

CURRICULUM VITA

Carolyn Lowe, Ph.D.

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EDUCATION

<u>YEAR</u>	<u>DEGREE</u>	<u>INSTITUTION</u>	<u>AREA OF STUDY</u>
1999	Ph.D.	University of Northern Colorado	Biological Education
1994	M.Ed.	Oklahoma City University	Gifted Education
1989	B.S.	Oklahoma City University	Biology

WORK EXPERIENCE-PROFESSIONAL ACADEMIC

<u>YEAR(S)</u>	<u>INSTITUTION</u> <u>POSITION</u>	<u>COURSES or RESPONSIBILITIES</u>
1999-Present	Northern Michigan Univ. Assistant Professor	MSED 250, Physical Science for Educators MSED 251, Life Science for Educators MSED 252, Earth Science for Educators MSED 340, Fundamental Concepts in Science MSED 350, Secondary Science Methods and Materials ED 222, Classroom Management ED 450, Seminar for Student Teachers Supervisor of over 20 Student Teachers MSED 521, The Effective Teaching of Science MSED 522, Technology Assisted Science Instruction MSED 523, Issues in Science Education MSED 525, Laboratory Investigations and Demonstrations MSED 541, Teaching Physical Science

MSED 542, Teaching Life Science
 MSED 562, Modeling in Science
 MSED 563, Contemporary Scientific Issues
 MSED 595S, Special Topics; Managing and Motivating in
 Science Classrooms (team taught)
 ED 595, Special Topics; Reaching out, Distance
 Learning in the K-12 Classroom
 EDSI 595S, Special Topics: Living World

1998	Univ. of Northern Colorado Term Lecturer	BIO 265, Biology Concepts for Elementary Teachers BIO 100, Exploring Biology (for non-majors) BIO 460, Laboratory for Ecology BIO 110, Laboratory for Principles of Biology
Summer 1997-1998	Univ. of Northern Colorado, Instructor	BIO 265, Biology Concepts for Elementary Teacher BIO 110, Principles of Biology BIO 110, Laboratory for Principles of Biology
1996-1999	Instructor: Univ. of Northern Colorado	COSMOS (Colorado Math and Science Opportunities), a federally funded Upward Bound Science and Math program.
1995	Univ. of Northern CO Research assistant	Designed spreadsheets and charts for analysis of data regarding radio tracking of swift and kit fox.
1994-1999	Univ. of Northern Colo. Teaching Assistant	BIO 100, Exploring Biology ZOO 115, Introduction to Human Biology
1990-1994	Putnam City High School Teacher	Biology, anatomy and physiology, chemistry, meteorology and astronomy.
1989-1990	Bridge Creek Jr. H. S.	7th and 8th grade science.
1988-1994 (summer)	Okla. City Univ. Summer Enrich. Program: Lead teacher	Taught an integrated summer program curriculum to various groups of gifted students ages 9 to 15.

PUBLICATIONS

Lowe, C. and Klett, M. (2006). Reaching rural teachers using distance education. Proceedings of the 22nd Annual Conference on Distance Teaching and Learning. Madison, WI.

- Dawson, C. (2002). Novice teachers' perceptions of a multifaceted mentoring program and the needs of early-career science teachers. Proceedings of the 2002 Annual International Conference of the Association for the Education of Teachers in Science. (ERIC Document Reproduction Service no. ED 465 602).
- Dawson, C. (1999). The effect of explicit instruction in science process skills on conceptual change: the case of photosynthesis. Doctoral dissertation, University of Northern Colorado, Greeley, Colorado.
- Dawson, C & Saunders, G. (1999). Teaching biology to preservice elementary teachers: Using the K-8 content standards as a framework. Proceedings of the 1999 Annual International Conference of the Association for the Education of Teachers in Science. (ERIC Document Reproduction Service No. ED 431 626).
- Saunders, G., Dawson, C., Tripp, B., Pentecost, T., Chaloupka, M., & Saunders, J. (1998). Laboratory Skills and competencies for secondary science teachers. Proceedings of the 1998 Annual International Conference of the Association for the Education of Teachers in Science. (ERIC Document Reproduction Service No. ED 421 363).

SELECTED PROFESSIONAL PRESENTATIONS

- National Space and Aeronautics Administration (NASA) and the National Science Teachers Association (NSTA). (2007, March). Living and working in space: habitat. Full day symposium. Member of the NASA team. Annual Conference of the National Science Teachers Association. St. Louis, MO.
- Klett, M., Lowe, C., and Wozniak, C. (2007, March). Integrating GLOBE, infusing inquiry. Peer reviewed presentation at the Annual Conference of the Michigan Science Teachers Association, Grand Rapids. MI
- Lowe, C. (2007, March). Going beyond lecture, lecture, lecture, test. Peer reviewed presentation at the Annual Conference of the Michigan Science Teachers Association, Grand Rapids. MI
- Lowe, C. (2007, March). What does vocabulary mean? Better ways to teach terminology. Peer reviewed presentation at the Annual Conference of the Michigan Science Teachers Association, Grand Rapids. MI
- Lowe, C. (2006, October). Go ahead and say the "E" word; teaching evolution with sensitivity. Invited paper presented at the Seaborg Center Annual Fall Conference.
- Lowe, C. (2006, October). New state science education laws and requirements – what do they mean for me? Invited paper presented at the Seaborg Center Annual Fall Conference.

- Lowe, C. and Klett, M. (2006, August). Distance learning resources for the K-12 classroom. Peer reviewed half—day workshop presented at the 22nd Annual Conference on Distance Teaching and Learning. Madison, WI.
- Lowe, C. and Klett, M. (2006, August). Reaching rural teachers using distance education. Peer reviewed presentation at the 22nd Annual Conference on Distance Teaching and Learning. Madison, WI.
- Lowe C. (2005, November). As the world turns: using the inquiry wheel to study a popbottle world. Peer reviewed Presentation at the Annual Area Conference of the National Science Teachers Association. Chicago, IL.
- Lowe, C. (2005, November). Using online classrooms to support the regular science class. Peer reviewed workshop presented at the Annual Area Conference of the National Science Teachers Association. Chicago, IL.
- Lowe, C. (2005, October). Dead tree hotel; who's staying in room 135?. Invited workshop presented at the Seaborg Center Annual Fall Conference.
- Lowe, C. (2005, October). Games for you, fun for me; alternative assessment in science. Invited paper presented at the Seaborg Center Annual Fall Conference.
- Lowe, C. (2005, March). Around and through inquiry; doing and writing in science. Invited paper presented at the Annual Conference of the Michigan Science Teachers Association, Detroit, MI.
- Lowe, C. (2005, March). Alternative assessment 1-0-fun. Assessing life science benchmarks in fun ways. Invited paper presented at the Annual Conference of the Michigan Science Teachers Association, Detroit, MI
- Lowe, C. (2004, October). Science toys for big girls and boys, technology tools for science education. Invited paper presented at the Seaborg Center Annual Fall Conference.
- Lowe, C. (2004, October). Rot in a Pot. Invited paper presented at the Seaborg Center Annual Fall Conference. Given twice during the conference.
- Lowe, C. (2004, March). Probing energy: using temperature probes to explore concepts in energy. Peer reviewed presentation at the Annual Conference of the Michigan Science Teachers Association, Lansing, MI. Presented by C. Lowe and students.
- Lowe, C. (2003, October) No way! Invited paper presented at the Seaborg Center Fall Conference, Marquette MI.
- Lowe, C. (2003, October) Probing energy; using temperature probes to explore concepts in energy. Invited paper presented at the Seaborg Center Fall Conference.

- Dawson, C. (2002, December 11). Changes in matter and energy. Full day workshop for teachers through the Copper Country ISD and Michigan Technical University AISIS Professional Development Program.
- Dawson, C. (2002, October). What is inquiry and how do I incorporate it in my classroom? Annual Conference of the Michigan Council of Teachers of Mathematics
- Dawson, C. (2002, October) Inquiry, cheap and available. Annual Conference of the Michigan Council of Teachers of Mathematics
- Dawson, C. (2002, January). Novice Teachers' Perceptions of a Multifaceted Mentoring Program and the Needs of Early-Career Science Teachers. Invited paper presented at the Annual Meeting of the Association for the Education of Teachers in Science, Charlotte, NC.
- Dawson, C. (2002, January). Meeting the needs of preservice elementary teachers in science content courses. Invited paper presented at the Annual Meeting of the Association for the Education of Teachers in Science, Charlotte, NC.
- Dawson, C. (2001, October). A world in a bottle. Invited paper presented at the Annual Meeting of the Metropolitan Detroit Association of Science Teachers, Detroit, MI.
- Dawson, C. (2001, October). The job of the cell: cellular structure and function. Invited paper presented at the Annual Meeting of the Metropolitan Detroit Association of Science Teachers, Detroit, MI.
- Dawson, C. (2001, October). Improving Science MEAP Scores. Invited paper presented at the Annual Meeting of the Metropolitan Detroit Association of Science Teachers, Detroit, MI.
- Dawson, C., (2001). Assessment II and writing in science and mathematics. A series of workshops offered to teachers (2 full days) through Copper Country ISD and Michigan Technical University AISIS professional development program.
- Dawson, C., (2001, September). Computers and the Internet. A hands-on workshop presented to teachers. Chassell School District.
- Dawson, C., (2001). Improving Science MEAP scores. Presented to teachers of the Marquette-Alger ISD Elementary Science Committee.
- Dawson, C. (2001, March). A year of biology in a bottle. Invited paper presented at the Annual Meeting of the Michigan Association of Science Teachers, Detroit MI.
- Dawson, C. and R. Hrecz. (2001, January). Every student with a laptop: Initial impacts on teacher education. Invited paper presented at the Annual Meeting of Association for the Education of Teachers in Science, Costa Mesa, CA.
- Dawson, C. (2000, March). Five kingdoms, more or less? Teaching about classification. Invited paper

presented at the Annual Meeting of the Michigan Association of Science Teachers, Lansing MI.

Dawson, C. and G. Saunders (1999, January). Teaching biology to Preservice Elementary Teachers: Using the K-8 Content Standards as a Framework. Invited paper presented at the Annual Meeting of the Association for the Education of Teachers in Science, Austin, TX.

Dawson, C. (1998, March). Minds of our own; Do university students know what you think they know? Presentation at the Math and Science Teaching Center Brown Bag Luncheon, University of Northern Colorado, Greeley, CO.

Saunders, G., Chaloupka, M., Dawson, C., Pentecost, T., Saunders, J., & Tripp, B. (1998, April). Laboratory skills and competencies for secondary science teachers. Paper presented at the Annual University of Northern Colorado Scholarship Symposium, University of Northern Colorado, Greeley, CO.

Dawson, C., Lamirato, A., Adams, J., & Buss, W. (1998, April). The effect of grazing and excrement on the germination of the seed of blue grama grass (*Bouteloua gracilis*). Paper presented at the Annual University of Northern Colorado Scholarship Symposium, University of Northern Colorado, Greeley, CO.

Kruschwitz, L, Dawson, C., (1993, October). Prairies to peaks. Invited paper presented at the Area Meeting of the National Science Teachers Association, Denver, CO.

Dawson, C., & Jackson, J. (1993, April). Increasing cultural awareness in science teaching using earth systems education. Workshop presented to teachers of Grandview School District, Grandview, OK.

Dawson, C., (1993, February). Teaching with terrariums. Workshop presented for teachers of Putnam City School District, Oklahoma City, OK.

Dawson, C., Jackson, J., & Egger, C., (1992, November). Program for leadership in earth systems education. Workshop presented to teachers of Putnam City School District, Oklahoma City, OK.

Dawson, C., Jackson, J., & Egger, C., (1992, October). Program for leadership in earth systems education. Workshop presented at the Annual Meeting of the Oklahoma Science Teachers' Association, Tulsa, OK.

PROFESSIONAL AWARDS

Northern Michigan University TLC award for Improvement of Instruction, Fall 2006

PROFESSIONAL SERVICE

Director, Region 13 of the Michigan Science Teachers Association

Technology Committee of the Michigan Science Teachers Association
Association for Science Teacher Education (ASTE) Technology Committee member
Key Leader for the US Department of Education and the National Science Teachers Association *Building a Presence in Science* program

PROFESSIONAL ORGANIZATIONS

Association for Supervision and Curriculum Development (ASCD)
Association for Science Teacher Education (ASTE)
National Association of Research in Science Teaching (NARST)
National Science Teachers Association (NSTA)
Michigan Science Teachers Association (MSTA)
National Association of Biology Teachers (NABT)

COMMITTEE SERVICE AT NORTHERN MICHIGAN UNIVERSITY

Chair, School of Education Faculty (2007-2008)
Chair, Evaluation and Personnel Committee (School of Education) Fall 2005
Outcomes Assessment Committee.
Undergraduate Review Committee (School of Education).
Evaluation Committee (School of Education).
Secondary Education Program Review Committee (School of Education).
State of Michigan Accreditation Review Committee (School of Education).
National Council for Accreditation of Teacher Education Review Committee (School of Education).
The Upper Peninsula Mentoring Project and the Seaborg Academy (The Seaborg Center and the Upper Peninsula Center for Professional Development).
The Seaborg Center Science Curriculum Committee (The Seaborg Center).

OTHER SERVICE AT NORTHERN MICHIGAN UNIVERSITY

Clear Lake Education Center Advisory Board
Science and Mathematics Committee for the Marquette-Alger ISD
Michigan Science Teachers Association, Director of District 13: appointed to fulfill the remaining two years of this post after the previous director resigned.
Science Olympiad – I was the event supervisor for the event for the years 2000 through 2007 Science Olympiad. This entailed developing the event and running it during the day of the regional Science Olympiad.
Seaborg Center Activity Nights – I supervised activity nights organized and presented by preservice teachers (both elementary and secondary) during the winter of 2001, and the fall of 2002. I am currently scheduled to supervise a Weekend College for Kids activity in April. Pond Scum – April 11, 2003
Windows on the Universe – The Seaborg Center, together with various groups from our community, received a NASA grant to bring space scientists to our community. I have been serving as a science curriculum specialist on the committee planning for these events and will be participating

in the activities during the time of the program.
Judge for Lego-Robotics Tournament for K-12 students; 2003 and 2005

CURRICULUM DEVELOPMENT

Developed and obtained approval from the Committee for Undergraduate Programs and the Faculty Senate for the following courses:

MSED 251, Life Science for Educators
MSED 252, Earth Science for Educators
MSED 340, Fundamental Concepts in Science

GRANT ACTIVITY

Awarded the College of Professional Studies grant for the development of biology content in the virtual world Second Life.

Science Education content delivery for the SISU grant of the Delta-Schoolcraft Intermediate School District.

Co-PI of NASA NOVA grant to improve teacher education in science.

Worked with a US Department of Education grant authored by Dr. Peggy House, director of the Seaborg Center.

ADDITIONAL PROFESSIONAL DEVELOPMENT

Summer 2004: Completed a course at Northern Michigan University in Web Page Design (IS208).

January 2002: attended a half-day pre-conference workshop on scholarly writing at the annual meeting of the Association for the Education of Teachers in Science, Charlotte, North Carolina.

May 2001: attended approximately 9 hours of instruction offered by the Center for Instructional Technology in Education (CITE) in the use of WebCT and ITV.