Wisconsin Medical Alumni

Quarterly

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On the front cover: This stained glass was once part of a window in Miss Helen Crawford's library office in SMI. It has been framed and resides now in Middleton Library.

On the back cover: Librarian Dorothy Whitcomb examines a Greek plane tree given in 1963 to Dr. Middleton by the National Library of Medicine in Bethesda, which obtained it from the Greek ambassador to Washington.

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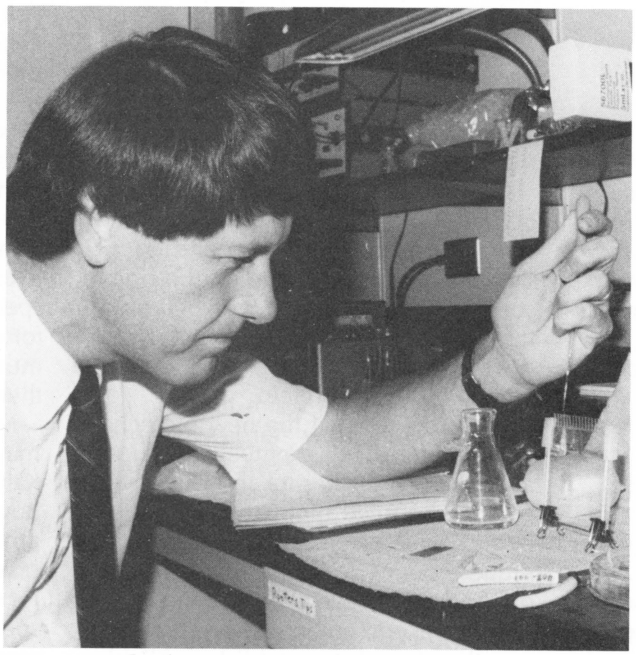
BIOTECHNOLOGY

In The Medical School

Biotechnology is as old and elementary as baking bread or brewing beer. It's as new and complex as imaging the depths of the brain or persuading bacteria to mass-produce human insulin. Any process involving the manipulation of organisms for a desired end, or the use of technology to probe or alter biological systems, can qualify for membership in the broadly-based conglomerate called biotechnology.

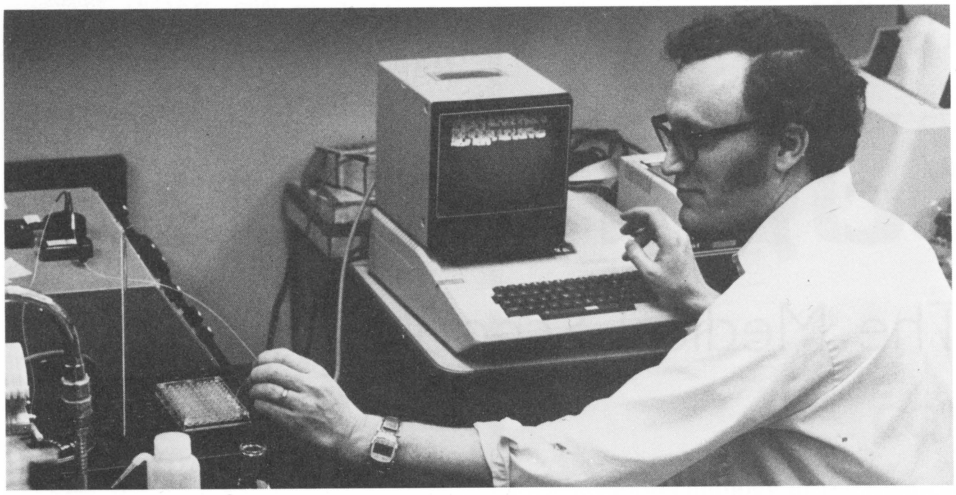


Richard Burgess, Director of the Biotechnology Center

The university recently took official notice of the increasing scientific and media attention centered upon biotec by announcing formation of a biotechnology center at University of Wisconsin–Madison.

The Medical School includes several research programs potentially encompassed by the center as well as many other innovative projects in biotechnology. A few will be discussed here.

They range from dissecting cells at the molecular level to improving x-ray images. All the projects, however different, share a common essence: they may someday benefit man. They promise to provide better diagnoses, facilitate treatment and prevention of disease, or contribute to the storehouse of knowledge essential to future growth in medicine and technology.



Physiological chemist Larry Kahan screens for monoclonal antibodies with a fluorescence test

Monoclonal Antibodies

Physiological chemist Dr. Larry Kahan wouldn't want to get along without the help of monoclonal antibodies, those highly specific and pure antibodies that have become indispensable tools in so many biological studies.

Discovered by Cesar Milstein and Georges Kohler of Cambridge, England only nine years ago, monoclonals are produced by the fusion of two specialized cell lines from mice: antibody producing lymphocytes from the spleens of immunized animals, and myelomas, or vigorously growing tumor cells. The resulting hybridomas, having been selected from among siblings, act as factories, tirelessly secreting pure strains of antibodies.

(Normally, a body's immune system responds to an antigen—which is actually a composite of subunits, each acting as an antigen—by making a spectrum of different antibodies, very difficult and expensive to separate. Monoclonals represent a division of the spectrum into each of its components.)

Kahan extensively uses monoclonal antibodies as he studies ribosomes, the small intracellular bodies where proteins are manufactured. Kahan believes that knowledge about the structure and function of ribosomes is basic to understanding fundamental cellular processes.

But studying ribosomes—so small that even an electron micrograph shows little detail—requires indirect strategy. Kahan explained that they are composed of RNA and proteins. "We want to know what parts of each protein are actually exposed on the ribosome's surface and actively interfacing with messenger-RNA and transfer-RNA, and which proteins are tucked inside the ribosome or largely covered up by other proteins. Immunochemical methods are a way to get at the answers."

(Messenger-RNA carries the genetic message from the gene to the ribosomes in the cytoplasm. Transfer-RNA actually directs assembly of protein at the ribosome.)

Now, thanks to monoclonal antibodies, Kahan is able to home in on specific ribosomal proteins and is well on his way to mapping the ribosome surface, a project which should further elucidate biology's central dogma: transfer of information from DNA to RNA to protein.

Kahan hopes that the new biotechnology center will eventually include a hybridoma facility for those investigators who need monoclonal antibodies as research tools. The technique requires that an individual laboratory spend several thousands of dollars for equipment as well as many months of work to establish a reliable system—a heavy investment for a service that a central facility could provide quickly, efficiently and at cost.

Monoclonals fit into another project in Kahan's laboratory. The story began 10 years ago, when a demonstration for medical students didn't work out. "We couldn't find the cancer marker we were looking for," Kahan said, "but we stumbled across an unusual alkaline phosphatase in 12 of 13 cancer patients." Although Kahan's main interest lies with ribosomes, he said he could hardly ignore what seemed to be a very interesting cancer marker, which is also present in normal people in low concentrations.

After further studies, Kahan and colleagues Dr. Frank Larson, Director of Clinical Laboratories, and Professor of Physiological Chemistry, Dr. Bob Metzenberg found that the alkaline phosphatase marker is very broad indeed, identifying cancers of a wide variety of organs and cell types. It may become useful in monitoring cancer therapy because its levels rise as a tumor grows and falls after successful treatment. Frequently, its levels rise before any clinical manifestation of a relapse—another plus for the alkaline phosphatase marker. A method for its measurement has already been patented with WARF, the Wisconsin Alumni Research Foundation.

In a study involving Kahan, Larson and human oncologist, Dr. Douglass Tormey, the marker is proving to be at least as useful as carcinoembryonic antigen (CEA), an established cancer marker in common use in breast cancer studies.

In other words, for people at high risk, such as patients being treated for cancer and persons with a genetic predisposition for developing cancer, the alkaline phosphatase marker gets excellent marks for sensitivity.

Its usefulness as a screening agent in healthy populations is another matter. It, like other potential screening agents, produces too many false positives. Even a marker with 95 percent specificity is not nearly good enough for screening, Kahan said; specificity must approach 99.9 percent. In fact, there are no screening tests for cancer.

Monoclonal antibodies, however, may come to the rescue. "It turns out," Kahan said, "that the marker is a huge complex with lots of different proteins, not just the alkaline phosphatase enzyme. We'd like to make a lot of monoclonal antibodies, each specific for one component. The technique should allow us to dissect this very complicated material, and may also permit identification of antigens in noncancerous persons (such as diabetics) which might distinguish false positives."

The ideal goal of such studies would be a test system highly specific for cancer patients, which, furthermore, would identify the type of cancer. Kahan has been working with a commercial medical products company to develop such a test system. He said the university is in an excellent position to carry through the necessary research and preliminary testing: it has the expertise of both basic re-

searchers and clinicians, as well as a large pool of patients. After a feasible system is demonstrated, he said, a company could then come along to manufacture, further test and market the product. If a screening test should evolve, mankind will benefit a great deal from this university-industry cooperation.

Kahan said his laboratory already has benefitted from having the two projects going on simultaneously. "For the ribosome work, we developed some fluorescence based enzyme immunoassays which are much more sensitive than what was available at the time—10 to 100 times more sensitive." The method was made available all over campus. "This wouldn't have happened without the fluorescence assays we had previously set up for the alkaline phosphatase marker. So the applied project has helped our more basic work, and vice versa. The technology goes back and forth."

Does Kahan think that some researchers might be lured into focusing their efforts on product-oriented research? His answer is an emphatic "No." "Basic research is much more interesting. There are few exciting discoveries in applications research, and researchers are here because they like the basic research. When they also take on an applied project, they simply add some more people, and everyone benefits. Industry can take advantage of the greater stimulation and expertise on campus, and university researchers can take advantage of the back-and-forth synergism I already mentioned, as well as additional funding."

There is one problem, however, in the relationship: sometimes the ability to publish is limited or delayed until a company can get proprietary protection. Kahan explained that graduate students and postdoctoral fellows must establish themselves on the basis of publication. "In our lab, students work on basic research," yet can make use of techniques developed in the applied work. "I would like to see more industrial research on campus."

Pharmaceuticals of the Future

The biotechnology center's director, Dr. Richard Burgess of the McArdle Laboratory for Cancer Research, is particularly interested in the potential medical applications of emerging technologies, and feels that the university

Specialist Nancy Holland records data from the DNA synthesizer—a gene machine

can provide the basic research which industry can then convert into useful products.

Monoclonal antibodies are an example. Companies are developing—and, in some cases, already marketing—a variety of diagnostic kits with monoclonal antibodies which can identify within minutes a large variety of infectious agents in samples of sputum, urine, blood and spinal fluid; conventional tests can sometimes require more than a week. Other kits identify a variety of telltale chemicals from patients.

Monoclonal antibodies can also serve as carriers for medication. There is much interest, for example, in attaching anti-cancer drugs to monoclonals which are directed to cancer cells. These will home in on specific cancer tissue, ignoring other parts of the body. In this context, and others in which carriers would enter the body, researchers are working on methods to produce monoclonal antibodies from human rather than mouse cells to minimize immune reactions to the foreign mouse protein. For diagnostic purposes where testing is done outside the body, mouse antibodies pose no problem.

Burgess said that developing methods of producing useful amounts of pure protein is another area where the center could be helpful. He feels that basic research will point the way to therapies that address regulatory imbalances in the body, such as diseases of the immune system. After it has been determined that a particular protein, perhaps an enzyme, may be needed for therapy, the center will be prepared to:

- Clone the gene responsible for directing synthesis of the enzyme. This may involve use of the Protein Sequencing and DNA Synthesis Facility (discussed elsewhere) and a UW computer program, developed in the Department of Genetics, that can "back translate," or deduce gene sequence from the protein sequence.
- Get the gene expressed efficiently, i.e., engineer a microorganism that overproduces the protein.
- Purify the protein and determine its structure and function. This would require the collaboration of an x-ray crystallgrapher and an enzymologist.
- Chemically modify the gene, if necessary, to produce an enzyme that is more stable, more active, easier to purify, etc. This will require site directed mutagenesis, in which one changes the DNA sequence so that the gene's protein product has a slightly different amino acid sequence.
- Develop the technology to scale-up production if very large quantities are needed.

Such expertise—all the steps involved in going from a minute amount of protein to gram or more quantities—will also be valuable to investigators who need relatively large amounts of protein for their basic research.

The UW Clinical Cancer Center is in the midst of an extensive program under the direction of Dr. Ernest Borden, to test human interferon, one of the first proteins produced by genetic engineering. Before this, large-scale testing was out of the question; only small amounts of human interferon, paintstakingly extracted from human sources, were available. Now, with cooperation between industry (Shell Oil Company and Cetus Corporation) and the university, inter-

feron's potential in cancer therapy will be thoroughly evaluated.

Burgess has already solved one of the sticking points in protein production. He explained that overproduced protein often is insoluble: when cells are harvested and broken apart, the protein aggregates and spins down with cell debris. "This can be a major problem," he said. "Our lab developed a method for getting around it by denaturing the pellet and gradually renaturing it. The enzymes then become soluble." The method has already been useful, and is considered a substantial technical breakthrough.

The molecular biology of gene expression is Burgess' main research interest. He purifies RNA polymerases—enzymes that regulate the transcription of information from DNA to RNA—and studies their enzymatic properties and subunit structure. "I try to understand more and more about how RNA synthesis is regulated," he said. "I work with RNA polymerases from *Escherichia coli* and from wheat, a good source of eukaryotic enzymes."

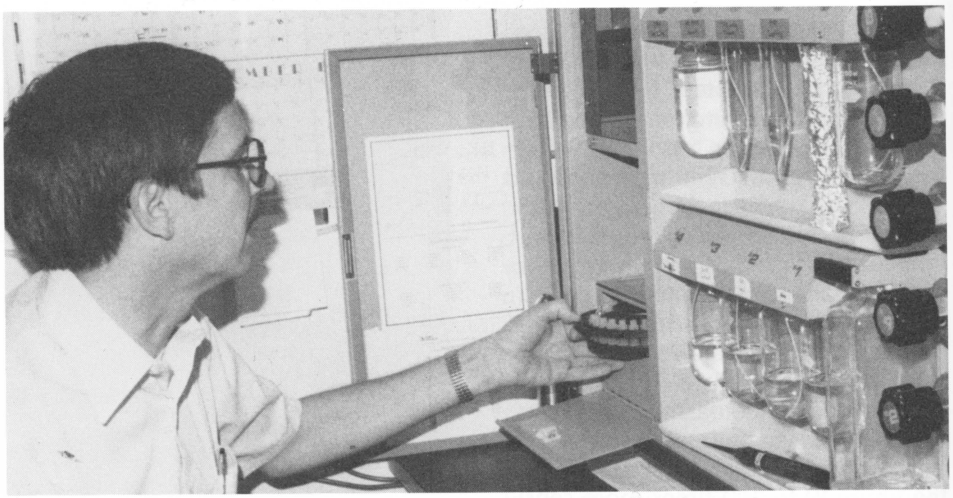
Sequencing Facility

The Protein Sequencing and DNA Synthesis Facility, now over a year old, provides an invaluable service to campus researchers who need to know the amino acid sequence of a purified protein or want to tailor-make a piece of DNA.

The facility, located in the Medical School's McArdle Laboratory for Cancer Research, is a shared equipment laboratory established by Professor Richard Burgess of McArdle (Department of Oncology). Funding is provided by the National Institutes of Health and several UW–Madison sources.

Dr. Ron Niece, who directs the facility, cited the usefulness of such an on-site service:

- Most research laboratories are not set up to sequence proteins or to make DNA. Even if they have the capabilities, investigators may find it more convenient and expedient to take advantage of the lab's state-of-the-art techniques and instrumentation—more than $250,000 worth. "A machine makes fewer mistakes and complains less," Niece said, noting that the alternative of doing the procedures by hand involves tedious work in shifts, with ample room for error.
- The service is inexpensive compared with sending samples to an outside laboratory. One researcher who uses the campus facility calculated that a commercial company would charge him about twice as much to make a piece of DNA he needed. User fees are based on the cost of labor and materials required for a particular job. Users outside the university are charged more, however, as they don't share the considerable overhead expenses borne by campus researchers.
- Proximity has proven to be advantageous. If lab personnel run into problems with a sample or have questions, the user, as well as other experts, are readily available for consultation. The facility thus acts as a sort of clearing house for university researchers, who exchange information on protein and nucleic acid chemistry and provide contacts when questions or problems arise.



Ron Niece removes samples from the protein sequencer in McArdle Laboratories

Synthesizing stretches of DNA is relatively easy using the gene machine, otherwise known as a 3 column, programmable, solid phase DNA synthesizer. The lab has custom-made many DNA pieces, ranging from 12 to 39 bases long, although it is capable of building longer stretches upon request. Many of the users of the synthesizing service are virus researchers.

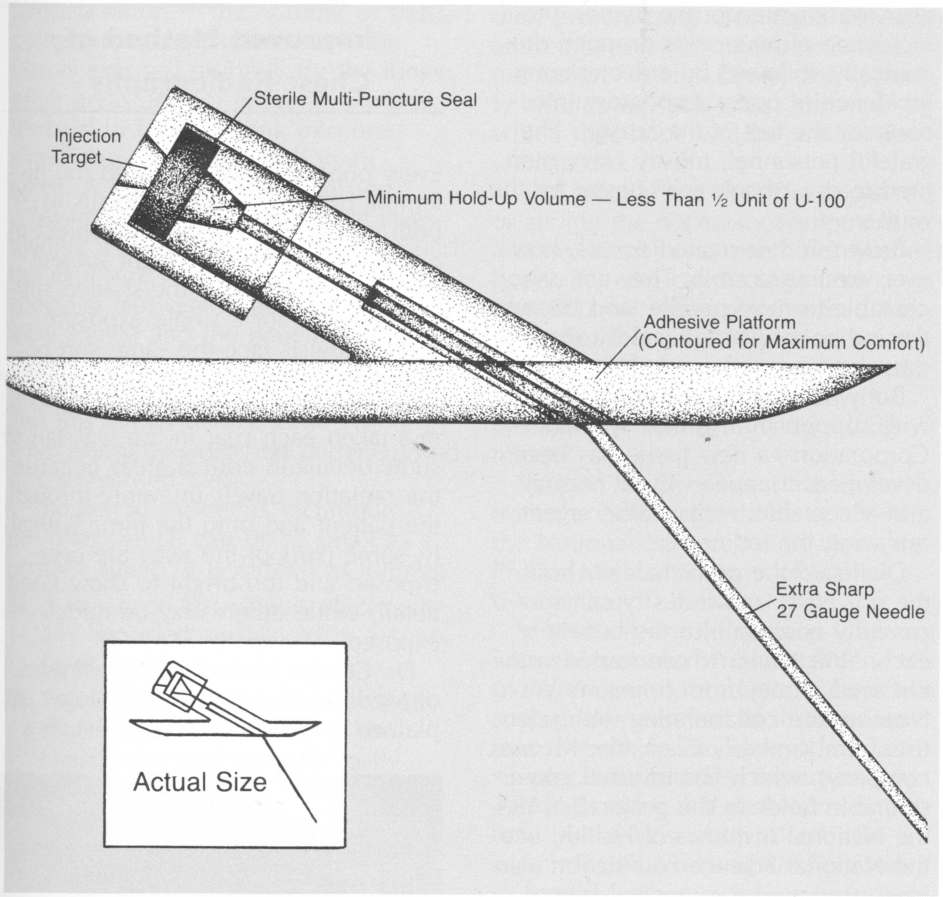
Sequencing proteins is more difficult and labor intensive, Niece said. Using a gas-phase amino acid sequencer, the lab has tackled a wide variety of proteins from sources such as *Escherichia coli*, slime molds, protozoa, tobacco, rat liver, chickens and bovine placenta. The analyses have helped determine protein structure-function relationships and evolutionary links; aspects of DNA transcription and translation; utilization of energy in transportation of ions across a membrane; vitamin D1 metabolism; mechanisms of pregnancy attachment and maintenance; muscle and nerve function.

The laboratory can provide a complete service to a researcher, Niece said. "Here we can sequence a purified protein given to us, deduce the nucleic acid sequence from the protein sequence (a process called "back translating") and make a gene probe by constructing an appropriate piece of DNA with a radioactive marker." A probe has the ability to hybridize to a gene or gene fragment it recognizes as complementary and thus tell the researcher where a particular gene is; this is helpful, for example, when one wants to fish out a particular segment of nucleic acid from a library that contains thousands of different segments of DNA.

Progress in Insulin Therapy

In spite of great improvements in therapy since Banting and Best discovered insulin in 1921, diabetes is still a major health problem. It is the third-ranking killer of Americans, trailing only heart disease and cancer; it's the number one cause of blindness, kidney failure, sudden death in young adults, and limb amputation.

In recent years, the medical community has essentially agreed that for most insulin-dependent diabetics, mulitiple daily injections of regular insulin are most effective in controlling blood glucose levels than one



The button infuser helps to make insulin injections "ouchless"

shot of long-acting, crystalline-type insulin. Proper control of blood glucose is considered by most authorities to be essential for the prevention or delay of secondary effects of diabetes, such as kidney failure and diabetic retinopathy, although there is enough controversy about the effectiveness of tightly controlling glucose levels that a nationwide study is in progress.

Many patients find it disagreeable to stick themselves several times a day. For them, and others who suffer skin reactions, several devices are available to reduce the number of times a needle must be plunged into the skin. Two of them—an insulin pump (Pen Pump™) and a subcutaneous infusion device (Button Infusor™)—were developed in the Biomedical Engineering Laboratory of Dr. Stuart J. Updike, Professor of Medicine, and are manufactured by Markwell Medical Institute, Inc. of Racine, Wisconsin.

The pump, about the size of a fat fountain pen, and easily carried on a chain around the neck or on the waist, is a reservoir for insulin, which is delivered to the patient through a catheter connected to a subcutaneous needle fastened to the body. Repeated doses of insulin can be delivered before insulin replacement is necessary.

A more popular device, the Button Infusor, consists of a thumbnail-sized piece of plastic with a needle for subcutaneous injection and a very small well with a cover, through which a given dose of insulin is injected. The button is affixed to the abdomen or some other area, and instead of repeatedly sticking needles into the skin, the patient injects the Button Infusor, which carries the insulin into the body. The button is an elegantly simple, eminently useful device whose time had come, thanks to the efforts of Stuart Updike, who so often observed the awkwardness to the patient of other devices with a similar purpose.

Regardless of delivery systems, however, the vexing issue of how much insulin to inject at what time intervals still poses a problem to physicians and their insulin-dependent patients, some 2,000,000 in the U.S. The ability to measure actual blood glucose levels has recently made this decision easier. A number of systems for this purpose are on the market. All of them, however, have drawbacks: they tend to be expensive and time-consuming, and require expertise and careful attention from the patient.

Updike has invented two glucose sensing devices, still in the development stage, which show promise of ameliorating the drawbacks.

One, called a subcutaneous implantable glucose sensor, consists of a soft, slender catheter about one millimeter in diameter, placed under the skin with a disposable insertion device. The sensor would register glucose levels on a small, wristwatch-sized meter, giving the patient continuous glucose information with minimum effort. It's expected to remain in place up to two weeks, when the patient would place a new sensor at a different location.

The other device, a portable glucose meter, is similar to existing meters. The patient puts a small drop of blood on the proper spot and pushes a button; the reading appears in about one minute. The unit is sub-pocket sized, simple to use and read, and inexpensive to operate—a significant improvement over other models.

The sensor is the critical part of the devices, according to bioengineer Mark C. Shults, who has worked on the project for several years. It consists of an electrode with an immobilized enzyme system to quantitatively detect glucose. "The technology must be very dependable," he said. "People's health will depend on it. It will take about $240,000 over the next two years to develop and test prototypes, and several times more support to go into production." However, the need for such monitoring devices is great, and—if they perform well—they could bring money and jobs to Wisconsin.

Previously financed by NIH, Updike's research is now being funded by Markwell, which will be the manufacturer, with matching funds from the Technology Department Fund of the State of Wisconsin.

Another strategy that includes both an automatic sensor and an automatic insulin dispenser has been under Updike's consideration for many years: an implanted, closed-loop, totally self-regulating biofeedback device. Such an artificial pancreas may prove to be the most useful way to provide insulin to the diabetic precisely when it is needed.

Treated Tissues Battle Viruses

Members of the Department of Preventive Medicine have established ties with industry which have proved use-

Elliot Dick, Professor of Preventive Medicine

ful to both. Together, they have developed a new method that potentially could diminish the spread of viruses responsible for causing the common cold.

The method involves use of a facial tissue impregnated with an anti-viral substance capable of killing millions of rhinoviruses per minute. Virologist Dr. Elliot Dick said the tissue seems to be a promising way to fight colds. "Vaccines are not practical because there are so many viruses (300 or more) that cause colds, and anti-viral drugs need much more research."

Dick and colleagues, after years of studying systems in which susceptible (antibody-free) recipients were exposed to donors given hefty doses of rhinoviruses, have developed a tightly controlled model system in which rhinoviral colds can be predictably transmitted under natural conditions. In two recent experiments at the university, the system showed that using the tissues cut person-to-person transmission from approximately 60 percent to zero. Although the tissues appear to be very effective, more testing is planned.

The idea took shape after Wisconsin epidemiologists had monitored the incidence and spread of colds in an Antarctic experiment station from 1975 through 1977, where 200 people spent two summer months isolated from contact with the rest of the world.

"In 1979," Dick said, "with help from Johnson's Wax, we distributed tissues containing iodine every day and made sure they were used." The results seemed like magic: a few days after introduction of the tissues, the incidence of new colds dropped dramatically, followed by a decreaseing incidence of upper respiratory infections for the rest of the season. The grateful personnel, mostly Navy men, produced a "thank you" poster for the wall.

Brown, iodine-treated tissues, however, are impractable. They are unacceptable to most people, and because the iodine evaporates rapidly, they must be frequently replaced.

But work continued, and now—with support from Kimberly Clark Corporation—a new tissue has been developed. It appears quite normal and acceptable, with another agent replacing the iodine.

Dick said the project shows how the university and industry can successfully cooperate to the benefit of each. "We couldn't have started without seed money from Johnson's Wax. Now we are collaborating with scientists from Kimberly Clark (the Kleenex company), which has invested considerable funds in the project." NASA, the National Institutes of Health, and the National Science Foundation also have supported the medical school research.

Dick explained that the new model system for transmitting viruses should prove useful in a variety of studies:

- It should permit conclusions about the method(s) of virus spread. Although Dick and others have found that cold viruses are very hard to transmit, no one knows the precise mode(s) of transmission.
- It could serve as a miniature field trial preparatory to or replacing a large conventional field trial, which can be unreliable and expensive.
- It might be used to study immune mechanisms in respiratory virus infection.

The model, the only one of its kind, is highly predictable and took many years to perfect. It uses male volunteers, 18 or older, who spend 12 consecutive hours together in the same room as they play cards and video games, sing, sleep and otherwise carry on as normal people. The 8 donors and 12 recipients are closely monitored by history students, who have proven to be good record keepers.

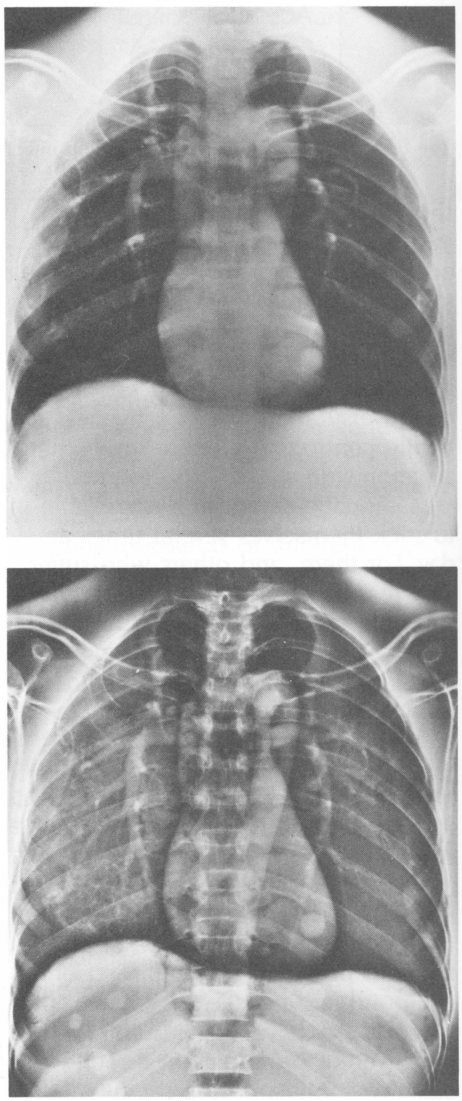
Dick's colleague, UW biophysicist Roland Rueckert, is studying how the agent is so effective in killing viruses at the molecular level.

Improved Method of Chest Radiography

Every photographer has faced the dilemma of trying to show details in both a bright and a shaded subject in one photo. Either the bright subject turns out too light or the shaded subject too dark for a single exposure.

Radiologists face the same sort of problem. For example, a large number of the more than 100,000,000 chest x-rays taken each year in the U.S. fail to show details in critical areas because the radiation travels unevenly through the patient and onto the film. Typically, some parts of the x-ray are overexposed and too bright to show good detail, while others may be underexposed.

Dr. Charles Mistretta (Departments of Medical Physics and Radiology) explained it this way: "There is such a



Chest X-rays before (top) and after interception by cesium-template filter

large variation in the number of x-rays going through a patient that if the film is exposed properly for the lungs, other areas are not properly exposed. It's hard to fit everything into one x-ray—and one is often all that's taken. A lot of lesions are missed."

Mistretta and his students are investigating a new technique to get around the exposure problem by placing a specially fabricated filter between the x-ray source and the patient. "It's designed to equalize the number of x-rays that arrive at the film," he said, and this allows details to be visible in what normally would be underexposed or overexposed areas.

The key to Mistretta's technique is the filter, which can be as small as a postage stamp. It is formed as follows:

- A low dose test x-ray is electronically recorded and stored in a computer.
- This x-ray is used by the computer to calculate which parts of the chest x-rays pass through easily and which parts are more opaque to radiation.
- The computer image is then used as a template to deposit just the right amount of cerium, a heavy metal that absorbs x-rays, on a piece of paper. The areas where the most cerium is laid down correspond to the areas within the patient where x-rays most easily pass through.

The result: a miniature of the patient in various thicknesses of cerium. The custom-made x-ray-beam filter shows the more x-ray transparent areas of an individual patient in putty-like relief, much like a topographical map showing landscape elevations. When the filter is placed between the x-ray source and the patient, the cerium intercepts radiation in proportion to the amount of x-rays that would normally travel through without such a filter.

Mistretta said because the technique equalizes and optimizes the number of x-rays that pass through the patient and arrive at the film, the quality of the image is much better; details often missed in regular x-rays show up, and the probability of detecting disease in previously under- and overexposed regions of the chest is greatly improved.

Eventually, Mistretta and colleagues would like to develop a setup in which the whole process takes place while the patient is holding his breath. This would require, among other things, a printer that could deposit the cerium much faster than their present research model. Mistretta and engineers from the UW Instrumentation Systems Center are currently developing such a fast printer, which they hope will be suitable for clinical use.

And what about the extra expense of adding the necessary equipment to a conventional x-ray machine? Mistretta hopes the cost can be kept under $100,000, far less expensive than the approximately $400,000 price tag of another approach being investigated. "Besides," he added, "how do you measure the cost of missing a lung tumor?"

Support for the project has come from the National Institute of Health, the National Science Foundation, and Philips Medical Systems of Shelton, Connecticut.

Mistretta is an old hand at inventing improvements for x-ray machinery. His pioneering work on digital subtraction angiography resulted in instrumentation to examine blood vessels in a simpler, safer and less expensive way. The patents for that development are held by the Wisconsin Alumni Research Foundation and are licensed to several x-ray companies, including Philips and General Electric.

Antibiotic Resistance Explored at Molecular Level

Pharmacologist Dr. Bernard Weisblum takes advantage of many biotechnology tools in his studies of genes responsible for antibiotic resistance in microorganisms.

He is particularly interested in those genes whose expression can be turned on and off. What are the factors responsible, he asks, when a gene lies silent or when it is switched into action? The mechanims of genetic control systems are at the very core of biological phenomena, including the orderly processes involved in embryological development and, on the other side of the coin, the out-of-control aspect of cancer.

Weisblum finds his work intriguing as basic research with medical, genetic and practical applications. "To be able to determine the structures of genes and of their control regions at the molecular level is intellectually exciting," he said. "The genes we study here were originally obtained from patient strains, and we are learning the rules by which expression of resistance is regulated."

He added that some of the genes he studies are also useful for recombinant DNA studies: If one desires to clone a gene, it is often spliced onto a gene for antibiotic resistance. Sensitive microorganisms are then infected with the combination, but only a very few accept it. Microorganisms that don't carry the desired-gene/antibiotic resistance-gene combination are killed off when exposed to the antibiotic. Some of those that survive consist of organisms that have picked up the gene that's wanted, attached to the gene for antibiotic resistance. The added-on gene for antibiotic resistance, therefore, has made selection possible for the recombinant cell from among the vast majority of non-recombinant microorganisms which remain sensitive.

"Some genes for antibiotic resistance are present in organisms that make the antibiotic in the first place," Weisblum said. *Streptomyces erythreus*, the organism that makes the antibiotic erythromycin, is a case in point.

Staphylococcus aureus, a common pathogenic bacterium that causes boils, is another matter. Some strains are resistant to erythromycin, Weisblum said, and he found that biochemical changes responsible for the resistance are very similar to those that he found in *S. erythreus*. "In other words, it looks as if similar genes are responsible for conferring resistance to both bacteria that make us sick and the bacteria that make the antibiotics that we use *against* the bacteria that make us sick."

Weisblum has learned enough about this genetic system to manipulate gene expression in other systems. For example, he was able to change the organism that makes lincomycin so that it produces five times as much antibiotic by exposing it to an inducing (very low) level of antibiotic. The technique has commercial possibilities and has been patented by WARF.

Weisblum is now studying the factors responsible for inducible antibiotic production as well. "What is the sensor?" he asks. "What do resistant organisms carry around that allows them to sense low levels of antibiotic? What distinguishes them from their sensitive relatives? And, once the antibiotic is sensed, how is the information processed so as to make the bacteria resistant to the antibiotic?"

The answers, no doubt, will come. But they may take many years and a great deal of additional scientific probing. **Q**

PRESIDENT'S COLUMN

George A. Behnke, M.D., '42

What does being a member of the Wisconsin Medical Alumni Association mean? Membership signifies pride in the University of Wisconsin Medical School, which continues to be a truly outstanding medical school. Testimony to its excellence are the fine physicians who have been graduated and who include leaders in every medical sphere. Similarly, our school is a leader in the training of graduate students and postdoctoral fellows for careers in industry, government and in teaching and research. The School's faculty includes many outstanding scholars—men and women whose research excellence has been recognized by the most prestigious international awards, membership in the National Academy of Sciences and the Nobel Prize.

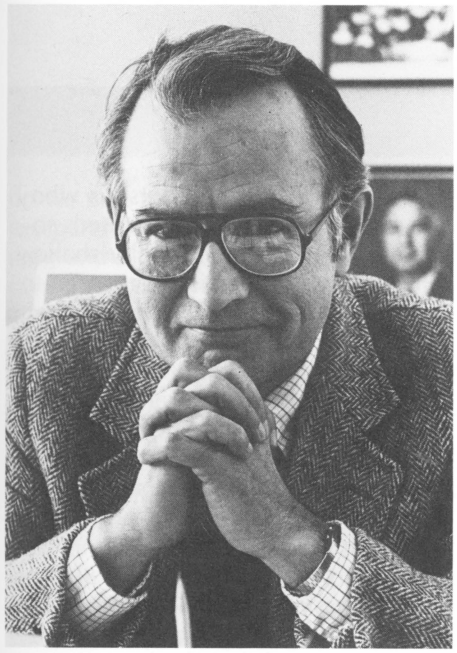
Being a member of the Association signifies a continuing interest in ongoing medical education. We remain students all of our professional lives and the majority of us function as teachers to some extent. Since 1926, our medical school curriculum has featured the preceptor system, which is a unique and valuable learning experience for all students and a stimulus for the preceptor. This is something of Wisconsin which has a lasting influence on each Wisconsin graduate.

Wisconsin Medical Alumni also share a camaraderie which is particularly exemplified by returning to Madison for the Annual Alumni Day festivities, attendance at class reunions and at an increasing number of regional and national Medical Alumni meetings.

Annual contributions to support the Medical School give one a sense of participation and gratification and express our thanks to the School for the fine education we received, which enabled us to devote our lives to the field of medicine. Personally, medicine has been very good to me and I in return feel that I have given substantial service to my community, my profession and to my patients.

With the cost of medical education constantly rising, financial support to our school offers an opportunity for us to help other young persons become well trained physicians who, in turn, will assure good medical care for me, my children and grandchildren.

This is what being a Wisconsin Medical Alumnus means to me. I hope that you feel the same. **Q**



DEAN'S COLUMN

Arnold L. Brown, M.D.

The basic premise of this column is that superior medical care can exist only in the presence of a superior medical educational system. I define such a system broadly and include the education that precedes medical school, that which occurs in medical schools, the residency training period, and continuing medical education. I also include one of the prime functions of a medical school, that of conducting research into biomedical problems. Critical to all of this, of course, is the ability of the profession to attract to it men and women who very much want to learn the art and science of medicine and who will be indifferent to the time, the energy and the sacrifices necessary to do so.

Before going on to a consideration of the various components of medical education, I wish to remind you of a difficult problem that we share with much of the educational enterprise. We have no good measure of the quality of our product, in our case, physicians. I believe that I know what a good physician is, and I suspect you do, but my criteria are quite different from those of a patient who has not spent most of her life in the company of doctors. No test has ever been devised or objective set of criteria developed which measures how good a physician is in the conduct of his or her profession, nor do I anticipate any in the foreseeable future. In short, there is no obvious bottom line in medicine against which the educational process can be measured. This makes rational accountability for medical education impossible, reduces the variables—as we shall see in a moment—that can be used in the admissions process, and renders curriculum design a matter of faith in what seems to work.

Now to the educational process itself. I will start with the public school, a beleaguered institution often studied and just as often criticized. I will not be an exception. It is the lost opportunity that bothers me most. It is just those years when the mind is most malleable, most absorbent, when ineradicable memory traces can be established, and when a naive curiosity makes learning as illuminating as it will ever be again. I suspect everyone reading this can name all of his or her grammar school teachers. None of you has forgotten the multiplication tables, and as poor a speller as you may be, consider how many words you get right and learned before the sixth grade. I do not regard it as making an impossible demand that students arrive at college knowing how to read efficiently and how to write a coherent sentence. But beyond this, it is in the public schools that the study habits of a lifetime are established and, just as importantly, a student's intellectual expectations are set.

What has this to do with medical education? Plenty. Well prepared students do not have to spend their first year in college learning things they should already know. They do not have to develop the discipline that learning requires. They do not have to find the confidence that successful fulfillment of strict standards engenders. People should be educated to the level of their maturity, and the public schools have underestimated the capacities of their students for at least the past 30 years. Now, I realize that to pick on the public schools is to select but one set of variables out of many that affect learning.

With that off my chest, let us now proceed to the premedical years. Except for the time spent in learning what I regard as appropriate subject matter and skills that should have been learned in high school, the four years of college seem to be well spent. There is such a thing as the pre-med syndrome—the fault of the medical schools, not of the colleges. And grade inflation is a fact of life. But the content of the courses that are offered, the diversity of subjects available, and the quality of the teaching are, in my experience, good. This is true whether a student attends a small, liberal arts school or a place like the University at Madison with a population that exceeds that of most of the cities and towns of the State.

Let us, for a moment, consider the pre-med syndrome. For those of you unfamiliar with this malady, I can describe it as follows: this affects a student, male or female, who very much wants to go to medical school and fears, often correctly, that his or her grades will not be good enough. He/she understands that admissions committees pay a great deal of attention to grade point averages, so the af-

flicted student develops a strategy whose sole purpose is to maximize his/her grades. Now, it turns out that medical schools require certain courses, among them mathematics, biology, chemistry and physics. These are not easy, and to receive less than a B in any one of them is the kiss of death. The student realizes that the time-honored, and in my view wholly inappropriate, method for determining grades is to compare performance against the class as a whole, to wit, to grade on a curve. Thus, one must not only not help one's fellow student, but must do whatever is possible to reduce the level of performance of the class. This can take several forms, none of them even remotely consistent with the code of morality that illumes the higher reaches of scholarship. Afflicted students would never think of taking a course in, let us say, the quantum basis of metallo-organic reactions or, just for the hell of it, do a paper on the Influence of 12th Century Monastic Traditions on the 19th Century Novel for an English course. Neither is necessary, and the likelihood of receiving an A is remote. I am happy to report that my colleagues in the College of Letters and Science at Madison tell me that this syndrome is only rarely encountered now. To make it even less likely, we started what we call a Medical Scholars Program four years ago in which we, in effect, enroll twenty graduating high school seniors into the Medical School. They must maintain a reasonable grade point average, just above a B, and are encouraged to take any courses that strike their fancies. It is turning out very well.

Then comes the admission process. I suspect that this has never been an easy job, although I am told that Dean Middleton used to do it all by himself in a couple of afternoons. The number of applications has decreased significantly in recent years due largely, at least in Wisconsin, to a decrease in the number of marginally qualified and unqualified applicants. The process itself is, thank goodness, entirely in the hands of a faculty committee operating with criteria established by the faculty as a whole. All I do is appoint the committee, and from there on my presence is not only unwelcome but actively discouraged. This makes it possible for me to look an influential legislator straight in the eye and tell him that there is no way that I can be of help in getting his son into the Medical School.

Our Admissions Committee, like those of many schools, relies on quantitative information—the grade point average and scores on the Medical College Aptitude Test—for the first cut. From there on, sifting and winnowing utilizes letters of recommendation, extracurricular activities and, last of all, a personal interview. To fill our 159 places we must accept around 200 applicants. Based on what I have seen over the past five years, the Committee does a good job. Our classes, and they differ little from other medical schools, consist of about 30% women and around 7% minority persons.

We, speaking generally of medical schools, have received a lot of criticism concerning the way we admit students. We are accused of a preoccupation with intelligence, as measured by numbers, to the exclusion of such characteristics as compassion, humanism, breadth of interests and motivation. In one sense, those criticisms are correct. We can measure intelligence, although imperfectly, but there is no objective way to quantify those other things. I have yet to read a letter of recommendation that asserted that a candidate was not compassionate, etc. Nor have I talked to a parent who did not sincerely believe that his/her son or daughter had all the characteristics necessary to become a first-rate physician. But, admissions committees understand very well that medical school is a tough intellectual grind; it demands unremitting study and little opportunity for special attention by the faculty. It is also understood that bright men and women, at least those with high grades and MCAT scores, are not, ipso facto, social dullards or lacking in compassion.

At this point, I would like to deliver myself of an opinion on a myth that seems to be gaining increasing currency. The myth is that medical students, and the physicians they are narrowly educated persons who are forever intellectually stunted, socially inept, and emotionally shallow. My response to this is—compared to what? I have not been impressed with the intellectual breadth, the social brilliance, nor the emotional sensitivity of engineers, lawyers, journalists or even professors of English. Nor have I noted a correlation between compassion and an intimate knowledge of Shakespeare, of grand opera, or of impressionistic painting. I suppose the problem here is a definition of compassion. At any rate, medical students are products of their environments and their heritage, just like everyone else, and differ little from their college classmates and, later, from the society in which they become embedded.

How about the medical schools themselves? In the absence of any good measure of the quality of our product, I'd say that we are doing about as well now as we ever have and maybe a little better. We are frequently accused of cramming too much detail into the students at the expense of the development of broad concepts and problem-solving skills. I have always had a problem in responding to this. How does one teach a broad concept of tuberculosis? The way it has been done these many years is to require the student to know what a tubercle bacillus is, how the body reacts to it, the social context of the disease, how the pathological process leads to diagnosis, and then appropriate treatment with considerable emphasis on untoward effects and the monitoring of therapy. This requires the learning of hundreds of facts, and I know of no other way to understand tuberculosis. Problem-solving is, essentially, the integration of observations with knowledge, and from this, devising a solution. While systems analysts and others have spent a great deal of time in devising more efficient ways of performing that integration, their algorithms are meaningless without a good knowledge base and observational skills. In terms that are more familiar to most of us, it all starts with a good history and physical.

Medical schools are also criticized for their curricular conservatism. Why

do we not, it is asked with increasing exasperation, add courses in nutrition, drug and alcohol abuse, oncology, family practice, rehabilitation, occupational health, preventive medicine, epidemiology, health systems analysis, computer technology, and, so help me, accounting for the small office practice. We have, in fact, added much of this to the already staggering amount of information that we expect our students to learn. With the explosive increase in biomedical knowledge in the past ten years, our curriculum has become more a test of endurance than of intellect, a fact that we well recognize but have no good answer for.

Should any of you return to your medical school, I suspect that you would find that the methods of teaching have changed very little since you were a student there. It has always struck me as odd that faculty, most of whom are doing research on the cutting edge of their fields, and are receptive to the very latest that is going on there, should be so conservative when it comes to accepting the research findings that have occurred in the area of education. We still teach largely by lecture; computer-aided instruction is only sparingly used, and learning by objective and competence-based curricula are rare, indeed, in most medical schools. I shall not burden you with more of my thoughts on this subject, which are many, since I have been unable even to convince my own department, much less the faculty as a whole, that there are better ways of transforming bright, young mean and women into physicians.

While some of you may have been preoccupied with other matters, a problem of some significance has developed for today's medical students. This is the inordinate costs of attending medical school. At the University of Wisconsin the tuition for a state resident is $5700 per year. Add the cost of books and a place to live, enough to eat and a couple of beers on a Saturday night, and about $11,000 will have been spent for each of the four years. Tuition at private schools can vary between $15–20,000 a year. This means that most students will have to borrow money to get through school. The average debt of our students is in the neighborhood of $30,000 when they graduate and is steadily increasing. We believe that this not only dissuades people from applying to medical school but also influences career choices of those who finish.

Not only do students have the problem that we all had in choosing a specialty, but today the number of residencies in all specialties is decreasing; the number available is very nearly equal to the number of graduates. Thus, students no longer are concerned with what part of the country they would like to go to, but are worried about obtaining any residency at all. Some apply to several different specialties in the hope of landing one. This situation will likely become worse before it gets better, and then only because there will be fewer graduates in the future.

Residency training has changed very little over the years. Physicians who will spend the majority of their time in office practices still spend most of the time in their residencies taking care of inpatients with problems they may never encounter again. I have often wondered how an internist fresh from a residency in a busy teaching hospital handles his first patient with a chief complaint of pruritus ani.

A brief word about continuing education. In the first place, it works. It does improve patient care, a fact that has been disputed in recent years (I rely here on a recent report in JAMA). Medical schools bear a heavy responsibility for the conduct of CME, not only in providing faculty but in instilling in their students the capacity and desire for independent study.

After this quick survey of medical education today, I would like now to, even more briefly, consider what the future holds. I will start with the public schools, where I believe some significant changes will soon occur. Public awareness, and along with it public demands, will require new expectations on the part of teachers for their students. Thus, reading and writing skills will be improved and more attention paid to what are the basic and critical responsibilities of the schools.

I don't expect that colleges will change very much, though they will become more expensive. This will mean that some colleges will disappear, with an attendant reduction in the diversity of educational opportunities that has served us so well.

Medical schools will change. In the first place, there will be fewer medical students. At Wisconsin, we begin this year a phased reduction of 10% in the number of students we admit. This is happening at other schools across the country, though not all. This will occur because legislators will want to find ways of saving money, because it is widely believed that there are too many physicians, and because medicine as a career is becoming less attractive.

New curricula will emerge, but slowly, along with different ways of teaching. Progressively more time for students and house staff alike will be spent in outpatient settings as hospitals become more and more oriented toward surgery and critical care medicine.

Full-time medical school faculties will decrease in size, and clinical teaching will become increasingly conducted by part-time faculty members. The volume of biomedical research and number of people involved in it will decline, though I cannot predict the effect this might have on the significance of the new knowledge produced.

The number of residencies will continue to decline as will the level of support that residents now receive, though I doubt that we will ever return to the room, board and laundry compensation of 30 years ago. Some restrictions will be enforced in the size of a few residencies such as ophthalmology, neurosurgery and orthopedics.

Continuing medical education will always be around whether it is required by the State or not. Courses will become even more numerous and more convenient to take.

Finally, the practice of medicine will become more complex, more intellectually demanding as the emerging concepts of molecular biology enter into the everyday care of patients. We shall be able to do more for the sick, keep more people well—which is a pretty good way to spend a lifetime. **Q**

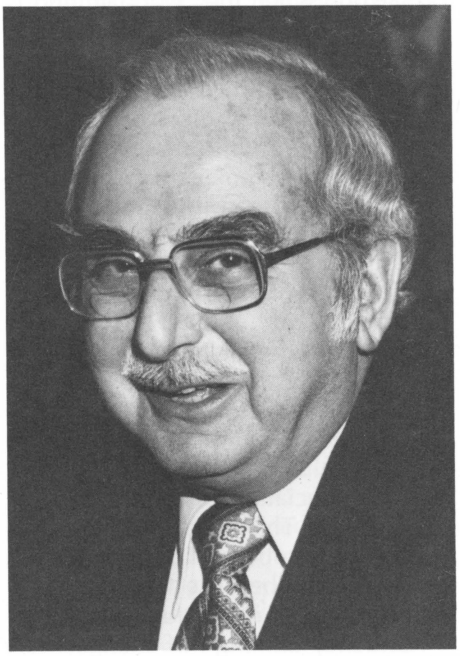
Nothing Is Forever

Mischa Lustok, M.D., '35

It seems that nothing is forever. Things were crisp, orderly, and pretty much in their place when we graduated from our Medical School some fifty years ago. Those of us who survived the harvest of one hundred ten sophomores to glean only fifty juniors were a super crop. We faced the challenge of our chosen profession with courage, secure in our eminence.

The precipitous flight of Bill Middleton's brown derby seldom missed its target. Our ego was often bruised, but never fractured. We even enjoyed some small victories. Albeit somewhat less than graciously, Joe Gale withstood the battle cry: "Come the revolution and you will hold the retractors while we do the surgery!" After a pleading confrontation, Robin Buerki allowed us to wear operating room shirts without a black tie, providing they were starched, covered by a white coat and tucked into our white pants. God was in the Heavens and Erwin Rudolph Schmidt saw to it that everything was in its right place down here. We knew who we were, where we were, and what we were expected to do. We were doctors forever.

We were secure in our knowledge. It was obvious that the Sippy diet cured peptic ulcers. It was clearly established that the Correll milk diet enhanced diuresis, but there was more needed for the treatment of congestive heart failure. Tincture of digitalis was superior to digitalis leaf, but care must be taken not to confuse drops with minims, and the dose carefully calculated to one cat unit for each ten pounds of body weight. Pneumococcic pneumonia was a common and often fatal disease. Type specific sera held out promise of cure, but were not yet available, and time proven remedies were employed. Mustard plaster, when properly applied, relieved pleuritic pain. Turpentine stupes were beneficial in relieving distension. Thoracic empyema inevitably accompanied the cure of pneumococcic pneumonia and in turn was cured by open drainage with twice daily irrigation of the thoracic cavity with Dakin's solution. Under the



tutelage of J.A. English Eyester, electrocardiographic recordings, and recording the curves on photographic film with the aid of a carbon arc lamp, allowed us to make the diagnosis of myocardial infarction with unchallenged certainty. Gorton Ritchie's observations at the autopsy table assured us that myocardial necrosis requires at least six weeks to heal, and we kept our patients at absolute bed rest for the prescribed period. We knew that rheumatic fever was an infectious disease of childhood with the predilection for heart valves which responded to bed rest and salicylates. Rheumatic fever convalescent homes were established in Madison and Milwaukee under the guidance of Chester Kurtz, and children with rheumatic hearts were kept at bed rest and loaded with salicylates to the point of tinnitus for periods extending over many months. Toxic goiter was prevalent in our community and responded well to potassium iodide drops served in milk. Surgical intervention often precipitated a thyroid crisis and was reserved for cases of obvious medical failure. Materia Medica was a very popular course given by Joe Evans and provided us with valuable compounded prescriptions to be used in our practice of medicine.

We were quite secure in our knowledge and training. As you would expect, there were among us some doubting nonconformists who dreamed that perhaps some day there will be better ways to treat disease, but they were hard pressed to challenge the established traditions of bedside experience.

But, we soon learned, nothing is forever. The comfortable security of our complacency was shattered by the scientific explosion and the unimaginable fantasia of discovery. Humbled by the forced surrender of cherished concepts, we were driven to embark on the newer perception of pathophysiology of disease and embrace the evolving therapeutic modalities. The journey was arduous, but the voyage was filled with excitement, challenge, revelation and endless inquiry. We learned a great deal on the way. Perhaps our most significant lesson was the ultimate realization that sanctuary in medicine is elusive, and no matter how turbulent the passage, there is no safe harbor in sight.

What about the neophyte physicians? I must admit some envy. The future of medicine never looked more exciting. They join the profession on the move. The comfortable package of truisms attached to their diplomas is no more impermeable to change and growth than was ours. Will the harnessing of nuclear magnetic resonance be an archaic exercise fifty years from now? Will genetic engineering be relegated to the kitchen laboratory in the future? Will transluminal angioplasty become the mustard plaster of tomorrow? Will every doctor carry a miniaturized Laser as well as his stethoscope in his black bag? Will the social and economic pressures to dehospitalize the patient generate the revival of the house call?

There is no comfort in medicine. You either move on or fall back. There is not the slightest doubt that the avant garde science of our medical profession today will become the ignominious anachronism of tomorrow. You just wait and see. Nothing is forever. **Q**

The Happy Warrior's Hat

or, The Story of The Brown Derby

Vic Falk, M.D., '39

The Medical School graduates of the last several decades probably wonder about the tradition and mystique surrounding the brown derby. The 1962 summer edition of the Wisconsin Medical Alumni Newsletter, which was forerunner of the Medical Quarterly, reported the history of the tradition.

At the spring meeting in 1962, Dr. Middleton was presented the Emeritus Faculty Award. In his response, he said it all began when he left Philadelphia for Madison in 1912, and a common slang expression at that time was, "That takes the derby!" Dr. Middleton modified it by adding brown derby, as it was the height of unkindly notice. Each year while he was teaching at the University, Dr. Middleton had a brown derby which made the rounds of his class in the manner of dunce cap. "A misstatement, error (factual, grammatical or what you will) was the occasion for the transfer of the brown derby and the affixing of the signature of the recipient." At the end of the junior year, the last recipient of the derby was allowed to keep it. It was often reported in some Wisconsin newspaper that a hometown boy had been signally honored at the end of his junior year in medical school, having been awarded the brown derby for academic achievement.

Dr. Middleton hastened to add that there was never malice nor humiliation in his basic motivation. It was simply his personal invention for keeping students on their toes. At that 1962 spring banquet, Dr. Middleton returned a particular brown derby to the Alumni Association with the hope "that this token of one small tradition in our Medical School may be preserved." And he added, "Generations of medical students to come may realize that their predecessors got their medicine painlessly."

The brown derby that Dr. Middleton especially cherished had been presented to him by the Class of 1939 during their skit at the onset of their junior year. Although many previous classes had written Governor Alfred Smith of New York requesting one of his famed brown derbies, it was finally Len Lovshin of the Class of 1939 who successfully importuned the governor to send an autographed brown derby for Dean Middleton. Dr. Middleton described that "the appearance of the real article was a memorable occasion and that Len Lovshin's presentation letter (presumably from Al Smith) was a classic in light satire." Dr. Middleton then read the entire letter at the banquet.

In addition to the presentation of the famed derby, the class skit also included a spoof of Dr. Middleton's thorough physical examination. This was performed on the skeleton which hung in the classroom. On examination, the spleen was described as tremendously enlarged, but proved to be the size of a French pea. On the opposite side, the liver was reported to be not palpable but was a second brown derby which was the one which was actually used for the rest of the year whenever the dean cried out, "Hat." The skit concluded with a performance by the class magician, Phil Svec. His final trick was to borrow a handkerchief from Dr. Middleton that resulted in a large hole being burned in the Dean's kerchief. Phil sprinted back to his seat with what was probably the fastest move in all his years in medical school. Dr. Middleton, famed for his phenomenal memory, was on the committee that examined Phil at the end of his senior year. At intervals during the long exam, the Dean would pull the burned kerchief from his pocket and wave it in front of Phil, who by that time was in an advanced stage of diaphoresis.

Alfred E. Smith was the former governor of New York and also the Democratic candidate for president in 1928, losing to Herbert Hoover. He was famous for his outlandish pronounciation as well as his brown derby. He was nicknamed "The Happy Warrior." Certainly, that title could also have been applied to Dean Middleton, since he had a distinguished military career in both WWI and WWII, as well as with the Veterans Administration after the war.

The Al Smith derby is in the Alumni office, and the Class of 1939 has promised to provide a suitable display case for proper enshrinement of the hallowed hat. **Q**

Isabelle Peterson

Retires

I don't know how I'd have gotten through school without Isabelle." This fond and familiar refrain from Medical School alumni sums up the role played by Registrar Helen Isabelle Peterson: indispensable.

For 20 years she has kept students' records, scheduled labs, assigned clerkships, written recommendation letters, handled certification for licensing, worked with the promotions committees, arranged social events, and, in general, kept an even keel between faculty and students. Quite a job for your average administrator.

But Isabelle Peterson is anything but average. Somehow she has always managed, in addition to her required duties, to be a very special person to the many students who called upon her for guidance through hard times. She has willingly taken time out to think problems through with students, one-on-one, whether they required essential information, wise counsel, painful home truths, or simply compassion and support.

"I got to know the ones in trouble very well," Isabelle said. "I'd try to guide them, refer them to people who could best help with their problems." She called it "people work."

It is the people work part of her job that has so firmly stuck in the hearts of the hundreds of students who relied upon "Ma" Peterson's help. One graduate referred to her immiment retirement with "horror."

Isabelle said that she owes much of her abilities in relating with students to Associate Dean Otto Mortensen, with whom she worked closely in her early years at the Medical School. "I admired his way of handling students. He was kind but firm, and always fair."

Times have changed during her 20 years at UW, which followed 20 years with Wisconsin state government in the transportation and personnel departments. She began as Assistant Registrar and soon became Registrar, assuming ever more and changing duties in an institution that was growing mightily in size and complexity. She recalled taking work from the office and writing letters under the hair dryer—before the word processor came along. In the old days, she said, Dr. Middleton did it all.

Her expertise has been equally appreciated by the medical faculty, who recognize her as "a constant source of reliable information, and advisor and friend who can be counted on to point us in the right direction." Her relationship with the preceptors was particularly useful.

Isabelle's co-workers in the Registrar's office have a healthy head start on her longevity record. Emily Winer has worked there 17 years; Florence Waisman (her secretary) 15 years; and Joyce Meier 11 years. Together with Isabelle, they have logged a respectable 63 years of service.

Although many of Isabelle's interests are firmly rooted in the Medical School, her after-hours life would overwhelm most ordinary people: mother of 3, grandmother of 8, bookkeeper for her husband's business, good cook, painter, woodworker, carpenter (she and her husband built their home in Stoughton), upholsterer and needleworker. "She does just about everything," according to a co-worker.

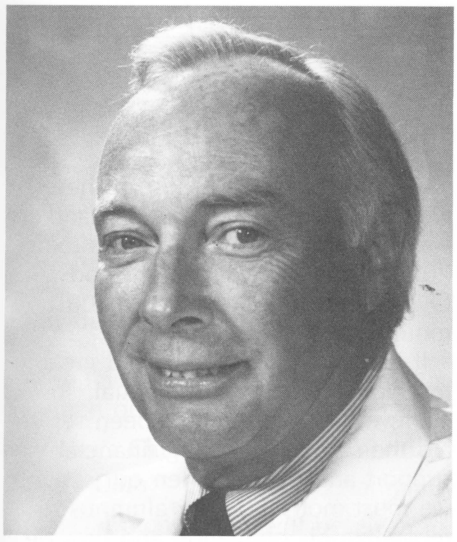
Now Isabelle Peterson is retiring—sort of. "I'm going to do a little fishing," she said, "and spend more time with my home and family. And I'll catch up on forty years of unfinished projects."

And, of course, be sorely missed by the Medical School.

Isabelle will receive an honorary Life Membership in the Medical Alumni Association during the annual dinner meeting of Preceptors, Medical Alumni Association Directors and members of the faculty on October 12—the evening before Homecoming.

She will be further honored by establishment of the Isabelle Peterson Scholarship Fund, which will provide some financial support for deserving students. **Q**

Distinguished Service Award to Dr. Stephen C. Copps (Res. 60–61)



Dr. Stephen Copps, La Crosse pediatrician, received a Distinguished Service Award from the W.M.A.A. at a La Crosse Medical Alumni meeting on September 14.

The award was given in recognition of exemplary leadership to the La Crosse community and Coulee Region in the initiation and development of programs for disabled children.

Programs he developed at the Gundersen Clinic for La Crosse have served as models for other programs across the country. He is Director of the Neurodevelopment Evaluation and Treatment Center and Medical Director of the Comprehensive Child Care Center of the Gundersen Clinic, with which he has been associated since completing his U.W. pediatric residency in 1961.

A previously unmet need in western Wisconsin has been served by his lectures and conferences with physicians, teachers, social service agencies and therapists, which have created an awareness of children with learning disabilities and neurodevelopmental problems.

Steve directs the Pediatric Residency Program of the Gundersen Clinic, has served in major leadership roles in the American Academy of Pediatrics and as a member of Medical Advisory Committees of the United Cerebral Palsy and Lutheran Social Service Agencies.

He currently serves on the Board of Directors of the Motor Development Program of the U.W.–La Crosse as well as the State and County developmental disability bodies.

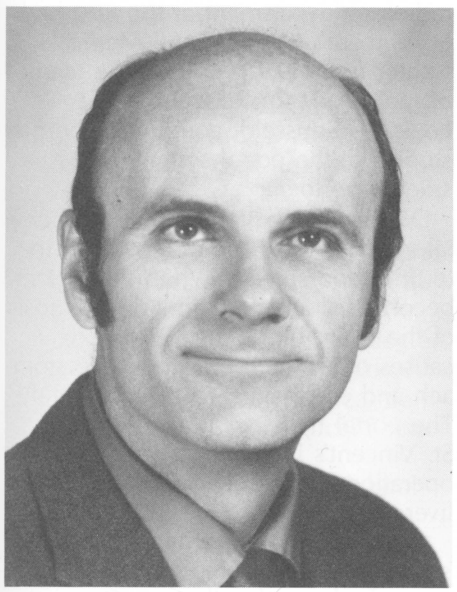
In 1975, Dr. Copps received the American Academy of Pediatrics Award for outstanding contributions to the health care of children in Wisconsin. The Mott Rehabilitation Center of Flint, Michigan presented him with their 1981 award for outstanding contributions to disabled children.

He is Associate Clinical Professor of Pediatrics at the U.W.–Madison and adjunct Professor of Physical Therapy at the U.W.–La Crosse.

Distinguished Service Awards are designed to recognize medical alumni for outstanding contributions to their communities, their profession and their patients! **Q**

Medical Alumni Hall Progress Report

D.J. Freeman, M.D., '52, Campaign Director



I had hoped that this space in the Quarterly would be devoted to a photograph of the completed Medical Alumni Hall—spanking new and already serving the medical student body.

Despite the best efforts of Dean Brown and assorted expeditors, some of the essential materials needed for the remodeling were delayed in delivery for weeks. The result is that the completion of the auditorium remodeling has been delayed for at least one month—to early October.

Alternate temporary lecture room space for freshman students has been found in other university buildings and, in the best Wisconsin tradition, faculty and students are coping with temporary inconvenience with relative good cheer.

This modest setback in no way diminishes the pride I feel in the successful efforts of the Medical Alumni body to provide the funds which enabled the conversion of an antiquated, ill equipped autitorium into a superb learning center. If you have not yet contributed, you can still be part of a successful campaign that has helped significantly to provide Wisconsin medical students with excellent teaching and learning facilities. Warm thanks to you all. **Q**

Plans for the 1984–85 Annual Giving Program

John Brennan, M.D., '67, Chairman

1984 will be the year that the Medical Alumni Association comes of age. With the enthusiastic endorsement of your Board of Directors and the Council of Representatives we are going to increase the annual level of alumni contributions to the Medical School to a meaningful level of $600,000 per year.

We shall provide funds for student financial aid, for professorships (wouldn't a Middleton Professor of Medicine, a Bardeen, Sullivan or Mortensen Professor of Anatomy, a Meek Professor of Physiology, etc., be great!) and for unrestricted support of the Medical School.

Approximately $300,000 was received in gifts and pledges during the year ending June 30. Most of these were for Medical Alumni Hall and were contributed by little more than 20% of the Medical Alumni body. Over 100 contributions of $1,000 or more were received.

It is obvious that we have a great reservoir of untapped potential. To achieve the goal that has been set (to aid the students needing financial support and to strengthen our school) we must motivate every alumnus to recognize his obligation and provide generous annual support.

Class representatives are the essential catalytic agents who will make this happen with the participation of every alumnus.

Each representative is asked to iden-

Francis Ruzicka Goes to NIH

Radiology Chairman Joseph Sackett and Professor Ruzicka

Dr. Francis F. Ruzicka, Jr. described his years at the Medical School as a "wonderful experience. I was glad to be able to contribute something along the way."

The medical school, especially the Department of Radiology, will surely miss the expertise and service of Fred, who recently moved to the Washington, D.C. area to join the National Institutes of Health, where he heads the Diagnostic Imaging Branch of the Radiation Research Program, a part of the National Cancer Institute. He became the first radiologist to hold the position, which taps into his vast background in imaging and diagnosis. His new responsibilities include research and development in diagnostic imaging, as well as "looking over the whole field and promoting research where most needed."

Dr. Ruzicka's credentials for the job are without question. A master diagnostician and specialist in abdominal radiology, he pioneered in studies of the portal venous system in New York City, where he was director of the radiology department at the 800 bed St. Vincent's Hospital and Medical Center from 1950 to 1973. The team of radiologist Ruzicka and surgeon Louis M. Rousseldt conducted the first studies of the portal system using splenic portography.

Dr. Ruzicka explained that the portal venous system drains the liver, intestines and spleen. When the system becomes blocked—mainly by cirrhosis of the liver—blood backs up and causes other organs, such as the stomach and esophagus, to bleed severely. The portal hypertension research at St. Vincent's included development of operations to bypass an obstructed liver.

Other lifesaving techniques took shape because of Fred's interest. For example, he and colleague, Dr. Howard R. Gould, were the first to use xeromammography, in which a negatively charged metal plate re-

tify a sufficient number of classmates to ensure that each member of the class receives a personal appeal from a classmate. I am suggesting that each individual be asked to contact no more than 5 or 6 classmates.

The levels of giving we must achieve to reach our goal are:

Founder's Club $100 to $499 annually

Dean's Club $500 to $999 annually

Special recognition will be given to contributors in this category, including an invitation to a unique function hosted by Dean Brown.

Middleton Society-
Bascom Hill Society $10,000
lump sum or a commitment of $1,000 per year for ten years

Contributions in this category are also recognized uniquely.

Rarely does one have the opportunity to influence and be part of a great enterprise. That opportunity is here now. We can be instrumental in preventing the erosion of medical school excellence and make a fine school better. We can make possible careers in medicine for talented young men and women of modest means.

I am confident that, with your help, we will reach our goal. **Q**

places a film. Special processing of the plate with positively charged plastic brings out an excellent image of soft tissue such as the breast. The process is still used today. Fred also was the first person in this country to use a similar system to view the spleen.

Peers describe Fred Ruzicka as a master teacher, excellent clinician, and a very forward looking thinker. Also, "He was a good organizer, and made radiology a very important field in any hospital he worked in."

Fred received his bachelor's degree from Holy Cross College in Worcester, Massachusetts, and his medical training at Johns Hopkins Medical School in his native Baltimore.

His career at the Medical School began in 1973, and he was department chairman from 1976 until 1981. A great many students as well as patients benefitted from his expertise: he taught radiology and gastrointestinal anatomy to medical students and worked continually with residents. He also was a prime mover in continuing education, arranging for practicing radiologists to attend refresher courses.

Dean Brown presents plaque to Dr. Ruzicka at his retirement dinner

All the while, according to one colleague, "He was a nice person to have around, always very willing to help other people and share his knowledge and experience whenever needed or asked." Another said, "He was very much a gentleman. He treated everyone with respect."

The Ruzickas' six children are scattered from Taiwan to Chicago, Milwaukee, New York and New Jersey.

In appreciation of his service and accomplishments, the university has named Francis Ruzicka Emeritus Professor, and the Department of Radiology has established a fund for residents in his honor. **Q**

It's a Hurricane!

Mary Kaye Favaro, M.D.

Of all the various minuses for living anywhere, there's no doubt in my mind, the biggest Minus of all for the coastal, sunny South, is the hurricane.

Like all former landlocked Midwesterners, who have watched with detached sadness when a natural disaster hits Others, believe me, it's an entirely different ballgame when it's Me and Mine waiting like chickens looking at a chopping block when this ugly, swirling 110 mph storm with the the unlikely name of Diana is sitting 70 miles off your coast and, as they say, "wobbling," not sure of which direction to take.

The natives are cool. They look at the wild, dilated pupils of us immigrants with amusement, but never failing to tell a story or so of Uncle Joe, who "stayed put" when Camille hit New Orleans some years ago and found himself inundated with sea snakes and fish as the tidal wave broke in his living room window. I don't ask, but I feel sure Uncle Joe is now living in an Arizona desert, I would be. Between warnings, the TV shows adventuresome souls surfing on the waves off Folly Beach, the College of Charleston students having one big, amorphous, alcoholic party, unmindful that they sit one foot above sea level in an area that floods during a little rainstorm, and now 6 to 10 foot flood tides could come inland.

The tourists flying in for a convention on Seabrook Island off our coast say "You've got to be kidding" on TV when interviewed at the airport and diverted from their oceanfront villas due to "voluntary" evacuation of the sea islands. They are later shown drowning their sorrows in a considerably-less-than-five-star local inland motel.

Some of the schools close, some remain open in an unorganized patchy awareness. This is to be weighed in the balance when we consider that ALL schools immediately close and businesses lock up when it looks like we'll be hit with a major snowstorm dropping an inch or more of snow on the area. (That's right, I said one INCH.) That is a real, defined disaster, a snowstorm. A hurricane? Well, I guess I'll tape the windows.

The hurricane control center in Miami comes on TV with an experienced hurricane watcher (sure, he's safe, he's not going to get hit, he doesn't even have a bath towel wrapped around his head to mop the sweat while he scurries around) who tells the latest wind velocity reported by the little planes who fly into and out of the storm center (how'd you like to have that job, brother?). Anyway, Mr. Cool says only the outlying barrier islands need voluntarily evacuate, they show the strings with white flags placed alongside the roads to mark the roadbed so you won't flounder into the roadside swamp should you decide to wait until the roads are flooded.

Mr. Cool says comfortably that the city of Charleston is only on standby for evacuation, but to gas up all your cars (check, done), fill the bathtubs with water for supplies later when all water will be contaminated (check, done three times—after ¼ inch of soccer mud was noted in the first potable water supply, then again after the dog slobbered in it), and check your batteries and canned food supply (check, I nearly bloodied someone's nose fighting for the last five cans of tuna on the grocery shelf, and have enough batteries to easily last to 2023).

Then, he says soothingly, it's good to have suitcases packed and your pets disposed of since none, of course, will be allowed in the shelters.

PETS!—(the children begin to cry). Ours consist of an independent cat who would haughtily sit on the rooftop and survey the damages with an unblinking stare, and an expensive-falsely-declared-as-intelligent-standard-poodle who is nervous, gets carsick and had the distinction of being the only dog to flunk dog school. The trainers looked at each other and shook their heads knowingly as, after eight weeks of class and formidable homework, our Fancy Dog named Jacquelyn responded to "COME" with a slow, defiant sit, and a slow, negative shaking of the head side to side. (I would like to respond that my young teenagers respond in just such a manner, but they probably would report me to Social Services as an unfit-kid-mother-too, humiliation of it all being a pediatrician and everything.) Anyway, we board the animals, and that's taken care of.

Now for the valuables. My son demands that the entire booklet of Clemson season football tickets be given to him for safekeeping. Of course, even if we are living in a tar-paper shack with foodstamps, we wouldn't want to miss any of the home games, now would we? I silently hand them over. My daughter has a mania about her records, her 79¢-a-string-twist-a-bead necklaces, twelve stuffed animals, and her nail polish. I stuff my bank books, insurance papers and a super-size bag of M&M's into my purse and we're ready.

What's that, Mr. Cool?. . . It's moved to the Others or maybe out to sea??? Oh-h-h.

(Anybody got a swap-for-sale in the desert?) **Q**

Faculty News

Oliver Smithies

Professor of Medical Genetics, **Oliver Smithies,** received the AABB 1984 Karl Landsteiner Memorial Award for his discovery and interpretation of the Starch Gel Electrophoresis Technique and many significant contributions to the knowledge of human genetics.
The Award was established in 1954 to honor an individual who is internationally known for his contributions to immunohematology.
Dr. Smithies presented the Karl Landsteiner Memorial lecture during the 1984 annual meeting of the AABB in San Antonio, Texas.

Folkert O. Belzer, Professor and Chairman of Surgery, has had a candid introduction to the readers of the Wisconsin State Journal through the "Know Your Madisonian" column.
Since coming to Madison in late 1974, Dr. Belzer has guided the growth, expansion and development of the department into one of the finest in the United States. The UW Hospital is the third largest organ transplant center in the country and is well recognized for strong sections in Sports Medicine, Plastic Surgery and Implant Surgery.
An extensive article detailing the expansion within the department appeared in the 1977 Spring issue of the *Quarterly.* Named the Anthony R. Curreri Professor of Surgery in 1982, Dr. Belzer has received several teaching awards and the Distinguished Alumni Award of Boston University Medical School, his alma mater. He and his wife, Marion, are the parents of four children: Ingrid, a law student in San Francisco; John, a Massachusetts Institute of Technology student who is entering medical school next year; Eric, a UW–Madison student; and Paul, a senior at Memorial High School, Madison.

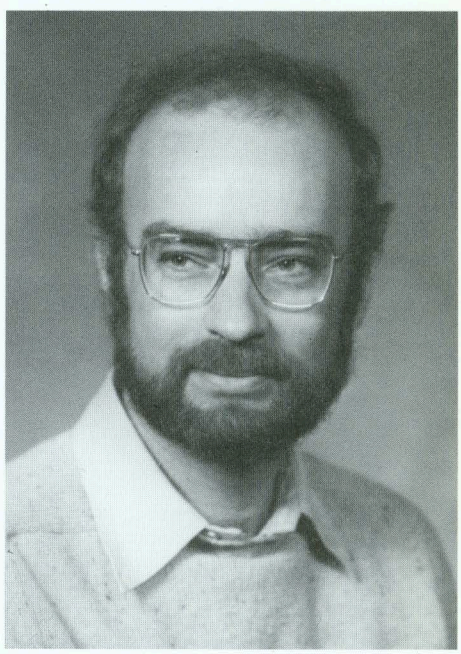
Dean Arnold L. Brown is the new President of the Four Lakes Boy Scout Council, Madison. He will be the chief volunteer for the council.

The White House recently announced the appointment of **Roswell K. Boutwell** for a second term on the National Cancer Advisory Board, an arm of the National Institutes of Health. Boutwell, on leave from the McArdle Laboratory for Cancer Research, is currently director of research for the Radiation Energy Research Foundation in Hiroshima, Japan.

Professor of Anatomy, **John Fallon,** has been appointed a consultant to NASA. He chaired a session in Developmental Biology at a NASA workshop which will be assessing the possible uses of the space shuttle to study problems of embryonic development using the avian embryo. The group will also investigate if normal osteogenesis can occur in space.

Emeritus Professor, **Ruth Dickie,** was awarded the Distinguished Alumnae Award of the Wisconsin Home Economics Association.

Dean O. Smith, Professor of Physiology, has been appointed Associate Dean of the UW–Madison Graduate School. Professor Smith chaired the Medical School Research Committee for several years prior to this appointment and gave leadership to the development of a medical school policy on ethical standards for the conduct of research. He has also served on the Graduate School Research Committee.
A productive investigator, Dr. Smith is studying synaptic structure and function during senoscence and mechanisms of nerve impulse propagation failures. He has held a National Institutes of Health Research Career Development Award and in 1983 received one of the highly competitive H.I. Romnes Faculty Fellowships.



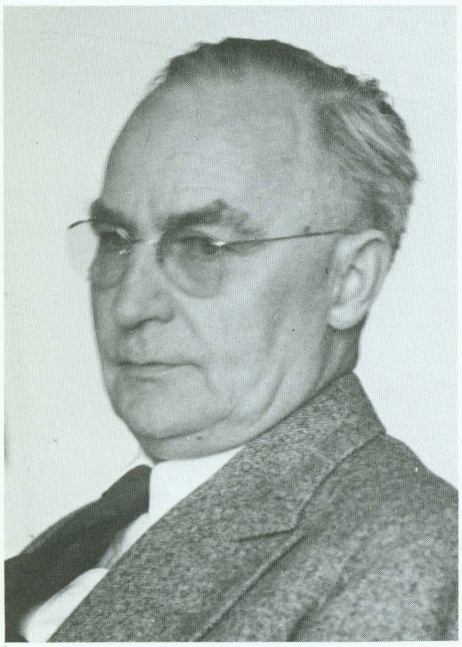
Dean O. Smith

Professor of Physiological Chemistry, **Harold Deutsch,** is serving as Alexander von Hemboldt Visiting Professor at the Institute of Cell Biology—Max Planck Institute.

Daniel Wikler, Associate Professor of History of Medicine and Philosophy, has been named general editor of "Cambridge Studies in Philosophy and Health Policy," a new international book series to be published by Cambridge University Press. **Q**

Medical School News

Scholarship Awarded to Student
Third year medical student Pamela L. Vincent has been selected as a scholar by the Medical Advisory Council of the Life and Health Insurance Medical Research Fund. Vincent, mother of two, is enrolled in the Independent Study Program while she continues work on a Ph.D. in Physiological Chemistry. She studies enzymatic modification of calmodulin, a calcium-binding protein.



Professor Walter Sullivan

Dr. Walter Sullivan Conference Room Named
Chancellor Irving Shein has approved the unanimous recommendation of the Department of Anatomy that the departmental conference room-library be formally designated "The Dr. Walter Sullivan Conference Room.

Dr. Sullivan joined the Medical School faculty in 1920, served as Anatomy Chairman from 1935 to 1946 and retired in 1956. His teaching excellence was recognized by award of our first Emeritus faculty Award on May 20, 1960.

The Sullivan Room, Room 341, Bardeen Medical Laboratories, serves as the site of anatomy seminars, conferences, lectures and departmental meetings.

Scanner Warns of Stroke Risk
A new method to look directly at brain blood flow may improve the ability to identify patients most at risk for stroke.

Developed by Dr. Robert Polcyn, Professor of Human Oncology and Medicine, the technique uses Positron Emission Tomography (PET). A patient is given two PET scans, the first while breathing room air and the second under more stressful, high carbon dioxide levels. Under both conditions, the patient breathes a small amount of radioactively-labelled fluoromethane gas, which releases photons detected by the PET scanner. If blood vessels are blocked and unable to increase blood flow to accommodate the higher carbon dioxide level, the second image will show inadequately supplied areas. A comparison of the two scans will alert physicians to potential trouble spots, with minimal risk to the patient.

Polcyn believes the experimental test can be adapted to devices less sophisticated than a PET scanner.

New Solution Improves Kidney Storage
Dr. Folkert Belzer, Chairman of the Department of Surgery, and biochemist James Southard of the same department, developed a fluid containing adenosine for storing donated kidneys. The solution preserves kidneys better than other treatments, leaving them with greater capacity for resuming normal functions and significantly reducing post-surgical complications. UW Hospital patients who received such kidneys rarely needed dialysis.

Belzer and Southard said the adenosine, along with other blood constituents, help the cold-stored kidneys to maintain their reserves of ATP and other energy-rich molecules. Cell membranes also are stabilized.

The research team hopes eventually to extend preservation time possibly to two weeks, which would allow good suppression of adverse reactions and should dramatically improve acceptance rates.

Professor Hosts Governor
Nobel Laureate Dr. Howard Temin, Professor of Oncology, hosted a visit to campus by Governor Anthony Earl on June 20. Earl toured Temin's laboratory in the McArdle Laboratory for Cancer Research, the Laboratory of Professor Donata Oertel of the Department of Neurophysiology, and the Department of Sociology's $1 million computer facility. A press conference followed.

Temin, a faculty member for nearly 25 years, has been active recently in trying to influence government officials to invest enough funds in UW–Madison to maintain its preeminence as a research institution. He invited the governor to campus to show him the various facets of a professor's life, including research, teaching, publishing and lecturing.

Viricidal Tissues Go To Market
The Kimberly-Clark Corporation, makers of Kleenex tissues, is currently test-marketing a new antiviral tissue called "Avert" in Albany, Rochester and Buffalo, New York. The tissue was developed as a result of experiments conducted in Antarctica by U.W. scientists, including Dr. Elliot Dick, Professor of Preventive Medicine (see feature story).

The company considers the product a major advance in fighting the spread of the common cold.

Medical Student in Fine Form
Medical students have a rough life. Up at 5. Study psychiatry. On to Lathrop Hall for stretching; classical ballet under the faculty of Joffry II, the New York dance company that visited campus for the past summer; individual workout. More study. More dance class. More practice. Hit the sack.

This was the summer life of Lewis Ptacek, now into his third year of Medical School. "While taking anatomy during my dirst semester," Lew said, "it was sort of a revelation to see how msucles fit into this wonderful machine—like a piece of art.

This started my serious interest in dancing, and it was an incredible experience."

Lew has been combining medical studies with dancing ever since, except for a recent three month trip through Europe, where he watched some of the greats dance, and bicycled 1,000 miles.

"I don't feel dancing is a break from styding," he said. "I don't do it to get away, but because I love it.'

But there's a catch: to be good at either doctoring or dancing requires a tremendous commitment, Lew says, so he may pursue a "crazy possibility" and take off a year next year to dance intensively. "I didn't start to dance until late in life—most dancers begin by five—so it can be frustrating. Improvement comes slowly."

Lew was able to combine med school with dance courses, plus a stint with the Madison company of M.M. Colbert, because he was in the independent study program, where he could complete course work on his own, squeezing in 3 to 4 hours of dancing a day.

Now, however, Lew has begun clinical rotations, allowing him little time for formal dance courses. But that will merely slow him down. "I'll practice as much as I can—maintain flexibility and keep the weight down. And maybe sneak in a dance class now and then."

Breast Cancer Symposium Held at CCC

Breast cancer researchers from seven countries met at the Clinical Science Center June 26–29 for a satellite symposium of the seventh International Congress of Endocrinology. It was entitled *"Estrogen and Aniestrogen Action: Basic and Clinical Aspects."*

Symposium host V. Craig Jordan, Assistant Professor of Human Oncology and Pharmacology, said the participants discussed strategies to combat breast cancer over the next 10–20 years. Papers were presented on topics such as: the role of antiestrogren in controlling cell growth cycles, combined hormone and chemotherapy treatments and the use of progesterone receptors to predict treatment success.

Jordan is known for his pioneering research with the antiestrogen drug tamoxifen.

Animal Care Chief Certified

Ellis E. Seavey, Director of the Medical School's Animal Care Unit, was recently certified as a Diplomate of the American College of Laboratory Animal Medicine. Seavy received his DVM at the University of Illinois, followed by postdoctoral training in laboratory animal medicine at U.W.

Medical Student Research Day

At the annual Medical Student Research Program on September 4, 1984, ten medical students presented research papers resulting from their research sponsored by a National Institutes of Health Medical Student Training grant.

In the past, such student research has led to publications in prestigious journals of biomedical research, and four of our students won prizes in the Midwest Medical Student Research Forum held on the U.W. campus this spring.

Professor of Physiological Chemistry Harold Deutsch is director of the training grant while Leonard A. Fahien, Professor of Pharmacology, is Coordinator of the Program.

The following papers were presented at the Program:

STUDENT	MENTOR	DEPARTMENT	TOPIC
Robert Steiner	L. Kahan	Physiol. Chem.	Enzyme Profiles of FHAP Cancer Marker
Kirsten Evans	R. Auerbach	Zool.	Isolation and Establishment of Endothelial Cell Lines
Scott Kohlbeck	A. Harper	Nutrition	Valine Metabolism in the Perfused Rat Liver
Gregg Heatley	T. Martin	Zool.	Use of Fluorescent Dye to Monitor Cytoplasmic Calcium
Scott Sasse	E. Shrago	Nutrition	Brown Fat Thermogenesis in the OB/OB Diabetic Mouse
Matthew Solberg	D. Walker	Med. Micro	Polyoma Virus Infection of Mice After Immunosuppression
Craig VandeList	R. Schilling	Medicine	Deleterious Effects of Repeated N_2O Exposure in Vitamin B12 Deficient Rats
Brad Peterson	H. Deutsch	Physiol. Chem.	A System for Study of Immuno-suppression Activity of Alpha-Fetoprotein
Betty Amuzu	J. Dahlberg	Physiol. Chem.	Effect of Modification with Group Specific Reagents on Binding of Fibrinonectin Fragment to Cells **Q**

Alumni Capsules

1929

Lawrence C. Davis has been retired from a career in surgery and medical administration for fifteen years and is residing in Homosassa, Florida. He served as Chief of Surgery at the V.A. Hospital in Beckley, West Virginia, Director of Professional Services at a V.A. Hospital in Martinsburg, West Virginia, and Director of a hospital in Erie, Pennsylvania before his retirement.

1933

New members of the Fifty-Year Club of the Wisconsin State Medical Society are **Samuel S. Blankstein** (2 yr.) of Milwaukee and **Earl A. Hatleberg** (2 yr.) of Chippewa Falls.

Einar Daniels

1934

In attendance at the annual dinner honoring new Fifty-Year Club members of the Wisconsin State Medical Society were **Robin N. Allin,** Madison; **Isadore I. Cash,** Milwaukee; **Einar R. Daniels** (president of the WMAA in 1957 and 1958), Milwaukee; **Jay S. Goodman,** Milwaukee; **T.L. Hartridge** (2 yr.), Milwaukee; **Walter H. Jaeschke,** Madison; **Norbert A. McGreane** (2 yr.), Darlington; **Frederic E. Mohs,** Madison; **Thomas W. Tormey, Jr.** (2 yr.), Madison; and **Joseph P. Wild** (2 yr.), Mequon.

1937

Emeritus Professor of Physiological Chemistry, Philip P. Cohen, provided the Quarterly with the following poem written by the late **Arthur W. Frisch,** shortly before his death on May 26, 1984.

"On 9th of May of 84
A day that lives forevermore
He shot a ball into the sun
It ended up a hole in one.

A hole in one at seventy four
On 9th of May of 84.
True in flight from eight iron face
One hundred thirty yards its goal.
Then landed soft in proper place
And rolled ahead into the hole.

A hole in one at seventy four
On 9th of May of 84.
Hail to Frisch for what he done
A hole in one; a hole in one.
Every golfer just for fun
Needs to shoot that hole in one."

A.W.F.

1938

Harry R. Maytum has retired from general practice in Merced, California. He enjoys reading the Medical Alumni Quarterly for news of his classmates, former teachers and current happenings in the Medical School.

Now enjoying retirement is **Mildred M. Stone,** after twenty-four years of service in the Cuba City, Wisconsin area. Associated with the Cuba City Doctors Clinic, Dr. Stone is an allergist and for nine years was head of the Allergy Clinic at Veterans Hospital in Madison and an Assistant Professor on the teaching staff at the UW Medical School. She is the author of many articles pertaining to allergy associated illnesses, is listed in *Who's Who of American Women,* was president of the Grant County Medical Society for four years, and recently was reelected to the Academy of Family Physicians.

1942

On January 1, 1984, **Miles Smith** retired from active practice with the Veterans Administration. He is continuing to reside in Walla Walla, Washington.

1943

Noland A. Eidsmoe has retired after thirty-eight years of solo general practice in Rice Lake, Wisconsin. He is continuing to reside in Rice Lake.

Classmate **Creighton A. Hardin** is Vice-Chairman of the Department of Surgery at Kansas University. His field is vascular and transplantation surgery.

1944

Gertrude C. Luther of Anniston, Alabama, is the 1984 recipient of the Samuel Buford Word Award, given annually by the Medical Association of the State of Alabama in recognition of "service to humanity beyond the scope of medical practice, such services to have been rendered at some personal sacrifice." Certified by the American Board of Pediatrics, she was the first pediatrician in the Anniston area, where she opened her practice in 1949. During her 34-year career and in retirement, Dr. Luther has volunteered her services to a variety of agencies, including the Crippled Children's Clinic, a well-baby clinic, and the blook bank. For nearly 15 years, she volunteered one month a year to work in the Albert Schweitzer Hospital in Haiti, where she treated malnourished and desperately ill children. She also served in Algeria, Honduras, India and with the Frontier Nursing Service in the U.S. Appalachian region. Long active in civic and charitable organizations, she is credited with pioneering the establishment of classrooms for Anniston's handicapped children. Dr. Luther joined many of her classmates last May when they celebrated their fortieth anniversary at the Nakoma Country Club.

1945

Henry A. Peters was the subject recently of the "Know Your Madison-

Henry Peters

ian" column, a weekly feature of the Wisconsin State Journal. Certified by both the American Board of Neurology and the American Board of Psychiatry, he is a Professor in the Department of Neurology as well as in the Department of Rehabilitation Medicine and in Psychiatry. Nationally known for his work with neuromuscular disease, Dr. Peters has operated a clinic for Muscular Dystrophy patients since 1956 and has done pioneer research in the treatment of Amyotrophic Lateral Sclerosis. This interest in neuromuscular disease has taken him and his coleagues, **George T. Bryan** '57, and **Derek J. Cripps,** to Turkey twice a year to study and treat villagers who suffered permanent damage as a result of ingestion of contaminated feed grain. In the remote villages, "we also treat any health problems the people have." A former president of Wisconsin-Nicaragua Partners, Dr. Peters has traveled frequently to Nicaragua on behalf of the Medical School and after the earthquake of 1972, he led the relief efforts. Active in civic circles, he is a member of the March of Dimnes advisory committee, the medical advisory board for the national Muscular Dystrophy Association and the commission on public policy for the State Medical Society. A talented musician, Dr. Peters sings with several Madison musical groups and has had prominent roles in the Madison Civic Opera productions. He and his wife, Jean, have four grown sons.

1948

Alwin E. Schultz of Madison has been elected to the Board of Directors of the Wisconsin State Medical Society for a three-year term, representing District 2. Prior to graduation from medical school, Dr. Schultz served in the United States Navy during WWII. He also served in the U.S. Air Force during the Korean War after the completion of his residency in Obstetrics and Gynecology at UW Hospitals. He was President of the Dane County Medical Society in 1982.

1950

Harvey Monday has retired after 31 years of general practice in his hometown of Oshkosh, Wisconsin. After graduation from Oshkosh Teacher's College in 1941 he served as an Air Force chemical officer during World War II and subsequently taught at Oshkosh High School for one year.

Following graduation from medical school he served a rotating internship at St. Joseph's Hospital in Marshfield before being recalled to the U.S. Chemical Corps during the Korean conflict.

Retirement plans include reading, gardening and travel with his wife, Mary Ann.

1953

Melvin Griem conducted Human Oncology Grand Rounds at the Medical School on Wednesday, August 22. The title of his presentation was "New Trends in Radiotherapy for Glioblastoma." Melvin is Professor of Radiotherapy at the University of Chicago. Spouse, Sylvia, also a 1953 graduate, is co-representative for the Class of 1953.

1954

Class Representative, **George Kroncke,** has been elected to membership in the American Association for Thoracic Surgery. He is Associate Professor of Surgery at U.W.

George M. Kroncke

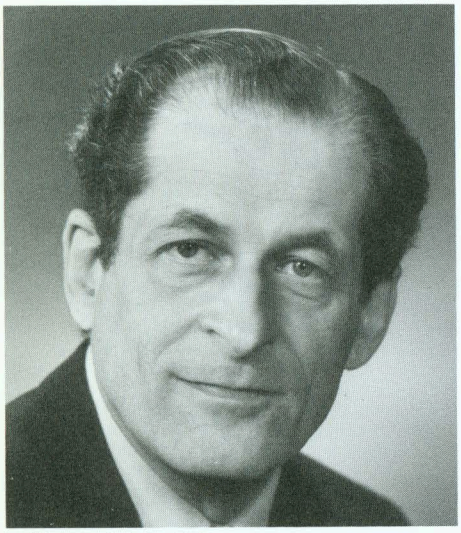
Representing District 1, **Richard D. Fritz** of Milwaukee has been elected to the Board of Directors of the Wisconsin State Medical Society for a three year term. An Internist, Dr. Fritz is a member of the medical staff of Columbia Hospital and F.W. Madison Medical Associates of Milwaukee. He has served as President of the Milwaukee Academy of Medicine and was President of the Milwaukee County Medical Society in 1983. His internship and residency in Internal Medicine were completed at Johns Hopkins Hospital, Baltimore.

1956

Co-representative **Loren H. Amundson** of Sioux Falls, South Dakota, is Alumni Director of the University of South Dakota School of Medicine Alumni Foundation. Loren and his co-representative, **Diane A. Dahl,** are in the preliminary stages of planning for the 30th reunion of their class in 1986.

1957

Wilbert Wiviott has been elected President of the American Society of Maxillofacial Surgeons. Will resides in Milwaukee, Wisconsin and served as President of the W.M.A.A. for the 1982–83 year.



Wilbert Wiviott, M.D.

1961

One of the featured speakers at the 1984 Spring Session of the American Academy of Pediatrics was **H. Peter Chase** of the University of Colorado, Denver. Decrying the dearth of fiber in U.S. diets, Dr. Chase expressed concern that American children do not eat even the recommended amount of fruits, vegetables, and whole-grain products. He cited a number of physiologic effects linked to dietary fiber including decrease in constipation and a delay in gastric emptying, which has been shown to lower blood glucose and serum insulin in patients with Type II diabetes. A seconday effect may be a feeling of satiety which helps control obesity. "Most studies have shown that a high-fiber diet decreases intestinal transit time, thus reducing the contact time of fecal carcinogens with the large intestine; decreases intra-abdominal pressure, reducing the chance of hiatal hernia or venous problems; and reduces colonic intraluminal pressure, making appendicitis or diverticular disease of the intestine less likely." Fiber has been shown to inhibit lipid absorption and increase excretion of cholesterol and bile acids. Emphasizing that 30 to 50 percent of American children eat little or no fruit or vegetable daily, Dr. Chase stressed "the need to encourage the well-balanced diet, including three to four fruit and at least two vegetable servings a day."

1966

William Busse has been promoted to Professor of Medicine at U.W. He is Chief of the Division of Allergy.

1969

Congratulations to **Walter Burgdorf,** who has left the faculty of the University of Oklahoma to become Professor and Chairman of the Department of Dermatology at the University of New Mexico School of Medicine in Albuquerque. Walter is excited about his move to the "Enchanted Land."

1970

Shirley Ann Roy of Chicago has been elected to Fellowship in the American College of Physicians, a 60,000 member national society. Fellowship is granted in recognition of medical scholarship and achievement, including publication of articles and presentation of papers, involvement in teaching of physicians and medical students, as well as other notable contributions to the advancement of medical science and practice. Dr. Roy has been in Chicago for 14 years and is a staff member of the Weiss Memorial Hospital, Cook County Hospital, Edgewater Hospital and Thorek Hospital.

Daniel N. Wochos has left the Mayo Clinic to enter private practice in nephrology and hyptertension in Sarasota, Florida. He looks forward to seeing classmates and colleagues in the area.

1972

Samuel M. Cohen is Professor and Vice-Chairman of Pathology and Laboratory Medicine at the University of Nebraska Medical Center. He received a Ph.D. degree in oncology as well as an M.D. degree from U.W. While a medical student, Samuel received the James M. Price Award for outstanding cancer research. His research in carcinogenesis is funded by the National Cancer Institute, and he is Associate Editor of *Cancer Research*.

The Cohens have four children.

1975

Constance S. Barr (formerly Connie Smith), 1975 Class Representative, has initiated plans for a tenth reunion next May in Madison.

On May 19, Constance married Dr. Joseph S. Barr, Jr., an orthopedic surgeon at the Massachusetts General Hospital. She invites U.W. students looking at potential residencies to avail themselves of her offer of a place to stay when in Massachusetts.

1976

Mary Hallmann Leikness of Berlin, Wisconsin, has the distinction of being the only woman in Wisconsin certified by the American Board of Urology and one of the fifteen certified women urologists in the country. She served a two-year general surgery residency and four years of urology at UW Hospitals before joining the staff of Berlin Memorial Hospital in 1982. Dr. Leikness is a member of the Wisconsin Urological Society, the North Central Section of the American Urological Association, the American Urological Association, and both the Green Lake-Waushara County and State Medical Societies. She is married and has a 3-year old daughter.

1976

Victor Trastek has joined the Department of Cardiovascular and Thoracic Surgery at the Mayo Clinic after completing training in general surgery, cardiovascular and thoracic surgery there. Victor, wife Diane and their three children continue to reside in Rochester.

1979

Urologist **Dirk T. Fisher** has joined the Sheboygan Clinic after completing a four-year residency in Urology at UW Medical School. During his last year of training, he was chief resident of the Department of Urology. In Sheboygan he will be associated with **John P. Hermann,** '74, and has been accepted for staff privileges by St. Nicholas and Sheboygan Memorial

Hospitals in Sheboygan and the Plymouth Hospital in Plymouth. He and his wife, Maureen, are the parents of one son.

After completing a residency in Obstetrics and Gynecology at Los Angeles County University of Southern California Women's Hospital, **Steven L. Clark** is serving a fellowship in Maternal-Fetal Medicine at the same hospital. He is an Assistant Professor, division of Maternal-Fetal Medicine and Director of Critical Care Services at USC Women's Hospital.

1981

Molly McMahon is now in residency training in Endocrinology at the Mayo Graduate School of Medicine, a part of the Division of Education of Mayo Foundation. She had completed a three-year postgraduate training in Internal Medicine at the Medical College of Wisconsin in Milwaukee before locating in Rochester, Minnesota.

1984

Jeffrey J. Lehman is a recipient of the Houghton Award of the State Medical Society's Charitable, Educational and Scientific Foundation. Given yearly to senior medical students who "through scholastic excellence, extracurricular achievement and interest in medical organization show high promise of becoming a complete physician," the award consists of a check for $250 and a plaque. It was established in 1968 by the late John H. Houghton, a Wisconsin Dells General Practitioner, to emphasze high ideals for future physicians. Dr. Lehman, a member of Alpha Omega Alpha, is now in residency in ENT at University Hospitals, Madison.

FORMER HOUSE STAFF

Charles Strother ('67–'68 Radiology) has been promoted to the rank of Professor of Radiology. **Frank Graziano** ('73–'76 Medicine) has been promoted to Associate Professor of Medicine. **Paul Sondel** ('78–'80 Pediatrics) has been promoted to Associate Professor of Pediatrics and Human Oncology. All three are members of the U.W. medical faculty.

Michael Trangle (Res. Psych. '80–'84) is now affiliated with the Park Nicollet Medical Center as a staff psychiatrist, serving patients in the Minneapolis-St. Paul area.

During 1983–84 Michael served as Chief Resident in the U.W. Department of Psychiatry. He resides in Richfield, Minnesota with his wife, Barbara Beutler.

Necrology

F.A. Duncan Alexander
(Former Res. Anesthesiology)
Merced, California
May 7, 1984

John F. Cant, '34 (2 yr.)
Park Ridge, Illinois
February, 1984

Joseph N. Dhuey
Milwaukee, Wisconsin
July 3, 1984

Gordon J. Kaske, '30
Belvidere, Illinois
July 10, 1984

Joyce C. Kline, '54
Madison, Wisconsin
September 2, 1984

Wilford A. Risteen, '30
Chippewa Falls, Wisconsin
July 18, 1984

Frederick W. Schacht, '26 (2 yr.)
Evanston, Illinois
March 27, 1984

Ernest V. Stadel, '29
Reedsburg, Wisconsin
July 28, 1984

William J. Swansbro, '48
Danville, Illinois
September 1, 1983 **Q**

John W. Porter

John W. Porter, Professor of Physiological Chemistry, died June 27, 1984. Since 1964, he was principal scientist and Chief of the Lipid Metabolism Laboratory at the William S. Middleton V.A. Hospital, as well as Professor of Physiological Chemistry. In 1980, he was designated V.A. Career Scientist, a title restricted to a select few.

Dr. Porter published over 225 scientific articles, contributed chapters to several scientific books and co-authored and edited three books. The most recent entitled, "Biosynthesis of Isoprenoid Compounds." He was cited as being among the top 85 investigators to whose work other scientists referred.

Throughout his long and distinguished career, Dr. Porter received many honors. In addition, he participated in numerous international symposia, including ones in India, Europe, Japan and the Soviet Union. He served on the Editorial Board of Archives of Biochemistry and Biophysics and on study sections for the National Institutes of Health.

Dr. Porter was particularly proud of the professional success of his graduate students and postdoctoral fellows. He is survived by his wife, Helen, a son, two daughters and five grandchildren.

A Medical School graduate research scholarship fund has been established in his memory. **Q**

From the Archives

Seventy-five Years Ago—1909

The third class to be admitted to the new University of Wisconsin Medical School numbered thirty-two. The first year students included: James Philip Dean, Victor Sofus Falk, Herbert Spencer Gasser, Robert Albert Gesell, Oscar Eugene Nadeau, Frank Richard Nuzum, Pearle Mae Stetler and Dexter Hathaway Witte. (Dr. Gasser shared the Nobel Prize with former Physiology faculty member Joseph Erlanger for their discoveries regarding the highly differentiated functions of single nerve fibers. Women physicians at Wisconsin and two other medical schools are today benefiting from a bequest from Dr. Pearl Stetler which provides research fellowship support.)

Seventy Years Ago—1914

"The faculty met at 5:00 p.m. with Dr. Bardeen in the chair. Present were Drs. Bunting, Eyster, Meek, Bradley, Dawson, Morse, Evans, Middleton, Miller and Loevenhart, Secretary.

The faculty voted to send the following notation to the Athletic Council on the relation of intercollegiate rowing to student health: 'The faculty of the Medical School believe that the data presented by the Clinical Department showed conclusively that the severe training deemed necessary for preparing crews for intercollegiate contests puts so severe a strain on the heart that an undue proportion of men are seriously injured and that, therefore, a continuation of intercollegiate rowing is indefensible from the health standpoint.' "

Sixty-five Years Ago—1919

Following the 1918–19 pandemic of influenza, when temporary infirmary space was secured in the University Club and the top floors of Barnard and Lathrop Halls, a student infirmary was constructed at a cost of $93,000. The building was funded by $50,000 in gifts from Thomas E. Brittingham and Carl Johnson and $43,000 from the legislature.

Professor of Physiology, Walter Joseph Meek, was appointed Assistant Dean of the Medical School, effective in 1920, with responsibility for advising all premedical students.

Sixty Years Ago—1924

Drs. Lorenz, Loevenhart and Middleton were appointed to work out the details of a course of two weeks training for officers of state institutions and county physicians. Drs. Van Valzah and Lorenz were appointed as a committee to study methods whereby medical examinations may be made at stated intervals of those confined in state institutions.

The Executive Committee of the Medical Faculty approved the following list of extension lectures in medicine:

Dr. Robert Van Valzah, Professor of Medicine, Director of Student Health Service

Professor of Physiology, Walter J. Meek

Intracranial Pressure

Available second or third Fridays of the month.

Assistant Professor of Pharmacology, Chauncey D. Leake

The Development of Anesthesia

The presentation may be considered semi-popular.

Available at any time.

Dr. William S. Middleton, Department of Clinical Medicine

The Clinical Study of the Diaphragm

The importance of this neglected study in relation to intrathoracic diagnosis is stressed in this presentation.

Available Tuesdays, Thursdays and Saturdays.

Dr. William S. Middleton

Dr. J.A.E. Eyster, Department of Physiology

The More Common Types of Chronic Valvular Heart Disease

Available at any time.

Professor of Pharmacology and Xicology, Dr. A.S. Loevenhart

Local Anesthetics

This lecture is intended to point out the relative safety of the different local anesthetics on the market, both clinically and experimentally.

Available at any time.

Dr. Elmer L. Sevringhaus, Department of Physiological Chemistry

Diets for Diabetics and the Obese

Insulin Treatment of Diabetes

Available at any time.

Fifty-five Years Ago—1934

The Students Day Program was held on Wednesday, May 23. Former medical school faculty member Dr. Joseph Erlanger, Professor of Physiology, Washington University, St. Louis, presented an address: *The Physiological Properties of Axons as Revealed by Their Electrical Responses.*

Student research demonstrations included:

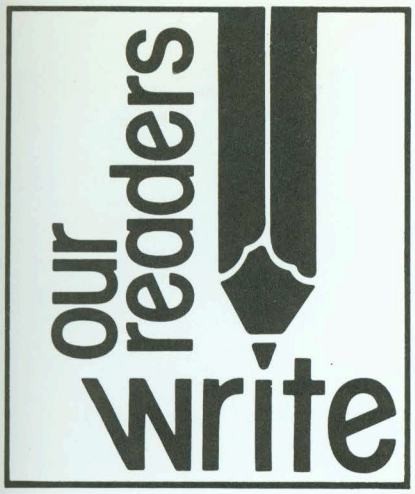
Joseph Lalich—*Reflex Inhibition of Gastric Motility Upon Intestinal Distention*

Misha Lustok—*Physiological Effects of Rhemium*

Eugene Adashek and Charles Bloom—*Arteriography with Thorum Dioxide*

John Robinson—*Pathology Produced in Lathyrism in Rats*

Arthur Frisch—*The M and N Elements in Ischemagglutiation* Q



Dear Sir:

My husband, Dr. Edward L. Prien, died January 23, 1984. Here is the obituary for your records. The University gave us a good start for life. I grew up in Madison—a beautiful city. I taught art for thirty-two years in public schools.

Sincerely,
Dorothy Strauss Prien
Waban, Massachusetts

Dear Friends:

Please note, I have not retired! (As reported in a back issue of the Medical Alumni Journal.) I'm alive and dry in drought ridden west Texas. I practice and teach at Texas Tech School of Medicine in Lubbock, Texas—the Hub City—though what it is the hub of I've yet to discover.

That is not to say there aren't those who think I should retire, nor that there aren't days when *I* think I should retire, but alas, I'm healthy and active and still can't think of anything I love that much more than medicine.

Cheers,
Nancy Furstenberg, M.D., '50
Associate Professor, Internal Medicine
Texas Tech Medical School
Lubbock, TX 79430

Editor's Note:
Three cheers for your continuing enjoyment of the practice of medicine.

The summer '84 Quarterly brought news of a grad of the class of 1934 that had not been heard from for many years. As a youngster I lived in Oconomowoc in the same neighborhood as Edward L. Foss, M.D. His current address would be appreciated.

Philip M. Wilkinson, M.D.
6084 Mary Lane
Oconomowoc, WI 53066

Editor's Note:
Dr. Foss' address is: Condon, Montana 59826. He appears to be leading an idyllic existence in the Montana high country.

Dear Sir:

To transform the old S.M.I. Auditorium into a modern, properly and superbly equipped learning center is a great project. I am proud to contribute and hope to see it when it is finished.

Sincerely,
David G. Weldon, M.D.
Charlotte, North Carolina
Class of 1935 **Q**

Continuing Medical Education

DATE:	**January 20–23, 1985**
TITLE:	**New Therapeutics V: The Results of Recent Advances in Medicine**
SITE:	**Telemark Lodge, Cable, Wisconsin**
SPONSORS:	School of Medicine, University of Wisconsin; Continuing Medical Education, University of Wisconsin–Extension
CREDIT:	AMA Category I, AAFP, University of Wisconsin–Extension CEU's

DATE:	**January 26–February 2, 1985**
TITLE:	**Update: Infectious Diseases, Diabetes and Other Common Endocrine Disorders**
SITE:	**Puerto Vallarta, Mexico**
SPONSORS:	School of Medicine, University of Wisconsin; Continuing Medical Education, University of Wisconsin–Extension
CREDIT:	AMA Category I, University of Wisconsin–Extension CEU's

DATE:	**February 9–16, 1985**
TITLE:	**Update: Arthritis and GI**
SITE:	**Ocho Rios, Jamaica**
SPONSORS:	School of Medicine, University of Wisconsin; Continuing Medical Education, University of Wisconsin–Extension
CREDIT:	AMA Category I, University of Wisconsin–Extension CEU's

DATE:	**February 16–23, 1985**
TITLE:	**Update: Allergy/Immunology and Pulmonary Disease**
SITE:	**Puerto Vallarta, Mexico**
SPONSORS:	School of Medicine, University of Wisconsin; Continuing Medical Education, University of Wisconsin–Extension
CREDIT:	AMA Category I, University of Wisconsin–Extension CEU's

DATE:	**February 23–March 2, 1985**
TITLE:	**Management of Patients Who Make Physicians Feel Insecure**
SITE:	**Ocho Rios, Jamaica**
SPONSORS:	School of Medicine, University of Wisconsin; Continuing Medical Education, University of Wisconsin–Extension
CREDIT:	AMA Category I, University of Wisconsin–Extension CEU's

FOR FURTHER INFORMATION, CONTACT:

Ann Bailey
University of Wisconsin–Extension
Continuing Medical Education
454 WARF Bldg., 610 Walnut St.
Madison, WI 53705
Telephone: (608) 263-2854

DATE: **November 8–9, 1984**

TITLE: **Aging and Illness in Primary Care—The 4th Symposium on Ethical and Clinical Problems in the Care of the Elderly**

SITE: **Westowner Hotel, Madison, Wisconsin**

CREDIT: AMA Category I; AAFP prescribed; AOA Category 2-D, University of Wisconsin–Extension CEU's - all 12 hours

DATE: **November 30, 1984**

TITLE: **Trauma/Critical Care Conference**

SITE: **Madison, Wisconsin**

CREDIT: AMA Category I, University of Wisconsin–Extension CEU's

DATE: **December 1–2, 1984**

TITLE: **Care and Treatment of the Injured High School Athlete**

SITE: **Madison, Wisconsin**

CREDIT: University of Wisconsin–Extension Continuing Education Hours - 10

DATE: **December 7–8, 1984**

TITLE: **New Approaches to the Management of Profound Congestive Heart Failure—The 4th Annual Conference on Heart Diseases**

SITE: **Westowner Hotel, Madison, Wisconsin**

CREDIT: AMA Category I; AAFP prescribed, University of Wisconsin–Extension CEU's, AOA Category 2-D

FOR FURTHER INFORMATION, CONTACT:

Sarah Z. Aslakson
Department of Allied Health
465B WARF Bldg., 610 Walnut St.
Madison, WI 53705
Telephone: (608) 263-2856

Coming Events

November 28, 1984

Wisconsin Reception—R.S.N.A. annual meeting
5:30 to 7:30 p.m., Concord Room of Hyatt Regency Hotel,
Washington, D.C.

November 28, 1984

Madison—annual meeting of Board of Directors and Medical School
Administration

February 3, 1985

Milwaukee Winter Meeting
Bluemound Country Club
Speaker: Professor Michael Leckrone, Director of U.W.-Madison Bands

April, 1985

Sheboygan, Wisconsin Regional meeting
Presentation of Distinguished Service Award

May 16, 1985

Annual meeting of Council of Representatives
Class reunions: Post-fifty year and pre-1927, fiftieth anniversary
Class of 1935. Classes of 1940, 1945, 1950, 1955, 1960, 1965, 1970, 1975, 1980

May 17, 1985

Alumni Day—programs from alumni and spouses
Traditional Awards Banquet—welcome to graduating seniors

Some Christmas Gift Suggestions

_____ **True color *Aaron Bohrod Print of the Medical Center*** (18" X 24") $ _____
Emeritus Artist-in-Residence Aaron Bohrod presented the original oil to the Medical School and personally approved the production of these prints of exceptional quality. The painting includes numerous symbols of significance to the Medical School. ($30 each or $50 for an autographed copy)

_____ Dr. Harold P. Rusch's book. $ _____
The History of Cancer Research at the University of Wisconsin
Pre-publication Price $15.00.

_____ Dr. William Middleton's book $ _____
Tangible and Intangible Values in Modern Medicine ($19.95 per copy)

_____ ***Coffee mug*** incorporating medical school medallion design—the mug is cobalt blue $6.00 each. $ _____

TOTAL $ _____

_____ TIE: A distinctive Medical School-Medical Alumni tie has been manufactured to our specifications by one of the nation's leading manufacturers. ($20.00 each) $ _____
Please specify:
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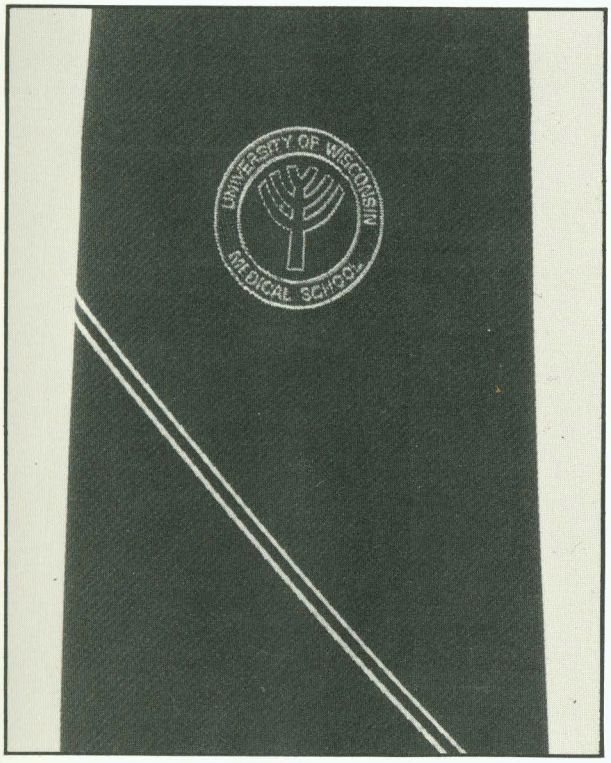
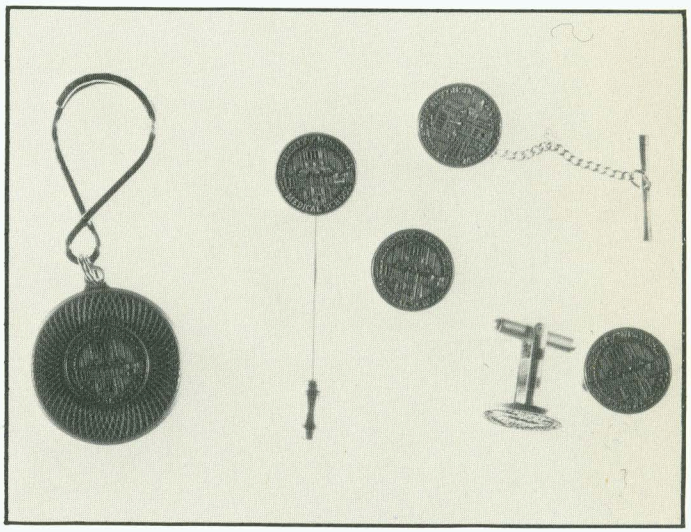


_____ Dr. William S. Middleton's ***Medical History Essays*** ($6.00) $ _____

_____ Dr. Paul F. Clark's book ***The University of Wisconsin Medical School: A Chronicle,*** 1848-1948 ($19.95 a copy). Only a limited quantity of this unique work remains. There are no plans for a second printing. $ _____

_____ ***Jewelry Item(s)*** incorporating unique Medical School Medallion (5/8 in.) gold filled $ _____

_____ Charm with loop	$20
_____ Pendant	$20
_____ Key tag with super-loop	$20
_____ Tie tack	$20
_____ Stick pin	$20
_____ Lapel pin	$20
_____ Cuff links	$30



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Madison, Wisconsin 53706

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