1999

The Stanford sports medicine web site - An educational recourse tool

Shane Allen Meschke
San Jose State University

Follow this and additional works at: https://scholarworks.sjsu.edu/etd_theses

Recommended Citation

Meschke, Shane Allen, "The Stanford sports medicine web site - An educational recourse tool" (1999). *Master's Theses*. 1828.

DOI: <https://doi.org/10.31979/etd.2m9b-j5ut>

https://scholarworks.sjsu.edu/etd_theses/1828

This Thesis is brought to you for free and open access by the Master's Theses and Graduate Research at SJSU ScholarWorks. It has been accepted for inclusion in Master's Theses by an authorized administrator of SJSU ScholarWorks. For more information, please contact scholarworks@sjsu.edu.

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

THE STANFORD SPORTS MEDICINE WEB SITE - AN EDUCATIONAL
RESOURCE TOOL

A Project Report

Presented to the Department of Human Performance

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Masters of Arts

By

Shane Allen Meschke

May 1999

UMI Number: 1394540

UMI Microform 1394540

Copyright 1999, by UMI Company. All rights reserved.

**This microform edition is protected against unauthorized
copying under Title 17, United States Code.**

UMI

**300 North Zeeb Road
Ann Arbor, MI 48103**

© 1999
Shane Allen Meschke
ALL RIGHTS RESERVED

APPROVED FOR THE DEPARTMENT OF HUMAN PERFORMANCE

Dr. Bethany Shifflett

Kyle Bodyfelt, MA, ATC

Dale Rudd, MS, ATC

APPROVED FOR THE UNIVERSITY

William Fisher

ABSTRACT

THE STANFORD SPORTS MEDICINE WEB SITE – AN EDUCATIONAL RESOURCE TOOL

by Shane Allen Meschke

The purpose of this project was to create a Stanford Sports Medicine Web site that would educate, advertise, and inform. The Web site was intended to serve as an educational reference for Stanford Sports Medicine graduate assistants and undergraduate students, advertise the Stanford Sports Medicine program, and provide important information to athletic trainers and visiting athletic teams. The Web site contains information regarding: Stanford athletic training staff and facilities, graduate assistants at Stanford University, the Stanford Sports Medicine Internship Program, magnetic resonance imaging, continuing education, and athletic training related links. Athletic trainers, and other users, are able to browse through the previously mentioned areas as well as utilize hyperlinks to educate themselves about Stanford Sports Medicine and various athletic training related topics.

DEDICATION

This project is dedicated to the memory of my Grandpa.

William Carl Meschke

April 12, 1909 - October 3, 1990

ACKNOWLEDGMENTS

To my parents, for their love, support, guidance, and understanding. Dad and Ma, you have always been there for me when I needed you. Thank you so much for everything. I love you guys!

To my brother Chad, whose drive and determination has inspired me to keep plugging away no matter what the circumstances! You're a great brother and friend. I love you man!

To all of my relatives, Grandpa and Grandma Meschke, Grandma Tramel, Uncle Ron and Aunt Judy, Uncle Rick and Aunt Linda, Brice, Brice Brian, and Brent, thank you so much for the caring words and prayers throughout the years. Your caring and generosity means so much to me.

To Bethany Shifflett, whose inspiration and drive for teaching can not be calculated using SPSS. Thank you for all of your help. It was a crazy run, but we made it! You're a great teacher and an awesome thesis coordinator. Thank you so much for your guidance!

To Kyle Bodyfelt, for taking on yet one more thesis. Thank you for spending the time to read this monster and provide invaluable feedback. You're a great athletic trainer and a super person that has only success in your future. Thanks again for your help!

To Dale Rudd, whose passion and knowledge for athletic training has guided me for the past two years. I can't thank you enough for the education and advice you have given me. Thanks Dale!

To Charlie Murdach, ...you the man! I owe you so much for your help with this project. Your helpful words and suggestions guided me until the final hyperlink was established. Thanks for taking the time to help me out, Charlie!

To Scott Barker, whose audit of the Web site created an even better finished product. Thanks for taking the time to let me tap your knowledge of the World Wide Web. I greatly appreciate it. Thanks Scott!

To Duncan Stewart, thank you for all of your help with the Web site and the server.

To Dr. Chris Beaulieu, thank you so much for all of your help with the MRI Web page. That page could not have been made without your generous assistance. Thank you so much!

To Horn, you are one-of-a kind. We've been through a lot, and we're still going. It's been a great run through school, and our post-school lives are only going to begin another chapter. Get Ready!

To Schurman, the friendship we've developed has been awesome. You are a great friend, and have always been there for me. Thanks Nate!

To Chris and TJ, you slaps were great to live with for the past two years. We've been through quite a bit, and I wouldn't change any of it! Thanks for being such great friends. (Also see GA section below)

To the GA's. Trolley car, noon-time hoops, disco, saddle rack, scruffy murphy's, the bonnet, pizza-a-go-go, trieb, summer camps (buffaloes), bratfest, magic cooler, cows, and beer. It's been a blast!

To Marc, alias Frog, thanks for everything you have done for me. Your rehabilitation knowledge has inspired me to strive for more. You have taught me an immeasurable amount of knowledge. However, it'll always be a battle at noon! Thanks for everything!

To Dava, Eric, Kathy, Jan, Jeff, Jim, Mike, and Perry, thanks for being great friends to me for the past two years. I couldn't have dreamed up a better group of coworkers. You guys are awesome!

To Jeff Oliphant, whose drive for athletic training inspired me to pursue this occupation. As a teacher you were awesome, and as a friend you're even better. Thanks Jeff.

To everyone else that it seems I am forgetting, I am not actually forgetting you, I just decided to give you a "group thanks." So here it goes, "Thank you to all who have given me support in any way, shape, or form over the past two years. I am severely indebted to you for your help and kindness during my graduate years. Thanks again for everything!"

TABLE OF CONTENTS

	Page
<u>CHAPTER 1</u>	
Introduction	1
1. Definition of Terms	3
<u>CHAPTER 2</u>	
Review of Literature	6
1. The Scope of Continuing Education for Health Professionals and Athletic Trainers	6
2. How the Internet has Changed Information Retrieval, Dissemination, and Education	10
3. A Review of Current Web Based Athletic Training Resources	18
4. Web Site Design Principles	21
<u>CHAPTER 3</u>	
Method	25
1. Naturalistic Inquiry Paradigm	25
2. Establishing Trustworthiness of the Web Site	26
3. Equipment and Software	30
4. Procedures and Design	31
5. Thick Description of How the Web Site was Created	34
a) Stanford Sports Medicine Home Page	35

b) Stanford Athletic Training Home Page	41
c) Stanford Athletic Training Staff and Facilities Web Page	43
d) Stanford Athletic Training Graduate Assistants Web Page	51
e) Stanford Sports Medicine Internship Program Web Page	52
f) Stanford MRI Comparison Web Page	55
g) Stanford Continuing Education Web Page	59
h) Stanford Related Links Web Page	61
6. Subjects	62
7. Survey	63
8. Statistical Analysis	63
9. Descriptive Information on Subjects	63
10. Descriptive Information on Items	63

CHAPTER 4

Results	65
1. Results of the Creation of the Stanford Sports Web Site	65
a) Stanford Sports Medicine Home Page	65
b) Stanford Athletic Training Home Page	66
c) Stanford Athletic Training Staff and Facilities	67

Web Page	
d) Stanford Athletic Training Graduate Assistants	70
Web Page	
e) Stanford Sports Medicine Internship Program	71
Web Page	
f) Stanford MRI Comparison Web Page	72
g) Stanford Continuing Education Web Page	74
h) Stanford Related Links Web Page	76
2. Results of Interaction with Peer Debriefers	77
3. Results of the Auditor's Critique	79
4. Survey Results	81
5. Content Analysis for Open - Ended Questions	81
6. Statistical Analysis of Likert Items	82
a) Frequency Distribution Tables for	83
Questions 1 - 20	
1) Table 1	83
2) Table 2	84
b) Cross-Tabulation of Status with	84
Questions 1 - 20	
c) Cross-Tabulation of Gender with	85
Questions 1 - 20	
d) Cross-Tabulation of Question 20 with	85

Questions 1 - 19	
e) Cross-Tabulation of Question #2 with Question #10	86
1) Table 3	87
7. Triangulation and Member Checks	87
8. Web Designer's Review	88
<u>CHAPTER 5</u>	
Conclusion	92
<u>REFERENCES</u>	95
<u>APPENDIX A</u>	
Full Text Version of Stanford Sports Medicine Web Site	98
<u>APPENDIX B</u>	
Stanford Sports Medicine Web Site Survey	203
<u>APPENDIX C</u>	
Subject Consent Forms	206
<u>APPENDIX D</u>	
Letters of Consent from Stanford University	208
<u>APPENDIX E</u>	
Inquiry Audit	211

Chapter 1

INTRODUCTION

Health professionals are continuously bombarded with information on various continuing education opportunities. This “bombardment” is done in the form of newsletters, journals, newspapers, television programs, and within the last ten years, electronic discussion groups and various Web-related forms of information. From this information, health professionals choose the program(s) needed to attain their own educational objective. Their choices range from seminars and group meetings, to take home exams and self-teaching packets. This naturally leads to a discussion about the value of continuing education for health related professionals. How valuable is a weekend seminar or self-taught class? Do continuing education units (CEU’s) need to be required by various health care organizations?

The National Athletic Trainers Association is one organization that does require its certified members to acquire CEU’s. The CEU’s can be obtained in various ways (i.e. symposiums, workshops, conferences, approved home study provider courses, software packages, etc). There are many opportunities throughout the course of the year to attend these various activities, but it is sometimes hard to locate these seminars or symposiums. This is where the World Wide Web (w3) comes in to play. The addition of the w3 to the already bulging arsenal of multimedia tools gives the athletic trainer one additional opportunity to locate information regarding CEU’s. The w3 also is a resource that the athletic

trainer can turn to for information about injuries, anatomy, new treatments, and other general athletic training information. The w3 has opened up the opportunity for discussion groups between athletic trainers across the country. The w3 is also a place to locate Web sites specifically oriented to athletic training programs. These web sites range from university and high school athletic training Web sites to the NATA's official web site. Each Web site is unique in its own way. Some offer descriptions of their programs, while others include educational information or even video clips of injuries. The possibilities for providing information on a Web site are literally endless.

The purpose of this project was design a sports medicine Web site for Stanford University. The creation of this Web site allows users to access information on: (a) how to become a graduate assistant at Stanford University, (b) graduate assistant duties, (c) position vacancies around the country, (d) various Ph.D. programs in athletic training, (e) the Stanford sports medicine internship program for undergraduate students, (f) staff coverage, facility description, equipment available, and emergency procedures for visiting athletic teams, (g) magnetic resonance images (MRI) of injured and non-injured anatomy, (h) local, state, district, and national continuing education opportunities for athletic trainers, and (i) other athletic training related web sites. The creation of the Stanford sports medicine Web site was a unique endeavor, and one that enables the user to access a tremendous amount of valuable information.

Due to the shear volume of information that already exists on the w3, it is challenging for users to find information about athletic training. This Web site

allows the user to easily locate information important to Stanford sports medicine and the athletic training field. The specific design of this Web site makes the information listed in the previous paragraph just a point and click away from the user.

The designer's motivation, creativity, and proficiency with the software; the software utilized; and the time frame available limited the project. It was assumed that the prospective user understood the structure of the w3 and the commands necessary to access and browse a Web site. It was also assumed that undergraduate students and graduate assistants would have access to Internet compatible computers.

This Web site is important because it gives undergraduate students, graduate assistants, and full-time staff a resource tool on event coverage, continuing education opportunities, facilities, and the programs available to them at Stanford University. The way this information was made available to the athletic training population made this Web site an unparalleled informational tool.

Definition of Terms

For this project, the following terms are defined for the reader:

Databanks: Computerized databases available through commercial fee-based online search services (Clever & Dillard, 1993).

Database (computerized): Data electronically stored in a computer which can then be accessed through the use of search terms (usually subject, title or author searches).

FTP: File Transfer Protocol. The method in which files are sent back and forth from server to host (Tatters & Colburn, 1997).

GIF: Graphical Interchange Format. A graphics format used to store photographic-quality images (Tatters & Colburn, 1997).

Hyperlink: Hyperlinks are words or images, which when clicked on, take the user from one area of the w3 to another. Note: The hyperlink may link 2 different Web pages together, or may also link one part of a Web page with another part of that same Web page)

HTML: Hypertext Markup Language. A set of special formatting codes and rules used to create web pages (Tatters & Colburn, 1997).

http: Hypertext Transfer Protocol. URL protocol that identifies the document as an HTML file (Tatters & Colburn, 1997).

Internet: A large number of computer networks linked together that can relay information between one another and still maintain their own framework.

IP: Internet Protocol. The host-to-host portion of the address needed by each information packet to travel the Internet (Tatters & Colburn, 1997).

JPEG: A graphics image format developed by the Joint Photographics Experts Group. JPEG is rapidly replacing the older GIF format because of its ability to store pictures in a highly compressed format (Tatters & Colburn, 1997).

Listserv: Mailing list management software (Tatters & Colburn, 1997). Note: Listserv is a term that is used by many to refer to a “mailing list.”

Mailing List: A form of distributed messaging system that forwards a copy of every message it receives to all participants in the mailing lists (Tatters & Colburn, 1997).

URL: Uniform resource locator. This is the common method used by the World Wide Web to describe the location of a document by defining its type, site, and directory path, along with its name (Tatters & Colburn, 1997).

World Wide Web (w3): ...A graphical hypertext-based information system that provides access to a multitude of Internet resources (Tatters & Colburn, 1997).

Chapter 2

REVIEW OF LITERATURE

The review of literature for this project includes: the scope of continuing education for health professionals and athletic trainers; how the internet has changed education and information retrieval; a review of current web based athletic training resources; and web site design principles.

The Scope of Continuing Education for Health Professionals and Athletic Trainers

Continuing education is just what the words themselves describe. It is education that increases knowledge of the learner after some minimum standard has been met. This education can be presented to the learner in many different styles. For the health professional, some forms are more common than others. Some of the most common are: journals, books, symposiums, seminars, software packages, and various multimedia presentations. One needs only to take a look at the mailbox of a physician to learn of all the opportunities available for continuing education. However, is there really a need for all of these various sources of continuing education? Is continuing education a necessary part of the health professional's life?

One reason for the continuing medical education enterprise is to enable practicing physicians to achieve and maintain the knowledge, skills, and attitudes they need to carry out their patient care responsibilities at an optimum level of competence (Felch, 1987). That is the mission of continuing medical education

according to Felch. However, accompanying that mission statement are a number of other reasons for continuing education in the physician's chosen field.

Professional continuing education is a vital component to ensuring clinical competence and preventing professional obsolescence (Pitney, 1998). Coupled with the public demand for accountability, these factors may well be the premier argument for mandating professional continuing education (Pitney, 1998). Pitney agrees with Felch, but goes one important step further in stating that continuing education requirements assure the public that they are receiving care from a physician who is aware of the newest breakthroughs in medicine. It is indeed comforting to know that one's personal physician is keeping up to date on the latest medical issues. Many health organizations require their members to obtain continuing education units. This requirement keeps health professionals updated on important health-related issues.

However, how do health professionals themselves feel about the requirement of continuing education in their field? In a Queensland survey of 298 respondents, 99% of general practitioners felt that the commitment to continuing medical education was lifelong (Wilson, Munro, & Colditz, 1981). On the vexed question of whether continuing medical education should be mandatory, the sample was evenly divided (Wilson et al., 1981). This response to mandatory continuing education is understandable when one takes into account the fact that all people learn in different ways. Some health professionals will learn a great deal from a seminar, while others will learn more from doing private research or making rounds with other professionals. In 1989, a survey of general

practitioners found that educational activities receiving the highest rating of value were those occurring within the practice of the involved physicians (Owen, Allery, Harding, & Hayes, 1989). This just reemphasizes the statement that there is no universal teaching method for all the educational needs of learners (Miller, 1987). At the very least, mandatory continuing education forces individuals who may not otherwise engage in learning activities to take on continued learning (Pitney, 1998).

As with any educational tool, there will be critics and defenders; and continuing education is no different. The critics claim that the whole continuing education system is too costly. These critics assert that continuing medical education is changing its mission from altruism and service to physicians, to money-making, bottom-line concerns (Felch, 1987). Other critics state that the continuing medical education system is too diversified, and that the inevitable result is much uncertainty, considerable overlapping, and equivocal outcomes (Felch, 1987). Still others complain about the frequent lack of relevancy to their real needs for learning. Defenders argue that continuing medical education has its roots in history, that it has been around since before Hippocrates, and that if the enterprise did not exist, we (health professionals) would have to invent it (Felch, 1987). These defenders contend that continuing medical education is a natural and obligatory component of medical education (Felch, 1987). As far as spending goes, defenders say it is the health professionals themselves who are in the driver's seat. If an expensive convention or seminar is not worth attending, then they will not go. This counters the critic's argument about money because

this leads to the seminar not profiting and hence being eliminated. The arguments for and against continuing medical education will go on, yet one thing that has not been argued is the process behind continuing education. That process is self-directed.

Continuing education is a self-directed learning endeavor involving two parts. First, an individual needs to self-evaluate and determine their strengths and weaknesses. Second, the individual needs to self-reflect on the weaknesses and decide what areas need the most improvement. It is from this self-reflection that an individual decides what type of continuing education is necessary. The health professional can then decide which seminars or symposiums are worthy of their time. However, self-direction is not always easy for individuals. Alluding to athletic training, Pitney states that perhaps athletic trainers' efforts should be focused on considering alternative approaches to continuing education and helping the small percentage of athletic training professionals who are not currently self-directed with regard to their education (Pitney, 1998). The National Athletic Training Association Board of Certification requires its members to accumulate continuing educational units, so it is paramount that all individuals have options for accumulating these units. However, this is not just an athletic training problem, and efforts should be made to find choices for continuing education other than medical books, journals, lectures, symposiums, or annual meetings.

Continuing education of the health professional is an ever-evolving process. This process will see many changes in the years to come. The growth of

the World Wide Web may have a tremendous impact on the face of continuing medical education. Seminars are already being advertised via the Internet. Possibly some day there will be ways to accumulate CEU's from home via the Internet. The future will be exciting for continuing education.

How the Internet has Changed Information Retrieval, Dissemination, and Education

The Internet has changed the face of information retrieval forever. No longer does one have to go to the library and search through card catalogs and stacks of books. No longer does one have to rummage through encyclopedias and indexes trying to find pieces of information and data. The Internet has made these processes and others obsolete.

It is now easy to access a library's online catalog from home. Several hundred libraries around the world have opened their online public access catalogs (OPACs) to Internet users via remote (modem) login (Mikita & Drusedum, 1993). These OPACs allow the user to locate, and many times order, copies of journals and books that aren't shelved at their local library. It is a tremendous resource for students and researchers who need to retrieve large volumes of research articles. In fact, much of the research done for this project was accomplished through the use of an OPAC.

A growing number of non-commercial and university sponsored databases may also be accessed through the Internet using remote login (Mikita & Drusedum, 1993). There are many different types of databases one can access via the Internet. Some examples of databases are: the genetic databases of John

Hopkins, GDB (Genome Data Base) and OMIM (Online Mendelian Inheritance in Man); SPIN (Sponsored Programs Information Network), which contains funding information; and Project Cork (alcoholism and substance abuse information) (Mikita & Drusedum, 1993). Sometimes a database is grouped with others to form a databank. An example of a databank would be DIALOG. DIALOG contains many databases such as BIOSIS (Biological Abstracts); MEDLINE; EMBASE (Excerpta Medica); and CINAHL (Combined Index to Nursing and Allied Health), along with many others (Clever & Dillard, 1993). Although there are many databases located in a databank, sometimes their still isn't enough information. Therefore, it is important to remember that there are many databanks available for browsing, and that one databank isn't necessarily going to contain all of the necessary information.

Aside from OPACs and databases, there is yet another source of research information. That source is the wide variety of Web pages (documents written in hypertext format) available to the w3 user. These documents contain text, photos, video, animation, and sound bytes on almost anything one can imagine. As a resource, the Internet has grown rapidly. At the beginning of 1995, the Internet linked nearly 5 million computers on more than 46,000 computer networks (Glowniak, 1995). When one takes into consideration that these computers have the ability to design Web pages, the number of Web pages and Web sites is growing at a staggering pace. One only has to spend an evening "surfing the Web" to get an idea of how many Web pages are out there. Therefore, one can only imagine the amount of information and misinformation available. A good

feature of the W3 is that most of the information is up to date, although one must double check information for credibility. It is possible and even likely that w3 information is more current than some journals and texts.

The dynamic nature of the World Wide Web means that all a person needs to do to obtain the latest information is select the appropriate hyperlink (Tatters & Colburn, 1997). However, selecting the appropriate hyperlink is not always an easy task considering the amount of information available. The situation is much better than it was a couple of years ago thanks to a number of developments: search engines, subject trees, and distributed subject trees (Kennedy, 1996). If one is lucky, he/she might “surf” into a comprehensive collection of URL's in a particular subject area known as a “meta page” (Kennedy, 1996). Many times these “meta pages” lead to other “meta pages,” and it cycles into a massive amount of valuable information for the researcher. Once the user has obtained the desired information, there remains one final problem. Is the information found from a reliable source?

A paper in a medical journal implies strict rules of presentation and peer review (Benson, Kjellmer, Rosberg, & Billig, 1997). Cyberspace has no such restrictions (Benson et al., 1997). Anyone that has a Web page construction program and access to a server can put a Web page on the Internet. Therefore, the source can't be guaranteed to be reliable or credible. In most cases, the quality of the information on the Internet is determined solely by the institutions and individual persons who publish it (Glowniak, 1995). This applies to the content of the Web page as well as to frequency of updates. Although the World Wide

Web has the potential to be the best source of up-to-date information, information still has to be placed on the World Wide Web by someone (Tatters & Colburn, 1997). If a Web page has not been updated, then how is the user to know whether or not the information is still pertinent? When a Web site's credibility is in question, users should compare information with other related Web sites, journals, and books, or consult with one's colleagues.

Through the Internet, there is another way to discuss information with a large number of colleagues. This is done through electronic mail (e-mail) and mailing lists. E-mail allows the sender to convey a large amount of information to a recipient, at which time the recipient can review the information at their leisure. E-mail is as fast as a phone call, yet, unlike a phone call, gives the recipient some time to think about a response. Mailing lists give the user an opportunity to communicate with a large group of people. Messages to a group are sent to an electronic mailer that forwards the messages to all members on the mailing list (Glowniak, 1995). All one needs to join a mailing list is an email address. Here is how it works:

1. Someone sends a message to the computer that runs the LISTSERV software;
2. The LISTSERV computer sends the message either directly to all subscribers to the list or to the editor who determines whether it is appropriate for the list and then sends it to all subscribers;
3. Subscribers read the message;

4. Some subscribers respond to the message by sending their own message to the LISTSERV computer;
5. The process then starts to cycle by going back to number 2 (Ingersoll, 1996).

Therefore, a quality mailing list discussion among professionals is not uncommon. These mailing lists are also a good place to ask questions or propose new ideas. One can also reveal research findings or vital information to colleagues via a mailing list.

Along with the previously mentioned uses, the Internet can be used as a vehicle to collect information. Surveys can be placed on a Web page to be accessed all over the world. Survey responses can then be sent back to the creator through e-mail. A survey can also be placed on a mailing list. This would limit one's survey to only the people currently subscribed to the particular mailing list. Although electronic data collection lacks the tactile interaction of face-to-face interviews, as well as the ability to perceive a respondent's feelings by changes in voice intonation, an enormous amount can be learned through written electronic communication (Fawcett & Buhle, 1995). Collecting data by means of an electronic survey saves considerable time and money by eliminating salaries of assistants, phone calls, and letters (Fawcett & Buhle, 1995).

Use of the Internet may also facilitate recruitment of research subjects. The ease and relative low cost of accessing large numbers of potential subjects in a relatively short period of time are major advantages of using this method of accessing subjects (Wilmoth, 1995). Disadvantages include the need to have a

personal computer and membership in an on-line network (Wilmoth, 1995).

Obviously, ethical standards regarding use of human subjects are to be exercised.

Informed consent procedures and issues of privacy and confidentiality/anonymity must be considered when interacting over on-line networks (Wilmoth, 1995).

In addition to the birth of new research opportunities, the Internet has spawned a new and exciting change in another area. That area is education. Data can be acquired from remote sites, teachers can advise from anywhere, and peers can communicate with each other from multiple locations around the world (Friedman, Baron, & Addison, 1996). The Internet also gives the instructor a new way to introduce information to students.

There are different ways to incorporate the Internet into one's classroom. One way is to have students do some general research via the w3. This would involve choosing a search engine and "surfing the web" for selected topics. Another way would be to have the students follow along as the instructor incorporates various Web pages into the lecture (Note: if the classroom is not equipped with computers for each student, then a computer screen projector may be used by the instructor). A third way to instruct students via the Internet is to place a lesson plan on the w3, and then have the students locate it and complete the lesson. These three options aren't the only options available for an Internet based assignment, but do give one a good idea of the different choices.

Use of the Internet for computer assisted instruction (CAI) appears useful, but do CAI's work? Do CAI's educate the students as well as the traditional classroom lectures? CAI's do work. A computer learning environment introduces and

increases usage of varied motivational and educational factors which have the potential to improve learning as well as academic interest (Perez & White, 1985). This means that CAI's give the learner an opportunity to be educated through different mediums and thereby increase the potential of retaining knowledge. These mediums (e-mail, news groups, listservers, etc.) allow students to observe and interact with individuals, many of whom have divergent views and opinions (Nicaise & Barnes, 1996). This interaction should provide students with opportunities to react to differing views, challenge others' beliefs, and reflect on their own ideas (Nicaise & Barnes, 1996). Also, this technology enables students and teachers to reorganize, consolidate, and share information (Nicaise & Barnes, 1996). It gives the student-teacher relationship a new meaning because communication with one another can happen at virtually anytime about virtually anything. Teachers can advise from anywhere, and peers can communicate with each other from multiple locations around the world (Friedman et al., 1996). Students react to these capabilities in a very positive manner. One group of researchers reported that students believed that their success and self-confidence were increased while studying with computers; students stated that learning from computers was both enjoyable and interesting (Askar, Yavuz, & Koskal, 1992). Students believed that they were more interested in, better understood the material presented on computers, and were more eager to study (Askar et al., 1992). Also, students stated that both their attention and success were increased (Askar et al., 1992). Another study done with a sport biomechanics class reported that students enjoyed having interactive review questions on each unit and the sound and

animation used to describe various biomechanical analyses (Guthrie & McPherson, 1992). The biomechanical class study also noted a positive change in student performance when CAI was used (Guthrie & McPherson, 1992). The positive student attitudes found in the Askar et al. and Guthrie & McPherson studies suggest that CAI works for students and teachers. Teachers utilizing another option to reach students' minds is definitely positive for the instructors as well as the students.

It has been established that CAI can work, so how does one create a web-based lesson? The first thing to do is to decide what one wants to teach. Once this is decided, there are numerous ways that the w3 can be incorporated. Some of these ways were mentioned earlier. When deciding how to include the w3 in a lesson, it can be helpful to view other Web pages. With an instructional goal in mind, one can benefit from examining online curricula (Quinlan, 1996). The various curriculum sites give one an idea of the different approaches he/she could take and provide a sampling of the online resources available in the subject area (Quinlan, 1996). Once the instructor has decided what to teach, the next step is to outline the lesson. Upon completion of the outline, the lesson is prepared in a Web based format through the use of Web page construction software. Once the Web pages have been created, the instructor can engage in CAI with their classes, and this can benefit both the instructor and the student.

The use of the Internet has changed the face of research and education. The use of e-mail, listservers, news groups, and the w3 have created major advances in communication of data and ideas. The future is still uncertain as to

where this expanding, technological revolution is going, but it is exciting. The face of research and education will, without a doubt, never be the same.

A Review of Current Web Based Athletic Training Resources

Athletic trainers use computers for many different tasks. Computers are used to record injury information, keep records, do word processing, and to conduct research. These are just the jobs done using computers that don't involve the use of the Internet. The role of computers is further expanded when Internet use is added to the mix.

The Internet has changed the way that athletic trainers research topics. Through the use of the Internet, it is possible to retrieve information using electronic databases. Some of the most commonly used databases for athletic training information are MEDLINE, CINAHL, SPORT, and ERIC (Whitehill, Norton, & Wright, 1996). Each of these databases has its own specialization:

- MEDLINE—a broad range of medical literature from professional journals;
- CINAHL—nursing and allied health literature which is more technical in nature and written for both physicians and allied health personnel;
- SPORT—practical and technical/medical information relating to sports and athletics;
- ERIC—educational/pedagogical perspectives of sport and athletics (Whitehill et al., 1996).

These databases are a great resource for locating references to be used in completing research projects. There is also another way to find valuable

information over the Internet, and that is to use the w3. The w3 allows the athletic trainer to search for information using key word searches. These key word searches (done using search engines) give links to numerous Web pages containing information on the specified topic. One just needs to start a search to see how wide open the possibilities are for research using the Internet.

The Internet has also contributed greatly to the enhancement of communication between athletic trainers. E-mail made possible greater communication between athletic trainers. This opportunity expands even further when a listserv is incorporated. There is a discussion list for athletic trainers called ATHTRN-L (pronounced “athletic training L”) (Ingersoll, 1996). It is a very valuable list to athletic trainers, because it gives them a chance to discuss difficult injury cases, problems with administrative duties, and general athletic training questions. This discussion list is also a good location to look for job vacancies. These job vacancies are posted on a regular basis. The listserv is also a place to challenge one another and debate with other athletic trainers. This listserv gives athletic trainers the ability to communicate more frequently with other athletic trainers who are members of the listserv.

There is still another use for the w3 that hasn't been mentioned, and that is advertisement. The Web has now become the Internet's most widely used informational and retrieval system in both academic and business domains (Nielsen, 1995). Therefore, advertising through the w3 can reach a large number of people. A number of educational institutions have placed home pages on the Internet as a way of displaying and advertising services (Fleck, 1996). Many

colleges and universities already have athletic training Web sites. These Web sites are very informational to the student that is considering pursuing an athletic training degree. These Web sites usually offer a description of the curriculum, the staff, and various other information regarding facilities and the training room. Some Web sites also include an educational portion. This instructional portion may be a small article, a video clip, or a number of pictures involving various types of injuries. These instructional portions give athletic trainers an opportunity to be involved with an injury that perhaps they haven't seen before. To cite a very specific example, one study stated that a lecture on a Lachman examination (test for rupture of the Anterior Cruciate Ligament in the knee) was demonstrated by using digital video of a positive Lachman test (Barker & Barker, 1996). This allowed the student to see the pathology of the injury as well as the effectiveness of the Lachman examination to determine this pathology (Barker & Barker, 1996). This digital clip could easily be placed on the w3 for all athletic training personnel to view. In addition to this, many athletic training Web sites also have links to other athletic training web sites. This gives the athletic trainer more options for education and reviews of various programs.

The use of the Internet has changed the way that athletic trainers operate. No longer does the research process seem overwhelming. The Internet has made the process a little easier. Also, communication between members of the field has improved. With the advent of the Internet, college health professionals (athletic trainers) have available to them a new setting in which to network (Luckey, Sweet, & Knupp, 1996). Through the use of listservs, job openings and vacancies

are posted on the Internet to help unemployed athletic trainers find jobs. Also, school administrators now have another way of informing people about the athletic training program at their institution. It is obvious that the Internet has increased the resources available to the athletic trainer. These resources will only help to improve the athletic training profession.

Web Site Design Principles

When designing a Web site, one needs to take into consideration many different things. Items to think about when designing a Web site include purpose, layout, text, graphics, and general considerations. These items must be thought about before the Web site is designed in order to get the maximum use out of one's Web site.

The most important thing one needs to do when developing a Web site is decide what one wants to accomplish with the Web site (Tatters & Colburn, 1997). In essence this means choosing a purpose. There is no point in designing a Web site without a purpose behind it, because the purpose should determine the layout. There are many options available to the creator when designing a Web site, and it is important to pick the right options based on the Web site's underlying purpose. Web page design is not simply a matter of selecting individual elements and putting them onto a page (Child, 1996). Therefore, not all institutional Web sites are designed the same; some have various features that others may not have. For example, one Web site may include biographical information about faculty, current students, and alumni, while another might include information about student athletic training organizations and participation

in university and statewide functions. It is up to the Web page designer to decide what each Web site will contain, and that's what makes these institutional Web sites individualized and worth checking out. This is one reason why each institution should have its own Web site. The Web site gives an athletic training program identity, and allows others to understand this identity.

The next thing that needs to be done is make a layout for the Web site. This includes outlining the goals of the Web site. Once one has established the goals of the Web site, he/she needs to create a list that describes in detail what is to be included in the Web site (Tatters & Colburn, 1997). This outline will have the basic skeleton structure including what type of text to use and what type of images should be used.

The text is a very important issue, because the text is what passes information on to the reader. The following are some tips about text:

- Attention is drawn to words or passages that stand in contrast to the rest of the body of the text;
- Make physical attributes consistent with learner experience (this means formatting, paragraphs, indents, colors, font sizes, etc.);
- Avoid jargon (use familiar, concrete, and specified terminology);
- Use active voice (consider the page a conversation with the reader) (Child, 1996).

These tips should be given considerable thought, because one should use different text options based on the purpose of the Web site.

Image use on a Web site should also be considered. There are various types of images that can be used on the w3. The two most common types of image formats used are Graphical Interchange Format (GIF) and Joint Photographic Experts Group (JPEG) format. According to the W3 Consortium, as of December 1994, all graphical Web browsers now support the display of GIF images (Tatters & Colburn, 1997). However, any single image in GIF format can contain a maximum of only 256 colors, and, due to the GIF compression formula, the images can be very large in size (Tatters & Colburn, 1997). Included in the JPEG format's design is the capability to store images that contain 16 million colors, while at the same time using the smallest possible amount of storage space (Tatters & Colburn, 1997). JPEG images are often up to one-tenth the size of their corresponding GIF counterparts (Tatters & Colburn, 1997). These GIF and JPEG images include both pictures and graphics. When considering the use of pictures, it must be realized that realistic pictures should be used sparingly for two reasons (Child, 1996). Realistic pictures may show more information than is needed, or may be large and take a long time to download. Pictures should be simplified so that only those parts directly pertinent to the intended message are immediately apparent (Child, 1996). More importantly, retrieval speed depends on the document's size (Child, 1996). Most likely, the larger the picture, the longer it is going to take to download. Users are not going to want to sit and stare at a computer screen for long periods of time while pictures are being downloaded. The same is true of graphics. Graphics can occupy large amounts of space and can be used for backgrounds, images, and hyperlink buttons (Fleck, 1996). Large

graphics will also take a long time to download, and thought should go into deciding how many of these should be used. The text and images are what the user sees and remembers, therefore, careful thought should go into planning how these items will be utilized throughout the entire Web site.

General considerations include ease-of-use and organization. Simply put, the Web site should be easy to use. There is no reason why a user should have trouble finding a particular item in a Web site. If trouble does occur, most likely the user will be annoyed and move on to another easier-to-use Web site.

Therefore the Web site should have good presentation, flexibility, and allow simple navigation by the user (Barker & Manji, 1992). This progresses right into the fact that good organization is needed. A user needs to be able to go from one link to another in a logical fashion. The format should promote a sense of achievement with logical steps for accomplishing outlined goals (Cates, 1992). If the format is logical, then the user will be able to find what he/she is searching for quicker and easier.

It is important to consider Web site design principles before diving into full Web site construction. This will help make the development process easier. It will also increase the value of the Web site to the user because it will be easy-to-use, aesthetically pleasing, and contain pertinent information about the selected topic.

Chapter 3

METHOD

The reason for creating a Stanford Sports Medicine Web site was three-fold. It was created to educate, advertise, and inform. The Web site was intended to serve as an educational reference for Stanford sports medicine graduate assistants and undergraduate students, advertise the Stanford Sports Medicine program, and provide important information to athletic trainers and visiting athletic teams.

Naturalistic Inquiry Paradigm

This project employed the naturalistic inquiry paradigm. Naturalistic inquiry is a method of understanding naturally occurring phenomena in their naturally occurring states (Patton, 1980). According to Lincoln and Guba (1985), naturalistic inquiry is founded on five axioms, or basic beliefs. "The first and most important axiom states that there is not one single reality, but rather each person creates his or her own reality depending on how he or she views the world" (Hanson & Newburg, 1992, p. 30). "The second axiom of naturalistic inquiry states that knowledge exists inside individuals and that the knower and the known are inseparable" (Hanson & Newburg, 1992, p. 31). "The third axiom states that since each setting or context is unique, the results of a study are not generalizable in the positivist sense to other settings" (Hanson & Newburg, 1992, p. 31). "The fourth axiom states that all things are in a state of 'mutual simultaneous shaping'" (Hanson & Newburg, 1992, p. 31). "In the fifth axiom,

naturalistic inquiry recognizes that the value of the researcher cannot be separated from the inquiry process" (Hanson & Newburg, 1992, p. 31). Each decision that is made, from the selection of the question to the conclusions, is based on the values of the person making the decisions (Hanson & Newburg, 1992). Therefore, there needs to be a way of checking to make sure that the work done by the researcher is trustworthy. The reason these axioms apply to this project is that the designer is the only person involved in the creation of the Web site. The designer decides how things should be arranged, what information to put on the Web site, and what pictures to use, along with many other decisions. The fact that the designer is the only person making decisions about the creation of the Web site gives the Web site bias towards the designer's views. These biases need to be noted and possibly corrected. Also, there needs to be a way of making sure that what is being placed on the Web site is being done properly. The designer needs to accomplish what he/she stated would be accomplished. The designer needs to be held responsible for actions taken to create the Stanford sports medicine Web site. This will help give the Web site credibility.

Establishing Trustworthiness of the Web Site

The trustworthiness of a study refers to how well the researcher can persuade the reader that the results are worthy (Hanson & Newburg, 1992). Thus, the researcher's task is to build a convincing argument that his or her findings are worthy of consideration and that the end product contains potentially useful information (Hanson & Newburg, 1992). There are four main areas to be concerned with when dealing with the issue of trustworthiness, and they are:

credibility, transferability, dependability, and confirmability (Guba, 1981; Hanson & Newburg, 1992).

Credibility is necessary for a project to be trustworthy, yet how does a project become credible? There are various ways of establishing credibility in research, and a few carry over into the realm of projects. Guba (1981) suggests that peer debriefing, triangulation, and member checks all be employed to establish necessary credibility.

According to Lincoln and Guba (1985), peer debriefing “is a process of exposing oneself to a disinterested peer in a manner paralleling an analytic session and for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit within the inquirer’s mind” (p. 308). A “disinterested peer” is one who knows the methodological issues and the topical area of study but is not otherwise involved in the study (Hanson & Newburg, 1992). The purpose of peer debriefing is basically to question the project designer’s thought process, and uncover any biases that he/she might have. The Stanford sports medicine Web site incorporated peer debriefing. The peer debriefer was Charlie Murdach, MA, ATC.

Triangulation refers to the use of multiple sources to obtain the same information (Hanson & Newburg, 1992). The concept behind triangulation is that by receiving the same information from a number of respectable sources, that the information itself is more credible. Guba (1981) mentions that different methods, for example, questionnaires, interviews, and documentary analyses, should be used when possible (to crosscheck data). Triangulation was used during the

creation of the Stanford sports medicine Web site. This was accomplished by gathering input from undergraduate students, graduate assistants, and professional athletic trainers.

Member checks are a third way to insure credibility in the completion of a project. Member checking involves having the respondent who generated the data review the analytic categories, interpretations, and conclusions of the researcher to verify their accuracy (Hanson & Newburg, 1992). The process of member checks is the single most important action inquirers can take, for it goes to the heart of the credibility criterion (Guba, 1981; Lincoln & Guba, 1985). The use of member checks should be done both during and after a study. All information received from these member checks should be recorded in a journal. The final member check should basically be a test run of the study or project that allows the researcher or designer to see the final product and how others will react to it. A member check was performed following review of the survey responses. This was done in order to maintain credibility regarding survey responses.

Transferability is another process that is done to establish trustworthiness in research and projects. Transferability is done by providing a “thick description” or detailed account of the data collection and data analysis procedures (Hanson & Newburg, 1992). Lincoln and Guba (1985) state that there are no set rules that detail what a thick description must include. It is therefore up to the researcher to furnish enough information so that an anonymous researcher may replicate the study. The data must be “transferable” to another study. Transferability was taken into consideration when creating the Stanford sports

medicine Web site. This was accomplished through keeping a detailed record of the steps used to create the Web site. The steps used in creation of the Web site are found in the next section of this chapter.

Dependability is the third item needed to establish trustworthiness. Dependability is established using an external source. That external source is known as the external auditor. The external auditor examines the processes whereby data were collected and analyzed, and interpretations were made (Guba, 1981). In a project however, the data is the project itself. The external auditor analyzes how the project was assembled. This includes thought processes as well as the physical tasks needed to complete the project. In order to do this, the external auditor needs to have some way of knowing what the project creator was thinking. This is done through the use of a reflexive journal. A reflexive journal is in essence a diary that is kept to record information about the researcher (who is the instrument in the study), and about the unfolding methodology of the study (or project) (Hanson & Newburg, 1992). Lincoln and Guba (1985) propose that a reflexive journal consists of three parts: the researcher's daily schedule and logistics of the study, a personal diary for reflection and speculation, and a methodological log in which methodological decisions and the rationale behind those decisions can be recorded. A reflexive journal was kept throughout the creation of the Stanford sports medicine Web site. An external auditor was used to help establish trustworthiness in the Web site. The auditor for this project was Scott Barker, Head Athletic Trainer at Cal State-Chico.

Confirmability is the final item needed to establish the trustworthiness of this project. Confirmability is the ability to acknowledge that what was decided to be included in the project at the beginning is indeed found in the project at the end. This is done in virtually the same way that dependability is verified. An external auditor is again called upon to attest that the information the researcher has included in the project contains what he/she said the project would include. The external auditor is usually the same person for both the confirmability and dependability verifications, and was the same person for this project as well.

Trustworthiness is indeed an issue in all research projects. The review of literature begins this process by providing the basic theory for justification behind developing this project. However, this review of literature does not confirm that the procedure for completing the project was done in a credible fashion. There needs to be another way to establish trustworthiness. The best way to insure that this project was sound, was to go through the various trustworthiness checks noted.

Equipment and Software

The hardware that was used to design the Stanford sports medicine Web site was:

1. A NEC personal computer with a 200MHz Pentium® Processor with MMX® technology.
2. A NEC MultiSync® E500 CromaClear™ 15" monitor.
3. 56Kbps* Modem featuring U.S. Robotics® x2™ Technology for high speed downloads.

The system requirements needed to design the Stanford sports medicine Web site were:

1. Windows 95 (Note: Windows 3.2 and 3.11 can only use the 16-bit program as opposed to the 32-bit program used by NT and 95).
2. 24 MB EDO RAM
3. 3.2 GB Hard Disk Drive

The software that was used to design the Stanford sports medicine Web site was:

1. Netscape Communicator 4.5 (which includes Netscape Composer).

This was downloaded off the Internet from the Netscape Web site located at www.netscape.com.

2. FTP software used was WS_FTP 95

Procedures & Design

In order to create the Stanford sports medicine Web site, permission was first granted by the appropriate Stanford employees. Written permission to create the Web site was obtained from Dale Rudd, Head Athletic Trainer, and Gary Migdol, assistant athletic director, both employed by Stanford University (letters in Appendix D). The next item was to download Netscape Communicator 4.0 off of the Internet. This was done by accessing the Web site located at <http://www.netscape.com>. Netscape Communicator included Netscape Composer, which was used to create the various Web pages needed for the Web site.

The first page created was the Stanford sports medicine home page. This page included a brief welcome to the Web site along with a list of what items

were included in the Web site. The items in the list had icons which when clicked, linked the user to the icon's respective item. One of the icons was an athletic training icon, that when clicked, would take the user to the athletic training home page. This home page also included a brief welcome along with a list of items in the athletic training portion of the Web site. The athletic training home page had the creator's email address listed to direct user's questions or comments.

There were six Web pages (not including the home page) created for the Stanford sports medicine Web site. The main topics of these six web pages were chosen to provide something of value that the user couldn't get elsewhere. The main topics were chosen to provide an informational resource that covered Stanford specific components and contained professional components for athletic trainers as well. All items placed on the Web site that were directly or indirectly related to the Stanford Sports Medicine and Stanford Athletic Training programs were checked for accuracy by Dale Rudd-Head Athletic Trainer at Stanford University. The following is a list of the Web pages and what they contained:

- I. Information for the graduate assistant at Stanford University
 - A. Information on how to become a graduate assistant at Stanford University
 - B. Information on graduate assistant duties at Stanford University
 - C. Information on athletic training position vacancies around the country
 - D. Information on athletic training related Ph.D. programs and options for further education

Note: The creator's email address was provided on this Web page.

Users wanting to advertise their program were instructed to send information via the e-mail address given.

- II. Information on the Stanford Sports Medicine Internship Program (SMIP)
 - A. Information on how to become a member of SMIP
 - B. Information on the duties of a SMIP member
 - C. Information outlining program opportunities (i.e. volunteer work, chance to work with Stanford sports teams, resume builder, chance to earn federal work study money etc.)
 - D. A listing of the different types of careers/majors in which the SMIP may help prepare the student (i.e. physical therapy, athletic training, physician's assistant, massage therapist, etc.)
- III. Information for visiting athletic teams about Stanford University's athletic facilities
 - A. Staff coverage (list of sports and their respective sports medicine staff members)
 - B. Facility description (football stadium, track, swimming pool, etc.)
 - C. Information about emergency and non-emergency equipment available
 - D. Information about the emergency procedures for each facility
- IV. Educational Component
 - A. MRI comparison page

1. Comparison of normal MRI and MRI showing injury for commonly injured body parts (ankle, knee, pelvis/low back, shoulder, hand, and neck)
2. Collection of MRI photos in which the user has to identify the problem
3. List of the various injuries found in the MRI images that the user tried to identify

V. Continuing Education Web page

- A. Listing of local, regional, state, district, and national opportunities where one can receive continuing education units.

Note: The creator's email address was provided on this Web page. Users wanting to advertise a continuing education opportunity were instructed to send information via the e-mail address given.

VI. Page including links to other athletic training related Web sites

Note: Administrators of Web sites with links on this Web page were asked to place a link to the Stanford Sports Medicine Web site on their Web site.

Once these six Web pages were created, the final step was to link them to the appropriate icon found on the home page. The Web site itself was then installed on a Stanford server at <http://www.stanford.edu/~drudd/stanfordat> .

Thick Description of How the Web Site was Created

As was mentioned in the previous section, the Stanford Sports Medicine Web site involved the creation of a Stanford Sports Medicine Home page, an Athletic Training Home page, and six other Web pages related to Athletic

Training. Each Web page was constructed using different methods because each page contained different material. The following is a detailed description of how each Web page was constructed.

Stanford Sports Medicine Home Page

The creation of this Web page involved entering text along with creating hyperlinks and images. In order to enter text, the layout of the Home page had to be decided. It was decided that the Home page would include a general introduction, and a listing of various hyperlinks along with explanations of what could be found at the link. Once this design was finalized, the actual text was entered by the following procedure:

1. Netscape Composer was opened by double clicking on the Netscape Composer icon located in the bottom right corner of Netscape Communicator 4.5.
2. Once opened, Times New Roman, size 18 font was chosen. This size was only used to write the term “Welcome!!,” after that, size 14 font was used.
3. The rest of the text was then entered by simply typing in the information using the keyboard.
4. A bulleted list of links was created by clicking on the “bullet” button located in the toolbar at the top of Netscape Communicator. (Note: If the toolbar is not showing, click on “view”
5. The first item listed as a hyperlink was “Stanford Athletic Training.” All other hyperlinks include were decided upon by Dr. Gordon

Matheson - Director of Stanford Sports Medicine. These were decided as per discussion on 1/20/99.

6. Once the hyperlinks and their explanations were entered into the Home page, the e-mail address of the Web master was listed at the bottom of the page.
7. Following the typing of the introduction, hyperlinks, and Web master address, it was decided that there should be a note put on the Home page to all users expressing the fact that the contents of the entire Web site were under construction. It was decided that this would be put at the bottom of the Home page in red lettering. In order to select the color red, the "font color" button was clicked once. This opened a window which allowed the selection of various font colors. The color red was then selected to replace the default black color. The text was then entered in the color red.

Following the entering of text onto the Stanford Sports Medicine Home page, hyperlinks were created using the already established text. Hyperlinks were created by highlighting the word or phrase desired to be a hyperlink, and then clicking on the "link" button. Once this button was clicked on, a window opened. In this window, the highlighted text was shown with a box entitled "link to:" located beneath the text. In this box, the URL of the desired target for the link was entered. After the URL was entered, the "OK" button was clicked, and this finished creating the hyperlink. The text that was highlighted then became blue in

color signifying there is a hyperlink attached to that text. A list of the hyperlinks found on this Home page, may be found in Chapter 4.

The final task was the creation of images to be placed on the Stanford Sports Medicine Home page. This involved the creation of a large Stanford “S” logo to be used in the background of the Home page, and a Stanford Sports Medicine Banner (.gif format), to be used at the top of the Home page.

The Stanford “S” was created by downloading an already established “S” from the WWW. The “S” used was found at <http://www.gostanford.com> in the top left corner of the Web page. The cursor arrow was placed over the “S,” and the right button of the mouse was clicked. This brought up a list of options to choose from. The option “save image as” was selected, and the image was saved to a 3 ½ inch floppy disc. The image did not just involve an “S,” but also involved some extra graphics that were undesirable for the Stanford Sports Medicine Home page. The image also had to be resized, so Paint Shop Pro was utilized to alter the image. Once the image was opened in Paint Shop Pro, the following alterations were made to the image:

1. The logo involved some extra red graphics to the left of the “S” that were eliminated using the “flood fill” button. The color used to fill the “red” graphics was the same as the “white” background color. This color was selected with the use of the “eye dropper.” By clicking on the “eye dropper” button, the cursor changes to an eye dropper. Moving the eye dropper over the white background area of the image and clicking the left button on the mouse loaded the white color into

the pallet. Once this background color was loaded onto the pallet, the flood fill button was utilized. Clicking on the “flood fill” button prompted the arrow cursor to change to the “flood fill” cursor. This was then moved over the unwanted red graphics area, and the left mouse button was clicked. This changed anything that was the color found below the cursor to the white background color found in the pallet. Since not all of the unwanted image went away, the “pen” function was used to finish up the job. By clicking on the “pen” button, a pen was created from the cursor. By depressing the left mouse button and holding it, the pen wrote in the “white” background color found in the pallet. Therefore, the remains of the unwanted portion of the graphic were eliminated by writing over them with the pen function.

2. Next, the image had to be resized because it was to be used as the background for the Web site. The goal was to have one large “S” in the background, so the small “S” which was downloaded had to be enlarged to encompass a large portion of the screen. “Format” was clicked from the top toolbar, and under this, “resampling” was selected. This opened the “resampling” window. The new size was then selected to be 500 x 603 (maintaining the aspect ratio of 0.6230 to 1). The image size was selected by trial and error, and it was found that the 500 x 603 size was most aesthetically pleasing.

3. Following the resampling, the image now had to have borders placed around it in order to center the image in the background of the Home page. This was done because Netscape Composer only allows background images to be “tiled.” This means that the images were placed side by side in the background in order to fill up the entire screen. Since only one image was desired, the image had to have borders placed around it in order to create the appearance of only one “S,” even though it would be tiled. This was done by selecting “borders” from the ‘image’ tab located on the toolbar. Clicking on this opened up a “borders” window. Borders were added on the top, bottom, left, and right by typing in numbers in the appropriate box. Centering the image was done by trial and error.
4. Next, the image’s color was changed. In order to be a background image, it was desired that the “S” have a water mark look to it. This was accomplished by first changing the image to grey scale. This was done by selecting the “grey scale” function located under the “image” tab. The image was then colorized to a saturation of 200 by utilizing the “saturation” function, also found under the “image” tab. This gave the image its light red water mark appearance.
5. The image, and its changes, was saved under a new title on the same 3 ½ inch floppy disc.

The Stanford Sports Medicine logo was created from an already existing logo found at <http://www.stanford.edu/dept/sportsmed/>. The image was saved to a 3

½ inch floppy disc in the same manner as the Stanford “S.” This image was then modified because the designer felt that the image’s colors were too dark.

Therefore, the image was opened in Paint Shop Pro, and the subsequent changes were made:

1. Utilizing the “edit pallet” function, the following colors were changed:

- Red I:22 (R:67, G:0, B:0) changed to Red (R:217, G:17, B:27, Hue:238, Sat:205, Lum:110)
- Green I:9 (R:0, G:48, B:0) changed to Green (R:0, G:98, B:0, Hue:80, Sat:240, Lum:46)
- White I:0 (R:255, G:255, B:255) changed to Grey (R:222, G:222, B:222, Hue:160, Sat:0, Lum:209)

2. The image was also resized to 500 x 111 (aspect ratio 4.5185 to 1) through the use of the resampling function.

3. A line underlining the image was erased using the flood fill function (grey background color chosen by “eye dropper” was used as filler).

4. A border was placed around the image by using the borders function.

The border was size 5 on all four sides (left, right, top, 7 bottom). The color of the border was a red shade chosen from the pallet (I:69, R:140, G:8, B:16).

Now that both images were done, it was time to place them on the Stanford Sports Medicine Home page. First, the background image was placed onto the page.

This was done by loading the already established Stanford Sports Medicine Home page onto Netscape Composer. Located under “Format,” “Page colors and properties” was selected, and the corresponding window was opened. In this window, the “choose image as background” box was checked and the “S” image was selected from the 3 ½” floppy. “OK” was clicked, and the image now

appeared in the background. Following this, the Stanford Sports Medicine logo was added to the Home page. This was done by placing the cursor at the beginning of the page and clicking on the “image” button. This opened up the “image” window. In this window, the image was selected from its 3 ½” floppy disc. “OK” was clicked and the logo appeared at the top of the page. The logo was then centered by clicking on the logo once, and then hitting “Control – E.” This then completed the Stanford Sports Medicine Home page, and the page was resaved to its 3 ½” floppy disc.

Stanford Athletic Training Home Page

The design of the Stanford Athletic Training Home page also involved the entry of text, and the creation of hyperlinks and images. Entering the text involved opening a new page in Netscape Composer. The same procedure employed to enter text on the Stanford Sports Medicine Home page was used to enter text on the Stanford Athletic Training Home page. The only difference was in the content of the text.

The hyperlinks created were also done in the same manner used to enter hyperlinks on the Stanford Sports Medicine Home page. There was no difference in the procedure for entering in the information, however, the links and targets were different. The links for this Web page can also be seen in Chapter 4.

There were two images used in the Stanford Athletic Training Home page. One image was the Stanford “S,” and the other was the Stanford Athletic Training Home page logo.

The Stanford “S” was the same image used in the Stanford Sports Medicine Home page. The “S” was again used as a background for the Home page. The procedure for placing the “S” in the background is listed in the Stanford Sports Medicine Home page section.

The Stanford Athletic Training Home page logo was created by altering the Stanford Sports Medicine logo. This was accomplished through the following procedure:

1. The Stanford Sports Medicine logo was opened in Paint Shop Pro.
2. The “eye dropper” button was used to acquire the same color as the grey background. This button automatically loaded the color onto the pallet.
3. The “paint brush” button was pressed, and this changed the arrow cursor into a paint brush. By moving this cursor over the letters “ports Medicine” and pressing the left button on the mouse, the paint brush would paint over the letters in the grey color of the background.
4. The letters “tanford” needed to be moved down in order to align with the base of the large “S.” This was done by placing a rectangle around the letters “tanford” using the rectangle selection button. The clone button was then depressed. This allowed the image in the rectangle to be moved to a new location on the image. The new location was selected by lining up the base of the “S” with the base of the letters in the rectangle. This left two “tanford” groups of letters on the image.

5. The original “tanford” was painted over using the same technique described above in number 3. The image now only said “Stanford.”
6. The “apply text” button was pressed, which opened the “apply text” window. The following specifications were employed: font-book antiqua, font style-regular, font size-28. The words “athletic” and “training” were then typed in the text window. The apply button was pressed and the words athletic and training were below the cursor. By moving the cursor, the text would move around the image. Once the desired location was reached, the left mouse button was pressed and the text was placed below the location of the cursor. Each word, “athletic” and “training” was done separately so that each word’s location could be adjusted apart from the other’s.
7. The image was saved on a 3 ½” floppy disc under a new name.
8. The Stanford Athletic Training logo was then placed on the Home page using the same technique used on the Stanford Sports Medicine Home page.

The Stanford Athletic Training Home page was then complete, and was saved to 3 ½” floppy disc.

Stanford Athletic Training Staff and Facilities Web Page

The Stanford Athletic Training Staff and Facilities Web page included, like the other pages, the elements of text, hyperlinks, and images. However, this page did have a major difference. The difference was that this page was divided into three separate Web pages. The original layout called for the Stanford

Athletic Training Staff and Facilities Web page to contain information about staff, facilities, and visiting team information. It was the realization of the designer that the loading time would be too long for the Web page if it was to contain all three components. Therefore it was decided to break up the Web page, and connect the three separate Web pages via hyperlinks. To complete this Web page, the first task was to open a new page in Netscape Composer. This new page would be the foundation for the Stanford Athletic Training Staff and Facilities Web page.

The entering of text was done in the same manner as previously described. The one difference between entering the text on this page and the other pages was that some of the text was entered in the form of a table. These tables housed the biographical information which would be placed next to each staff member's photograph on the Web page. This was done in the following manner:

1. The "table" button was clicked and the corresponding "table" window was opened.
2. It was selected to be aligned left, by pressing on the left button.
3. The table was designed to have one row and one column.
4. The table width was selected to be 500 pixels.
5. The "OK" button was clicked and the table appeared on the Web page.
6. The cursor was then placed in the table. Text, font size-14, was then entered in the table. The text entered into the table was entered so that the table would have a height of 11 rows of text. This was done because the height of the table would then be as high as the staff picture it would be beside.

Note: Some of the text on the Web page was entered using different text altering procedures (i.e. bold, underlined, font size). This was accomplished by clicking on the appropriate icon (bold, underline, font size) located on the toolbar at the top of Netscape Composer.

The next task was to enter the Stanford “S,” the Stanford Staff & Facilities logo, and the staff photos into the Web page. The Stanford “S” was entered as the background image of the Web page in the same manner as described in the Stanford Sports Medicine Home page section of this chapter. The Stanford Staff & Facilities logo was created in a similar manner to the creation of the Stanford Athletic Training logo. The difference was that the Stanford Staff & Facilities logo was created from the Stanford Athletic Training logo as opposed to the Stanford Sports Medicine logo. Therefore, it was only necessary to paint over the words “Athletic Training” and then enter in the text “Staff & Facilities.” The technique used to do these was the same as that mentioned in the Stanford Athletic Training section of this chapter.

Following this, the process of entering the staff photos onto the Web page was undertaken. Written permission was obtained from each staff member prior to shooting his/her photo. These photos were taken using a digital camera. The pictures were then downloaded onto 3 ½” floppy disc by Dale Rudd using software that came with the camera. The 3 ½” disc was then given to the Web designer for placement of the pictures onto the Stanford Staff & Facilities Web page. Prior to being placed on the Web page, the photos first had to be cropped. The following is a list of the procedures used:

1. The photos were loaded into Paint Shop Pro one by one.
2. The “rectangular selection” button was pressed. This prompted the rectangular selection cursor.
3. The cursor was utilized to select an area of 155 x 220 x 16 million (pixels). This rectangle was to encompass the staff member’s bust, with the staff member centered in the middle (done visually).
4. Under the “image” tab located at the top of Netscape Composer, the crop function was selected. This then cropped the original image down to the new size (area of the rectangle).
5. Under the “image” tab, the “borders” function was selected. This opened up the “borders” window. A 5 pixel border was placed around the photo by placing a 5 in the left, right, top, and bottom boxes of the window. The color of the border was a red hue (R:156, B:0, G:0).
6. Each picture was then saved under a different name.

Next, the images were placed onto the Web page. This was done in the following manner:

1. The cursor was placed below the “Staff” text located at the top of the page.
2. The “image” button was depressed and this opened the “image” window.
3. The appropriate staff photo was selected off the 3 ½” floppy disc.
4. The wrapping around text function was selected, with the photo being aligned left.

5. The “OK” button was then clicked and the image was placed on the Web page.

Following the entering of the staff photos, a new Web page was opened under Netscape Composer. This Web page would be the “facilities” portion of the Stanford Athletic Training Staff and Facilities Web page. This Web page was created by the following process:

1. The Stanford “S” was used as the background image for the Web page. This was done through the same processes listed in the Stanford Sports Medicine Home page.
2. Text was entered using the same method as described in the Stanford Sports Medicine Home page section of this chapter.
3. Two images were taken of the Primary Training Room, and one picture was taken of the Maples Training Room. These were taken with a digital camera. The images were then transferred to 3 ½” disc by Dale Rudd. This disc was given to the designer in order to alter the photos.

The following is a list of the processes used to alter the three training room photos:

1. All three pictures were opened in Paint Shop Pro.
2. Each picture was given a border of 5 pixels in the same manner used to give borders to the staff photos.
3. One of the pictures of the main training room was selected (the picture of the treatment tables), and the canvas was enlarged. This was done

by clicking on the “image” tab from the toolbar, and clicking on “enlarge canvas.” The images were of dimensions 330 x 250, so the canvas was enlarged to 680 x 250. These dimensions would allow for 20 pixels worth of space between the current image and the other training room image (hydro room).

4. The second main training room image (hydro room) was then clicked on and copied using the “copy” key located on the toolbar.
5. The main training room image with the enlarged canvas was clicked on, and the “paste” button was clicked (selecting paste as new selection).
6. This placed the hydro room image under the control of the cursor, and the image was placed as far right as possible in order to make sure that 20 pixels were between the 2 images (treatment tables and hydro room).
7. This new image containing both .jpeg images was then saved under a new name as a new .jpeg image.

The newly generated image, combined image of the main training room and Maples training room, was then placed on the Web page. This was done in the same manner as described in the Stanford Sports Medicine Home page section of this chapter. This completed the creation of the second portion of the Web page (with the exception of hyperlinks which will be listed later).

Succeeding the creation of the facilities section of the Web page, was the creation of the Visiting Teams Information section. In order to create this section,

a new page was opened in Netscape Composer. This page's creation involved the use of text and hyperlinks.

Text was entered in the same fashion as was employed for previous pages. At the top of this Web page a table was created to house the names of all 34 varsity sports at Stanford University. The table was created using the following procedure:

1. The cursor was placed below the title of the web page.
2. The "table" button was clicked opening the "table" window.
3. In the window, the dimensions of the table were selected to be 16 rows x 2 columns (Notice this is only 32 sections for 34 sports because swimming and diving were combined for both men and women). The table was also selected to be left justified by clicking on the left button, and was set to a width of 600 pixels by entering 600 into the width box. The "OK" button was then clicked and the table was placed on the Web page.
4. The names of each sports were entered alphabetically into the table by clicking on the appropriate square and typing in the text using font size-14.

Following the creation of this table, every sport's athletic training information was listed below the name of the sport. Hyperlinks were then created from the table to each sport's athletic training information. A list of the hyperlinks created can be found in Chapter 4.

Following the creation of the visiting team information, a table of emergency telephone numbers was listed. Hyperlinks were then created from each sport's provisional information to the emergency numbers table. The following list explains how the creation of the table and hyperlinks was accomplished:

1. The cursor was placed at the end of wrestling's (last team on table) visiting team information.
2. The "table" button was clicked opening the "table" window. The table was selected to be aligned in the center, and consist of 4 rows and 2 columns. "OK" was clicked on and the empty table was placed on the Web page.
3. The cursor was then placed in the table. Font size-14 and font color-red were selected to be used in the table. The location was then entered into the left side, and the corresponding phone number was entered in the right side.
4. The hyperlink to the table from every sport was then created. The link was "emergency numbers," and the target was `file:///A/VisitingTeams.htm#EMERGENCY`.

This completed the visiting teams section of the Stanford Athletic Training Staff and Facilities Web page. Upon completion of this section, the last task was to link together the three Web pages that would make up the Stanford Staff and Facilities Web page. Therefore, the resulting hyperlinks were created:

Staff
Facilities

`file:///A/staffexperiment.htm#Staff`
`file:///A/Facilities.htm`

Visiting teams	file:///A:/VisitingTeams.htm
Return to Stanford Athletic Training Home page	file:///A:/atc home2.htm
Return to Stanford Sports Medicine Home page	file:///A:/stanfordhome.htm

Once these Web pages were linked together, the Stanford Athletic Training Staff and Facilities Web page was completed.

Stanford Athletic Training Graduate Assistants Web Page

In order to create this Web page, the first task done was to open up a new page in Netscape Composer. Once this new Web page was opened, the text was entered. The text entered was based on the Stanford Athletic Training Policies & Procedures Manual and the designer's experience as a Stanford graduate assistant.

There were two images used on this Web page. These two images were the Stanford "S," and the Stanford Graduate Assistants logo. The Stanford "S" was used as the background for the Web page. This was accomplished by employing the same technique utilized in the Stanford Sports Medicine Home page (mentioned earlier in this chapter). The Stanford Graduate Assistants logo was created in the same manner as the Stanford Staff & Facilities logo. The one exception was that instead of typing "Staff & Facilities," "Graduate Assistants" was typed. When finished, the logo appeared centered at the top of the Stanford Graduate Assistants Web page.

The final items added to this Web page were hyperlinks. The hyperlinks on this Web page were created utilizing the same procedure mentioned in the Stanford Sports Medicine Home page section of this chapter. The hyperlinks used are listed in Chapter 4.

The Stanford Graduate Assistants Web page was completed with the creation of the hyperlinks.

Stanford Sports Medicine Internship Program Web Page

Like the previously described Web pages, the Stanford Sports Medicine Internship Program Web page was started by opening a new Web page in Netscape Composer. Once this was completed, the text could be entered into the Web page.

Entering the text involved the same process as described in the Stanford Sports Medicine Home page section of this chapter. The only exception, was that some of the text was entered by copying it from another disc to the Web page. Mike Lahaie (Stanford Sports Medicine Internship Program – Staff Director) had devised an informational handout for those interested in the internship program. These handouts were saved to one of his 3 ½” floppy discs. This disc was then given to the designer so the information could be added to the Web site. The following procedure was used in order to transfer information from the disc to the Web site:

1. The Stanford Sports Medicine Internship Program Web page was opened under Netscape Composer.
2. Mike Lahaie’s disc was put in the disc drive, and the file containing the handouts was opened under Microsoft Word.
3. “Control-A” was hit on the keyboard, thereby highlighting all of the material contained in the Microsoft Word document.
4. “Control-C” was hit on the keyboard. This copied the information.

5. The Stanford Sports Medicine Internship Program Web page was clicked on using the arrow cursor.
6. The “paste” button was clicked. This pasted all of the previously copied material from Mike Lahaie’s disc onto the Web page.
7. The text was then changed to font size 14, and the headings for each section were changed to bold type.

Following the pasting of this information onto the Web page, the only items left to add were the images.

There were two images used on this Web page. These two images were the Stanford “S,” and the Stanford Sports Medicine Internship Program logo. The Stanford “S” was used as the background for the Web page. This was accomplished by employing the same technique utilized in the Stanford Sports Medicine Home page (mentioned earlier in this chapter). The Stanford Sports Medicine Internship Program logo was created in the same manner as the Stanford Staff & Facilities logo. The one exception was that instead of typing “Staff & Facilities,” “Sports Medicine Internship Program” was typed. When finished, the logo appeared centered at the top of the Stanford Sports Medicine Internship Program Web page.

The next items added to the Web page were hyperlinks. The hyperlinks were added to the Web page in the same fashion as the hyperlinks mentioned in the Stanford Sports Medicine Home page section of this chapter. The hyperlinks created for the SMIP Web page are listed in Chapter 4.

After the links were added, there was one more section that needed to be completed. The section involved creation of the Stanford Sports Medicine Internship Program application. This on-line application was set-up using a table format. The following is the procedure used to create the on-line application.

1. A new Web page was opened in Netscape Composer.
2. The "Table" button was clicked, which opened the "Table" window.
3. Once in the "Table" window, a 2 column, 5 row table was selected.
4. The width of the table was selected to be the width of the entire screen.
5. "OK" was clicked and the table appeared on the screen.
6. The cursor was placed below the newly created table.
7. The "Table" button was once again clicked, thereby opening the "Table" window.
8. A 1 column, 5 row table was selected, with the width being the width of the screen.
9. "OK" was clicked and the table was formed.
10. The cursor was placed below the second table.
11. The "Table" button was clicked again, and the "Table" window opened.
12. A 2 column, 1 row table was selected, with the width of the table chosen to be the width of the screen.
13. "OK" was clicked and the table appeared below the previous table.

In order to create the text and proper spacing shown in the application, the cursor was placed in each box and text was entered. The font-size was selected to be 14

and when extra space was desired in the table, the “Enter” key was hit. Following the last table, a hyperlink back to the Stanford Sports Medicine Internship Program Web page was created. The hyperlink was as follows:

Return to Stanford SMIP page file:///A/SMIPhome.htm

Once this was entered, the Stanford Sports Medicine Internship Program Web page had been completed.

Stanford MRI Comparison Web Page

This Web page included text, images, and hyperlinks. However, before any of these items could be created, a new Web page needed to be opened in Netscape Composer. Once this was completed, the text, images, and hyperlinks could be placed on the Web page.

The first task was to add text to the Web page. This was done in the same manner as was done on the Stanford Sports Medicine Home page (mentioned earlier in this chapter).

The next item taken care of was the creation of images. There were many images used on this Web page. The Stanford “S” was used in the background, an MRI logo was created and placed at the top of the page, and MRI images were transferred from disc onto the MRI Web page as well as being placed on their own Web pages.

As was previously stated, the Stanford “S” was used as the background for the Web page. This was accomplished by employing the same technique utilized in the Stanford Sports Medicine Home page (mentioned earlier in this chapter). The Stanford MRI Page logo was created in the same manner as the Stanford

Staff & Facilities logo. The one exception was that instead of typing “Staff & Facilities,” “MRI Page” was typed. When finished, the logo appeared centered at the top of the Stanford MRI Web page.

The next item of business was to apply the images donated by Dr. Chris Beaulieu to the MRI Web page. The theory behind the MRI Web page was that there would be small images that could be clicked on in order to see the full-size view. In order to do this, the MRI that was saved on the 3 ½” disc that Dr. Beaulieu donated would have to be altered in order to create 2 images. This was done using Paint Shop Pro. The following is a list of the procedures used to alter the MRI’s:

1. The MRI’s were opened in Paint Shop Pro. The MRI’s Dr. Beaulieu gave the designer were paired. One would be of an injured body part, and the other would be the same body part, but uninjured.
2. The two MRI’s were both resized using the “resampling” function located under the “image” tab. In the “resampling” window, the image was selected to have the new dimensions of 150 x 168. Once the dimensions were selected, the “OK” button was clicked and the image’s dimensions were changed. This was done separately for each image. Following this size change, the MRI was saved under a new name.
3. Now that there was a small image, and a large image of the normal and injured MRI’s, it was time for the “Touched-up” image to be created. This involved loading the injured MRI in Paint Shop Pro.

4. The “circle” button was on the toolbar. This caused the cursor to change to cross-hairs. The cross hairs were moved to a spot on the image, and the left mouse button was depressed and held. The cursor was then moved, which caused a circle to be created. The circle was created so that the injured portion of the image was encompassed in the circle. The left mouse button was then released when the circle was in the proper position.
5. This image was then saved under a new name.
6. The touched-up image was then reopened in Paint Shop Pro.
7. The touched-up image was resized to 150 x 168 using the “resampling” function. The image was then saved under a new name.

There were now 6 images, a small and large image of each of the following: normal, injured, and touched-up. These images were then used to create the rest of the Web page. First, the MRI Web page was reopened in Netscape Composer. The cursor was then moved to the bottom of the previously written text. The following procedures were then used:

1. A 3 column x 1 row table was created using the “table” button. This was done using the same procedure as described in the Stanford Athletic Training Staff & Facilities section of this chapter.
2. The cursor was placed in the first box of the table, and font-size 14 was chosen. The word “Normal (body part)” was written. This was completed for the next two boxes, however the middle box said “Injured (body part),” and the last box said “Touched-Up Image.”

3. The cursor was placed below the text in the first box.
4. The “image” button was clicked (located on the toolbar), and this opened the image window. The “choose file” button was then depressed and this opened up the “choose file” window. The “small normal body part MRI” was selected. “OK” was clicked in both windows, and the image appeared in the box. This procedure was done for the other two boxes, with the respective small MRI image being entered in the appropriate box.

Now that the table was set-up properly, the next order of business was to create the Web pages of the large MRI’s. These Web pages would be the targets for hyperlinks from the small MRI’s located in the table. The succeeding list illustrates how this was accomplished:

1. A new Web page was opened in Netscape Composer.
2. Font-size 18 was used to enter in the title “Normal MRI of (body part).” The font-size was then reduced to 14, and a few sentences of explanation about the Web page were entered.
3. The cursor was placed below the text, and the “image” button was clicked (located on the toolbar), and this opened the image window. The “choose file” button was then depressed and this opened up the “choose file” window. The “large normal body part MRI” was selected. “OK” was clicked in both windows, and the image appeared below the text.

4. A hyperlink was then created at the bottom of this page. This was created to link the new Web page back to the MRI Web page. The following is how the link was entered:

Return to MRI Home Page file:///A:/MRIhome.htm

5. This process (steps 1 – 4) was then completed for the other two large images (Injured MRI of (body part) and Touched-Up Image)

There were now three Web pages of large MRI's that corresponded to three small images in the table on the MRI Web page. In order to link the images together, the cursor was placed over the small image and the left mouse button was clicked once. Next, the "Link" button is depressed, and the procedure then follows that listed in the hyperlink section of Stanford Sports Medicine Home page located in this chapter. The hyperlinks found on the MRI Web page are listed in Chapter 4.

Once all of these Web pages were created and the corresponding hyperlinks attached, the MRI Web page was completed.

Stanford Continuing Education Web Page

The Stanford Continuing Education Web page included the elements of text, hyperlinks, and images. In order to include all three of these items in a Web page, a new Web page had to be opened in Netscape Composer. Once this was accomplished, the Web page was begun.

Text was the first item entered into the Web page. For the most part, text entry was done as stated in the Stanford Sports Medicine Home page section of this chapter. However, some of the information placed on this Web site was

reprinted from other Web sites. The following procedure explains how this process was accomplished:

1. Netscape Communicator was opened (Netscape Composer remains open as well).
2. The Web site where the material would be coming from was located in Netscape Communicator.
3. The cursor was used to highlight any desired information.
4. While highlighted, "Control-C" is pressed. This copies the highlighted area to memory.
5. Netscape Composer is clicked on, and the cursor is placed on the Web page at the future location of the text.
6. The "paste" button from the toolbar is clicked, and the text appears below the cursor.

Note: Information from the following Web sites was used for this Web page:

- <http://www.nataboc.org>
- <http://www.apta.org>
- <http://www.aapa.org/>
- <http://www.aamc.org/>

Following text entry, images were placed onto the Web page. The two images placed on this site were the Stanford "S" and the Stanford Continuing Education logo.

As was previously stated, the Stanford "S" was used as the background for the Web page. This was accomplished by employing the same technique utilized

in the Stanford Sports Medicine Home page (mentioned earlier in this chapter). The Stanford Continuing Education Web page logo was created in the same manner as the Stanford Staff & Facilities logo. The one exception was that instead of typing "Staff & Facilities," "Continuing Education" was typed. When finished, the logo appeared centered at the top of the Stanford Continuing Education Web page.

After the placement of the images, hyperlinks were entered onto the Web page. These hyperlinks were created using the same procedure as mentioned in the Stanford Sports Medicine Home page section (found earlier in this chapter). A listing of the hyperlinks used on this page can be found in Chapter 4.

Following the creation of these hyperlinks, the Web page was completed.

Stanford Related Links Web Page

This being a related links page, the hyperlinks on this Web page were the most important element. The first task was to open a new page in Netscape Composer. Once this was done, text was entered as was described in the Stanford Sports Medicine Home page section of this chapter.

After text was entered onto the page, images were added to the Web page. There were two images used on the Web page. These two images were the Stanford "S" and the Stanford Related Links logo.

As was previously stated, the Stanford "S" was used as the background for the Web page. This was accomplished by employing the same technique utilized in the Stanford Sports Medicine Home page (mentioned earlier in this chapter). The Stanford Related Links logo was created in the same manner as the Stanford

Staff & Facilities logo. The one exception was that instead of typing "Staff & Facilities," "Related Links" was typed. When finished, the logo appeared centered at the top of the Stanford Related Links Web page.

Following the placement of images on the Web page, hyperlinks were entered for the Web sites selected to be "related links." A listing of the hyperlinks can be found in Chapter 4.

Once the hyperlinks were completed, the Related Links Web page was finished. The completion of the Stanford Related Links Web page also marked the completion of the Stanford Sports Medicine Web site. The Web site was then placed on the server using Windows File Transfer Protocol software (Note: Any FTP software can be used).

The URL of the Stanford Sports Medicine Web site is:

<http://www.stanford.edu/~drudd/stanfordat>

(Note: the Web site may be viewed in its entirety in Appendix A)

Subjects

Human subjects were used in the Stanford Sports Medicine project. Permission to use human subjects was obtained, and all rights pertaining to use of human subjects were followed (see Appendix C). These subjects were asked to view the Web site and answer questions related to various aspects of the Web site. These questions were administered in the form of a survey. The subject pool that included twelve students of Stanford University, twelve SJSU graduate assistant athletic trainers, and twelve sports medicine related professionals (i.e. physicians, physical therapists, athletic trainers, etc.).

Survey

In order to insure that the Stanford sports medicine Web site was accomplishing the goals that it was designed to accomplish, a survey was created and distributed. This survey (see Appendix B) included twenty questions about organization, content, presentation, and usefulness. The questions asked in the previously mentioned categories were answered by recording responses on a Likert scale. There was also a section in which suggestions could be offered. This section involved an open-ended question format. Three open-ended questions were asked, involving graphics, writing style, and aesthetics. This survey was distributed to the various groups mentioned in the “subjects” section.

Statistical Analysis

Survey responses were collected and reviewed for suggestions and comments about the Web site. The responses to the open-ended section of the survey were reviewed and summarized.

Descriptive Information on Subjects

First, the demographic characteristics of subjects were summarized. These characteristics included gender and status. Frequency distribution tables for these categorical variables were constructed.

Descriptive Information on Items

There were several items regarding Web site features on the survey. The responses to these items were summarized using frequency distribution tables for the group as a whole. In addition, responses were examined separately by gender and status using cross-tabulation tables. Also, responses to Likert items were

cross-tabulated to better understand the strengths and weaknesses of the Web site. Finally, a member check was then performed. The member check involved asking the respondents if the reviewer's interpretation of their response was accurate.

Chapter 4

RESULTS

The purpose of this section is to report results of the development and assessment of the product. Therefore, this section will discuss what was created, results of interaction with the peer debriefer, results of the auditor's critique, and survey results.

Results of the Creation of the Stanford Sports Medicine Web Site

As was mentioned in Chapter 3, the Stanford Sports Medicine Web site involved the creation of many separate Web pages. The following Web pages were created:

- Stanford Sports Medicine Home page
- Stanford Athletic Training Home page
- Stanford Athletic Training Staff and Facilities Web page
- Stanford Athletic Training Graduate Assistants Web page
- Stanford Sports Medicine Internship Program Web page
- Stanford MRI Comparison Web page
- Stanford Continuing Education Web page
- Stanford Related Links Web page

Note: These Web pages can be seen in their entirety in Appendix A.

Stanford Sports Medicine Home Page

This page was created to be the Home page for the entire Stanford Sports Medicine Department. Underneath the sports medicine “umbrella” term were

links to various divisions within the department. The creation of this page involved entering text along with creating hyperlinks and images. The Home page's layout included the following:

- "Stanford Sports Medicine" logo at the top, and the Stanford "S" in the background of the Home page
- "Welcome" written in 18-font, followed by text (14-font) describing the Home page
- Link to the Stanford Athletic Training Web site
- Links to various Web sites related to Stanford Sports Medicine
- Link to the Web master

The following is a list of the "links" and "targets" found on the Stanford Sports Medicine Home page:

Stanford Athletic Training	file:///A:/atchome2.htm
Stanford Human Biology	http://www.stanford.edu/dept/humbio/
UCSF Stanford Health Care	http://www.ucsfstanford.org/
Orthopedic Surgery	http://www.med.stanford.edu/shc/ortho/smeschke18@hotmail.com
	mailto:smeschke18@hotmail.com

The creation of the hyperlinks marked the completion of the Web page.

Stanford Athletic Training Home Page

The Stanford Athletic Training Home page was created in virtually the same manner as the Stanford Sports Medicine Home page. The Stanford Athletic Training Home page contained the following components:

- "Stanford Athletic Training" logo at the top, and the Stanford "S" in the background of the Home page
- A short description (14-font) of the Home page
- Links to the seven other Web pages, with a description of the Web page's contents listed next to each link
- Link back to the Stanford Sports Medicine Home page

The following is a list of the Stanford Athletic Training Home page's hyperlinks and their targets:

Stanford Athletic Training Staff and Facilities	file:///A:/staffexperiment.htm
Stanford Athletic Training Graduate Assistantship	file:///A:/GAhome.htm
Stanford Sports Medicine Internship Program	file:///A:/SMIhome.htm
MRI Comparison Page	file:///A:/MRIhome.htm
Continuing Education	file:///A:/C-EDhome.htm
Related Links to Athletic Training	file:///A:/Linkshome.htm
Return to Stanford Sports Medicine Home page	file:///A:/stanfordhome.htm
Pre-Participation Exam	http://www.stanford.edu/dept/sportsmed

Stanford Athletic Training Staff and Facilities Web Page

The Stanford Athletic Training Staff and Facilities Web page was divided into three different sections: Staff, Facilities, and Visiting teams. The Staff section contained the following components:

- The "Stanford Staff and Facilities" logo at the top, and the Stanford "S" in the background of the Web page.
- A short description (14-font) of the Web page

- Links to the facilities and visiting teams Web pages
- Photos of the nine full-time staff members next to tables containing their biographical information.
- Link back to the Stanford Athletic Training Home page

The following is a list of the hyperlinks found on the Stanford Staff and Facilities

Web page:

staff	file:///A:/Shane/staffexperiment.htm#Staff
facilities	file:///A:/Shane/Facilities.htm
visiting teams	file:///A:/Shane/VisitingTeams.htm
Return to Stanford Athletic Training Home Page	file:///A:/Shane/atchome2.htm

The Facilities Web page contained the following:

- The Stanford "S" in the background of the Web page
- "Facilities" in bold text (18-font), and 14-font text describing the Stanford facilities
- Pictures of the main training room (treatment area and hydro room) and satellite training room (Maples Pavillion)
- Link to the Stanford Athletic Training Home page

The following, is the one link on the Web page:

Return to Stanford Athletic Training Home Page
<file:///A:/Shane/atchome2.htm>

The Visiting teams Web page contained the following:

- The Stanford "S" in the background of the Web page
- "Visiting Teams" in bold text (18-font), and 14-font text for the rest of the Web page

- A table containing each varsity athletic team, and a link to that team's athletic training provisions
- A table of emergency numbers, with links from each team's provisions to the table
- Links back to the table following each provision listing
- Link to view weather forecast for Palo Alto, CA (Stanford Area)
- Link to return to the Stanford Athletic Training Home page

The following is a list of the hyperlinks found on the Visiting Team page:

Baseball	file:///A:/VisitingTeams.htm#Baseball
Basketball(M)	file:///A:/VisitingTeams.htm#Basketball
Basketball(W)	file:///A:/VisitingTeams.htm#Basketball
Crew(M)	file:///A:/VisitingTeams.htm#Crew
Crew(W)	file:///A:/VisitingTeams.htm#Crew
Cross Country(M)	file:///A:/VisitingTeams.htm#Cross Country
Cross Country(W)	file:///A:/VisitingTeams.htm#Cross Country
Fencing(M)	file:///A:/VisitingTeams.htm#Fencing
Fencing(F)	file:///A:/VisitingTeams.htm#Fencing
Field Hockey	file:///A:/VisitingTeams.htm#Field
Football	file:///A:/VisitingTeams.htm#Football
Golf(M)	file:///A:/VisitingTeams.htm#Golf
Golf(W)	file:///A:/VisitingTeams.htm#Golf
Gymnastics(M)	file:///A:/VisitingTeams.htm#Gymnastics
Gymnastics(W)	file:///A:/VisitingTeams.htm#Gymnastics
Lacrosse	file:///A:/VisitingTeams.htm#Lacrosse
Sailing(Co-ed)	file:///A:/VisitingTeams.htm#Sailing
Soccer(M)	file:///A:/VisitingTeams.htm#Soccer
Soccer(W)	file:///A:/VisitingTeams.htm#Soccer
Softball	file:///A:/VisitingTeams.htm#Softball
Swimming & Diving(M)	file:///A:/VisitingTeams.htm#Swimming
Swimming & Diving(W)	file:///A:/VisitingTeams.htm#Swimming
Synchronized Swimming	file:///A:/VisitingTeams.htm#Synchro
Tennis(M)	file:///A:/VisitingTeams.htm#Tennis
Tennis(W)	file:///A:/VisitingTeams.htm#Tennis
Track & Field(M)	file:///A:/VisitingTeams.htm#Track
Track & Field(W)	file:///A:/VisitingTeams.htm#Track
Volleyball(M)	file:///A:/VisitingTeams.htm#Volleyball
Volleyball(W)	file:///A:/VisitingTeams.htm#Volleyball
Water Polo(M)	file:///A:/VisitingTeams.htm#Water Polo

Water Polo(W) <file:///A:/VisitingTeams.htm#Water Polo>
 Wrestling <file:///A:/VisitingTeams.htm#Wrestling>
http://www.weather.com/weather/cities/us_ca_palo_alto.html
 Return to Visiting Teams Sport Table
<file:///A:/Shane/VisitingTeams.htm#Visiting emergency numbers>
<file:///A:/Shane/VisitingTeams.htm#EMERGENCY>
 Return to Stanford Athletic Training Home Page
<file:///A:/Shane/atchome2.htm>

Stanford Athletic Training Graduate Assistants Web Page

This Web page was created using text, images, and hyperlinks. The Web page contains the following:

- The "Stanford Graduate Assistants" logo at the top, and the Stanford "S" in the background of the Web page
- Information located under each of the following headings: How to Become a Graduate Assistant at Stanford University, Role of the Stanford University Graduate Assistant Athletic Trainer, and Future Educational Opportunities
- Link to the San Jose State Athletic Training Web site
- Links to other Web pages found in the Stanford Athletic Training Web site
- Link back to the Stanford Athletic Training Home page

The following is a list of the hyperlinks created:

SJSU Graduate Athletic Training Program
<http://www.sjsu.edu/depts/hup/gradath/gradath.html>
 visiting teams
<file:///A:/Shane/VisitingTeams.htm>
 SMIP program
<file:///A:/Shane/SMIPhome.htm>
 Physical Therapy
<file:///A:/C-EDhome.htm#Accredited PT>

Physician's Assistant

<file:///A:/C-EDhome.htm#Accredited PA>

Ph.D. Programs in Educational Administration

<file:///A:/Shane/GAhome.htm#Ph.D. Programs in Educational>

Ph.D. Programs in Sports Medicine

<file:///A:/Shane/GAhome.htm#Ph.D Programs in Sports>

Medical School

<file:///A:/C-EDhome.htm#Med Schools>

Return to Stanford Athletic Training Home Page

<file:///A/atc home2.htm>

gradcent@apu.edu

<mailto:gradcent@apu.edu>

ethel.rogers@cgu.edu

<mailto:ethel.rogers@cgu.edu>

ck.gaa@forsythe.stanford.edu

<mailto:ck.gaa@forsythe.stanford.edu>

info@gseis.ucla.edu

<mailto:info@gseis.ucla.edu>

ferris@mizar.usc.edu

<mailto:ferris@mizar.usc.edu>

<http://curry.edschool.Virginia.EDU/curry/dept/edhs/hlthpe/sprtmed/>

<http://www.temple.edu/SPORTMED/>

Stanford Sports Medicine Internship Program Web Page

The Stanford Sports Medicine Internship Program (SMIP) was constructed using text, images, and hyperlinks. The following is a list of the contents found on the SMIP Web page:

- The "Stanford Sports Medicine Internship Program" logo at the top, and the Stanford "S" in the background of the Web page
- Information about the program located under the following headings:
Introduction, Welcome to the Stanford University Sports Medicine Internship Program, Program Format, Program Expectations, and Application Requirements
- Link to the SMIP application, which was created on a separate Web page
- Links to sections within the Web page, other Web pages, the SMIP application, and e-mail accounts

The following hyperlinks were created on the Stanford Sports Medicine

Internship Program Web page:

Welcome

<file:///A:/SMIPhome.htm#Welcome>

Program Format

<file:///A:/SMIPhome.htm#Program>

Program Expectations

<file:///A:/SMIPhome.htm#program exp>

Application Requirements

<file:///A:/SMIPhome.htm#Application req>

Application

<file:///A:/SMIPApplication.htm>

Return to Stanford Athletic Training Home Page

<file:///A:/atchome2.htm>

Back to Introduction

<file:///A:/SMIPhome.htm#Introduction>

lahaieat@leland.stanford.edu

<mailto:lahaieat@leland.stanford.edu>

Found on SMIP application page:

Return to Stanford SMIP page

<file:///A:/Shane/SMIPhome.htm>

Stanford MRI Comparison Web Page

The Stanford MRI Comparison was constructed using text, hyperlinks, and images. This Web page, contained the following:

- The "Stanford MRI page" logo at the top, and the Stanford "S" in the background of the Web page
- A short explanation of MRI's and the different types of MRI's used (written in 14-font)
- A table of images (sorted by body part) that could be viewed by clicking on the image (Note: There were 3 images for each body part, 1 uninjured and 2 injured, with one of the injured images including an explanation of where to find the injury)

- Links from the images to their respective Web pages
- Links to the Stanford Sports Medicine Home page and the Stanford Athletic Training Home page

The following is a list of the hyperlinks sorted by body part:

Knee 1

Small Normal	no image yet
Small Injured	file:///A:/MRI-Knee.htm
Small Touched-Up	file:///A:/MRI-KneeTU.htm

Knee 2

Small Normal	file:///A:/MRI-NormKnee2.htm
Small Injured	file:///A:/MRI-Knee2.htm
Small Touched-Up	file:///A:/MRI-KneeTU2.htm

Chest

Small Normal	no image yet
Small Injured	file:///A:/MRI-Chest.htm
Small Touched-Up	file:///A:/MRI-ChestTU.htm

Cervical Spine

Small Normal	file:///A:/MRI-NormCSpine.htm
Small Injured	file:///A:/MRI-CSpine.htm
Small Touched-Up	file:///A:/MRI-CSpineTU.htm

Hyperlink found on each image Web previously listed:

Return to MRI Home Page
<file:///A:/MRIhome.htm>

Hyperlinks found at bottom of MRI Web page:

Return to Stanford Sports Medicine Home Page
<file:///A:/stanfordhome.htm>
 Return to Stanford Athletic Training Home Page
<file:///A:/atchome2.htm>

Stanford Continuing Education Web Page

The Stanford Continuing Education Web page was created using the elements of text, hyperlinks, and images. The Web page was made of the following components:

- The "Stanford Continuing Education" logo at the top, and the Stanford "S" in the background of the Web page
- A short explanation of continuing education (using 14-font text)
- Links to the following three sections of the Web page: NATABOC Approved Providers (in the state of California), Colleges/Universities that have programs related to athletic training, and a Bulletin Board - listing some of the symposiums and conferences being offered
- Hyperlinks to Web pages where NATABOC providers can be found
- Link returning to the Stanford Athletic Training Home page

The following is a list of the hyperlinks found on the Stanford Continuing Education Web page:

<http://www.nataboc.org>
NATABOC Approved Providers
[file:///A:/Shane/C-EDhome.htm#NATABOC Approved Provider's
Colleges/Universities](file:///A:/Shane/C-EDhome.htm#NATABOC%20Approved%20Provider's%20Colleges/Universities)
<file:///A:/Shane/C-EDhome.htm#Colleges/Universities>
Bulletin board
[file:///A:/C-EDhome.htm#Bulletin Board](file:///A:/C-EDhome.htm#Bulletin%20Board)
<http://academymedical.com/index.htm>
<http://www.aapainmanage.org>
<http://www.americanbacksoc.org>
<http://www.tennisone.com/Atherclinic.html>
<http://www.probaseballteamdoctors.com/AnaheimAngels.html>
<http://www.bettyfordcenter.org/>
<http://www.netmktpkc.com/cata/>
<http://www.csun.edu/>

<http://www.tenethealth.com/CenturyCity>
<http://www.cuesta.cc.ca.us/>
<http://www.huntingtonbeachhosp.com/>
 Graduate Athletic Training (NATA)
 [file:///A:/C-EDhome.htm#Grad ATC](file:///A:/C-EDhome.htm#Grad%20ATC)
 Undergraduate Athletic Training (CAAHEP)
 [file:///A:/C-EDhome.htm#Undergrad ATC](file:///A:/C-EDhome.htm#Undergrad%20ATC)
 Physical Therapy Programs (APTA)
 [file:///A:/C-EDhome.htm#Accredited PT](file:///A:/C-EDhome.htm#Accredited%20PT)
 Physician Assistant Program (AAPA)
 [file:///A:/C-EDhome.htm#Accredited PA](file:///A:/C-EDhome.htm#Accredited%20PA)
 Medical School (AAMC)
 [file:///A:/C-EDhome.htm#Med Schools](file:///A:/C-EDhome.htm#Med%20Schools)
<http://www.csun.edu>
<http://www.csun.edu/~at20570/ATEPHome.html>
<http://www.csufresno.edu>
<http://www.csufresno.edu/pehp/programs>
<http://www.csus.edu>
<http://www.hhs.csus.edu/HPE/Academics/undergrad/physicaleducation/athletictraining/atppt.htm>
<http://www.csulb.edu/>
<http://www.hhs.csus.edu>
<http://www.chapman.edu/wilkinson/pt>
<http://www.llu.edu>
<http://www.samuelmerritt.edu>
<http://www.ucsf.edu>
<http://www.sfsu.edu>
<http://www.usc.edu>
<http://www.uop.edu>
<http://www.westernu.edu>
<http://www.cdrewu.edu>
<http://www-leland.stanford.edu/dept/medfm/pca/tofc.htm>
http://www.usc.edu/hsc/medicine/family_med/pa
<http://www-med.ucdavis.edu/>
<http://meded.com.uci.edu/>
<http://www.medsch.ucla.edu/>
<http://medicine.ucsd.edu/>
<http://www.som.ucsf.edu/>
<http://www.llu.edu/llu/medicine/>
<http://www.usc.edu/hsc/med-sch/index.html>
<http://med-www.stanford.edu/school/smeschke18@hotmail.com>
 <mailto:smeschke18@hotmail.com>
 California Athletic Trainers Association Calendar
 <http://www.netmktplc.com/cata/calendar.htm>
 National Athletic Trainers Association Home Page

<http://www.nata.org>
Return to Stanford Sports Medicine Home Page
<file:///A:/stanfordhome.htm>

Stanford Related Links Web Page

The Stanford Related Links Web page was created using text, hyperlinks, and images. The following is a list of the contents found in the Web page:

- The "Stanford Related Links" logo at the top, and the Stanford "S" found in the background of the Web page
- An explanation of the content found in the Web page (font size 14)
- A listing of hyperlinks found under the following headings:
Professional Organizations, Athletic Training Programs at
Universities/Colleges, Athletic Training Programs at High Schools,
and On-line Professional Journals
- A link back to the Stanford Athletic Training Home page

The ensuing list contains the hyperlinks from the Stanford Related Links Web page:

NATA	http://www.nata.org
District 8	http://www.csuchico.edu/~sbarker/FWATA/
CATA	http://www.netmktplc.com/cata/
NATABOC	http://www.nataboc.org
University of Wisconsin-Eau Claire	http://www.uwec.edu/Academic/Kin/athtr.htm
Cal State Chico	http://www.csuchico.edu/~sbarker/scott.html
Pub-Med	http://www.ncbi.nlm.nih.gov/PubMed/
the Physician & Sports Medicine (on-line)	http://www.physsportsmed.com
Medical Matrix	http://www.medmatrix.org/Index.asp
Return to Stanford Athletic Training Home Page	file:///A:/atchome2.htm

The completion of the Stanford Related Links Web page also marked the completion of the Stanford Sports Medicine Web site.

Results of Interaction with Peer Debriefers

As was mentioned in Chapter 3, Charlie Murdach, MA, ATC, was chosen to be the peer debriefer for the Stanford Sports Medicine Web site project. Mr. Murdach was contacted on August 8, 1998. The discussion on 8/8/98 involved an inquiry as to the availability of Mr. Murdach to accomplish the duties of a peer debriefer. He was given a description of the peer debriefer's duties, and after listening to the conditions for being a peer debriefer, he verbally accepted the role. The following is a journal of the phone conversations, and meetings, which took place between the designer (myself) and the peer debriefer (Mr. Charlie Murdach):

8/8/98 Phone conversation with Charlie Murdach. Explained to Charlie the duties and responsibilities associated with the role of a peer debriefer. Upon completion of the explanation, Mr. Murdach was formally asked to be the peer debriefer for the Stanford Sports Medicine Web site project. Mr. Charlie Murdach verbally accepted the responsibility.

8/14/98 Phone conversation with Mr. Murdach. The decision to meet, in person or via phone, and discuss the progress of the project two to three times minimum prior to the defense was made.

8/19/98 Phone conversation with Mr. Murdach. Discussion took place in which Mr. Murdach advised the designer to acquire his auditor, and also determine which server he will be using.

9/2/98 Phone conversation with Mr. Murdach. Mr. Murdach told the designer to go to the San Jose State University library and "check-out" the naturalistic inquiry text (written by, Guba).

9/10/98 Phone conversation with Mr. Murdach. Finalized with Mr. Murdach a time to meet in person. This would be the next Wed. (9/16/98) at 8:00pm.

9/16/98 Met in person with Mr. Murdach. Discussed the following items during the meeting:

- methods of presentation of proposed Web pages for upcoming proposal
- naturalistic inquiry
- importance of recording quality, in-depth notes about where and when information was received that was being placed on the Web site
- importance of keeping detailed journal entries
- how to approach Scott Barker in regards to aiding the designer with "auditing" the Web site (decided e-mail would be the best method)

- holding a meeting with Dr. Matheson (director of Sports Medicine at Stanford University) in order to get his views on the layout of the Web site
- best ways to save and use images on a Web site (i.e. jpeg or gif)

11/18/98 Phone conversation with Mr. Murdach. Talked with Mr. Murdach about journal writing. Mr. Murdach gave the designer advice, as well as a format for entering journal data. He mentioned that the designer should divide the journal into three sections (schedule/logistics, personal diary, log).

3/18/1999 Phone conversation with Mr. Murdach. Discussed previous meeting and phone conversations. Made tentative plans to meet once more prior to April 2, 1999. Also, decided that Mr. Murdach will be called Sunday evening in order to finalize future meeting.

The discussion on 3/18/99 represented the last time that a discussion with the peer debriefer was held. The peer debriefing journal indicated the amount of time spent discussing Web related material with Mr. Charlie Murdach. The journal also acts as a reminder of what logistical decisions were made with the help of the peer debriefer. This journal served as a reminder of the importance of a quality peer debriefer.

Results of the Auditor's Critique

The auditor for this project, Scott Barker, ATC (California State University, Chico), was asked to complete a critique of the Stanford Sports

Medicine Web site. The purpose of this audit was to make sure that an audit trail was evident, and that both the research and project were logical and coherent. After reviewing the Web site, Mr. Barker sent an inquiry audit (seen in its entirety in Appendix E) to the Web page designer. Mr. Barker gave the following recommendations for the Web site:

- 1) Utilizing JavaScript to control the size of the browser window due to cosmetic problems that may arise from the Stanford "S" found in the background. However, he goes on to state that this problem may not be too prevalent as the Web site was designed to be viewed on standard sized monitors.
- 2) Realigning the staff page from original "stair step" layout, which involves horizontal scrolling. He recommends using a left-aligned table, possibly with a "Blockquote" indent tag in order to eliminate the need for horizontal scrolling.
- 3) Interlacing the "gif" images used on the Web site, so that the user can see the images developing. The "gif" images used on the Web site were the logos found at the top of each Web page.

Accompanying the recommendations was a summary containing overall conclusions regarding the design process of the Web site. The auditor stated that he found an audit trail to be evident by reviewing the scholarly writing, reflexive journal, and Web site content. Mr. Barker also states that the research and the project were found to be logical and coherent. The auditor's critique found the Stanford Sports Medicine Web site research project to be valid and dependable.

Survey Results

The Stanford Sports Medicine Web site survey was sent to 36 subjects: 12 undergraduate athletic training students, 12 graduate assistant athletic trainers, and 12 collegiate level full-time staff athletic trainers. From the previously mentioned groups, the following was the number of surveys returned: 10 undergraduate, 10 graduate assistant, and 9 full-time staff (return rate 80.56%). First, a content analysis was performed on the section involving the open-ended questions. Then a statistical analysis of the Likert items was performed using the Statistical Package for Social Sciences (SPSS) software.

Content Analysis for Open - Ended Questions

The survey used for this project contained three-open ended questions. The questions asked for input regarding: 1) background, graphics, and images 2) writing style and content, and 3) aesthetic quality of the Web site. Following collection of the surveys, the designer reviewed and summarized the responses. The subsequent list is the result of the summary:

- Over 75% of the 29 subjects said that they would not change the graphics and images used. However, 13 subjects also added that they would like to see more graphics.
- Over 65% of the subjects found the writing style "easy to read." The remaining 35% felt that some of the longer sections could have been broken-up into smaller sections.
- 24 out of the 29 subjects found the site enjoyable to use.

- A recurring theme appearing was that subjects found the hyperlinks "easy to find" and that they lead to "pertinent information that athletic trainers may need."

Other suggestions were given regarding specific cosmetic improvements, eliminating certain information, and adding new links. These suggestions were all noted by the designer and considered for future revisions.

Statistical Analysis of Likert Items

A frequency distribution table was generated for each question. This was done to determine distribution of responses for each question. Next, each question was cross-tabulated with status. This was done to determine if there were any differences in responses from undergraduate, graduate, and full-time staff athletic trainers. Following this, each question was cross-tabulated with gender. This cross-tabulation was performed to check for differences between responses given by males and females. Next, a cross-tabulation was performed between question #20 (over-all impression of the Web site) and all other questions. This was done to check the overall strengths and weaknesses of the Web site. Finally, a cross-tabulation was performed between question #2 and question #10. Question #2 dealt with specificity of the information accessible through the Web site, and question #10 was concerned with ability to locate desired information. Since this was an educational Web site, it was the designer's decision that the cross-tabulation of these two questions would give the most pertinent information. After the statistics were generated, the data print-out was

analyzed for significant findings. These findings are reported in the following sections.

Frequency Distribution Tables for Questions 1 - 20

When analyzing the frequency distribution tables, data was considered to be significant if 62.1% (18 out of 29) or more of the responses were found under a particular category. Therefore, only responses that were deemed significant by the previously mentioned standard will be presented in this section.

Upon review of the data, two questions showed significance, they were: question #7, regarding hyperlinks, and question #13, dealing with download time. The frequency distribution for each question can be seen in Tables 1 & 2. Table 1 shows 62.1% of the subjects giving the hyperlinks a "very good" rating. When the excellent totals are added, it shows that 89.7% of the subjects found that the hyperlinks were either "very good" or "excellent."

Table 1

Question #7 (Hyperlinks)

<u>Rating</u>	<u>Number</u>	<u>Percent</u>
Good	3	10.3
Very Good	18	62.1
Excellent	8	27.6
Total	29	100

Table 2 shows that 69.0% felt that the download time for the Web site was "very good." Also, it was noticed that 89.7% of the subjects felt that the download time was "very good" to "excellent."

Table 2

Question #13 (Download Time)

<u>Rating</u>	<u>Number</u>	<u>Percent</u>
Good	3	10.3
Very Good	20	69.0
Excellent	6	20.7
Total	29	100

Cross-Tabulation of Status with Questions 1 - 20

As was previously mentioned, the purpose of this cross-tabulation was to determine if there was any difference in the responses from undergraduate, graduate, and full-time staff athletic trainers. After reviewing the cross-tabulation tables, it was found that there were no significant differences across the status groups with respect to their responses to the questions. The greatest level of disparity was when one of the three groups had a few more responses under a section one step higher or lower than the two remaining groups. This gave the impression that overall, the responses were similar between status groups.

Cross-Tabulation of Gender with Questions 1 - 20

The purpose of this section was to ascertain whether or not there were any gender differences in the responses to questions 1 through 20. Gender data was only collected for the graduate student and full-time staff subjects. Therefore, the data used for this portion of the statistical analysis involved 19 subjects (10 males, 9 females). After reviewing the cross-tabulation tables, it was determined that there was no significant variation in male and female responses. The greatest variation involved having one group rate a majority of responses "very good" and the other group had the majority of the responses "excellent." No question had responses that varied more than the previous example.

Cross-Tabulation of Question 20 with Questions 1 - 19

The purpose of this cross-tabulation was to determine the overall strengths or weaknesses of the Web site. Question #20 dealt with overall impression of the Web site. When this was cross-tabulated with a question, it revealed where the subject rated that that item in terms of the overall impression of the Web site. Therefore, if an item was rated high by those that had an overall rating of "very good" or "excellent," it was theorized that the item was influential in their overall impression of the Web site. On the contrary, if an item was rated low by a subject that had an overall "fair" or "good" impression of the Web site, it was theorized that the item examined in the question was influential in determining their overall impression. Therefore, the item was determined to play a key role in the future of the Web site, as the overall impression of visitors could be improved with the

improvement of items with low ratings, or placing a greater emphasis on the items given high ratings.

There was one subject who gave the Web site an overall rating of "fair," and three that gave "good" ratings. Analyzing their responses, it was found that this group gave the graphics found in the Web site (question #3 on the survey) overall ratings of 2 "fair" and 2 "good." Another question rated low by this group dealt with usefulness of the continuing education components (question #15). This group gave the continuing education components an overall rating of 1 "fair" and 3 "good." It was theorized that the low opinions of the graphics and continuing education components influenced the overall impression of these subjects.

There were 14 individuals giving the Web site an overall rating of "very good" and 10 individuals giving "excellent" ratings. The cross-tabulation tables illustrated that this group of 24 subjects gave high ratings to two questions. The hyperlinks question (question #7) received 2 "good," 15 "very good," and 7 "excellent" ratings. The download time (question #13) also received favorable ratings of 2 "good," 16 "very good," and 6 "excellent." It was theorized that this information may have favorably influenced the subjects overall impression of the Web site.

Cross-Tabulation of Question #2 with Question #10

One of the purposes behind the creation of this Web site was "to educate the user." Therefore, the designer determined that the responses to questions #2 and #10 would reveal the most pertinent information to this project. Question #2

dealt with specificity of the information accessible through the Web site, and question #10 dealt with the ability to locate desired information. The cross-tabulation of these two questions (see Table 3) revealed that if a subject rated question #2 low, they also rated question #10 low. It was also noticed that if the subject rated question #2 high they also rated question #10 high. This led to the hypothesis that if the subject found it difficult to locate desired information that they also found the Web site to have inadequate specificity of information. Therefore, the importance of ease of navigation was illustrated in the cross-tabulation of these two questions.

Table 3

Cross-Tabulation of Question #2 with Question #10

		<u>Question #10</u>		
		Good	Very Good	Excellent
<u>Question #2</u>	Good	4	2	0
	Very Good	3	8	5
	Excellent	0	5	2

Triangulation and Member Checks

As was discussed in Chapter 3, triangulation was employed during the survey in order to establish higher credibility. This was accomplished by receiving information from three athletic training subject pools: undergraduate, graduate, and full-time staff. By incorporating the three subject pools, all levels

of collegiate athletic training were represented. This also gave the designer three different angles to analyze the data, along with increasing credibility.

Member checks were also utilized in order to increase credibility. The member check was performed after the data was collected and statistically analyzed. The results of the statistical analysis were then taken to one member of the three groups that filled out the survey, and asked if the statistical analysis represented the responses of the entire group. This was done to help remove any researcher bias that may have occurred during the statistical analysis of the data. The subjects using during the member check all agreed that the statistics were representative of their responses.

Web Designer's Review

The Web designer's review of the Web site includes his views on text and writing style, graphics and images, usefulness of the individual Web pages, and overall impression. The designer then goes on to discuss future considerations for the Web site.

The font style chosen (Times New Roman) was professional and appropriate for the Web site. Font-sizes were suitably used to clearly delineate different sections of the various Web pages. The writing style seemed "easy to read" throughout most of the Web site. One suggestion would be to rewrite the SMIP Web page in order to coordinate writing styles between the Web designer and Mike Lahaie (Director of SMIP). Since the SMIP page was the only section with information written by an outside source, the rest of the Web page's writing styles coordinated with each other.

There were numerous graphics and images used in the Web site. The photographs of the staff members and training facilities were clear and took minimal time to download. The background image of the Stanford "S" was just dark enough to be seen, and yet light enough to keep from distracting the user. The logos at the top of the Web pages appeared clear and professional. Most of the MRI images appeared clear, however it may be an inconvenience to some if they have to adjust the brightness of their monitor. One recommendation would be to add more images to the Web site of students, graduate assistants, and more facilities.

The Web site was very useful, however some sections were more useful than others. The SMIP page was very informative, and described the undergraduate program in great detail. The continuing education page seemed a little lengthy due to the list of approved providers. However, if one needed to acquire CEU's that page could aid in the process. The staff page wasn't very useful other than to learn background information of the staff. The MRI page seemed like a very useful tool for those who might want to learn how to read MRI's. The hyperlinks Web page also appeared to be a useful Web page to those trying to learn more about athletic training related topics. The visiting teams Web page seemed to be a very useful Web page, as it listed all of the necessary provisions for visiting athletic trainers. The hyperlink to the weather channel appeared to be useful, as it would show the forecast to visiting athletic trainers.

The overall impression of the Web site is that it is easy to navigate, educational, and aesthetically pleasing. The site appears to have accomplished

the goals that were set at the beginning of the project. The site is functional and unique. It is a quality Web site that could continue to grow into an even more educational Web site limited only by the imaginations of the Stanford Sports Medicine Department.

Future considerations for the Web site include both revisions of the current material along with possible additions to the Web site. The following suggestions were made for revisions:

- Realign tables on the staff Web page, or eliminate the tables, so that information is presented in a more aesthetically pleasing format.
- Reorganize the continuing education Web page so that the long list of providers is at the end and not the beginning. This would possibly make navigation easier.
- Reword the facilities page, so that the available amenities for each athletic training facility are in a list format. This would allow visitors to easily assess what is available at each facility.
- Interlace the .gif images that are located on the Web site.
- Discuss the future of the Web site with the Stanford Sports Medicine Department, and the revisions that may need to occur in order to facilitate upkeep of the Web site.

As well as entertaining revision suggestions, the following possible additions should also be considered:

- More images and graphics of students, staff, facilities, and MRI's
- Different diagnostic tests to the MRI page (i.e. motion MRI, CT scans)

- Maps to show visitors where the different athletic training facilities are located
- Links to more athletic training related items (related links Web page)
- Information regarding the team physicians
- Counter to show number of hits to Web site

Regardless of whether or not the revisions or additions will be made, the Web site has accomplished its educational goal. The Web site is useful and has the opportunity to continue to grow into one of the world's premier athletic training Web sites.

Chapter 5

CONCLUSION

The reason for creating the Stanford Sports Medicine Web site was three-fold. It was created to educate, advertise, and inform. The Web site was intended to serve as an educational reference for Stanford Sports Medicine, and provide important information to athletic trainers and visiting athletic teams. The results and feedback from the survey indicate that the three goals of the Web site have been obtained.

As evidence of the fact that the educational purpose of the Web site was satisfied, one need look no further than the cross-tabulation table of question #2 with question #10 (Chapter 4). From this table, it can be seen that 20 subjects of the 29 responded with a "very good" or an "excellent" to both questions. Since these questions both deal with information (specificity and level of accessibility), and have high ratings, it can be inferred that the site is doing a good job of educating. Also, the frequency distribution table for question #18 (educational value of MRI Web page) showed 20 of the 29 subjects listing "very good" or "excellent" for that question. (Note: the reason this wasn't listed in the results section is because neither the very good or excellent responses constituted 62.1% of the responses) This rating, although not as high as some questions, also shows a tendency towards the higher end of the Likert scale when discussing education. Therefore, the Web site has been shown to fulfill its educational component.

The Web site will also serve its advertising purpose. Fleck stated in 1996 that a number of institutions had placed home pages on the Internet as a way of displaying and advertising services. The Stanford Sports Medicine Web site will also be one of those Web pages. In his inquiry audit (Appendix E), Mr. Scott Barker states that, "This site will serve as an excellent resource to people wanting to learn more about the Stanford Sports Medicine Program." He goes on to state that, " Due to the nature of the World Wide Web, it won't be long before other sites from around the country will also be linked to the Stanford Sports Medicine Web site." It is common knowledge that an increase in the number of links to a Web site also increases the number of opportunities for visitors. This in turn increases the probability of visitors to the Web site. Therefore, it is only a matter of time before the advertising potential of this Web site can be fully realized.

The final goal, to provide an informative resource for visiting athletic trainers, was also attained. The attainment of this goal is evident by viewing the survey. When viewing the statistical analysis in response to question # 16, the frequency distribution table shows 23 of the 29 responses in the "very good" or "excellent" categories. These responses reflect a positive outlook for the visiting team Web page. Taken from the open-ended responses, some of the terms used to describe the Web page included "everything is there for a visiting athletic trainer," and "it is especially helpful to have the visiting team page." Both the high ratings found on the Likert scale, and the comments found in the open-ended section lead to the conclusion that the goal of informing other visiting athletic trainers was accomplished.

The creation of the Stanford Sports Medicine Web site was a unique endeavor that started as a small idea for a Web site and grew to a "educational resource tool" for all levels of athletic trainers. It is the hope of the Web site designer that this Web site be maintained so that it may continue to grow and provide athletic training community with years and years of information and enjoyment.

REFERENCES

- Askar, P., Yavuz, H., & Koksac, M. (1992). Students' perceptions of computer assisted instruction environment and their attitudes towards computer assisted learning. Educational Research, 34(2), 133-139.
- Barker, S., & Barker, A. (1996). Multimedia uses in educational settings. Athletic Training: Sports Health Care Perspectives, 21(1), 7-13.
- Barker, P., & Manji, K. (1992). Computer-based learning: An institutional approach. Education & Computing, 8, 229-237.
- Benson, M., Kjellmer, I., Rosberg, S., & Billig, H. (1997). Can paediatricians benefit from the internet? Archives of Diseases in Childhood, 77, 179-182.
- Cates, W. (1992). Fifteen principles for designing more effective instructional hypermedia/multimedia products. Educational Technology, 32(12), 5-11.
- Child, D. (1996). An introduction to the world wide web page design. *T.H.E. Journal*, 24(8), Available:
<http://www.thejournal.com./past/aug/896exclu2.html> [1998, Jan.29]
- Clever, E., & Dillard, D. (1993). Physical education research - computerized databases in an interdisciplinary field. The Journal of Physical Education, Recreation, and Dance, 64(7), 67-72.
- Fawcett, J., & Buhle, L. (1995). Using the internet for data collection. Computers in Nursing, 13(6), 273-279.
- Felch, W. (1987). Continuing medical education in the United States-an enterprise in tradition. Journal of the American Medical Association, 258(10), 1355-1358.
- Fleck, R. (1996). An introduction to the internet: creating and using web pages for instruction. *T.H.E. Journal*, X(X), Available:
<http://www.thejournal.com./past/aug/896exclu1.html> [1998, Jan. 29]
- Friedman, E., Baron, J., & Addison, C. (1996). Universal access to science study via internet. T.H.E. Journal, 23(11), 83-86.
- Glowniak, J. (1995). Medical resources on the internet. Annals of Internal Medicine, 123(2), 123-131.

- Guba, E. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. Educational Communication and Technology, 29(2), 75-91.
- Gutherie, B., & McPherson, M. (1992). The efficacy of a customized approach to computer assisted instruction. Journal of Computer-Based Instruction, 19(3), 100-104.
- Hanson, T., & Newburg, D. (1992). Naturalistic inquiry as a paradigm for doing allied performance enhancement research. Performance Enhancement, 1, 26-40.
- Ingersoll, C. (1996). The athletic trainer and the internet. Athletic Training: Sports Health Care Perspectives, 2(1), 14-24.
- Kennedy, S. (1996). The challenge of research on the web. Information Today 13(5), 65-66.
- Lincoln, Y., & Guba, E. (1985). Naturalistic Inquiry. Beverly Hills, CA: Sage Publications.
- Luckey, R., Sweet, J., & Knupp, B. (1996). The internet: An essential tool for college health networking. Journal of American College Health, 45(7), 6-10.
- Mikita, E., & Drusedum, L. (1993). Introducing health sciences librarians to the internet. Medical References Services Quarterly, 12(3), 1-12.
- Miller, G. (1987). Continuing education - what it is and what it is not. Journal of the American Medical Association, 258(10), 1352-1354.
- Nicaise, M., & Barnes, D. (1996). The union of technology, constructivism and teacher education. Journal of Teacher Education, 47(3), 205-212.
- Nielsen, J. (1995). Multimedia and Hypertext. Boston, MA: AP Professional.
- Owen, P., Allery, L., Harding, K., & Hayes, T. (1989). General practitioners' continuing medical education within and outside their practice. British Medical Journal, 299, 238-240.
- Patton, M. Q. (1980). Qualitative Evaluation Methods. Beverly Hills, CA: Sage Publications.

Perez, E., & White, M. (1985). Student evaluation of motivational and learning attributes of microcomputer software. Journal of Computer-Based Instruction, 12(2), 39-43.

Pitney, W. (1998). Continuing education in athletic training: An alternative approach based on adult learning theory. Journal of Athletic Training, 33(1), 72-76.

Quinlan, L. (1996). Crafting a web-based lesson. Part one: Setting instructional goals and finding sources. Techtrends, 41(6), 6-8.

Tatters, W., & Colburn, R. (1997). Teach Yourself Netscape 4 Web Publishing in a Week. (2nd ed.). Indianapolis, IN: Sams.net.

Whitehill, W., Norton, P., & Wright, K. (1996). Navigating the library maze: Introductory research and the athletic trainer. Journal of Athletic Training, 31(1), 50-52.

Wilmoth, M. (1995). Computer use and nursing research. Western Journal of Nursing Research, 17(3), 335-337.

Wilson, A., Munro, C., & Colditz, G. (1981). Continuing education in general practice. The Medical Journal of Australia, 2, 545-546.

APPENDIX A

Full Text Version of Stanford Sports Medicine Web Site

Welcome!!! to the official site for Stanford Sports Medicine. The Stanford Sports Medicine Department involves many different divisions and departments. These related areas are listed below with a short description of what is offered at each Web page.

- [Stanford Athletic Training](#) - Information about: the staff and facilities, provisions for visiting athletic trainers, continuing education in the state of California, graduate assistants, the student internship program, and athletic training related links.
- [Stanford Human Biology](#) - Information about Stanford Human Biology including: Course work, faculty, and general student information.
- SOAR
- [UCSF Stanford Health Care](#) - Information about the UCSF Stanford Health Care mission statement, medical services, jobs, news, and more.
- Division of Biomechanics
- Exercise Cardiology (Dr. Vic Froelicher's Web Site)

Stanford University School of Medicine - Department of Functional Restoration (Listed below
are specializations within the Dept. of Functional Restoration)

- Hand Surgery
- [Orthopedic Surgery](#)
- Physical Medicine & Restoration
- Plastic and Reconstructive Surgery
- Sports Medicine

Web site is best viewed with Netscape Communicator 4.5, which is available in download form via the [Netscape download page](#)

If you have any questions about this Web site, please contact Shane Meschke at:

smeschke18@hotmail.com

Note: This Web site is currently under construction. Over the next few months, changes will constantly be made to improve the quality of this site. Thanks for your patience!

Welcome to the Stanford Athletic Training Home Page! This page was constructed to educate users about Stanford Athletic Training and the various opportunities available through Stanford Athletic Training. To find out more information on Stanford Athletic Training please choose from the links below:

[Stanford Athletic Training Staff and Facilities](#)

- Visit if you are an athletic trainer and will be visiting Stanford University, or if you would like to learn more information about our staff, facilities, & sport coverage

[Stanford Athletic Training Graduate Assistantship](#)

- Contains information about Stanford Graduate Assistant Athletic Training

[Stanford Sports Medicine Internship Program \(SMIP\)](#)

- Visit if interested in becoming a Stanford student athletic trainer, or if you would like more information about the internship program

[MRI Comparison Page](#)

- Contains information on how to read Magnetic Resonance Images by viewing various examples of MRI's

[Continuing Education](#)

- Contains information about obtaining continuing education units in the state of California

Related Links to Athletic Training

- Browse through selected links related to athletic training

Pre-Participation Exam

- Access the Stanford Athletics Pre-Participation Medical History Form

[Return to Stanford Sports Medicine Home Page](#)

This page includes information about the Stanford Athletic Training staff and facilities. This page also includes information for visiting athletic teams. If your team is visiting Stanford University, please view the visiting teams section and click on your appropriate sport to view information about that particular sport's event coverage.

Staff

The Stanford Athletic Training Staff is comprised of 10 full-time staff members, along with 7 graduate assistants. There are also a number of physicians and support staff that are directly involved with the athletic training room. The following is a list of the Stanford Full-time Staff:

Dale Rudd

Title: Head Athletic Trainer
Sport Assignments: Football
Education: MS in Movement & Sports
Science - U of Arizona
BA in Physical Education - CSU
Northridge
Experience: 1982-85 Dir. of Athletic
Training - CSU-Northridge
1985-88 Dir. of Athletic Training/Athletic
Trainer - Purdue U
1988-90 Head Athletic Trainer - Pepperdine
University
1990-96 Asst. A.D./Head Athletic Trainer -
UCLA
1996-Present Head Athletic Trainer -
Stanford University
Family: Married to wife Stacie. They have 1
daughter - Caitlin
Hobbies: Reading Professional Journals &
Spy Novels

Marc Guillet

Title: Director of Rehabilitation/Associate
Head Athletic Trainer
Sport Assignments: Football, Women's Golf,
Sailing
Education: MS in Physical Therapy -
Columbia University
BA in Biology - Fairfield
University
Experience: 1991-94 UCLA Medical Center
- Acute Care
1994-96 Director of Rehabilitation
UCLA Athletics
1996-Present Dir. of Rehab/Assoc.
Head Athletic Trainer
Family: Marc is married to his wife Dana
(who is expecting)
Interests: Basketball, Good Food & Wine,
Teaching
Other: Authored article published in
"Athletic Therapy Today"
Presenter at The American Back
Society National Meeting

Perry Archibald

Title: Assistant Athletic Trainer

Sport Assignments: Men's Soccer, Men's & Women's Crew,

Men's & Women's

Fencing

Education: MA in Athletic Administration - Idaho State U

BA in Physical Education/History - Idaho State U

Experience: NATA certified for 25 years

1979-1985 Head Athletic Trainer for SF Giants Baseball Team

1985-present Asst. Athletic Trainer for Stanford University

Family: Married to wife Coralie. They have 3 sons -

Christopher, Dane, and Andy

Interests: Health Care, Reading, Sports, Fishing, Volunteer Work

Eric Buckman

Title: Assistant Athletic Trainer
 Sport Assignments: Football, Men's &
 Women's Track & Field
 Education: MS in Sport Management -
 University of Kentucky
 BA in Athletic Training - Purdue
 University
 Experience: 1993-94 NFL Internship with
 Dallas Cowboys
 1996-97 Collegiate Internship
 UCLA
 1997-98 Asst. Athletic Trainer
 Princeton Univ
 1998-Present Asst. Athletic
 Trainer Stanford Univ.
 Family: Parents Thomas & Carol Buckman
 Interests: Golf, Travel
 Other: Boilermaker thru & thru

Mike Lahaie

Title: Assistant Athletic Trainer
 Sport Assignments: Women's Basketball
 Education: MA in Physical Education - San
 Jose State University
 BS in Kinesiology - Indiana
 University
 Experience: 1993-94 IU Football and
 Independence Bowl
 1994-96 Homestead HS Graduate
 Asst. ATC
 1996-Present Asst. Athletic
 Trainer Stanford Univ.
 Family: Mike is married to his wife Nikole
 Hobbies: Fishing, Mountain Biking, Hiking,
 Camping, Playing
 with Durango (Dog)
 Other: NASCAR fan - Chad Little

Jim Liukkonen

Title: Assistant Athletic Trainer

Sport Assignments: Baseball, Men's Water Polo,

Men's Swimming &

Diving

Education: BA in Physical Therapy - Fresno State University

Certified Physical Therapist since 1976

Certified Clinical Hypnotherapist since 1996

Experience: 1977-80 Palo Alto Medical Clinic (PT)

1980-Present Asst. Athletic Trainer Stanford Univ.

Family: Married to wife Colleen. They have two daughters -

Jessie and Kaela

Interests: Baseball, Tennis, Golf, and Martial Arts

Kathy Poulsen

Title: Assistant Athletic Trainer

Sports Assignments: Women's Volleyball,
Men's & Women's

Track & Field

Education: MS in Health - University of
Oregon

BS in Physical Education -

University of Oregon

Experience: 1987-89 Grad Asst. ATC at
University of Oregon

1989-92 Head Athletic Trainer for
Menlo College

1992-Present Asst. Athletic
Trainer Stanford Univ.

Family: Married to husband Paul. They have
one son -

Christopher

Interests: Water-skiing, Outdoors, Working
out

Dava Reeder

Title: Assistant Athletic Trainer
Sport Assignments: Women's Swimming &
Diving, Women's
Gymnastics
Education: MA in Physical Education
(emphasis Athletic
Training & Ex. Sci.) - San Diego
State U
BA in Physical Education - CSU -
Los Angeles
Experience: 1984-1991 Asst. Athletic Trainer
San Diego State U
1991-Present Asst. Athletic
Trainer Stanford Univ.
Family: Single
Interests: Golf, Tennis, Needle Point/Cross
Stitch, Reading,
Walking/Hiking Other: US
Army 1971-1981

Jeff Roberts

Title: Assistant Athletic Trainer
Sport Assignments: Football, Men's
Basketball, Men's Tennis
Education: MS in Exercise & Sports Science
- Univ. of Arizona
BS in Exercise Science -
University of Iowa
Experience: 1993-94 Asst. Athletic Trainer -
Miami of Ohio U
1994-97 Asst. Athletic Trainer -
Arizona State Univ.
1997-Present Asst. Athletic
Trainer - Stanford Univ.
Family: Married to wife Katie.
Cat-Chandler
Interests: NASCAR - Terry Labonte,
Country Music
Other: Avid Iowa Hawkeye Fan

Jan Steele

Title/Assignment: Office Manager - Medical Insurance and Billing

Education: BA in History - Stanford University

Job Description: Collect and keep current medical insurance

information for every Stanford athlete.

Provide insurance

information to medical facilities and identify athletic related

injuries. Track medical expenses for submission to secondary insurance.

Family: Married to husband Tim. They have 3 adult sons,

Cameron, Clark, & Brian. Two graduated from Stanford and one from UCLA.

Interests: All Stanford Sports, Drawing, Painting

[Return to Stanford Athletic Training Home Page](#)

Facilities

The athletic training facilities at Stanford include one primary training room and two satellite training rooms. There are also training facilities located at the football stadium in each of the locker rooms. However, these are used only on game days.

Primary Training Room

The primary training room is located in the northwest corner of the Arrillaga Family Sports Center. The training room consists of 13 training tables, 6 taping tables, 3 offices, 2 doctor's offices, and a whirlpool room. This facility contains numerous modalities including 4 ultrasound machines, 4 electrical stimulation units, 4 whirlpools, 2 large hydrocollators, 1 ice machine, 1 Biodex, 1 UBE, 3 bikes, and 1 Biodex column. All Stanford athletic teams use this facility, however the 2 satellite facilities are also used by men's & women's basketball, volleyball, and gymnastics.

Treatment Area & Hydrotherapy Room

Satellite Training Rooms

There are three satellite training rooms at Stanford University. One is located at Maples Pavilion, another is located at the Ford/Burnham Center, and a third is located at Stanford Stadium. The training room at Maples Pavilion is used by the Men's and Women's volleyball teams on days when they have a match, and it is used by the Men's and Women's basketball teams for practice and games. It is equipped with an electrical stimulation unit, an ultrasound machine, a whirlpool, a hydrocollator, and an ice machine. This training room is also used for any special events hosted at Maples Pavilion.

The Ford/Burnham training room is a small satellite training room used by Men's & Women's volleyball, gymnastics, and wrestling. It is equipped with an ice machine, one treatment table, and one taping table.

The Stanford stadium training room has two satellite training rooms. There are facilities for both home and away football teams. During the football season, the training rooms are equipped with training tables, hydrocollators, and ice. Coolers are also provided along with other amenities listed in the Visiting Teams Supplies/Provisions section under "Football."

Maples Training Room

[Return to Stanford Athletic Training Home Page](#)

Visiting Teams (Service/Supply Provisions)

This section was created to aid the visiting athletic trainer on his/her trip to Stanford University. This section will provide the user with information regarding provisions and staffing assignments for various Stanford athletic teams.

Local Weather (courtesy of the Weather Channel)

View the current weather conditions and forecast for the Stanford/Palo Alto area.

http://www.weather.com/weather/cities/us_ca_palo_alto.html

Sports Table

To view provisions available to the visiting athletic trainer, please "click" on the appropriate sport located in the table below.

<u>Baseball</u>	<u>Sailing(Co-ed)</u>
<u>Basketball(M)</u>	<u>Soccer(M)</u>
<u>Basketball(W)</u>	<u>Soccer(W)</u>
<u>Crew(M)</u>	<u>Softball</u>
<u>Crew(W)</u>	<u>Swimming & Diving(M)</u>
<u>Cross Country(M)</u>	<u>Swimming & Diving(W)</u>
<u>Cross Country(W)</u>	<u>Synchronized Swimming</u>
<u>Fencing(M)</u>	<u>Tennis(M)</u>
<u>Fencing(W)</u>	<u>Tennis(W)</u>
<u>Field Hockey</u>	<u>Track & Field(M)</u>
<u>Football</u>	<u>Track & Field(W)</u>
<u>Golf(M)</u>	<u>Volleyball(M)</u>
<u>Golf(W)</u>	<u>Volleyball(W)</u>
<u>Gymnastics(M)</u>	<u>Water Polo(M)</u>
<u>Gymnastics(W)</u>	<u>Water Polo(W)</u>
<u>Lacrosse</u>	<u>Wrestling</u>

[Return to Stanford Athletic Training Home Page](#)

Baseball

Staff Coverage:

Jim Liukkonen - Baseball Athletic Trainer

Team Physician:

Dr. Gordon Campbell

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Game:

At Sunken Diamond:

10 gallon cooler of water

Cups

Cooler of ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

List of emergency numbers

Other supplies available upon request

Game Day:

In locker room:

10 gallon cooler of water

Cups

Cooler of ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Taping and Treatment tables

Towels

In dugout:

10 gallon cooler of water

Cups

Cooler of ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Towels

In bullpen:

10 gallon cooler of water

Cups

Cooler of ice bags

Towels

Accessible during game:

- Spineboard and cervical stabilizers
- Crutches
- Splinting devices
- Extremity immobilizers: knee, ankle, elbow, etc.
- Phone with long distance service
- Ambulance on-call
- X-ray facility at Stanford Hospital (located on campus)

**Host athletic trainer will be on-site

**Physician will be on call

[Return to Visiting Teams Sport Table](#)

Men's and Women's Basketball

Staff Coverage:

- Jeff Roberts - Men's Basketball Athletic Trainer
- Mike Lahaie - Women's Basketball Athletic Trainer

Team Physician:

- Dr. Gordon Campbell - Men's Basketball
- Dr. Robert Gamburd - Women's Basketball

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Game:

At Maples Arena:

- 10 gallon cooler of water
- Cups
- Cooler of ice bags
- Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Towels

List of emergency numbers

Other supplies available upon request

Game Day:

In locker room:

10 gallon cooler of water

Cooler of ice bags

Cups

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Hydrocollator

Taping and Treatment tables

Towels

Courtesy taping supplies

At end of bench:

10 gallon cooler of water

Cooler of ice bags

Cups

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Towels

Accessible during game:

Spineboard and cervical stabilizers

Sports Chair

Crutches

Splinting devices

Extremity immobilizers: knee, ankle, elbow, etc.

Phone with long distance service

Ambulance on-call

X-ray facility at Stanford Hospital (located on campus)

****Host athletic trainer will be on-site**

****Physician will be present at the game**

Return to Visiting Teams Sport Table

Men's & Women's Crew

Staff coverage:

Perry Archibald - Men's & Women's Crew Athletic
Trainer

Team Physician:

Dr. Paul Ford

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Contest:

Provisions available upon request

Day of Contest:

At competition site:

Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze

pads, Bleach solution)

List of emergency numbers

Courtesy kit supplies available upon request

Cooler of ice bags

Coolers of water

Cups as appropriate

Accessible during contest:

Crutches

Splinting devices

Extremity immobilizers: knee, ankle, elbow, etc.
Phone with long distance service
X-ray facility at Stanford Hospital (located on campus)

****Host athletic trainer and/or team physician will be on-site**
Return to Visiting Teams Sport Table

Men's & Women's Fencing

Staff Coverage:

Perry Archibald - Men's & Women's Fencing Athletic
Trainer

Team Physician:

Dr. Gerald Keane

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Contest:

Provisions available upon request

Day of Contest:

At competition site:

Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze
pads, Bleach solution)

List of emergency numbers

Courtesy kit supplies available upon request

Cooler of ice bags

Coolers of water

Cups as appropriate

Accessible during contest:

Crutches

Splinting devices

Extremity immobilizers: knee, ankle, elbow, etc.

Phone with long distance service

X-ray facility at Stanford Hospital (located on campus)

**Host athletic trainer will be on-site

**Physician will be on-call

[Return to Visiting Teams Sport Table](#)

Field Hockey

Staff Coverage:

Graduate Assistant - Field Hockey Athletic Trainer

Team Physician:

Dr. Michael Fredericson

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Game:

At field:

10 gallon cooler of water

Cups

Cooler of ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Towels

Game Day:

In main athletic training room prior to game:

Water
Ice bags
Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze pads, Bleach solution)
List of emergency numbers
Hydrocollator
Taping and Treatment tables
Towels
Other modalities and supplies available upon request

At field:

10 gallon cooler of water
Cooler of ice bags
Cups as appropriate
Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze pads, Bleach solution)
Towels
Treatment table

**Host athletic trainer will be on-site

**Physician will be on-call

Return to Visiting Teams Sport Table

Football

Staff Coverage:

Dale Rudd - Head Athletic Trainer
Marc Guillet - Director of Rehabilitation
Eric Buckman - Assistant Athletic Trainer

Team Physicians:

Dr. Gary Fanton
Dr. Gerald Keane

Dr. Gordon Matheson

Stanford will supply the following:

The main athletic training room will be open upon request.

Day Prior to Game:

In locker room:

2 x 10 gallon coolers
1 Ice chest filled with ice bags
300 Cups
Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Hydrocollator
Taping and Treatment tables
Towels (provided by equipment room)
List of emergency numbers
Other supplies available upon request

On sideline of Stanford Stadium:

Coolers of water as appropriate
Cups as needed
Ice bags as needed

Game Day:

In locker room:

Ice
Bottled water
2 x 10 gallon coolers
1 Ice chest filled with ice bags
300 Cups
Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Hydrocollator
Taping and Treatment tables

Towels (provided by equipment room)

On sideline of Stanford Stadium:

Ice

Bottled water

2 x 10 gallon coolers

1 Ice chest filled with ice bags

2 Ice towel coolers

1,000 cups (additional supplied if needed)

1 Treatment table

Student and staff personnel (with radio)

Accessible during game:

Spineboard and cervical stabilizers

Sports Chair

Crutches

Splinting devices

Extremity immobilizers: knee, ankle, elbow, etc.

Phone with long distance service

Ambulance/EMT on site

X-ray facility on site (extremity views only, spine views taken at Stanford Hospital)

Methods available for athlete removal from field:

Sports chair, cart, or stretcher

****Physicians will be present at the game**

[Return to Visiting Teams Sport Table](#)

Men's and Women's Golf

Staff Coverage:

Dale Rudd - Men's Golf Athletic Trainer

Marc Guillet - Women's Golf Athletic Trainer

Team Physicians:

Dr. Gordon Matheson - Men's Golf
 Dr. Elaine Lambert - Women's Golf

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Contest:

No provisions will be available unless requested

Day of Contest:

At clubhouse:

Water
 Coolers of ice bags
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 List of emergency numbers
 Towels
 Courtesy kit supplies

Accessible during contest:

Crutches
 Splinting Devices
 Extremity immobilizers: knee, ankle, elbow, etc.
 Phone long distance access

****Host athletic trainer will be on-site**

****Physician will be on-call**

[Return to Visiting Teams Sport Table](#)

Men's and Women's Gymnastics

Staff Coverage:

Trainer
 Dava Reeder - Women's Gymnastics Athletic Trainer
 Graduate Assistant - Men's Gymnastics Athletic

Team Physician:

Dr. Michael Fredericson - Men's Gymnastics
 Dr. Gerald Keane - Women's Gymnastics

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Meet:

At practice site:

Cooler of water
 Cups
 Cooler of ice bags
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 Towels

Day of Meet:

In main athletic training room prior to meet:

Water
 Ice bags
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 List of emergency numbers
 Hydrocollator
 Taping and Treatment tables
 Towels
 Other modalities and supplies available

At competition site:

10 gallon cooler of water
Cooler of ice bags
Cups
Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze pads, Bleach solution)
Hydrocollator
Towels

Accessible during contest:

Spineboard and cervical stabilizers
Crutches
Splinting devices
Extremity immobilizers: knee, ankle, elbow, etc.
Phone with long distance service
Ambulance on-call
X-ray facility at Stanford Hospital (located on campus)

**Host athletic trainer will be on-site

**Physician will be on-site

[Return to Visiting Teams Sport Table](#)

Lacrosse

Staff Coverage:

Graduate Assistant - Lacrosse Athletic Trainer

Team Physician:

Dr. Elaine Lambert

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Game:

At field:

10 gallon cooler of water
 Cups
 Cooler of ice bags
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 Towels

Game Day:

In main athletic training room prior to game:

Water
 Ice bags
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 List of emergency numbers
 Hydrocollator
 Taping and Treatment tables
 Towels
 Other modalities and supplies available upon request

At field:

10 gallon cooler of water
 Cooler of ice bags
 Cups as appropriate
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 Towels
 Treatment table

**Host athletic trainer will be on-site

**Physician will be on-call

[Return to Visiting Teams Sport Table](#)

Staff Coverage:
Marc Guillet - Sailing Athletic Trainer

Team Physician:
Dr. Dr. Paul Ford

The main athletic training room will be open normal hours or available upon request.

Provisions available upon request

At competition site:
Biohazard Kit (Contains: Gloves, Sharps' container,
First aid kit, Gauze pads, Bleach solution)

List of emergency numbers
 Courtesy kit supplies available upon request
 Cooler of ice bags
 Coolers of water
 Cups as appropriate

Phone with long distance service
X-ray facility at Stanford Hospital (located on campus)

****Physician will be on-call**

[Return to Visiting Teams Sport Table](#)

Men's and Women's Soccer

Staff Coverage:

Perry Archibald - Men's Soccer Athletic Trainer
Graduate Assistant - Women's Soccer Athletic Trainer

Team Physician:

Dr. Gerald Keane - Men's Soccer
Dr. Gordon Matheson - Women's Soccer

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Game:

At field:

10 gallon cooler of water
Cups
Cooler of ice bags
Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze pads, Bleach solution)
Towels

Game Day:

In main athletic training room prior to game:

Water
Ice bags
Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze pads, Bleach solution)
List of emergency numbers
Hydrocollator

Taping and Treatment tables

Towels

Other modalities and supplies available upon request

At field:

10 gallon cooler of water

Cooler of ice bags

Cups as appropriate

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Towels

Treatment table

Accessible during game:

Spineboard and cervical stabilizers

Crutches

Splinting devices

Extremity immobilizers: knee, ankle, elbow, etc.

Phone with long distance service

Ambulance on-call

X-ray facility at Stanford Hospital (located on campus)

**Host athletic trainer will be on-site

**Physician will be on-call

[Return to Visiting Teams Sport Table](#)

Softball

Staff Coverage:

Graduate Assistant - Softball Athletic Trainer

Team Physician:

Dr. Robert Gamburd

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Game:

At softball diamond:

10 gallon cooler of water

Cups

Cooler of ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

List of emergency numbers

Other supplies available upon request

Game Day:

In locker room:

10 gallon cooler of water

Cups

Cooler of ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Taping and Treatment tables

Towels

In dugout:

10 gallon cooler of water

Cups

Cooler of ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Towels

In bullpen:

10 gallon cooler of water

Cups
Cooler of ice bags
Towels

Accessible during game:

Spineboard and cervical stabilizers
Crutches
Splinting devices
Extremity immobilizers: knee, ankle, elbow, etc.
Phone with long distance service
Ambulance on-call
X-ray facility at Stanford Hospital (located on campus)

****Host athletic trainer will be on-site**

****Physician will be on call**

[Return to Visiting Teams Sport Table](#)

Men's and Women's Swimming & Diving

Staff Coverage:

Trainer Jim Liukkonen - Men's Swimming & Diving Athletic

Trainer Dava Reeder - Women's Swimming & Diving Athletic

Team Physician:

Dr. Robert Gamburd - Men's Swimming & Diving

Dr. Michael Fredericson - Women's Swimming &

Diving

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Contest:

No provisions will be available unless requested

Day of Contest:

At deGuerre Pool:

Water

Coolers of ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

List of emergency numbers

Courtesy kit supplies available upon request

Accessible during contest:

Crutches

Splinting Devices

Extremity immobilizers: knee, ankle, elbow, etc.

Phone long distance access

X-ray facility at Stanford Hospital (located on campus)

****Host athletic trainer will be on-site**

****Physician will be on-call**

[Return to Visiting Teams Sport Table](#)

Synchronized Swimming

Staff Coverage:

Kathy Poulsen - Synchronized Swimming Athletic

Trainer

Team Physician:

Dr. Gordon Matheson

Stanford will supply the following:

The main athletic training room will be open normal hours or available

upon request.

Day Prior to Contest:

Provisions available upon request

Day of Contest:

At deGuerre Pool:

Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze pads, Bleach solution)

List of emergency numbers

Courtesy kit supplies available upon request

Cooler of ice bags

Coolers of water

Cups as appropriate

Accessible during contest:

Crutches

Splinting devices

Extremity immobilizers: knee, ankle, elbow, etc.

Phone with long distance service

X-ray facility at Stanford Hospital (located on campus)

**Host athletic trainer will be on-site

**Physician will be on-call

[Return to Visiting Teams Sport Table](#)

Men's and Women's Tennis

Staff Coverage:

Jeff Roberts - Men's Tennis Athletic Trainer

Graduate Assistant - Women's Athletic Trainer

Team Physician:

Dr. Gordon Matheson

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Contest:

No provisions will be available unless requested

Day of Contest:

At Stanford Tennis Stadium:

Water
Coolers of ice bags
Biohazard Kit (Contains: Gloves, Sharps' container,
Spill kit, Gauze pads, Bleach solution)
List of emergency numbers
Towels
Courtesy kit supplies

Accessible during contest:

Crutches
Splinting Devices
Extremity immobilizers: knee, ankle, elbow, etc.
Phone long distance access
X-ray facility at Stanford Hospital (located on campus)

**Host athletic trainer will be on-site

**Physician will be on-call

[Return to Visiting Teams Sport Table](#)

Men's and Women's Cross Country
Men's and Women's Track & Field

Staff Coverage:

Athletic Trainer Eric Buckman - Men's Cross Country/Track & Field

Field Athletic Trainer Kathy Poulsen - Women's Cross Country/Track &

Field Athletic Trainer Graduate Assistant - Men's and Women's CC/Track &

Team Physician:

Dr. Michael Fredericson

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Meet:**At competition site:**

Cooler of water

Cups as appropriate

Cooler of ice bags

List of emergency numbers

Day of Meet:**At competition site:**

10 gallon cooler of water

Cooler of ice bags

Cups

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Taping and Treatment tables

Towels

Courtesy taping supplies

Hydrocollator %

Electrical Stimulation %

Ultrasound %

% = For Track & Field Meets Only

Accessible during meet:

Crutches

Splinting devices

Extremity immobilizers: knee, ankle, elbow, etc.

X-ray facility at Stanford Hospital (located on campus)

Spineboard and cervical stabilizers %

Sports chair %

% = For Track & Field Meets Only

****Host athletic trainer will be on-site**

****Physician on site for major competitions. Physician will be on-call for all other meets.**

[Return to Visiting Teams Sport Table](#)

Men's and Women's Volleyball

Staff Coverage:

Kathy Poulsen - Women's Volleyball Athletic Trainer

Graduate Assistant - Men's Volleyball Athletic Trainer

Team Physician:

Dr. Gerald Keane - Men's Volleyball

Dr. Elaine Lambert - Women's Volleyball

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Game:

At competition site:

10 gallon cooler of water
 Cups
 Cooler of ice bags
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 Towels
 List of emergency numbers
 Other supplies available upon request

Game Day:

In locker room:

10 gallon cooler of water
 Cooler of ice bags
 Cups
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 Hydrocollator
 Taping and Treatment tables
 Towels
 Courtesy taping supplies

At end of bench:

10 gallon cooler of water
 Cooler of ice bags
 Cups
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 Towels

Accessible during game:

Spineboard and cervical stabilizers
 Crutches
 Splinting devices
 Extremity immobilizers: knee, ankle, elbow, etc.
 Phone with long distance service

X-ray facility at Stanford Hospital (located on campus)

****Host athletic trainer will be on-site**

****Physician will be on-call**

Return to Visiting Teams Sport Table

Men's and Women's Water Polo

Staff Coverage:

Jim Liukkonen - Men's Water Polo Athletic Trainer

Graduate Assistant - Women's Water Polo Athletic

Trainer

Team Physician:

Dr. Robert Gamburd - Men's Water Polo

Dr. Elaine Lambert - Women's Water Polo

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Game:

At deGuerre Pool:

Provisions available upon request.

Game Day:

In main athletic training room prior to game:

Water

Ice bags

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

List of emergency numbers

Hydrocollator

Taping and Treatment tables

Towels

Other modalities and supplies available upon request

At deGuerre Pool:

10 gallon cooler of water

Cooler of ice bags

Cups as appropriate

Biohazard Kit (Contains: Gloves, Sharps' container,

Spill kit, Gauze

pads, Bleach solution)

Towels

**Host athletic trainer will be on-site

**Physician will be on-call

[Return to Visiting Teams Sport Table](#)

Wrestling

Staff Coverage:

Graduate Assistant - Wrestling Athletic Trainer

Team Physician:

Dr. Paul Ford

Stanford will supply the following:

The main athletic training room will be open normal hours or available upon request.

Day Prior to Meet:

At competition site:

Cooler of water

Cups

Cooler of ice bags
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 Towels

Day of Meet:

In main athletic training room prior to meet:

Water
 Ice bags
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 List of emergency numbers
 Hydrocollator
 Taping and Treatment tables
 Towels
 Other modalities and supplies available upon request

At competition site:

10 gallon cooler of water
 Cooler of ice bags
 Cups
 Biohazard Kit (Contains: Gloves, Sharps' container,
 Spill kit, Gauze pads, Bleach solution)
 Towels

Accessible during contest:

Spineboard and cervical stabilizers
 Crutches
 Splinting devices
 Extremity immobilizers: knee, ankle, elbow, etc.
 Phone with long distance service
 Ambulance on-call
 X-ray facility at Stanford Hospital (located on campus)

****Host athletic trainer will be on-site**

****Physician will be on-call**

[Return to Visiting Teams Sport Table](#)

EMERGENCY NUMBERS:

Stanford Hospital Emergency Room	(650) 723-2248
Athletic Training Room	(650) 723-1213 (650) 723-1214 (650) 725-3793
Maples Training Room	(650) 723-5011
Ford/Burnham	(650) 723-9397

[Return to Visiting Teams Sport Table](#)

[Return to Stanford Athletic Training Home Page](#)

The Stanford Athletic Training Program maintains a very high standard of quality in its performance and commitment to the student-athlete. In order to maintain this standard, the training room relies on the performance of its physicians, full-time staff, and graduate assistant athletic trainers. The training room employs seven graduate assistants. These graduate assistants are exposed to all facets of athletic training over the course of 2 years at Stanford University. The experience at Stanford University prepares the graduate assistant for an occupation in athletic training or other health-related field. For information about the Stanford Athletic Training graduate assistantship, please browse the information below.

How to Become a Graduate Assistant at Stanford University

Stanford University selects its graduate assistants from a pool of applicants provided by San Jose State University (SJSU). SJSU is an NATA accredited graduate program that provides graduate assistants to area high schools, colleges, and universities. In order to become a Stanford graduate assistant one needs to apply to SJSU Graduate Studies. Once accepted by SJSU Graduate Studies, applications are reviewed by both SJSU and Stanford University. To find out more about the Graduate Athletic Training Program at SJSU please visit the following: [SJSU Graduate Athletic Training Program](#)

Role of the Stanford University Graduate Assistant Athletic Trainer

The goal of the Stanford Athletic Training Department is to supplement the classroom work of the graduate assistant with a responsibility driven, learning environment. Therefore, a graduate assistant athletic trainer at Stanford University is given a large amount of

responsibility. The responsibilities of the graduate assistant encompass the six domains of athletic training.

- Manage all health care aspects of assigned sports teams. Stanford University Athletics includes 34 varsity sports and over 800 student-athletes. For more information on teams and event coverage, see the visiting teams Web page.
- Schedule appointments with physicians, radiology, and nuclear medicine
- Educate undergraduate Stanford Sports Medicine interns (SMIP program)
- Assist director of rehabilitation with daily appointments
- Coordinate event coverage for home and away events
- Assist staff with conference tournament hosting responsibilities
- Liaison between athlete, coach, and physician
- Training Room maintenance
- Aid with pre-participation physical examinations
- Evaluate and treat injuries including first-aid care

Future Educational Opportunities

Even though graduating from San Jose State University with a masters degree in Kinesiology seems like the end of one's educational career, it is important to remember that there are other options available. There are also a number of other programs that an athletic trainer with a masters degree might also want to pursue. These educational opportunities include the below programs. Choosing a program allows you to see a list of California Colleges/Universities that offer that program:

- Physical Therapy (Masters or Doctorate) - found on Continuing Education page
- Physician's Assistant (Masters) - found on Continuing Education page
- Medical School (AAMC Accredited) - found on Continuing Education page
- Ph.D. Programs in Educational Administration - see below
- Ph.D. Programs in Sports Medicine - see below

Ph.D. Programs in Educational Administration

Azusa Pacific University

School of Education and Behavioral Studies

Education Administration

901 East Alhambra, P.O.Box 7000

Azusa, CA 91702-7000 U.S.A.

Click to send E-mail to: gradcent@apu.edu

Phone: 1-800-TALK-APU

Fax: 1-626-815-5445

Degrees Offered:

M.A. - Education Administration;

Ph.D. - Educational Leadership and Administration

Claremont Graduate University

Center for Educational Studies

Education

150 E. Tenth St

Claremont, CA 91711 U.S.A.

Click to send E-mail to: ethel.rogers@cgu.edu

Phone: 1-909-621-8317

Fax: 1-909-621-8734

Degrees Offered:

Ph.D.;

Professional Administrative Credential

Research Areas: Educational policy issues; Public school administration.

Stanford University

School of Education

Social Sciences and Educational Practice

c/o Graduate Admissions Office, Room 137, Old Union

Stanford, CA 94305-3096 U.S.A.

Click to send E-mail to: ck.gaa@forsythe.stanford.edu

Phone: 1-650-723-4891

Degrees Offered:

Ph.D. - Higher Education;

A.M., Ph.D. - Policy Analysis;

A.M. - Evaluation;
A.M., Ph.D. - International Comparative Education;
A.M. - International Educational Administration and Policy Analysis;
A.M., Ph.D. - Social Sciences in Education Interdisciplinary Program;
Ph.D. - Anthropology of Education;
Ph.D. - Economics of Education;
Ph.D. - History of Education;
Ph.D. - Philosophy of Education;
Ph.D. - Sociology of Education;
A.M. - Gender Studies

University of California, Los Angeles (UCLA)

Graduate School of Education and Information Studies

Educational Research Programs

1009 Moore Hall, Box 951521

Los Angeles , CA 90024-1521 U.S.A.

Click to send E-mail to: info@gseis.ucla.edu

Phone: 1-310-825-8326

Fax: 1-310-206-6293

The Department of Education offers four degree programs, M.A., M.Ed, Ed.D, and Ph.D.

Degrees Offered:

M.A. or Ph.D. - Higher Education and Organizational Change;
M.A. or Ph.D. - Advanced Quantitative Methods;
M.A. or Ph.D. - Educational Research Methods;
M.A. or Ph.D. - Comparative Education;
M.A. or Ph.D. - Ethnic Studies;
M.A. or Ph.D. - Cultural Studies;
M.A. or Ph.D. - Philosophical/Historical Studies;
M.A. or Ph.D. - Learning and Instruction;
Ph.D. - Leadership;
Ph.D. - Policy Studies;
Ph.D. - Curriculum and Teaching Studies;
Ph.D. - Psychological Studies in Education;
Ph.D. - Special Education (Joint degree with CSULA)

University of Southern California

Education

Educational Policy and Organization
Waite Phillips Hall 801, 3470 Trousdale Parkway
Los Angeles, CA 90089-0031 U.S.A.
Click to send E-mail to: ferris@mizar.usc.edu
Phone: 1-213-740-2606
Degrees Offered:
M.S. - Educational Policy, Planning and Administration;
Ph.D.- Educational Policy and Organization

Ph.D Programs in Sports Medicine

University of Virginia
Curry School of Education
Department of Human Services
Health & Physical Education Program Area
Doctoral Degree: Emphasis in Sports Medicine Program Description
Web site located at:
<http://curry.edschool.Virginia.EDU/curry/dept/edhs/hlthpe/sprtmed/>

Temple University
Students may earn a Master's of Education (MEd) in the National Athletic Trainers Association (NATA) Graduate Athletic Training program or a Doctoral degree (PhD).
Web site located at:
<http://www.temple.edu/SPORTMED/>

[Return to Stanford Athletic Training Home Page](#)

Introduction

This web page is dedicated to the Stanford University Sports Medicine Internship Program (alias SMIP). This page was designed to provide some general information about SMIP, as well as inform the user about how to apply to the program. The following sections can be found on this page:

- [Welcome](#) (general description about SMIP)
- [Program Format](#) (some logistics about SMIP)
- [Program Expectations](#) (expectations of the student intern)
- [Application Requirements](#) (list of requirements for the applicant)
- [Application](#) (copy of SMIP application)

[Return to Stanford Athletic Training Home Page](#)

Welcome to the Stanford University Sports Medicine Internship Program

This Sports Medicine Internship Program (S.M.I.P.) has been developed to expose interested undergraduate students of Stanford University to various career options. In conjunction with Stanford Health Services (SHS) and the Stanford Athletic Department, the purpose of the Athletic Treatment Center is to provide quality medical care to all 33 varsity athletic teams which Stanford currently supports. This medical care includes athlete education, injury prevention, injury

management, consultation and rehabilitation by a professional staff of certified athletic trainers (ATC's), physical therapists and physicians from Stanford Health Services.

As a sports medicine intern, undergraduates will have the opportunity to work with national caliber teams while acquiring knowledge that is valuable to all health care fields. By definition, athletic training is the art and science concerned with athletic injury prevention, evaluation, treatment and rehabilitation. Working in the Athletic Treatment Center, interns will learn the importance of injury prevention, apply appropriate rehabilitation techniques, and effectively evaluate and treat a wide variety of athletic injuries. In addition, one will gain confidence in decision making, develop critical thinking skills, obtain leadership abilities and meet new people.

The S.M.I.P. requires a three year commitment to complete. Each year there are specific requirements, or competencies which must be completed in order to stay an active member of the program. Many of these competencies will be 'hands on' educational experiences which will require practice and some research on the part of the student, while other skills will be taught in an educational forum environment. In addition, some unique experiences outside of the Athletic Treatment Center such as following physicians on daily rounds, observing orthopedic surgical procedures, visiting physical therapy and chiropractic clinics, as well as athletic training rooms of local college and professional teams, will be included at various times during the program.

We hope that you will find the Sports Medicine Internship Program enhances your education as well as exposes you to an interesting, exciting and ever-changing career in sports medicine. The Sports Medicine Internship Program handbook is being created to direct and inform the student interns of various policies, procedures and expectations of our program. Please consult your handbook frequently to answer many of your questions. However, always feel free to ask any of the professional staff questions when they arise. Always remember, in order to be successful it is vital that those of us working in the Athletic Treatment Center communicate at every level to establish

rapport and a healthy working environment.

[Back to Introduction](#)

[Return to Stanford Athletic Training Home Page](#)

Program Format

As previously mentioned, this program requires a three year commitment to complete. In order to satisfy the requirements set forth by the Stanford University Athletic Training Department in a timely fashion, the S.M.I.P. has been divided into a nine-quarter format. Clinical experiences, competencies and objectives are set up as to require more responsibility from the student as they progress through the internship.

Applications for the S.M.I.P are accepted during spring in preparation for the fall quarter, when the program officially begins. The S.M.I.P. is divided up as follows:

First Quarter- Observation and Basic Skill Acquisition

The first quarter is a learning experience for the intern and is a part of the formal acceptance process. The student will be asked to devote a minimum of ten hours a week to skill acquisition and to working in the clinic. The hours will consist of varied experiences including the learning of basic taping skills, knowledge in the use of modalities, first aid and emergency procedures, as well as daily treatment center operation. At the end of the first quarter the intern will be evaluated on: grades, skill acquisition, an interview and staff evaluation. This phase of the program has a two-fold purpose: 1) It allows the potential intern to participate and observe first hand to see if the program suits their needs and career objectives, and 2) it affords the professional staff the opportunity to evaluate the interns.

Second Quarter

Once the student has been selected and formally invited to continue in the program they go through a probationary period. The time commitment during this quarter is 15-17 hours a week. The student will have the opportunity to rotate through a variety of experiences during this time period. New skills will be acquired in addition to practicing and demonstrating skill competency of those already obtained in the first quarter. In addition, the student will be expected to function and meet responsibilities as a fully accepted intern. The intern is also expected to attend educational inservices given by the professional staff, graduate students or guest speakers in an effort to continue the education process. At the end of the quarter the student will be evaluated for advancement into the next phase of the program.

Professional Phase- Quarters 3-9

The seven remaining quarters of the program function to expose the intern to as many clinical and educational experiences as possible, thereby broadening their base of knowledge in meeting the challenges of a potential career in a sports medicine related profession. Three tools have been created to assist the student: a skills competency manual, in-service sessions taught by sports medicine professionals and a sports medicine course. During this period, interns are encouraged to register for Human Biology 97Q if at all possible. This introductory seminar class, "Critical Insights in Sports Medicine", is taught by Dr. Gordon Matheson, Director of Stanford Sports Medicine and is only offered in the Winter quarter. "Critical Insights in Sports Medicine" will expose the intern to a curriculum of 8-10 topics related to athletes and athletic injury, presented in a format of exams, guest lecturers, oral and written presentations, practical experience and lecture.

The time commitment of these quarters to the Athletic Treatment Center is 17-20 hours per week. During this time, in-depth skills and understanding of athletic related injury and recovery are explored. The student will be expected to have a complete understanding of daily treatment center operations and be capable of managing health care concerns of an assigned team, should an opportunity arise.

The student intern will be evaluated each quarter. Performance, goals and concerns will be discussed. Satisfactory evidence of progress must

be evident to continue in the program. A 2.5 G.P.A. (cumulative) must be maintained at all times to remain in the program. Failure to progress or falling below the 2.5 minimum will be handled by a one quarter probationary period, followed with a review by the Head Athletic Trainer and Director of the S.M.I.P. to evaluate the intern's progress in regaining the minimum G.P.A.

Internships by nature necessitate initiative. During the course of the program, remember to take advantage of every educational opportunity that comes along. Throughout the entire length of the internship, not a single day should go by without gaining another valuable piece of knowledge.

[Back to Introduction](#)

[Return to Stanford Athletic Training Home Page](#)

Program Expectations

The professional staff hopes that you will find working in the Athletic Treatment Center as a sports medicine intern a very exciting and educationally stimulating experience. Nearly every day will afford you the opportunity to learn a new skill or technique in handling operations within the clinical environment. However, along with this excitement also comes expectations which the sports medicine intern must be able to meet on a daily basis.

With so many people working together in the Athletic Treatment Center to achieve the same goal, one thing will become very obvious. Each and every person is outstanding in their own individual way. For those interns with previous sports medicine experience, this will be no time to rest on past achievements. You will be expected to perform at the highest level possible in both the classroom and the clinical setting. As is true for each member of the professional staff, the ultimate goal for each day should be to strive for excellence in every way possible. There

is no room for being “average” when caring for the athletic teams of Stanford University. In addition, “average” should not be a word used to describe the work ethic and enthusiasm of the intern. In such a beautiful facility and with so many tools to make work non-routine, take pride in the Athletic Treatment Center. Expect and demand that everyone treat it as if it were their own. Encourage peers to recognize when things are out of place and seeing that jobs get done. Everyone must communicate, help and care for each other in order for the team to be successful. To do otherwise implies that you do not take your position as part of the Stanford sports medicine team seriously.

Time spent in the Athletic Treatment Center should be treated as both a class and a job. That is, it is a learning situation, and everyone is expected to show up as scheduled. At times, everyone is asked to volunteer for certain events or duties. These opportunities should be met with enthusiasm as it provides exposure to many different environments in which to learn. In addition, interns are expected to be inquisitive and ask appropriate questions as well as take initiative and not have to be told what to do all the time. As you gain experience, interns will be expected to demonstrate leadership skills among peers. Also, everyone will be expected to pitch in and make sure everyday and weekly chores do not become the responsibility of certain individuals. If these principles are recognized for their importance, there will seldom be “dead” time with nothing to do.

Rest assured, student interns will never be put in a position in which they are not prepared to handle. That situation of being unprepared can only foster a sense of insecurity from the athlete and from yourself. However, it is also important that the intern never put themselves in a position of faking knowledge. Do not be party to handing out misinformation. If the answer isn't known, accept that fact and ask someone for help. The athlete will appreciate an honest answer, even if it is “I don't know.”

A great deal of learning and knowing how the Athletic Treatment Center operates will be done on your own and with the help of your peers. It will be up to you to seek help if you are having difficulty with a practical skill or understanding proper procedures. Those that succeed

in this program will be the sports medicine interns that fit into the above expectations, are able to communicate effectively, ask appropriate questions and have helped themselves to get ahead.

[Back to Introduction](#)

[Return to Stanford Athletic Training Home Page](#)

Application Requirements

Return completed application with:

- Two letters of recommendation
- A one-page typed essay stating your purpose and goals in applying for the internship program
- Copy of current CPR certification
- Current transcripts of college credits completed or upon graduation from high school

Return completed application and required materials to:

Michael Lahaie
Sports Medicine Internship Program Director
Arrillaga Family Sports Center
Stanford University
(650) 725-3793
e-mail: lahaieat@leland.stanford.edu

[Back to Introduction](#)

[Return to Stanford Athletic Training Home Page](#)

Student Athletic Training Internship Program **Application**

Name:	Date of Application:
Age:	Date of Birth:
Year in School:	Projected Grad Date:
Registration #:	Social Security #:
Campus Phone:	Permanent Phone:

Campus Address:

Permanent Address:

Athletic Training Experience (High School, College, Clinic):
--

Other Related Experience:

Job Experience (Current and past employment with inclusive dates):
--

Hobbies, Interests, and Sport Experience:

Name: Referral Source: Address: Phone:	Name: Referral Source: Address: Phone:
---	---

[Return to Stanford SMIP page](#)

Magnetic Resonance Imaging (MRI) is a technique used to analyze the anatomical structures of the body. These magnetic resonance images are capable of showing abnormalities in soft-tissue, which makes MRI a very useful diagnostic tool. MRI's are capable of creating images in any plane. This allows an anatomical structure to be "virtually sliced" in order to look at any structure from almost any angle. MRI's are read by a radiologist, a specialist who has had training in detecting abnormalities/changes in the tissue. The results of the radiologist's findings are then reported to a physician who determines the appropriate course of treatment based on the radiologist's findings.

Types of MRI's

There are many different types of magnetism used in MRI's and many different ways of shooting an MRI. MRI's are created through a very complex procedure. It is not necessary to completely understand how an MRI is created, but a basic understanding should be obtained.

MRI's work based on the fact that protons are affected by magnetic fields. All protons spin (creating a magnetic field). When an individual is placed in an MRI machine, they are being placed inside a magnetic field. This new magnetic field alters how the protons are moving. This alteration of movement is picked up by bouncing radio frequency waves off these protons. A computer assesses the radio frequency waves and creates an image. There are many different features that can be done which affect the appearance of the MRI. Two of these features are T1 & T2 weighting.

T1 and T2 are "relaxation rates" which determine how the body's signal is interpreted by the computer. By shooting the images at these two different settings, it creates a difference in the way fluid accumulation appears on the MRI. A T1 weighted image shows fluid accumulation to be black (darker) in color. A T2 weighted image shows fluid accumulation to be white (lighter) in color. Since fluid accumulation usually represents some form of tissue change, it is very significant that an MRI can detect the degree of normal or abnormal fluid accumulation present.

Images

Located below are some examples of MRI's. There will be two copies of the same image below. One image will be untouched, the other will have arrows drawn to point out certain findings. The "touched-up" images will also have an accompanying report, which explains pertinent information.

To view in larger format, please click on the appropriate image.

Note: Adjusting the brightness of the monitor may make the image more visible.

Cervical Spine

Chest

Knee **Knee** **Shoulder**

Special Thanks to Chris Beaulieu, M.D., Ph.D., for his help with the Magnetic Resonance Images used on this Web page.

Note: Some of the above images do not have superior resolution. Attempts are being made to solve this problem. Also, more images will be added to this Web page shortly.

[Return to Stanford Athletic Training Home Page](#)

[Return to Stanford Sports Medicine Home Page](#)

MRI of an Uninjured Cervical Spine

Below is an image of an uninjured cervical spine. While looking at this image, remember that this is a slice of the cervical anatomy (close to the center of the spinal column). Therefore, if you are looking for structures that are more distal from the body's midline, you probably won't see them. Study the image, and when you are done, return to the MRI home page to view the MRI of an injured cervical spine (click on image below "injured cervical spine").

[Return to MRI Home Page](#)

Injured Cervical Spine

Study the image below for any abnormalities, then return to previous page and click "Touched-up" image. This will tell you what is wrong with the below MRI. Hint: The image is T2 weighted.

[Return to MRI Home Page](#)

Touched-Up MRI of Injured Cervical Spine

Below is an MRI of a fractured cervical vertebra. Notice how the body of the cervical vertebra is putting pressure on the spinal cord (light grey in color).

[Return to MRI Home Page](#)

Injured Chest

Study the image below for any abnormalities, then return to previous page and click "Touched-up" image. This will tell you what is wrong with the below MRI. Hint: The image is T2 weighted.

[Return to MRI Home Page](#)

Touched-Up Image of Injured Chest

Below is an MRI of a torn Right pectoralis major. Located inside the circle is a white (lighter) area. This white area is fluid accumulation in the pectoralis major, indicative of a tear. Located in the bottom right corner of the MRI is a small image indicating the exact angle/location of the MRI shown.

[Return to MRI Home Page](#)

Injured Knee

Study the image below for any abnormalities, then return to previous page and click on the "Touched-up" image. This will tell you what is wrong with the below MRI. Hint: The image is T2 weighted.

[Return to MRI Home Page](#)

Touched-Up MRI of Injured Knee

Below is an MRI of a torn ACL. The tissue in the circle would normally appear as a straight black line originating from the anterior tibia and attaching at the posterior aspect of the femoral condyle. As you can see, the tissue is light in color (fluid accumulation) and is also frayed (looks like mop ends). This a typical MRI of a torn ACL.

[Return to MRI Home Page](#)

MRI of an Uninjured Knee

Below is an image of an uninjured knee. If you think that some of the structures of the knee are missing, you're right. Remember that an MRI only takes a slice of the anatomical structure. Keeping this in mind, look below and study the structures shown in the image. When you are done studying, return to the MRI home page to view the MRI of an injured knee (click on image below "injured knee").

[Return to MRI Home Page](#)

Injured Knee

Study the image below for any abnormalities, then return to previous page and click "Touched-up" image. This will tell you what is wrong with the below MRI. Hint: The image is T2 weighted.

[Return to MRI Home Page](#)

Touched-Up MRI of Injured Knee

Below is an MRI of a torn PCL. Take a look at the tissue in the circle. This tissue does not produce a "black line" as is depicted in the "normal MRI." Instead, the area appears to be light grey (lighter), and also non-linear in nature. This is evidence that swelling/fluid accumulation is present, and that the ligament has indeed been torn.

[Return to MRI Home Page](#)

MRI of an Uninjured Shoulder

Below is an image of an uninjured shoulder. Study the image, and when you are done, return to the MRI home page to view the MRI of an injured shoulder (click on image below "injured shoulder").

[Return to MRI Home Page](#)

Injured Shoulder

Study the image below for any abnormalities, then return to previous page and click on the "Touched-up" image. This will tell you what is wrong with the below MRI. Hint: The image is T2 weighted.

[Return to MRI Home Page](#)

Touched-Up Image of Injured Shoulder

Below is an MRI of a torn labrum. The area in the circle shows the shoulder labrum. This should be a solid dark (grey) triangle. Instead, the area in the circle shows a white line going through the middle of the labrum. This white color is fluid that has accumulated in the space of the labral tear.

[Return to MRI Home Page](#)

Obtaining continuing education units (CEU's) is a requirement of many professional health organizations including the National Athletic Trainer's Association. CEU's may be obtained by taking courses related to athletic training from Colleges or Universities. CEU's may also be received by attending a meeting or symposium, or by attending a seminar from an approved provider. For a complete listing of the NATABOC's CEU guidelines, please check out their web site at <http://www.nataboc.org>. The goal of this Web page is to provide a list of the opportunities to obtain CEU's in the state of California. This Web page is conveniently divided into the following sections:

- NATABOC Approved Providers
- Colleges/Universities that have programs in or related to athletic training.
- Bulletin board listing some of the statewide symposiums, conferences, and meetings that will offer CEU's to participants.

NATABOC Approved Providers in California **(11/1/98)**

Academy Medical Systems, Inc.
Neal Beissert
4000 Palos Verdes Drive North Suite 108
Rollins Hills Est, CA 90274
(310) 544-3500
<http://academymedical.com/index.htm>

American Academy of Family Practice

Warren Scott, MD
Kaiser Permanente Medical Center - Sports Medicine 900 Kiely
Blvd.
Santa Clara, CA 95051
(408) 236-4487

American Academy of Health & Fitness Professionals
Michael K. Jones, MS, RPT
333 Estudillo Ave Suite 206
San Leandro, CA 94577
(800) 572-2237

American Academy of Pain Management
Richard S. Weiner, PhD
13847 Mono Way #A
Sonora, CA 95370
(209) 533-9744
<http://www.aapainmanage.org>

American Back Society
Sara Fighter
2647 E. 14th St. Ste. 401
Oakland, CA 94601
(510) 536-9929
<http://www.americanbacksoc.org>

American Chiropractic Board of Sports Physicians
Joseph Horrigan, DC, DACBSP
6222 Wilshire Blvd. Ste. 313
Los Angeles, CA 90048
(213) 932-1855

American Institute of Massage Therapy, Inc.
M.K. Hungerford, Ph.D.
Sports Massage Training Institute 2156 Newport Blvd.
Costa Mesa, CA 92627
(714) 642-0735

Apex Integrated Resources

Sara Shapiro, MPH, PT
1601 Ocean Ave Suite 33
San Francisco, CA 94112
(415) 239-0755

Aquatechnics Consulting Group
Marilou Moschetti, PTA
138 Brooktree Ranch Road
Aptos, CA 95003
(408) 688-2696

Arrowhead Sports Medicine - Physical Therapy
James M. Syms, ATC
PO Box 406
Lake Arrowhead, CA 92352
(909) 337-9234

Ather Sports Injury Clinic, Inc.
Donald Chu or Leta Stagnaro
20996 Redwood Rd.
Castro Valley, CA 94546
(510) 537-0272
<http://www.tennisone.com/Atherclinic.html>

Athletic Conditioning and Injury Center Physical Therapy Center,
Inc. (A.C.I.C.)
Ken Yoshino, PT, ATC
4950 Barranca Pkwy #202
Irvine, CA 92714
(714) 733-2242

Athletic Injury Clinical Seminars
Robert Moore, PhD, PT, ATC
Dept. of Physical Education San Diego State University
San Diego, CA 92182
(619) 594-6952

Atlas International
Rusty Hammett

8231 Alpine Ave Suite 7
Sacramento, CA 95826
(916) 454-3447

Back To Golf Seminars
H.J. Ferrante, PT
3485 W Shaw Ave Suite 100
Fresno, CA 93711
(209) 271-1222

Baseball Team Medicine
Ned Bergert, ATC
c/o Anaheim Angels P.O. Box 2000
Anaheim, CA 92803
(714) 937-7243
<http://www.probaseballteamdoctors.com/AnaheimAngels.html>

Betty Ford Center
V'anne Singleton
39000 Bob Hope Dr.
Rancho Mirage, CA 92270
(619) 773-4108
<http://www.bettyfordcenter.org>

Biosensory Systems
Beth Rothenberg
PO Box 1764
Santa Monica, CA 90406
(310) 454-7648

California Athletic Trainers' Association (CATA)
Hazel Ando, ATC
9112 McFadden Ave.
Westminster, CA 92683
(909) 594-5611
<http://www.netmktplc.com/cata>

California State University - Northridge
Alice McLaine, ATC

Kinesiology Dept. 18111 Nordhoff St.
Northridge, CA 91330
(818) 885-3205
<http://www.csun.edu>

Century City Hospital
Nancy Franklin
Century City Med Office Bldg Ste 1210 2080 Century Park East
Los Angeles, CA 90067
(310) 201-6781
<http://www.tenethealth.com/CenturyCity>

Contemporary Forums
Pam Jenkins-Wallace, NP, MS
11900 Silvergate Dr
Dublin, CA 94568
(510) 828-7100

Continuing Education Experiences
Emily Lipscomb Batin, PT
9087 Arrow Route, Suite 150
Rancho Cucamonga, CA 91730
(909) 989-5699

Cuesta College
Sue Gin, ATC
P.O. Box 8106
San Luis Obispo, CA 93403
(805) 546-3225
<http://www.cuesta.cc.ca.us>

Desert Orthopedic Center
Bill Durney
39000 Bob Hope Dr Lakeview Bldg
Rancho Mirage, CA 92270
(760) 568-2684

Dr. Lois Labonville
Dr. Lois Labonville

6440 Lake Arrowhead Dr.
San Diego, CA 92119
(619) 698-3424

Felder Seminars
Charles R. Felder, PT, SCS, ATC
1971 E. 4th St. Ste. 210
Santa Ana, CA 92705
(714) 836-9088

FWATA - District 8
Sandy Shultz, ATC
C/O FWATA PO Box 3567
La Habra, CA 90632
(310) 694-0622

Green Hospital of Scripps Clinic
Johan Otter, P.T., O.C.S.
Sports Medicine Dept 10820 North Torrey Pines Rd
La Jolla, CA 92037
(619) 554-8904

Hayashi, Sakai and Dahms
Mel M. Hayashi, MD
339 S Moorpark Rd
Thousand Oaks, CA 91361
(805) 497-9481

Health and Fitness Institute
Julie Pryde, MS, PT, SCS,
2231 Galaxy Ct
Concord, CA 94520
(510) 685-1779

Health Potentials
Michelle H. Cameron, PT
6131 Thornhill Dr
Oakland, CA 94611
(510) 339-2135

HealthSouth - Inglewood
Clive Brewster, MS, RPT
501 East Hardy St., Ste. #100
Inglewood, CA 90301
(301) 674-5213

Huntington Beach Hospital
Priscilla O'Malley
17772 Beach Boulevard
Huntington Beach, CA 92647
(714) 993-6553
<http://www.huntingtonbeachhosp.com>

Idea Independent Study
Juliane Gendron
6190 Cornerstone Ct.. E. Ste 204
San Diego, CA 92121
(619) 535-8979

IDEA, Inc.
Michelle Freiberg
6190 Cornerstone Ct E Suite 204
San Diego, CA 92121
(619) 535-8979

Ilana Parker, PT, CFT
Ilana Parker, PT, CFT
2170 Filbert St. Ste 103
San Francisco, CA 94123
(415) 922-7223

Institute for Natural Resources (INR)
Richard Colman, Ph.D
PO Box 4218
Berkeley, CA 94704
(510) 450-1650

Integrating Function, LLC

Brian Hauswirth, PT
15 Wallare Way
San Rafael, CA 94903
(415) 883-1620

Jack Dabert/Chris Kline
Jack Dabbert/Chris Kline
7491 Comet View Ct.
San Diego, CA 92120
(619) 582-4073

Jim Davis Connection, L.L.C. (The)
Brian F. Barry, ATC
3160 Redhill Ave.
Costa Mesa, CA 92626
(714) 662-4402

Jones Institute
Randall Kusunose, PT, OCS
1653 Willowhaven Rd
Encinitas, CA 92024
(619) 942-647

Kaiser Foundation Rehab. Ctr.
Hink Mangold
c/o Physical Therapy Dept 975 Sereno Dr
Vallejo, CA 94589
(707) 648-6232

Kaiser Permanente Physical Therapy Residency Program
Carol J. Tichenor
27400 Hesperian Blvd
Hayward, CA 94545
(510) 441-4259

Kaiser Permanente PT Residency Program in Advanced Orthopaedic
Manual Therapy
Carol Jo Tichenor, MA, PT
Advanced Ortho Manual Therapy 27400 Hesperian Blvd

Hayward, CA 94545
(510) 441-4259

Kathol Health and Fitness Consultants
Matthew Lewis Kathol
3664 Grim Ave.
San Diego, CA 92104
(619) 692-3534

Los Angeles College of Chiropractic
Rita M. Pierce, MA
PO Box 1166 1600 E. Amber Valley Dr.
Whittier, CA 90609
(310) 902-3379

Los Angeles Orthopaedic Institute
Domenick J. Sisto, MD
4955 Van Nuys Blvd Suite 615
Sherman Oaks, CA 91403
(818) 905-2222

Manley and Associates
Linda Manley Teahen, MEd, ATC
750 S. Lincoln Ave. Ste. 104-485
Corona, CA 91720
(909) 273-823

McConnell Institute
Siri Kennedy
13856 Bora Bora Way Ste 227
Marina Del Ray, CA 90292
(310) 827-7515

Memorial Hospital Association
Janice Jarboe, RN
Education Dept 1700 Coffee Rd
Modesto, CA 95355
(209) 572-7047

Moves International
Candice Copeland Brooks
PO Box 4083
Mammoth Lakes, CA 93546
(760) 934-0312

Naval Hospital - Camp Pendleton
Joseph L. Moore, M.D.
Sports Medicine Department
Camp Pendleton, CA 92055
(619) 725-1813

Neuro Orthopedic Institute
Bernie Guth, PT
20115 Redwood Rd #24
Castro Valley, CA 94546
(510) 733-5933

Nutrition Dimension, Inc.
Richard A. Kline
Box 6488
Eureka, CA 95502
(888) 781-5388

Ola Grimsby Institute, Inc.
Ola Grimsby
4420 Hotel Circle Court, Suite 210
San Diego, CA 92108
(800) 646-6128

OrthoRx, Inc.
Kathleen J. Grace, RPT, OPA-C
8929 University Center Lane, Suite 200
San Diego, CA 92122
(619) 457-3545

Pacific Coast Seminars
Lynne Oberlander, MA, OTR
P.O. Box 368

Forest Knolls, CA 94933
(415) 488-9070

Pain & Rehabilitation Medical Group (The)
Cindy Conway, ATC
3445 Pacific Coast Hwy #300
Torrance, CA 90505
(310) 325-8054

Palmer College of Chiropractic West
Mary Anne Cedil
90 E. Tasman Dr.
San Jose, CA 95134
(800) 442-4476

Paul Chek Seminars
Paul Chek
565 Pearl Street, Suite 108
La Jolla, CA 92037
(619) 551-8789

Paul Chek Seminars
Pentheia Crozier
565 Pearl Street, Suite 108
La Jolla, CA 92037
(619) 551-8789

Rancho Los Amigos Medical Center
Mei Lee Chapple, PT
7601 E. Imperial Hwy. Harriman Bldg. 223
Downey, CA 90242
(310) 401-6239

Ray R. Padilla, D.D.S.
Ray R. Padilla, D.D.S.
100 S. Vincent Ave., Suite 404
West Covina, CA 91790
(626) 919-4337

Santa Monica Orthopaedic and Sports Medicine Group
Diane Watanabe, ATC
1301 20th Street, Suite 150
Santa Monica, CA 90404
(310) 829-2663

Space Maintainers Laboratory
Dr. Rob Veis
9129 Lurline Ave.
Chatsworth, CA 91311
(818) 998-7460

Sport Foundation (The)
Jim Clover
4444 Magnolia Ave
Riverside, CA 92501
(909) 274-3484

Sport Performance & Rehab Ctr.
Michael V. Adams, MS, ATC, PTA
2040 Brea Canyon Rd., Ste. 106
Diamond Bar, CA 91765
(909) 396-5035

Sports View
Dr. Burton E. Worrell
1685 Westwood Dr.
San Jose, CA 95125
(408) 267-2020

Stanford University
Marc Guillet, PT, ATC
Stanford Univ./Athletic Dept./Sports Medicine Arrillaga Family
Sports Center
Stanford, CA 94305
(650) 723-1214

Stens Corporation
Dr. Phillip Hughes, ATC

6451 Oakwood Dr
Oakland, CA 94611
(510) 339-9053

Tahoe Fracture Spine Institute
Darcy M. Wallace, RN, MN
2201 South St
South Lake Tahoe, CA 96150
(916) 541-3100

United States of America Track & Field (USATF)
Denise Richardson
33 Christamon South
Irvine, CA 92620
(800) 955-6455

University of California - Berkley
Carol Rogers, ATC
Sportsmedicine Memorial Stadium
Berkley, CA 94720
(510) 642-4878

University of California - Los Angeles (UCLA) Extension,
Humanities, Sciences, Social
Sciences
Sheila King, MS
10995 Leconte Ave Rm 714
Los Angeles, CA 90024
(310) 825-7093

University of California - Los Angeles (UCLA) Sports Medicine
Staff
Lorita Granger
Athletics 405 Hilgard Ave
Los Angeles, CA 90024
(310) 206-6104

University of California - San Diego
Pamela Pallas

Office of Continuing Education 9500 Gilman Dr. Dept. 0617
La Jolla, CA 92093
(619) 534-3940

University of Southern California - University Hospital
Brian Chavarin
Center for Athletic Medicine 1500 San Pablo St
Los Angeles, CA 90033
(213) 342-5226

Wahl and Associates
D. Peter Wahl
7297 Ronson Rd, Ste #D
San Diego, CA 92111
(619) 495-577

Wenmat, Inc.
Sabra Martinez
5800 Winding Way
Carmichael, CA 95608
(916) 481-5004

West Coast Ctr. for Orthopedic Surgery & Spts Medicine
Keith S. Feder, MD
1200 Rosecrans Ave Ste 208
Manhattan Beach, CA 90266
(310) 416-9700

Western Orthopaedic Association
Susan Hanf
2975 Treat Blvd., Ste D4
Concord, CA 94518
(510) 671-2164

Wound Care Management Services
Carrie Sussman, PT
Division of Sussman Physical Therapy, Inc. 3904 W. 234 Place
Torrance, CA 90505
(310) 375-8815

Colleges/Universities with Programs Related to Athletic Training

If you are an athletic trainer trying to gain CEU's by taking courses from a College or University remember the following:

- Any course can be taken for credit as long as it falls in one of the five performance domains as defined by the 1995 Role Delineation Study. The five domains are: 1) Prevention of Athletic Injuries 2) Recognition, Evaluation, and Immediate Care of Athletic Injuries 3) Rehabilitation and Reconditioning of Athletic Injuries 4) Health Care Administration 5) Professional Development and Responsibility
- 1.0 CEU is awarded for each credit hour earned

The following is a list of various institutions that have accredited programs in athletic training or a related field. These programs are listed because they are strong candidates for finding classes that will fit in one of the above listed five domains. The programs listed below are all accredited by their national accrediting organization (listed in parentheses):

- Graduate Athletic Training (NATA)
- Undergraduate Athletic Training (CAAHEP)
- Physical Therapy Programs (APTA)
- Physician Assistant Programs (AAPA)
- Medical School (AAMC)

Graduate Athletic Training Education Programs (NATA)

San Jose State University

<http://www.sjsu.edu>

Dept. of Human Performance

One Washington Square
San Jose CA 95192-0054
Leamor Kahanov, ABD, MS.
408.924.3040
408.924.3053 fax
Athletic Training Program
<http://www.sjsu.edu/depts/hup/gradath/gradath.html>

Entry-level (Undergraduate) Athletic Training Educational Programs (CAAHEP)

California State University-Northridge

<http://www.csun.edu>
Dept. of Kinesiology
Northridge, CA 91330-8287
Alice McLaine, MS
818.677.3205
818.677.3207 fax
alice.mclaine@email.csun.edu
Athletic Training Program
<http://www.csun.edu/~at20570/ATEPHome.html>

California State University-Fresno

<http://www.csufresno.edu>
Dept. of P.E. & Human Performance
Fresno, CA 93740-8018
Rebecca Crumpton, EdD
209.278.7094 ext.7049
209.278.7010 fax
rebeccac@csufresno.edu
Athletic Training Program
<http://www.csufresno.edu/pehp/programs>

California State University-Sacramento

<http://www.csus.edu>

Dept. of HPE
Sacramento, CA 95819-2694
Doris E. Flores, MS
916.278.6401
916.278.7664 fax
floresde@csus.edu
Athletic Training Program

<http://www.hhs.csus.edu/HPE/Academics/undergrad/physicaleducation/a>

Accredited Physical Therapy Programs (APTA)

California State University, Fresno

<http://www.csufresno.edu>
Robert K Martin, PhD, PT
Interim Chair
Physical Therapy Department
California State University, Fresno
2345 East San Ramon Avenue
MS-29
Fresno CA 93740-8031
209/278-2022
Fax: 209/278-3635

California State University, Long Beach

<http://www.csulb.edu>
Ray J Morris, MA, PT
Chair
Physical Therapy Department
College of Health and Human Services
California State University, Long Beach
1250 Bellflower Boulevard
Long Beach CA 90840
562/985-4072
Fax: 562/985-4069

California State University, Northridge

<http://www.csun.edu>

George A Wolfe, PhD, PT
Director
Program in Physical Therapy
Department of Health Sciences
California State University, Northridge
Northridge CA 91330-8285
818/677-3101
Fax: 818/677-2045

California State University, Sacramento

<http://www.hhs.csus.edu>

Susan M McGinty, MS, PT
Director
Degree Program in Physical Therapy
California State University, Sacramento
School of Health and Human Services
Sacramento CA 95819-6020
916/278-6426
Fax: 916/278-5053

Chapman University

<http://www.chapman.edu/wilkinson/pt>

Donald L Gabard, PhD, PT
Chair
School of Physical Therapy
Chapman University
333 N Glassell
Orange CA 92666
714/744-7620
Fax: 714/744-7621

Loma Linda University

<http://www.llu.edu>

Larry Chinnock, EdD, PT
Director
Department of Physical Therapy
School of Allied Health Professions

Loma Linda University
Loma Linda CA 92350
909/824-4632
Fax: 909/824-4291

Mount St Mary's College
Cynthia L Moore, MS, PT
Chair
Department of Physical Therapy
Mount St Mary's College
12001 Chalon Road
Los Angeles CA 90049
310/954-4171
Fax: 310/954-4179

Samuel Merritt College
<http://www.samuelmerritt.edu>
Martha J Jewell, PhD, PT
Chair
Department of Physical Therapy
Samuel Merritt College
370 Hawthorne Avenue
Oakland, CA 94609
510/869-6576/6241
Fax: 510/869-6282

University of California, San Francisco
<http://www.ucsf.edu>

San Francisco State University
<http://www.sfsu.edu>

Nancy Byl, PhD, PT
Professor and Director (UCSF)
Chair (UCSF/SFSU)
UCSF/SFSU Graduate Program in Physical Therapy
School of Medicine
University of California, San Francisco
374 Parnassus, Box 0736

San Francisco, CA 94143-0736
415/338-2001 (SFSU)
Fax: 415/338-0907

University of Southern California

<http://www.usc.edu>
Sandra Howell, PhD, PT
Associate Professor and Interim Chair
Department of Biokinesiology & Physical Therapy
University of Southern California
1540 East Alcazar Street
CHP 155
Los Angeles CA 90033
213/342-2900
Fax: 213/342-1515

University of the Pacific

<http://www.uop.edu>
J Carolyn Hultgren, MPH, PT
Chair
Department of Physical Therapy
School of Pharmacy
University of the Pacific
Stockton CA 95211
209/946-2367
Fax: 209/946-2886

Western University of Health Sciences

<http://www.westernu.edu>
Donna Redman-Bentley, PhD, PT
Chair
Department of Physical Therapy Education
Western University of Health Sciences
352 Pomona Mall East
Pomona CA 91766-1854
909/469-5294
Fax: 909/629-7255

Accredited Physician Assistant Programs (American Academy of Physician Assistants)

Charles R. Drew University of Medicine and Science

<http://www.cdrewu.edu>

Physician Assistant Program

College of Allied Health

1621 East 120th Street

Los Angeles, CA 90059

213/563-5879

E-mail: belassit@cdrewu.edu

Stanford University/ Foothill College

<http://www-leland.stanford.edu/dept/medfm/pca/tofc.htm>

Primary Care Associate Program

School of Medicine

703 Welch Road, Suite F-1

Palo Alto, CA 94304-1760

415/723-7043

E-mail: hf.agn@forsythe.stanford.edu

Univ. of California - Davis, Medical Center

Physician Assistant Program

Department of Family Practice

2525 Stockton Blvd, Suite 1025

Sacramento, CA 95817

916/734-3550

University of Southern California

http://www.usc.edu/hsc/medicine/family_med/pa

Primary Care Physician Assistant Program

School of Medicine

1975 Zonal Avenue, KAM B-29

Los Angeles, CA 90033

323/342-1328

Western University of Health Sciences

<http://www.westernu.edu>
Physician Assistant Program
College Plaza
309 East Second Street
Pomona, CA 91766-1889
909/469-5378

Accredited Medical Schools (Association of American Medical Colleges)

University of California - Davis

School of Medicine (<http://www-med.ucdavis.edu/>)
Admissions Office
Davis, CA 95616
(530) 752-2717

University of California - Irvine

College of Medicine (<http://meded.com.uci.edu/>)
P. O. Box 4089
Medical Education Building
Irvine, CA 92717
(800) 824-5388

University of California - Los Angeles

School of Medicine (<http://www.medsch.ucla.edu/>)
Office of Student Affairs
Division of Admissions
Center for Health Sciences
Los Angeles, CA 90095-1720
(310) 825-6081

Drew/UCLA Joint Medical Program

Drew University of Medicine and Science (<http://www.cdrewu.edu/>)
1621 East 120th Street
Los Angeles, CA 90059
(213) 563-4952

University of California - San Diego

School of Medicine (<http://medicine.ucsd.edu/>)
Office of Admissions, 0621
Medical Teaching Facility
9500 Gilman Drive
La Jolla, CA 92093-0621
(619) 534-3880

University of California - San Francisco

School of Medicine (<http://www.som.ucsf.edu/>)
Admissions, C - 200, Box 0408
San Francisco, CA 94143
(415) 476-4044

Loma Linda University

School of Medicine (<http://www.llu.edu/llu/medicine/>)
Associate Dean for Admissions
Loma Linda, CA 92350
(909) 824-4467

University of Southern California

School of Medicine (<http://www.usc.edu/hsc/med-sch/index.html>)
Office of Admissions
1975 Zonal Avenue
Los Angeles, CA 90033
E-mail: medadmit@hsc.usc.edu
(213) 342-2552

Stanford University

School of Medicine (<http://med-www.stanford.edu/school/>)
Office of Admissions
851 Welch Road, Room 154
Palo Alto, CA 94304-1677
(650) 723-6861

Bulletin Board of Events in California

This section contains information about meetings, symposiums, and conventions that are offered in the state of California. If you know of more opportunities to earn CEU's that are not listed below, please contact the Webmaster at smeschke18@hotmail.com

California Athletic Trainers Association Calendar

This is a link to the CATA calendar that contains information about athletic training CEU opportunities.

National Athletic Trainers Association Home Page

This is a link to the NATA home page, once at this page, click on the "Meetings Schedule" button to list symposiums and meetings advertised by the NATA

[Return to Stanford Athletic Training Home Page](#)

The purpose of this Web page is to provide useful links to Web sites related to the athletic training field. It is not the purpose of this page to provide a link to every Web site remotely related to athletic training. Instead, links to Web pages that Stanford Sports Medicine deems the most helpful to athletic training at Stanford University will be listed. For example, not every University/College that has a link to their athletic training program will be listed. However, if the University/College has a feature that sets it apart from other University/College links, it will be placed on this page. Links will be listed under the following categories:

- Professional Organizations
- Athletic Training Programs at Universities/Colleges
- Athletic Training Programs at High Schools
- On-line Professional Journals

Professional Organizations

NATA - The official site of the National Athletic Trainers' Association

District 8 - The official site for NATA District 8

CATA - The official site of the California Athletic Trainers' Association

NATABOC - The official site of the National Athletic Trainers' Association Board of Certification

Athletic Training Programs at Universities/Colleges

[University of Wisconsin-Eau Claire](#) - Site has downloadable video clips of injuries, and X-ray library

[Cal State Chico](#) - This site has 3-D images, X-rays, and more of sports related injuries

Athletic Training Programs at High Schools

On-Line Professional Journals

[Pub-Med](#) - Site has over 10,000 indexed medical journals searchable by author, title, or subject.

[the Physician & Sports Medicine \(on-line\)](#) - Official site has of the Physician & Sports Medicine journal

includes on-line copies of

[Medical Matrix](#) - Index of various medical related journal and Web sites

[Return to Stanford Athletic Training Home Page](#)

APPENDIX B

Stanford Sports Medicine Web Site Survey

Stanford Sports Medicine Web Site Design Survey

Thank you for participating in a survey of the Stanford Sports Medicine Web Site. The information you provide will potentially influence design or content modifications. Please evaluate the web site by answering the following questions. Note: The letters stand for the following: P=Poor, F=Fair, G=Good, VG=Very Good, and E=Excellent.

	P	F	G	VG	E
1. Comprehensiveness of information accessible through the web site.	☐	☐	☐	☐	☐
2. Specificity of the information accessible through the web site.	☐	☐	☐	☐	☐
3. Graphics contained in the web site.	☐	☐	☐	☐	☐
4. Ease of navigation.	☐	☐	☐	☐	☐
5. Text quality (i.e. easy to read?).	☐	☐	☐	☐	☐
6. Writing style (i.e. easy to understand?).	☐	☐	☐	☐	☐
7. Hyperlinks (i.e. easy to find?).	☐	☐	☐	☐	☐
8. Use of color.	☐	☐	☐	☐	☐
9. Aesthetic quality (i.e. pleasing to look at?).	☐	☐	☐	☐	☐
10. Ability to locate the information you want?	☐	☐	☐	☐	☐
11. Quality of MRI jpeg images.	☐	☐	☐	☐	☐
12. Quality of staff, facility, and SMIP photos.	☐	☐	☐	☐	☐
13. Download time (i.e. fast enough?).	☐	☐	☐	☐	☐
14. Usefulness of related links.	☐	☐	☐	☐	☐
15. Usefulness of continuing education components.	☐	☐	☐	☐	☐
16. Usefulness of visiting team information.	☐	☐	☐	☐	☐
17. Usefulness of graduate assistant page.	☐	☐	☐	☐	☐
18. Educational value of MRI web page.	☐	☐	☐	☐	☐
19. Content quality of SMIP page.	☐	☐	☐	☐	☐
20. Overall impression of the web site.	☐	☐	☐	☐	☐

Please complete the following three open-ended questions. In each section, please provide suggestions for improvements or modifications. Your recommendations and comments are greatly appreciated.

1. Would you change the background, graphics, and images used; and if so, how?

2. Would you change anything regarding the writing style or content of the material?

3. Was the web site enjoyable to use? Please explain why or why not.

APPENDIX C

Subject Consent Form

San José State
UNIVERSITY

**College of Applied
Sciences and Arts
Department of Human
Performance**

One Washington Square
San Jose, CA 95192-0054
Voice: (408) 924-3010
Fax: (408) 924-3053

Agreement to Participate in Research

Stanford Sports Medicine Web Site - An Educational Resource

Responsible Investigators:

Shane Meschke, ATC

Bethany Shifflett, Ph.D., Dale Rudd, MS, ATC, Kyle Bodyfelt, MA, ATC

I have been asked to participate in a research study to determine the usefulness of a web site created to inform users about Stanford Sports Medicine (i.e. staff, facilities, provisions), educate undergraduate and graduate assistant athletic trainers, and be a resource in the areas of continuing education and employment.

I will be asked to view the Web site, and then fill out a survey. The survey includes questions regarding content, ease of navigation, usefulness, and aesthetic quality of the Stanford Sports Medicine Web Site. The study will take place from March 22-26, 1999.

Participation in this study will allow the principle investigator (Shane Meschke, ATC) to formulate a more effective way to project information to users interested in Stanford Sports Medicine and the educational components of the web site.

The results of this study may be published. If the material is published, every effort possible will be made to protect subject anonymity. I am aware that data will be kept confidential and destroyed following completion of the study.

Questions about the research may be addressed to Shane Meschke, ATC, principle investigator, at (408) 248-8826. Complaints about the research may be presented to Carol L. Christensen, Ph.D., San Jose State University, Department of Human Performance, Department Chair, at (408) 924-3010. Questions about research, subjects' rights, or research related injury may be presented to Serena Stanford, Ph.D., Associate Vice President for Graduate Studies and Research, at (408) 924-2480.

Consent is granted voluntarily. I understand that there is no compensation or alternate form of testing. I realize that I may refuse to participate in the study or any part of the study. If I decide to participate in the study, I am free to withdraw at any time without prejudice to my relations with San Jose State University or Stanford University. No service, to which I am otherwise entitled, will be lost or jeopardized if I choose to "not participate" in the study.

If I choose to accept the above terms, a copy of this signed and dated form will be given to me for my reference.

- The signature of a subject on this document indicates agreement to participate in the study.
- The signature of a researcher on this document indicates agreement to include the above named subject in the research and attestation that the subject has been fully informed of his or her rights.

The California State University:
Fresno, Bakersfield, Calicut, Chico, Dominguez Hills,
Fullerton, Hayward, Long Beach, Los Angeles, Maritime Academy,
Merced, San Bernardino, San Diego,
San Francisco, San Jose, San Luis Obispo,
Santa Barbara, Sonoma, Stanislaus

Subject's Signature

Date

Investigator's Signature

Date

APPENDIX D

Letters of Consent from Stanford University

Department of Athletics
Stanford University
Stanford, CA 94305-6150
www.gostanford.com

September 10, 1998

To Whom It May Concern:

I, Dale Rudd, authorize Mr. Shane Meschke to design and place on the World Wide Web, a Stanford Sports Medicine Web site. However, all information pertaining to Stanford Sports Medicine must be pre-authorized by myself prior to be placed on the Web site.

Sincerely,

Dale Rudd
Head Athletic Trainer
Stanford University Athletics
Stanford University

Department of Athletics
Stanford University
Stanford, CA 94305-6150
www.gostanford.com

September 10, 1998

To Whom It May Concern:

As per our discussion on the eighth of September, nineteen ninety-eight, I authorize Mr. Shane Meschke to design and place on the World Wide Web a Stanford Sports Medicine Web site. However, Mr. Meschke must also obtain consent from Dale Rudd, Head Athletic Trainer, prior to placing anything on the Web.

Sincerely,

Gary Migdol
Assistant Athletic Director
Stanford University Athletics
Stanford University

APPENDIX E

Inquiry Audit

Inquiry Audit

Key Elements Checklist

"Stanford Sports Medicine Web site "

Author: Shane Meschke

Auditor: Scott Barker, ATC

1. Subject specific

The information presented in the Stanford Sports Medicine web site is very specific to the Stanford Sports Medicine Program and the Athletic Training Profession. It allows the visitor to easily find accurate information pertaining to the Stanford Sports Medicine Program in an asynchronous medium.

2. Instructional Design

•Non-linear design

Through incorporating well-organized hypertext links to various web pages and other web sites the web site visitor can explore information that meet their needs.

•Text Format

The text format is presented in a clear and sensible manner. Font selections and sizes are acceptable for the purpose of this web site.

•Writing Style

The writing style used in the Stanford Sports Medicine web site is acceptable. It is very clear and legible.

•Graphic Design

The graphic design of the Stanford Sports Medicine web site is acceptable. I do have these suggestions based on the four principles of design as described by Robin Williams, 1994. The four principals are: Contrast, Repetition, Alignment, Proximity.

1. All pages use a large background image (Stanford S). This may present a minor cosmetic problem when viewed on different sized monitors. One suggestion would be to use a JavaScript to control the size of the window. This will not be a problem for most due to the fact that the site was designed to be viewed on standard size monitors.
2. The Staff page contains photos and text that pertain to each member of the staff. The alignment used is a "stair step" approach. This results in the need for horizontal scrolling as the viewer moves down the page. I would suggest using a left-aligned table, possibly with a "Blockquote" indent tag.

•Graphic Format

The logo is a "gif" format. The "gif" graphic file format is the accepted standard for web page graphics. However, I would suggest adding the extra benefit of an interlaced gif. Interlacing the "gif" allows the image to be downloaded sequentially. This allows the viewer to see the image while it is downloading rather than waiting for the entire image. The Staff photos are .jpg format and that is the best format for higher degree color images.

3. Functionality

The Stanford Sports Medicine web site is extremely functional and provides the viewer with a tremendous amount of information pertaining to the Stanford Sports Medicine Program.

Summary

The auditor has found an audit trail to be evident through the scholarly writing, reflexive journal, and web site content. With the completion of the inquiry audit, the auditor finds the research and project logical and coherent. The auditor's critique and review finds this research project valid, and dependable.

The Stanford Sports Medicine web site is a well designed and very functional web site. It is evident through viewing this site as well as reading the paper and reflexive journal that the author has put an extreme amount of research and work into creating this site. This process far exceeds the average practices used in web page design. The quality and thoroughness of the Stanford Sports Medicine web site is extremely high. This site will serve as an excellent resource to people wanting to learn more about the Stanford Sports Medicine Program. Due to the nature of the World Wide Web, it won't be long before other sites from around the country will also be linked to the Stanford Sports Medicine web site.

Auditor
Scott Barker, ATC
Head Athletic Trainer
California State University, Chico
Chico, CA 95973

IMAGE EVALUATION TEST TARGET (QA-3)

APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989

© 1993, Applied Image, Inc., All Rights Reserved