Edited into one document. Links are preserved for historical reference only.

Medical Informatics 1990-1995

A Five Year Progress Report - August 1995

Office of Medical Informatics College of Medicine University of Florida

This report was prepared by Richard Rathe, MD with assistance from
Gene Cornwall, MEd; Pam LaFrentz, RN; Maggie Downey; and Charles Poulton.
Marketing data was provided by Joe Cassels of Gold Standard Multimedia, Inc.

Vision Statement

The Office of Medical Informatics was created by the Dean in 1990 to enhance the medical education and patient care missions of the College of Medicine. For the past five years our office has endeavored to develop appropriate and cost-effective information technologies in these areas. The following principles have guided our efforts:

- Information technology must be viewed from an ecological perspective. Information systems do not stand alone; they effect and are affected by the operational environment. Understanding how information technology "fits" into the larger context is the key to its effective use.
- It is not enough to merely automate a process. Automation without process redesign often leads to a negative outcome. Technology should be applied to transform systems and solve problems. In the words of Joseph Izzo, "The enlightened user understands that computer technology is a vehicle for creating change."
- Economies of scale, multiple use, and reuse should be design goals whenever possible. End users, such as students or physicians, should always be part of the design process. Ongoing feedback from users is essential for quality improvement.
- The primary focus of medical education should be patient care - not technology. There is no need to devote large amounts of curricular time to study computers per se. Students will become "literate" by using computers to perform tasks related to their course of study.
- "Computers should be used to enhance, not replace, the teacher and supplement, not supplant, traditional teaching methods." - Andy Reinhardt
- Patient care, not financial services, should drive the design of clinical systems. These systems should provide the clinician with a simple, unified view of patient data from various sources. Data should be collected as close to its source as possible. Data quality is directly related to its use for patient care.

Medical Informatics Personnel

Richard Rathe, MD **Director**

Dr. Rathe joined the University of Florida in July of 1990 to develop the informatics program for the College of Medicine. Prior to his arrival, he completed a two year informatics fellowship at the Harvard School of Public Health. He is board certified in Family Practice and holds a joint appointment with the Department of Community Health and Family Medicine. He directs the On-Line Medical Record project for the College and Shands Hospital. He also serves on the Curriculum Committee for the College and the Academic Computing Committee for the University.

Pam LaFrentz, RN, MA **Coordinator of Information Services**

Pam LaFrentz is the full time liaison between clinicians and the On-Line Medical Record project. She has a background in nursing, as well as a master's degree in literature. Prior to joining the College in 1991, she was the acting head of the Gift and Exchange Unit for the University of Florida libraries.

Gene Cornwall, MEd **Coordinator of Computer Services**

Gene Cornwall works closely with faculty to design, develop, and manage the production of computer-assisted instruction materials. He also provides direct support for classroom and laboratory computer/videodisc workstations. Gene received his degree in instructional technology from Utah State. He developed several interactive videodisc programs in orthopedics for the Hughston Clinic in Columbus, GA before joining the College in the spring of 1991.

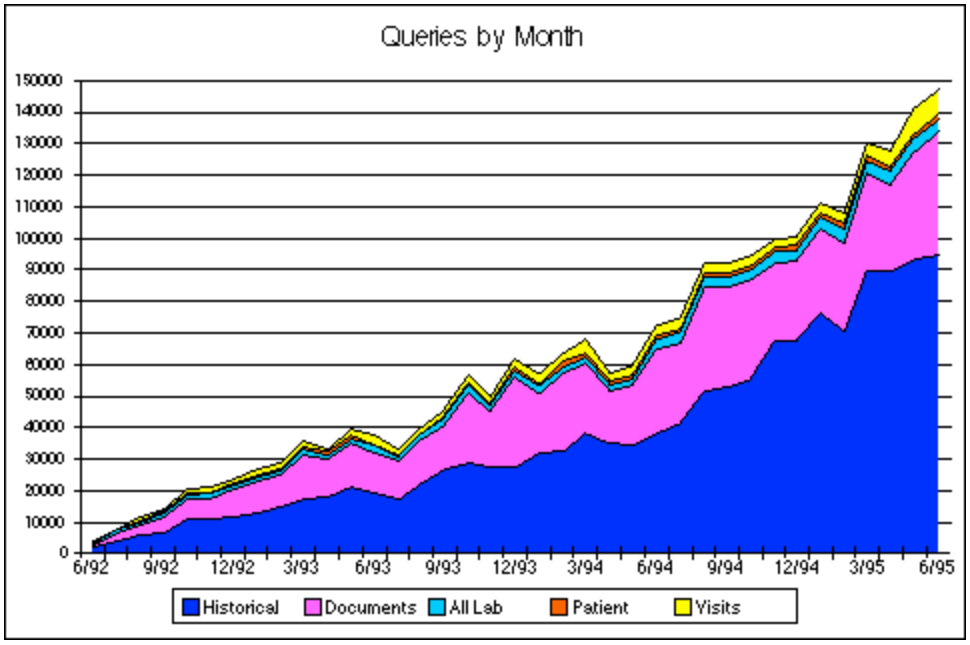
Charles Poulton **Audiovisual Specialist**

Charles Poulton works extensively with digital image capture and manipulation to support education. He also provides audiovisual support for the Harrell Professional Development and Assessment Center. Charles has a background in television and broadcasting. He helped start the videodisc program for the Health Science Center while working for Teaching Laboratory Resources. He joined the College in the spring of 1991.

On-Line Medical Record

Introduction

The On-Line Medical Record (OLMR) is a joint project between Shands Hospital and the College of Medicine. It has been available in the hospital and clinics since June 1992. Since that time it has become an indispensable part of patient care, administration, education, and research at our institution. Pam LaFrentz has trained approximately 3000 clinicians, staff, and students to use the system. Between 800 and 1200 individuals access the system during a typical month.



This graph shows the steady growth of OLMR use between June 1992 and June 1995. Each of the five categories represents an OLMR function that returns patient specific data. The "Historical" and "Document" functions account for the majority of OLMR queries. Clinicians use the historical view to quickly review a patient's complete database holdings. These lists are conveniently sorted in reverse chronological order so that recent additions are always at the top. Administrative staff are often interested in specific information related to admission, discharge, or billing. They tend to use the document view to filter out extraneous data. The historical view includes lab data and this may explain the relative underuse of the lab specific functions. There are also two alternative sources for these data, the Laboratory and Hospital Information Systems.

Current Database Holdings

Data Type	Since	Data Type	Since
Anesthesia Pre-op Reports	11/92	Endoscopy Reports	11/92
Anatomic Pathology	3/94	History and Physicals	4/90
Bone Marrow Aspirate Reports	7/90	Holter Monitor Reports	7/93
Bronchoscopy Reports	11/92	Laboratory Results	3/91
Cardiac Catheterization Reports	7/90	Microbiology/Virology Results	6/93
Clinic Letters	4/90	Occupational Therapy Reports	6/95
Clinic Notes	4/90	Shands Hospital Op. Reports	1/90
Consultations	4/90	Florida Surgical Center Op. Reports	6/94
Dermatopathology Reports	7/95	Physical Therapy Reports	6/95
Medical/Surgical Disch. Summaries	4/90	Radiation Oncology Reports	1/91
Newborn Disch. Summaries	1/92	Radiology Reports	11/89
Echocardiography Reports	7/90	Treadmill Exercise Reports	8/92
EKG Reports	7/90		

The OLMR currently holds over 30 million lab results and 1.5 million documents. The database is cumulative; older records have not been purged due to lack of storage capacity. Data are collected

automatically from most ancillary systems by a microcomputer interface called "Input Manager." A simple but effective user interface allows access from hard-wired 3270 terminals or networked desktop computers. Access from MS-DOS, MS-Windows, Apple Macintosh, and UNIX systems is possible using terminal emulation. An example OLMR session is shown on the next page.

Example of OLMR Use

```
OLMR- OLMR BASE SCREEN                          MR#:  000000999999  12/05/92  2048
PT NAME: JONES, JOHN JAY          SEX: M  RACE: W  AGE: 052Y  DOB: 07/16/1945
--------------------------------------------------------------------------------
Select one of the following options:

OP  View Patient                      OC  Change Date Range
OV  View Visits                       RS  Select a Different Patient

OX  View Activity History             MA  Return to Clinic Master Screen
OY  View Text by Category             SO  Sign Off HIS System

OL  View Lab by Category              HIS Functions:
ON  View Single Lab Results           ---------------------------------
                                      QK  View Patient Referring MD
                                      QP  View Hospital Census
                                      JQ  View Patient Allergies

    WARNING:  The information contained in this system is confidential.
              DO NOT SHARE YOUR PASSWORD WITH ANYONE!


CMD: OY     |                                  SO=SignOff   RE=Return
OLCH001S             SHANDS HOSPITAL                          RATHE, RICHARD
```

OLMR Base Screen - The user selects the "OY" command to bring up the categorical view.

```
OLMR- PATIENT ACTIVITY BY CATEGORY              MR#:  000000999999  12/05/92  2048
PT NAME: JONES, JOHN JAY          SEX: M  RACE: W  AGE: 052Y  DOB: 07/16/1945
--------------------------------------------------------------------------------
Select one of the following:              TEXT DATE RANGE: 03/11/90 TO 12/05/92
Description                    Department              Most Recent Count
01=  Discharge Summary             Medical Records          01/27/92     4
02=  CHEST  1 VIEW                 Radiology                01/17/92     3
03=  EKG                           Heart Station            01/17/92     4
04=  Clinic Note                   Medical Records          01/13/92     3
05=  Treatment Summary             Radiation Oncology       12/31/91     2
06=  Re-Evaluation                 Radiation Oncology       12/17/91     1
07=  Treatment Planning Note       Radiation Oncology       12/17/91     1
08=  HEAD WITH & WITHOUT CONTRAST - Radiology               12/14/91     1
09=  Operative Report              Medical Records          12/12/91     2
10=  CHEST  PA & LATERAL           Radiology                12/06/91     4
11=  Consultation                  Radiation Oncology       10/22/91     1
12=  CHEST WITH CONTRAST - CT      Radiology                09/03/91     2
13=
14=
15=
16=

CMD: 01     |              PF=PAGE FWD      RS=ReSelect  RE=Return
OLCI101S             SHANDS HOSPITAL                          RATHE, RICHARD
```

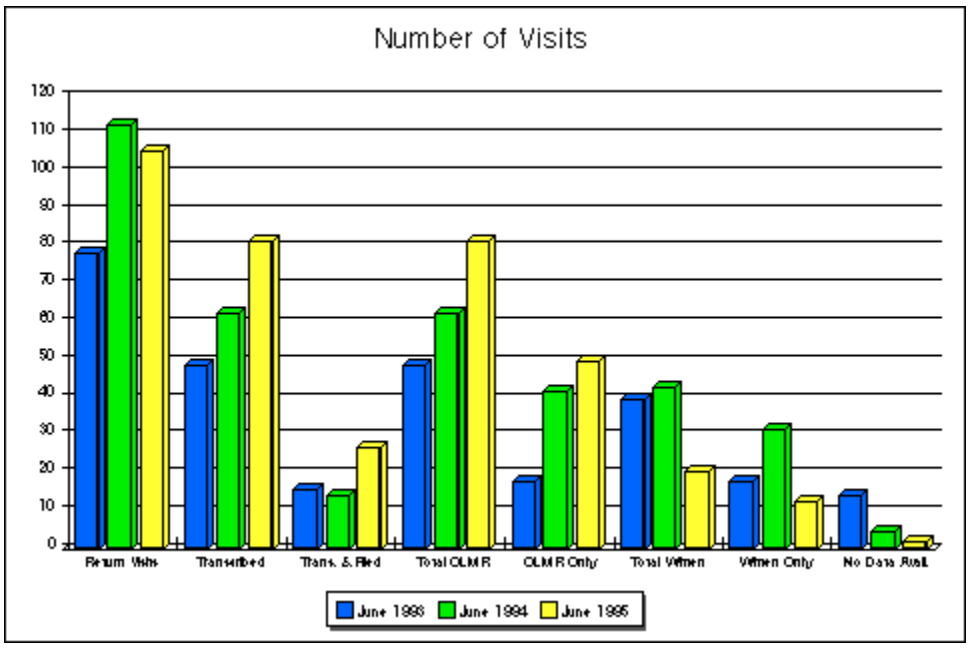
Categorical View - The user enters "01" to view the list list of discharge summaries.

```
OLMR- PATIENT ACTIVITY BY CATEGORY          MR#:  000000999999  12/05/92  2048
PT NAME: JONES, JOHN JAY           SEX: M  RACE: W  AGE: 052Y  DOB: 07/16/1945
--------------------------------------------------------------------------------

JONES, JOHN
99-99-99

DISCHARGE SUMMARY

ADMISSION DATE:  11-29-91
DISCHARGE DATE:  12-20-91

DIAGNOSES:  Poorly differentiated adenocarcinoma of the colon; metastatic
disease in the right shoulder and lung.

ASSOCIATED DIAGNOSES:  Bronchitis; mucositis; chronic pain; anxiety with
depressed features.

PROCEDURES PERFORMED:  Computed tomography of the chest, 12-03-91;
ultrasound-guided biopsy of the right arm mass, 12-04-91; Infuse-A-Port
placement, 12-12-91; CT scan of the head, 12-14-91; chemotherapy, continuous
Page 01  of 08
CMD: PF     |                PF=PAGE FWD     RS=ReSelect  CO=Continue
OLCG001S             SHANDS HOSPITAL                          RATHE, RICHARD
```

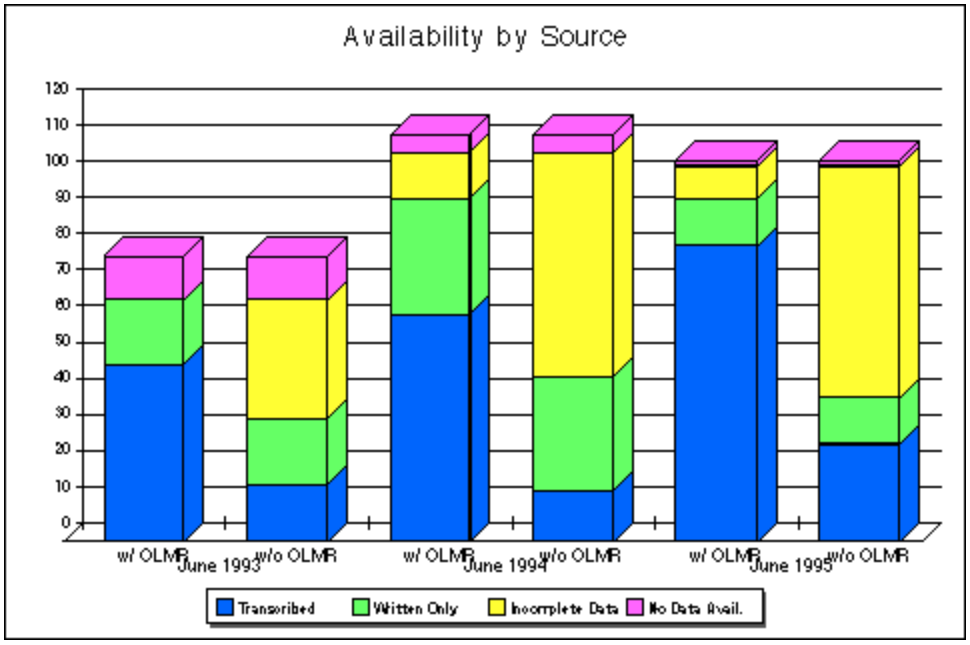
Document View - After selecting a specific discharge summary to review, the user enters "PF" to page forward through the full text of the document.

Clinical Impact

In order to assess the impact of the OLMR, we have prospectively audited our adult oncology clinic during June for three consecutive years. This clinic was selected because the majority of physicians who work there have access to central transcription. All return visits for a one week study period were included. The following graph summarizes the results of this survey.



While the number of transcribed documents has increased steadily over the past three years, actual filing of these documents has not kept pace. Less than one third of clinic notes were available in the paper chart by the time of each subsequent visit. By virtue of a direct upload path, 100% of transcribed documents were available in the OLMR. In June of 1995 the OLMR was the only source of prior clinic notes for 47% of return visits. The number of handwritten notes has decreased significantly over the past year as OLMR availability has increased.



This graph shows availability of clinic notes as a percentage of total return visits. The first bar in each pair shows the actual availability encountered in the study. The second bar shows the same data as if the OLMR did not exist. Several conclusions can be drawn from this comparison:

- In spite of increased transcription, access to clinic notes in paper form is largely inadequate. The OLMR is essential to the orderly and timely flow of information in the adult oncology clinic.
- As the availability of transcribed documents improves, clinicians may be less inclined to hand write their clinic notes.
- The number of return visits for which there is no data available has decreased from approximately 10% to almost zero over the course of the study.
- There is a small, recalcitrant number of visits for which the clinical data available are incomplete. The cause of this problem was not obvious from our analysis and suggests an area for future study.

Medical Education

Introduction

We work directly with the Office of Medical Education and Teaching Laboratory Resources to support instructional technology. There are currently 27 computers and 32 laserdisc players available for use in the multidisciplinary labs. Students use this equipment for self study, review, and laboratory sessions. In addition, several faculty members use multimedia presentations to enhance their classroom teaching. Computer-assisted instruction plays an important role throughout the academic year as outlined in the following table:

Year	Fall	Winter	Spring/Summer
1	Human Anatomy Microscopic Anatomy Radiologic Anatomy	Radiologic Neuroanatomy HyperBrain*	Microscopic Anatomy (Dental)
2	Pathology Images Radiologic Pathology NLM Pathology Series*	Microbiology	Geriatrics

3	Musculoskeletal Pathology (Orthopedic Rotation)	Musculoskeletal Pathology (Orthopedic Rotation)	Musculoskeletal Pathology (Orthopedic Rotation)
4	Human Anatomy Radiologic Anatomy (Anatomy Elective)	Human Anatomy Radiologic Anatomy (Anatomy Elective)	Human Anatomy Radiologic Anatomy (Anatomy Elective)

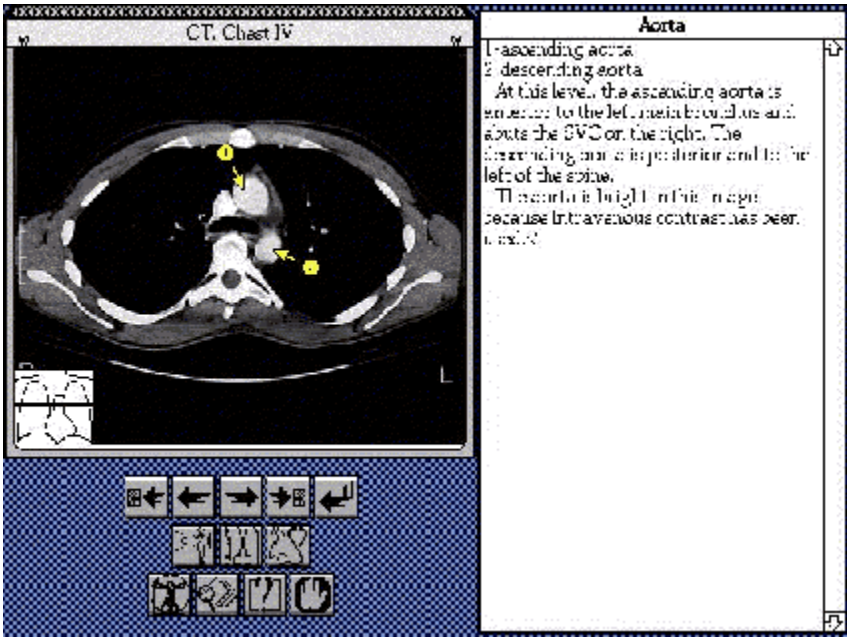
**Evaluation, installation, and support for non-UF programs*

We are taking steps to increase the availability of electronic communication and instruction during the third and fourth year. Our office has worked closely with Information Services to open the network link with the Jacksonville campus for student use. We also supervised the installation of computers in the fourth floor student lounge at Shands. Students now have access to electronic mail, the World Wide Web, and Medline from these locations. We expect to bring several other sites on-line over the next year.

Over the past four years we have captured over 36,500 instructional images. Approximately half of these have been digitally modified or annotated. To make these images available to students, we have produced a series of ten laserdiscs. Dr. Rathe has developed several generations of software for faculty to author interactive programs using these discs. The next section highlights twelve of our most successful projects.

Undergraduate

Radiologic Anatomy



Authors - Linda Lanier, MD; Richard Rathe, MD; Jon Seymour, MD

Description - This award winning program is the primary text for our "Anatomy by Diagnostic Imaging" course in the first semester of medical school. It combines hundreds of radiographs with text describing the significant structures visible on each image. The program is completely self paced, allowing students to customize their path through the material. A sophisticated self evaluation module provides on-demand quizzing with immediate feedback.

Status - Radiologic Anatomy is currently being used in over half of US medical schools. Fourteen schools

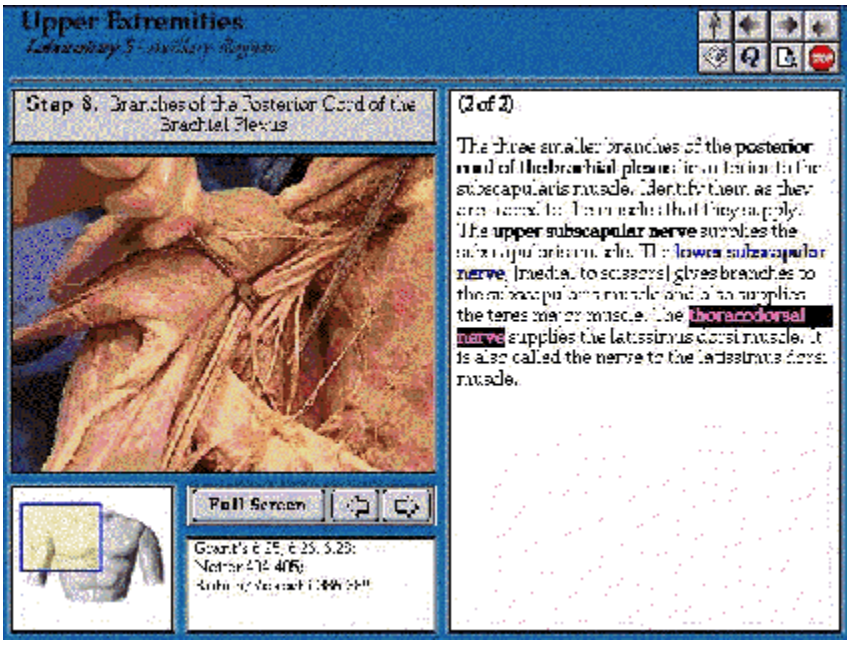
have purchased site licenses and 31 plan to use the program as a primary resource in their curricula. The program has also been approved for 32 hours of continuing education credit by the American Society of Radiologic Technologists. Radiologic Anatomy is published by Gold Standard Multimedia, Inc. of Gainesville, FL. Institutions Using Radiologic Anatomy are summarized in the following table:

US Medical Schools	US Medical Schools	Osteopathic Medical Schools
Alabama	Mount Sinai	Kirksville COM
Albert Einstein	NE Ohio Universities	Lake Erie COM
Arizona	Nebraska	Michigan State University COM
Arkansas*	North Carolina*	Ohio University COM
Boston	North Dakota	Pacific COM
Chicago*	Northwestern	UMDNJ-New Jersey COM*
Chicago Medical School	Oregon*	Univ of Health Sciences COM
Cincinnati*	Penn State	
Columbia	Pittsburgh	**Canadian Medical Schools**
Connecticut	Puerto Rico	British Columbia
Creighton	Rush	Manitoba
Duke*	South Alabama	McGill
East Carolina	South Dakota	Toronto
East Tennessee	St Louis	Western Ontario
Emory	SUNY-Brooklyn*	
George Washington	SUNY-Buffalo	**Other Medical Schools**
Harvard	SUNY-Stony Brook	Am Univ of the Caribbean*
Hawaii	SUNY-Syracuse*	Ben Gurion University (Israel)
Indiana	Texas Tech	Landspitallin (Iceland)
Iowa	Thomas Jefferson	National Univ of Singapore
Kentucky	UC-Irvine	Univ of the West Indies
Loma Linda	UC-San Francisco	Several UK Schools
Loyola	UMDNJ-NJ Medical School*	
LSU-Shreveport	UMDNJ-RWJohnson Med School*	
Maryland	Uniformed Services UHS*	
Massachusetts	USC	
Mayo	UT-Dallas (Southwestern)	
MCP/Hahnemann	UT-Galveston	
Med Coll of GA	Vermont	
Michigan State*	Washington	
Minn-Duluth	Wayne State	
Minn-Minneapolis	Wisconsin	**Site Licensee*

A demonstration is available on the World Wide Web at:

http://www.med.ufl.edu/medinfo/rademo/raintro.html

Human Anatomy



Authors - Kyle Rarey, PhD; Lynn Romrell, PhD; Wojciech Pawlina, MD; Richard Rathe, MD; Jason Rosenberg, MD

Description - Based on a manual of dissection developed for our students, Human Anatomy combines thousands of cadaveric images with step-by-step instructions for studying the human body. Students are able to select images and figures relevant to each laboratory session by clicking on colored links within the text. The program includes self evaluation quizzes, practice practical exams, and graded exercises that can be customized by the faculty.

Status - Human Anatomy is currently being used at a third of US medical schools. Nine schools have purchased site licenses and 15 plan to use the program as a primary resource in their curricula. The program has also generated considerable interest from schools of Occupational and Physical Therapy. Human Anatomy is published by Gold Standard Multimedia, Inc. of Gainesville, FL. Institutions Using Human Anatomy are summarized in the following table:

US Medical Schools	US Medical Schools	Osteopathic Medical Schools
Alabama	NE Ohio Universities	UMDNJ-New Jersey COM*
Albert Einstein	Nebraska	
Arkansas*	North Carolina	**Canadian Medical Schools**
Bowman Gray-Wake Forest	North Dakota	British Columbia
Chicago*	Northwestern	
Cincinnati*	Oregon*	**Other Medical Schools**
Connecticut	Pittsburgh	Am Univ of the Caribbean
Duke	Rush	Fundacao Univ (Brazil)
East Carolina	South Alabama	Ohio Coll Podiatric Med

East Tennessee	South Carolina	Ross University
Eastern Virginia	South Dakota	Several UK Schools
Emory	South Florida*	
Illinois	SUNY-Brooklyn	
Indiana	Texas Tech	
Iowa	Thomas Jefferson*	
Loma Linda	UMDNJ-NJ Medical School*	
Loyola	UMDNJ-RWJohnson Med School*	
Marshall	University of Washington	
Massachusetts	UT-Dallas (Southwestern)	
Mayo	UT-Galveston	
MCP/Hahnemann	Vanderbilt	
Meharry	Wisconsin	
Mount Sinai		**Site Licensee*

Microscopic Anatomy

Authors - Tom Hollinger, PhD; Richard Rathe, MD; Tim Garren

Description - This interactive program contains 1000 high quality images taken directly from the glass microscope slides. Students find the program useful to preview material before lab, confirm what they are seeing during lab, and review for exams. The collection also contains 100 electron-photomicrographs and an annotated 1500 item question bank for self-evaluation quizzes.

Status - This program has been in use for five years by our freshman medical students. It is the final part of an "Anatomy Suite," covering gross, microscopic, and radiologic anatomy. It is currently being converted to CD-ROM format by Gold Standard Multimedia, Inc. of Gainesville, FL.

Microbiology ("Bugs")

Authors - Donna Duckworth, PhD; Richard Crandall, PhD; Richard Rathe, MD

Description - As part of the reorganization of the Microbiology course, we have produced a series of interactive cases that illustrate microbiologic concepts as well as a "Bugs" database on the most common bacteria, viruses, and parasites. The students are able to work through these cases as well as bacteriologic unknowns to test their mastery of the material.

Status - The program has been used by second year medical students for the past three years. Students also use the "Bugs" database to review for Step One of the National Board Examination. Dr. Duckworth is currently polishing the program in preparation for publication.

Radiologic Pathology

Authors - Linda Lanier, MD; Richard Rathe, MD

Description - This program consists of 800 abnormal radiographs linked to explanatory text and figures.

Status - The program has been used by second year students for the past four years in parallel with systemic pathology.

General and Systemic Pathology

Authors - Sigurd Norman, MD; Nancy Hardt, MD; et al

Description - At the present time we have assisted faculty with the creation of 2500 images to support pathology instruction. Dr. Hardt has also produced a program on GYN pathology that utilizes a portion of these images.

Status - The image collection has been used in our curriculum for the past four years. Dr. Hardt's program has been used for the past two years. Over the past summer a medical student prepared the entire image collection for publication on CD-ROM and the World Wide Web.

Geriatric Education ("Geri Ann")

Authors - Cathy Schell, MD; George Caranasos, MD; David Lowenthal, MD; Richard Rathe, MD

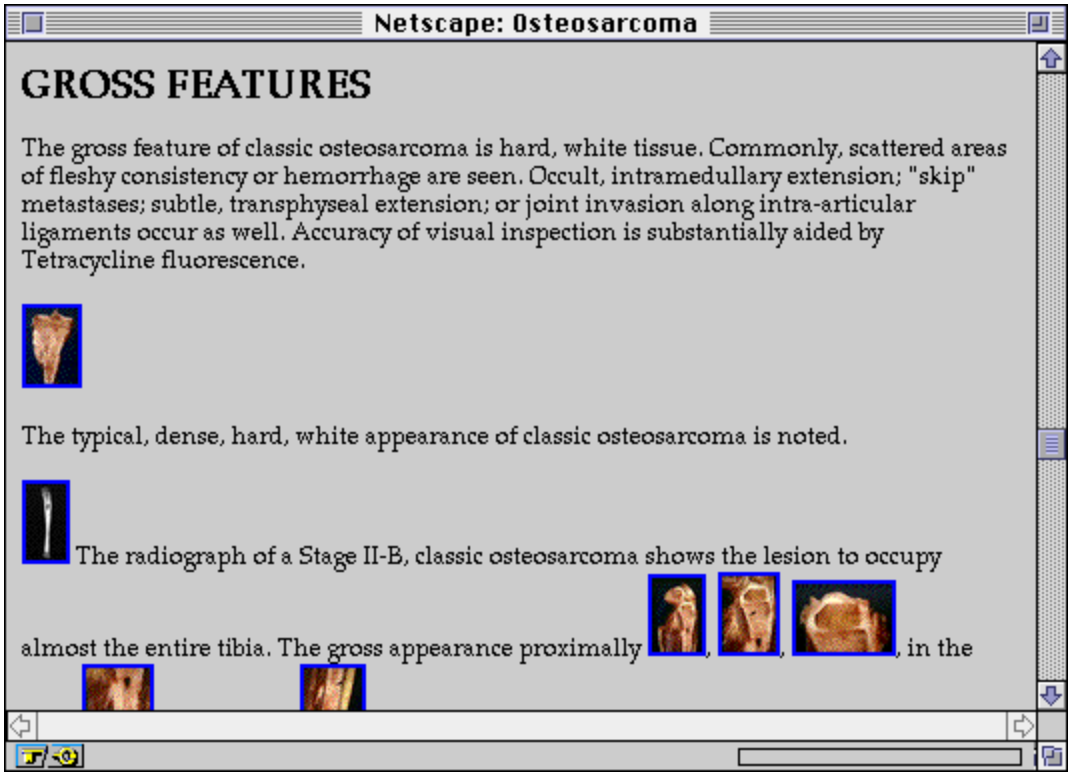
Description - This our first educational program produced entirely for the Internet. It consists of five cases covering major topics in geriatrics. Interactive questions punctuate each case to stimulate student interest. We make extensive use of hypertext links for definitions, images, and cross references.

Status - Student volunteers are currently testing the program for completeness and relevance. It is initially targeted at second year students for use during their "Introduction to Clinical Medicine" block. We plan to expand the program over time to include basic science and advanced clinical topics. "Geri Ann" is available on the World Wide Web at:

http://www.med.ufl.edu/medinfo/geri/geri.html

Graduate and Continuing Education

Musculoskeletal Pathology



Authors - William Enneking, MD; Richard Rathe, MD; Gene Cornwall; et al

Description - This is an ongoing project with three major components. The first is to archive hundreds of cases and thousands of images in the musculoskeletal pathology collection at UF. The second is to create a computer-assisted course in musculoskeletal pathology for students, residents, and practicing orthopedists. The third is to prepare the entire project for distribution via interactive videodisc, CD-ROM, the World Wide Web, and traditional textbook.

Status - To date, we have captured approximately 20,000 images representing more than 1800 cases. The software and images have been used in various national and international settings over the past four years. We anticipate completing the project and submitting it for publication within the next year. A demonstration is available on the World Wide Web at:

http://www.med.ufl.edu/medinfo/ortho/ostsarc.html

Liver and Pancreatic Tumor Imaging

Authors - Pablo Ros, MD; Wendi Moore, MD; Richard Rathe, MD; et al

Description - Medical students working with Dr. Ros have collected and edited a large number of images related to liver and pancreatic tumors. Based on this collection, interactive programs have been developed covering all aspects of the pathology and diagnostic imaging of these tumors.

Status - Radiology residents and students on rotation have used this suite of programs for the past three years.

Obstetric Ultrasound

Authors - Douglas Richards, MD; Gene Cornwall, MEd; Richard Rathe, MD

Description - This program serves as a beginners guide to diagnostic ultrasound. The program makes use of a large number of full motion video clips stored on laserdisc. In addition to demonstrating normal exams, cases of various malformations are presented and diagnostic strategies are discussed.

Status - The program has been part of a major obstetrical continuing education conference for the past two years.

Head and Neck Imaging

Authors - Anthony Mancuso, MD; Richard H. Wiggins, III, MD

Description - This program consists of fifty unknown cases, which serve as the basis for a continuing education course on evaluating head and neck disorders.

Status - The complete set of cases will be available during the course this fall.

Other Projects

Internet Publishing Project ("MTX")

Authors - Richard Rathe, MD; Gene Cornwall, MEd

Description - Hypertext Markup Language (HTML) is the format used for all World Wide Web documents. We have designed a simplified markup format called "MTX" to help automate HTML document production.

Status - Although this is a work in progress, we have already used MTX to create courseware, case presentations, newsletters, and conference proceedings. MTX related materials are available on the World Wide Web at:

http://www.med.ufl.edu/medinfo/mtx/

OSCE Inter Station Exams

Authors - Richard Rathe, MD; Margaret Duerson, PhD; Ben Stevens, MEd; et al

Description - Our curriculum now includes multiple, performance-based Objective Standardized Clinical Exams or OSCEs. During these exams, students are expected to interview and examine standardized patients while being videotaped. In order to test student proficiency with diagnosis and management we include inter station exercises on computer. The system supports complex questions with multiple correct answers to test such things as differential diagnosis and workup strategy. Results are automatically recorded for subsequent analysis and grading.

Status - The system has been part of the fourth year OSCE for the past two years.

Radiologic Neuroanatomy

Authors - Linda Lanier, MD; Richard Rathe, MD

Description - We are developing a sequel to Radiologic Anatomy that will include a complete set of axial, coronal, and transverse MRI scans of the brain; a series of detail views of the temporal bone; and various

conventional, digital subtraction, and MRI angiograms.

Status - This is a work in progress.

Mental Status Examination

Authors - Ed Valenstein, MD; Gene Cornwall, MEd; Richard Rathe, MD

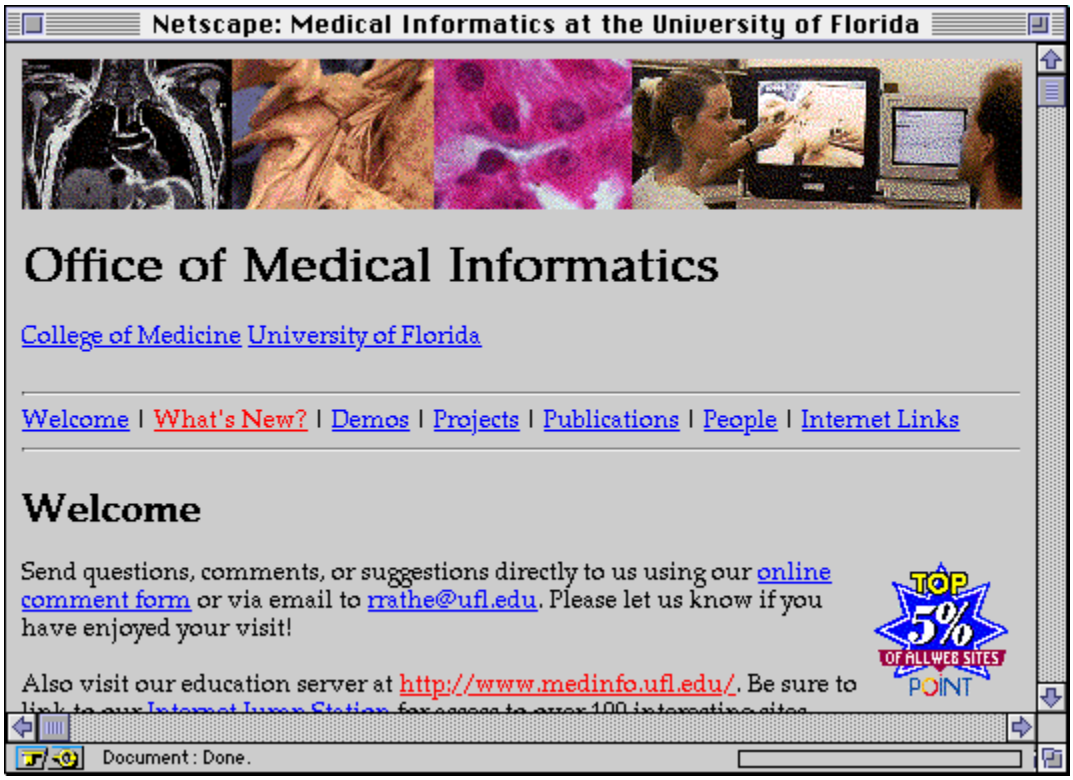
Description - The department of Neurology, due to its small size, is unable to spend enough time with each student going over the complete mental status exam. The availability of patients with neurologic findings is also highly variable. We have begun to develop instructional media to overcome these difficulties. Video clips demonstrating each part of the exam have been correlated with pathologic examples taken from the neurology department's large videotape collection. These materials will be combined into an interactive program for use by second and third year medical students.

Status - This is a work in progress.

Home Page and PDAs

Medical Informatics Home Page

The World Wide Web (WWW) is the fastest growing part of the Internet. Our College has just begun to explore the use this exciting new medium for teaching, research, patient care, and administration. In cooperation with Information Services, our office has become a leading WWW resource for faculty and staff. The Medical Informatics Home Page has become a popular WWW site offering instructional materials, scholarly discourse, and WWW publishing tools.



Over the next year we anticipate a large number of projects including: electronic texts and syllabi; on-line

directories and calendars; paperless distribution of committee documents for review and comment; and CD-ROM publication of WWW documents. The Home Page is available at:

http://www.med.ufl.edu/medinfo/

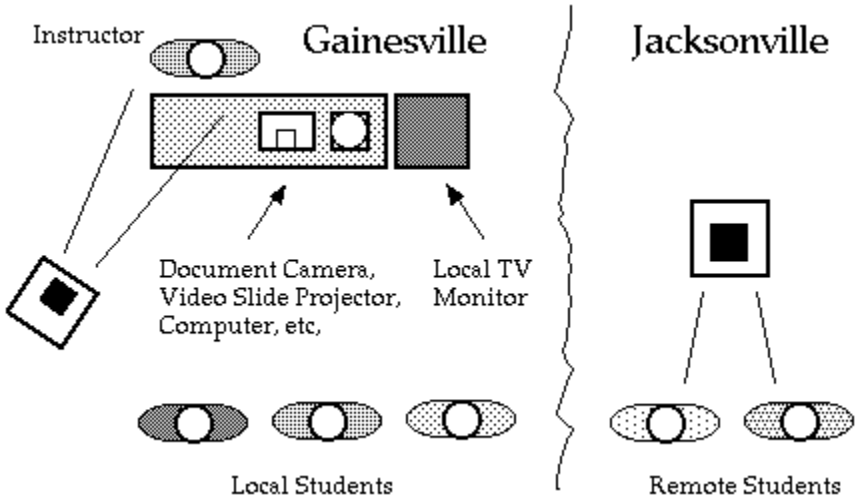
Personal Digital Assistants

Our students have begun to use small, hand held computers called personal digital assistants for patient management and reference. Dr. Rathe is currently assisting them with the development and acquisition of effective software for use during their third year clerkships. The Home Page for the student lead Newton Users Group is available at:

http://www.med.ufl.edu/medinfo/newton/

Video Teleconferencing

The College of Medicine has begun a program to unify teaching efforts at the Gainesville and Jacksonville campuses using video teleconferencing. At any point during the year, a quarter of our third year medical students are on rotation at University Medical Center in Jacksonville. Approximately one third of our faculty are permanently assigned to this site as well. In the past, the 80 miles between our campuses has hindered educational programs at all levels. This is changing however with the introduction of classroom teleconferencing. Distance is no longer a barrier to high quality instruction delivered by the best teachers on both campuses.



During the first half of 1995 there were 105 teleconferenced sessions between Gainesville and Jacksonville. Of these, 5 involved direct patient care and 14 were education related. The Department of Pediatrics has used this approach to conduct several "core" classes on such topics as infectious disease, immunology, and hematology. Students on both campuses participate in these lecture/ discussions as the instructor delivers a truly "multimedia" presentation. Since these sessions are completely "peer to peer," classes can originate from either site. We plan to expand this program to include most major Jacksonville clerkships. This effort is supported by the Information Services and the Office of Medical Informatics.

Support for Student Projects

Anatomy (Drs. Rarey, Romrell, Pawlina)

- Chris Johnson
- Jason Rosenberg
- Ki Abel
- Bill Cotrell
- George Scherer
- Glenn Feinstein
- Michael Freeman
- Allison Bennett
- Thomas George
- Jason Rosenberg (Thesis)

Microbiology (Dr. Duckworth)

- Paul Blackwood

OB/GYN (Dr. Richards)

- Alyse Kelley Jones

Pathology (Dr. Norman)

- Jeffrey Held

Radiology (Dr. Lanier)

- John Seymour
- Steve Class
- Will Williams

Radiology (Dr. Mancuso)

- Michelle Rossi

Radiology (Dr. Ros)

- Wendie Moore
- Michelle Smith

Awards, Conferences, and Classes

Awards

Medical Informatics Home Page

Top 5% Web Site, Point Communications Corporation, 1995

Radiologic Anatomy

Second Place Award for Innovative Software

Software Publishers Annual Meeting, April 1994

Cum Laude Award
Radiological Society of North America Annual Meeting, Nov 1993

Certificate of Merit
Radiological Society of North America Annual Meeting, Nov 1992

Cardiovascular Anatomy

American Heart Association Award, May 1993
Software and image support for thesis project by Jason Rosenberg

Conferences and Classes

Southeastern Medical Informatics Conference, June 1995

25 Speakers, 3 Workshops, 65 Participants from UF, USF, and elsewhere

Users Guide to the Internet, Faculty Development Workshops, April 1995

45 Participants from the College of Medicine

Computer-Assisted Instruction Seminar, October 1991

14 Speakers, 50 Participants from UF

Meetings, Presentations, and Other Support

Fourth year OSCE, August 1995 Type of support: Setup computers with tests, and track the student responses and record the results

Basic Science Education Course, Chicago Ill., June 21 1995 Faculty: Lynn Romrell PhD, Tom Hollinger PhD. Type of support: Shipped equipment preset-up for presentation.

Southeastern Medical Informatics Conference, Gainesville, FL, June 10, 1995 Faculty: Richard Rathe MD, Jan J. van der Aa, PhD, Gordon L. Gibby, MD Type of support: Setup of equipment, room arrangements, presentations support for speakers.

Internet Faculty Development Workshops, May - June 1995 Faculty: Richard Rathe MD Type of support: Setup of equipment, assist in instructing course and preparing materials brought by students to be used on the web.

Musculoskeletal Pathology Review, Crescent Beach, FL, April 3-14, 1995 Faculty: William F. Enneking MD Type of Support: Creating software, shipping and setting up equipment, demonstrating software

Mini-Med School, April 5 1995 Faculty: Linda Lanier MD Type of Support: Setup equipment for presentation/demonstration and setup 9 student stations for the course attendees to view the Radiologic Anatomy program. Assist with the demonstration of this program.

20th Annual Update in Obstetrics and Gynecology, Orlando FL, April 20-21 1995 Faculty: Douglas Richards MD Type of Support: Creating software, shipping equipment, demonstrating software

American Academy of Orthopedic Surgeons Meeting, Orlando FL, Feb 1995 Faculty: William F. Enneking MD Type of Support: Creating software, shipping equipment, demonstrating software

HTML and the WWW Demonstration, January 27, 1995 Faculty: Richard Rathe, MD

Musculoskeletal Pathology Review, Crescent Beach, FL, Nov 29 - Dec 9, 1994 Faculty: William F. Enneking MD Type of Support: Creating software, shipping and setting up equipment, demonstrating software

Third Annual Florida Government Technology Conference, Tallahassee FL, Oct 11-14 1994 Type of Support: Shipping equipment, demonstrating software

Concept Mapping Course, August 23 1994 Faculty: Emanuel Suter, PhD Type of support: Assist Dr. Suter with computers and projection equipment for a course on Concept Mapping.

Fourth year OSCE, August 1994 Type of support: Setup computers with tests, and track the student responses and record the results

Musculoskeletal Pathology Course, Munster, Germany, July 19-23 1994 Faculty: William F. Enneking MD Type of Support: Creating software, finding equipment to borrow or lease

Maine Orthopedic Review, Waterville ME, June 27-July 8 1994 Students at this course used Dr. Enneking's Musculoskeletal Pathology material in preparation for board examinations Type of Support: Creating software, managing labs

Clinical Anatomy Meeting, Galveston TX, June 14-18, 1994 Faculty: Kyle Rarey, PhD, Lynn Romrell, PhD, Wojciech Pawlina, MD Type of Support: Creating software, shipping equipment

Clinical Anatomy Meeting, Anaheim CA, April 23-29 1994 Faculty: Kyle Rarey, PhD, Lynn Romrell, PhD, Wojciech Pawlina, MD Type of Support: Creating software, shipping equipment

Southern Group on Educational Affairs, Charleston, WV, April 13-17, 1994 Faculty: Richard Rathe, MD, Kyle Rarey, PhD, Lynn Romrell, PhD, Wojciech Pawlina, MD Type of Support: Creating software, shipping equipment

Musculoskeletal Pathology Review, Crescent Beach, FL, April 18-29, 1994 Faculty: William F. Enneking MD Type of Support: Creating software, shipping and setting up equipment, demonstrating software

19th Annual Update in Obstetrics and Gynecology, Orlando FL, April 13-15, 1994 Faculty: Douglas Richards MD Type of Support: Creating software, shipping equipment, demonstrating software

Texas Musculoskeletal Pathology Course, University of Texas Southwestern Medical Center, Dallas, TX, March 9-13,1994 Faculty: William F. Enneking MD Type of Support: Creating software, finding equipment to borrow or lease

American Academy of Orthopedic Surgeons Meeting, New Orleans, LA Feb 23-28, 1994 Faculty: William F. Enneking MD Type of Support: Creating software, shipping equipment, demonstrating software

Presentation and Demonstration to Faculty Alumni, Girls Club, Gainesville, FL, January 26, 1994 Faculty: Lynn Romrell PhD. Type of Support: Shipping equipment, demonstrating software

Musculoskeletal Pathology Review, Crescent Beach, FL, October 18-29, 1993 Faculty: William F. Enneking MD Type of Support: Creating software, shipping and setting up equipment, demonstrating software

Second Annual Florida Government Technology Conference, Tallahassee FL, Oct 12-15, 1993 Type of Support: Shipping equipment, demonstrating software

RSNA, Chicago, IL, Nov 1993 Faculty:Linda Lanier, MD, Pablo Ross, MD Type of Support: Creating software, Lease equipment

Musculoskeletal Pathology Course, Perth, Australia, Nov 1993 Faculty: William F. Enneking MD Type of Support: Creating software, finding equipment to borrow or lease

Maine Orthopedic Review, Waterville ME, June 14-25 1993 Students at this course used Dr. Enneking's Musculoskeletal Pathology material in preparation for board examinations Type of Support: Creating software, managing computer lab

Musculoskeletal Pathology Course, Munster, Germany, May 17-24, 1993 Faculty: William F. Enneking MD Type of Support: Creating software, finding equipment to borrow or lease

American Association of Anatomists Meeting, San Diego CA, Apr 1993 Faculty: Kyle Rarey, PhD, Lynn Romrell, PhD, Wojciech Pawlina, MD Type of Support: Creating software, leasing equipment

American Association of Clinical Anatomists, Seattle, WA, June 1993 Faculty: Kyle Rarey PhD, Lynn Romrell PhD, Wojciech Pawlina MD Type of Support: Creating software, leasing equipment, shipping equipment

Musculoskeletal Pathology Course, Spain July 1993 Faculty: William F. Enneking MD Type of Support: Creating software, finding equipment to borrow or lease

Musculoskeletal Pathology Review, Crescent Beach, FL, April 19-30, 1993 Faculty: William F. Enneking MD Type of Support: Creating software, shipping and setting up equipment, demonstrating software

Texas Musculoskeletal Pathology Course, Dallas TX, March 8-12, 1993 Faculty: William F. Enneking MD Type of Support: Creating software, finding equipment to borrow or lease

American Academy of Orthopedic Surgeons, San Francisco, CA, Feb 17-23, 1993 Faculty: William F. Enneking, MD, Richard Rathe, MD Type of Support: Creating software, shipping equipment, demonstrating software

Musculoskeletal Pathology Review, Crescent Beach, FL, Nov 2-13, 1992 Faculty: William F. Enneking MD Type of Support: Creating software, shipping and setting up equipment, demonstrating software

Musculoskeletal Tumor Society, Boston MA, October 28-31, 1992 Faculty: William F. Enneking MD Type of Support: Shipping equipment, demonstrating software Maine Orthopedic Review, Waterville ME, June 15-26, 1992 Type of Support: Creating and demonstrating software

Interactive Multimedia, Tallahassee, FL, May 1, 1992 Type of Support: Demonstrate Multimedia courses being developed for the medical students.

Beta testing of the Human Anatomy software, June-August 1993 Sites: University of Cincinnati, University of South Florida, University of South Dakota, University of Oklahoma, Medical College of Virginia Type of Support: Included sending copies of all software and helping the schools with any questions, updates,

program fixes, etc..

Supported the PIMS program in Tallahassee for the past 3 years by helping to install systems for their students. These systems have the same software that the first year students at UF use.

Supported the testing of Drs. Duerson and Merwyn's videodisc entitled "Interactive Diagnostic Encounters". Spring and Summer, 1992-1993

Supported the Academic research day here on campus each of the last three years by putting up displays of all the software that is being developed.

Supported the medical students during their presentations during homecoming week with demonstrations either on campus or here at the health center.

Supported the department of pathology in their use of National Library of Medicine videodisc materials for general pathology course for the past 3 years.

Supported use of HyperBrain for neuroscience course.

Obtained and evaluated the following software for faculty:

- Slice of Life
- Adam
- HyperBrain
- HyperCell
- Dementia
- Home Medical Advisor

Assisted the College of Pharmacy and the College of Veterinary Medicine with the use and capture of videodisc images.

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