

# **2006-2007 REU Report – Christopher Klosowski**

## ***Research Questions***

Research and development related to a collaborative, international Content Management System (CMS) for engaging scientists and educators throughout the U.S. and in selected other countries participating in the Advanced Internet Satellite extension Program. Key research questions include:

- Will the ability of researchers to create and update their own content on the site without requiring web authoring skills (e.g., HTML, CSS, Javascript) encourage them to do so in a more timely fashion?
- Will the ability to easily and, in some cases, automatically cross reference content make it easier for site visitors to locate relevant material?
- Will the use of metadata within the CMS improve the effectiveness with which external web services (e.g., search engines, content aggregators, etc.) can “mine” the CMS website?

## ***REU Background***

I am a senior in the Northern Michigan University Department of Art and Design’s Electronic Imaging program and worked with Steven R. Conn, AISEP Project Director (PD), to advance my understanding and to develop professional skills in the following areas:

- Information architecture, human-computer interfaces and graphic design;
- Content management systems, information workflow and use of metadata;
- Content markup and representation standards (e.g., HTML, XML, CSS and RDF);
- Requirements gathering/analysis, project management and working effectively with clients.

## ***Activities***

### **Information architecture, human-computer interfaces and graphic design**

- Designed and prepared graphic images and logos for use on CMS pages;
- Actively participated in a major revision of the CMS site structure.

### **Content management systems, information workflow and use of metadata**

- Mastered the technical skills needed to develop content using the Microsoft Content Management System;
- Designed and implemented simplified workflows within the CMS;
- Assigned metadata tags to CMS content;
- Moved content from the existing AISEP content repositories (static HTML websites) to the CMS.

## **Content markup and representation standards**

- Implemented a re-design of the CMS home page;
- Converted extensive HTML content from existing AISEP websites for compatibility with the CMS;
- Created and modified CSS stylesheets used by the CMS.

## **Requirements gathering/analysis, project management and working effectively with clients**

- Actively participated in an intensive, 4-day meeting with ADEC staff in Lincoln, NE to finalize the CMS site structure, home page design and visual characteristics.

## ***Collaboration/Interaction with other Project Scientists***

- Worked under the supervision of Project Director Steven Conn, receiving work assignments, technical guidance and mentoring.
- Worked with Fred Piazza, Louisiana State University AgCenter CIO, and the LSU Agcenter Information Technology staff to learn CMS use/administration and to resolve technical issues which arose during the CMS migration.
- Collaborated with ADEC President and AISEP PI Janet Poley and Project Scientist Jeff Poley in designing the information architecture and planning the CMS migration.

## ***Standards***

My work on the AISEP CMS project afforded me the opportunity to work extensively with several established and emerging web and information technology standards, including:

- HTML 4.0 Transitional and CSS 2.0 (content authoring and CMS page formatting)
- XML 1.0 (CMS configuration files)
- RDF and Dublin Core (metadata)

## ***Expectations for product evaluation and validation***

The AISEP CMS is expected to transition from development to production status in June, 2007. At that time, gathering of data regarding usability, effectiveness, quality of collaboration and utilization of the CMS will begin.

## ***Personal Advancement and Growth***

So far, I have found the experiences with ADEC valuable to my undergraduate education. My university is in a small town and does not offer internships in my field of study. The REU work with ADEC has served as my equivalent to an internship giving me very important experiences with clients, co-workers, and communication. This work has taught me how to manage and be self-sufficient in my projects because I do not always have someone to contact and ask at that exact moment.

While in Lincoln, we held meetings which helped me understand the process of brainstorming as a group, being able to execute a group design, and presenting that final design. That single experience has been the most important and helpful I have had in my work with ADEC

### ***Comments from PD/Mentor***

Mr. Klosowski studied computer science at NMU for two years prior to moving to the Department of Art and Design. In addition, he holds professional certifications in Windows servers and networking. As a result, he brought a combination of technical skills and visual design talent uniquely suited to working on the AISEP CMS project. As he has described in the Activities section above, I assigned tasks to Chris that would allow him to develop his existing technical and design skills, as well as to give him experience in new areas that will be of value in his professional career. Of particular value to Chris in his future work were the following:

- Hands-on experience with administering and developing content using a CMS product which is widely used in both the public and private sectors (Microsoft CMS). Since most CMS products are similar in their overall approach to content management, his experience will translate well to other commercial and open source CMS products.
- Use of metadata (RDF and Dublin Core) to enable more effective discovery of content stored in the CMS from the CMS interface and through external search engines and aggregators.
- Substantial participation in the full life-cycle of a “real-world” technology project, from requirements to design to implementation to testing.
- Participation in a 4-day intensive “JAD” (joint application design) session with PI Dr. Janet Poley and Jeff Poley during which several important CMS information architecture and design issues were resolved.

During my professional career, I have provided leadership for many IT-related projects ranging in staff size from two or three to over fifty employees. My approach with Chris was to conduct the CMS project as much like a “real world” engagement as was practical. Rather than spell out exactly what I wanted him to do, I gave him objectives and left it mostly to Chris to decide how he would meet them (in some cases, we agreed to a number of hours he would work on a task before asking for help). Since both of us are nearly always available via instant messaging, it was very easy for him to ask a quick question or for me to get a status report from him (we resolved several coding issues, for example, by exchanging code fragments via IM).