



A newsletter for students, parents, educators, and friends

Spring 2003

 THE SHODOR EDUCATION
FOUNDATION, INC.

What's Inside?

Exciting
Developments!

page 2

Cool Online Compu-
tational Science
Activity: page 6

Summer SUCCEED
Workshops:
Summer Explorations
in Science and
Mathematics schedule
and application.

***Sign up now! See
mail-in application
inside.**

**Or apply online:
[www.shodor.org/succeed/
application/appSum03.html](http://www.shodor.org/succeed/application/appSum03.html)**

pages 3 & 4

This publication is available
on the World Wide Web at:
www.shodor.org/newsletter

A New Local Initiative: Shodor's Mentor Center

by Bob Panoff and Cornelia Simons

We are happy to announce Shodor's newest project - The Mentor Center at Shodor. The Mentor Center's purpose is to greatly expand the number and variety of mentorship opportunities for students in the Triangle area by leveraging Shodor's staff, facilities, contacts and reputation to enable several small research organizations to support students in hands-on, research-driven explorations in computational science and scientific visualization.

The Mentor Center is funded by the Burroughs Wellcome Fund which has also provided support for Shodor's Project SUCCEED - Stimulating Understanding of Computational science through Collaboration, Experimentation, Exploration, and Discovery - since 1997. Over the years, many of Shodor's Project SUCCEED students have gone on to volunteer as research apprentices and then

continued on pg 2

NCSI and Sigma Xi Partner:

Reprinted with permission from Sigma Xi Today (condensed)

Seven Sigma Xi chapters are among the first to host innovative computer modeling workshops for undergraduate faculty in a new partnership with the Shodor Education Foundation.

The workshops explore how to develop computer models that can help science students "see" the invisible: phenomena that are too small (atoms and molecules), too large (galaxies and the universe), too fast (photosynthesis), too slow (geological processes), too complex (automobile engines) or too dangerous (toxic materials) to investigate in the classroom.

continued on pg 5

Mentor Center:

continued from page 1

progressed into paid internships working with our staff scientists. We hope to continue the success of Project SUCCEED by focusing on mentoring and providing meaningful, research-based internships. We plan to collaborate with several small and fledgling organizations in the Triangle area who will be able to provide mentors for new scientific experiences outside our own areas of expertise, especially in the life sciences.

We would like to use our contacts at local schools

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to recruit outstanding students who will be trained in computational science, modeling, and scientific visualization - these students will then be matched with scientists from smaller or newer organizations who do not yet have the infrastructure to operate their own programs. Shodor will be a safe and appropriate location to help these organizations learn how to run an effective mentorship program.

Students who will participate in internships through the Shodor Mentor Center will come from area high school and middle schools and the home school community in central North Carolina.

continued on pg 5

INTERN OPPORTUNITIES

The following volunteer and paid opportunities are available to qualified high school and college students:

Newsletter Apprentices - help write, edit and layout stories for this newsletter

HTML, Java & Perl Programmers - make interactive web-based science and math activities

MacOs/Linux/NT - assist with regular system maintenance and backup procedures

Graphic Designers - Design dynamic graphics for the Web

For more information: contact Bob Panoff at 286 - 1911 or rpanoff@shodor.org

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Allyson West

Exciting Developments!

We welcome new staff members, Matt DesVoigne, John Heffernan, Matt Lathrop, Nicole Lopresto, and former research apprentice, Allyson West.

Congratulations to Dave Joiner whose paper "Modeling the Transport of Polarized Radiation Due to Scattering in Spherical Dust Shells" has been accepted for publication in *The Astrophysical Journal*.

Shodor is now a member of the Gateway to Education Resources (GEM) consortium. GEM is a U.S. Department of Education Initiative based at Syracuse University to collect and disseminate high quality education resources on the internet. Teachers can connect to the gateway and browse through lists organized by subject, keyword, or grade or by using an advanced search engine. Shodor's tools, including Interactivate, are being incorporated in this resource of over 24,000 records from over 350 sources. Shodor is also participating with GEM through the Virtual Reference Desk (VRD). Shodor's Computational Science Education Reference Desk will begin fielding computational science questions for the VRD.

Relevant link: <http://www.thegateway.org>

Math Tools collaboration: Shodor's online tools have also been selected to be included in MathTools which is run by the Math Forum a widely used internet resource based at Drexel University.

Relevant link: <http://mathforum.org/mathtools>

Mentor Center

continued from page 2

These students may take the path of first attending our SUCCEED workshops in the summer, fall and spring when they are middle school age, then applying for and participating in the Shodor Scholars Program when they are in high school, and finally applying for a competitive position as a Mentor Center intern.

Our initial group of partners in this project are:

The Institute for Biological Architecture- an organization dedicated to studying new theories of biological systems at the level of individual atoms.

The Duke Primate Center Division of Fossil Primates- a small, but renowned facility that

houses a unique collection of fossil mammals and primates. Students would participate in a specimendigitization and curriculum project at the Division.

EcoAccess- EcoAccess is an independent non-profit organization that works to improve the ability of individuals and organizations to protect the environment by providing better access to accurate and relevant knowledge.

Relevant links:

<http://www.shodor.org/mentorcenter>

<http://www.shodor.org/succeed/ssp>

<http://www.shodor.org/succeed>

<http://www.fossils.duke.edu>

<http://www.ecoaccess.org>

NCSI/Sigma Xi Collaboration continued from page 1



A collection of mugs from participating institutions.

The chapter-based computer modeling workshops are being offered through the National Computational Science Institute (NCSI) funded by the National Science Foundation and managed by the Shodor Foundation. The first Sigma Xi chapters to participate are Bryn Mawr, Fairfield College, University of Alabama, Colorado School of Mines, Louisiana State, Marshall University and Muskingum College.

This academic year program involves hosting two workshops on campus. Outreach to high schools and science museums, with an opportunity

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to engage the public, is another attractive feature of the program. E-mail education@sigmaxi.org for more information or to apply.

Quotes from satisfied participants:

“We just completed our Sigma-Xi/NCSI workshop and I wanted to write you and tell you what a great success it was. I think that the participants really got something out of this and they all left wanting more.”

-- Bill Wischusen, LSU Chapter

“Just wanted to let you know the workshop with the Shodor folks went extremely well. About 25 participants from our tri-co community (Bryn Mawr and Swarthmore mainly) worked on teaching and research projects. Some pre-service students and H.S. teachers also joined us in the late afternoon.”

--- Elizabeth McCormack, Bryn Mawr Chapter



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***Sign up now for Summer SUCCEED workshops! (see insert for information)**

If you want up-to-date information, visit our WEB site at www.shodor.org or e-mail: info@shodor.org

Looking for an Internship? Join the Mentor Center!

Take a look inside this issue for some of our current projects!!!

Shodor staff are always willing to work with individuals interested in science, math and computing. Contact us for more details: info@shodor.org

Activities for Kids Science & Math Explorations for Students

This activity gives the opportunity to simulate burning a forest by setting a probability given that one tree is on fire a tree next to it will catch fire. This activity lends itself for exploration on numerous topics such as: probability, application of scientific method, chaos, fractions, percents, data collection and analysis.

How does this model relate to real forest fires? How is it different? Play with the activity online and answer these questions for yourself!

Play

<http://www.shodor.org/interactivate/activities/fire1>

