

2017

Science and Engineering Saturday Seminars: A Brief History

Chris Emery

University of Massachusetts Amherst

Follow this and additional works at: https://scholarworks.umass.edu/stem_satsem

Emery, Chris, "Science and Engineering Saturday Seminars: A Brief History" (2017). *Science and Engineering Saturday Seminars*. 2.
Retrieved from https://scholarworks.umass.edu/stem_satsem/2

This Article is brought to you for free and open access by the STEM Education Institute at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Science and Engineering Saturday Seminars by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

This article appeared in the 2011 STEM Ed newsletter. It is still a good description of the program.

Science and Engineering Saturday Seminars: A Brief History by Christopher Emery

The draft version of the Massachusetts Frameworks for Science, Technology and Engineering was published in 1996, followed five years later by a revised version. And, although progress was being made with incorporating the Learning Standards for science, there was still not a clear sense of how teachers should proceed in order to implement the curriculum described by the Technology/Engineering section of the Frameworks. Some of the questions included: “What does technology/engineering education involve?”; “Who is responsible for teaching this material?” and “How will this material fit into the existing school curriculum structure?”

In the Fall of 2000, Kathy Rubin, Associate Dean of the College of Engineering, and Mort Sternheim, Director of the STEM Ed Institute, met to discuss this issue. They went on to develop a plan to assist K12 teachers in making sense of, and creating useable curriculum materials for teaching this content. This initial planning, with support from the Raytheon Corporation, resulted in the design of the Saturday Science and Engineering Seminars (SESS). Ten years later, this professional development activity is still going strong. When the Raytheon grant ended, NSF and Massachusetts Pipeline funds supported the program for a few years. Modest user fees now cover most of the costs.

The goal of the seminars is to provide teachers with background information, coupled with lab-based activities that will provide the foundation and incentive for development of teaching and learning materials that can be implemented in the classroom. Saturday workshops run from 8:30 AM to 1 PM, and are led by UMass Amherst and other Five College faculty as well as by K12 teachers. Five content sessions are offered each semester, with the presentations typically modeling an inquiry approach to learning, and including handout materials that can be modified for use in designing individualized lesson plans. Many of these materials are posted online.

To date, nearly one hundred topics in biology, chemistry, physics, earth/space science, mathematics and engineering have been addressed by various presenters. A sampling of session titles includes: Fast Plants, The World in Motion, Polymers All Around Us, Antibiotics in the Environment, Global Climate Change, Using Solar Energy, What is Electrical Engineering, Nanotechnology and Mapping Nest Success in Migratory Birds. Teachers have proven themselves very adept at taking one or more ideas from a session having a focus on a specific science or engineering topic outside their area of expertise/teaching responsibility and adapting it for their specific curriculum; this has occurred with modification for use across the entire K12 grade level spectrum.

Teachers receive Professional Development Points for attending and participating in the seminars, and also have the option of enrolling in a 3-credit, structured independent study course at a reduced tuition rate. Those who choose the credit option are required to do outside reading as well as to develop a curriculum plan, based upon some learning experience from the seminars that can be used with their students. This work culminates with an additional Saturday session which is focused on sharing teachers’ lesson plans.

Although the attendance for each Saturday workshop varies, typically between 18 and 32 people attend, and from those numbers, about 12 will choose the credit option. Feedback through weekly and

end-of-semester evaluations has been consistently enthusiastic and positive. It is clear that the short and focused content presentations, coupled with a mix of background information presented by talented workshop leaders, as well as the opportunity for teachers to “practice” working with lab materials, is a viable model for school year professional development.