

# A University Website Design Project: The Design Process, the Prototype and Some Design Issues

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*WebFeat was a Website design project undertaken on behalf of five departments and an administrative office of the University of Washington's College of Engineering. The role of the WebFeat Core Team was to provide design and technical guidance for the six teams working directly with these units. The Core Team created a prototype from which the unit teams designed their individual sites. Later the Core Team helped implement the unit sites. As part of the design effort, the Core Team examined numerous university Websites and thought through a variety of design issues. Three are discussed here: (1) indicating the identity of individual units within the hierarchical structure of the institution; (2) maintaining visual consistency throughout the site, and (3) harmonizing the messages conveyed by the university's home page and the home pages of the university's colleges and departments.*

WebFeat was a Website design project undertaken during the winter and spring quarters of 1997 for five academic departments and the Office of Academic Affairs of the University of Washington's College of Engineering (<http://www.engr.washington.edu>). WebFeat was directed by Professors Judy Ramey and David Farkas of the College's Department of Technical Communication (TC). TC was one of the departments whose site was redesigned as part of the project. About 25 undergraduate and graduate students, mostly from TC but from other departments of the College as well, provided most of the person power for WebFeat. Some College of Engineering faculty and staff also provided valuable support.

Each of the six units has a great deal of content to put on the Web. For example, each department has curriculum information, course descriptions (and, in some cases, syllabi, assignments, and study materials), notices of department events, descriptions of research projects, and sites for individual faculty members. Given the short duration of the project, our goal was simply to get a start on what will be a long-term and, indeed, unending project. We wanted to assist the units in determining what information they need to provide and how to best structure that information through a hierarchy of links. In addition, we wanted to improve the visual interface (the appearance and function) of each site. In a companion-piece paper, Ramey (1997, this volume) provides a broad overview of WebFeat. In my paper, I explain the activities of the Core Team, the prototype we created, and some design issues that are intrinsic to the creation of university Websites.

## The role of the Core Team

The WebFeat Core Team provided guidance and support, especially regarding the visual interface, to the six “unit teams,” the student teams that worked directly on upgrading the six College sites. The Core Team established basic policies and parameters for the design effort and created the design prototype from which each unit spun off its own variation. Besides myself, the Core Team consisted of three undergraduate students, Lani Huson, Garrett McKinnon, and Mike Yegge. They were chosen because they had good design skills and significant experience designing and implementing Websites.

The activities of the Core Team changed with each phase of WebFeat. Early in the project, we researched various Web design issues and examined and analyzed scores of university Websites. In addition, much of our job was to learn from the unit teams. We attended their meetings and examined their “data walls.” Our goal was to understand the units’ audiences and communication goals and to get a general idea of the design concepts they would approve. In addition, we received important suggestions from our “clients.” For example, a department administrator attending a unit team meeting proposed that our design include a prominent link to a page of contact information so as to reduce the frequency with which people call the departments for this information.

As we gathered information, we shared our initial determinations regarding the ultimate design so as to better achieve consensus. For example, we informed the unit teams that we planned to exclude frames from the design, that the design would be optimized for visitors with slow connections to the Web, and that (following University policy) the sites would need to be usable by visually challenged visitors whose “talking” browsers require text-only link anchors.

The prototype came into being as a rough sketch. Then, using PageMaker we created a paper mock-up that we distributed to the unit teams, the Dean, and some colleagues whose design sense we highly respected. The overall reception was positive, but various suggestions for improving the layout and navigation were incorporated into the next stage of the design, a working HTML prototype. This prototype also generated valuable ideas for improvement when it was reviewed. At this point, which was early in spring quarter, we sought the assistance of a recent graduate of our masters program and professional graphic designer, Tamara Adlin. Tamara had volunteered to refine our design, which indeed she did, and so our prototype was finalized. She also gave us the PhotoShop files from which she had created the GIF graphics, so the unit teams could more readily modify these files to meet their needs.

During the remainder of the WebFeat project, the Core Team focused on supporting the unit teams. We helped them create the banners, buttons, and bullets for their second-level and third-level pages. By this I mean that if there is a first-level page with the link anchor “Pursuing Studies in Electrical Engineering,” there must be a second-level page with a banner reading “Pursuing Studies in Electrical Engineering.” This page would include link anchors to the various academic programs, and each of these link anchors would lead to a third-level page with a banner identifying the particular program. The second- and third-level banners typically borrow key stylistic elements from the first-level banner (and from other elements on the first-level page), but are usually smaller in

size to reflect their position further down in the site's hierarchy. The Core Team finished up by assisting the unit teams in implementing the search feature and by creating a permanent WebFeat archive site containing the various graphics, the HTML code, and other resources created during WebFeat. This archive will prove useful to the six WebFeat units as they add new content to their sites and to other departments and non-departmental units of the College who may adopt and adapt the WebFeat design.

## The design concept

We recognized early on that our design should be "basic" and uncomplicated. For one thing, our design was actually a "meta-design" that existed only to permit the creation of multiple variants. Just like chefs cooking up a stock that will be used for several different soups, we wanted the strong seasoning to go into the soups rather than the stock. Also, the unit teams varied greatly in their Web and graphics experience, and we needed a prototype that would not cause them undue difficulty. Finally, we wanted a design that would be easy for the units to update. The figure shows our design as it was adapted by the Bioengineering unit team. Following is an explanation of the main components of the design.

**Spotlight**

- [New UWEB lab!](#)
- [Bioengineering has a new website design!](#)

**Main Menu**

- [Welcome to the Bioengineering Website.](#) Departmental contacts, Bioengineering defined, the Department Chairman welcoming message, FAQs, and a description of the Northwest are presented.
- [Getting Admitted and Graduating.](#) The requirements for getting admitted to the graduate and undergraduate programs, for financial assistance, and for graduating.
- [Pursuing a Course of Study.](#) Core curricula, pathways to a specialty, course descriptions and links to University of Washington admission requirements and UW policies may be found.
- [Finding Research in Bioengineering.](#) Information about ongoing and past research as well as about the labs, facilities, directors, and project funding sources may be found.
- [Finding People in Bioengineering.](#) The faculties, students, and staff of Bioengineering along with links to individual's web pages are listed.
- [Keeping Current in Bioengineering.](#) Calendars of current and future events, activities, lectures, and seminars, along with pending research and job openings may be found.
- [Getting Involved in Student Activities.](#) Information about student and professional societies of interest to Bioengineering students and alumni are provided.
- [Keeping in Touch with Industry.](#) Links to companies and labs in Bioengineering as well as to the specialties of students and alumni may be found.

### The major portion of the Bioengineering home page

#### The banner

The banner is the main identity element of each unit's home (first-level) page. It therefore identifies both the unit and the institution (University of Washington). We anticipated that the banners would be implemented as graphics, and to minimize download time we specified relatively small dimensions for the banners. In addition to

identity information, most of the banners include some kind of pictorial element to help establish a theme and message for the site as a whole. Some units show their building; others show students absorbed in some kind of group work. Bioengineering chose a strikingly beautiful graphic of a peptide complex, which, if clicked, displays a full-screen version.

### **The navigation bar**

We specified a navigation bar with four buttons. The first displays the Contact Info page, the second and third afford vertical navigation to the University of Washington and the College of Engineering home pages, and the fourth displays a Site Map. Note that the Bioengineering unit team departed from the specified design by creating four separate buttons rather than a navigation bar.

The search feature

With a search feature, visitors can quickly find a specific item of information in a large Website. In addition, we felt that including the search feature (in conjunction with the other major components) on all the unit sites would help establish visual consistency among the sites.

### **The spotlight region**

In our survey of university Websites, we frequently found some kind of “spotlight” region intended to focus visitors’ attention on timely information. This idea made sense both to us and to the unit teams, and so we added it to our prototype. Tamara Adlin created the graphic for the spotlight heading as an animated GIF: when the home page first displays, a moving light seems to shine momentarily from behind the word “Spotlight.” This is the only “non-basic” feature of the prototype.

### **The main menu**

The main menu heading and the bulleted entries below it make up the main menu, the central component of the design. The entries consist of the actual link anchors (underlined text in gerund) form and an explanatory sentence or lengthy phrase. For example: Finding People in EE This page links to faculty and staff, teaching assistants, student organizations, and UW's engineering alumni association. We believe that the link anchor/explanation format gives visitors a very useful preview of the link destination. Also, because these entries are made up of text rather than hotspot graphics, the units can easily add new entries or modify existing entries.

The main menu and the spotlight region are implemented as table cells so that one or more graphics can be placed to the right of these components. The drawback here is that the graphics are not visually tied to any particular entry of the main menu or spotlight region. After some debate, however, we decided that the unit teams would be able to create or borrow meaningful graphics with only a general relationship to the home page—such as the Bioengineering unit team’s choice of a young woman using an electron microscope.

### **The text-only menus**

Because people using text-only browsers cannot use a navigation bar, the link anchors on the navigation bar must be repeated in text form below the main menu.

### **The design concept: Summing up**

The prototype enabled the unit teams to produce home pages that are visually pleasing and function well as the pinnacle in a large hierarchy of links. Also, because our design consists of a limited number of visually prominent elements, consistency across these sites is attainable. If a unit's page includes just a few of these components, there should be some noticeable consistency with other units—even if the unit has chosen to significantly change the look of these components or to add a new component, such as the “service entrance.”

### **Issues in designing university websites**

In this section I focus on three closely related design issues that confronted us and will confront anyone working on a university Website. The issues are: (1) indicating the identity of individual units within the hierarchical structure of a university, (2) maintaining visual consistency throughout the site, and (3) harmonizing the messages conveyed by the university's home page and the home pages of the institution's colleges and departments. In addressing these issues, we found that we had to do more than apply standard principles of Web design. These issues have their roots in the way universities are organized and their role in our society.

### **The organization of North American universities**

North American universities—and especially large research institutions—are not monolithic organizations. Rather, they are made up of clearly identifiable units with their own external constituencies. For example, a segment of the local community might care solely about a university's music department and its faculty and student performance schedule. Similarly, a university's Concurrent Engineering Research Center may be of interest to researchers, working engineers, and potential corporate sponsors who have no particular interest in the university itself. Both the music department and research center are embedded within the university hierarchy. The typical university hierarchy is familiar: the university as a whole, colleges (or “schools”), departments, and such sub-departmental entities (and, at times, cross-departmental entities) as programs of study, research centers, and labs. Finally, at the “atomic” level are the individual faculty members. This kind of internal organization is relatively uncommon—though it can be seen, for instance, in federal and state government.

The internal structure of universities is mirrored in the typical organization and visual design of university Websites. In contrast, few corporations are organized like universities, and the difference is apparent from a survey of corporate Websites. Most corporate sites are organized by product lines or by user needs (sales, support, employment, understanding corporate policy, etc.) but do not map to the corporation's org chart. Why? While the engineering and marketing departments are very visible within a corporation, they do not have a strong external identity and external constituencies.

### **Institutional identity**

One design issue that emerges from the organization of universities is the need for a unit site to identify the institution as a whole and, at times, other units higher in the hierarchy. Because many visitors will navigate directly to, say, a department site, the site typically identifies the university and, very often, the college as well. (Often, the college can be easily inferred, so that the need to explicitly identify the college disappears.) Similarly, because many visitors will navigate directly to a faculty member's page, the page will identify the department and the university—and perhaps the college. On the other hand, for many non-academic units of a university, such as Admissions or Financial Aid, there is less or even no need for an institutional identifier—although designers may still want them—because visitors almost always reach these sites by navigating down through the university's Website hierarchy.

The issue of institutional identity only occasionally raises design problems. Sometimes the problem is political: a research lab may have little loyalty to the department to which it nominally belongs and may resist a departmental identifier. Sometimes there is risk of visual clutter if too many identifiers must be included. A logo may solve this problem.

TC encountered a problem in this area. We do not identify our college in the banner, and this affiliation is not inferable because technical communication groups are not generally housed in engineering colleges. The "CoE" button on the navigation bar does identify the college, but only to fairly astute visitors. A "College of Engineering" button seemed too long, and we decided that our college-level identity may not be important to most visitors. Furthermore, if they explore our site, they will soon learn that we are housed in Engineering. Hence, we settled on the "CoE" button.

### **Visual consistency**

Closely related to identity is the subtler and more complex issue of visual consistency. Even if every unit's position in the overall institutional hierarchy is perfectly clear (explicitly identified in words), the visual design of these units may still be totally inconsistent. Among the penalties exacted by inconsistency are these: visitors will have more difficulty navigating through the university site, and they will likely develop the impression that the units do not work well together.

Many issues arise in designing for consistency. How much consistency do we need? How many elements should be identical or similar, and how much similarity is called for? Should we try to include a common element on the institution's university, college, and department home pages, or is it adequate (and sometimes preferable) if one element is shared by the university and college home pages while a different element is shared by the college's and the departments' home pages? The ultimate measure of consistency, of course, is not some formal tally of consistent and inconsistent elements, but the subjective responses of the site's visitors.

The role of universities as institutions in our society also affects consistency. Not only are universities composed of hierarchically embedded units with strong external identities and constituencies, but there is (at least in North America) a strong tradition of de-centralized authority and individual autonomy among university units and faculty (Ramey and Farkas 1997). This tradition, while beneficial in many respects, tends to work against achieving a high degree of consistency. Often individuals and units simply

insist on doing their own thing. Not always, of course: in the very attractive site of Adams State University in Alamosa, Colorado (<http://www.adams.edu>), a highly consistent look and feel is maintained top to bottom. A highly consistent Website is more typical of smaller schools with relatively focused missions than large and diverse institutions. Also, while corporations are typically able to enforce a consistent look and feel in their Websites, corporate cultures differ considerably. In a companion-piece paper Dukay (1997, this volume) explains the challenge of maintaining consistency among the many largely autonomous units of Microsoft whose individual sites collectively make up <http://www.microsoft.com>.

The WebFeat project illustrates some of these consistency issues. Only five of the ten College departments took part in WebFeat. Thus we have only partial “horizontal” consistency at the departmental level. We hope that the other five departments will ultimately adopt and adapt enough of our design elements so that complete horizontal consistency is achieved. Trying to coordinate with the departments of other colleges, while achievable at Adams State, would be inconceivably difficult at UW.

Our attempt to achieve vertical consistency was stymied by an unusual problem. Very early in the project we created a provisional design, borrowing the color and general outline of the most usable and attractive design element in the UW home page, a salmon-colored banner/navigation bar. We intended to adapt this element for our prototype and to encourage the persons in charge of the College’s home page (a kind of umbrella site consisting primarily of links to the rest of the College sites) to adopt this element as well. This would have provided a visually consistent experience for those who navigate downward from the UW home page to the College home page to one (or more) of the WebFeat units and into the second and third level of that unit. However, in the process of sharing our plans with the staff members who control the University home site, we were strongly discouraged from borrowing any aspect of the salmon banner/navigation bar. Their intent is to reserve this element for administrative units (the Computing Center, the Admissions Office, etc.) Thus, in contrast to the usual problem, getting units to work together to achieve overall consistency, we were asked not to harmonize our design with the UW home page. We do plan to harmonize the College home page with the WebFeat prototype, thus achieving a significant degree of vertical consistency.

### **Orchestrating home page messages**

I close with the most complex and subtle of these three related design issues. Universities position themselves strategically and competitively in the world of higher education. Hence, university Websites and especially their home pages are designed to express a message (or, “make a statement”) that, at least in a rough and ready way, can be articulated. The content of the site (text, graphics, and time-based media) and the styling of this content engender the message. For example, the home page of a small, little-known (and in this case imaginary) liberal arts college might use warm colors and show a photo of happy students on a bench and another photo of students conversing with a professor, as part of the message: “Come to Farrington College, a friendly, close-knit place where all students fit in and where good teaching and close contact with students is the faculty’s main priority.” In contrast, the home page of an Ivy League university might adopt minimalist styling and simply feature the school’s name and heraldic logo, to convey the message: “We are an incredibly prestigious university. If

you get in, your degree will be a life-long credential.” Other messages are these: “This is a big, well-funded university where facilities and academic programs are up-to-date and first-class.” This message would appeal to graduate students and potential corporate sponsors as well as to many undergraduates. Here are a few more frequently seen messages: “Look at our incredible mountain setting. Your weekend and vacation outings will be extraordinary.” “We are Longhorns, Gophers, etc. Sports and ‘rah-rah’ figure big here.” “We are a good deal. Money Magazine ranked us 10th nationally in the ‘Best Sticker Price’ category.” University home pages often express several of these messages at once.

The home pages of departments and colleges also express messages, both to current students and to external constituencies. In addition, departments and certain colleges often express themes that arise from their academic disciplines: e.g., a violin for a music department, a peptide complex for bioengineering, and a wheat field for a college of agriculture. By “theme” I mean an impression that is less specific, less articulatable than a “message,” but the difference between the two can be blurry. For example, does not the peptide complex graphic, in addition to expressing a general life sciences theme, also say something like this: “We may be engineers, but we’re not oblivious to the extraordinary beauty of the natural world”?

There are significant challenges in devising clear and appropriate messages for one site while ensuring that the message harmonizes with the messages of the higher-level sites and, indeed, all the sites of the institution. The chemistry department at Farrington College is probably not much akin to the “Big Science” chemistry departments at Purdue or MIT, and the Farrington chemistry department should probably not try to convey the same kinds of messages. Similarly, the English department at Farrington, in striving to make known the highly intellectual nature of its students and the scholarly stature of its faculty, should take care to maintain the student-friendly message conveyed by the institution’s home page rather than to inadvertently express the intellectual austerity and perhaps even academic snobbism that might work for the English department of an elite university. Often a department’s problem is a bland, “message-less” home page. This may occur, for example, when a department’s banner features its building. Unless the building strikes Web visitors with its beauty, size, newness, etc., it may contribute nothing to the message of the home page. Finally, we must not forget the relationship between the home page content and the functional information that makes up the lower levels of the site. The message that Farrington is entirely focused on students and their education may be contradicted by indications in the descriptions of courses and degree requirements that there are many large lecture courses and that students are often closed out of courses they wish to take.

It is arguable, I think, that expressing appropriate messages on university Websites is more complex than for corporate sites. One reason is the unique and even contradictory role of universities in our culture—in part businesses hustling for students and resources, in part non-profit public trusts with a monastic heritage. This role necessitates more complex, more nuanced public messages than those of overtly profit-driven enterprises. Another reason is the sheer number of messages expressed by the many largely autonomous units representing a broad range of disciplines and outlooks. Both the central administration and each individual faculty member get to take part in the

conversation. In many instances at least, designing a university Website is like a musician sitting down to add a new strain of melody to the music of a very large and unruly orchestra.

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