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It’s got a whole new look!
http://www.shodor.org

Computing MATTERS
Defining the Heart of Shodor’s Work

2008 Student Programs

An Intern Looks at the Three E’s:
Excitement Experience Expertise

Explore Our New Website!

Interactivate Announces
New Online Tools & Features!
See back cover for details

Shodor’s new equation for learning: A better web site
BY JAMIE DEAL | SHODOR INTERN

Shodor’s Web site just got a lot easier to use. The shodor.org portal, through which students and educators access Shodor’s free online materials, including Interactivate and CSERD, has a fresh new design.

The redesign was a collaborative effort by Shodor’s staff and students, with input from educators and other friends of Shodor nationwide. Planned in 2007, the site was under development until it went live in November.

“We hope that the new site will give users around the Triangle and nation a better appreciation of who we are and what we contribute to education,” said Jonathan Stuart-Moore, one of the Shodor staff leading the project.

The Web site’s new look and feel was a design effort led by Shodor staff member Heather Marvin. Marvin began as an intern at Shodor, but is now a “post-baccalaureate” staff member specializing in Graphic Design.

“My objective was to use colors, shapes and an overall layout that would better visually communicate Shodor,” Marvin said.

Marvin pointed out that the new site allows Shodor to track usage in a more detailed way and provides more opportunities for users to give feedback.

Apprentices and interns helped construct the new site, practicing technology skills they have learned at Shodor.

Sandy Brady, an intern who attends Emerson Waldorf High School, had his first experience in developing a Web site while working on the project.

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Letter from the Executive Director
Milestones and New Beginnings

This year marks the 15th year (or our sesquicentennial anniversary) of Shodor serving as a national resource for computational science education. We continue as local and national leaders in transforming learning through computational thinking.

Besides completing our 3rd half-decade, you might say we have celebrated an entire year of “3’s”: we are announcing this issue our 3rd revision of Shodor’s website; our web pages are now viewed more than 3 million times per month; and this newsletter itself is the 3rd redesign of our “look and feel” to stay better in touch with you, our students, teachers, parents, friends, and supporters.

In the next few weeks, we anticipate the announcement of a new, national effort that can have a tremendous local impact, and we’ll be looking to local business and education leaders to help us continue our good work with students. In addition, we are developing new partnerships and outreach opportunities to expand the impact of our work in student experiences, interactive curriculum materials, and professional enhancement for teachers and college faculty.

None of this would have been possible without our on-going and generous support of so many organizations and individuals. I am counting on your continued advice, friendship, and support and we re-position to serve all of you and each of you even better in the years ahead.

- Robert M. Panoff, Ph.D.
Shodor’s President & Executive Director

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Computing MATTERS
The “heart and soul” of Shodor
BY KAITRIN WILSON | SHODOR INTERN

In November 2008, Shodor received a grant of $12,500 from the Harry L. Rust and Helen M. Rust Charitable Foundation in Kansas City, Missouri to support an important part of its Computing MATTERS initiative that brings computational science activities to youth at afterschool and community center sites in the Triangle, NC area.

This is the latest in a series of Computing MATTERS grants from supporters including: Cisco Systems RTP Regional Impact Grant Program, Burroughs Wellcome Fund, Stroud Roses, Inc., and the National Science Foundation. Additional support is being sought to support Computing MATTERS activities in NC. To contribute to this program, visit http://www.shodor.org/donate.

Mentoring, experience and research: These are the three key elements at the core of Shodor and are the emphasis of Computing MATTERS.

Computing MATTERS - Mentoring Academic Transitions Through Experiences in Research and Service - is an initiative led by Shodor to encourage students’ interest in science, math and technology. The goal of the program is to guide students from middle school to high school, through college and eventually into graduate school or a career that utilizes the skills they have gained.

Shodor’s executive director Dr. Robert Panoff calls Computing MATTERS the “heart and soul” of Shodor’s work to improve math and science education.

It begins with an emphasis on mentoring students.

By mentoring and being mentored, students gain the excitement and experience necessary to gain expertise in their target field. Shodor’s workshops, apprenticeships and internships provide many opportunities for these experiences and interactions.

“Younger students immediately see that they can advance themselves through their own efforts, helped by others, to become better learners. Much of the learning comes when one has to teach another,” Panoff says.

Computing MATTERS addresses a key challenge – keeping students who have a “spark” of interest in science from losing it. Introducing students to interactive data tools, dynamic visualizations, and content-rich simulations of real phenomena keeps them engaged.

“We can demonstrate that effective use of interactive computer models and tools capture and keep students’ interests across many subject areas,” he points out.

“Students are doing science while learning science.”

Aside from the topical knowledge gained, Computing MATTERS presents an opportunity for students to learn other life skills.

“At Shodor, students learn how to leverage the technology to build communication skills and problem solving skills that are more important than the underlying technology,” Panoff says.

Students leave the program with skills that enable them ready to take on any number of challenges in their given field.
Reflections on **SHODOR’S 2008 Student Programs**

*Mentor Center @ Shodor* offers workshops, apprenticeships and internships, allowing students to learn 21st Century Workforce Skills while contributing toward Shodor's work to improve math and science education nationally. Apprentices and Interns mentor younger students while applying their new skills toward developing and improving Shodor’s online curriculum, maintaining the Web site and supporting Shodor's infrastructure. Students also support workshop documentation, which provides a valuable resource for schools and civic organizations across the country. For more information on how you can design a workshop for your school or community center, visit [http://www.shodor.org/succeed/curriculum/](http://www.shodor.org/succeed/curriculum/).

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Mentoring  
Classroom Lessons  
Practicing New Skills

Summer Open House  
Building Online Curriculum  
Learning 21st Century Workforce Skills
SHODOR Celebrates the Accomplishments of our 2008 Apprentices and Interns

Avi Aggarwal
East Chapel Hill High Apprentice

Eric Aiello
Kestrel Heights High Apprentice

Deandra Anderson
Riverside High Apprentice

Aman Bali
East Chapel Hill High Apprentice

Mauricio Barreto
Enloe High Apprentice

Dayyan Borhanian
Cedar Ridge High School

Gavin Borg
Durham School of the Arts Intern

Kate Brady
Carnegie Mellon Apprentice

Sandy Brady
Emerson Waldorf High Intern

Ross Broadnax
NCSU Intern

John Burton
Duke University Intern

David Byrd
NCSU Intern

Crystile Caviness
C.E. Githens Apprentice

Katherine Ciccarelli
UNC Chapel Hill Intern

Joel Coldren
Durham Tech Intern

William Cook
East Chapel Hill High Apprentice

Nathaniel Davis
Homeschool Apprentice

Peitong Duan
Green Hope High Apprentice

Jamie Deal
UNC Chapel Hill Intern

Jared Erb
Riverside High Apprentice

Paris Fears
Wake Early College Apprentice

Thomas Fesperman
Riverside High Apprentice

William Foard
Homeschool Apprentice

Jovanna Foreman
NCCU Intern

Jasmine Foust
Jordan High School Intern

Emily Gartland
East Carolina Intern

Sam Gass
NCSSM Intern

Pablo Heitman
Durham School of the Arts Apprentice

Ja’beau Henderson
Southern High Apprentice

Zenik Hite
Hillside New Tech High Apprentice

Sidhartha Jandhyala
Hillside New Tech High Apprentice

Chelsea Jarvis
Hillside New Tech High Apprentice

Evan Jonson
Emerson Waldorf High Intern

Ronnie Johnson
NCSU Intern

Jason Jones
UNC Chapel Hill Intern

Philip Jurow
Earlham College Intern

Kelley Katzenmeyer
NC School of the Arts Intern

Krista Katzenmeyer
Durham School of the Arts Apprentice

David Keatts
Riverside High Apprentice

Elizabeth Kelley
East Chapel Hill High Intern

Alex Kesling
Emerson Waldorf High Intern

Matthew Knight
UNC Chapel Hill Intern
Learning and Mastering 21st Century Workforce Skills
Mentoring - Teaching - Contributing Their Talents to Shodor’s Work
An intern looks at the Three E’s: Excitement, Experience & Expertise
BY HANLEY RICE | SHODOR INTERNS

I began working for Shodor last summer as an intern excited about the opportunities to observe and assist teachers in workshops.

I am now a senior at UNC-Chapel Hill, planning to go into education after I graduate, and thought a summer at Shodor would help me prepare for my new life ahead. Not only did I gain some experience in teaching, but I was also able to see Shodor’s philosophy of mentoring students from “excitement to experience to expertise” actually being put into practice.

I was one of three interns helping Bethany Hudnut, my mentor, in my first workshop called Math and Verbal Skills.

By observing Bethany and the other interns, I gained valuable insight on teaching skills and lesson planning. After grading a student’s work, I could talk about it with them, and in doing so, I got to know some of the apprentices - possibly my favorite part of the workshops.

As an intern, I had the benefit of being able to mentor - and be mentored at the same time.

Later on in the summer, I helped with another Math and Verbal Skills workshop and this time, another intern and I did the teaching. Bethany helped us think about the best way to present the material and use our time, but I was able to acquire the actual experience in trying the teaching myself. And I was able to better help the apprentices in this workshop because of my experience with the first one.

Over the course of the summer, I was amazed at the knowledge the beginner and advanced apprentices had because of the workshops they had completed. They are given opportunities to put their knowledge into practice by working on projects for Shodor. At the end of the summer, I was also given several opportunities to put what I learned about teaching into practice, for which I am grateful.

While I don’t consider myself an expert, I can see that the idea of progressing from excitement to experience to expertise was realized in my internship and I could see it happening with the apprentices as well.

It is clear to me that Shodor’s motto isn’t just something they say, but it is a practical and reachable goal.

Hanley helps students explore online activities during a workshop this summer

Intern Accomplishments

2008 Graduates:

Lauren Riggs graduated from North Carolina State University, and will be teaching Math in Stokes County.

Maria Fedore graduated from Elon University, and is now in Teach for America.

Philip Jurov graduated from Jordan High School and now attends Earlham college.

Luke Van Oort graduated from Riverside High School and now attends University of Waterloo.

Matthew Knight graduated from Middle College High School and now attends UNC CH.

Interns Emeriti

Shilpa Khatri
Graduate Student
Courant Institute of Mathematical Sciences - NYU

We’re proud of Shilpa and so many of our interns emeriti, who move on to advanced education and STEM careers.

Read more about Shilpa and other interns emeriti at:
www.shodor.org/about/emeriti/
Shodor’s new equation for learning: A better Web site
- continued from page 1

“I learned JavaScript and made the drop down [menus] work smoothly. I helped clean up and expand the code,” he said.

Kaitrin Wilson, another intern, improved the visual presentation of Shodor’s online curriculum materials. She also tested and tweaked the site to make it compatible with all major web browsers.

“I don’t think many people realize just how much work goes into a redesign for a Web site as massive as Shodor’s,” she said.

The site offers new home pages that target specific users, including students, parents and educators. There is now an “Activities and Lessons” page with an overview of the free, interactive materials offered on the Web site.

Simplified descriptions of Shodor’s resources should help first-time visitors find what they are looking for more easily.

With the new portal up and running, Shodor continues to garner positive feedback. The organization’s full website receives 3 million to 4 million page views per month as its staff and students continue to improve its online resources — an ongoing learning and mentoring experience for the students.

Visit the new site at http://www.shodor.org

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**SUCCEED Winter/Spring 2009 Schedule**

<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
<th>Times</th>
<th>Grade Levels</th>
<th>Fee*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday Explorations</td>
<td>February 21, 28 and March 7, 14, 21</td>
<td>9am - 12pm</td>
<td>6th-8th graders</td>
<td>$175</td>
</tr>
</tbody>
</table>

* It is the policy of The Shodor Education Foundation that no otherwise qualified student should be discouraged from participation due to financial circumstances. Full and Partial financial assistance is available for all programs.

For More information on SUCCEED Workshops visit http://www.shodor.org/succeed/workshops/current/

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Thank you to the following granting organizations for their generous support:

- Strowd Roses
- Cisco
- Burroughs Wellcome Fund
- National Science Foundation

Harry L. and Helen M. Rust Charitable Foundation
Announcing SHODOR’s New Online Tools!

Check out the new mathematics activities and improved assessment reporting for grades 3 and up on Interactivate! Go to www.shodor.org/interactivate and enter the activity name in the search box in the upper right corner.

New Activities:
- Multi-Function Data Flyer
- Linear Equalities
- Number Base Clocks
- Fire: Estimating Percent
- Single Fraction Finder
- Single Fraction Pointer

Improved Assessment Reporting through "Keep Score" Feature:
- Arithmetic Quiz
- Algebra Four
- Algebra Quiz
- Estimator Four
- Estimator Quiz
- Fraction Four
- Fraction Quiz
- Order of Operation Four
- Arithmetic Four

Add SHODOR to your charitable giving plans!

- Support our work to improve math and science education
- Provide opportunities for students to learn and use their skills

Donate online at: http://www.shodor.org/donate

CLICK HERE! Visit our website!

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a national resource for computational science education
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