Lars J. Helgeson, Ph.D.
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Mayville, ND 58257
701-786-2043 (Home)

Curriculum Vitae

Current Position:
Associate Professor, Department of Teaching & Learning
Tenured
Graduate Faculty Full Membership
Department of Teaching & Learning
Room 101, 231 Centennial Dr. Stop 7189
University of North Dakota
Grand Forks, ND 58202-7189
Office: (701) 777-3144
Internet: lars_helgeson@und.nodak.edu

1. EDUCATIONAL BACKGROUND

Degrees

Ph.D.	1988	Curriculum & Instruction, University of California, Los Angeles,
M.A.	1979	Education, California Lutheran College, Thousand Oaks, CA,
M.A.	1971	Zoology, University of California, Los Angeles, CA
B.A.	1964	Chemistry, San Diego State College, San Diego, California

Certificates and Credentials

State of California Standard Teaching Credential, STC 35559
Major Areas: Chemistry, Biological Sciences
Minor Areas: Mathematics, German, Social Sciences

State of California Administrative Service Credential, Life, No. SC75653, Pre-School, Kindergarten, Grades 1-12

State of California Community College Credential, Life, No.8499 Biological Sciences

State of Washington Professional Education Certificate, No.369047F, Initial, Expiration date: 06/30/06, P-12, Principal

2. PROFESSIONAL EXPERIENCE

Teaching Experience

1997 – present Associate Professor
Department of Teaching & Learning
University of North Dakota, Grand Forks, North Dakota

- T&L 540,Curriculum Theory & Philosophy, Spring Semester
- T&L 590 The Brain in Memory & Learning Summer.
- T&L 400 Secondary Science Methods Fall Semester
- T&L 486 Secondary Science Field Experience, Fall Semester,
- T&L 470 Elementary Science Methods (TEAM), Spring & Fall
- T&L 471 Physical Science for Elementary
- T&L 401 Schools, Secondary School Science Safety
- T&L 390 Engineering & Science

1993 – 1997: Associate Professor of Science,
Director: Mathematics, Science, & Environmental Education Center (MSEEC)
Mayville State University, Mayville, North Dakota
Taught:: College Physics, Modern Physics, Astronomy, Electronics, Secondary Science Methods, Elementary Science Methods

1973 - 1981 Science Dept. Chair/Teacher
Moorpark Union High School, Moorpark, California
Taught Chemistry, Physics, Biology, Environmental Science, General Science, Photography, Math

1971 - 1973 Science Dept. Chair/Teacher
Don Bosco Technical Institute

Rosemead, California
Taught:: Chemistry, Physics, Biology,

1958 – 1960 U.S. Navy
Eye, Ear, Nose, Throat (EENT) Technician and Surgery School Instructor
Balboa Naval Hospital
San Diego, California

Administrative Experience

1985 - 1991 Science Education Curriculum Coordinator
County Office of Education, San Diego, California

1991 – present Executive Director, True-LL, Inc.
Ramona, California and Mayville, North Dakota

1986 - 1997 Executive Director, HUCK-FIN, An Environmental Education Program. San Diego, California

1985 – 1992 Director, Southern California Science Education for Public Understanding Project (SEPUP) Training Center
San Diego, California

1984 – 1991 California State Director
California Science Olympiad
San Diego, California

1982 – 1985 Curriculum Director
California Living Museum
Bakersfield, California

1981 - 1985 General Curriculum Consultant, Science Curriculum Consultant
Kern County Superintendent of Schools Office
Bakersfield, California.

1979 – 1981 Director, District Migrant Aid Program
Moorpark Union High School District

Moorpark, California

Other Professional Experience

2002 – present	Member of the National Institutes of Health K-12 curriculum team with the task to write lessons for tribal schools to promote awareness of diabetes and bring balance back to the health of Native American students.
1999 – present	Member of the North Dakota Technology Education Advisory Board.
1996 – 1997	President, North Dakota Coalition for Conservation and Environmental Education ($C^2E^{2)}$
2000 – 2002	Vice-President C^2E^2
1997 – 2004	Higher Education Representative on the Board of the North Dakota Coalition for Conservation and Environmental Education
1995 – 2000	Member of the Mid-continent Regional Educational Laboratory (McREL) High Plains Consortium Advisory Board
1997	Member of the North Dakota State Science Standards Writing Team
1994 – present	Member North Dakota Project Wild Advisory Board
1990 – 1992	Africanized Honey Bee Emergency Preparedness Committee, Chair of the Education Subcommittee, County of San Diego, San Diego, California.
1991 – 1993	National Science Consultant Zaner Bloser Publishers Columbus, Ohio
1981 – 1992	Test analyst/writer, Science Test Committee California Assessment Program Sacramento, California

1985 – 1992	Member of the Education Board San Diego Zoo, San Diego, California
1985 - 1922	Curriculum Advisor Fleet Space Theater and Science Center Balboa Park, San Diego, California
1985 – 1992	Curriculum/Education Advisor Scripps Institution of Oceanography La Jolla, California
1985 - 1992	Curriculum/Education Advisor Sea World San Diego, California
1985 – 1992	Curriculum/Education Advisor Natural History Museum Balboa Park, San Diego, California
1982 – 1993	California Project WILD Advisory Board member
1990 – 1991	Chair, Southern California Summer Outdoor Science Conference, San Diego, California
1990 –1991	Member of the writing team of the California Golden State Examination in Chemistry
1990	Chair, California State Science Framework Conference, San Diego, California
1990	Chair of Evaluations, National Science Teachers Association Regional Conference, Long Beach, California
1988 – 1992	Member of the Executive Board of the Elementary Institute of Science, San Diego, California. Providing science education for inner city black students.

1988 – 1989	Chair, San Diego County Environments Project
1986	Chair, 25th Thomas A. Edison Science Educators Conference, San Diego, California
1985-1987	Project director, translation of the AIMS (Activities Integrating Math and Science) books into Spanish.
1985	Member of the California Model Graduation Standards Grade 9-12 Science Committee.
1984	Chair of Contributed Papers Committee, National Science Teachers Association National Conference. San Francisco, California
1984	Consultant to the California Science Framework Addendum Committee.
1983	Founder of the Central California Science Specialists Association, Affiliate of the National Science Supervisors Association.
1983 – 1990	Member of the science writing team to develop the 6th, 8th, and 12th grade California Assessment Program (CAP) test.
1971 - 1972	Research Assistant Department of Psychology University of California Los Angeles, California
1967 - 1971	Analytical chemist, American Hospital Supply, Glendale, CA .
1966 - 1967	Analytical/Research Chemist Xerox Electro-Optical Systems Pasadena, California
1964 - 1966	Food Chemist: Westco Products, Los Angeles, CA

3. TEACHING ACTIVITIES

- Classes Taught at UND
  T&L 400 Methods and Materials, Science
  Fall 1997 to present

  T&L 471 Physical Science in the Elementary School
  Fall, Spring 1997 - present

  T&L 440 Science in the Elementary Classroom (TEAM)
  Fall, Spring 1997 - present

  T&L 518 Science Trends for Elementary Teachers
  Fall 2004

  T&L 540 Theories and Philosophies of Curriculum
  Spring each year 1997 to present

  T&L 590 The Brain in Memory and Learning
  2001 - 2006

  T&L 590 Alternative Assessment
  Summer 1998

  T&L 390 Secondary School Laboratory Science Safety
  Taught every Fall semester, approved in 2006 to be offered as T&L 401 in conjunction with T&L 400 (Secondary Science Methods)

  T&L 390 Science, Engineering and Society (Teaching basic science through the study of materials failure that caused disasters) Fall 2005, Fall 2006

Doctoral Advisees – Committee Chair - Completed

Liming Zhai, (2003) Ph.D. Dissertation: "*A Comparative study of Higher Education in the United States and the People's Republic of China 1945-1997: Purpose, Equality and Academic Freedom*"

Timothy J. Harms (2003) Lars Helgeson served as Doctoral Committee Member Ph.D., Dissertation
"Analysis of Minnesota Students' Mathematival Literacy on TIMSS, NAEP, and MN BST"

Masters Advisees Completed

John M. Healy , (2005) Master of Science – General Studies "*A summary of the Separation between Creationism and Evolutionary Theory in the United States Public School System"*

Annaliza Rivas Ybarra-Gourneau (2005) Master of Science – General Studies, "*An Exploration of how Children and Educators are Impacted Through the Experiential Learning Process in Educational Settings"*

Penny D. Pettit (2003) Thesis, Lars Helgeson served as a Committee member, "*Why Use Geospatial Technologies in K-12 Education?: An Analysis of Implementation From Spatial, Social, and Pedagogical Perspectives"*

Tracy D. Wolf (2003) Masters of Science in Elementary Education, *"Enhancing Curriculum with Technology"*

Renae L. Ely (2003) Masters of Science in Elementary Education
"Life Skills with Literature Circles: Exploring, Discovering and Learning"

Brad Lick (2003) Masters of Science in Elementary Education, *"Incorporating Current Brain and Learning Research into the Classroom".*

Greta Kyllo (2005) Masters of Science in General Studies
"A Study of Attitudes Towards Biology Using Problem-Based Learrning in an Undergraduate General Science Classroom"

Twyla Baker-Demaray (2005) MS in General Studies
"Elder Abuse in Native American Populations"

Current Doctoral Advisees Chair:

Chery Kingsbury
Barry Striegel
Annaliza Gourneau
Sofokli Garo
Meghan Salyers

Currently serving as doctoral committee member for:

David Crawford
Pam Langlie
Cynthia Lofton

Currently Chair of Masters Students

Marcia Westlund
Lief Bergerud
Audrey Barnhart
Marisa Reisinger
Georgann Collins
Sangeeta Kauldher

Undergraduate Advisees

Jessica Boger, Biology
Travis Ekren, Biology
Adam Johnson, Biology
Paige Jordan, Biology
Pamela Lautt, Science
Diane Leizens, Science
Michelle McDonald, Middle School
Alana Morrow, Physics
Kristin Pavlish, Middle School
Sarah Boese, Biology

Emily Chwialdowski, Science
Thomas Eagleson, Chemistry
Weston McGregor, Biology

Curriculum Development Activities

Grades 9-12 Health Lesson Plans developed for the National Institutes of Health Diabetes Education for Tribal Schools (DETS) Curriculum Project.

The Brain in Memory and Learning:
Developed a graduate level course T&L 590, was first offered during the summer of 2001. Subsequently offered during the summers of 2002, 2003, 2005, 2006 and during the Fall semester of 2004.

Summer environmental chemistry course for Cankdeska Cikana Community College
Designed a course that was offered for UND undergraduate credit at Fort Totten Indian Reservation during the summer of 2001. The course is based on SEPUP, Science Education for Public Understand Project. SEPUP is nationally disseminated, NSTA recognized exemplary program developed at the Lawrence Hall of Science, University of California, Berkeley California. It was my pleasure to be involved with the development of this program and to be director of the Southern California training center 1989-1992. The program focuses on basic science taught in the context of Social Issues. I piloted and tested the program for six weeks at the Fort Totten Indian Reservation during the summer of 2000. The new course will include SEPUP units plus environmental chemistry units that will study the water quality of Spirit Lake (Devils Lake).

4. INSTITUTIONAL SERVICE

Service to the University

July-August, 2006 College of Education and Human Development/College of Arts and Sciences Grant collaboration. North Dakota Department of Public Instruction, Mathematics, Science, Engineering, Teaching Three year Grant.- Funded for the amount of $1,500,000. I chaired weekly meetings, prepared grant drafts, budgets, and reviews of the grant by both College deans and representatives of the departments of Biology, Chemistry, Engineering, Mathematics, Physics, and Teaching & Learning. If approved the grant will be managed by the Dept. of Teaching and Learning under the Administration of the deans of EHD and Arts & Sciences. I will oversee grant operations as project director, serving with co-director, Kanishka Marasinghe (Arts & Sciences) for the three year period 2006-2009..

2006 – present: Member of the University Senate Compensation Committee.

Fall 2005, T&L 390: Engineering and Science: A Study in Materials. Taught by Dr. Helgeson (T&L) and Dr. Bibel (Engineering). This course is taught as an overload without compensation and is expected to provide material for at least one book and a minimum of two journal articles. This course is based on the Honors course taught in 2003 described below. Engineering and Science is an exploration into teaching two major concepts, i.e., atomic structure for elementary teachers and students, and failure in materials that lead to engineering disasters. The course is comprised of weekly inquiry style experiments that build sequentially into an understanding of atomic theory and engineering methods. We intend to submit the course for consideration as one that meets General Education Requirements.

2005 collaborated with the UND Dept. of Physics to implement a new physics course that is being taught as Phys. 492 in Fall of 2006 and as Phys 213 thereafter. The purpose of the course

is to prepare teachers for licensure to teach physics in North Dakota high school by completion of 12 credits of physics and to meet the ND highly qualified standards. This effort is in response to the need of North Dakota schools for physics teachers.

At the request of the Biology Dept. I applied to the North Dakota Educational Standards and Practices Board to have the UND Fisheries and Wildlife B.S. degree approved for secondary biology teacher licensing. This was completed in 2003 and the degree now carries full teacher licensure for biology in North Dakota schools.

2002: Assisted with the development of Engineering for Poets Honor Course in collaboration with UND Dept. of Engineering. Spring 2002, Education Advisor Committee for Informal Learning grant from the National Science Foundation to be submitted by the Energy and Environmental Research Center (EERC), UND.

1997-present:: Member of the Upper Midwest Aerospace Consortium (UMAC) EdPARC group to disseminate Geographic Information Systems technology among teachers in North Dakota, South Dakota, Montana, Wyoming, and Idaho.

1998- 2000: Worked on Development of the M.S. General Studies: Science Education
To bring secondary North Dakota science teachers into graduate studies at UND. The intent was to provide a means for teachers to take undergraduate science courses as part of the graduate degree. Science educators frequently are assigned classes to teach for which they have little preparation. They need coursework and graduate studies to improve their content knowledge and pedagogical skills. This effort has culminated in the writing of a Dept. of Public Instruction grant for teacher education, submitted August, 2006.

1998, 1999 Guest speaker for the Religions class of Dr. Scott Lowe, presenting a special topic on Hindu Influences on Religion in the United States.

October, 1998
Served on Amoco Grant Committee, to prepare a grant to encourage Native American Students in Engineering.

Service to the College of Education and Human Development (EHD)

Serve on the EHD Appeals Committee, 2004- present

School Laboratory Science Safety Course

I have developed and teach a course each Fall, T&L 390, Secondary Science Laboratory Safety. This course is based on five years of science safety inservice presented across the state of North Dakota for K-12 teachers, school administrators, North Dakota Fire Marshal, OSHA, Workers Compensation Bureau, and the North Dakota Insurance Reserve. This initial set of workshops, funded by Eisenhower grants through the Department of Public Instruction was the basis for a statewide school chemical cleanup program sponsored by the North Dakota School Boards Association. I wrote a series of Elementary Lectures and Secondary Lectures, used in the course, that has been published by Flinn Scientific Company.

May 2006, Secondary Science Safety has been approved by T&L to be offered as T&L 401. We are waiting for the College Curriculum committee to approve the renumbering.

Secondary Methods Technology Component

Based on over five years of North Dakota teacher inservice workshops that I presented under grants from DPI, I have developed a technology component for T&L 400, Secondary Science Methods. The course now includes units on the use of the graphing calculator, calculator based laboratory sensors, micro chemistry, global positioning systems, and geographic information systems. This component in the T&L 400 course is

the result of membership in the University of North Dakota Technology grant supported program to develop secondary methods technology components.

Service also to the College of Arts and Sciences:
A course of study program leading to licensure for teaching Biology in secondary schools:
At the request of the UND Biology Department I developed the proposal and obtained approval from the Program Approval Advisory Committee (PAAC) of the North Dakota Educational Standards and Practices Board (ESPB) on June 8, 2000, to recognize the UND Fisheries and Wildlife degree for licensure to teach Biology at the secondary level in the state of North Dakota. This course of study will provide a means to bring highly qualified field biologists into our classrooms as teachers.

Service to the Teaching & Learning Department

2005-date: member of the T&L Technology Committee

Sept./Oct.. 2005 Chair, Evaluation Committee for first year evaluation of Donna Pearson.

Sept./Oct., 2005 Chair, Evaluation Committee for the first year evaluation of Randall Bowden

2005 Chair, Tenure, Promotion, and Annual Review Committee for Gail Ingwalson.

2004 Committee member, Annual Review, 4th year, for Nadine Tepper

2003 & 2004 Chair of the Teaching & Learning Mathematics Search Committee

2002 Member of the Assessment Group for the Department of Teaching and Learning.

2002 Member of the Search Committee for an Elementary Education Generalist.

2000: Member of the New Admissions Subcommittee of the Admissions Committee.

Served as 1999 Chair of the Dept. of Teaching and Learning Admissions Committee

Science Advisor/Instructor for DREAMS (Disability Research Encompassing American Indians in Math & Science) 1998-99.

Community Service

Grant related Professional Service

FY1999, 2000, 2001, 2002: Reviewed Regional Grants for the Environmental Protection Agency

2002- present: Development of a National Diabetes Curriculum.
I serve as a committee member for a project involving seven tribal colleges working in collaboration with the National Institutes of Health (NIH) National Institute for Diabetes and Diseases of the Kidneys (NIDDK).
I wrote a grant for Cankdeska Cikana Community College to participate in the program ($176,000/year for five years), and serve with representatives from Cankdeska Cikana Community College (Fort Totten, ND), Leech Lake Tribal College (Cass Lake, MN) , Keweenaw Bay Ojibwa Community College (Baraga, MI), Southwestern Indian Polytechnic Institute (Albuquerque, NM), North West Indian College (Bellingham, WA), and Fort Peck Community College (Poplar, MT).

2003 - Alignment of teacher education standards with DPI/NCA curriculum and accreditation standards. Committee of North Dakota Education Standards and Practices Board.

2000-2003:: Vice-President of the North Dakota Coalition for Conservation and Environmental Education.

Summers of 2000, 2001, and in planning for 2002: Teaching at Cankdeska Cikana Community College. Requested by The HCOP, Health Professions Program, to teach basic science to High School and Junior College students. I taught basic Environmental Chemistry for six weeks at Cankdeska Cikana Community College in Fort Totten.

Summer 2001: June, four week workshop, four days per week, Ethnoscience/Ethnobotany for Elementary teachers from Warwick and Four Winds Elementary Schools, Spirit Lake Sioux Reservation, Fort Totten, ND.

Summer 2001: July, four week workshop, four days per week, Ethnoscience/Ethnobotany for Middle School and High School teachers. Four Winds, Warwick, and Devils Lake Middle Schools and High Schools. Spirit Lake Sioux Reservation, Fort Totten, ND.

2001-2002 External Evaluator for the Rural Systemic Initiative (RSI) National Science Foundation Grant to Cankdeska Cikana Community College, Fort Totten, ND.

2001-2002: External Evaluator for the Dakota Science Center U.S. Department of Education Grant, Grand Forks, ND.

1997 - 2000 I helped Steve and Dorothy Enger of Hatton, ND helping to develop appropriate activities for students who visit their farm during the Fall Harvest Festival. We have implemented the Life Lab (U. Calif. Santa Cruz) curriculum as the basis for student activities.

During the years 1994 – 1999 I served as Executive Board Member and Curriculum Director for the Mayville, ND Zoo.

2002-2003 Chair of the National Institute of Health grades 9-12 Diabetes-based Science Education Curriculum group. Member of the National Diabetes Education NIH Steering committee, member of the NIH Diabetes Education Executive Committee.

5. RESEARCH AND CREATIVE ACTIVITY

PUBLICATIONS

Peer Reviewed, Refereed Articles and publications

Diabetes Education in Tribal Schools: A Necessity for Health in Balance. By Lars Helgeson (UND) and Carolee DodgeFrancis (Keweenaw Bay Ojibway College). The Science Teacher, March 2006, Vol. 73, No. 3, 44-47. National Science Teachers Association,

Introducing Preservice Teachers to Issues Surrounding Evolution and Creationism Via a Mock Trial, Journal of Elementary Science Education. Co-authors: John Hoover (St. Cloud State University, St. Cloud, MN) and James Sheehan (Cleveland State U., Cleveland, OH) Fall, 2002

Embracing Controversy: Developing Skills in Preservice Social Studies Teachers. J. of Social Studies, 2002. Co-authored with John Hoover and James Sheehan (lead author).

Helgeson, L. & Bohnsack, W., (1999). *Laser, Light, and Lighting Safety,* Spectrum, 25 (3), 32-34.

Helgeson, L., Bohnsack, W., Harms, T., & Palmer, R., (1998). *Student Role Models,* The Science Teacher, 65, (9) 43-45.

Non-refereed articles and books

Natureshift! Linking Learning to Life: Evaluation Report (Summer 2001 and Fall 2002) by John Hoover (St. Cloud State) and Lars Helgeson (UND).

Helgeson, L. (February, 1992) *"Non-science is nonsense/You can teach science."* Teaching K-8. p.5.

Helgeson, L. (1989) *Implementing CEPUP,* Industrial Environmental Association of San Diego County Newsletter, p.2

Curriculum Development and Projects

WEBSITE 1999 to present: ***Gradepower.com*** is a website that I developed for university coursework. It is an interactive grading program that allows students to check grades at any time during the semester via the internet.
Gradepower is available at no cost to professors or teachers anywhere.
Grand Forks Herald, Summer 2000 Article on this project.

California Outdoor Schools Curriculum Guide: A curriculum guide for all sixth grade outdoor residential schools in California. Administrative guide, summary of literature on cognitive and affective aspects of outdoor education, model lesson plans, parent involvement guide, multicultural aspects, 1993. Published by the San Diego County Office of Education, San Diego, California

The Creative Spirit, teachers manual, and accompanying software *Darwin's Island,* and *Every Picture Tells a Story,* IBM, 1992. Author, Program and Software designer, consultant: This nationally broadcast PBS program explored creativity as a human endeavor. The Darwin's Island software allows a student to change the form of an animal body as environmental conditions change. I designed the environment, the changes, and the animal forms. Authored the section on the conditions for creativity in the classroom and designed a variety of activities for teachers to implement the creative components of teaching.

Elementary School Science Safety Lectures, FLINN Scientific, Inc., A series of five university lectures, activities, and assessment for the purpose of teaching preservice teachers about safety in elementary school activities, 1996.

Secondary School Science Safety Lectures, FLINN Scientific, Inc., A series of nine university lectures, activities, and assessment for the purpose of teaching preservice secondary teachers and university laboratory assistants about science safety in educational institutions, 1996.

Labquest Software, and *Action for Earth* Curriculum, National Business Education Alliance, Corvallis, OR. Laboratory data analysis Software Design and Curriculum Conceptualization. 1986-1994.

Radon Alert, A resource manual and series of lessons plans on radon for the elementary and secondary schools in the state of New Jersey. Publishers: Learning Quest, Inc., Corvallis, OR 1993.

Evaluation Unit for Merrill Publishers Middle School Life Science Textbook. Authentic assessment activities created for Merrill Publishers. 1993.

Beginning Breakthroughs a book, explaining thinking strategies curriculum applied to science education, including a five level rubric for evaluating student progress. Zaner-Bloser Publishing Co., Columbus, OH. 1992.

Action for Earth activities and curriculum. Published by the National Business Education Alliance, 1992. Curriculum and lessons designed to present environmentally related energy issues to students in a dynamic socially interactive format based on a unique model of cosmology.

1992, Esperanza High School, Orange County, CA. Complete review and evaluation of the science department and science curriculum. Report published for Esperanza High School to evaluate the science department and make recommendations for curriculum change and changes needed to improve teacher and student morale and performance.

Assessment in Issue Oriented Science, A teacher enhancement module, SEPUP. Published by CEPUP (SEPUP), Lawrence Hall of Science, University of California at Berkeley, 1991. A module incorporating the principles of authentic assessment into the SEPUP program.

1991, Esperanza High School, Orange County, CA. Complete review and evaluation of the mathematics department and mathematics

curriculum. Report published for Esperanza High School to evaluate the math department and make recommendations for curriculum change and changes needed to improve teacher and student morale and performance.

Video: (Nominated for an EMMY Award in 1990)
Fish On, Environmental Education Through Fishing,
San Diego County Office of Education, 1989.
Lars J. Helgeson, Ph.D., Executive Producer
The video forms the visual component of the curriculum for the HUCK-FIN environmental education program in San Diego, California.

United States Patent Search for Science and Engineering Students, Published by the San Diego County Office of Education, 1986.
This document provides science fair students with a detailed step by step procedure on how to use the U.S. Patent files to find up to date information of concepts and projects. Patents provide some of the best resource material for building new devices as well as a complete literature search on concepts behind the patent. Science Fair students and their teachers attended workshops on how to use this guide at the San Diego Patent Repository. The document could now be updated to provide use of the on-line patent listings.

Remodeling and Building Science Instruction Facilities in Elementary, Middle, Junior and Senior High Schools. Published jointly by the county offices of education in San Diego, Orange, and Los Angeles counties, 1986.
This document provides detailed descriptions of a variety of laboratory/classroom arrangements for science instruction. The book gives safety, storage, floor plans, timelines, relative cost factors, and lists of appropriate materials. The book was produced to help districts work effectively with architects who most often do not understand the special construction needs for science teaching.

Interactive Software - Heart Disease Prevention, Diet, and Exercise, prepared for the California Heart Association. 1986.

Interactive Software - Water Conservation, designed for the National

Water Commission. 1986.

Author/Editor/Project Leader: *Accent on Science, California Teacher Resource Books, K-6,* Charles Merrill Publishing Company, Columbus, OH, 1985.

This set of Resource books contains science skills, Integrating skills, Teaching masters, Enrichment activities, Parent Involvement pages, and Challenges for advanced work. There are seven books in the series. I wrote the sixth grade book, edited all the others and managed the writing project.

Accent on Science, Charles Merrill Publishing Co. K-8 California Resource Science Books, 1985. Author, writing team leader.

Interactive Chemistry Software designed for the Silver-Burdett sixth grade science, Silver-Burdett Publishers, 1985.

Consultant/Contributor, Physical Science section: *1984 California Science Framework Addendum*, California Department of Education, 1984.

Video:
The Relationship and Use of State and County Science Curriculum Publications,
Script and presentation by Lars J. Helgeson, Ph.D.
San Diego County Office of Education, San Diego, California, 1986

6. PRESENTATIONS AND INSERVICE FOR EDUCATORS

NATIONAL PRESENTATIONS

January 26-27, 2006 “Learning and Teaching Health and Science” Native American Interdisciplinary Conference, Northwest Indian College, Bellingham, WA

November 4-6, 2004 NSTA Fall Convention, Indianapolis, IN, “Science-based Diabetes Curriculum for Native Americans”

January 20-24,, 2003, Northwest Indian College, Bellingham, WA “Results of Internet survey of tribal schools about diabetes in the Native American Community.”

February 23-24, 1998
“Young Women Role Models using GPS & GIS Technology”
and “Assessing Laboratory Safety” Two Poster presentations
Third Annual National Institute for Science Education (NISE)
Washington, DC

“Breakthroughs in Science Education” presentations at the National Science Teachers Association Conferences:

- Boston, MA, 1991
- New York, NY, 1992
- Charlotte, NC, 1992

“*Teaching Thinking Strategies Across the Curriculum*” Keynote address at the Alabama State ASCD Conference, Birmingham, AL,1992.

REGIONAL PRESENTATION
November 18-20, 2004 NSTA Fall Convention, Seattle, WA.
“Science-based Diabetes Curriculum for Native Americans”

February 9, 1996
“SEPUP: An Introduction” National Science Teachers Association Regional Conference
Rapid City, South Dakota

CALIFORNIA STATE PRESENTATIONS

Feb.26-27, 1999. By invitation
"Technology in science education: CBL, GPS, and GIS" , Conference on Math, Science, and Technology, Calif. State University Bakersfield, Bakersfield, CA,

July 27, 1996
" Science Laboratory Safety"
California Outdoor Summer Science Conference
Lake Tahoe, California

"*Action for Earth*"
A comprehensive Energy Conservation Program for Home and School, Grades 5-9.
19th Energy Education Conference, San Diego, CA 1992

"Language Acquisition Through Science",
California Association of Bilingual Educators Conference, San Diego, California, 1989

"Performance Based Testing In Science",
California Research Society Conference, San Diego, CA 1988.

"California Science Education" Keynote address to the Northern California Science Framework Conference, Redding, California 1985

"The Administrators Role in Developing, Supporting, and Evaluating Science Programs", Presentation
Area IV ACSA Conference, Fresno, California 1985.

"Science in Bilingual Education", Panel presentation at the Bilingual Educators Conference, Los Angeles California, 1985.

NORTH DAKOTA STATE PRESENTATIONS
April 16, 2005 "School Laboratory Safety"
MN/ND Science Teachers Association Conference
MSUM, Moorhead, MN.

October 20, 2005 North Dakota Science Teachers Association Conference, Red River High School, Grand Forks, ND. *"Science, Engineering and Disasters: Teaching basic science through a study of the materials failure in disasters."* Co-presented with Dr. George Bibel, Dept. of Mechanical Engineering. We were invited to present at the October, 2006 NDSTA Conference in Bismarck, and are now scheduled to present.

April, 2005 Third Annual American Indian Research Forum
University of North Dakota, Enhancing the Health of Northern Plains Indians. Presented "Diabetes Education in Tribal Schools"

2004, Presentation to Teachers, Community, and Curriculum Committee members of the Cankdeska Cikana Community College Diabetes Education Program, Fort Totten, ND
"*History and concepts of curriculum design as a b asis for development and testing of diabetes lesson."*

November, 1999.
"Science Standards"
Dept. of Public Instruction, Bismarck, ND. By invitation.

March 6-7, 1999
"SEPUP, Science Education for Public Understanding: An Introduction"
North Dakota Science Teachers Conference
Minot, ND

October 14, 1998
"SEPUP Science Education for Public Understanding, Introductory workshop." 2 hour session at conference.
NDEA Conference, Grand Forks, ND

November 14, 1998
"Science Activities and Assessment"
Presentation to teachers of Native American handicapped students.
Minot, ND

April 19, 1997
"Science Education for Public Understanding" Presentation at North Dakota Science Teachers Association Conference
Bismarck, ND

May 6, 1996
"Full Option Science Systems and Activities Integrating Math and Science", Heart of the Valley Curriculum conference
Hatton, North Dakota

October 19, 1995
"Plastics" presentation at the North Dakota Science Teachers Conference
Discovery Middle School, Fargo, ND

September 22, 1995
"What a Zoo means to a school"
Mayport High School
Mayville, ND

TEACHER INSERVICE/WORKSHOPS

January 17, 2005
Emotional Aspects of the Brain as related to Memory and Learning.
One day in-service for K-12 teachers in Sawyer, ND.

Feb.15 and Mar.15, 2002
GIS/GPS, Cankdeska Cikana Community College, Advanced workshops for teachers in the Devils Lake area.

April – May 2001
GIS/GPS, , Cankdeska Cikana Community College, series of four workshops for teachers in the Devils Lake area.

January 29-30, 1999
Science for Disadvantaged Native American Students
Environments Module of SAVI-SELPH
Dreams Project
Ramada Inn, Minot, ND

July 5-7, 2000
“Geographic Information Systems”
Red River High School, Grand Forks, ND

April 16-17, 1999
“Global Positioning Systems and Orienteering for teachers of disadvantaged Native American children.”
Bottineau, ND

June 4, 1999
“Setting up an Orienteering Course”
Dreams Teachers Presentation at Camp Cross Roads Range
Bottineau, ND

September 11-12, 1998
Inservice for teachers, parents, administrators and students.
“Science and Math Technology”
Trenton Public School, Trenton, ND

October 17, 1998
“Determining Threshold Limits Module: SEPUP” science teacher inservice. Mayville State University, Mayville, ND

November 21, 1998
“Risk Comparison – SEPUP” Science Teacher Inservice
Mayville State University, Mayville, ND

December 12, 1998
“Groundwater Pollution – SEPUP”
Mayville State University, Mayville, ND

September 26, 1998
“Science Education for Public Understanding: Chemical Survey and Solutions and Pollution”
Mayville State University, Mayville, ND.

June 9-12, 1997 and August 11-14, 1997
“Science Education for Public Understanding – SEPUP – Summer Workshops”
Supported by grants from the ND Dept. of Public Instruction.

February 11, 1997
“Activities Integrating Math & Science”, Inservice for Cass County teachers presented at NDSU, Fargo

March 13, 1997
“Calculator Based Laboratory” science and teacher inservice
College of Mary, Bismarck, ND

May 3, 1997
“Calculator Based Laboratory” science and math teacher inservice
Mayville State University, Mayville, ND

May 15, 1997
“Calculator Based Laboratory” science and math teacher inservice
Bismarck, ND

October 3-4, 1997
“Risk Comparison” Secondary Science Teacher inservice
Mayville State University, Mayville, ND

October 18, 1997
“Determining Threshold Limits” Secondary Science Teacher inservice
Mayville State University, Mayville, ND

November 1, 1997
“Calculator Based Laboratory” Secondary Math and Science teacher inservice
Mayville State University, Mayville, ND

January 27, 1996
“School Laboratory Science Safety “ science teacher inservice
Valley City, North Dakota

December 16, 1995
“School Laboratory Science Safety “ science teacher inservice
Cavalier High School, Cavalier, ND

December 9, 1995

“School Laboratory Science Safety “ science teacher inservice
Red River High School, Grand Forks, ND

November 18, 1995
“School Laboratory Science Safety “ science teacher inservice
Turtle Mountain Community College, Belcourt, ND

August 9, 1995
“School Laboratory Science Safety” inservice for science teachers.
Red River High School, Grand Forks, ND

August 4, 1995
“School Laboratory Science Safety “ science teacher inservice
Cavalier High School, Cavalier, ND

March 18, 1995
“School Laboratory Science Safety “ science teacher inservice
Turtle Mountain Community College, Belcourt, ND

January 28, 1995
“School Laboratory Science Safety “ science teacher inservice
Dickinson, ND

January 7, 1995
“School Laboratory Science Safety “ science teacher inservice
Magic City High School, Minot, ND

New Jersey Inservice

1992-1993 Patterson Elementary School, Patterson, NJ. Series of five teacher inservice programs integrating *Breakthroughs* and *AIMS (Activities Integrating Math and Science)* in the elementary science curriculum.

California Inservice

1992-93 SEPUP (Science Education for Public Understanding Program) teacher workshop series to implement the SEPUP materials into the Court Schools program in Orange County, CA.

Following is a list of topics presented at workshops and conferences prior to 1985:

- Photography for Teachers
- Plants in the Classroom
- Animals in the Classroom
- Laboratory Safety in Junior High and High Schools
- Building Your Own Science Equipment
- Electricity and Magnetism
- Model Rocketry Principles and Construction
- SCI-MATH, a National Diffusion Network Program
- Reading and Science Education
- Science Activities for the Visually Impaired (SAVI)
- Science Experiences for the Physically and Learning Handicapped (SELPH)

7. GRANTS

Grant related Professional Service

FY1999, 2000, 2001, 2002: Reviewed Regional Grants for the Environmental Protection Agency

Grant funded:
July-August, 2006 College of Education and Human Development/College of Arts and Sciences Grant collaboration. North Dakota Department of Public Instruction, Mathematics, Science, Engineering, Teaching Three year Grant.- Funded for the amount of $1,500,000. I chaired weekly meetings, prepared grant drafts, budgets, and reviews of the grant by both College deans and representatives of the departments of Biology, Chemistry, Engineering, Mathematics, Physics, and Teaching & Learning. If approved the grant will be managed by the Dept. of Teaching and Learning under the Administration of the deans of EHD and Arts & Sciences. I will oversee grant operations as project director, serving with co-director, Kanishka Marasinghe (Arts & Sciences) for the three year period 2006-2009..

In each of the grants listed below Lars Helgeson is the Author and Principal Investigator unless otherwise noted.

June, 2006, Summer Instructional Development Professorship to develop materials for Science, Engineering and Society course in the amount of $1500.

OID Grant #31010-2635-00374, “Workshop/Training as a teacher trainer in the use of ARCVIEW GIS Software.” Travel grant $300. In-service resulted in certification to provide Geographic Information Systems training for pre-service teachers. Training provides teachers with access to ARCVIEW software packages under a site license purchased by the North Dakota Department of Career and Technical Education, Bismarck, ND.

Student Technology Fee Award #63052, March 2006
For purchase of educational technology materials for science methods course improvement. $6000 funded

2002 Wrote and received NASA Grant to the Cankdeska Cikana Community College, Spirit Lake Sioux Reservation, Fort Totten, ND. $100,000 per year for three years. To provide education programs in Physics, Robotics, Math, and Remote Sensing. funded

2002 Wrote and received National Institute of Health grant to Cankdeska Cikana Community College, Spirit Lake Sioux Reservation, Fort Totten, ND. $176,000 per year for five years to develop a K-12 Diabetes-based Science Education Curriculum for Native Americans. funded

2001 - $546 from the Faculty Instructional Development Committee to buy a Brain model for the Brain in Memory and Learning class.

2001-2002

U.S. Dept. of Education, "Preparing Tomorrows for Teaching Technology, PT3. $200,000/year for three years. Co-author and Co-Principal Investigator. funded

2000-01

Grant funded by the Environmental Protection Agency in support of Science Education. Graphing Calculator, Calculator Based Lab, and Vernier Sensor technology, for teachers on the Spirit Lake Sioux Reservation, Fort Totten, ND. $20,000 funded

1996

Mathematics, Science, and Environmental Education Center at Mayville State University.
North Dakota Dept. of Public Instruction Demonstration Project
Amount $5000 funded

1995

Follow-up for Laboratory Safety Training
Demonstration Project, North Dakota Dept. of Public Instruction
Amount: $6800 funded

1995

Training in Laboratory Safety for Public Schools
Demonstration Project Application, Dwight Eisenhower Mathematics and Science Funds.
Amount: $14,929 funded

1995-1998 In this grant I acted as writer, fund manager for the North Dakota Mathematics Science Alliance. During this time period I was co-chair of that organization along with Dr. Merwin Lyng of Mayville State University.
Grants were submitted to McREL, Mid-continent
Regional Education Lab, on behalf of the North Dakota *Mathematics/Science Alliance.*
Funded each year, $35,000 per year
Total: $140,000

1994 *Training in Laboratory Safety for Public Schools.*
Demonstration Project Application
Proposal written by Lars Helgeson for the Teaching and Learning Center at Mayville State University.
Amount: $8335 funded

<u>Grants Submitted, not funded</u>
In each of the grants listed below Lars Helgeson is the Author and Principal Investigator unless otherwise noted.

2005 *Tribal Health through Art and Science*
Submitted to Dept. of Health and Human Services, Public Health Services, NIH. This grant was reviewed and is being resubmitted based on NIH evaluation and encouragement.

1999

Outdoor Wildlife Learning Site (OWLS) Environmental Education Project
Submitted to Environmental Protection Agency for Regional Funding.
Amount: $17,084

1999
Graduate Science Institute
To develop a graduate science education program at UND.
Submitted to ND Dept. of Public Instruction.
$28,220

1998
CBL/GPS/GIS Integrating, Science, Mathematics and Social Studies. Submitted to North Dakota Dept. of Public Instruction, Title II Higher Education Competitive Proposal.
Amount $34,136

1998
Improving School Curriculum Through Technology and Water Quality Monitoring (WET-TECH).
Submitted to the Environmental Protection Agency.
Amount $230,512

1996
North Dakota WILD Roads Scholar Leadership Program
Submitted to the National Office of Project Wild
Amount: $18,057 .

1995
A Mathematics, Science, and Environmental Education Center for North Dakota.
Submitted to the Department of Public Instruction, Title II, Eisenhower Professional Development Program Grants.
Amount: $47,993

1994 Co-PI, Dr. Merwin Lyng was PI on this grant
PREMAST – Preservice Project in Mathematics and Science
A collaborative project of all 18 colleges and universities (public, private, and tribal) in North Dakota.
Submitted by Mayville State University
Dr. Lars Helgeson Co-PI, contributing author
Submitted to National Science Foundation
Amount: $6,940,683

1993

Lars Helgeson, co-author and Co-PI
Improved usage of computer-based laboratory technology
National Science Foundation
Amount $30,796

8. PROFESSIONAL ASSOCIATIONS

Phi Delta Kappa (PDK)
20 years

Association for Supervision and Curriculum Development (ASCD)
15 years

National Science Teachers Association (NSTA)
25 years

North Dakota Science Teachers Association (NDSTA)
13 years

Offices held:

1996 – 1997	President, North Dakota Coalition for Conservation and Environmental Education ($C^2E^{2)}$
2000 – 2002	Vice-President C^2E^2
1997 – 2004	Higher Education Representative on the Board of the North Dakota Coalition for Conservation and Environmental Education
1986 - 1997	Executive Director, HUCK-FIN, An Environmental Education Program. San Diego, California

9. Professional Education/Consultant Activities

1991 – 1993	National Science Consultant Zaner Bloser Publishers Columbus, Ohio
1984 – 1991	California State Director California Science Olympiad
1981 – 1992	Test analyst/writer, Science Test Committee California Assessment Program Sacramento, California
1985 – 1992	Member of the Education Board San Diego Zoo, San Diego, California
1985 - 1922	Curriculum Advisor Fleet Space Theater and Science Center Balboa Park, San Diego, California
1985 – 1992	Curriculum/Education Advisor Scripps Institution of Oceanography La Jolla, California
1985 - 1992	Curriculum/Education Advisor Sea World San Diego, California
1985 – 1992	Curriculum/Education Advisor Natural History Museum Balboa Park, San Diego, California
1982 – 1993	California Project WILD Advisory Board member

10. AWARDS AND HONORS

2001 North Dakota Project Wild Aquatic Educator of the Year Award

Summer 2001 - Honored by the Spirit Lake Sioux Nation with a presentation of a Star Quilt for service in education.

Certificate of Appreciation for Service to Mid-continent Regional Educational Laboratory, 2000

Presidents Award, California Living Museum, 1984

Outstanding Teacher Award, National Energy Foundation, 1982

Outstanding Teacher Award, Sigma Xi, Research Society of North America, Northridge University Area Chapter, 1981

Teacher of the Year, Moorpark High School, 1974
Teacher of the Year, Moorpark High School, 1981

Certificates of Honor, Westinghouse Science Talent Search, for Meritorious work with Science Students, 1972, 1973, 1981

B.A. Chemistry, San Diego State College, With Honors, 1964