASHS Annual Meeting, St. Louis, MO.
25. **Carr, P.**, N.G. Creamer, K.M. Delate, T.S. Kornecki, P. Miller, S.B. Mirsky, J. Moyer, and P. Mäder, 2009. Eliminating tillage in organic farming systems: Progress and Obstacles. *In* 2009 Annual Meetings Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.
26. **Carr, P.**, G. Martin, and R. Horsley. 2008. Impact of tillage and crop rotation on wheat grain quality. *In* 2008 Annual Meetings Abstracts [CD-ROM computer disk]. ASA, CSSA, and SSSA, Madison, WI.

27. • Pollak, L., **P. Carr**, W. Goldstein, and S. Zwinger. 2007. Developing and choosing annual grain crops for organic farming. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
28. **Carr, P.M.**, R.D. Horsley, and G.B. Martin. 2006. Impact of tillage and pea rotation effects on grain quality of spring wheat. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
29. • **Carr, P.M.**, H.J. Kandel, P.M. Porter, R.D. Horsley, and Steven F. Zwinger. 2006. Agronomic performance of modern oat cultivars on certified organic fields in Minnesota and North Dakota. p. 22. American Oat Workers Conf., 23-26 July, Fargo, ND.
30. **Carr, P.M.**, and W.W. Poland. 2005. Integrating crops and livestock by ley farming in North Dakota. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
31. • Clayton, G., P. Miller, Y. Gan, R. Blackshaw, **P. Carr**, B. Gossen, K.N. Harker, G. LaFond, J. O'Donovan, and O. Olfert. 2005. Ecological pulse crop management. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
32. **Carr, P.M.**, H.J. Kandel, P.M. Porter, R.D. Horsley, and Steven F. Zwinger. 2005. Wheat cultivar performance in certified organic environments in Minnesota and North Dakota. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
33. • Entz, M.H., **P.M. Carr**, C. Francis, and D. Tanaka. 2005. Integrated crop-livestock systems in nonirrigated, semiarid and subhumid environments. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
34. • Walley, F.L., G. Clayton, P. Miller, **P.M. Carr**, and G. LaFond. Nitrogen economy of pulse crop production in the northern Great Plains. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
35. • **Carr, P.M.** 2005. Ley farming: A North Dakota perspective. *In Western Society of Crop Science Annual Meeting Abstracts [CD-ROM computer disk]*. CSSA, Madison, WI.
36. **Carr, P.M.** and W.W. Poland. 2005. Integrating crops and livestock by ley farming in North Dakota. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
37. **Carr, P.M.**, W.W. Poland, and L.J. Tisor. 2004. Wheat yield following regenerating legume forages. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
38. Gaugler, S.E., W.W. Poland, **P.M. Carr**, and L.J. Tisor. 2004. Integrating forage into a traditional cropping system. 3<sup>rd</sup> Annual Undergraduate Research Conference. Dickinson State University, Dickinson, ND.
39. • Baltensperger, D., and **P.M. Carr**. 2003. Role of annual forages in continuous systems. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
40. • **Carr, P.M.**, P.M. Porter, H.J. Kandel, S.F. Zwinger, and T.R. Haigh. 2003. Moving small-grain variety testing onto organic farms. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
41. **Carr, P.M.**, W.W. Poland, and L.J. Tisor. 2003. Reseeding potential of forage legumes in the Great Plains. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
42. **Carr, P.M.**, R.D. Horsley, W.W. Poland, and L.J. Tisor. 2002. Forage yield and quality of cool season cereals. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
43. Oe, D. M., G.P. Lardy, W.W. Poland, and **P. Carr**. 2003. Effects of advancing season on nutrient quality of alfalfa and black medic in southwestern North Dakota. *J. Anim. Sci.* 81(Suppl. 2):78.
44. Poland, W. and **P.M. Carr**. 2003. Effect of various alternative forages on late summer forage production and grazing livestock performance. *J. Anim. Sci.* 81(Suppl. 2):78.
45. Henson, R.A., B.K. Hanson, B.L. Johnson, K.R. McKay, N.R. Riveland, E.D. Eriksmoen, and **P.M. Carr**. 2002. Canola dormant seeding in North Dakota. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
46. **Carr, P.M.**, R.A. Henson, W.W. Poland, M.E. Halvorson, K.R. McKay, and G.R. Endres. 2001. Effects of pop-up nitrogen and phosphorus fertilizer on pea *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.

47. **Carr, P.M.**, W.W. Poland, and L.J. Tisor. 2001. Comparison of barley and oat cultivars for forage yield and quality. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
48. Hanson, B.K., B.L. Johnson, R.A. Henson, N.R. Riveland, **P. Carr**, and M. Zarnstorff. 2001. Seeding rate response to various management factors in canola production. *In Annual Meetings Abstracts [CD-ROM computer disk]*. ASA, CSSA, and SSSA, Madison, WI.
49. **Carr, P.M.**, R.D. Horsley, and W.W. Poland. 2000. Tillage and seeding rate effects on spring wheat genotypes. p. 129. Amer. Soc. Agron. 92<sup>nd</sup> Annual Meeting, Minneapolis, MN, November 5-9.
50. **Carr, P.M.**, W.W. Poland, L.J. Tisor. 1999. Growth stage effects on forage yield and quality of cereal/pea intercrops. p. 142. Amer. Soc. Agron. 91<sup>st</sup> Annual Meeting, Salt Lake City, UT, October 31-November 4.
51. ●Entz, M.H., D.W. Meyer, **P. Carr**, P. McCaughey, V. Baron, and D. Cash. 1999. Potential of forages to diversify cropping systems in the northern Great Plains of Canada and the U.S. p. 61. Amer. Soc. Agron. 91<sup>st</sup> Annual Meeting, Salt Lake City, UT, October 31-November 4, 1999.
52. Poland, W.W., **P.M. Carr**, and L.J. Tisor. 1999. Feeding value of field pea forage and grain for growing beef heifers. *J. Anim. Sci.* 77(Suppl. 1):80.
53. Ashley, R.O., M.P. McMullen, **P.M. Carr**, J.A. Staricka, and E.D. Eriksmoen. 1998. Impact of root disease on dryland wheat in western North Dakota. p. 109. Amer. Soc. Agron. 90<sup>th</sup> Annual Meeting, Baltimore, MD, October 18-22.
54. **Carr, P.M.**, and G.B. Martin. 1997. A spring wheat cultivar by cropping system interaction exists. p.103. Amer. Soc. Agron. 89<sup>th</sup> Annual Meeting, Anaheim, CA, October 26-31.
55. **Carr, P.M.**, and W.W. Poland. 1997. Barley-pea and oat-pea intercrop can be grazed or grown for grain and seed. p. 15. *In T. Hanson (ed.) Proc., 21<sup>st</sup> Century Agriculture - Creating a Sustainable Future*, Aberdeen, SD, March 5-6.
56. Poland, W., **P. Carr**, and L. Manske. 1997. Grazing annual forages in the northern Great Plains. *J. Anim. Sci.* 75(1):204.
57. **Carr, P.M.**, and G.B. Martin. 1996. Forage and N yield of barley-pea and oat-pea intercrops. p. 115. Amer. Soc. Agron. 88<sup>th</sup> Annual Meeting, Indianapolis, IN, November 3-8.
58. **Carr, P.M.**, E.D. Eriksmoen, G.B. Martin, B.A. Melchior and R. Olson. 1995. Intercropping oat and pea for grain. p 77. *In J. Janick (ed.) Progress in New Crops - Third National New Crops Symposium*, Indianapolis, IN, October 22-25.
59. **Carr, P.M.**, E.D. Eriksmoen, J.C. Gardner, J.J. Hammond, J.J. Hanzel, B.K. Hanson, N.R. Riveland, B.G. Schatz, A.A. Schneiter, and M. Zarnstorff. 1995. Industrial oilseed production and research in North Dakota. p. 12. *In J. Janick (ed.) Association for the Advancement of Industrial Crops Annual Meeting*, Indianapolis, IN, October 21-22.
60. Harris, J.D., and **P.M. Carr**. 1995. Mechanical weed control in flax and lentils with rotary hoeing and harrowing. Western Society of Weed Science 48<sup>th</sup> Annual Meeting, Sacramento, CA, March 13-16.
61. **Carr, P.M.**, J.C. Gardner, and B. Miller. 1994. Influence of spring wheat-field pea intercrop on Soil-N. p. 83. Amer. Soc. Agron. 86<sup>th</sup> Annual Meeting, Seattle, WA, November 13-18.
62. Montagne, C., J. Ahlers, **P. Carr**, K. Graham, and C. Orchard. 1994. Assessing the process of holistic resource management. p. 89. Amer. Soc. Agron. 86<sup>th</sup> Annual Meeting, Seattle, WA, November 13-18.
63. **Carr, P.M.**, B.G. Schatz, J.C. Gardner, S. Edwardson, and S.J. Guldan. 1993. Intercropping wheat and lentil in a cool semiarid region. p. 75. Amer. Soc. Agron. 85<sup>th</sup> Annual Meeting, Cincinnati, OH, November 7-11.
64. ●**Carr, P.M.**, and K.A. Ringwall. 1993. Improving communication: a North Dakota research center's integration of extension, research and teaching. p. 63. Amer. Soc. Agron. 85<sup>th</sup> Annual Meeting, Cincinnati, OH, November 7-11.
65. Schatz, B.G., S.F. Zwinger, **P.M. Carr**, and J.C. Gardner. 1992. Intercropping flax and lentil in the Northern Great Plains. p. 155. Amer. Soc. Agron. 84<sup>th</sup> Annual Meeting, Minneapolis, MN, November 1-5.
66. **Carr, P.M.**, and J.C. Gardner. 1991. Grain and nitrogen yield of spring wheat-field pea intercrop in a cool semiarid region. p. 140. Amer. Soc. Agron. 83<sup>rd</sup> Annual Meeting, Denver, CO, October 27-November 1.

67. ●Gardner, J.C., B.G. Schatz, and **P.M. Carr**. 1991. Crambe - the cost of a new crop. p. 144. Amer. Soc. Agron. 83<sup>rd</sup> Annual Meeting, Denver, CO, October 27-November 1.
68. **Carr, P.M.** 1991. Potential of fanweed and other weeds as novel industrial crops. Second National Symposium for New Crops: Exploration, Research, Commercialization, Indianapolis, IN, October 6-9.
69. **Carr, P.M.**, J.C. Gardner, and B.G. Schatz. 1990. Multiple cropping in the Northern Great Plains. p. 138. Amer. Soc. Agron. 82<sup>nd</sup> Annual Meeting, San Antonio, TX, October 21-25.
70. Gardner, J.C., B.G. Schatz, B.S. Miller, S.F. Zwinger, **P.M. Carr**, and D.L. Klinkebiel. 1990. Long-term cropping systems research in the Northern Great Plains. p. 143. Amer. Soc. Agron. 82<sup>nd</sup> Annual Meeting, San Antonio, TX, October 21-25.
71. Klinkebiel, D.L., **P.M. Carr**, J.C. Gardner, and B.G. Schatz. 1990. Development of alternative crops for the Northern Great Plains. p. 148. Amer. Soc. Agron. 82<sup>nd</sup> Annual Meeting, San Antonio, TX, October 21-25.
72. **Carr, P.M.** 1990. Farming soils, not fields: varying fertilizer and cultivars within fields to increase profitability and enhance environmental quality. Diss. Abs. 51(2):480B.
73. **Carr, P.M.**, J.S. Jacobsen, G.A. Nielsen, and E.O. Skogley. 1988. Farming soils, not fields - a fertilizer strategy for achieving maximum economic yield. p. 273. Amer. Soc. Agron. 80<sup>th</sup> Annual Meeting, Anaheim, CA, November 27-December 2.
74. **Carr, P.M.**, G.R. Carlson, J.S. Jacobsen, and G.A. Nielsen. 1988. Farming soils, not fields: a fertilizer strategy for reducing soil erosion and improving groundwater quality. p. 230. Amer. Soc. Agron. 80<sup>th</sup> Annual Meeting, Anaheim, CA, November 27-December 2.
75. **Carr, P.M.**, D. Long, C. Montagne, and G.A. Nielsen. 1987. Geographic information systems for Montana agriculture. Soil Cons. Soc. Amer. Abs., Soil Conservation Society of America's 42<sup>nd</sup> Annual Meeting, Billings, MT, Aug. 2-5, 1987.

#### Reviewed Extension Circulars

1. **Carr, P.M.** 2002. Extending the grazing system in North Dakota. NC 225 special publication. Iowa State Univ. Press.
2. Franzen, D., **P. Carr**, and G. Endres. 2002. Fertilizing field pea and lentil. Coop. Ext. Serv. Circ. SF-725 (rev.)

#### Technical Reports (many were reviewed)

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98. Nalewaja, J.D., N.R. Riveland, B.G. Schatz, **P.M. Carr**, and M.M. Miller. 1994. Herbicide combinations for broadleaf weed control in wheat. Res. Rep. North Cent. Weed Sci. Soc. 51:40-41.
99. Nalewaja, J.D., N.R. Riveland, A.L. Thilmony, **P.M. Carr**, E.D. Eriksmoen, and B.G. Schatz. 1994. Broadleaf and grass weed control in wheat. Res. Rep. North Cent. Weed Sci. Soc. 50:71-73.
100. **Carr, P.**, E. Eriksmoen, G. Martin, B. Melchior, and R. Olson. 1994. Eleventh Annual Western Dakota Crops Day Annual Report. North Dakota State Univ., Hettinger Research Extension Center. 72 p.
101. **Carr, P.**, G. Martin, and B. Melchior. 1994. Alternative crops and cropping systems. North Dakota State Univ., Dickinson Research Extension Center. Misc. Rep. 12 p.
102. **Carr, P.**, G. Martin, and B. Melchior. 1994. Small grain crops in southwestern North Dakota. North Dakota State Univ., Dickinson Research Extension Center. Misc. Rep. 16 p.
103. **Carr, P.**, G. Martin, and B. Melchior. 1994. Wheat production systems for southwestern North Dakota. North Dakota State Univ., Dickinson Research Extension Center. Misc. Rep. 10 p.
104. **Carr, P.**, E. Eriksmoen, G. Martin, B. Melchior, and R. Olson. 1993. Tenth Annual Western Dakota Crops Day Annual Report. North Dakota State Univ., Hettinger Research Extension Center. 77 p.
105. **Carr, P.**, E. Eriksmoen, G. Martin, B. Melchior, and R. Olson. 1992. Ninth Annual Western Dakota Crops Day Annual Report. North Dakota State Univ., Hettinger Research Extension Center. 71 p.
106. **Carr, P.M.**, B.G. Schatz, S.F. Zwinger, and J.C. Gardner. 1992. Potential of flax-wheat and flax-lentil intercrops in the northern Great Plains. p. 64-68. 1992. In J.C. Gardner (ed.) Alternative crops and alternative crop production research: a progress report. North Dakota State Univ., Carrington Research Extension Center, Carrington.
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115. **Carr, P.**, B. Schatz, J. Gardner, and S. Zwinger. 1991. Agronomic performance of wheat-lentil intercrops. North Dakota State Univ. Carrington Research Extension Center. Crop and Livestock Review 32:6.
116. Gardner, J.C., B.G. Schatz, **P.M. Carr**, K. Klinkebiel, S.F. Zwinger, and M. Hollatz. 1991. Field scale - evaluation of crambe as an alternative crop. Prog. Rep. North Dakota State Univ., Fargo.
117. Schatz, B.G., **P.M. Carr**, J.C. Gardner, and S.F. Zwinger. 1991. Influence of flax and lentil intercrop on grain yield and lentil harvestability. p. 90-91. In J.C. Gardner (ed.) Alternative crops and alternative crop production research: a progress report. Carrington Research Extension Center, Carrington.
118. **Carr, P.M.**, D. Klinkebiel, B.G. Schatz, and J.C. Gardner. 1990. Alternative and new crops. p. 6-11. In J.C. Gardner (ed.) North Dakota State Univ. Carrington Research Extension Center, 1989-90 Report of Progress.
119. **Carr, P.M.**, B.G. Schatz, and J.C. Gardner. 1990. Multiple cropping. p. 11-12. In J.C. Gardner (ed.) North Dakota State Univ. Carrington Research Extension Center, 1989-90 Report of Progress.

#### Paper Presentations

*Invited professional (These are in addition to 13 invited presentations listed under the Abstracts sub-section of Publications; each abstract in that section was accompanied by an oral presentation)*

14. Cropping Systems Research at the Dickinson Research Extension Center, NDSU Research Extension Center Research Update, Best Western/Double Wood Inn Conference Center, 2 October, 2014
15. Contributions from a Distance: Opportunities Not Obstacles. Department of Plant Sciences faculty seminar, University of Wyoming, Laramie, WY, 15 April, 2014
16. Building the Three-Legged Stool at an REC. Faculty and farmer advisory board seminar, University of Wyoming seminar, Powell Research and Extension Center, Powell, NE, 14 April, 2014
17. Leadership at the Land Grant Institution Research and Extension Center. Faculty and administration seminar, University of Nebraska Panhandle Research and Extension Center, Scottsbluff, NE, 29 January, 2014
18. From the Mountains to the Prairies: Emerging Dryland Crop and Integrated Crop/Livestock System in Western North Dakota. Faculty and graduate student seminar series, Department of Plant, Soils, and Climate, Utah State University, Logan, 11 November, 2013
19. No-Till Organic Farming: Fact or Fiction? Faculty and graduate student seminar series, Department of Plant Sciences, North Dakota State University, Fargo, ND, 5 December, 2008
20. Organic Farming: Search for Agricultural Sustainability in the Buffalo Commons. Invited Scientist Seminar, USDA-ARS North Central Soil Conservation Research Laboratory, Morris, MN, 12 July, 2007
21. Wheat Cultivar Performance on Certified Organic Fields in Minnesota and North Dakota., Faculty and graduate student seminar, Department of Agronomy and Plant Genetics, University of Minnesota. 26 June 26, 2006
22. Ley Farming: A North Dakota Perspective. Western Crops Science Society Annual Meeting, Bozeman, MT, 22 June, 2005
23. The Importance and Need of Water Use Efficiency in Northern Great Plains Agriculture. Keynote address, Northern Great Plains Cropping Systems Conference, 22 March, 2005
24. Integrated Crop-Livestock Systems: New Approaches to an Old Concept. Faculty and graduate student seminar, Department of Land and Environmental Sciences, Montana State University, Bozeman, 7 January, 2004
25. Dryland Crop Rotations. Faculty and graduate student seminar, Department of Plant, Soil, and Entomological Sciences, University of Idaho, Moscow, 2 June, 2000
26. Tillage, Seeding Rate, and Cultivar Effects on Grain Yield and Protein of Spring Wheat. Faculty and graduate student seminar, Department of Plant, Soil, and Entomological Sciences, University of Idaho, Moscow, 1 June, 2000

27. Challenges and Opportunities of Directing Agronomic Research at an Off-campus Research Facility. Faculty and graduate student seminar, NDSU Department of Plant Sciences, Fargo, 5 February, 1999
28. Obtaining and Using Data from Research Centers. NDSU CES Area/State Specialists meeting, Bismarck, 15 April, 1998
29. Cropping Systems. ND Board of Agricultural Research, Fargo, 24 November, 1997

#### **D. TEACHING**

##### Guest Lectures

###### *Montana State University*

Nov. 15, 2016 – Cereal annual forages, AGSC 342, Forages, 40 students

Feb. 25, 2016 - C-sequestration in No-Till and Organic No-Till Systems, AGSC 428/LRES 529, Sustainable Cropping Systems, 21 students

##### Regular Courses Taught

###### *Dickinson State University*

2015- SOIL 322 Soil Fertility and Fertilizers (3 cr. annually)

2013- PLSC 325 Principles of Weed Science (3 cr: annually)

1992- PLSC 225 Principles of Crop Production (3 cr: annually - not taught during 2006-2011)

1992-2013 PLSC 110 World Food Crops (3 cr with two lab sections: annually - not taught during 2006-2009)

2003-2006 PLSC 492 Forages and Forage Systems (3 cr. - developed and then taught course annually)

1992-1996 SOIL 210 Soil Science (4 cr with one lab, annually)

1992-1996 SOIL 322 Soil Fertility and Fertilizers (3 cr - even years)

1992-1996 SOIL 321 Soil Management and Conservation (3 cr – developed and then taught course in odd years)

##### Special Courses Taught

2015- From Food to Plate, CommUniversity Team-Taught Course, Dickinson State University (Saturdays, February)

##### Graduate Student Committees

###### *Montana State University*

2016 Tessa Scott, M.S. Candidate (Major Advisor: Fabian Menalled)

2016 Andrew Burkhardt, Ph.D. Candidate (Major Advisor: Jamie Sherman)

###### *North Dakota State University*

2016 Samantha Hogstad, M.S. Candidate, Weed Science (Major Advisor: G. Gramig)

2013 Aman Amand, M.S. Candidate, Weed Science (Major Advisor: G. Gramig)

1997 Di Zhang, M.S., Soil Science (Major Advisor: J. Goos)

1996 Phil Boeve, Ph.D., Entomology (Major Advisor: M. Weiss)

##### Other

###### *Montana State University*

2016 On-site faculty advisor, Joe Jensen, CARC student internship

###### *North Dakota State University*

2015 Faculty supervisor, undergraduate student interns, Allan Peterson (NDSU) and Mike Adsero (DSU)

2013 Judge (1 of 3) of graduate student posters in the Organic Management Systems contest at the American Society of Agronomy Annual Meeting

2002-2015 Faculty advisor/co-advisor of undergraduate student research projects required of agricultural science majors at Dickinson State University

CV – P.M. Carr

- 2003 On-site faculty advisor for senior research project of undergraduate student intern in the Department of Animal and Range Science, NDSU
- 1994-1996 Advisor for 5 to 7 undergraduate students in Agriculture and Technical Studies majors at Dickinson State University annually

**E. COMMUNITY**

- 1994-2015 Lector, Queen of Peace Catholic Church
- 2003 Dickinson Catholic Schools Strategic Planning Committee – Governance Task Force
- 2002-2005 Member, Practices and Policies Committee, Trinity High School
- 1998-2001 Member, Parish Council, Queen of Peace Catholic Church
- 1996-1997 Member and Vice-President, Parent-Teacher Organization, St. Patrick’s Parochial School
- 1996-2000 Assistant Instructor, Jordheim’s Taekwondo, Dickinson, ND location
- 1993-1994 Member and Director, Agriculture Committee, Dickinson Area Chamber of Commerce