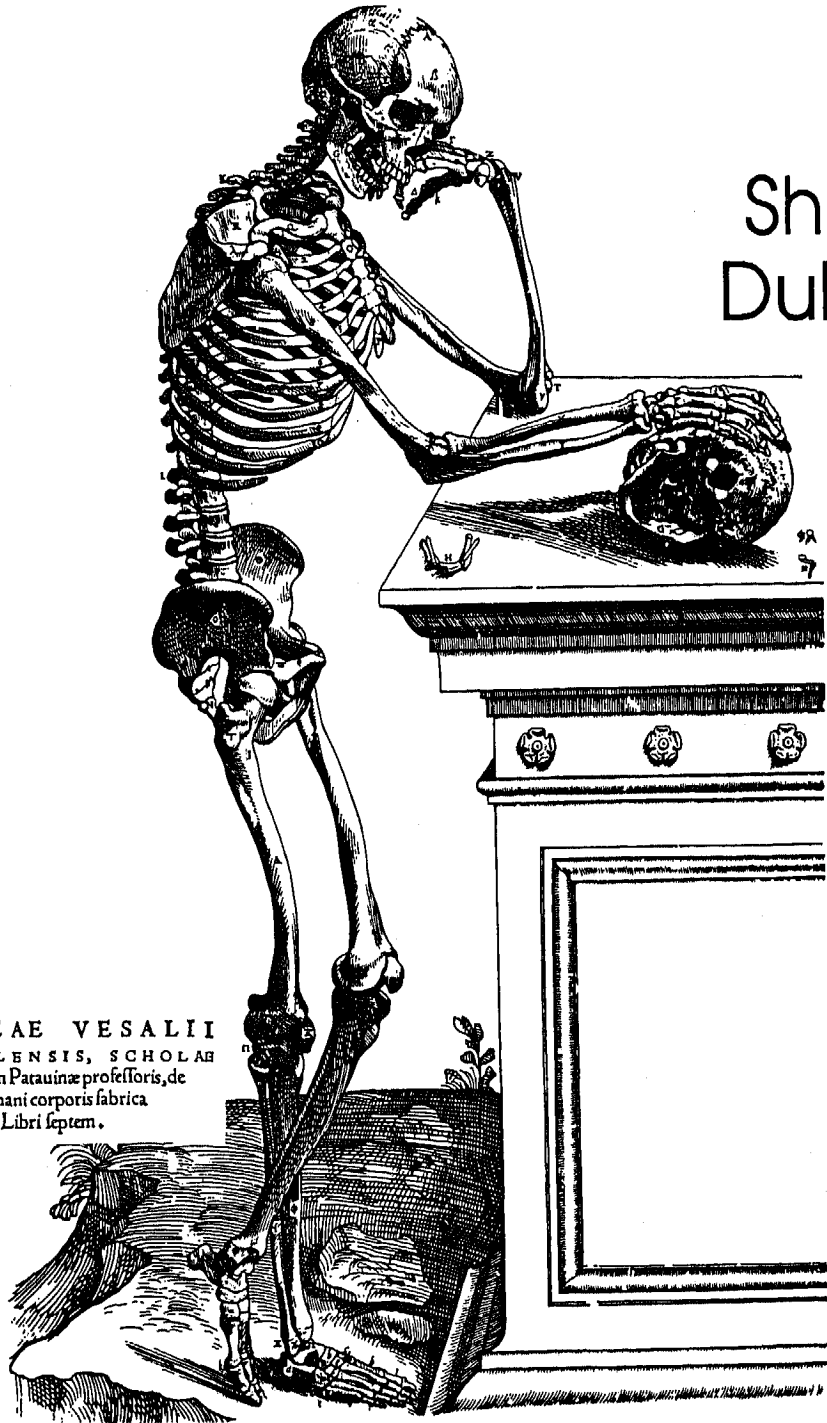


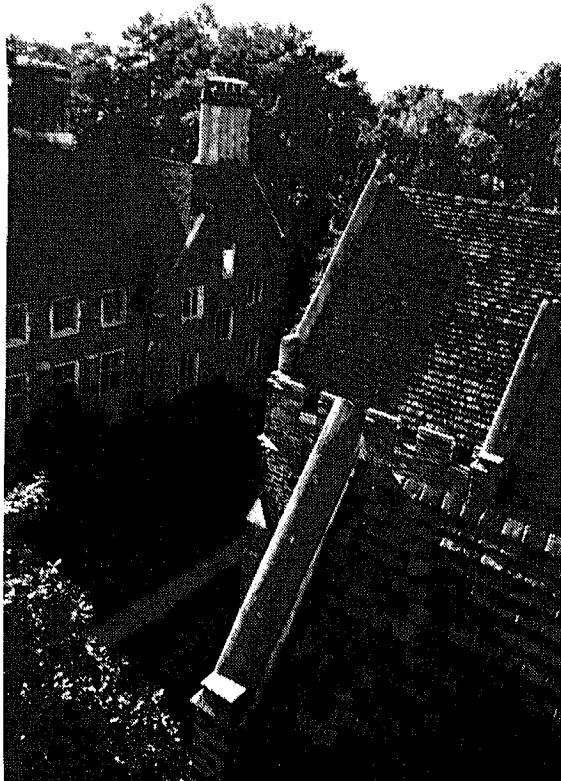
Shifting Dullness



ANDREAE VESALII
BRUXELLENSIS, SCHOLAE
medicorum Patavinæ professoris, de
Humani corporis fabrica
Libri septem.

December 1991/January 1992

- St. Eloy, patron saint in the Middle Ages against scrofula (cervical tuberculous lymphadenitis), died December 1, 659 A.D. Early in French history the belief arose that scrofula, or the King's Evil, was both induced by and cured by the king's touch. The myth travelled to England with the Norman conquest and persisted there into the nineteenth century. Traditionally, the king would "touch" for scrofula on Pentecost, hanging a gold coin specially minted for the occasion around each recipient's neck. Well-known patients *not* cured by the king's touch included St. Francis of Assisi and Samuel Johnson. King William III himself was unconvinced of his healing powers, telling each sufferer as he touched him, "God give you good health and better sense."
- On December 6, 1537, Andreas Vesalius, at the age of twenty-two, received his medical degree at Padua; the following day he was named chair of surgery and



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anatomy at the University. His anatomical studies then began in earnest, culminating six years later with the publication of *De Humani Corporis Fabrica*.

- Theobald Smith, an American pathologist and pioneer in the study of infectious microbiology, died December 10, 1934. He was the first to prove the transmission of a disease (Texas fever, or bovine babesiosis) by an arthropod vector, the tick. It should be noted, however, that ancient observers in Egypt suspected insect transmission of disease.

- On December 21, 1846, ether was first used as a surgical anesthetic in England. The operation was an amputation of the leg carried out by the great Scotch surgeon Robert Liston. Liston is also credited with inventing devices for reducing dislocations and refining laryngoscopy. Reflecting the state of surgical technique at the time, Liston was known for his physical strength as well as innovation; according to one story, he could amputate an entire leg with minimal assistance.

- December 23, 1819 marked the birth of the noted German obstetrician Carl Siegmund Franz Crede. Crede's career is notable for two important contributions to this field: external manipulation to expel the placenta, and the application of silver nitrate to prevent gonorrheal conjunctivitis (and subsequent neonatal blindness).

- Ephraim McDowell, a frontier surgeon in Kentucky and a former pupil of John Bell in Edinburgh, performed the first successful ovariectomy on Christmas Day, 1809. His patient had ridden 60 miles on horseback to have him remove a 22-pound ovarian tumor; she then survived another 33 years. Before his death in 1830, McDowell performed 13 more ovariectomies, with eight successes and five failures. During that time, he was practically the only surgeon in the world for ovarian tumors. His work, along with subsequent development of anesthesia and antibiotics, was essential to the advancement of general surgery.

- Thomas Sydenham of England is deservedly regarded as one of the greatest physicians in the history of internal medicine. He depended more on Hippocrates and his own clinical observations than on the sometimes spurious beliefs of his peers. His classic descriptions included malaria, measles, chorea, dysentery, and gout, the latter of which he studied and suffered from for thirty years, finally succumbing to the disease on December 29, 1689.

AAMC Reps Discuss Issues Critical to Duke Students

Christopher Cabell

The following is a report on the annual meeting of the Association of American Medical Colleges (AAMC) in Washington, D.C. on November 8-10, and in particular on meetings of the Organization of Student Representatives (OSR) to the AAMC.

Two of the most important issues (especially to the Duke medical student body) discussed regard the United States Medical Licensing Exam (USMLE) and the recent development of elimination of deferment for medical school loans. The National Board of Medical Examiners (NBME) is in its 76th year and currently serves as one of two possible pathways for licensure. The other pathway, the Federal Licensing Exam (FLEX), is taken by a large majority of Duke students at the present time. As of spring of 1992, there will be *one* common pathway to licensure, the USMLE. This new test will be administered in three parts, similar to the current NBME test. Step I will replace Part I of the NBME test and consists of the basic science aspect of the licensing examination. A number of changes have been made to this Step in preparation for the common pathway, and it is this Step that is causing the most anxiety for Duke students. The changes include a reduction in questions from 900 to 800, with the test being spread over two days. The unofficial word is that the USMLE has dropped K-type questions, eliminated multiple-multiple choices, and reduced the esoterica with an increased emphasis on clinical basic science. The people at the OSR meeting also revealed that to date, how the exam is to be scored has not been decided. Currently, the NBME test is scored on a bell-shaped curve with a pre-determined failure rate of 11.2%. The mean is given a score of 500 and standard deviations above and below are graded accordingly. The scores are reported to the student's medical school and are only released to residency programs with the student's permission. Unfortunately, many residency programs all but require the scores for initial screening processes, especially the more demanding programs such as orthopedics and ophthalmology.

The USMLE will be set up a little differently. It is believed the exam will be a content-based standard, and a preset 60.1% is required to pass. There is *no* predetermined failure rate. Theoretically, 100% or 0% could pass the examination. As the test is evaluated in the future the minimum may change. How the scores are reported is still a debate. A composite committee on score reporting will meet in December to address the Shifting Dullness

issue, and a recommendation may be made that will be adopted in the spring. Most student organizations, as well as the AAMC and the American Medical Association (AMA) support pass/fail reporting. In March, 1991, the AMA proposed that scores initially be reported as pass/fail, with a full score report delayed until application for licensure is made during residency.

The reason these organizations support pass/fail reporting is that many competitive residency programs use the scores as selection criteria when the exam is not meant to be used in this fashion. In fact, the exam has a single purpose: to determine if the examinee has a minimum requisite knowledge for licensure. As scores get farther and farther away from the mean, they have diminished meaning. For example, under the current scoring system a student who receives a score of 450 versus a score of 550 missed 1/15 more questions.

Another important reason groups are supporting pass/fail is that a competitive national exam that may dictate residency placement will have a profound effect on the curricula at medical schools across the country. Instead of being rewarded for innovative teaching and incorporation of problem based learning, schools will feel compelled to offer two years of board preparation-style basic science to insure that their students will be competitive. Duke has not had to face this question in the past because the students took FLEX, but this will be a major question once the USMLE is implemented.

The second major issue addressed at the OSR meeting was the loss of deferment for medical school loans. This will significantly affect all medical students who have Title IV loans, which include Graduate Student Loans (GSL's). Both the Senate and the House bills eliminate the two year loan deferment period for residents. They call for mandatory forbearance which allows residents to avoid loan payments; however, interest accrues on both the loan's principal and interest. For the SLS, this translates into paying \$5.60 for every dollar borrowed. On a ten year repayment schedule for a \$66,000 loan the difference a two-year forbearance makes is roughly \$24,519. This is a great burden for student borrowers.

At Duke, Dean Graham and Associate Dean Emil Petrusa have been made aware of the content of the OSR meetings. In addition, a letter-writing campaign is being organized to protest the loan bills. Representatives from Duke, such as MSII Christopher Cabell, will stay abreast of these issues by attending OSR/AAMC meetings in the future.

Cholera Epidemic Sweeps through South America

Kenny Boockvar

As we Duke students study patent Western medical problems such as coronary artery disease, cholera, an ancient human plague, now sweeps through South America, striking hundreds of thousands of people. The last epidemic of this size occurred in 1961, when cholera spread from Thailand to three continents [1]. Before that and for centuries cholera caused lethal epidemics in the Old and New Worlds, outbreaks known as the pandemics of 1826-1837, 1840-1862, 1863-1875, and 1883-1894. The first three of these outbreaks originated in India's Ganges basin, where cholera is endemic. There, deaths due to cholera frequently were greater than 100,000 per year up until the mid-twentieth century [2].

Only in the last twenty-five years, as medicine has come to understand the principles of rehydration therapy, has death due to cholera become unnecessary. Even so, though cholera is one of the cheapest and easiest illnesses to treat, 3000 of 270,000 people afflicted this year in South America have died, most of them in Peru and Ecuador, a mortality of greater than one percent (numbers from January to August) [3]. Furthermore, the bacteria threatens to contaminate the Amazon basin, at which time the large populations in the metropolitan areas at the mouth of the river will be affected. The Center for Disease Control is monitoring the epidemic carefully, and especially watching cases in the United States. As of August 15, only fifteen cases of epidemic-associated cholera have occurred in the U.S., from which there has been no secondary spread [3].

Cholera is caused by the gram negative bacillus *Vibrio cholerae*. The genus name comes from the bacteria's flagellar activity which makes it appear to vibrate, hence "vibrio." *Cholerae* comes from the Greek word for bile, "chole." The disease spreads by oral-fecal transmission, and the bacteria survives well in water and food. Gastric acidity is important in protecting the host—people with alterations of gastric acid production have been shown to be more likely to get the disease than normal hosts. Once beyond the stomach the organisms adhere to the brush border of the intestinal epithelial cell. They multiply and produce the now well-characterized cholera enterotoxin, which is made up of two subunits. The "B" subunit binds to monosialosyl ganglioside membrane receptors on the epithelial cell. The enzymatically active "A" subunit then travels through the plasma membrane to the cell interior, where

it catalyzes the transfer of ADP-ribose from NAD to the GTP-binding protein of the adenylate cyclase complex. The ADP-ribosylated GTP-binding protein maintains the adenylate cyclase in an activated state, causing an increase in intracellular cyclic AMP. The cyclic AMP itself activates intracellular protein kinases which phosphorylate ion transport membrane proteins, resulting in secretion of salt and water. The volume of epithelial secretion quickly overwhelms the absorptive capacity of the gastrointestinal tract.

The first clinical symptom of severe cholera is commonly vomiting of a great deal of clear, watery fluid. Subsequently a clear, watery diarrhea is produced. Signs and symptoms of dehydration occur when five percent of the body weight is lost in water. If not soon rehydrated, the choleric victim can suffer severe acidosis, hypokalemia, circulatory collapse and death. This severe form of cholera actually occurs in only five percent of infections with toxigenic *V. cholerae*. Twenty percent of those infected have a mild diarrhea, and the other 75% have asymptomatic infections.

Diagnosis is made by isolation of toxigenic *V. cholerae* serotype O1 from feces on thiosulfate citrate bile salts sucrose (TCBS) medium. Serogroups of *V. cholerae* other than O1 do not cause epidemic cholera. The strain currently moving through South America is serogroup O1, biotype El Tor, serotype Inaba. Clinically the manifestations of cholera may overlap with that of infections by other enteric pathogens like *Shigella*, so microbiologic diagnosis is important.

Due to the acute severe fluid loss, patients suspected of having cholera should be treated aggressively while waiting for diagnostic results. All but severely dehydrated patients can be rehydrated orally. Oral solutions with the correct electrolyte balance available in the U.S. are World Health Organization-Oral Rehydration Solution packets, *Ricelyte* and *Rehydralyte*. If IV therapy is needed, rapid volume replacement with Ringer's Lactate is recommended. Normal saline is less effective but can be used. Antibiotics help to decrease the duration of diarrhea and of bacterial shedding. *V. cholerae* has been shown to be susceptible to doxycycline, tetracycline, trimethoprim-sulfamethoxazole, erythromycin and furazolidone.

The best prevention of cholera is proper sanitation and personal hygiene, and adequate nutrition. The lack

(see Cholera, page 5)

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of these basic conditions in Third World nations makes cholera essentially a Third World disease, and a killer of impoverished people. Prevention efforts in the West have centered on development of a cholera vaccine. Killed *V. cholerae* given parenterally have been used for many years for travellers and during epidemics. However, this vaccine only boosts anti-vibrio titers in those people with pre-existing antibody and has minimal effect in unexposed individuals. Hence, the U.S. Public Health Service removed cholera vaccination from health requirements for entrance into the United States. New approaches to vaccine research include using isolated toxin "B" subunit as a natural toxoid and genetically engineering a vibrio organism in which the gene for the toxin "A" subunit has been deleted. The most protective vaccine developed so far is a combination of "B" subunit toxoid and killed whole bacteria. However, no vaccine is acceptable for widespread use yet. Much of the effort devoted to vaccine development in the West perhaps could be better devoted to improving basic living conditions in places like India, Africa and South America, resulting in just as effective control of cholera.

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1. Feigin, R.D. and Cherry, J.D. (1987) *Textbook of Pediatric Infectious Diseases*. Philadelphia: W.B. Saunders Company, 1987, pp. 652-660.
2. Ackerknecht, E.H. (1965) *History and Geography of the Most Important Diseases*. New York: Hafner Publishing Company, Inc., 1965, pp. 22-32.
3. Center for Disease Control (1991) "Update: Cholera—Western Hemisphere, and Recommendations for Treatment of Cholera." *Morbidity and Mortality Weekly Report*. 40: 562-565.



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Research in the Third Year: The Role of Retinoic Acid in the Oncogenesis of Breast Cancer

Yoshi Murata

Retinoids, which are analogues of vitamin A, have been known for some time to have profound effects on cellular development and differentiation. Although significant progress has been made in understanding the molecular and cellular basis of retinoid function, the role of retinoids in oncogenesis remains unclear. Nita Ahuja, a third year medical student in Dr. J. Dirk Iglehart's laboratory, is studying possible abnormalities in the function of retinoic acid, the active metabolite of vitamin A, in breast cancer cells.

Retinoic acid regulates vertebrate morphogenesis, influences cell growth, and inhibits malignant transformation of cells *in vivo* and *in vitro*. Retinoic acid exerts these cellular changes at the level of gene expression. As retinoic acid enters the cell and is translocated into the nucleus, it binds to one of three retinoic acid receptors (RAR-alpha, -beta and -gamma). The resulting ligand-receptor complex acts as a transcription factor and regulates gene expression as it binds to cis-acting DNA elements termed retinoic acid response elements (RARE).

The retinoic acid-RAR system is thought to be important in the development of certain malignancies that involve blockage of normal cellular differentiation. For example, a mutation in the RAR-alpha has been demonstrated in all patients with acute promyelocytic leukemia (APL). This mutation arises as a result of a chromosomal translocation t(15;17) that fuses the RAR-alpha gene to PML, a gene that codes for a putative DNA binding protein. The mutated RAR somehow disrupts the normal sequence of hematopoiesis and causes the accumulation of abnormal promyelocytes that fail to differentiate further.

There is evidence that suggests that retinoic acid is involved in invasive breast cancer as well. Invasive breast cancer is characterized by the absence of myoepithelial cells which normally synthesize the basement membrane. In addition, lack of basement membrane proteins such as laminin and the presence of metalloproteases such as collagenases that degrade the basal lamina are also found. These abnormal findings may all be attributed to irregularities in the retinoic acid-mediated cell regulation. This is because retinoic acid normally increases the transcription of laminin genes, attenuates the synthesis of collagenase type IV,

and induces differentiation of myoepithelial cells from mammary stem cells. Thus, it is of interest to examine the various aspects of retinoic acid-RAR system in breast cancer cells.

Nita is establishing a system to examine the function of retinoic acids in established breast cancer lines and normal human mammary epithelial cells. Her assay involves the induction of RARE by retinoic acid in transient transfections (introduction of foreign fragments of DNA into cells). For her assay, Nita has two constructs (plasmids containing the DNA fragments of interest), one containing the human RAR-alpha gene, and the other containing a human RARE upstream of the gene for chloramphenicol acetyl transferase (CAT). By transfecting cells with the hRARE-CAT construct, treating the cells with retinoic acid for 48 hours and assaying retinoic acid-induced CAT activity, Nita can measure the activity of cellular pathway for retinoic acid utilization and gene regulation by the retinoic acid-RAR complex.

If transfected cancer cells are able to endogenously synthesize RAR, treatment of cells with retinoic acid will result in the accumulation of retinoic acid-RAR complexes within the nucleus. The receptor-ligand complex can then bind to the transfected RARE in front of the CAT gene, and induce subsequent expression of CAT. If cancer cells lack RAR's or have altered retinoic acid metabolism, the transfected CAT gene will not be expressed following exposure of transfected cells to retinoic acid. Restoration of normal CAT activity in cancer cells may be observed after cotransfection of the human RAR-alpha gene along with the RARE-CAT construct. This result will suggest that cancer cells have low amounts of functional endogenous RARs due to gene deletions, mutations or abnormal regulation of RAR synthesis. This is corrected by the introduction of a functional copy of the RAR-alpha gene. The absence of CAT activity after cotransfections as above will imply that the cancer cells may have defects in the metabolism of retinoic acid, such as uptake and translocation into the nucleus, that may not involve the RAR's. These experiments will hopefully enable Nita to identify possible defects in the retinoic acid-mediated pathway of cellular regulation in breast cancer cells.

Computer Interest Group News

Medline from Home

Michael Weiner

If you have an IBM-compatible computer with a modem, you now have cost-free, remote access to the medical center library's CD Plus (CDP) MEDLINE system. You can doff that white coat, save time waiting in line at the library, and download results to your own computer. What's the catch? A standard 2400-baud modem is still slower than being there in person, but at least you can drink coffee and listen to the Grateful Dead while your proencephalon ponders palpable purpura. If your communications software is PROCOMM PLUS (versions 1.1A, 1.1B, or 2.0), the library will provide you with a free diskette containing an automated script and instructions for logging on remotely. Even if you don't have PROCOMM PLUS, you can access the system with the proper commands from your communications software (contact Mike Weiner for details). If you wish, you can purchase PROCOMM PLUS 2.0 for \$119, from Datastorm Technologies (tel. 314-443-3282).

Robbins' Pathology on Computer

Now you can get the most from Robbins, the text that friends at other med schools have been telling you about. In the next few months, CTL's digital dynamos plans to install another study aid: Keyboard Publishing's Pathology Series uses HyperCard on the Macintosh to manipulate both the complete text and a bank of over 1,300 questions covering all areas of pathology. The two are linked to maximize your learning, especially in areas of weakness. Even if you don't use the QuizBank, the system's searching abilities will let you find any word or phrase in the text. Watch for future details.

New Computer ASSIST Center

Duke's Center for Academic Computing has been dissolved and replaced by the new Center for Academic Systems Support for Information Systems Technology (ASSIST). This structure, consisting of Systems Support and Information Coordination branches, is designed to accommodate the growing diversity of specialized computing on campus by offering decentralized support. In short, the center will link resources and specialists in a variety of locations [Frances Kerr, "Computer ASSIST Center Replaces Academic Computing," The Data Channel, 31 Oct 1991]. Despite the new shine, they have the same phone: 684-3695.

Class News

MSIII

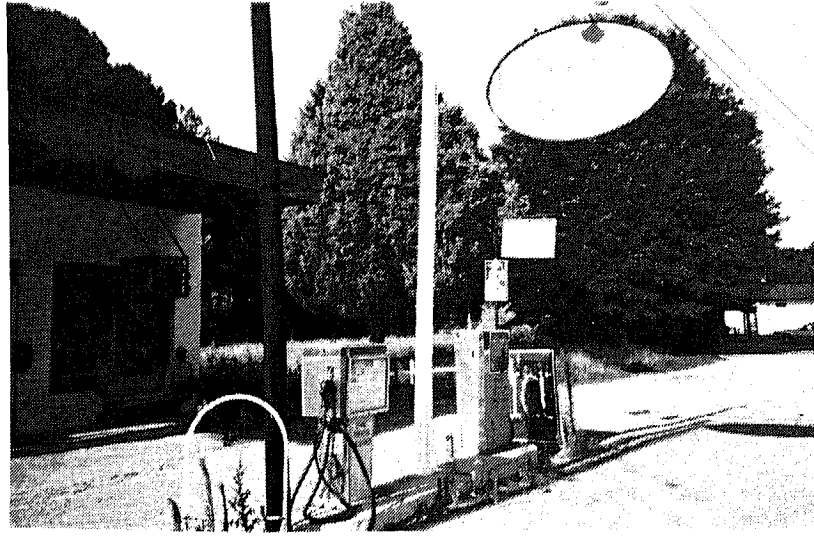
Thanks to all those who helped with the Adopt-A-Highway clean-up last month. The North Carolina Department of Transportation conveyed its appreciation for a job well done. MSIII's are needed for the Sex Education Program in the Durham City Schools. If interested contact Sheila Knerr at 967-0163. MSIII's especially are needed in two blockbuster productions: the 1992 Student/Faculty Show "Willy Davison and the Doctor Factory," and Doctors' Dilemmas' drama about people dealing with organ transplantation in an unusual way. See the announcements on page 11 for more details. If anyone has any suggestions for MSIII class activities please contact Lyndon (493-7877). So far, ideas include a class ski trip and an ice-skating party.

MSII

A class Christmas party is scheduled for 12/18 (time and place to be announced).



Shifting Dullness



● December / January Calendar ●

MUSIC

- December 12: Duke Chorale Christmas Concert at 7 p.m. in Duke Chapel.
- December 13: Student Chamber Music directed by Jane Hawkins at 8 p.m. in the Nelson Music Room.
- December 14: Duke University (Precollegiate) String School at 12:30 p.m., 2 p.m., and 4:30 p.m. in Baldwin Auditorium.
- December 14-15: Spanish and Portuguese Carols performed by the Durham Civic Choral Society at 8 p.m. Saturday and 4 p.m. Sunday in Duke Chapel.
- December 21-22: *Hansel and Gretel* presented by the Triangle Opera Theater and the Office of Cultural Affairs at 3 p.m. in Page Auditorium.
- January 18: Tokyo String Quartet at 8 p.m. in Reynolds Industries Theater.
- January 19: Organ recital by Calvert Johnson at 5 p.m. in Duke Chapel.
- January 23: Frederica von Stade, mezzo soprano at 8 p.m. in Page Auditorium (Duke Artists Series).
- January 23-24: Roscoe Mitchell Jazz Quartet at 8 p.m. at the Durham Arts Council and NCCU.
- January 25: Music of the Schumanns and Mendelsohns at 8 p.m. in the Nelson Music Room.

FILM

Freewater-All films at 7 p.m. and 9:30 p.m. in the Griffith Film Theater in the Bryan Center. Free to Duke Students.

December 12: *M*A*S*H.*

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ART EXHIBITS

- Duke North Display Cases: Works by Members of Womancraft through 1/3. Works by Members of Clayworks through 1/10.
- Rauch Display Case (First Floor Morris Building): A potpourri of handcrafted items by Donna Morris and Teresa Scarboro through December.
- Eye Center Tactile Art Gallery: Regular collection of African, Central American and Egyptian Art weekdays 10 a.m.-1 p.m.
- Duke Museum of Art (East Campus): "Art of the 1980's," selections from the Eli Broad Family Foundation Collection, through 1/5.
- Institute of the Arts Gallery (107 Bivins Building, East Campus): "Drawn to Water," photographs by Diana Parrish and Max Wallace through 12/20. "Black People," by Tom Whiteside, January-February 1992.

LITERARY LUNCHTIMES

Fridays at noon in the Dean's Conference Room, M34 Green Zone, Duke Hospital South except where indicated.

- December 13: Writer Florence Nash will read.
- December 20: Confessional poetry open reading.
- December 27: Poet Amy Spanel will read. Note: meeting will take place in the Administrative Conference Room, 14218 Red Zone, Duke South.

SPECIAL EVENTS

- January 16-February 28: Duke's annual festival of the art of our time, featuring resident artists and guests. Call 684-6654 for a complete schedule.
- December 1991/January 1992

Second and Third Opinions

Further Reflections on Clinical Arts

Scott Palmer

In the previous issue of *Shifting Dullness*, both Peter Higgins and Yoshi Murata criticize Garrett Nichols' recent editorial on the new Clinical Arts problem-based learning course. In his editorial, Garrett argued Clinical Arts sessions were becoming too focused on basic science issues while largely ignoring important psychosocial issues involved in patient care. In response, Yoshi says Garrett "fails to recognize that these sessions were initiated to provide an interactive approach to the basic science topics of medicine." Moreover, Peter goes so far as to assert Garrett represents a "sub-population" of "science-averse students" who now "attempt to alter the curriculum to justify their own ignorance."

As a third year student involved in the planning and oversight of Clinical Arts, I am glad to see fellow medical students express an interest in the course. However, I feel obligated to point out the only ignorance apparent in these recent articles lies in Peter and Yoshi's ignorance about the Duke curriculum. It disturbs me that neither Peter nor Yoshi attempted to research the goals of this new Clinical Arts course prior to undertaking their "Garrett-bashing." Instead, they both simply assumed Clinical Arts is solely a course to teach basic science material through problem based learning.

However, this is not the case. Clinical Arts began at Duke five years ago as part of a national trend to introduce courses in ethics and human values into medical education. A 1985 American Association of Medical Colleges (AAMC) survey showed 113 of the 127 U.S. medical schools had instituted such programs. This commitment to ethics and human values continues as a real part of the Clinical Arts course today.

In the current course, students now spend three weeks focusing on a particular disease topic. In the first week, one or more students interview a standardized patient to obtain a history. The group then spends the next two weeks developing questions about the patient's condition and researching and discussing answers to

these questions. Faculty facilitators guide student discussions but do not lecture on the topic. For example, one recent case focused on diarrhea in a gay man. From such a topic students can develop questions about the pathophysiology of diarrhea as well as questions about homosexuality and AIDS. As the Clinical Arts course description outlines, "Every case includes issues of ethics, nutrition, prevention and psychosocial problems for group discussion."

Once fellow students understand the goals of Clinical Arts, I think a more thoughtful discussion of the curriculum will be possible. Clearly, Clinical Arts now serves as an interesting, clinically oriented compliment to the standard basic science lectures, but is not intended to teach first years the core of basic science knowledge. I think this course offers students a valuable holistic perspective on patient care and should continue in much the same format. However, the enthusiasm among students for problem-based learning suggests first year basic science course directors need to critically evaluate their teaching methods and consider more ways to directly incorporate problem based learning into the first year. To do so could only make the experience of acquiring basic science knowledge both more enjoyable and more meaningful for students.

Shifting Dullness accepts letters of opinion from all members of the medical school community. Opinions expressed do not necessarily reflect those of the editorial staff. *Shifting Dullness* reserves the right to edit letters for length and style. Mail to *Shifting Dullness*, PO Box 2865, DUMC or drop them in the *Shifting Dullness* box in the Alumni Affairs Office (candy room) or in the Duke North student lounge (6th floor).

Basic Science Should Be Presented in Clinical Context

To the editor:

I wish to respond to the continuing dialogue in *Shifting Dullness* regarding the teaching of basic science material here at Duke. Having been involved with curriculum evaluation at Duke for two years, I would like to expand on a number of issues raised in previous letters by Garrett Nichols, Peter Higgins, and Yoshi Murata.

Mr. Nichols laments the lack of clinical focus in the first year problem-solving groups while Mr. Higgins advocates an unreasonable emphasis on basic science learning. In between these two viewpoints is the more reasoned approach of Mr. Murata.

While I agree that basic science knowledge is vitally important to all physicians, the emphasis on basic science knowledge has lessened while the practice of medicine in the U.S. has changed drastically in the past thirty years. The highly technological approach to health care in the U.S. has produced skyrocketing health care costs and has alienated many patients. Nationwide, medical schools are looking for applicants who demonstrate excellence in humanities coursework in addition to proficiency in the sciences. The recent changes in the MCAT and the National Board exams further emphasize that clinical problem solving and critical thinking skills are now more highly valued characteristics in future physicians than is the accumulation and regurgitation of vast quantities of basic science knowledge.

At the heart of this argument is the realization that we are medical students, not graduate students. Mr. Higgins is an M.D./Ph.D. candidate who naturally has a vested interest in basic science which he can pursue while studying for his Ph.D. However, the majority of students at Duke are M.D. candidates who favor a curriculum with a clinical emphasis.

Currently, our core basic science courses are taught during an expanded first year. Information compiled by the Student Curriculum Committee two years ago showed that the total time spent in basic science coursework at Duke is almost equivalent to that of most major medical schools in the U.S. when one considers that our first year is two months longer than the standard nine-month first year and that the total hours per week of basic science instruction is greater at Duke. Basic science coursework could be expanded during the third year, but currently there are few basic science courses available to third year students because most lab

preceptors discourage students from taking time away from the lab for coursework.

The third year is an innovative aspect of Duke's curriculum which exposes students to basic science research, but since only 20% of Duke students typically end up in academic medicine (Doyle Graham, personal communication), our curriculum should not be guided by people like Mr. Higgins who believe it is Duke's responsibility to train all of its students for careers in academic medicine.

Finally, there is the question of the first year problem-solving groups in the Clinical Arts course which generated this discussion in the first place. Clinical Arts began two years ago as a course which was designed to expose Duke students to patients and clinical problems from the beginning. The Clinical Arts course has since metamorphosed into the present groups which are designed to integrate problem-based learning into a combined basic science and clinical approach to common medical problems.

While this is an innovative and desirable approach to basic science instruction, it is not a "revolutionary change in the way basic science is taught" at Duke as Mr. Higgins asserts. The basic science course directors maintain a tight grip on their allotted lecture time which occupies the majority of first year students' time, while the Clinical Arts groups meet only once a week for three hours. Mr. Murata echoes students' general distaste for lectures as a method of basic science instruction in his letter, but the basic science departments have not yet made a "revolutionary" investment in the problem-solving method of teaching.

Mr. Nichols in his letter echoed many of his classmates' concerns, which I heard during a feedback session with first year group representatives. While the goals of applying basic science information to clinical problems are now being met in the groups, most groups were distracted by a laundry list of basic science facts they were given at the beginning of the course and from which they were told they would be tested. Most groups turned away from patient-oriented issues, led by over-zealous group members who attempted to accumulate science facts in preparation for tests. (Ironically, the students were never tested on these facts). The directors of the Clinical Arts course have quickly responded to the students' concerns and have commendably shifted the emphasis in the groups back to patient-oriented issues.

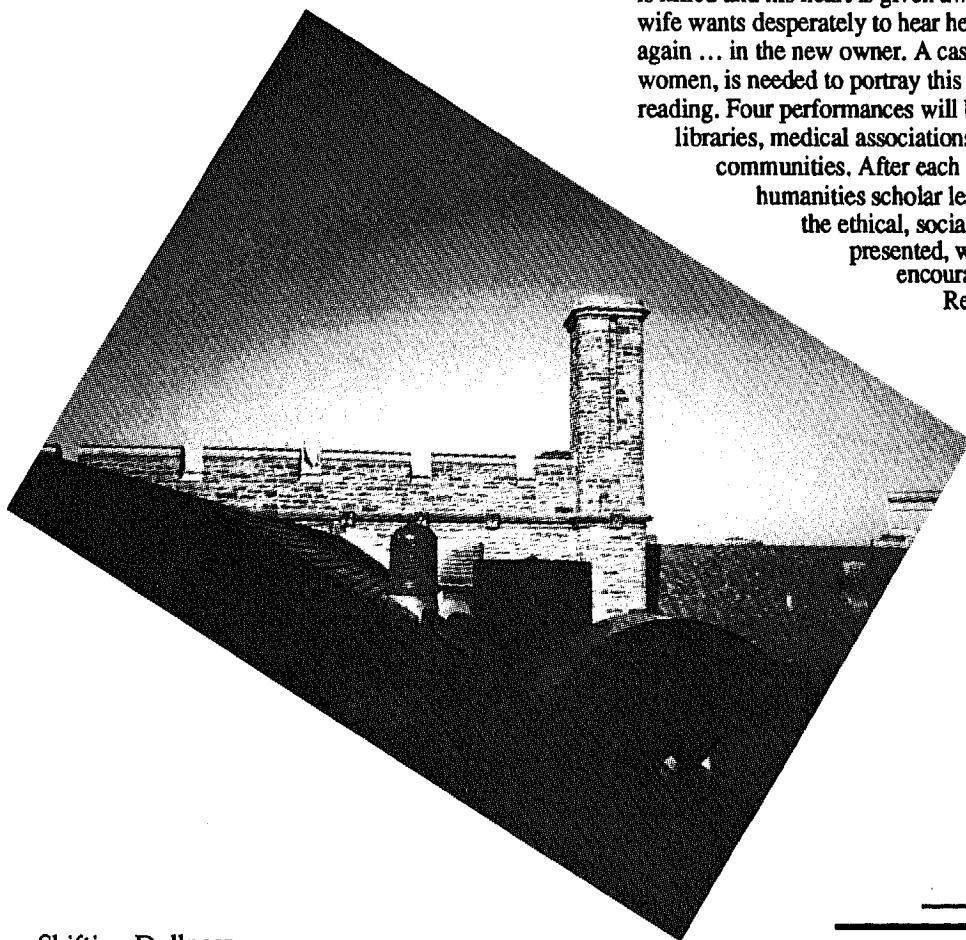
(see Letter, page 11)

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Thus, where do we go from here? I vehemently disagree with Mr. Higgins' assertion that "science-averse" students are subverting the Duke curriculum. Duke students want to learn basic science information in a clinical context so they can apply their knowledge to clinical situations—that is the crux of being a physician. However, most Duke students develop a distaste for the basic sciences after a long first year of boring and repetitive lectures which suppress interest and innovation in students.

Until the basic science instruction at Duke is organized into an integrated, cooperative, and clinically-oriented approach, Duke medical students should continue to have a healthy disdain for basic science instruction.

Sincerely,
Matt Roe, MSIII



Shifting Dullness

Announcements

STUDENT/FACULTY SHOW 1992

Writing is well underway for this year's student/faculty show "Willy Davison and the Doctor Factory," to be performed April 11, 1992 (Parents' Weekend). We still welcome volunteers for any phase of production—acting, dancing, orchestra, sets—and we are presently looking for MSI's or MSIII's who can work as assistant orchestra director or stage manager. Anyone with enthusiasm and music experience can contact Brian Bowman (471-8282) or Jason Dimsdale (493-1531). Teeshirts for the show are available for \$10 from Matt Areford (684-5354).

DOCTORS' DILEMMAS

The issues involving organ transplantation present doctors with some of the most difficult dilemmas that they encounter. In one scenario a young wife's husband is killed and his heart is given away. Afterwards, the wife wants desperately to hear her husband's heart beat again ... in the new owner. A cast of five, men and women, is needed to portray this story in a staged reading. Four performances will be given in public libraries, medical associations and nearby communities. After each performance a humanities scholar leads a discussion about the ethical, social and medical issues presented, with the audience encouraged to participate.

Rehearsals and performances do not interfere with medical school classes. For more information please call Joy Javits Stewart at 967-7429 or leave your name with Sheba in Dr. Puckett's office (684-2498).

THE DUKE MEDICAL ALUMNI ASSOCIATION

supports you by offering:

social functions

Medical Alumni Host Directory

Medical Alumni Scholarship Fund

School of Medicine Merit Scholarship

student bulletin board

Annual Fall Pig Picking

"Preparing for a Residency" workshop

Davison of Duke

Perspectives

and, of course, the Candy Jar



Medical Alumni Association
M144 Davison Building
Duke University Medical Center
684-6347



December 1991/January 1992



Recognize the hallway above? How about the buildings on the back page? *Shifting Dullness* obtained these photographs from unusual vantage points around Duke Medical Center. If you think you've been there, let us know. The respondent who can identify the location of the camera in the most photos will win a \$20 gift certificate to *China Inn*. Just fill out the blanks below, tear off the back page, fold so that the *SD* address is visible and drop in Medical Center mail. The contest is open to all readers. Entry deadline is January 24, 1992.

Name _____

Contact address or phone #:

Photograph:

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Location of camera:

*for extra credit: photo taken outside the medical center

Shifting Dullness

