

## **Executive Summary**

The current level of scientific literacy in Wisconsin and nationwide is alarmingly low. One key reason is that teachers often do not have the necessary tools to integrate cutting-edge science topics into their curricula. The Bureau of Labor Statistics projects that employment in math and science jobs in the US will increase from approximately 6.77 million jobs in 2006 to 7.98 million jobs in 2016. This is an increase of 17.8% in approximately 790 different job titles.

Our mission is to bridge the gap between the exponential growth of science discovery and science education by providing teachers with the tools to incorporate emerging science fields into their curriculum. SciFusion seeks to transform the way students view and do science, and prepare them to enter the workforce pipeline feeding today's knowledge-based economy.

### **The Goals of the Wisconsin Science Literacy Project**

The primary goal of the Wisconsin Science Literacy Project (WSLP) is to focus on the emerging fields of bioscience, new agriculture, health care, engineering, energy, and other important new scientific disciplines in a real time, on-line, on-demand format that gives teachers, students and the community the tools to stay current and involved. SciFusion provides a systematic approach to teacher professional development, experiential learning, career awareness and the importance of science to our society.

### **What can be done?**

The Wisconsin Science Literacy Project addresses five key areas related to science literacy in Wisconsin:

- Helping teachers integrate cutting-edge science topics into their science curricula.
- Ensuring that students are aware of the multitude of career opportunities in science fields.
- Leveraging new technologies to improve teacher and student resources.
- Providing no or low-cost resources for science professional development.
- Improving citizen and community awareness of emerging science fields and their relationship to our economy

The Wisconsin Science Literacy Project is Velocity Learning System's ambitious and innovative project to improve scientific literacy in Wisconsin and nationally. Scientific research is generating new breakthroughs with incredible speed. These scientific findings translate into new scientific disciplines and education and career options for our young people.

The Wisconsin Science Literacy Project focuses on the emerging jobs in bioscience, agriculture, health care, and energy. With only 5-10% of science teachers at the 6-12th grade levels actively teaching topics related to the fastest emerging sciences, most students in those grades are not being exposed to these rapidly expanding scientific areas.

We are currently developing a cutting-edge web portal called SciFusion. SciFusion.org brings together—or fuses—basic research, public education and the jobs of the future into a valuable community resource.

SciFusion.org is an on-line learning community and resource center that initially will contain multimedia eLearning web modules that introduce teachers to the fundamental concepts of biotechnology, health care, advanced manufacturing, energy and agriculture. This will enable teachers to incorporate these concepts into their classroom instruction. In addition to providing basic information on emerging sciences, SciFusion will focus on the importance of these disciplines to the future competitiveness of Wisconsin in the global economy. All SciFusion content will be aligned with the National Science Content Standards and the Wisconsin Academic Standards in Science.

### **How will we accomplish this?**

The first step in this ambitious project is to work with educators and industry representatives to determine the priority areas critical to the understanding of rapidly emerging technologies. This team will advise on the development of online learning modules. A teacher education program developed by the WSLP will prepare teachers to incorporate the student online learning modules into their curricula.

As of March 2009, we have partnered with different Wisconsin school districts, which will be vital in the development and piloting of the teacher training and the students modules. These initial pilot districts include De Forest, Watertown, Reedsburg, and Evansville. Each district has identified science teachers who are interested in assisting with the planning, implementation and evaluation of SciFusion. The planning and development process will include a three-day curriculum planning conference in August 2009. This will introduce them to SciFusion and the Wisconsin Science Literacy Project, bring them up-to-date on new developments and will include working groups to develop the modules.

Once the modules are tested, evaluated and piloted, we have plans to scale SciFusion.org across Wisconsin and nationally.

### **Timeline**

January 2009 Official Project Launch

April 2009 Superintendent and district planning sessions

July 2009 SciFusion.org launch

August 2009 Meeting with the involved teachers and subject matter experts for three days of planning to develop the pilot modules

September 2009 Learning module development begins

January 2010 First modules piloted

Fall 2010 Additional modules delivered. Begin scaling delivery across Wisconsin and beyond

Summer 2011 Evaluation, revision and expansion of materials

### **Funding**

Initial funding for this project has been provided by Velocity Learning Systems, the Wisconsin Department of Workforce Development, and BioForward. We continue to seek partners in the Wisconsin biotechnology, agriculture, health care, advanced manufacturing and energy communities. Entities that are interested in workforce development can also contribute

expertise, funding and other support to this project. Our longer-term funding goals include obtaining the support of federal and state agencies, corporations and private foundations that are interested in science literacy, education and workforce development.

### **The Advisory Team**

Terri Potter, Potter Consulting. Founding member and first Chairman of the Board for THRIVE

Michael Underwood, President, Velocity Learning Systems

Susan Carlson, Bioscience Curriculum Developer, Former Director of Operations at WiCell Research Institute.

Steve Lanphear, Science and Technology Education and Outreach Specialist, former Assistant Director of the Office of Education Outreach for the UW-Madison

Karen Dettinger, Operations Director of BioForward

Jon Bales, Superintendent, De Forest School District, Wisconsin School Superintendent of the Year

Heidi Carvin, Superintendent, Evansville School District

Doug Keiser, Superintendent, Watertown School District

Tom Benson, Superintendent, Reedsburg, School District

Bassam Z. Shakhshiri, Science Outreach Expert and Professor of Chemistry at UW-Madison

### **Implementation Team**

Michael Underwood, President and Founder of Velocity Learning Systems: Mr. Underwood provides leadership to the project with an extensive experience in public and private arenas of learning and business development. Velocity Learning Systems has an extensive client base, serving statewide and national corporations, various educational institutions, trade associations and non-profits. Combined with his own teaching credentials, he is uniquely positioned to develop innovative digital media strategies for learning. Mr. Underwood helped conceive and direct the nation's most successful Olympic-style sports festival, the Badger State Games and served as the Games first Executive Director. He was selected as a Rotary International graduate fellow at the University of Otago, Dunedin, New Zealand. He was again selected by Rotary international to participate in a group study exchange with Japan.

Susan Carlson, Bioscience Curriculum Developer: Ms. Carlson is an experienced manager of research laboratories and biotechnology organizations, and has developed curriculum for on-line learning environments. She has worked as an outreach educator for UW-Madison research organizations and as director of operations at WiCell Research Institute. She has also been instrumental in developing a series of "Cutting Edge Science" textbooks for use in on-line education at the high school level and has managed the development of a STEM (Science Technology Engineering and Mathematics) curriculum.

Steven Lanphear, Science and Technology Learning Subject Matter Expert: Mr. Lanphear, a 25 year veteran science teacher in the Madison Metropolitan School District, is an expert in delivering science education both in the classroom and online. Steve has a graduate degree in Science Education. He has made numerous local, state, national and international presentations on aspects of learning through technology. He also served as an educational consultant for IBM and Director of Technology for the Verona, WI school district. He has taught several online courses and was the Assistant Director of the Office of Education Outreach for the UW-Madison, School of Education. Mr. Lanphear will provide science and technology learning expertise.

**How You Can Help**

We hope you share our enthusiasm for the role of science literacy in creating a strong future workforce, strong communities and a strong Wisconsin economy. The jobs of the future will continue to require an increased level of scientific understanding and the WSLP will offer the resources to meet those needs.

The Wisconsin Science Literacy Project seeks partners to help us reach our goals. Specific needs include financial support, in-kind goods and services, volunteers and expertise. We are actively pursuing federal, state and private funding to support SciFusion. A collective effort between the public and private sectors will ensure a more science-literate populace that will support a strong technology-based Wisconsin economy.

You can make a difference by participating in The Wisconsin Science Literacy Project. Please join us with your energy, experience and resources.