

Curriculum Vitae: Natalie J. Carroll

EDUCATION:

Degree	Year	Institution
Ph.D. – Agricultural Engineering	1993	Michigan State University
M.S. – Agricultural Engineering	1983	Michigan State University
B.S. – Mathematics	1977	Michigan State University

PURDUE AND OTHER PROFESSIONAL APPOINTMENTS:

Professor, Youth Development and Agricultural Education (80%), and Agricultural & Biological Engineering (20%) (2006-present)
Associate Professor, Youth Development and Agricultural Education (80%), and Agricultural & Biological Engineering (20%) (2000-2006)
Courtesy Appointment, Forestry & Natural Resources, (2001-2005)
Assistant Professor, 4-H Youth Development (1995-2000), and Agricultural & Biological Engineering (20% from 1998-2000)
Courtesy Appointment, Agricultural & Biological Engineering (1996-1998)
Guest Lecturer, Agricultural Engineering, Michigan State University (1985-1993)
Instructor, Agricultural Engineering, Michigan State University (Fall 1989)
High School Teacher – math, science, GED preparation (1977-1981)

AWARDS AND HONORS:

Sensible Disposal of Unwanted Medicine, APEX Award for Publication: Green Materials, 2011
Private Water Systems (MWPS-14, 5th edition), Blue Ribbon Award, Educational Aids Competition, Comprehensive (long) publication, American Society of Agricultural and Biological Engineers, 2010
PUCESA (Purdue University Cooperative Extension Service Association) Mid-Career Award, 2010
Forests of Fun, 4-H Forestry Curriculum and Supporting Website, Award for Excellence (High Distinction), Mixed Media – Youth & Teacher Education, Southern Regional Extension Forestry Award Recipient, 2006
Snakes of the Midwest interactive CD-ROM – Bronze Award, Association of Natural Resource Extension Professionals, 2005; and Gold Award, Association for Communication Excellence in Agriculture, Natural Resources, Life and Human Sciences, 2005
Junior Award, Purdue University Cooperative Extension Specialist Association (2003)
New 4-H Wildlife Manuals poster – Bronze Award, Association of Natural Resource Extension Professionals, 2002
4-H Entomology Curriculum – Award for Education and Teaching, Entomological Society of America's Board Certified Entomologists, 2001
Great Lakes Adventure CD-ROM, Blue Ribbon Award in the Educational Aids, American Society of Agricultural and Biological Engineers, 1999

MEMBERSHIPS IN PROFESSIONAL AND HONOR SOCIETIES:

American Society of Agricultural and Biological Engineers (1982 – 1985, 1995-present)
 Purdue University Cooperative Extension Specialist Association (1995-present). Offices held: Executive Board (1995-2002), Awards Chair (1997), Secretary (1998), President-elect (2000), President (2001), Past-president (2002)
 Hoosier Association of Science Teachers (2003 – present)
 Alpha Epsilon, Agricultural Engineering Honor Society (1982-present)
 Gamma Sigma Delta, The Honor Society of Agriculture, Consumer and Family Sciences, and Veterinary Medicine (2001-present)

ADVISORY COMMITTEE MEMBERSHIP

Internal Advisory Board of Purdue’s Discovery Learning Research Center

COURSE RESPONSIBILITIES:

<u>Course</u>	<u>Title</u>	<u>Semesters</u>
ASM 336	Environmental Systems Management	5 (Fall, '05 - now)
NRES 290	Introduction to Environmental Science	1 (Spring, '08)
ABE 450	Finite Element Method in Design and Optimization	4 (Fall, '03 - '06)
YDAE 591F	Enrichment in the Classroom: Farm to Table	2 (Summer '04 & '06)
ENGR 103	Introduction to Engineering Careers, Environmental and Natural Resources	1 (Fall '02 and intro lectures '03 – '06)
HORT 590	Introduction to Agricultural Biotechnology	1 (Summer '00)
EDCI 589D	Enrichment in the Classroom: Natural Resources	2 (Summer '97 & '98)

GUEST LECTURES

<u>Course</u>	<u>Title, Course instructor(s), Topic</u>	<u>Semesters</u>
ABE 450	Finite Element Method in Design and Optimization (Joseph Irudayaraj & Richard Strohshine) Topic: Groundwater flow	Fall, 2007 – 2011 (2 lectures)
FNR 485	Service Learning (Rod Williams), <ul style="list-style-type: none"> • 2010: Curriculum Development (informal) • 2011: Writing age Appropriate activities 	Spring, '10 & 11
AGRY & ANTH 460	Contemporary Issues in Agriculture (Cliff Johnston) Topic: Non-Cropped Farmland and Sustainable Ag	Spring, '10

EXTENSION/ENGAGEMENT RESPONSIBILITIES:

Dr. Carroll provides 4-H program support in 10 project areas – aquatic science, beekeeping, entomology, forestry, geology, shooting sports education, soil and water conservation, sport fishing, weather, and wildlife. Carroll also provides guidance, direction, and information for other programs that are not official 4-H projects (e.g., environmental stewardship, composting, recycling, waste management, and outdoor education). Carroll coordinates two, two-day 4-H shooting sports certification workshops (for adults), a 2.5 day 4-H entomology workshop (for youth), and three 4-H/FFA Career Development Events (Entomology, Forestry, and Wildlife Habitat Evaluation) each year. Since 1995, Carroll has provided sessions at 281 Extension conferences, schools,

workshops, short courses, and other organized educational activities Carroll for 6,274 youth and 6,126 adults. (data from March 9, 2010)

GRADUATE STUDENTS DIRECTED:

<u>Student Name</u>	<u>Role/department</u>	<u>Degree</u>	<u>Completed</u>
Hubert Montas	Member/ABE	Ph.D.	1995
Scott Ripberger	Member/4-H	M.S.	1996
Penny Lee	Member/4-H	M.S.	1996
Tyra Stall	Member/AGRY	M.S.	1998
Kris Machtmes	Member/EDCI	Ph.D.	1998
Steve McKinley	Member/EDCI	Ph.D.	1999
Cathy Burwell	Member/EDCI	Ph.D.	2000
Becky Potratz	Member/Biology	M.S.	2001
Yanshu Li	Member/Ag Econ	M.S.	2002
David Kellam	Member/FNR	M.S.	2003
Zhonghua Tang	Member/ABE	Ph.D.	2004
Brenda Potter	Chair/FNR	Ph.D.	2004
Karen Dalman	Chair/FNR	Ph.D.	2005
Andrew Westfall	Chair/YDAE	M.S.	2006
Steven Smith	Member/ EDCI	M.S.	2007
Heather Light	Member/YDAE	M.S.	2007
Trish Brutus	Member/C&I	M.S.	2007
Zhonghua Tong	Member/AGRY	Ph.D.	2008
Ashley Mueller	Member/YDAE	M.S.	2009
Julia Wickert	Chair/YDAE	M.S.	2011
Miriam Otto	Member/AgEcon	Ph.D	2011
Guillermo Carrillo	Member/ABE	Ph.D	x
Mi Hoon Jeong	Member/ABE	M.S.	2011

FUNDING (TOTAL, JULY 1, 2011, \$15,464,948)

Agro-ecosystem Approach to Sustainable Biofuels Production via the Pyrolysis-Biochar Platform (AFRI-CAP), NIFA, Geo-Chemical Controls on the Adsorption, Bioavailability, and Long-Term Environmental Fate of Dioxins, PCBs, and PAHs, Collaborators: Volenec, Jeffrey J.; Chaubey, Indrajeet; Turco, Ronald F.; Brouder, Sylvie M; Carroll, Natalie J.; Erickson, Bruce J; Johnson, Keith D; Martin, Chad; Murphy, Patrick T; Orvis, Kathryn S; 'lpropopy@purdue.edu'), 04/01/2011 – 03/31/2016, \$22M; \$3,787,226 to Purdue

2011 Toyota 4-H2O Community Project, Indiana, National 4-H Council, Natalie Carroll & Renee McKee, \$65,000.

2010 Toyota 4-H2O Community Project, Indiana, National 4-H Council, Natalie Carroll & Renee McKee, \$65,000.

Indiana Energizes! A 4-H SET Activity, Duke Energy, 2010, \$12,500

COSIA: Communicating Ocean Sciences to Informal Audiences, Halversen, Niyogi, D, NSF, 07/01/2009-8/31/11, collaborator, \$?????. Our portion appears to be \$174,351, at least

based on documents I got in June, 2010. Maybe the \$268,258 was the total to University of California, Berkley

National 4-H Entomology curriculum, Christian Oseto (PI), Tim Gibb, Melissa Shepson, Natalie Carroll, one year (2009-2012), National 4-H Council, CSREES, USDA. \$81,474.

Encouraging Regional Trade with Hermetic Storage for Cowpea in West and Central Africa, Joan Fulton (PI), Jess Lowneberg-DeBoer, Natalie Carroll, Larry Murdock, Barry Pittendrigh, Katy Ibrahim ('07 – '11), Bill and Melinda Gates Foundation, \$11,414,417

Response of Aquatic and Terrestrial Microorganisms to Carbon-based Manufactured Nanoparticles, National Science Foundation ('04 – '08) \$1,600,000

Apple Functional Genomics, National Science Foundation, two years ('03-'05).

Youth Research Projects, N. Carroll (PI), 2004, North Central Sustainable Agriculture Research and Education (SARE), \$3,500

Stout Woods Trail and Education, N Carroll (PI), '01-'02, Purdue Department of Forestry & Natural Resources, \$5,000

Purdue Residential On-site Wastewater Disposal, N. Carroll (PI), D. Jones, J. Frankenberger, two years ('00-'01), Purdue Extension Initiative Funding, \$24,000

Development of Biotechnology curriculum for teachers, P. Goldsbrough (PI), N. Carroll, two years ('00-'01), Bottum/Kohlmeyer Public Policy Education Award, \$4,500

Septic System and Water Quality in Indiana conference, N. Carroll (PI), D. Jones (2001), Sea Grant College Program, \$6,500.

Youth Shooting Sports Curriculum Development, N. Carroll (2001), National Wild Turkey Foundation, \$5,000

Biological Control of Purple Loosestrife by 4-H Volunteers, N. Carroll (PI), M. Klepinger, two years ('99-'01), National Sea Grant College Program, \$140,891

Watershed Connections in Clinton County, J. Frankenberger (PI), N. Carroll (1999), Bottum/Kohlmeyer Public Policy Education Award, \$3,500

Great Lakes Adventure, CD-ROM, N. Carroll (PI), D. Jones, M. Strickland ('96-'98), Environmental Protection Agency, \$50,000

SYNOPSIS OF PUBLICATION AND PRESENTATION (not updated recently)

Publications	number
Books	2
Book edits	1
Chapters in Books	1
Referred journal articles	9
Non-refereed Journal Articles	19
Extension Publications, Printed outside Purdue	10
Extension publications	48
Other bulletins and reports	2
Computer-based curriculum and resources	6
Presentations	
International: Brazil, Ireland, Sweden, Burkina Faso, Costa Rica	
<ul style="list-style-type: none"> <i>Proper Disposal of Unwanted Medication</i>, ASABE's 21st Century Watershed Technology Conference, Costa Rica 	2010

<ul style="list-style-type: none"> • <i>Experimental Design for Extension Research Protocol for Extension Education Research</i>, Collaborators meeting: Hermetic Storage for Cowpea Project, Burkina Faso 	2007
<ul style="list-style-type: none"> • <i>Poster: Nanotechnology and the Environment</i>, International Symposium on Society and Resource Management, Sweden 	2005
<ul style="list-style-type: none"> • <i>Employing a Volunteer Network to Help Control Purple Loosestrife</i>, International Conference on Aquatic Invasive Species, Ireland 	2004
<ul style="list-style-type: none"> • <i>The Great Lakes Adventure CDROM</i>, American Society of Agricultural Engineers, Brazil 	2002
International Service Learning: Ecuador (exploratory)	?
National (Professional Conferences)	28
Indiana presentations and workshop coordination (1995 – 2009)	281
<ul style="list-style-type: none"> • 6,274 youth • 6,011 adults 	

CURRICULUM DEVELOPMENT

Carroll’s major responsibility is curriculum development for youth natural resource and environmental programs. She maintains (reviews, revises, rewrites) 75 paper publications (averaging 32 pages each) and 10 web publications to support Indiana 4-H natural resources projects. Paper publication sales average 13,000 each year. Carroll has extensively revised or rewritten nine of the 10 4-H project curricula in her program area. Carroll has produced 16 peer-reviewed manuals being used by youth nationwide through the National 4-H Curriculum Collection. Sales of these manuals now exceed 200,000 copies. The publications are:

- Biological Control of Purple Loosestrife (two manuals, 135 total pages)
- Entomology (four manuals, 144 total pages; revised in 2002?? And rewritten in 2011)
- Forestry (four manuals, 144 total pages)
- Shooting Sports (one manual, 28 pages, plus and on-line leader’s guide)
- Wildlife (five manuals, 131 total pages)

Carroll was responsible for determining the scope, content, design, and layout of half of these manuals (eight), she co-authored the other half with a national team. Her efforts in curriculum development include writing with both content and youth development specialists, pilot testing with the target audience, evaluating the efficacy of the curriculum, revising materials, and training and marketing the new curriculum.

PUBLICATIONS

Book

Carroll, N., Frankenberger, J., Jones, D., Persyn, R., Powell, M., Scherer, T., *Private Water Systems*, Midwest Plan Service (MWPS-14), April, 2009, ISBN 0-89373-105-6.

Carroll, N and Jones, D, 2006. *Living on Acreages, What You Need to Know*. Midwest Plan Service (MWPS-50), ISBN 0-89373-103-X.

Book Edits

Irudayaraj, J.; Puri, V.: Raghavan, V.J.; Segerlind, L.J., 1996. *Selected Topics in*

Numerical Analysis, A Tutorial Set. Mohtar, R.H.; Puri, V.; and Carroll, N. (Eds.). Published by IET-217 committee of The American Society of Agricultural Engineers. Minneapolis, MN.

Book Chapter

Miller, B.K., Schaaf, K., Carroll, N.J., and Arnold, C.L. Jr., edited by: R. K. Swihart and J. E. Moore, *Putting Models into Practice*, Book: Conserving Biodiversity in Agricultural Landscapes Model-Based Planning Tools, Purdue University Press, W. Lafayette, Indiana. ISBN 1-55753-333-4, pp. 241-251, 2004.

Refereed Journal Articles

- Buckmaster, D and Carroll, N, Teaching Tip/Note, Motivating Students: Factors to Consider, NACTA Journal (#2009-0172, <http://nacta.fp.expressacademic.org/article.php?id=1734>), June 2009
<http://nacta.fp.expressacademic.org/>
- Gasic, Ksenija, Delkin O. Gonzalez, Jyothi Thimmapuram, Mickael Malnoy, George Gong, Yuepeng Han, Lila O. Vodkin, Lei Liu, Herb S. Aldwinckle, Natalie J. Carroll, Kathryn S. Orvis, Peter Goldsbrough, Sandra Clifton, Deana Pape, Lucinda Fulton, John Martin, Brenda Theising, Michael E. Wisniewski, Gennaro Fazio, Alexander F. Feltus, and Schuyler S. Korban. *Comparative Analysis and Functional Annotation of a Large Expressed Sequence Tag Collection of Apple (Malus x domestica)* (TPG-2008-11-0014), The Plant Genome. Vol 2, No. 1, March, 2009
- Gasic, Ksenija; Gonzalez, Delkin; Thimmapuram, Jyothi; Malnoy, Mickael; Gong, George; Han, Yuepeng; Vodkin, Lila; Liu, Lei.; Aldwinckle, Herb; Carroll, Natalie; Orvis, Kathryn; Goldsbrough, Peter; Clifton, Sandra; Pape, Deana; Fulton, Lucinda; Martin, John; Theising, Brenda; Wisniewski, Michael; Fazio, Gennaro; Korban, Schuyler, Comparative Analysis and Functional Annotation of a Large Expressed Sequence Tag Collection of Apple, Plant Physiology, 9/26/08, (MS ID#: PLANTPHYSIOL/2008/130435
- Carroll, N. and Lovejoy, S., December, 2005. *Using Technology to Survey New Audiences*, Journal of Extension electronic newsletter (www.joe.edu).
- Lovejoy S. and Carroll, N. December, 2005. *Intensity Weighted Ranking: A Methodology for Understanding What Clients Tell Us*, Journal of Extension electronic newsletter (www.joe.edu).
- Carroll, N.; Mohtar, R.; and Segerlind, L.J., Predicting the cooling time for irregular shaped food products. Journal of Food Process Engineering, November, 1996, 19(4): 385-401.
- Shahabasi, Y.; Segerlind, L.J.; and Carroll, N., *A simulation model to determine the allowable depth for apples stored in bulk*. Transactions of the American Society of Agricultural Engineers, 1995, 38(2):587-591.
- Carroll, N.J.; Merva, G.M., and Segerlind, L.J., 1995. *Water movement in an unsaturated soil beneath a velocity permeameter*. Transactions of the American Society of Agricultural Engineers (ASAE), 38(2):463-469.

Non-refereed Journal Articles and Proceedings

- What Motivates Agricultural Students?* N. Carroll, D. Buckmaster, A. Davis, N. Knobloch, ASAE, paper 11-10978.
- Student Motivations in Undergraduate Agricultural Related Courses*, A. Davis, N. Carroll, D. Buckmaster, N. Knobloch, AAAE, 2011. Number?
- Proper Disposal of Unwanted Medication*, Proceedings, ASABE's 21st Century Watershed Technology Conference, Costa Rica, Feb. 2010
- The Science Teacher, Orvis, Carroll, Goldsbrough. *The Apple Genomics Project*, Idea Bank, Tips and Techniques, for Creative Teaching, pp 68-70, Vol. 76, No. 7, October, 2008.
- Buckmaster, D. and Carroll, N. *Student Motivation: a Literature Review*, The American Society of Agricultural and Biological Engineers, Paper 08-3654 Providence RI, June, 2008. (Posted at: <http://asae.frymulti.com/techpapers.asp?confid=prov2008>)
- Carroll, N., K. Orvis, P. Goldsbrough, *Teaching Genomics with Computer Simulations*, The American Society of Agricultural and Biological Engineers, Paper 08-5084, Providence RI, June, 2008. (Posted at: <http://asae.frymulti.com/techpapers.asp?confid=prov2008>)
- Carroll, N and J. R. Fulton. *Extension Methods to Teach Hermetic Storage in West Central Africa*, paper 08-3654, Providence, June, 2008. (Posted at: <http://asae.frymulti.com/techpapers.asp?confid=prov2008>)
- Carroll, N and R. Turco. *Impact of Fullerene (C60) on Organisms in the Soil*, Scitizen.com, a collaborative news source by scientists for the general public (http://scitizen.com/screens/blogPage/viewBlog/sw_viewBlog.php?idTheme=5&idContribution=893). July 27, 2007.
- Carroll, N. 2007. *Engaging Students in Environmental Systems Management*. The American Society of Agricultural and Biological Engineers paper #078033, Minneapolis.
- Carroll, N., Segerlind, L., Stroshine, R., and Nyquist, C., 2006. *Introducing Undergraduate and Graduate Students to Finite Element Analysis*. The American Society of Agricultural and Biological Engineers paper #068033, Portland.
- Carroll., N., 2006. *Introducing Middle School Students to Computer Modeling*. The American Society of Agricultural and Biological Engineers paper #068040, Portland.
- Carroll., N., 2006. *Using Case Studies to Introduce Situations Requiring Ethical Decisions*. The American Society of Agricultural and Biological Engineers paper #068018, Portland
- Carroll, N. 2002. *Distance Education and Web-based Delivery*, The American Society of Agricultural and Biological Engineers paper #028007.
- Carroll, N. February, 2002. Employing the 4-H Youth Network to Help Control Purple Loosestrife, Proceedings, International Conference on Aquatic Invasive Species, Alexandria, VA.
- Carroll, N. 2002. *Engaging Youth by Studying Local Water Concerns*. Proceedings of the 2nd National Conference, Nonpoint Source Pollution Information & Education Programs.
- Carroll, N., April, 2001. Engaging Volunteers in Biological Control of Nonindigenous species through the 4-H network, Proceedings, International Marine Bioinvasions

Conference, New Orleans.

- Carroll, N., 2001. *Purdue Predicts Pollution Problems: The Future of Nonpoint Source Pollution Control* which was published in *LakeLinks* the University of Toledo College of Law, electronic newsletter (<http://law.utoledo.edu/lgl/LakeLinksSpring2001.pdf>).
- Carroll, N. 2001. *Youth Volunteers Help with Biological Control of Purple Loosestrife. Aquatic Invaders*, The Digest of National Aquatic Nuisance Species Clearinghouse, Vol. 12, Num 3.
- Carroll, N. 2001. *Electronic Learning, Great Lakes Adventure CD-ROM a hit with teachers and students*, Resource, monthly publication of the American Society of Agricultural and Biological Engineers.
- Carroll, N. and Miller, B., 2001. *Evaluation of student demographics and program impacts of the Indiana State Wildlife Habitat Career Development Event*, Reno, NV.
- Carroll, N. 1998. *Pfiesteria piscicida: A Case Study*, The Ag Bioethics Forum, Human and Animal Health, Vol. 10, (<http://www.biotech.iastate.edu/Bioethics/casestudies.htm>) No. 1.
- Carroll, N.; Dunning, J.B.Jr.; Freeman, A.; Hallberg, C. A.; and Morgan, J., 1998. *Reintroduction of the Gray Wolf to Yellowstone National Park: A Case Study*. The Ag Bioethics Forum, Human and Animal Health, Vol. 10, (www.biotech.iastate.edu/Bioethics/casestudies.htm) No. 1.

Extension Publications, Printed outside Purdue

- Oseto, C., Carroll, N., 4-H Entomology manuals: *Teaming with Insects*, Level 1 (3rd-5th grades, 37 pages, #08440), Level 2 (6th-8th grades, 33 pages, #08441), Level 3 (9th-12 grades, 33 pages, #08442), and Facilitator's Guide (49 pages, #08443), National 4-H Curriculum Collection, September, 2011
- Carroll, N. and W. Siegfried, *Proper Disposal of Unwanted Medication*, IL/IN Sea Grant College Program, <http://www.iiseagrant.org/catalog/ed/meds4h.html>, May, 2010.
- Baoua, Ibrahim, Natalie Carroll, Clementine Dabire, Joan Fulton, Bokar Moussa, Antoine Sanon, Abdoulaye Tahirou, 2008. *Field Technician Training Manual* Purdue Improved Cowpea Storage Project. Purdue University. (Published in English for use in Nigeria and published in French for use in Burkina Faso.)
- Daniels, B., Horton, R., Page, K., Wilkinson, R., Smith, S., Carroll, N., Johnson, R., 2004. *Forestry Manuals: Follow the Path, Level 1* (4HCCS BKU 08038), *Reach for the Canopy, Level 2* (4HCCS BKU 08039), *Explore the Deep Woods, Level 3* (4HCCS BKU 08040), and *Forestry Helper's Guide* (4HCCS BKU 08041). National 4-H Curriculum Collection, 36 pages each.
- Oseto, C.; Carroll, N.; Zurcher, T., 1998. *Entomology 1, Creepy Crawlies* (BU 6853, 36 pp.), *Entomology 2, What's Bugging You?* (BU 6854, 36 pp.), *Entomology 3, Dragons, Houses, and Other Flies* (BU 6855, 36 pp.), *Entomology Group Helper's Guide* (BU 6856, 36 pp.), Cooperative Curriculum System, University of Minnesota Cooperative Extension Service, Minneapolis, MN.

Extension Publications (Purdue University)

Nda-Agyima Addae-Mensah and Natalie Carroll, *Conservation Wise* series:

- Saving Energy in Your Home: **Windows** ([ID-434](#))
- Saving Energy in Your Home: **Air Leaks** ([ID-435](#))
- Saving Energy in Your Home: **Insulation** ([ID-436](#))
- Saving Energy in Your Home: **Heating & Cooling** ([ID-437](#))
- Saving Energy in Your Home: **Appliances** ([ID-438](#))
- Saving Energy in Your Home: **Home Electronics** ([ID-439](#))
- Saving Energy in Your Home: **Lighting** ([ID-440](#))
- Saving Energy: **Driving and Car Maintenance** ([ID-441](#))

Carroll, N.J., Kruse, J., *Energy Investigators*, Youth manual (4-H 1014), Facilitator's Guide (4-H 1015), in press.

Lesson Plans in Spanish, Natural Resources, 2009.

Carroll, N.J., Williams, R., 2009. *Teaching Wildlife Habitat Evaluation*, revisions (4-H 992-W, 16pp.), 2010.

Carroll, N., D. Jones, 2008, Indiana Farm Ponds (ID-409), The Education Store. Purdue University, www.ces.purdue.edu/extmedia/ID/ID-409-W.pdf

Knipp, J., N. Carroll, B. Miller, D. Jones, 2008, Farm Ponds Q&A (ID-410), The Education Store. Purdue University, www.ces.purdue.edu/extmedia/ID/ID-410-W.pdf

Carroll, N.J., G. Aldred, W. Aldred, W. Beck, J. Bliss, K. Eck, D. Fadely, S. Foster, 2007, *4-H Geology manuals*: Level 1(3rd-5th grades), Level 2 (6th-8th grades), Level 3 (9th-12 grades), and Helper's Guide, 2007.

Carroll, N.J. and Miller, B.K. 2006. *Wildlife Habitat Evaluation*, Food Flashcards (4-H 993-W, 27pp.)

Miller, B.K. and Carroll, N.J., 2006. *Developing a Wildlife Habitat Management Plan* (4-H 991-W, 14pp.), 2006.

Carroll, N.J., and Miller, B.K. 2006. *Teaching Wildlife Habitat Evaluation* (4-H 992-W, 10pp.) 2006.

MacGowan, B., Kingsbury, B., Brown, J.W., Morrison, C., Katz, S. and Carroll, N., 2004. *Snakes of the Midwest* CD-ROM.

Carroll, N., Beck, T., Downing, R., Garrison, A., Martin, K., Studebaker, D., 2002. *4-H Shooting Sports Education Youth Manual* (4-H 950), National 4-H Curriculum Collection, 29 pp.

Klepinger, M., Potratz, R.J., and Carroll, N., 2001. *Biological Control of Purple Loosestrife, Youth Guide* (4-H 917, 44 pp.) and *Leader's Guide* (4-H 918, 99 pp.) National 4-H Curriculum Collection.

Carroll, N., Addison, D., Butler, H., Chalupa, R., Dickson, R., Ferris, J., Jones, J., Miller, B., and Podell, R., 2001. *4-H Wildlife Manual, Level A* (4-H 903, 29 pp.), *4-H Wildlife Manual, Level B* (4-H 904, 32 pp.) *4-H Wildlife Manual, Level C* (4-H 905, 40 pp.), *4-H Wildlife Manual, Level D*. (4-H 906, 29 pp.).

Carroll, N., 2001. *4-H Wildlife Leader's Guide* (4-H 907-W, 41 pp.), National 4-H Curriculum Collection.

Frankenberger, J. and Carroll, N. 2000. *Drinking Water Quality Reports – Your Right to Know* (WQ-33), 6 pp.

Miller, B., Theller, L., and Carroll, N. 2000. *Wildlife Habitat Evaluation with Aerial Photographs* (4-H 910), 41 pp.

Oseto, C.; Carroll, N.; Zurcher, T., 1998. *Entomology 1, Creepy Crawlies* (BU 6853, 36

- pp.), *Entomology 2, What's Bugging You?* (BU 6854, 36 pp.), *Entomology 3, Dragons, Houses, and Other Flies* (BU 6855, 36 pp.), *Entomology Group Helper's Guide* (BU 6856, 36 pp.), Cooperative Curriculum System, University of Minnesota Cooperative Extension Service, Minneapolis, MN.
- Carroll, N., 1999. *Entomology Leader's Guide* (4-H 890) 40 pp.
- Frankenberger, J., Carroll, N.: and Machtmes, K., 1998. *Watershed Connections: Youth Activities*. (WAT-1), 32 pp.
- Frankenberger, J., Carroll, N., 1998. *Watershed Connections: Shelby County*. Purdue University (WAT-2), 6 pp.
- Carroll, N.: Frankenberger, J., 1998. *Watershed Connections: LaPorte County* (WAT-3), 6 pp.

Extension Publication Revisions (Purdue, unless otherwise noted)

- Caldwell, W., Wayne, W., Macklin, J., Schuder, D., Matthew, D., Hoxie, C., Jacks, M., Cabell, J., Miller, L., King, F., Frickey, E., Aldred, G., Carroll, N., 2004. *Geology 1* (4-H 320), 28 pp.
- Caldwell, W., Wayne, J., Macklin, J., Schuder, D., Hoxie, C., Jacks, Johnson, R., J., Frickey, E., Carroll, N., 2004. *Geology 2* (4-H 378), 28 pp.
- Caldwell, W., Matthews, D., Schuder, D., Frickey, Carroll, N., 2004. *Geology 3* (4-H 397), 12 pp.
- Carroll, N. (original authors unknown) 2004. *Advanced Geology* (4-H 429-W), 16 pp.
- Hunt, G. and Carroll, N., 2006. *Understanding the Honey Bee* (4-H 571-W), 28 pp.
- Hunt, G. and Carroll, N., 2006. *Working with Honey Bees* (4-H 586-W), 41 pp.
- Carroll, N., Addison, D., Butler, H., Chalupa, R., Dickson, R., Ferris, J., Jones, J., Miller, B., and Podell, R., 2001. *4-H Wildlife Manual, Level A* (4-H 903, 29 pp.), *4-H Wildlife Manual, Level B* (4-H 904, 32 pp) *4-H Wildlife Manual, Level C* (4-H 905, 40 pp.), *4-H Wildlife Manual, Level D*. (4-H 906, 29 pp.), National 4-H Curriculum Collection.
- Metzger, I., England, S., Sloderbeck, P., Carroll, N., and Oseto, C., *Entomology 1, Creepy Crawlies* (4H CCS BU 6853, 36 pp), *Entomology 2, What's Bugging You?* (4HCCS BU 6854, 36 pp), *Entomology 3, Dragons, Houses, and Other Flies* (4HCCS BU 6855, 36 pp), *Entomology Group Helper's Guide*. (4H CCS BU 6856, 36 pp), National 4-H Curriculum.
- Caldwell, W., Carroll, N. 2002. *Aquatic Science* (4-H 447-W), 24 pp.
- Zimmerman, J., Macklin, J., Smith, L., Carroll, N. 2001. *Weather Watchers, Level 1* (4-H 346), 20 pp.
- Caldwell, W., Smith, L., Newman, J., Macklin, J., Frickey, E., Carroll, N., 2001. *Storm Spotters* (4-H 379), 24 pp.
- Shaw, R., Elford, C., Carroll, N., 2001. *Clouds: Signposts of the Sky* (4-H 399), 16 pp.
- Miller, P., Smith, L, Caldwell, W., Carroll, N. 2001. *Fonts & Symbols* (4-H 426), 28 pp.
- Caldwell, W., Carroll, N., 2002. *Indiana 4-H Weather Leader's Guide* (4-H 441-W), 25pp.
- Trout*, S. and Siffring, D.D., Edinger, S. Carroll, N, 1999. *Indiana's Water Riches* (4-H 882), 114 pp.

Websites

- Home page, www.four-h.purdue.edu/natural_resources/
- Genomics education, www.four-h.purdue.edu/apple_genomics/

- Nanotechnology and the environment, www.ydae.purdue.edu/ANE/
- *Wildlife Habitat Evaluation*, www.four-h.purdue.edu/whep/
- *Biological Control of Purple loosestrife* www.four-h.purdue.edu/purple/
- *Shooting Sports Education*: www.four-h.purdue.edu/shooting_sports/

Other Publications (unnumbered)

- Carroll, N., 1997. *Indiana 4-H Shooting Sports Guidelines*. Purdue University Cooperative Extension Service, W. Lafayette, IN. 4-H 854, 123 pp. Revised 2000, 2006, 2008.
- Carroll, N., 1997. *Indiana 4-H Shooting Sports Coordinator Handbook..* Purdue University Cooperative Extension Service, W. Lafayette, IN. 4-H 854, 67 pp. Revised 2000, 2006, 2008.

PRESENTATIONS AT PROFESSIONAL MEETINGS, SINCE 2000:

International

- Carroll, N., 2007. *Experimental Design for Extension Research*, Workshop: Encouraging Regional Trade with Hermetic Storage for Cowpea in West and Central Africa, Ouagadougou, Burkina Faso, August, 2007.
- Carroll, N., 2007. *Protocol for Extension Education Research*, Workshop: Encouraging Regional Trade with Hermetic Storage for Cowpea in West and Central Africa, Ouagadougou, Burkina Faso, August, 2007.
- Carroll, N, 2005. *Nanotechnology and the Environment: Fate/Transport of Nano-Structured Materials*, International Symposium on Society and Resource Management, Sweden.
- Carroll, N, 2004. *Employing a Volunteer Network to Help Control Purple Loosestrife: Implementation and Impact*, International Conference on Aquatic Invasive Species, Ireland.
- Carroll, N, 2002. *The Great Lakes Adventure CD-ROM*, American Society of Agricultural and Biological Engineers Computers in Agriculture Conference, Iguassu Falls, Brazil.

National

Posters:

- Davis, A. L. E., Knobloch, N., Buckmaster, D., & Carroll, N. (2011). *Student Motivations in Undergraduate Agricultural Related Course*. Research poster abstract submitted to the annual meeting of the American Association of Agricultural Educators, Coeur d'alene, ID.
- Kruse, J., Carroll, N., 2010. Undergraduate Research, DLRC DURi presentation...????
- Siegfried, W., Carroll, N., 2010. *Don't Rush to Flush: Disposal of Unwanted Medicines*, Poster presented at the annual meeting of the American Association of Agricultural Educators, Louisville, KY.
- Carroll, N., Proper Disposal of Unwanted Medication, Curriculum for Youth, ASABE, Costa Rica, February, 2010.
- Snyder, L., Knobloch, N., Brady, C., Carroll, N., Dotterer, A., Esters, L., Rusk, C., Tormoehlen, R. 2009. 4-H High School Students' Career Intentions and Motivation to Learn Science after Participating in Science Workshops. Association of Career and

- Technical Education Research, Nashville, TN.
- Tong Z, Bischoff, M, Nies, L.F., Carroll, N.J., and Turco, R. F., 2009. Single-Walled Carbon Nanotubes: Impacts on Soil Microbial Community Composition and Functions, Industrial & Engineering Chemistry, 237th ACS National Meeting, Salt Lake City, UT, March 22-26.
- Carroll, N. Extension Methods to Teach Hermetic Storage in West Central Africa. The American Society of Agricultural and Biological Engineers, Providence, RI. 2008.
- Carroll, N. Teaching Genomics with Computer Simulations. The American Society of Agricultural and Biological Engineers, Providence, RI.
- Buckmaster, D. and Carroll, N. 2008. *Student Motivation: a Literature Review*. The American Society of Agricultural and Biological Engineers, Providence, RI.
- Carroll, N. 2007. *Engaging Students in Environmental Systems Management*. The American Society of Agricultural and Biological Engineers, Minneapolis.
- Orvis, K. and N. Carroll. 2007. Utilization of computer simulations as a tool for teaching genomics science. *National Science Teachers Association (NSTA) Regional Conference*, Detroit, MI.
- Carroll, N., Segerlind, L., Stroshine, R., and Nyquist, C., 2006. *Introducing Undergraduate and Graduate Students to Finite Element Analysis*. The American Society of Agricultural and Biological Engineers, Portland.
- Carroll, N., 2006. *Introducing Middle School Students to Computer Modeling*. The American Society of Agricultural and Biological Engineers, Portland.
- Carroll, N., 2006. *Using Case Studies to Introduce Situation Requiring Ethical Decisions*. The American Society of Agricultural and Biological Engineers, Portland.
- Orvis, K. and Carroll, N. 2006. *Utilization of Computer Simulations as a Tool for Teaching Genomics Science*, National Association of Biology Teachers Professional Development Conference, Albuquerque, New Mexico.
- Carroll, N., 2005. *Public education about Fate/Transport of Nano-structured Materials*, American Chemical Society National Meeting, San Diego, CA.
- Carroll, N., P. Goldsbrough, K. Orvis, 2005. *Teaching Genomics: Utilization of Computer Animation and Learning Modules to Visualize and Teach Complex Science Topics*. National Association of Biology Teachers Annual Conference. Milwaukee, MN.
- Korban, S.S., L. Vodkin, L. Liu, H. Aldwinckle, N. Carroll, P. Goldsbrough, K. Orvis, and S. Clifton, 2004. *Towards Apple Functional Genomics: The EST Project*. Plant & Animal Genome Conference.
- Carroll, N. 2004. *Employing a volunteer network to help control purple loosestrife: implementation and impact*, Proceedings, 13th International Conference on Aquatic Invasive Species. New Orleans
- Carroll, N., 2004. *4-H Shooting Sports Manuals*, National Association of 4-H Agents National Conference, Oklahoma City.
- Carroll, N., 2004. *4-H Wildlife Manuals*, National Association of 4-H Agents National Conference, Oklahoma City.
- Carroll, N., 2002. *New 4-H Wildlife Manuals*, Agricultural and Natural Resource Extension Professionals Conference, Naples, FLA.
- Carroll, N., 2002. *Volunteers Teach Youth about Local Water Resource Concerns*, Agricultural and Natural Resource Extension Professionals Conference, Naples,

FLA.

Carroll, N. 2002. *Distance Education and Web-based Delivery*, International Conference of the American Society of Agricultural and Biological Engineers, Chicago.

Carroll, N. 2002. *Employing the 4-H Youth Network to Help Control Purple Loosestrife*, International Conference on Aquatic Invasive Species, Alexandria, VA.

Carroll, N., Tormoehlen, R., 2002. *4-H Programs on CD-ROMs*, Teaching, Learning, and Technology Showcase, Purdue University.

Carroll, N., 2002. *Non-formal Environmental Education Materials for the Classroom Enrichment*, Midwest Environmental Education Conference and Leadership Clinic, Chicago.

Carroll, N., 2002. *4-H Natural Resources*, Area 2 Judges and Leader's Clinic. Ft. Wayne, IN.

Carroll, N. 2001. *Engaging volunteers in biological control of nonindigenous species through the 4-H network*. Second International Marine Bioinvasions Conference, New Orleans.

Carroll, N., 2001. *Engaging youth by studying local water concerns*, 2nd National Conference on Nonpoint Source Pollution Information and Education Programs. Chicago, IL

Frankenberger, J., Carroll, N., 2000, *Watershed Connections*, National Extension Natural Resources Conference. Lake Tahoe, NV.

Carroll, N., 2000. *Natural Resources Distance Class for Teachers*, National Extension Natural Resources Conference. Lake Tahoe, NV.

Carroll, N., 2000. *Lake Guardian CD-ROM*, National Extension Natural Resources Conference. Lake Tahoe, NV.

Selected Presentations for Teachers & Extension Educators in Indiana

Carroll, N., Goettel, R., 2010. *Proper Disposal of Unwanted Medications*, Hoosier Association of Science Teachers Annual Conference. 15 attendees, Feb, 2010

Carroll, N., Knobloch, N., Martin, C., Orvis, K. *\$4 for Gas? Green Energy Activities for Inquiry in the Classroom*, Hoosier Association of Science Teachers Annual Conference., 2009.

Extension Professional presentations – curriculum, guidelines, and resources for the 4-H natural resources and environmental programs at State, District, and Area meetings. Two to three per year since 1995.

Carroll, N. 2008. *Natural Resource Lesson Plans*, Hoosier Association of Science Teachers Annual Conference.

Carroll, N. 2008. *Nanomaterials and the Environment*, Hoosier Association of Science Teachers Annual Conference.

Carroll, N. 2006. *Teaching genomics using computer simulations*, Teaching, Learning, and Technology Showcase, Purdue University.

Carroll, N., Talbert, A., 2005. *Agriculture in the Classroom, On-Line Course: Enrichment in the Classroom: Farm to Table*, National Agriculture in the Classroom Conference, Indianapolis.

Orvis, K. and Carroll, N. 2005. *Teaching Genomics: Utilization of computer animations to visualize and teach complex science topics*, Tools of Engagement IHETS/ISPE All Partners Conference, Indianapolis.

- Carroll, N., 2005. *The Apple Genomics Project*, Biotechnology Workshop, Indianapolis Children's Museum.
- Carroll, N., 2005. *Discovering Genomics Utilizing Animations and the Internet: The Apple Genomics Project* – Hoosier Association of Science Teachers Annual Conference. Indianapolis, IN
- Lovejoy, S. and Carroll, N., 2004. *Learning Environmental Science Through Computer Games and Needs Assessment: Technology Assistance for Discovering Clients' Priorities*, National Extension Technology Conference, Purdue University.
- Carroll, N., 2004. *Putting Models into Practice*, Midwest Fish and Wildlife Conference, Indianapolis.
- Carroll, N., 2004. *Using a Global Positioning System*, Hoosier Association of Science Teachers Annual Conference.
- Carroll, N., 2004. *Natural Resources Materials You Can Use*, 4-H Regional Volunteer Forum, Indianapolis.
- Carroll, N., March and November 2003. *Engaging Youth in Science with 4-H Natural Resource Curriculum*, Children, Youth, and Families at Risk Conference. Purdue University
- Carroll, N., 2003. *GPS Workshop for Elementary Students*, Lafayette Urban Ministry Camp, Pine Creek Camp, IN.
- Carroll, N., 2003. *Introduction to Engineering* (for middle school aged youth), 4-H RoundUp, Purdue University.
- Carroll, N., 2003. *Engaging Youth with Nonformal Natural Resource Activities*, Hoosier Association of Science Teachers Annual Conference. Indianapolis, IN
- Lovejoy, S. and Carroll, N., 2004. *What's Your EIQ?* The Environmental Science and Engineering Institute Symposium, Purdue University.
- Carroll, N. 2002. *Water and Wetlands with a Local Focus*, and *Restoring Wetlands - The Purple Loosestrife Project*. Hoosier Association of Science Teachers. Indianapolis, IN.
- Carroll, N. and Miller, B. 2002. *Teaching Wildlife Habitat Evaluation*, Hoosier Association of Science Teachers Conference. Indianapolis, IN.
- Carroll, N. 2002. *The Lake Guardian CD-ROM*, Teaching, Learning, and Technology Showcase, Purdue University.
- Watkins, B. and Carroll, N., 2001, 2000. *Biological and Agricultural Science Education*, Teaching, Learning, and Technology Showcase, Purdue University.
- Carroll, N. *Agricultural Biotechnology*, Boilermaker Blockbuster, Indianapolis, IN.

Selected Presentations for Volunteers for 4-H Programs

- 4-H Shooting Sports certification workshops – 31 (two presentations/years, since 1995-March, 2011); Introduction to 4-H and 4-H Shooting Sports: background, requirements, risk management, experiential learning, project requirements.
- 4-H Shooting Sports Coordinator Training – 23 (one to two workshops/year, since 1995 to March, 2011); two and one-half day workshop focusing on program creation, maintenance, liability, working with youth, volunteers, and extension professionals.
- Managing Flying Pests, Indiana Horseman's Conference, 2007

ADMINISTRATIVE SERVICE

University

Community Standards Board (CSB), August, 2010 – current
Andrews/Blosser Environmental Travel Grant Reviewer for the Graduate School, Spring, 2010
Discovery Learning Research Center, Internal Advisory Board, 2010 - present
Promotions Committee, Panel X (clinical faculty), 2009-2010.
Department Head Review Committee, Chair (2009) Required by the university every 5 years.
Facilitator, Searching for Excellence & Diversity: A Workshop for Search Committee Chairs and Members, Women in Science & Engineering Leadership Institute, University of Wisconsin-Madison, Purdue University, January, 2009.
Institutional Review Board (IRB) human subjects committee (2005 - 2007)
University Senate, 2002 – 2008, 2009-current
University Senate, Steering Committee, 2009-current
University Senate, Nominations committee (2002 – 2008, chair, '06-07 and '07-08, '10-current)
University Senate, Documents and Records committee (2000 - current, chair, '05-06)
Engagement Forum, presenter ('01, '02)
Introduction to Agricultural Biotechnology Web Site (presentation), BoilerMaker Blockbuster, 2000

Service to the University (NSF Advance Grant events and programs)

Mentoring for College of Agriculture faculty, 2010
Discussion with Assistant Professors in STEM disciplines: topic tba, Spring, 2010
Discussion with Assistant Professors in STEM disciplines: Mentoring, Fall, 2009
Discussion with Assistant Professors in STEM disciplines: Work-Life Balance, Fall, 2009
Discussion with Assistant Professors in STEM disciplines, Spring, 2009
Purdue policy discussion for selected Assistant Professors in STEM disciplines, Oct., 2009
Met with COA department heads to discuss hiring practices to increase diversity, Spring, 2009
Meetings with COA search committees to discuss diversity: ARP, Ag Communications, Animal Science, Summer, 2009 - ongoing

College of Agriculture

Scholarship of Teaching efforts/guidelines, Advance rep
College Awards Committee, 2009 – current, Chair, 2010-current
Extension Internal Review Board (IRB), June, 2009 – January, 2011
University Senate, 2009 - 2012
Spirit of the Land-Grant Mission Award Committee, 2009, 2010
Agriculture Research Program Assistantship Review Team, 2009
Extension Engagement working group (part of the COA's Strategic Planning, 2008)
Chair, PK-12 committee (to develop recommendations for coordinating and advancing the College of Agriculture's impact on PK-12 education), 2007
Faculty Advisor, Pre-Professional Women in Agriculture, (2005 – current)
Search Committee: Associate Dean and Director, Agricultural Research Program (2005)
Search Committee: Assistant Dean and Director, Office of Diversity Programs (2005)
Agriculture in the Classroom National Conference, coordinate Purdue College of Agriculture tour (June 2005)

Co-director, Women Faculty in Agriculture group (2003-05)
Water Quality Common Interest Group (2002 - 2004)
Deans Advisory committee (2001-2004)
Biotechnology education efforts - presentation to the Dean's Advisory Council (April 2000)

Youth Development and Agricultural Education

4-H Procedures & Policy Committee, 2010 -
4-H Website Committee (2008 - current)
University Senate (2000 – 2008)
Search Committee Chair (2005, 2006)
Lead, Departmental Science Focus (2005-06)
School of Agriculture, Agenda and Policy Committee (2001-2004)
School of Agriculture Roadmapping "Core 40" (2001)

Agricultural and Biological Engineering Department

Search Committee, ASM faculty, 2009
Lunch with Women in Engineering, prospective students (high school seniors), '05, '06
Welcome for Freshman Engineers ('01 – '03, '05, '06)
Commencement (Fall 2002 and Spring 2003)
Extension committee (2000-2008)

Service to the Department of Forestry and Natural Resources

Mentoring committee, Dr. Haviarova (2005-current)
Mentoring committee, Dr. Rod Williams (2008-current)

Service to the Department of Food Science

Mentoring committee, Dr. SanMartin-Gonzalez (2009-current)

Service to the Department of Horticulture and Landscape Architecture

Mentoring committee, Ann Hildner (2009-current)

Other – Public, Governmental, Other

Reviewer – NIH, *Research Translation and Community Outreach* cores of Superfund Basic Research Program grant applications (Phase 1, 2005).
Reviewer – EPA, Region 5, grant applications
Reviewer – EPA, National EPA Public Right to Know working group, for the National Drinking Water Advisory Council (1998-1999).
National 4-H Wildlife Stewards Advisory Committee, University of Oregon (2002-2004)
Reviewer – Views of the National Park Service website, ('02-'03)
Reviewer – Secret Agent Worm, publication and website, University of Illinois ('99, '03, '05)
Reviewer - Review of Agricultural Economics ('06)

Professional Development

STEP Workshop, University of Michigan, May, 2010
Faculty Success Coaching, Train the Trainer Workshop, Purdue Advance (Center for Faculty Success) Fall, 2009
Searching for Excellence and Diversity: A Workshop for Search Committees, 2008
Women in Academia: Institutional Change to Enhance Success, Purdue University, 2005

Working with the faculty women in Agriculture to develop a peer evaluation system for women in the college, 2005
School of Agriculture, Women Faculty Retreat, 2004
Basics of Teaching, Center for Instructional Excellence, 2003
Gender Workshop, 2000
Agricultural Ethics workshop, 2000
Diversity Forum Workshop, 1999