Co-Directors

Joe Andrade, Project Director, is professor of Bioengineering, of Materials Science and Engineering, and of Pharmaceutics at the University of Utah and is the former Dean of the College of Engineering (1983-87). Several years ago Joe became increasingly interested in the issue of science education for the general population. While in graduate school Joe taught high school general science, biology, and chemistry in a parochial high school in Denver. He established the Center for Integrated Science Education at the University of Utah, and is working to involve all faculty, staff, and interested graduate students on campus with interests in science education. He is an accomplished scientist and engineer with 5 books, over 100 peer reviewed research papers, and 5 patents. His research group focuses on proteins at interfaces, proteins as engineering machines and devices, and cost effective health care technologies.

Dr. Trish Stoddart is an Assistant Professor in the College of Education. Trish's area of expertise is the cognitive and developmental psychology with a focus on teacher learning and development and teacher education. She is particularly interested in the development of subject-specific pedagogy and has conducted research in the areas of mathematics and science. As a Senior Researcher with the National Center for Research on Teacher Education, she was involved in a five year study on teachers' subject matter knowledge. She brings to this project her expertise in the development of teahcers' content and pedagogical understandings for teaching science. Over the past two years she has investigated the scientific conceptions of University of Utah elementary education students and the use of conceptual change pedagogy to improve their science content knowledge. This work will contribute to the development of this project. Trish has published extensively in the areas of teacher learning and development.

University of Utah

The University of Utah is the major science teaching and research institution in the region. The University employs some 5,000 scientists, engineers, physicians, and other technical professionals and performs $300 Million/year in sponsored research and technical, medical, and related services. Each of the peopled involved in this effort has some science background -- most of them have children or grandchildren in school -- most of them have opinions and observations related to the science education of children and of the general population. These 5,000 professionals constitute an enormous resource with which to expand and enhance science education in the region.

Center for Integrated Science Education (CISE)
University of Utah
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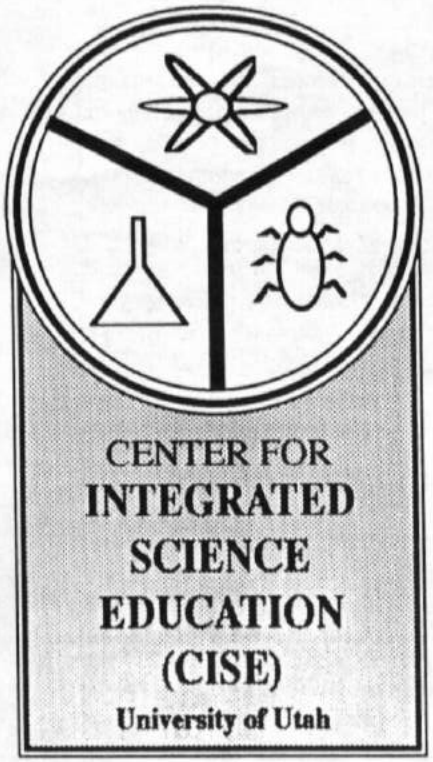
(801) 581-4171 Fax (801) 581-5361



- CISE provides inservice/continuing education courses and workshops for practicing teachers and other professionals.
- CISE seeks to involve the general public in science awareness, discovery, and education by initiating and encouraging lectures, work shops, exhibits, contests, competitions, and science fairs.
- CISE develops novel, interesting, motivating materials and methods for the discovery of scientific concepts and principles.
- CISE coordinates and collaborates with other science education efforts locally, nationally, and internationally.
- CISE encourages University faculty, staff, and students to participate in Center activities and provides the mechanisms and liasion to facilitate their involvement.

Center for Integrated Science Education

Life in modern society involves technical and scientific machines, techniques, and skills. The general public must cast votes and make judgements on a wide range of scientific, technical, and medical issues. Our economy is becoming more and more dependant on scientific and technical innovation, skills, and knowledge for its well being and international competitiveness. Scientific and technical excitement, awareness, and knowledge have not been successfully imparted to a large fraction of our population; many people in our society -- including many with college and university degrees -- have strong fears and anxieties toward science. Such fears and anxieties are often transmitted to their students, co-workers, and friends. There is a growing realization that the education of our citizenry should be significantly improved and enhanced.

Explore! Newsletter

Explore! is distributed to elementary teachers throughout the state and is designed to encourage science education by eliminating anxieties which are often passed on to students. Explore! contains resources, hands-on experiments, and current events tied to science. Teachers are encouraged to establish networks with University faculty and science professionals.

Science Fairs

Science fairs are often just projects related to science but do not always teach children the scientific method and process. The Center encourages teacher, parent, and student participation in such projects. Interested science students from the University serve as mentors to help elementary children do science for their projects.

Contests

Contests, sponsored by CISE, provide the opportunity for students, teachers, and parents to become actively involved in learning science. Prizes and publicity are awarded to the winning entries. One of CISE's unique contests centers around bioluminescence and combines several scientific disciplines, such as biology, chemistry, ecology, and physics, into the learning process.

Science Museums

The Center works closely with agencies and groups involved in informal science education. The Center is working with the Task Force for a Utah Science Center to develop a premier science discovery place in Utah. The Center is also working with the Utah Museum of Natural History, The Children's Museum of Utah, the Hansen Planetarium, Red Butte Gardens and Arboretum, and the Hogle Zoo.

Teacher Inservices

CISE conducts inservices for elementary and middle school teachers wishing to improve their science skills, knowledge, and comfort level. Inservices are designed to eliminate science "fears" and "anxieties." In addition, CISE works with undergraduate teacher candidates to strengthen their science abilities and encourage healthy attitudes towards science.

Science Journalism

The Center sponsors science-related journalism content in order to encourage science and technology awareness in the high school and junior high school populations. Entries consist of news stories, features, editorials, reviews, interviews, or other forms. Prizes are awarded in Health and Medicine, Environment and Biosphere, Life Sciences and Technologies, and Physical Sciences and Technologies.

Education

School administrators, science curriculum coordinators, science teachers, and elementary teachers are encouraged to become involved in the Center. The Center serves as a resource to public and private education. The Center works closely with the Utah Science Teachers' Association (USTA), the State Office of Education, and the State's school districts in formulating, developing, and implementing means to expand and enhance science experiences statewide and regionally.

Community Involvement

The Center works with the State Department of Community and Economic Development and with local industry in encouraging industrial resources and activities directed to science education.

University

The Center strives to involve all faculty, staff, and students who have a strong interest and motivation to improve and enhance science education. There are a large number of faculty who are outstanding science teachers and who have a genuine interest in improving science education. The Center serves as a focus, a catalyst, a vehicle to integrate and encourage science education activities throughout the campus and the community.