

Linda Kay Goodwin, RN, PhD

CURRICULUM VITAE



Contact Information

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Education

<u>Institution</u>		<u>Date</u>	<u>Degree</u>
■ Hickman High School	Columbia, MO	1967	
■ University of Missouri	Columbia, MO	1971	BSN
■ University of Missouri	Columbia, MO	1977	MSN
■ University of Kansas	Lawrence, KS	1992	PhD

Major-Nursing; Minor-Computer Science

Current Employment

Jan 1996 to present

Duke University
 School of Nursing
 Assistant Professor – 1996 to 2003
 Associate Professor with Tenure– 2003 to present
 Director, Nursing Informatics Program – 1996 to 2008
 Director, Center for Instructional Technology and
 Distance Learning – 2002 -2005
 Joint Appointment – Information Services – 1996-99
 Clinical Team Leader – Information Services – 1998-99
 Secondary Appt – School of Medicine – 1999 to present
 Dept of Community and Family Medicine
 Division of Community Health
 Division of Clinical Informatics

Professional Interests and Strengths

- Team building
- Project management
- Data-driven quality improvement
- Nursing leadership skills for health care culture transformation
- Online instruction (both technologies and pedagogy)
- Privacy issues in data mining and electronic health care records
- Evaluation of Health IT systems
- Health IT systems that improve patient outcomes, provider workloads, and health care quality

Employment History

June 1971 - June 1972	Lutheran Hospital - Denver Colorado Staff nurse - pediatrics
Oct 1972 - Dec 1974	Baylor University Medical Center - Dallas, Texas Staff nurse - labor & delivery
Jan 1973 - Dec 1973	Baylor University Medical Center - Dallas, Texas Prenatal Instructor
Fall 1973 and Fall 1974	Baylor University School of Nursing (BSN program) Dallas, Texas -- Clinical instructor – obstetrics
Mar 1974 - Dec 1975	Dallas Assn. for Parent Education Childbirth Educator
Feb 1975 - July 1985	Independent practice - childbirth education Dublin, California; Columbia, Missouri; Chaska, Minnesota
Nov 1975 - Feb 1976	Boulder Community Hospital - Boulder, Colorado Staff nurse – obstetrics
Mar 1976 - Aug 1976	Boone County Hospital - Columbia, Missouri Staff nurse – obstetrics
Aug 1976 - June 1977	Central Methodist College (ADN program) – Fayette, MO Lectures - obstetric and pediatric nursing
Aug 1977 - June 1978	University of Missouri (BSN program) - Columbia, Missouri Instructor - Family-Child Nursing
Sept 1978 - July 1981	University of Minnesota Hospitals - Minneapolis Assistant Director of Nursing and Clinical Nurse Specialist Level III labor, delivery, postpartum; Level II nursery; Director: Parent Education Program
Sept 1978 - Dec 1981	University of Minnesota (BSN/MSN programs) Minneapolis, Minnesota -- Adjunct Instructor
Oct 1978 - June 1981	Twin Cities Lamaze - Minneapolis, Minnesota President two years, Vice President one year Independent practice - childbirth and parenting education
Oct 1982 - Mar 1985	Health Services Research Center - St. Louis Park, MN Park-Nicollet Medical Foundation Research Nurse (Research assistant) Prenatal Education Clinical Nurse Specialist

June 1986 - July 1992 Children's Mercy Hospital - Kansas City, Missouri
 Director, Nursing Information Systems
 Founder and chairperson: Nursing Ethics Forum

Sept 1990 - Aug 1992 University of Missouri - Kansas City (MSN program)
 Kansas City, Missouri -- Affiliated Faculty

Aug 1992 - Dec 1995 University of Missouri - Columbia, MO
 Assistant Prof - School of Nursing (BSN, MS, PhD programs)
 Core Faculty - Informatics Group, School of Medicine
 National Library of Medicine funded training program

Funding History

Past	PI	Effort	Title	Funding	Description
1991-92 Children's Mercy Hospital Education and Research Committee	(Woolery) Goodwin	10%	<i>Decision modeling for NICU nurses' ethical dilemmas</i>	\$5000	Decision analysis using software to evaluate options for cocaine babies
1992-93 National Center for Nursing Research = 1R43 NR02899-01A1	(Woolery) Goodwin and VanDyne	30%	<i>An expert system for preterm labor risk assessment.</i>	\$49,351	Technology eval and predictive modeling for preterm birth
1994-95 National Library of Medicine	Mitchell	10%	<i>Missouri Integrated Academic Information Management Systems (IAIMS)</i>	\$550,000 Y1 Steering & Research Committees	Enterprise level (Univ of MO) Info Systems
1997 Duke Univ Office of the Vice Provost for Academic & Intl Affairs	Goodwin	5%	<i>Building an International Virtual Research Collaboratory Infrastructure</i>	\$2500	Web based research collaboration planning
1997-2000 National Library of Medicine: 1R01LM/NRO6468-01	Goodwin	30-40%	<i>Informatics Tools for Perinatal Medical Knowledge Building</i>	\$867,443. (direct) \$1.3 million (total)	Predictive (data mining) modeling for preterm birth risk
1999-2000 Teagle Foundation	Allred	10%	<i>Gerontological Leadership and Outcomes Management Program</i>	\$149,964	Curriculum consultation
1999-2001 Fullerton Foundation	Michener	10%	<i>Shaping the Evolving Health Care Environment: New Grad Program for HealthCare Professionals</i>	\$366,723 Steering Committee	Interdisciplinary leadership development
2001 Duke Univ Program for Values & Ethics in the Marketplace	Goodwin	5%	<i>Exploring Privacy Issues in Patient Records</i>	\$1500	Patient survey to explore awareness of data sharing

continued

2002 Duke Center for Instructional Technology (CIT)	Goodwin (completed for P Allen)	10% donated	<i>Advanced Use of PDA Technology in Nursing Education and Patient Care</i>	\$25,000	BSN students' Personal Digital Asst (PDA) use
2002-2003 Duke Center for Instructional Technology (CIT)	Goodwin	20% donated	<i>Improving Online Teamwork Using Computer Supported (CSCW) Technologies</i>	\$32,500	Technology eval for CSCW tools to support online teamwork
2002-2003 National Library of Medicine: 2 RO1 LM06488-04A1	Goodwin	50%	<i>Informatics Tools for Perinatal Medical Knowledge Building. (Data Mining for Preterm Risk Factors)</i>	\$248,126 (direct) \$382,114 (total)	Predictive (data mining) modeling for preterm birth risk
2002-2005 DHHS – Division of Nursing 1 DON HP 00392-01	Goodwin	30%	<i>Clinical Informatics Leadership in Nursing</i>	\$631,915 (direct) \$666,268 (total)	Implementation of new online MSN in Nursing Informatics
2004-2005 Duke Center for Instructional Technology (CIT)	Hill	10% donated	<i>Improving Quality in Online Core Courses</i>	\$2500 (direct)	Quality evaluation and improvement in online courses
2005-2006 Duke Center for Instructional Technology (CIT)	Pietroban Goodwin (Co-I)	20% donated	<i>Scientific Writing Workshop Using Online Instructional Technology</i>	\$40,000 (direct)	Online training in clinical research
2007 1R01HD057137-01 NICHD	Goodwin	30%	<i>Machine Learning To Build Knowledge For Preterm Birth Disparities</i>	\$750,000 (direct)	Scored but not funded
2008 1R01HD057137-01A1 NICHD	Goodwin	40%	<i>Machine Learning To Build Knowledge For Preterm Birth Disparities</i>	\$1,000,000 (direct)	Scored but not funded
2008-2009 Duke Center for Instructional Technology (CIT)	Goodwin	20% donated	<i>Netbooks for Virtual Teamwork</i>	\$7500	Hardware and software testing
2009 1RC1HD063351-01 NICHD-NLM	Goodwin	30%	<i>Machine Learning To Build Knowledge For Preterm Birth Disparities</i>	\$500,000 (direct)	Unscored
2009-2010 iNet – Innovative Nursing Education Technologies	Goodwin (B Turner)	10% donated	<i>Privacy Issues in Electronic Health Records</i>	\$15,000 (direct)	Online learning modules covering privacy issues and opportunities in electronic records

Refereed Publications

are data based ; all are refereed; black references are included in PubMed (click on [PMID number](#) to connect to abstract or article) ; gray references are mostly computer science literature not included in PubMed Note: name change from Woolery to Goodwin in 1996

1. **Woolery, L.& N. Barkley.** (1981) *Enhancing couple relationships during prenatal and postnatal classes.* American Journal of Maternal Child Nursing. 6(3): 184-88. PMID: [6787365](#)
2. **Woolery, L.** (1983) *Self-care for the obstetrical patient: a nursing framework.* Journal of Obstetric, Gynecologic, and Neonatal Nursing. 12(1): 33-37. PMID: [65501432](#)

3. Brennan, P., Ozbolt, J., Tymchyshyn, P., Grier, M., Schwirian, P., & **L. Woolery**. (1986) *Building Bridges to the Future*. Research in Nursing and Health. 9, 1-2.
4. **Woolery, L.** (1985) *Ethical considerations for computer applications in nursing and healthcare*. in Hannah et.al. (editors), Proceedings of the International Symposium on Nursing Use of Computers and Information Science. Amsterdam: North Holland Publishers, 93-96.
5. Brennan, P., Butler, E., Degner, L., Griesser, G., Hannah, K., Kenny, D., McCormick, K., Ozbolt, J., Protti, D., Ryan, S., Schneider, W., Schwirian, P., Shires, D., & **Woolery, L.** (1985) *Making visions real: The future of informatics in nursing*. in Hannah et.al. (editors) Proceedings of the International Symposium on Nursing Use of Computers and Information Science. Amsterdam: North Holland Publishers, 351-355.
6. **Woolery, L.** (1989) *Ethics in Practice*. Missouri Nurse. 58, (5), 30. PMID: [2528677](#)
7. **Woolery, L.** (1990) *Expert nurses and expert systems: research and development issues*. Computers in Nursing. 8(1): 23-28. PMID: [2302590](#)
8. **Woolery, L.** (1990) *Professional standards and ethical dilemmas in nursing information systems*. Journal of Nursing Administration. 20(10): 50-53. PMID: [22132247](#)
9. **Woolery, L.** & J. Grzymala-Busse, S. Summers, & A. Budihardjo. (1991) *The use of machine learning program LERS_LB 2.5 in knowledge acquisition for expert system development in nursing*. Computers in Nursing. 9(6): 227-234. PMID: [1474822](#) #
10. Budihardjo, A., J. Grzymala-Busse, & **L. Woolery**. (1991) *Program LERS_LB 2.5 as a tool for knowledge acquisition in nursing*. Proceedings of the Fourth International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE). 735-740. #
11. VanDyne, M., **Woolery, L.**, Grzymala-Busse, J., & Tsatsoulis, C. (1994) *Using Machine Learning and Expert Systems to Predict Preterm Delivery in Pregnant Women*. Proceedings of the Tenth Conference on Artificial Intelligence Applications. IEEE Computer Society. 44-49. #
12. **Woolery, L.**, VanDyne, M., Grzymala-Busse, J., & Tsatsoulis, C. (1994) *Machine Learning for Development of an Expert System to Support Nurses' Assessment of Preterm Labor Risk*. in Grobe & Pluyter-Wenting (Eds.), International Overview for Nursing in a Technological Era (Nursing Informatics '94). Amsterdam: Elsevier Science Publishers, 357-361. #
13. Griffin, J. & **Woolery, L.** (1994) *Point of Care Documentation: A Viable Alternative*. Missouri Medicine. 91, (2), 76-77. PMID: [8183220](#)
14. Grzymala-Busse, J., & **L. Woolery**. (1994) *Improving Prediction of Preterm Birth Using a New Classification and Rule Induction*. In J. Ozbolt (Ed). Proceedings of the Annual Symposium on Computer Applications in Medical

- Care, Washington: Hanley & Belfus Inc., Philadelphia.18: 730-734.
PMCID: [PMC2247776](#) #
15. **Woolery, L.** (1994) *Clinical Knowledge Base Development for Preterm Birth Risk Assessment*. Applied Nursing Research. 7(3): 141-144. PMID: [7979358](#) #
 16. **Woolery, L.** & J. Grzymala-Busse. (1994) *Machine Learning and Preterm Birth Risk Assessment*. Journal of the American Medical Informatics Association.1(6): 439-446. PMCID: [PMC116227](#) #
 17. **Woolery, L.** & Yensen, J. (1995) *Nursing Collaboratory Development via the Internet*. Medinfo '95. Proceedings of the 8th World Congress on Medical Informatics. North-Holland, Vancouver, Canada. July, 1995, 1349-1352. PMID: [8591443](#)
 18. **Woolery, L.** & J. Grzymala-Busse. (1995) *Machine Learning for Development of an Expert System to Predict Premature Birth*. Biomedical Sciences Instrumentation. 31, 29-34. PMID: [7654979](#) #
 19. Grzymala-Busse, J., and **Goodwin, L.** (1996) *A Comparison of Less Specific vs More Specific Rules for Preterm Birth Prediction*. Proc. of the First Online Workshop on Soft Computing WSC1 on the Internet, served by Nagoya University, Japan, 129-133. #
 20. Saville, J. & **L. Goodwin.** (1997) *Data Extraction and Archiving for Research using a Computerized Clinical Information System*. Gerdin, et al, Eds. IDS Press. Nursing Informatics '97, 77-81. #
 21. **Goodwin, L.** Saville, J. Jasion, B. Turner, B. Jones, P. Prather, J. Dobousek, T. & S. Egger. (1997) *Collaborative International Nursing Informatics Research Project: Predicting ARDS Risk in Critically Ill Patients*. Gerdin, et al, Eds. IDS Press. Nursing Informatics '97, 247-249. #
 22. Prather, J., Lobach, D., **Goodwin, L.**, Hales, J., Hage, M., & WE. Hammond. (1997) *Medical Data Mining: Knowledge Discovery in a Clinical Data Warehouse*. In D. Masys (Ed). Proceedings of the AMIA Annual Fall Symposium. Hanley & Belfus, Inc., Philadelphia, 21: 101-105. PMCID: [PMC2233405](#) #
 23. **Goodwin, L.** (1997) *Performance Support Concepts for Web-Based Informatics Instruction*. In D. Masys (Ed). Proceedings of the AMIA Annual Fall Symposium. Hanley & Belfus, Inc., Philadelphia, 21: 698-702. PMCID: [PMC2233506](#) #
 24. Grzymala-Busse, J.W., & **L.K. Goodwin.** (1997) *Predicting preterm birth risk using machine learning from data with missing values*. Bulletin of the International Rough Set Society. 1, 17-21. #
 25. **Goodwin, L.** Prather, J. Schlitz, K. Iannacchione, MA. Hage, M Hammond, WE. & J. Grzymala-Busse. (1997) *Data mining issues for improved birth outcomes*. Biomedical Sciences Instrumentation, 34: 291-296. PMID: [9603055](#) #
 26. Allred, C., Arford, P., Mauldin, P., & **L. Goodwin.** (1998) *Cost-Effectiveness Analysis in the Nursing Literature, 1992-1996*. IMAGE: Journal of Nursing Scholarship. 30(3): 235-242. PMID: [9753838](#) #

27. Grzymala-Busse, J., **Goodwin, L.**, & X. Zhang (1999) *Increasing Sensitivity of Preterm Birth by Changing Rule Strengths*. Intelligent Information Systems VIII Proceedings of The International Symposium on Methodologies for Intelligent Systems, Ustron, Poland, June 14-18, 1999, 127-136. #
28. Grzymala-Busse, JW, Grzymala-Busse, WJ, and **LK Goodwin.** (1999) *A closest fit approach to missing attribute values in preterm birth data*. Proc. of the Seventh Int. Workshop on Rough Sets, Fuzzy Sets, Data Mining and Granular-Soft Computing (RSFDGrC'99), Ube, Yamaguchi, Japan, November 8-10, 1999. Lecture Notes in Artificial Intelligence, No. 1711, Springer Verlag, 1999, 405-413. #
29. Grzymala-Busse, J., **Goodwin, L.**, & X. Zhang (1999) *Preterm Birth Risk Assessed by a New Method of Classification Using Selective Partial Matching*. Foundations of Intelligent Information Systems Proceedings of 11th International Symposium on Methodologies for Intelligent Systems, Warsaw, Poland, June 8 - 11, 612-620. #
30. Hewitt, D. and **L. Goodwin.** (2000) *Millennium Issues for Nursing Informatics Education*. NI2000 (7th International Congress on Nursing Informatics) Apr 28-May 3, 2000 Auckland, New Zealand, 198-205.
31. **Goodwin, L.** and S. Maher. (2000) *Data Mining for Preterm Birth Prediction*. SAC 2000 (ACM Symposium on Applied Computing) March 19-21, 2000 Como, Italy, 46-51. #
32. **Goodwin, L.** Iannacchione, M.A., and W.E. Hammond. (2000) *Data Mining Methodology for Outcomes Analysis in Complex Clinical Problems*. NI2000 (7th International Congress on Nursing Informatics) Apr 28-May 3, 2000 Auckland, New Zealand, 66-72. #
33. Grzymala-Busse, JW , **Goodwin, LK**, Grzymala-Busse,WJ, and X. Zheng. (2000) *Comparing different rough set strategies in using rules induced from pre-term birth data*. IPMU-2000: Information Processing and Management of Uncertainty in Knowledge Bases Systems, Madrid, Spain, July 3-7, 2000, 388-394. #
34. Grzymala-Busse, JW., **Goodwin, L.**, WJ. Grzymala-Busse. (2000) *An approach to Imbalanced Data Sets Based on Changing Rule Strength*. Learning from Imbalanced Data Workshop, 17th National Conference on AI, AAAI-2000, Austin, TX, July 30-31, 2000, 69-74. #
35. **Goodwin, LK**, Maher, SG, Ohno-Machado, L, Iannacchione, MA, Crockett, P, Dreiseitl, S, Vinterbo, S, and WE. Hammond. (2000) *Building Knowledge in a Complex Preterm Birth Problem Domain*. In Proceedings of the AMIA Annual Fall Symposium. Hanley & Belfus, Inc., Philadelphia, 24: 305-309. PMID: PMC2243761 #
36. Grzymala-Busse, JW., Grzymala-Busse, WJ., and **LK. Goodwin.** (2001) *Coping with Missing Attribute Values Based on Closest Fit in Preterm Birth Data: A Rough Set Approach*. Computational Intelligence 17: 425-434. #

37. **Goodwin, LK**, Iannacchione, MA., Hammond, WE., Crockett, P., Maher, S., and K. Schlitz. (2001) *Data Mining Methods Find Demographic Predictors of Preterm Birth*. Nursing Research. 50(6): 340-345. [PMID: 11725935](#) #
38. **Goodwin, LK**. (2002) *Nursing Informatics Web-Based Education: Five Years in the Trenches*. In Proceedings of the AMIA Annual Fall Symposium. Hanley & Belfus, Inc., Philadelphia, 300-305. PMID: [PMC2244176](#) #
39. **Goodwin, LK**, Iannacchione, MA., (2002) *Data Mining Methods for Improving Birth Outcomes Prediction*. Outcomes Management for Nursing Practice. 6(2): 80-85. [PMID: 11949518](#) #
40. **Goodwin, LK**, and JC. Prather. (2002). *Protecting patient privacy in clinical data mining: a comparison of HIPAA de-identification with careful data filtering procedures*. Journal of Health Information Management. 16(4): 62-67. [PMID: 12365302](#)
41. **Goodwin, L**, Courtney, K, Kirby, D, and MA Iannacchione. (2002) *A Pilot Study: Patients' Perceptions About the Privacy of Their Medical Records*. Online Journal of Nursing Informatics ([article link](#)). 6(3): #
42. Courtney, K., Dikes, C., Welch, R., **Goodwin, L.**, (2003) *Putting Power in Your Nursing Applications*. 8th International Congress in Nursing Informatics June 20, 2003 Rio de Janeiro, Brazil,
43. Lin, S., Patel, S., Duncan, A., **Goodwin, L.** (2003) *Using Decision Trees and Support Vector Machines to Classify Genes by Names*. Proceedings of the Text Data Mining Workshop at the European Conference of Machine Learning (ECML/PKDD), pp 35-41. #
44. Grzymala-Busse, JW., **Goodwin, LK.**, and X. Zhang. (2003) *Increasing sensitivity of preterm birth by changing rule strengths*. Pattern Recognition Letters. 24(6): 903-910. #
45. **Goodwin, L**, VanDyne, M, Lin, S, Talbert, S. (2003) *Data Mining Issues and Opportunities for Building Nursing Knowledge*. Journal of Biomedical Informatics. 36: 379-388. [PMID: 14643734](#) #
46. White A, Allen P, **Goodwin L**, Breckinridge D, Dowell J, Garvy R. (2005). *Infusing PDA technology into an accelerated baccalaureate nursing program*. Nurse Educator, 30(4):1-5. [PMID: 16030450](#) #
47. Grzymala-Busse, J., **Goodwin, L.**, Grzymala-Busse, W., Zheng, X. (2005). *Handling missing attribute values in preterm birth data sets*. Tenth International Conference on Rough Sets, Fuzzy Sets, data Mining, and Granular Computing, 3462: 242-351. #
48. Courtney, K. L., Baktay, C., Stewart, S. L., Popescu, M., & **Goodwin, L. K.** (2007). *Visualization of Preterm Birth Health Disparities*. MEDINFO, Brisbane, Australia. #
49. Courtney, K. L., Stewart, S. L., Popescu, M., & **Goodwin, L. K.** (2008). *Predictors of Preterm Birth in Birth Certificate Data*. Intl. Congress of the European Federation for Medical Informatics, Goteborg, Sweden. #

50. **Goodwin, L.** (2008). *Point of Care Testing: Issues and Opportunities*. Nursing Management. 39(3): 40-43. PMID: [18414225](#)
51. Blood-Siegfried, Jane E.; Short, Nancy M.; Rapp, Carla Gene; Hill, Elizabeth; Talbert, Steve; Skinner, John; Campbell, Amy; and **Goodwin, Linda** (2008). *A Rubric for Improving the Quality of Online Courses*, International Journal of Nursing Education Scholarship: Vol. 5 : Iss. 1, Article 34. PMID: [18976231](#)
52. Courtney, K. L., Stewart, S. L., Popescu, M., & **Goodwin, L. K.** (2008). *Predictors of preterm birth in birth certificate data*. Studies in Health Technology and Informatics, (136): 555-560. PMID: [18487789](#) #
53. Wyatt, T.H., Krauskopf, P.B., Gaylord, N., Ward, A., Hawkins-Huffstutler, S. Y., & **Goodwin, L.** (2009 - In Press, Nov-Dec issue). *Cooperative M-learning with Nurse Practitioner Students*, Nursing Education Perspectives. #

Non-refereed Publications

1. **Woolery, L.** (Spring, 1995) *WWW Nursing Resources*. AMIA Nursing Informatics Working Group Newsletter.
2. **Woolery, L.** (Fall, 1995) *WWW Nursing Resources*. AMIA Nursing Informatics Working Group Newsletter.
3. **Goodwin, L.** (Spring, 1996) *WWW Nursing Resources*. AMIA Nursing Informatics Working Group Newsletter.
4. **Goodwin, L.** (1997) *The Future of Nursing Informatics and Data-Driven Nurse Practitioner Decisions*. NP News. North Carolina Nurses' Association. 6(1): 9-10.
5. **Goodwin, L.** Schlitz, K., Jasion, B. (1997) *Data Mining for Improved Patient Outcomes*. Tarheel Nurse. 59(4): 21-22.
6. **Goodwin, L.,** (2000) *Data Mining for Improved Patient Outcomes*. Interactive Health Care Report. 2(5): 3-4.

Book Chapters

1. Goldstein, N., Zink, M., Stevenson, L., Anderson, M., **Woolery, L.,** & DePompolo, T. (1983) *Self care: a framework for the future*. Chapter 7 in Chinn (editor), Advances in Nursing Theory Development, 107-121.
2. **Woolery, L.** (1990) *On-line documentation in the operating room*. Chapter 5 in Perioperative Nursing Documentation. Denver, Co: Association of Operation Room Nurses, Inc.
3. Summers, S. & **L. Woolery.** (1991) *Computer-enhanced management in the ambulatory surgical setting*. Chapter 3 in Summers and Ebbert (Editors). Ambulatory Surgical Nursing: A Nursing Diagnosis Approach, Philadelphia: J.B. Lippincott, 26-66 .
4. **Goodwin, L.,** Turner, B. Allred, C., & J. Yensen (1998) *A Virtual Patient Outcomes Research Collaboratory for Nurse Administrators*. Chapter 3 in Series on Nursing Administration: Information Systems Innovations for Nursing. Volume 10. Moorhead & Delaney, Editors. Thousand Oaks, CA: Sage Publications, 30-47.

5. **Goodwin, L.**, N. McIntyre, and K. Sprecher. (2000) *Web-Based Informatics Education: The Duke University Model*. Nursing Informatics: Education for Practice. B. Carty (Ed) Springer Publishers, 136-168.
6. **Goodwin, LK.** (2001) *A Vendor-Free Option for 'Online' Content Delivery*. The American Journal of Distance Education (8th Book of Readings). Penn State – The American Center for the Study of Distance Education), Moore & Savrock (Eds), 115-124.
7. **Goodwin, L.** and Grzymala-Busse, J. (2001) *Data Mining Approaches for Perinatal Knowledge Building*. Handbook of Data Mining and Knowledge Discovery. New York, NY: Oxford University Press, 936-944.
8. Grzymala-Busse, JW, **Goodwin, LK**, Grzymala-Busse, WJ , and X. Zheng. (2002) *Problems of rule induction from preterm birth data*. New Paradigms in Machine Learning, (J. Kacprzyk and L. Jain (Eds), Physica-Verlag, 403-418.
9. Grzymala-Busse, JW, **Goodwin, LK**, Grzymala-Busse, WJ , and X. Zheng. (2002) *A comparison of rough set strategies for pre-term birth prediction*. Technologies for Constructing Intelligent Systems, ed. by B. Bouchon-Meunier, J. Gutierrez-Rios, L. Magdalena, and R. Yager (Eds), Springer Verlag.
10. Grzymala-Busse, JW, **Goodwin, LK**, Grzymala-Busse, WJ , and X. Zheng. (2003) *An Approach to Imbalanced Data Sets Based on Changing Rule Strength*. Rough-Neuro Computing: Techniques for Computing with Words, by S. K. Pal , I Polkowski and A. Skowron (Editors), Springer-Verlag.

Scientific Abstracts

1. **Woolery, L.** & Summers, S. (1992) *A description of NICU nurses' ethical dilemmas when caring for cocaine-exposed newborns*. Proceedings of Sigma Theta Tau International's Conference on Voyages into the Future through Nursing Research. Madison, WI, 113.
2. **Woolery, L.** & Summers, S. (1992) *Knowledge Acquisition for Expert System Development to Assist Post-Anesthesia Recovery Room Nurses with Assessment of Patient Status*. Proceedings of Sigma Theta Tau International's Conference on Voyages into the Future through Nursing Research. Omnipress: Madison, WI, 230.
3. **Woolery, L.** & S. Summers, R. Clifford, D. Hill, L. Davies, D. Glasnapp, M. VanDyne, R. Mansfield, D. Crown, J. Sauer. (1992) *Knowledge Acquisition for Assessment of Preterm Labor Risk in Pregnant Women*. Proceedings of Sigma Theta Tau's International State of the Science Congress on Nursing Research and Utilization. Madison, WI, 188.
4. Yensen, J. & **Woolery, L.** (1994) *The development of a Virtual Nursing College*. National League for Nursing : Informatics, Nursing, and the Future. Spokane, WA: October 1994.
5. Yensen, J. & **Woolery, L.** (1995) *The Virtual Nursing College: Opportunities and Obstacles*. Medinfo '95. Proceedings of the 8th World Congress on Medical Informatics. North-Holland, Vancouver, Canada. July, 1995, 1716.
6. **Woolery, L.** (1995) *Nursing Informatics Approaches to Preterm Birth Prevention*. Midwest Nursing Research Society. Kansas City, MO: March 1995
7. Poole, M. & **Woolery, L.** (1995) *Building a Classroom on the Electronic Frontier*. Missouri Research and Education Network Conference. Columbia, MO: March 1995.

8. Harr, D. & **Woolery, L.** (1995) *An Expert System to Predict Preterm Birth Risk.* Symposium for Computer Applications in Medical Care. New Orleans, Nov, 1995.
9. Poole, M. & **Woolery, L.** (1995) *Authentic Learning Strategies in the Electronic Classroom.* EDUCOMM National Conference: Portland, OR: Nov, 1995.
10. Harr, D. & **Woolery, L.** (1996) *Cost Factors of an Expert System to Predict Preterm Birth Risk.* University of Vermont: Feb, 1996.
11. Prather, J., Lobach, D. Hales, J., **Goodwin, L.**, Hage, M., and Hammond, E. (1997) Exploratory Data Analysis to Detect Preterm Risk Factors. (Poster abstract) AMIA Annual Fall Symposium Proceedings.
12. **Goodwin LK**, Maher S, Nahum GG, Prather JC, Iannacchione MA, Crockett PW, Hammond WE. (1999). *New Data Mining Tools for Outcomes Analysis in Complex Clinical Problems.* (Poster abstract). AMIA Annual Fall Symposium Proceedings (and 2nd place poster winner).
13. Hayko, D. and **LK Goodwin**, (2000). *Productivity Measurement: A Faculty Portfolio System.* AMIA Annual Fall Symposium Proceedings. Nov 7, Los Angeles, CA.
14. **Goodwin, LK.** (2001) *Data Mining for Predicting Birth Outcomes.* Outcomes Management: From Theory to Action. Medical University of South Carolina, March 8-9, Charleston, SC.
15. **Goodwin, LK.** (2001) *Some Data on Email Volume in Web-Based Teaching. Looking to the Future: Is Teaching a Lost Art?.* American Assn of Colleges of Nursing, April 26-28, Denver, CO.
16. Newkirk, J. and **Goodwin, L.** (2004) *The Use of Mobile Data Collection for a Systematic Evaluation of a Healthcare Information System for Nursing Documentation.* MEDINFO. Sep 8-12, 2004, San Francisco, CA.
17. Crockett, P., Harvey, E., **Goodwin, L.** (2004) *Incorporating Bayesian Prior Information into CART with Application to Data-assisted Diagnosis.* American Public Health Association. November 6-10, 2004, Washington, DC.
18. Stewart, S., Courtney, K. and **Goodwin, L.** (2006) *Knowledge Discovery (KDD) in Birth Certificates for Preterm Birth Prediction.* American Public Health Assn. Nov 4-8, 2006, Boston, MA. #

Non-Authored Publications

1. Joch, A. (1998) *No Sour Notes: Five ways to hammer out harmony between your IS professionals and users.* Healthcare Informatics. October: 91-96. Also available at: http://www.healthcare-informatics.com/issues/1998/10_98/sour.htm
2. Sorrells-Jones J. and D. Weaver (1999) *Knowledge workers and knowledge-intensive organizations, Part 3. Implications for preparing healthcare professionals.* Journal of Nursing Administration. 29(10):14-21.
3. Elfrink, V. (2000) *Artificial intelligence—is it applicable in nursing? Crossroads: Where Nursing and Technology Meet 12(3)* http://www.fitne.net/healthnet/archives/00_spring/cross.html
4. Levine, H. (2002) *Nurses Know Best.* Ladies Home Journal. July: 62-74. www.lhj.com
5. Spader, C. (2008) *RNs Warming up to Information Technology.* Nursing Spectrum. <http://news.nurse.com/apps/pbcs.dll/article?AID=/20080505/NATIONAL02/80503002/-1/frontpage>

Editorial Positions

■ <u><i>American Medical Informatics Association</i></u>	Reviewer	1988 to present
■ <u><i>Research Practitioner</i></u>	Editorial Board	2000-2004
■ <u><i>Journal of the American Medical Informatics Assn</i></u>	Reviewer	1999, 2002
■ <u><i>Interactive Health Care Report</i></u>	Guest Editor	2000
■ <u><i>Information Sciences</i></u>	Reviewer	2004 to present
■ <u><i>Joint Conference on Information Sciences</i></u>	Reviewer	2005
■ <u><i>Journal of Biomedical Informatics</i></u>	Reviewer	2005 to present
■ <u><i>International Journal of Medical Informatics</i></u>	Reviewer	2005 to present
■ <u><i>Health Care Management Review</i></u>	Editorial Board	2005 to present
■ <u><i>MERLOT (merlot.org) Health Sciences</i></u>	Editorial Board	2007 to present

Professional Recognition

- Who's Who in American Colleges and Universities - 1971
- Sigma Theta Tau Nursing Honor Society - Inducted 1971
- Outstanding Employee Award, Baylor University Medical Center - 1974
- Special Service Award, Twin Cities Lamaze - 1980
- Invitational Post-Conference, International Symposium on Nursing Use of Computers and Information Science. Calgary, Alberta, Canada – 1985
- Children's Mercy Hospital Outstanding Employee Recognition - 1991
- Invited to write items for ANA's Nursing Informatics Certification Exam -1994
- Wakonse Teaching Excellence Retreat (By Invitation) - 1995
- Invited Inaugural Address: I European Conference on Computers In Nursing. Ciutat Sanitaria i Universitaria de Bellvitge, Barcelona, Spain – 1997
- Werley Award Nominee – American Medical Informatics Association – 1998, 2000, 2002
- American Medical Informatics Association - 2nd Place Poster Winner – 1999
- Duke University Vice Provost for International Affairs – Travel Award – 2000
- Invited Keynote Speaker – Rutgers 18th Annual Nursing Informatics Conference – 2000
- Duke University Provost's Award for International Presentation Travel – 2000
- Duke University School of Nursing (student elected) Outstanding Faculty of the Year – 2005

Scientific Review Panels

- National Library of Medicine (NLM) - Electronic Medical Records review panel 1994
- National Institute of Nursing Research (NINR) - SBIR review panel 1997-2000
- Agency for Health Research and Quality (AHRQ) - Bioterrorism review panel 2000
- National Library of Medicine (NLM) - IAIMS site visit - review panel 2001
- Chair: National Library of Medicine (NLM) Panel (ZLM1 MMR C 01) - June 10, 2002
- Chair: National Library of Medicine (NLM) Panel - 2003
- Natl Institute of Nursing Research (NINR) T32 Panel ZNR1 REV-J (80) – Nov 2004

- Oak Ridge Associated Universities (ORAU) Panel reviewing perinatal applications for state of Pennsylvania tobacco settlement distribution funding – 2004
- National Library of Medicine (NLM) – Panel ZLM1 HS-K (01) – July 2005
- National Library of Medicine (NLM) – Panel ZLM1 AP-K (J2) – Dec 2005
- Natl Institute of Nursing Research (NINR) – Panel ZNR1 REV-A (89) (S) – Feb 2006
- National Library of Medicine (NLM) – Panel ZRG1 HOP-S (51) R) – Mar 2007
- Natl Institute of Nursing Research (NINR) – Panel T32 - ZNR1 REV-K (99), Jan 2008
- Oak Ridge Associated Universities (ORAU) Panel reviewing Florida Centers of (HIT) Excellence - March 2008
- Oak Ridge Associated Universities (ORAU) Panel reviewing PA Dept of Health Biomedical Proposals - Sept 2008
- National Institutes of Health(NIH) - Panel 2009/05 ZRR1 CR-1 (02)Clinical Science Translation Awards (CTSA) – Feb 2009
- National Institutes of Health(NIH) - Panel ZRG1 PSE-C 58 R Economic Stimulus Proposals (RC1) – June 2009

Past Year's Teaching (prior years provided on request)

Note: Ratings are a 4 point scale with 4.0 being the best. All informatics courses are taught online with 3-5 days on campus each semester.

Semester	Course	Course Average	Instructor Average
Spring 2008	N410 Issues & Standards in Informatics	3.91	4.0
Spring 2008	N417 Capstone Seminar in Nursing Informatics	3.60	3.70
Spring 2008	N498 Clinical Informatics Practicum	NA	NA
Summer 2008	N412 Health Systems Project Management	3.92	3.71
Fall 2008	N413 Informatics Infrastructure for Safe Pt Care	3.56	3.70
Spring 2009	N417 Capstone Seminar in Nursing Informatics	3.88	3.89
Spring 2009	N498 Clinical Informatics Practicum	NA	NA
Summer 2009	N303 Health Program Planning and Evaluation	3.41	3.52
Fall 2009	No teaching assignment		

Past Year's Presentations (prior years provided on request)

- March 2008 - Jefferson College and Carillon Health System (invited), Roanoke, VA: *Informatics Infrastructure for Health Care Transformation*
- June 2008 – Kaiser Permanente (invited) Pasadena, CA: *Domain Modeling and Leadership Skills for KP Informatics Nurse Champions*
- July 2008 – Summer Institute in Nursing Informatics (invited) Baltimore, MD : *Big Brother and Big Data: Protecting Patient Privacy and Data Quality in Data Mining*
- Sept 2008 – Center for Democracy and Technology (invited) Washington, DC: *De-Identified Data for Predicting Preterm Birth*

- April 2009 – Duke Univ Center for Instructional Technology Showcase (Durham, NC) *Netbooks or Nonesense?: Technologies for Virtual Teamwork*
<http://cit.duke.edu/showcase/2009/category/1020-1100/>
- Sept 2009 – Duke Health Technology Solutions (Durham, NC) *Big Brother or Big Bother? Privacy Issues in Electronic Health Records*

Clinical Activity

- 30-40% Joint Appointment Information Services Department (1996-1999)
- Consulting and clinical/evaluation data collection: Lumata product development, Morehead Memorial Hospital (2009-2010)

Professional Service

- American Nurses Association (ANA)
 - ANA Council on Nursing Systems and Informatics
 - Member 1997-98, Chair-Elect 1998, Committee dismantled by ANA in 1998
 - ANA Council on Nursing Practice Information Infrastructure (CNPII)
 - Appointed - 1999-2004; reappointed 2005-2008
- North Carolina Nurses' Association (NCNA)
 - Member, Informatics Council 1996-2008
 - Member, Legislative Liaison Committee 1997-98
 - Chair, Planning Committee 3rd Annual Nursing Informatics Conference 1997
 - Co-chair, Planning Committee 4th Annual Nursing Informatics Conference 1998
- American Medical Informatics Association (AMIA)
 - Nursing Working Group Leadership (Member-at-Large) 1994-1996
 - Nominating Committee (1999)
 - Planning Committee- annual fall symposium-Orlando (1998); Los Angeles (2000)
 - National Awards Committee (2002-2009)
 - Nursing Informatics Working Group History Project (2004-2005)
- North Carolina Health Information and Communications Alliance (NCHICA)
 - Member, HIPAA State-wide Implementation Task Force 2000-01
 - Co-Chair, HIPAA Awareness and Education Workgroup 2000-01
 - Member, HIPAA Privacy Task Force 2001-2008
 - Co-founder and co-chair, Consumer Advisory Council on Health Information (CACHI) 2006-2009

Participation in Academic and Administrative Activities of the University and Medical Center

External

- Promotion and Tenure review for faculty members at the University of Pittsburgh (2005, 2008)
- Guest lecture (online) for data mining students at the University of Utah (2005)
- Guest lecture (online) for doctoral students at the University of Pennsylvania (2006)
- Consultation for CiPCT - Dr. George DeMiris at the University of Washington (2009)

Campus

- Duke Academic Council - Member (1997-1998; 2000-02)
- Duke Academic Council - Alternate Member (1998-1999)
- Computer and Information Technology Intensive Environment (CITIE) Steering Committee. - Member (2001-2002)
- CIT Advisory Board – Member (2002-2005)
- Information Technology Advisory Committee (ITAC) – (2002-2005)
- Blackboard Advisory Committee – Member (2003-2005)

Medical Center

- 30-40% Joint Appointment Information Services Department (1996-1999)
- Patient Identification Network (PIN) Committee (1996)
- Center for Health Informatics (1997)
- Vienna Teleconferencing Project (1997)
- Clinical Team Leader – Information Services Department (1998-1999)
- HIPAA Security and Privacy Evaluation & Monitoring Committee (2001-02)
- Institutional Review Board (2002 – 2003)
- Clinical Innovations Group (DHTS-CIG) (2004 - 2005)
- DHTS CareDocs Metrics and Evaluation Committee (2007-2009)
- Conflict of Interest Committee (2007-present)
- Chancellor's ad hoc Appointment, Promotion, and Tenure review committee (2009-present)

School of Nursing

- Leadership
 - **Faculty Governance Association**
 - ◆ Chair elect (2007-2009)
 - ◆ Chair (2009-2011)
 - **Program Director** – Nursing Informatics (1996-2008)
 - **Division Chief** – Health Systems (1999-2000); Health Systems and Primary Care (2000-2001)
 - **Director CITDL** - Center for Information Technology & Distance Learning (2002 – 2005)

- Committees
 - Graduate Studies Committee - Chair (1998-1999)
 - Technology Strategic Planning Chair – (1999-2000)
 - Curriculum Committee - Member (1996-98; 2000-2003)
 - Multiple Search Committees for New Faculty (1998-2004)
 - Technology Committee - Member (1997-2005)
 - Graduate Studies/Faculty Governance Assn – Member (1996-present)
 - Appointment, Promotion, Tenure (APT) Committee – (2003-present)
 - APT Faculty Annual Peer Review Subcommittee – Member (2003-2006)
 - Ad hoc 301 course revision committee – Member (2005)
 - Doctorate of Nursing Practice planning committee – Member (2007)
 - Doctorate of Nursing Practice program committee – Member (2008 to present)

- Selected Projects/Service
 - Long list of projects as CITDL Director provided on request (2002-2005)
 - Online lecture/tutorial for DUSON quality improvement teams (2005)
 - System selection committee (matriculation plans, clinical placements and evaluation) (2008)
 - Duke Univ School of Nursing master calendar system (2009)
 - Faculty Governance reporting system (2009)

Recent Community Service

- Southern Piedmont Health Information Exchange - Executive Board
- Cameron Woods Homeowners Assn – Executive Board
- Center for Clinical Workforce Planning Professionals – Advisory Board
- Parents Network for Troubled Teens - Volunteer