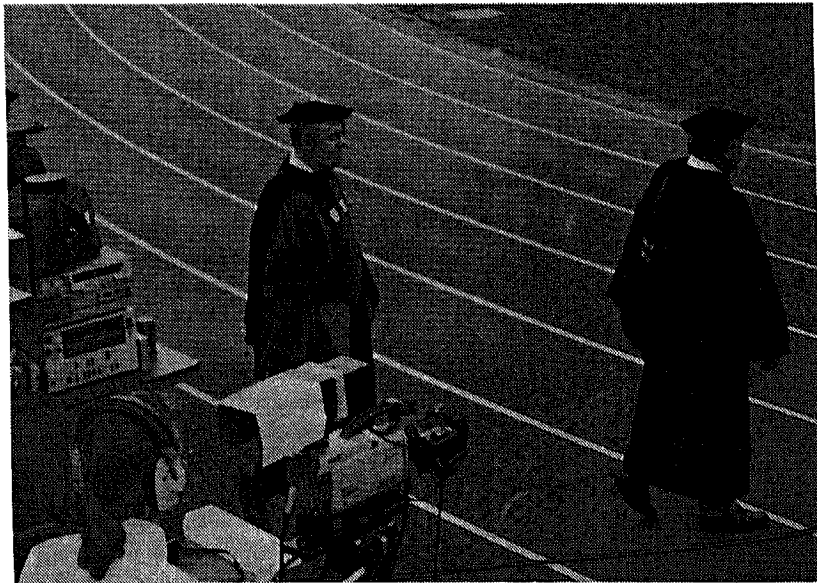


# Shifting Dullness

June/July 1991



*Commencement 1991*

# Two Months in Medical History

Chris Tharrington

## June

• When William Harvey died June 3, 1657, his peers had not acknowledged him or his work. Nearly a century after his death, Inquisitors in Madrid excommunicated Harvey in a symbolic gesture. However, the passage of time has allowed recognition of Harvey as one of the greatest thinkers in seventeenth-century medicine.

• On June 6, 1822, Alexis St. Martin, a Canadian traveller, was shot in the abdomen. He recovered slowly over a two-year period under the care and at the expense of a U. S. Army post surgeon, William Beaumont in Michigan; at the end of this time, St. Martin retained a permanent gastric fistula. Thus, over the course of the next several years Beaumont was able to make his groundbreaking observations on digestive physiology. The first edition of his classic *Experiments and Observations on the Gastric Juice* was published in 1833. Sir William Osler is said to have asked for St. Martin's stomach after the death of the latter; the family, however, refused.

• St. Gilbert's fete day falls on June 7. An Englishman, Gilbert was the first Anglo-Norman physician to achieve fame on the European mainland, and is mentioned by Chaucer. His collection of medical advice, typical for the period, included references to magic. Editions were produced as late as 1608. Gilbert died sometime around 1240.

• On June 15, 1667, Jean Baptiste Denis, physician to Louis XIV, performed the first human blood transfusion. The donor was a cat, and the recipient did fairly well afterward; however, when Denis repeated this type of transfusion, the patient suffered a severe reaction. Blood transfusions were later banned by papal decree and other condemnations. The first human-to-human transfusion did not take place until 1818, under the supervision of a London obstetrician named Blundell.

• St. Albans, the first Christian martyr in Britain, died north of London on June 22, 303. The first leprosarium in England was established at the same location in 794. Before and during the medieval period, leprosy was rampant in Europe. Its progress was slowed in part by



the founding of leprosaria throughout western Europe. By the seventeenth century, the incidence of leprosy had decreased dramatically in Europe.

• The first commencement of the medical department of the College of Philadelphia (later the University of Pennsylvania) took place on June 21, 1768. Eight students graduated in the first class from a medical school in the United States.

• On June 24, 1861, with Florence Nightingale as director, the first English training school for lay nurses began operating in a wing of St. Thomas' Hospital in London.

• On June 30, 1559, the greatest military surgeon of all time, Ambroise Pare and the greatest anatomist of all time, Andreas Vesalius met in Paris to consult over a head injury sustained by King Henry II in a tournament. In spite of their efforts—including the "anatomizing" of the heads of four criminals executed for the occasion—to locate lance splinters in the royal brain, the king died a week and a half later.

(continued on page 14)

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# Second Opinions

## Sexual Harassment in Medicine

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Holly Lisanby

If you have been exposed to sexist jokes or malicious gossip in medical school, then you have first hand knowledge of sexual harassment. The AMA Council on Judicial and Ethical Affairs lists these examples, as well as inappropriate sexual advances, favoritism based on gender, and the exchange of rewards for sexual favors, in their definition of sexual harassment. Sexual harassment may take the form of verbal or physical conduct of a sexual nature which, explicitly or implicitly, affects employment, academic success, or creates an intimidating, hostile, or offensive academic environment.

You are not alone if you feel you have experienced sexual harassment as a medical student. In fact, 81% of third year female medical students in a 1988 survey reported exposure to sexist slurs, over half reported sexual advances, and almost one third felt denied certain opportunities in their training because of their sex (Sheehan et. al., 1990). Several surveys have shown that many victims of such harassment do not report these experiences (*The AMA Guidelines for establishing sexual harassment prevention and grievance procedures*). When the perpetrator of the harassment is your supervising resident who is also evaluating your performance, the risks of reporting harassment seem much greater than any benefits. And the risks are greater if procedures to deal with the complaint in a confidential manner are not available.

Not reporting sexual harassment leads to disillusionment and cynicism about the medical profession, according to respondents in the cited survey. I know from personal experience that being called "honey" in a patronizing tone by a surgical attending while he reprimanded me for not pulling hard enough on a retractor certainly shaped my opinions. During an inguinal hernia repair my surgical resident asked me, between chuckles, which part of the male reproductive anatomy was my favorite and why. I have also heard other more explicit examples of verbal sexual slurs directed at myself and my classmates which led me to believe that my performance was being evaluated with

different criteria due to my sex. These experiences clearly make the learning environment intimidating, offensive, and sometimes hostile.

Unfortunately sexual harassment does not stop with verbal misconduct. Although not as prevalent as other forms of sexual harassment, sexual relationships between trainees and supervisors have been reported with surprising frequency. Almost five percent of psychiatric residents reported sexual involvement with supervisors during residency training (6.3% of women and 3.9% of men, Gantrell et al, *American J Psychiatry*, 145:690). Consensual or otherwise, the power imbalance inherent in relationships between trainees and educators involves the potential for exploitation.

Just as we pay attention to the power imbalance existing between patients and doctors, we must also recognize the potential for exploitation in the student / teacher relationship. Nearly 30% of medical schools and 50% of residency training programs had not adopted formal policies on sexual harassment according to a report last year (*JAMA*, August 15, 1990). Medical educators must emphasize that sexual harassment in medical training is unacceptable and take to heart their responsibility to act as good role models in their interactions with students as well as patients. If we feel abused by our teachers, how will we treat our patients?

Reference: *AMA guidelines for establishing sexual harassment prevention and grievance procedures*. AMA members may obtain a free copy of this publication by calling 1-800-AMA-3211, ext. 4392.

*Shifting Dullness* accepts letters of opinion from all members of the medical school community. Opinions expressed do not necessarily reflect the opinions of the editorial staff. *Shifting Dullness* reserves the right to edit letters for length and style. Submit letters to the *Shifting Dullness* box in the Alumni Affairs Office (candy room), student lounge in Duke North, or mail to PO Box 2865 DUMC.

# Medical Center Employees Show Their Talent

Patty Shi

The contributions of the employees here at Duke being as much as they are, it is appropriate that the activities of "Employee Appreciation Week", organized by Cultural Services, fill both May and June. Not only are there activities for the employees, such as "Night at the Durham Bulls", but also activities by the employees themselves. Two such events which have already occurred are a musical production and an arts and crafts fair.

The musical, called "The Future is in Our Hands", took place May 30th and 31st in Page Auditorium after preparation since early March. That the last employee musical took place as far back as 1983 is not due to a lack of talent, as over 50 employees from a multitude of medical departments were involved in this celebration of the 60th anniversary of DUMC. To write the script which chronicles the history of the medical center from its inception in the 1930s to the year 2000 AD, Cedar Koons, DUMC's poet-in-residence, used both the medical library archive collections and reminiscences of long-time medical center employees. The events of each decade were situated in time by use of a scrimstage—a living room set whose decor changes in trend with the era—and historical slides projected onto screens above the stage. Lisa McIver, the musical's director who is a former drama teacher at Jordan High School, also highlighted each era's prevailing mood by selecting songs which are "era-pieces" as well as songs which suited the script.

This combination of enthusiasm and ability was reflected in the performance, which took the audience through a wide range of emotions as time traveled from the opening of the hospital during the Depression to events such as its focus on basic science research while understaffed during WWII and its movement towards racial integration during the civil rights period. The hall filled with laughter when a motorcycle gang temporarily invaded the ER to the tune of "Born To Be Wild" during the 1970's and smokers huddled outside the hospital in a rainstorm during the 1980's. In addition to the cast and production members, there were less obvious contributions by Duke employees. Larry Dowell, for example, has amassed over fifty antique radios since he began collecting and restoring them twenty-five years ago, and some of these radios were used in the sets from the 1930s, '40s, and '50s.

In contrast to the common theme of the various vignettes of the employee musical, the arts and crafts fair, held on June 5th in the Perkins Library quad, was notable for its diversity of themes. Some art was clearly medically-related, such as a black-and-white close-up of a rat's eye by Susan Embry, who works in the photopathology lab, but most of the art appeared to have nothing to do with medicine. Pottery, quilting, woodwork, jewelry, weaving, basketry, painting, and photography were only some of the artistic mediums on display.

In addition to the eyes, other senses were also fed. There were several food stands ranging from Indian dishes such as chick pea nut fudge to barbecue, sausage dogs, and pecan pie. In front of the picnic table area "Chuck and the Waggin' Ears" played bluegrass music. According to Sam Morrison, the fair's organizer, in previous years "Chuck Davis and the African-American Dance Ensemble" used to play, but professors in the Social-Psych building complained that the konga drums made the lemur monkeys housed there too agitated.

Fair-goers could turn in cards voting for their favorite works and these most-voted works as well as those favored by a panel of three local artists are on display during June in the Duke North display case. These works, however, are only some of the many excellent pieces which were at the fair. Sam Morrison states the fair's purpose is to "provide the opportunity for employees to get outside of their work roles and recognize each other with respect to their artistic abilities," and with a growing turnout since the fair's inception in 1979—this year's attendance was over one thousand—this purpose shows no wavering.

Performing in the musical and/or exhibiting at the arts and crafts fair is open to all DUMC employees. See you there next year!



June/July 1991

# Facts on Women in Medicine

Holly Lisanby

The following are some interesting statistics on women physicians compiled by the AMA Department of Women in Medicine. These numbers document the increase in women entering medicine. They also identify areas still lacking women, such as medical school faculties. The discrepancy between men's and women's salaries is persistent in medicine as it is in other professions. As the number of women in medicine grows, I hope future statistics reflect the important contributions of women as they enter leadership positions, demanding equal rewards for equal work.

## How many women are in medicine?

### Percentage of women:

	<u>med students</u>	<u>physicians</u>
1970	9.0%	7.6%
1980	25.3	11.6
1988-89	36.2	16.4

Over the past twenty years, the number of women in medical school has risen to over one-third. The number of women physicians has also risen and is projected to be almost 17% in 2010. The top five specialties that women most frequently entered from 1980 to 1988 were Internal Medicine, Pediatrics, Family Medicine, Psychiatry, and OBGYN.

## How many faculty members are women?

### Percentage of women medical school faculty members, 1989

<u>rank</u>	<u>% women</u>
Professor	7.0%
Associate professor	16.1
Assistant professor	26.8
Instructor	38.4

Overall, twenty percent of medical school faculty members are women. The higher the rank, the smaller the percentage becomes.

## How much do women physicians make?

### Net Income

<u>sex</u>	<u>1982</u>	<u>1988</u>
male	\$100,800	\$151,100
female	\$63,700	\$94,900
female (% of male)	63.2%	62.8%

### Net Income by years in practice, 1988

<u>years</u>	<u>net income (\$)</u>	
	<u>male</u>	<u>female</u>
1-4	120,700	80,200
5-9	160,400	96,300
10-19	178,000	99,000
20+	133,100	109,600

### Net Income per visit by years in practice, 1988

<u>years</u>	<u>females (% of male)</u>
1-4	72.3%
5-9	67.6
10-19	62.6
20+	95.0

Women physician's salaries were 62.8% of men's salaries in 1988. This percentage has dropped since 1982. Some speculate that this discrepancy is due to the fewer number of women in higher ranking positions. However women's income by years in practice is still much lower than men's. Others argue that women do not work as long hours or see as many patients as men. Yet the average number of patient visits per week of women physicians was 90% that of male physicians in 1988. The average number of practice hours per week in 1988 of female physicians was 91.7% that of male physicians.

Reference: *The AMA Women in Medicine Data Source 1990*. AMA members may obtain a free copy by calling

# Curriculum Committee Adjusts to New System

Andrew Muir

The student curriculum committee recently held elections for the upcoming year. The need for elections arose due to an overhaul in the administration's committee system. Dean Graham will lead the education oversight committee, which occupies the apex of the new structure. Andrew Muir, who was selected chairman of the student curriculum committee, will sit on the education oversight committee as well.

In the second tier of the system, there are two additional committees: Basic science teaching and clinical science teaching. Dr. Matt Cartmill will chair the basic science teaching committee, and the student representatives are Chris Cabell and Mike Flynn. The clinical science teaching committee will be led by Dr.

Frank Neelon, and the student representatives are Natalie Cvijanovich and Matt Roe. Individual committees for each first year block and each second year clinical rotation will subserve the two main committees.

Under this new system, no meetings about curriculum will take place without student representation. Key issues expected to arise next year include the length of the first year, problem-based learning in the first year, and more objective grading in clinical rotations. The next student curriculum committee meeting is Tuesday 6/11 at noon in Room 2253 of Duke North. All students are invited and encouraged to attend.

## Computer Interest Group News

Michael Weiner

Several members of the Computer Interest Group recently met with Carol Reilly of CTL to discuss changes occurring to the clusters of CTL computers. Below is a summary of the news.

**Increased access.** Students have suggested modems and improved access to printers and software. Beginning in July, CTL will make their large computer room (M410) accessible on Monday and Wednesday evenings, from 5:30 pm to 7:30 pm. CTL may extend the hours, depending on use.

**Postgraduate education.** Duke medical students now have access, via computer, to current listings of available positions in fellowship and residency programs. CTL has installed FREIDA, Fellowship and Residency Electronic Interactive Database Access, on 15 workstations in room M410. It is a new system of video and software that allows the user to make queries with specific restrictions, such as geographic location or the possibility for couples-matching. FREIDA contains details about teaching institutions and most of the 6700 programs across the country. We hope this will minimize your time searching for bliss.

**Board review.** CTL has a new release of the NBME Computer-Based Training (CBT) system. It consists of 25 cases with 700 multiple-choice questions, reflecting parts I, II, and III of the National Boards. It is based on the ability to browse through a videodisc, and includes

an orientation section, interactive patient simulations requiring treatment plans (you're the doc), cost of your suggested treatment, and a summary of risks and benefits of the procedures you select. CTL intends to assess medical students' use and utility of this system. Even with the new USMLE approaching, this may be an effective way to study. In July 1991, students will have access to computerized samples of the USMLE.

**Heartlab.** This software, available on Macintosh computers in CTL room M405, simulates the signs of a cardiac exam, including audible heart sounds. Brush up on those murmurs and gallops.

**Hardware upgrades.** CTL hopes to upgrade the IBM PC's in the small cluster to new PS/2 machines.

**Electronic mail.** The MSI class will soon have access to individual accounts allowing them to use electronic mail. This will ultimately be extended to all classes. Watch for news about PCMAIL.

We need your input! Based on surveys conducted by CTL, over 30% of Duke medical students own computers, and this figure is likely to rise. Everyone, of course, uses the machines. If you have ideas—large or small—about hardware, software, printing, videodiscs, access, electronic mail or other communications, or any other matter related to computers, please offer your suggestions. Call Mike Weiner at 286-3147.

Special Prizes and Awards in Medicine  
Duke University Graduation Exercises, May 12, 1991

American Medical Women's Award

Kirsten Lee Johansen  
Sarah Hollingsworth Lisanby  
Deborah Pei-Yu Shih

American Federation for Clinical Research Award

Tedra Louise Anderson-Brown

Ciba Geigy Award

Tamera D. Coyne

Commonwealth Fund Scholarship

Jennifer Lynn Parker

Davison Scholarship Award

David Martin Frucht

Four School Scholarship

Murray Alexander Abramson  
David Martin Frucht

Hewlett Packard Award

Tedra Louise Anderson-Brown  
Kirsten Lee Johansen  
Sarah Hollingsworth Lisanby  
Joseph L. Micca  
Eric Robert Weidman

Howard Hughes Fellowship

Jennifer Morrow Burstain  
Adrian Howard Valentine Cotterell  
Lisa M. Gangarosa  
Catherine Madeline Hren  
Wendy Ann Michelle Olivier  
Clark Clothier Otley

Howard Hughes Scholarship

David Martin Frucht  
John Allen Stahl

International Health Scholarship

Julia Ann Paranka

Ishiyaku EuroAmerican Award

Barry Sidney Myers

Thomas Jefferson Award

Deborah Pei-Yu Shih

Appleton-Lange Award

John A. McAree  
Barry Sidney Myers  
Eric Robert Weidman

Merck Manual Award

Thomas Michael Fyda  
Tracy Williams Gaudet  
John Allen Stahl

E.E. Owen Award

Murray Alexander Abramson  
Scott Anthony Buchanan  
Thomas Andrew Oetting  
Clark Clothier Otley

Sandoz Award

Danil Todd Laskowitz

Stead Scholarship

Diane Alice DeMallie  
Rowena Joy Dolor  
William Robert Harlan III  
Kirsten Lee Johansen  
Lisa Ann Maier  
Deborah Pei-Ye Shih

Upjohn Community Service Award

Christopher Farnitano

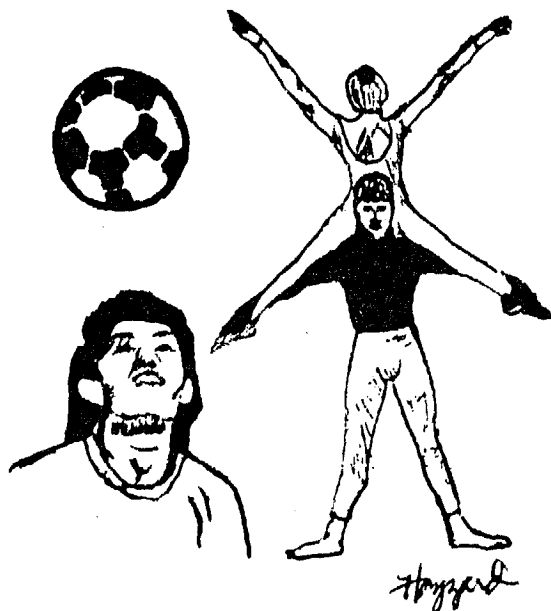
# Announcements

## Basic Cardiac Life Support (CPR) Certification Courses Offered

Nursing Education and Development will be sponsoring Basic Cardiac Life Support Certification courses for all members of the community. Medical students who have been certified as basic life support providers within the last two years (which includes all current MSII's) can register for a recertification course, which will take place on August 1, September 12, and December 16, 1991. The fee for non-nursing personnel is \$15. Registration deadlines are one week prior to each course.

In addition, a Basic Cardiac Life Support Provider Certification course (for those who have not been recently certified) will be held on September 13, 1991. The cost is \$20 for non-nursing personnel and the registration deadline is September 3, 1991.

Registration forms and further information are available from Debbie Carter at Box 3883 DUMC or 684-4293.



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## New Licensing Exams: Correction

Dr. Emil Petrusa

In the last issue of *Shifting Dullness*, future dates for administration of licensing examinations were partially incorrect. The mistake may have occurred due to confusion about labels. The National Board of Medical Examiners (NBME) will phase out its exams labeled Part I, II and III. The NBME is constructing new tests, called Comprehensive Part I and Comprehensive Part II examinations. These Comprehensive exams will be *renamed* Step 1 and Step 2 beginning with the administrations in 1992. The dates for Comprehensive Part I are June 11-12 and September 4-5, 1991. This exam will become Step 1 in 1992 with administration dates of June 9-10 and September 22-23, 1992 and June 8-9 and September 21-22, 1993.

The Comprehensive Part II exam will be given September 25-26, 1991 and April 2-3, 1992 after which it will become Step 2 with administration dates of September 24-25, 1992 and March 30-31, 1993. The Step 3 exam has not been created as yet but will be given beginning on June 21-22, 1994 and December 6-7, 1994. The FLEX exam (which has Components 1 and 2) will continue to be given June and December through 1993.

## Volunteer Docents Needed at the Eye Center Tactile Art Gallery

The Tactile Art Gallery's hours are limited by the number of docents. Contact Joy Javits Stewart at Cultural Services Box 3017 DUMC or 684-2027 if you have a Tuesday morning, or Monday or Thursday afternoon free.

## Summer Intramural Registration Deadlines

Registration for softball, 3-on-3 basketball, tennis, racquetball, squash, and "captains choice" golf begins July 1 and ends July 2. All sports begin play July 10. For details about these events call the IM office at 684-3156.

June/July 1991

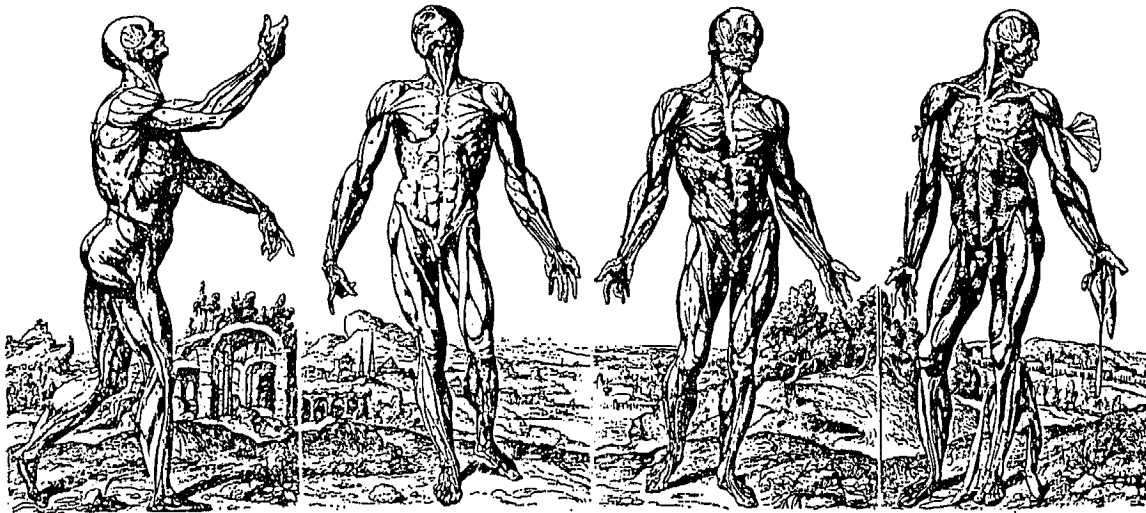


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## Cultural Calendar

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### Art Exhibits

6/21 At 3 p.m. the Clyde Jones display of folk art will be presented in the Eye center Tactile Art Gallery.  
June — The winners of the Duke Employee Arts and Crafts exhibit will be displayed in the Duke North Mars display cases.  
June — The Rauch Exhibit cases in Duke north will display handcrafted mirrors by Kate Murphy.

### Literary Lunchtimes

Fridays 12 p.m. Room M133 Green Zone (Dean's Conference Room). Call 684-2027 for copies of the short stories.  
6/14 A.J. Mayhew will read one of her short stories.  
6/21 Summer Solstice open reading.  
6/28 Betsy Cox will read a short story.  
7/5 Open reading and the poetry of Ezra Pound.  
7/12 A short story by Jane Smiley will be discussed.  
7/19 Mike Clintwood will read poetry.  
7/26 Clyde Edgerton from 12-1 p.m. in North lobby and from 1-2 p.m. in medical center board room.

### Music

6/11 The Ciompi Quartet will play in the Bryan Center Film Theater at 8 p.m. Guests include pianist Jane Hawkins, violinist Rolf Schulte and soprano Jeanne Ommerle.  
6/20 "Cello with mixed toppings." The Ciompi Quartet will perform in the Reynolds Industries Theater at 8 p.m. Free tickets available through Sheba Vaughn in the Dean's Office.  
6/20 An African-American Dance Ensemble will perform from noon to 1:30 p.m. in Duke Gardens.  
6/27 The Ciompi Quartet will perform at 8 p.m. in the Reynolds Industries Theater.  
8/4 Sing along in Duke gardens at 5 p.m.

### Special Events

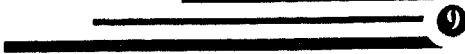
6/10 Duke Employee Night at the Durham Bulls  
6/13 Students of recycle and read are having an award ceremony to honor their achievements at 2 p.m. in the Searle Center. Guest poets include Jaki Shelton-Green and Richard Robeson.

Shifting Dullness

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You, too will be an MSIV someday (if the first three years don't sink you), and will need to choose electives and residency programs. The following are direct quotes from responders to a recent *Shifting Dullness* survey of MSIV's. Students were asked to list courses that they would and would not recommend, and for advice on residency selection.

## Courses recommended:

**Anesthesiology (ANE 240C):** "great for learning procedures, and easy."

**Correctional/Forensic Psychiatry (PSC 353c):** "You will work in the 150 bed psychiatric hospital in the Raleigh Central Prison. It was the most emotionally challenging rotation I ever had. Dr. Smith and Dr. Carter are fantastic."

**Endocrinology (MED 290C):** "The diabetes service is especially good—one becomes proficient at treating such a common disease."

**Family Medicine Preceptorship (CFM 299C):** "This is essentially the same course as the second year one month family med course. I learned a lot more the second time around."

**Infectious Disease (MED 280C):** "The consult service is sometimes slow, but you learn a lot about diagnosis and treatment. Dr. Sexton is a fantastic attending."

**Medicine Emergency Room (MED 220C):** "Good variety of cases. Good chance to see patients before the diagnosis is made. Good opportunity for one on one work with medicine junior residents." "High volume of patients with lots of experience in managing common and uncommon medical problems in an acute state."

**Medicine Intensive Care Unit (MED 223C):** "Five credits, lots of procedures, good teaching." "Good experience with ventilators and complications of ICU stay. Great attendings."

**Medicine Subinternship (MED 211C):** "Independence, good exposure to real patient care." "Good for gaining self-confidence as a future intern." "Should be required—only way to learn to handle many patients."

**Neuroradiology (RAD 211C):** "Spend a full month on neuro MR and CT. In the basic radiology course you would only spend two days and really not learn much. The entire neuroradiology staff is excellent...especially Dr. Hatten."

**Pediatric Intensive Care Unit (PED 250C)**

**Pediatric Neurology (PED 281C):** "Fellows are outstanding—patients complex."

**Psychosomatic Gynecology (OBG 250C):** "Dr. Steege and Dr. Stout are great teachers. You will learn about chronic pelvic pain from a unique interdisciplinary perspective."

In addition to those listed above, last year's responders to a similar survey recommended the following courses: **Advanced Family Medicine (CFM 259C)**, **Advanced Surgical Clerkship (SUR 299C)**, **Clinical Coagulation (MED 275C)**, **Dermatology (MED 250C)**, **Gynecology Clinics (OBG 249C)**, **Medical Ophthalmology (OPH 210C)**, **Orthopedics (SUR 259C)**, **Pediatric Hematology and Oncology (PED 217C)**, **Pediatric Infectious Disease (PED 211C)**, **Pediatric Radiology (RAD 210C)**, **Pediatric Surgery (SUR 276C)**, **Pulmonary Medicine (MED 230C)**, and **Radiation Oncology (RAD 215C)**.

## Courses on which opinion varied:

**Radiology (RAD 229C):** "Fun and necessary info you don't get." "Good general background, especially for chest X-rays." "Not sufficient time spent in any one area (except chest radiology)." "Students are not involved with decisions and are instead distant observers."

Courses on which last year's opinion varied included **Cardiology (MED 240C)**, **Endocrinology (MED 290C)**, **Geriatrics (MED 400C)**, **Neuropsychiatry (PSC 260C)**, **Otolaryngology (SUR 239C)**, **Radiology (RAD 229C)**, and **Rheumatology (MED 320C)**.

## Courses not recommended:

**Pediatric Hematology and Oncology (PED 217C)**

**Surgery Trauma Service (SUR 303C):** "If you are interested in big-time trauma surgery, you might be better off taking a rotation in a big city hospital—not at Duke. I enjoyed the Duke trauma surgery rotation, but DUMC does not get a large volume of trauma."

Courses not recommended from last year's survey were **Gastroenterology (MED 260C)** and **Office Orthopedics (SUR 261C)**.

(continued on next page)

## Advice about choosing electives:

—"A rotation away at an institution at which you are considering training is a good idea. You should take it early in the summer so you will have letters of recommendation for your application. Take a subinternship in the specialty you have chosen early so you can get letters of recommendation. If you apply in psychiatry, it is a good idea to get at least one letter from a medicine attending. Don't kill yourself with too many subinternships and intensive care unit rotations. Take some consults and relax before internship."

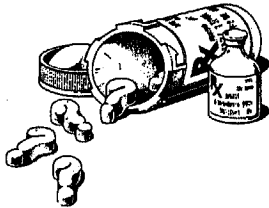
—"I found a rotation away (at the institution I wanted to attend) helpful, as I was able to get to know them and vice versa. I think it's good to do a rotation in one's chosen specialty early (to be sure it's the right one) and to get recommendations. One should definitely do at least a subinternship or an intensive care unit rotation."

—"I recommend a rotation with the Indian Health Service."

—"Take hard rotations early to get experience and recommendations. Take one-on-one preceptorships with the attendings of your choice. If you can't decide what specialty to enter, talk to lots of residents in each one in which you're interested (and to non-Duke residents too, if possible) and experiment early with different specialties. Subinternships and intensive care unit rotations are really fun but don't do too many of them. Take subinternships early because you won't have the motivation later."

—"Rotations away are very helpful in ophthalmology."

—"Do one elective in which you work closely with an attending in your specialty early on in order to have a good thorough recommendation. Otherwise it's best not to take too many courses in your chosen specialty—better to get a well-rounded medical education; you'll need it later."



## Advice about residency selection:

—"It's good to take time off (or at least a reduced courseload) while interviewing. This process takes a lot of energy and one needs to make a good impression. I think interviewing at 8-10 places is sufficient, unless entering a very competitive field. In retrospect I can say that it's OK to trust what residency training directors tell you."

—"Take a month off and do all interviews then. Only interview at places you are seriously considering, and only rank places you really want to go to."

—"You should take time off to interview and you should interview at and rank fewer places than you think you should. Do not trust what residency program directors promise you, no matter how nice they are."

—"It is not necessary to take time off to interview. Rotation directors expect MSIV's to take off a few days for interviews. I don't recommend taking more than three days per four week rotation. Also, you will have a long Christmas break and you can use the first two weeks of January to interview."

Do not trust what residency directors promise you. They are not supposed to promise anything and what they do promise is not binding. As a Duke student, your should expect most programs to want you, so be flattered but do not feel obligated to make any promises in return. Under no circumstances should you list only one program."

—"In obstetrics and gynecology you need to look at a large number of schools and apply early in order to be able to choose 8-12 interviews. This field has become increasingly competitive and therefore you need to look at a lot of places. If a program really wants you, you'll get a letter saying so; if not so sure then you won't (except for Duke which sends everyone a letter of some sort)."

—"In ophthalmology all of us got our first choice. But I would interview at at least eight and rank at least six bare minimum. I had no promises from residency directors. You will need to take the month of December off to interview."

Magnetic resonance (MR) imaging has emerged as an important radiologic tool. Duke was among the first U.S. hospitals to use MR, and remains a leader in the field. On May 22, the Computer Interest Group hosted G. Allan Johnson, Ph.D., professor in radiology's Division of Imaging, as he led a tour and discussion of DUMC's modern imaging facilities. Dr. Johnson and his colleagues have developed systems using MR microscopy to answer such questions as how the process of stroke occurs.

The MR laboratories are located in the new Bryan Research Center for the Neurosciences. Parts of the building were constructed according to specifications of the high-gradient magnetic equipment in the labs. Using machinery on the premises, MR coils can be designed and manufactured with relative ease, for application to specific small mammals involved in the studies. Stroke can be induced and monitored step by step, while *in vivo* experiments are conducted with the MR equipment. Physiologic conditions, such as respiratory and cardiac parameters, can be carefully controlled. The noninvasive nature of the imaging also requires using fewer experimental animals than before.

Following imaging of an animal, workstations equipped with computer graphics systems are used to manipulate and analyze the data. Images of three-dimensional objects can be projected realistically under a variety of mathematical transformations. The results are effects such as rotation or zooming in multiple planes, in addition to detailed calculations, perhaps of

volumes or distances between points. By interpreting data in terms of opacity, images such as the bony outline of a chick embryo can be created by changing the threshold of points displayed.

Whole images can also be electronically transferred to remote sites over fiber-optic cables that can transmit information at maximum speeds on the order of  $10^{16}$  bits of data per second. Storing images and other data is possible using specially designed compact discs with write-once, read-many capability. Equipment manufactured by Apple (Macintosh) is abundant in the labs, but versatile links to UNIX-based Sun Work stations and other systems have been installed.

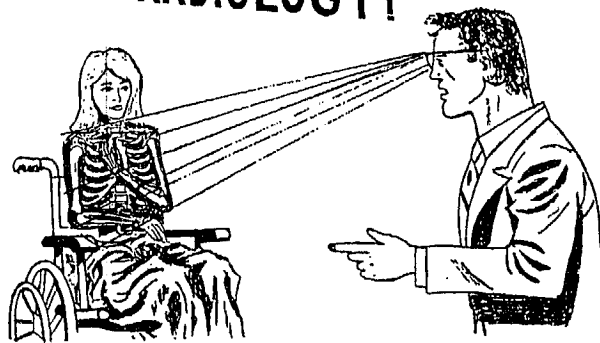
With MR microscopy, scientists now address a problem that has perplexed them for many years: how to capture anatomic data accurately in three dimensions. Those who have spent hours producing serial sections with a microtome can appreciate the complexity of assembling the information with traditional techniques. While advances of the methods themselves constitute a great achievement, this imaging technology promises valuable applications not only to clinical medicine, but to the basic science of both animals and plants.

#### References

1. "MR provides a new look into living things." *Duke Dialogue*, 11 January 1991.
2. "Ravin reappointed as radiology department chairman." *Duke Dialogue*, 26 April 1991.

CLARK KENT, M.D.... PROFESSOR  
EMERITUS OF

## RADIOLOGY!



12

by John Armitage, Susan Graves, Andrew Baxter

June/July 1991

Jeff Melnick is a third year MD/PhD student who has been working for six months in the laboratory of Dr. Yair Argon, Assistant Professor of Microbiology and Immunology. Jeff's research project involves the analysis of intracellular transport and secretion of immunoglobulin light chains.

Immunoglobulins are protein molecules with a monomeric structure consisting of two heavy (H) chains and two light (L) chains. All H and L chains have constant (C) and variable (V) regions within the amino acid sequences. The V regions are actively involved in the recognition of antigens, while the C regions play a role in the structural stability and other functional specificities of the immunoglobulin. The noncovalent association and disulfide bond formation between the L and H chains begin as the peptides are synthesized and are completed within the endoplasmic reticulum (ER). The immunoglobulin molecules are then secreted from the mature B cell (plasma cell). Free H chains are not secreted whereas L chains are capable of being secreted by mutant cells without intact H chains.

Recent work in Dr. Argon's laboratory has focused on the mechanism and regulation of immunoglobulin intracellular transport and secretion. Dr. Argon's group has found that the V region of the lambda subclass of L chains appears to be involved in the secretion of free L chains and mature immunoglobulin molecules. This conclusion is based on the fact that a specific amino acid substitution within the V<sub>L</sub> region (variable region of the light chain) abolishes the secretion of immunoglobulins. Thus, it is possible that the V<sub>L</sub> region contains regulatory signals that are necessary for secretion.

Jeff has continued these studies on immunoglobulin secretion. He has subcloned a fusion protein in which V<sub>L</sub> is covalently linked to an H chain and has transfected the gene into COS cells (cells not ordinarily secreting immunoglobulins). Although earlier experiments have suggested that the V<sub>L</sub> region may contain secretory signals, the fusion protein is not secreted from the COS cells. Jeff is currently running cotransfection experiments to see if normal L chains are able to induce secretion of these fusion proteins.

The remainder of Jeff's work involves the isolation and characterization of cellular factors that may be

involved in the intracellular transport of the lambda L chains in myeloma cell lines. Using DSP (a crosslinking agent) and antibodies against the L chain in immunoprecipitation studies, Jeff has shown that the L chain is associated with an unidentified protein of molecular weight 100kD and with BiP, a previously characterized protein within the ER. Preliminary experiments have shown that L, BiP and the 100kd protein all interact with one another in some form of a complex within the cytoplasm. Jeff now plans to characterize the 100kD protein in order to elucidate its role in the transport process.

Jeff's project will hopefully contribute to our understanding of immunoglobulin transport and secretion. In addition, Jeff's work may have clinical applications. There are plasma cell disorders such as multiple myeloma and immunocytic amyloidosis (AL type) that are associated with hypersecretion of specific immunoglobulin L and H chains. In addition, lysosomal storage diseases involving defective intracellular transport and secretion of lysosomal hydrolases are known to occur. Jeff's work may lead to advances in our knowledge of the pathogenesis and treatment of these disorders.

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## July

- On July 1, 1505, a union of barbers and surgeons was established as the Royal College of Surgeons of Edinburgh. The charter required that those licensed be freemen of the city of Edinburgh, that their understanding of anatomy be tested by officers of the College, that all apprentices be literate, and that each member be provided a criminal's cadaver each year for dissection. The same agreement also provided the barbers and surgeons with a virtual monopoly of the production of aqua vitae for many years.
- At the Pasteur Institute in Paris on July 6, 1935, the semicentennial of the first preventative inoculation against rabies by Louis Pasteur was observed. One of the participants was Joseph Meister, a janitor at the Institute. Years earlier, as a ten-year-old boy bitten by a rabid dog, he had been Pasteur's first patient to receive the inoculation; as a result of the novel and successful treatment, he survived to honor Pasteur 50 years later.
- On July 7, 1348, the bubonic plague reached England at Weymouth, Devon (then called Melcombe Regis). In less than 20 years the Black Death wiped out between a quarter and a half of the population of the island.
- The first person to vaccinate against smallpox in America was Benjamin Waterhouse, one of the first three professors at the Harvard Medical School. He vaccinated four of his children on July 8, 1800. Confident of his actions, he subsequently exposed them to smallpox and demonstrated the validity of his technique by observing their failure to develop the disease.
- On July 12, 1771, the New York Hospital was chartered. However, it was not used exclusively as originally intended until almost 20 years later. Before the initial structure was finished, fire destroyed it completely. It was rebuilt soon thereafter, but the British occupation of New York during the Revolutionary War led to its use as barracks for Hessian troops. After the war the building served as the meeting place for the New York state legislature and as anatomy classrooms

for Columbia College medical students. Starting in January of 1791, the hospital finally was used as such.

- Sir William Osler was born July 22, 1849 in Canada and died December 29, 1919. A noted medical historian and eminent teacher, he served as professor in turn at McGill, Pennsylvania, Johns Hopkins, and Oxford (where he held the Regius Professorship which had never before been occupied by a British citizen of transatlantic birth). It was said that during Osler's lifetime that a letter, posted from anywhere of the planet, addressed simply to "The Greatest Physician in the World," would eventually find its way to his doorstep.

- Friedrich Gustav Jacob Henle was born July 19, 1809. A brilliant scientist and skilled artist, Henle was to microscopic anatomy what Vesalius had been to gross anatomy. Among the structures bearing his name are Henle's ampulla, ansa, fissures, loop, membrane, sheath, spine, tubules, and warts, as well as Henle's layers of fiber and nerve.

- Ludwig Tuerck was born July 22, 1810 in Vienna. A respected neurologist and laryngologist, Tuerck is notable as the first person to use the laryngoscope in medicine (the instrument was invented earlier by a Spanish singing instructor in London).

- On July 23, 1840, the practice of inoculation was outlawed in England. Earlier the procedure had become somewhat fashionable, with smallpox inoculations taking place at parties. By the early to mid-nineteenth century, vaccination was again both well-established and preferred.

## Correction

In the May issue of *Shifting Dullness* in the entry on James Lind in "This Month in Medical History," the phrase "and daily umbilicus cleanings" was added erroneously and without the author's consent. *Shifting Dullness* regrets any confusion and unnecessary umbilical cleanings this may have caused.

## Grandmother

*She is here  
"Sit with me, dear,"  
proud of my everything  
giving me her school ring —  
too small.*

*She is near  
singing, I can hear,  
in her hat on Sunday.  
She always wore it that way —  
just so.*

*She is there  
combing her hair  
the way it has been  
since I don't know when —  
always.*

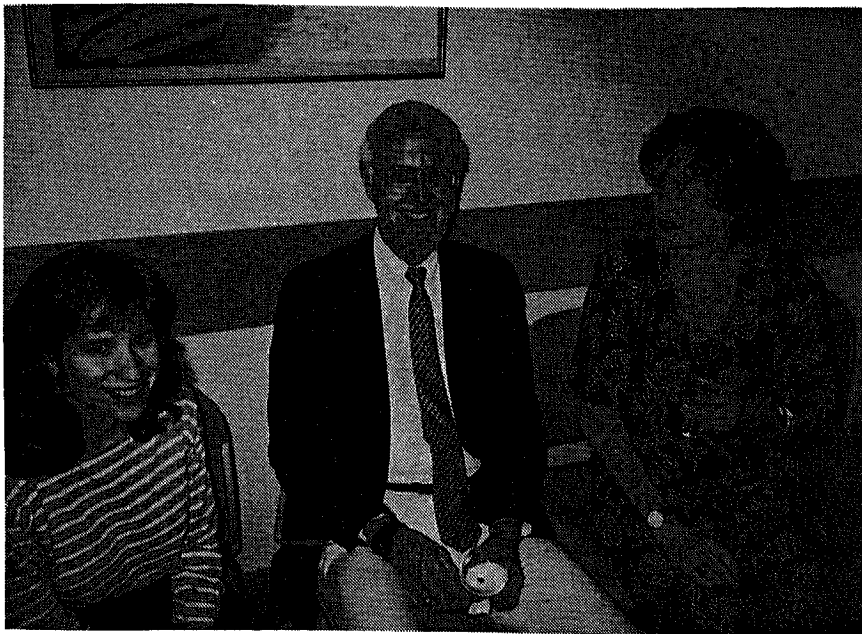
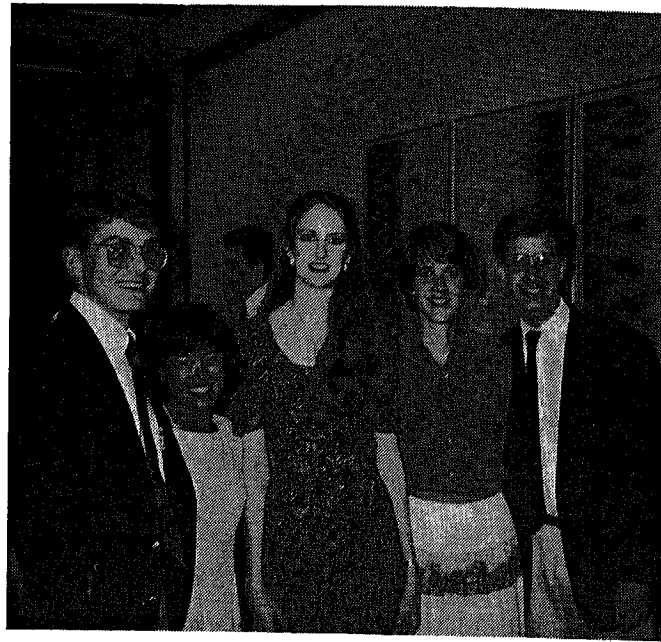
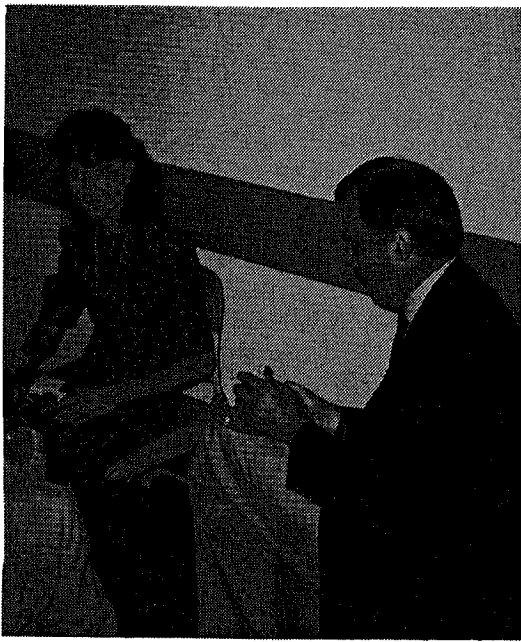
*She is there  
sitting in the chair  
grandfather gave her  
looking at the paper —  
yesterday's.*

*She is alone  
painting at home  
as grandfather dies,  
his dogs by his side —  
content.*

*She is away  
as the last oak sways  
and falls to the storm,  
planted when she was born —  
now gone.*

*Where is she  
now looking at me  
with eyes unknowing?  
Where is she going —  
too soon?*

—Holly Lisanby, 5/91



Photographs from the graduation reception given by RAdm. and Mrs. James W. Lisanby for their daughter Holly Lisanby and the staff of *Shifting Dullness* on May 11, 1991 in the Searle Center.