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**Sabbatical Leave Proposal**  
December 5, 2005

## Proposal Summary

I plan to use my sabbatical time creating live websites / databases / web services for not-for-profit businesses. I plan to create them using the rich variety of different tools I have been teaching. I think it is important that I not only build these sites, but also interact with groups who will be using the sites while building them.

I plan to write a time-based contract with the entities for whom I will consultant pro bono for. Of the many benefits, this will ensure an end for the work, to prevent this from interfering with my future work at Parkland. This will also give me the best idea of what our students will really be doing in the real world and allow me to adequately prepare them.

I plan to keep track of what I do using one of my favorite ideas I gleaned from at the Center for Excellence: journaling. By keeping track of what I did and how I spent my time on the first project, I can reflect on this and modify subsequent tasks accordingly.

I am requesting a sabbatical in the Fall of 2006. I have spoken with Maria Mobasseri, Chair of Computer Science and Information Technology and we agreed that it would be much easier for the department to fill my courses in the fall than in the spring.

## Responsibilities at Parkland

I teach courses in Computer Science. In the past, I have developed and directed career programs and developed numerous courses. I have served as Chair of the PCA's Diversity Committee, PCA's Student Affairs Committee and several hiring committees. I have been a member of the PCA's Executive Council, the PCA and numerous departmental committees.

## Eligibility for Sabbatical

I was hired in January 1997, and therefore, will have been at Parkland College for 9 years as of the end of this semester. I have never taken sabbatical leave.

## Rationale

Since my hiring by Parkland College, I have been the leading force in creating the Web Programming Career Programs and Professional Certificates. I have developed and taught nearly a dozen different classes on web-based programming. I entered Parkland with little or no experience in web programming. Over the years I have taught myself, but I am lacking the actual experience of creating a full professional web site. I want to deepen my skills by creating useful, professional websites.

As a programming professional in my pre-Parkland career, I acquired valuable insights into the realities of programming. I find my students enjoy these insights. While I understand the principles behind web programming, I have never designed a large scale website in any of the platforms I teach. I feel this is an issue when a student asks what it will be like to really program a large-scale web site. Since my personal philosophy of teaching is based on the principle of lifelong learning through doing, I can see myself moving to a higher level of expertise in this area by doing. This is going to renew the courses I teach and, therefore, my work life at Parkland College. I also hope that this will increase my community contacts for finding student service learning projects in the future.

## Specific Activities Planned for the Sabbatical

I will contact Karen Fletcher, Director of Volunteers, at prairienet.org, which hosts many local not-for-profit groups' websites, to get leads on groups in need of a website. I know that there are many such groups.

### Specific Goals

To consult, develop and implement a web site in a specific technology. Keep a journal to review when the project is completed, then reflect upon that journal to help plan for the next website.

- a. Consult with administration and employees about what the website should do.
- b. Develop a bid proposal and mock-ups of projected website.
- c. Design database(s).
- d. Design graphics.
- e. Program website.
- f. Handle change orders to project.
- g. Test website.
- h. Install website.
- i. Develop written procedures for maintaining the website.
- j. Consider the procedures I used and refine it for the next project.

### Time Line

- 1) August – September 06: *Center for Sustainable Community*
  - a. Server Technology: Perl
  - b. Database Technology: MySQL.
  - c. Graphics: Photoshop for Images and Animations
- 2) September – October 06: *Illinois Sustainable Living Fair*
  - a. Server Technology: PHP,
  - b. Database Technology: XML
  - c. Graphics: Photoshop for Images, Flash for Animations
- 3) October – November 06: To Be Determined.
  - a. Server Technology: C#.net
  - b. Database Technology: SQL Server.
  - c. Graphics: Photoshop for Images and Animations
- 4) November – December 06: To Be Determined.
  - a. Server Technology: Whichever I had the most trouble with

- b. Database Technology: Whichever I had the most trouble with
- c. Graphics: Photoshop for Images, Flash for Animations

### Explanation of some terms

PHP, Perl and C#.net are web server programming platforms. Like the variety of web browsers people can choose from, there are also a variety of server platforms to choose from. These platforms are quite disparate in the way they work, hence the variety of courses in this area that I teach. I wish to produce entire websites using each of these technologies.

MySQL, XML and SQL Server are different database technologies and Flash is a graphical interface for browsers and Photoshop is an image-editing tool. I hope to be able to find a way to use SQL Server, but may not be able to as it is quite an expensive program and few non-profits would choose it over the free MySQL.

### Justification for Sabbatical

As strange as this may sound to some, I really enjoy programming. This is what I chose to do with my life in the early eighties, and I still like it and am quite good at it. One thing I don't get to do is develop larger projects on one platform at a time. Since my semesters are split between 4 or 5 different areas I don't have the ability to pursue projects of the depth and scope I wish. A good analogy of what I want to do would be a theater faculty member directing an off-Broadway play or writing faculty taking the time to write a novel. I want to stretch the skills I have in a way I can't do while teaching 5 different classes.

### Sharing the Results of the Sabbatical

Besides the requisite talks before the board and the PCA, all my work, excluding the agencies content, will be placed in the public domain. The finished websites will bear my name and a link to my Parkland College website.

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Ken Urban

Associate Professor, Computer Science and Information Technology

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Maria Mobasseri

Chair, Computer Science and Information Technology

# Sabbatical Leave Report

Ken Urban

CSIT

Fall '06

The purpose of my sabbatical was to develop websites for non-profits. I would use a variety of technologies and follow the projects through from beginning to end. This would give me not only real life experience with the technologies involved, but would teach me how consulting works (many of the web programming students become consultants) and develop community connections.

The specific projects that I chose were WRFU-LP FM, the Urbana-Champaign Independent Media Center, the Stelle Community Association and the Champaign County Health Care Consumers. All are non-profit organizations that I've had some involvement with over the years. I've separated out each of the projects here in the report, but they ended up being done simultaneously.

WRFU-LP is a very new low power FM station in Urbana. My involvement with them starts with the weekend the station was built by the community. Their organization structure is anarchic, so I had free rein to do what I felt needed to be done. They have web services provided by a parent group, the UC IMC. I worked with Dan Meredith on the installation and setup of a Drupal Content Management System (CMS).

Drupal was chosen specifically because it was open source and had an add-on module for internet streaming of audio and an add-on module for Radio Station programming and scheduling. On researching Drupal, I discovered that it is quite popular among non-profits, is very expandable via lively module (add-ons) and theme (look and feel) communities. I was also featured program in Linux Journal. I installed it and various modules and themes a couple of times on my Parkland test server to get a feel for it.

Once installed, Drupal requires user and system management similar to most computer systems, although it uses a web interface to do this. There are two levels of work to be done, defining the system and putting the content into this defined systems.

On the defining the system side, I built 'stub' pages for what were important pages. Put together a menu that pointed to them and other external pages and placed that menu in a block to be displayed on the screen. Once the menu was up and working I filled in the information on the page. This is the same technique I have been telling my classes to use, not specifically to Drupal. It works quite well. Rather than putting work into detail first, it's much more efficient to work on the metastructure first, get everything in there place, then fill in the details.

After the basic, and immutable information was placed on the web, we needed to get the mutable information up and running, I created the programming schedule, the shows on

the schedule and the DJ connected to the shows. This is part of the day-to-day operation of a website that is not talked about in textbooks, but turns out to be the most important part of a CMS ... managing the daily content in a world of spam. We discovered that allowing anyone one to post information to the web attracts spam, but we also want to allow for comments on the shows. Our solution was a 'captcha' module. 'Captcha' is the form field where you enter in a few letters and numbers to prove that there is a person, not a spam bot on the form. The other day-to-day operations included creating new shows, deleting old shows, changing schedules, and changing personnel in shows. I took over the day-to-day operations of the website, and I can see that the most work done is in the day-to-day operations.

As a followup, the ideas from here appeared in two of my classes this semester. I added a drupal module to csc255 – Topics in Webserver Administration and in CSC155 – Perl CGI programming, the semester project was based on problem encountered in day-to-day operations of the website.

The Stelle Community Associate is a small non-profit located in Ford County. I chose this one because it was small and would afford me a chance to do more design than programming. My plan was a 5-7 page site with some introductory information and pages for bylaws, and other documents they wanted online.

I got to spend some time taking digital images of the people and places around Stelle. I chose to center my pages around the sunset colors and the number of sunset images I took. From there I spent some time with Photoshop and it's filter converting the images into suitable banners, link and header text and background images.

As of this writing, the site is completed but the SCA has not published it. They cited concerns about who would maintain the site once it was up. Upon reflection, this is another site that requires a CMS to do what it is they really want.

Champaign County Health Care Consumers was having a website built by a former student of mine, Mike Cruz. He contacted me and asked for my advice on building a site for CCHCC. We met weekly for a while where he would do some work, ask for advice, then do more work. He basically built a custom CMS from scratch for CCHCC. Much of our time was spend discussion database and program design. His view tended to be towards taking what CCHCC was doing verbatim, where my view was towards looking for overlap and presenting them in different ways.

As a case in point, CCHCC has 'programs' and 'news releases'. He was building two parallel sections for each of them, while I observed that they were really the same thing (as far as the web site was concerned) that could be differentiated with a flag in the database. I got the idea across to Mike, and make the observation that many sites can get bogged down by insiders doing things the same way, as opposed to consultants with a fresh 'non-organizational' view.

There was a serious challenge in that Mike had his whole project on a laptop. So in order to work on the site, we had to huddle around the machine in coffee shops and elsewhere. I can see the use of the CSIT department's new service learning lab for a solution to hardware and software issues for students wanting to try projects like this, but lacking the hardware and software investments to get started.

The most fun learning experiences for me came from going outside my field. I chose to help the local Independent Media Center with sound engineering for live shows. I was looking for a way to expend my multimedia knowledge and ran into Dan during a show at the IMC. We scheduled a training week for myself and others and showed me how to not only do the sound, but how to set up a stage including speaker systems, mics, wires, amps and lighting.

With Dan as a mentor, we did the sound for a couple of live shows together. After which I did a bunch of shows on my own. It was a fun challenge to be able to put together a decent sound at the last minute when a band shows up with a few extra members who each need a couple of mics; that seemed to happen often.

It was a good learning experience and a satisfying exercise to set up and tear down a full band. The geek in me likes to run wires, solve configuration problems, and know what little bits of electronic equipment do. It's hard work before and after the shows, but you it's enjoyable to hang with the musicians, who invariably are glad you're there helping. Tear down after everyone is gone and it's late at night can be a drag.

I got to experiment on different audio equipment ... sound boards, speakers, amplifiers, equalizers, XLR connection boxes, many different converters and audio equipment. I also digitally recorded some of the later shows on minidisc directly from the board, converted, edited and master the recording to MP3 and CD. I familiarized myself with the open source audio production program Audacity, which I used to edit the raw files from the minidisc.

Additionally, I and small group configure the building to take the live feed from the stage and put it into the mixer board in the WRFU studio. We custom build and ran the cables from one mixer board to the other, discovered why longer cables need shielding (they pick up noise) and redid them to get quite a good signal over the air. I was both the DJ and the sound guy for a number of performances from the IMC, most notably the C-U Woman in Music benefit concerts (for the Crisis Nursery and other charities).

I spent some time examining the overall learning outcomes from my sabbatical and noticed some recurring themes: Web site development has changed in the last couple of years ... rather than custom made applications doing most of the work, Content Management Systems are taking over a large place in the market. I can see that rather than paying someone for a custom website and someone to maintain it, you can get someone to install and manage a CMS for a lot less and give more access to other people. Since day-to-day management is the biggest hurdle for smaller websites, being able to make changes with in house expertise is a great advantage and cost savings, which many

places seems to place higher than having a completely unique website. This seems to give an advantage to web consultants and employees who are literate installing and maintaining webapps like Content Management Systems.

I've have a semester to implement some of these ideas in the classes I teach and the career programs I'm involved in. One change I've made is to modify the CSC255 course (Topics in website programming) to include a module on CMS. I chose Drupal because students can freely install it themselves and learn by doing on it. Additionally, I am rethinking the semester project in CSC155. Rather than a larger custom website that I build half of and the students finish, a smaller website build entirely by a student seems more appropriate. There's a significant niche between a complete website and single webpage. Since the audience for csc155 is both web programmers and system administrators, a few page website that allows access to a single database table seems a very useful application. I will also free up much of the class time spent preparing for a larger project to cover other topics in more depth.

I've made few contacts around the community, and feel that I can use these resources to get real world project examples for my class and significantly increase the Service Learning component of csc155 with doable projects. I understand what we can and can't get done as a class and as individual students. It's never good to fail in a service learning project; that reflects badly on everyone involved. But when they work, everyone wins. I feel confident to make that happen.

# Appendix: Presentation Slides

## Sabbatical Leave

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CSIT  
Fall '06

### Tasks

- ◆ Develop Websites for non-profits
- ◆ Use a variety of technologies
- ◆ Full project design and implementation

### Specific Projects

- ◆ WRFU-LP FM
- ◆ Stelle Community Association
- ◆ Champaign County Health Care Consumers

### WRFU-LP FM

- ◆ Big Site
- ◆ Content Management System – Drupal
  - ◆ Radio Station Module for streaming
  - ◆ Open Source
- ◆ Challenges:
  - ◆ Day to day operation
  - ◆ Customization

### Stelle Community Association

- ◆ Small Site
- ◆ Dreamweaver/Photoshop
- ◆ Challenges:
  - ◆ Indecision
  - ◆ Ongoing maintenance

### CCHCC

- ◆ Former student request
- ◆ Technical Assistance
  - ◆ Database design
  - ◆ Program design



- ◆Testing
- ◆Challenges:
  - ◆Mac
  - ◆Not on-line

## **Sound Engineer Biggest Lessons?**

- ◆Day to day management
- ◆Database-driven websites are very similar
- ◆Content Management Systems

## **What now?**

- ◆Course Modifications
- ◆Program Modifications
- ◆Service Learning

## **Course Modifications**

- ◆CMS module in curriculum (CSC255)
- ◆Web Maintenance tools in curriculum (CSC255)
- ◆Semester Project (CSC155)
- ◆More real life projects

## **Career Program Conversations**

- ◆Ongoing maintenance
- ◆Administrator vs. Programmer vs. Designer vs. Maintainer
- ◆Service Learning vs. Lab Time
- ◆Maintenance as service learning

## **Service Learning**

- ◆Contacts / Get the word out
- ◆Better understanding of what projects can and can't be done

## **Questions?**