

**Brian Enderson**, Senior Programmer Analyst III  
**Melody Wainscott**, Graduate Technology Scholar  
**TTU/HHMI Science Education Program at CISER,**  
**Texas Tech University**

### Abstract

The Center for the Integration of Science Education and Research (CISER) is a university-wide center at Texas Tech University (TTU) that encourages and supports the integration of science education and science research for TTU students and mentors, and for Texas Region 17 K-12 public school students and teachers.

CISER is a dynamic center with both internal and external audiences. Reaching both audiences by creating effective information flow from internal databases to the Web, CISER's primary tool of communication, presented several challenges: 1) CISER had multiple databases spread out between many applications. Changes made in one database were not reflected in other databases that used the same information; 2) CISER web content was not integrated with the databases. Every web-related update to the database(s) required a separate update to the website; and 3) to make information available via the Web to both internal and external audiences of TTU required programming by a skilled individual.

Windows SharePoint Services 3.0 (WSS) provided a simple solution for these challenges. WSS is a single source content management solution which is easy to use, easy to maintain, and easy to access via the web. All CISER public and private information was moved to SharePoint lists. Updates to data made once, either online or using Office 2007, are reflected in all lists and websites that use the information. Because WSS defaults to Windows authentication, CISER authentication and role management is secured by utilizing the TTU "eRaider" system for user identification. Authorized users can easily edit content based on permissions determined by site administrators. More importantly, all the technology utilized in this solution is available at little or no additional cost through the Microsoft Campus Agreement.

WSS allows CISER to communicate faster and more effectively with its audiences because of single-sourcing and ease of use, creating technology solutions at little or no cost.

*WSS allows CISER to communicate faster and more effectively with its audiences because of single-sourcing and ease of use, creating technology solutions at little or no cost.*

### Software:

- Microsoft Windows Server 2003 Standard Edition SP2
- Microsoft SQL Server 2005 Express Edition with Advanced Services
- Microsoft Windows SharePoint Services 3.0
- Microsoft SharePoint Designer
- Microsoft Office 2007 Enterprise Edition
- Visual Studio 2008

### Technologies:

- Active Directory
- Internet Information Services
- ASP.NET 2.0+ (C# and Visual Basic)

### Sites:

- CISER Home Site  
<http://www.ciser.ttu.edu>
- CISER Science Education  
<http://www.ciser.ttu.edu/outreach>
- CISER Student Research  
<http://www.ciser.ttu.edu/hhmi>
- CISER Staff Site  
<http://www.ciser.ttu.edu/staff>
- CISER Databases  
<http://www.ciser.ttu.edu/db>

### **Situation**

- The CISER data was spread out between many applications. None of these applications referenced the other, which meant that each database had to be updated separately. This was a very time consuming process and one that introduced a greater risk of incorrect data entries.
- Content management was very difficult for the web because it required special software and training. As a result, content was frequently not up to date.
- Software previously required to edit data was both costly and difficult to manage.

### **Solution**

- Moved all the data to Windows SharePoint Services 3.0 and secured the site with eRaider.
- Set up sites specific for each component of the program that allows for content management using SharePoint's web-based interface.
- All user computers were updated with Office 2007 Enterprise and Internet Explorer 7.0. Both products are freely available either through the Microsoft campus agreement or online. Furthermore, all machines were placed on the TTU domain, which facilitates authentication with eRaider.

### **Benefits**

- Provides a central portal for collaboration, document storage, content management and workflow management, and uses the web to deliver the bulk of these features.
- Content managers for each component of the program can maintain their site's information without intervention. Furthermore, site administrators can authorize these updates become they are publicized.
- By leveraging existing Microsoft technologies, CISER is able to consolidate its data infrastructure with minimal cost. Software updates are freely available through the Microsoft Campus Agreement.