

VANDERBILT UNIVERSITY



School of Medicine

1972-73

VANDERBILT UNIVERSITY

School of Medicine

1972-73



*Containing general information, appointments
and courses of study for the 1972-73 session,
corrected to September 15, 1972* † NASHVILLE

School of Medicine Calendar, 1972-73

FALL SEMESTER 1972

Aug. 29-Sept. 2, Tues.-Sat.	Registration 1st year
Aug. 30-Sept. 2, Wed.-Sat.	Registration 4th year
Aug. 31-Sept. 2, Thurs.-Sat.	Registration 2nd year
August 28, Monday	Registration 3rd year
August 28, Monday	Fall semester begins, 3rd year
September 5, Tuesday	Fall semester begins 1st, 2nd, & 4th years
November 23, Thursday	Thanksgiving Day: a holiday
December 22, Friday (5 p.m.)	Christmas holidays begin
January 8, Monday	Instruction resumes
January 15-19, Mon.-Fri.	Examination period 1st & 2nd years
January 20, Saturday	Fall semester ends

SPRING SEMESTER 1973

January 22, Monday	Spring semester begins
March 25-April 1, Sun.-Sun.	Spring holidays
April 10-11, Tues.-Wed.	National Board examination 4th year (Part II)
April 12, Monday	Classes resume
May 14-19, Mon.-Sat.	Examination period for electives
May 19, Saturday	Instruction ends 1st, 2nd, & 4th years
May 21, Monday	Grade due for electives
May 21-23, Mon.-Wed.	Examination period for required courses: 1st & 2nd years
May 25, Thursday	Commencement
June 12-13, Tues.-Wed.	National Board examination 2nd year (Part I)
June 22, Saturday	Instruction ends 3rd year
June 25-27, Mon.-Wed.	Examination period for required courses: 3rd year
July 2, Monday	Grades due for 3rd year

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School of Medicine

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THOMAS W. HAINES, Ph.D., *Director of Sponsored Programs*
RICHARD M. SCOTT, B.S., *Director of Student Services*
CLAUDIA SUTHERLAND, Ph.D., *Director of Sponsored Research*

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ALLAN D. BASS	PAUL GAZZERRO	GRANT W. LIDDLE
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JACK DAVIES	ALBERT S. KAPLAN	PAUL E. TESCHAN
JAMES H. ELLIOTT	DAVID T. KARZON	HUGH R. VICKERSTAFF

EXECUTIVE COMMITTEE OF THE EXECUTIVE FACULTY: Dr. Chapman, *Chairman*; Dr. Bass, Dr. Fenichel, Dr. Griffin, Dr. Kaplan, Dr. Liddle, and Dr. Park.

STANDING COMMITTEES

(*The Dean is an ex officio member of all standing and special committees.*)

ADMISSIONS

The Admissions Committee has the responsibility of reviewing applications for admission to Medical School and making recommendations to the Dean for the admission of those students who are thought to be best qualified.

JAMES W. WARD, *Chairman*

JOSEPH H. ALLEN	OSCAR B. CROFFORD, JR.	CHARLES E. WELLS
F. TREMAINE BILLINGS	ROBERT A. NEAL	RICHARD M. SCOTT, <i>ex officio</i>

ALLIED HEALTH EDUCATION

The Committee on Allied Health Education has as its objectives: (a) the development of the Division to a School in the University; (b) the expansion and improvement in the quality of existing programs now offered at Vanderbilt; (c) the preparation of teachers for both professional and technical programs with emphasis on programs at baccalaureate level and above; and (d) the study of health services delivery methods with identification of new health occupational needs and the development of appropriate curricula.

RICHARD O. CANNON, *Chairman*

SARA K. ARCHER	HENRY BURKO	GOVIND P. GARG
F. TREMAINE BILLINGS	D. GENE CLARK	JOSEPH F. GLASS
RICHARD D. BUCHANAN		W. ANDERSON SPICKARD

ANIMAL CARE

The Animal Care Committee functions as an all-University committee and has the scientific and ethical responsibility and authority to evaluate the Vanderbilt animal care programs and to provide humane care for experimental animals used in the service of man and animals. It establishes guidelines and plans for the development of new physical resources based on

scientific principle and experience. The committee encourages research investigators to seek new and improved methods for laboratory animal care as one of its responsibilities to Vanderbilt University.

JOHN T. WILSON, *Chairman*

ROBERT J. BAGLAN	ROBERT A. NEAL	THOMAS C. SPELSBERG
IAN M. BURR	ALAN S. NIES	HAKAN SUNDELL
HENRY P. COPPOLILLO	JAMES A. O'NEILL, JR.	THOMAS F. BARNES,
CAROLYN GREGORY	MARIE-CLAIRE	<i>ex officio</i>
RAYMOND D. HARBISON	ORGEVIN-CRIST	GEORGE BARNEY
ROBERT G. HORN	OAKLEY S. RAY	<i>ex officio</i>

AWARDS

The Awards Committee is responsible for the nomination to the Executive Faculty of each candidate to be considered for intramural, national, and international awards available to members of the faculty of the Medical School.

HARRY P. BROQUIST, *Chairman*

ROGER M. DES PREZ	RONALD E. MUNKEBOE
JAMES V. DINGELL	MILDRED STAHLMAN

CLINICAL INVESTIGATION

The Clinical Investigation Committee is composed of faculty members from both clinical and preclinical departments as well as representatives from the undergraduate and graduate schools at Vanderbilt. The committee's charge is to review all research proposals involving human subjects with respect to the following: (a) the rights and welfare of the human subjects; (b) the appropriateness of the methods used to obtain informed consent; (c) the risks and potential medical benefits of the investigation. Approval of the committee is required prior to initiation of the investigation.

MURRAY HEIMBERG, *Chairman*

HELEN BIGLER	WILLIAM W. LACY	EDWARD V. STAAB
RICHARD L. BLANTON	HAROLD L. MOSES	WILLIAM J. STONE
D. GENE CLARK	ALAN S. NIES	JOHN W. WADE
JOHN M. DAVIS	JAMES A. O'NEILL, JR.	THOMAS W. HAINES,
JOHN M. FLEXNER	JOHN L. SAWYERS	<i>ex officio</i>
DONALD R. HARRIS	STEVEN SCHENKER	CLAUDIA SUTHERLAND,
M. GLENN KOENIG		<i>ex officio</i>

CLINICAL RESEARCH CENTER

The Clinical Research Center Committee meets regularly to review and act upon new and current faculty research proposals for use of the Center, to formulate policy and review all aspects of the administration of the Center, and to approve reports and applications by the Center to the National Institutes of Health.

WILLIAM W. LACY, *Chairman*

HARRY S. ABRAM
STANLEY COHEN
SANFORD KRANTZ
VIRGIL S. LEQUIRE

WILLIAM M. MITCHELL
WILLIAM H. OLSON
DAVID N. ORTH

STEVEN SCHENKER
JAN VAN EYS
LEON W. CUNNINGHAM,
ex officio

CONTINUING EDUCATION

The Continuing Education committee has the responsibility of developing policies, providing leadership, liaison, and recommendations in the matter of departmental and institutional programs of instruction designed for presentation to those who have completed formal studies in their respective health fields.

PAUL E. SLATON, *Chairman*

HARRY S. ABRAM
ANGUS M. G. CROOK

ROGER M. DES PREZ
VERNON H. REYNOLDS

SARAH H. SELL
W. ANDERSON SPICKARD

CREDENTIALS*

This is a joint Medical School and Hospital committee responsible for the examination of the credentials of candidates for non-tenure faculty appointments and appointments to the hospital staff.

BRADLEY E. SMITH, *Chairman*

GERALD M. FENICHEL
WALTER G. GOBBEL, JR.

WILLIAM W. LACY
LOUIS ROSENFELD

JAN VAN EYS
EDWIN LEA WILLIAMS

DEAN'S COMMITTEE FOR VETERANS ADMINISTRATION HOSPITAL

The Dean's Committee is the fundamental administrative unit for development, control, and evaluation of educational programs at affiliated hospitals. It is composed of senior faculty members of the school(s) of medicine associated with the V.A. Hospital. Members are appointed by the Chief Medical Director of the Veterans Administration on nomination by the dean(s) concerned.

LLOYD H. RAMSEY, *Chairman*

JOHN R. AMBERG
ALLAN D. BASS
RANDOLPH BATSON
F. TREMAINE BILLINGS
RICHARD O. CANNON
RALPH CAZORT
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GRANT W. LIDDLE
THOMAS P. LOGAN
H. WILLIAM SCOTT, JR.
LEON W. CUNNINGHAM,
ex officio
HUGH VICKERSTAFF,
ex officio

*Joint committee of the Medical School and Hospital.

EDUCATIONAL PROGRAMS AND STUDENT AFFAIRS

The Educational Programs and Student Affairs Committee, composed of students, Executive Faculty, faculty, and administration, serves as a forum for exchange of views and a continuing review of educational programs and policies in the broad spectrum of student affairs and medical education, and recommends to the Executive Faculty and Dean actions and policies which have the committee's endorsement in these areas of responsibility. Membership includes representatives of the Executive Faculty, general faculty, administration, and students.

FACULTY PROMOTIONS AND TENURE APPOINTMENTS

This committee, appointed by the Chancellor, is responsible for consideration of all tenure faculty promotions in the School of Medicine and for examination of credentials of candidates for appointment to tenure positions on the faculty.

LLOYD RAMSEY, *Chairman*

HARRY P. BROQUIST

ELLIOT V. NEWMAN

JANE H. PARK

PAUL P. GRIFFIN

JOHN A. OATES

LEON W. CUNNINGHAM,

MARC H. HOLLENDER

ex officio

GRADUATE EDUCATION

The Graduate Education Committee is the faculty body concerned with graduate student affairs and programs in the Medical Center. Its functions also include admissions to the combined M.D.-Ph.D. program, evaluation of proposed graduate programs, and recruitment of graduate students.

SIDNEY HARSHMAN, *Chairman*

HARRY P. BROQUIST

FREEMAN MCCONNELL

M.D./Ph.D. Student

JOHN E. CHAPMAN

HAROLD L. MOSES

Chairman, Biomedical

G. RODMAN DAVENPORT

JANE H. PARK

Sciences Graduate

R. J. HO

THOMAS C. SPELSBERG

Student Council

INTERNSHIPS

The Internships Committee is responsible for assisting members of the senior class of the Medical School in their efforts to obtain further suitable education as interns.

ROBERT C. HARTMANN, *Chairman*

HENRY BURKO

WILLIAM SCHAFFNER

JOHN E. CHAPMAN,

ANGUS M. G. CROOK

SARAH H. SELL

ex officio

JOHN H. FOSTER

W. ANDERSON

D. GENE CLARK,

DAVID T. KARZON

SPICKARD, JR.

ex officio

LEWIS B. LEFKOWITZ,

Chief Resident, Medi-

RICHARD M. SCOTT,

JR.

cine

ex officio

DAVID N. ORTH

Chief Resident, Surgery

MEDICAL LIBRARY

The Medical Library Committee is advisory to the Medical Librarian in matters related to day-to-day management of the library, book and periodical selection, and in discussion of policy.

F. TREMAINE BILLINGS, *Chairman*

SARA K. ARCHER	DAVID N. ORTH	FRANK P. GRISHAM,
A. BERTRAND BRILL	SARAH H. SELL	<i>ex officio</i>
CHARLES E. GOSHEN	HARRY S. SHELLEY	SUZANNE MILLER,
KENNETH J. LEMBACH	T. MARK HODGES	<i>ex officio</i>

ex officio

PROMOTIONS (FIRST AND SECOND YEARS)

The Promotions Committee of the first and second years holds the responsibility for reviewing student progress in each of these years and of making recommendations to the Executive Faculty concerning the progress and promotion of each student.

JACK DAVIES, *Chairman*

DAVID BARTON	SIDNEY HARSHMAN	CHARLES R. PARK
DANIEL M. BUXBAUM	ROBERT G. HORN	THOMAS GUY
JOHN E. CHAPMAN	LEWIS B. LEFKOWITZ, JR.	PENNINGTON
JOHN G. CONIGLIO	GEORGE V. MANN	RICHARD M. SCOTT,
GERALD M. FENICHEL		<i>ex officio</i>

PROMOTIONS (THIRD AND FOURTH YEARS)

The Promotions Committee of the third and fourth years has the responsibility of reviewing student progress in each of these years and making recommendations to the Executive Faculty concerning the promotion of students in the case of the third year and recommending to the Executive Faculty those students completing the fourth year who are deemed qualified to receive the M.D. degree.

GERALD M. FENICHEL, *Chairman*

GERALD F. ATWOOD	JACK DAVIES	VIRGIL S. LEQUIRE
DAVID BARTON	DONALD A. GOSS	WILLIAM D. SALMON,
HARVEY BENDER	PAUL P. GRIFFIN	Jr.
THOMAS E. BRITTINGHAM		RICHARD M. SCOTT,
JOHN E. CHAPMAN		<i>ex officio</i>

SMALL GRANTS

The Small Grants Committee has the responsibility for making limited financial grants from Medical Center funds, primarily to young investigators. Applications are received at announced times for review by the committee.

OSCAR B. CROFFORD, JR., *Chairman*

RICHARD E. BRYANT	ROBERT G. HORN	THOMAS W. HAINES
WOLF-DIETRICH	ROBERT A. NEAL	CLAUDIA SUTHERLAND,
DETTBARN	ROBERT L. POST	<i>ex officio</i>

**SPECIAL STUDENT PROGRAMS—FELLOWSHIPS
AND MERIT AWARDS**

The committee is charged with responsibility for the over-all coordination of free time fellowship experiences for medical students throughout Vanderbilt Medical School and elsewhere and recommends to the Executive Faculty institutional policy in this regard. This committee approves and allocates institutional funds supporting M.D./Ph.D. students; approves M.D./Ph.D. students for non-institutional support; approves and allocates institutional funds in support of fellowship experiences for medical students during summer and free time and approves student initiated programs which are independent of departmental or similar institutional sponsorship. The committee also serves as a coordination point for all free time student programs. The committee approves and recommends to the Dean those students who are best qualified for institutional merit scholarship awards.

VIRGIL S. LEQUIRE, Chairman

JOHN E. CHAPMAN
STANLEY COHEN

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JANE H. PARK
JAN VAN EYS
2 Student Members

GENERAL INFORMATION

THE first diplomas of graduation from Vanderbilt University were issued to sixty-one new Doctors of Medicine on February 25, 1875. The diplomas were in accord with an arrangement that the Vanderbilt trustees had made with the University of Nashville whereby that university's medical school was recognized as serving both institutions. The students could elect to receive their degrees from either university. Thus Vanderbilt embraced a fully-organized and functioning medical school before its own campus was ready for classes in October of that year.

The arrangement continued for twenty years, and the School of Medicine remained on the old "South Campus" for thirty more. In the beginning, the school was owned and operated as a private property of the practicing physicians and surgeons who comprised the faculty and received the fees paid by the students. This system was typical of medical education in the United States at that time. Vanderbilt made no financial contribution to the school's support and had no control over the admission requirements, the curriculum, or the standards for graduation. Even so, the catalogue proclaimed the instruction to be "inferior in no respect to that of any medical school in the country."

In 1895, the school was reorganized under the control of the Board of Trust. The requirements for admission were raised, the course of study was lengthened, and the system of instruction was changed to make way for laboratory work in the basic sciences. Subsequently there was a gradual increase in the quality of training offered.

The famous report of Abraham Flexner, which was published by the Carnegie Foundation in 1910 and was afterward credited with revolutionizing medical education in America, singled out Vanderbilt as "the institution to which the responsibility for medical education in Tennessee should just now be left." The Flexner Report declared Vanderbilt to be "the only institution in position at this juncture to deal with the subject effectively."

Large grants from Andrew Carnegie and his foundation and from the Rockefeller-financed General Education Board enabled Vanderbilt to carry out the recommendations of the Flexner Report. (These two philanthropies, with the Ford Foundation added in recent years, contributed altogether more than \$20,000,000 to the School of Medicine from 1911 onward.) The reorganized school drew upon the best-trained scientists and teachers in the nation for its faculty. The full benefits of the reorganization were realized when the decision was made to move the school to the main campus, thus integrating instruction in the medical sciences with the rest of the University.

PLAN OF INSTRUCTION

The objective of the program of medical education at Vanderbilt University is to produce the highest quality of medical graduate. A good medical education is best achieved by demanding excellence in performance on the

part of the student, excellence in teaching, research, and service on the part of the instructors, and by providing for close contact between the student and his teachers.

During the four years of undergraduate medical education at Vanderbilt, the student will gain an understanding of the foundations of medical science necessary for the pursuit of any medical career, as well as a respect for the responsibilities of the physician to society. After graduation, most students continue their education by spending several years in training in clinical specialties or in research fellowship programs.

The curriculum of Vanderbilt University School of Medicine provides time for all students to take courses of their own choosing. The student thereby has an opportunity to increase his knowledge in fields in which he has particular interest, or to correct deficiencies in fields of importance to his overall medical education.

The curriculum at Vanderbilt is under constant review by the Committee on Education and through consultation with students. Where such reviews support the desirability for change, the curriculum is changed, with the approval of the Committee on Education as supported by action of the Executive Faculty.

Students bear a high level of responsibility for participation in the curriculum in an effort to develop the sense of obligation for continuing scholarship necessary to keep pace of the rapid advances in medical knowledge.

The College of Arts and Science and the Graduate School of Vanderbilt offer courses which augment the medical curriculum, particularly during the senior year. As the Medical School is located on the University campus, the total facilities of Vanderbilt University are available to the medical student.

MEDICAL CENTER BUILDINGS

When the School's new quarters were opened in 1925, they were called "the best-arranged combination school and hospital to be found in the United States." The Medical Center buildings now encompass more than 750,000 square feet of floor space as the result of additions to research and clinical facilities.

Recent additions include:

The A. B. Learned Laboratories for research in the sciences basic to medicine and health-related research being conducted by members of the University's medical and graduate faculty. This building, which joins the main building on the north, was completed in 1961.

The West Wing addition to Vanderbilt University Hospital, a 154-bed patient care facility completed in 1962. This wing, which joins the main building at the southwest corner, is circular in shape with the nursing station located in the center surrounded by rooms for patients.

The Clinical Research Center, a United States Public Health Service regional facility for research in clinical medicine. This unit contains twenty-one beds and approximately 10,000 square feet of laboratory space. At the time of its opening it was the largest noncategorical clinical research center in the nation.

The West Court building, completed in 1964, contains a greatly expanded x-ray department, the entrance to the University Hospital, offices for admission and discharge of patients, a newborn nursery, and additional space for the Department of Pediatrics.

The Northeast Wing, a multi-purpose structure housing a complete laundry, the medical storeroom, research laboratories, and the Medical Library. Stacks and reading room were occupied by the library in 1964. An outstanding collection on the history of medicine is accommodated within the library.

The Student Health & Radiology Wing, completed in 1967, comprises four floors with a total gross area of 40,000 square feet, it will accommodate a future addition of ten floors. The upper two levels house the Student Health Center with outpatient facilities and a twenty-six bed inpatient unit. The second level is shell space, and the first level is occupied by radiological research and therapy, using high energy electron and cobalt equipment. The design of the wing is of contemporary style, using materials of brick and exposed concrete to be compatible with the existing hospital and adjacent Stevenson Center for the Natural Sciences. Large areas of glass brighten inpatient rooms; a play deck is provided for the hospital's pediatric patients.

A new Northwest Court Building, completed in March of 1970 and occupied in April of that year, provides space for the Department of Neurology, for the Division of Biomedical Sciences, for the accounts and reports division, as well as for the offices of the Director of Student Services for the Medical School.

The Joe and Howard Werthan Building, facing Twenty-First Avenue and completed in 1972, houses the Department of Psychiatry, the Clinical Research Center, laboratory space for clinical divisions, and lecture and conference rooms.

Other buildings in the Medical Center include the Medical Arts Building, erected in 1955 to provide part-time members of the clinical faculty with convenient office space; Mary Ragland Godchaux Hall, which houses the Vanderbilt University School of Nursing; and the Bill Wilkerson Hearing and Speech Center, a community-operated diagnostic and treatment center for audiological and speech problems.

The Medical Center contains all the equipment and facilities necessary to operate a modern teaching hospital and a school of medicine. The laboratories and clinical facilities are closely coordinated to allow a ready flow of ideas between the laboratories of the medical sciences and the wards and outpatient clinics. Teaching laboratories are provided for the major subdivisions within medical science and for the clinical departments.

The hospital contains 501 beds and 45 bassinets divided into the following seven service units: medicine, surgery, obstetrics, gynecology, pediatrics, ophthalmology, and psychiatry.

The outpatient clinics are located on the first floor and contain a series of examining, treatment, and teaching rooms for general medicine and surgery, pediatrics, neurology, dermatology, psychiatry, dental surgery, orthopedic surgery, ophthalmology, otolaryngology, obstetrics, gynecology, urology, and plastic surgery.

There are ten operating rooms and three delivery rooms.

Besides the clinical facilities offered by the wards and outpatient clinics of the University Hospital, the School of Medicine has clinical privileges in the 2,300 bed Central State Hospital for psychiatric patients. Vanderbilt is closely affiliated with the 500-bed Veterans Administration Hospital, it being a Dean's Committee hospital. The Nashville Metropolitan General Hospital, containing 240 beds and outpatient facilities, is another affiliate of the School of Medicine. The chiefs-of-service of this hospital are all members of the Vanderbilt faculty.

MEDICAL LIBRARY

The Library of the School of Medicine was founded in 1906. A year later the Nashville Academy of Medicine donated the private library of Dr. Richard Douglas, consisting of 2,500 volumes. This nucleus has been augmented by generous gifts from local physicians. The library has been the recipient of many grants from the Rockefeller Foundation which made rapid development possible. The collection now contains most of the material needed for research in any of the medical sciences. It contains complete files of the important journals, both in English and foreign languages, numerous well-selected monographs and basic textbooks, and the important reference works and bibliographic indexes.

The library contains approximately 78,000 volumes and receives 1,500 current periodicals and serial publications.

A collection of books, journals, and memorabilia illustrating the history and development of the literature of medicine, especially that of the United States, is being developed. This collection is kept in a History of Medicine Room provided by a generous donor. The funds for acquiring this collection have come largely through the gifts of patrons of the library. Donations of letters, photographs, books, and money are gratefully received.

A Friends of the Medical Library Fund has been established honoring faculty, students, and other friends of the School of Medicine, and these memorial donations are used for the purchase of current and historical publications.

Professional librarians provide reader assistance and instruction in the use of medical literature. First-year medical students are given orientation in the arrangement and services of the library, and small group seminars are held for demonstration of methods of information retrieval, including practical experience in the use of medical indexes, abstracts, review publications, and specialized bibliographic products of modern computer technology.

A Xerox 3600 copier machine is provided for library use within the limits of copyright laws, and loan services are maintained with local and out-of-town libraries. Through the facilities of the Joint University Libraries system, which contains more than a million volumes, students have ready access to publications in other fields.

The Medical Library is open from 8:00 a.m. to 11:00 p.m. Monday through Friday; from 8:30 a.m. to 4:30 p.m. on Saturday, and from 2:00 to 11:00 p.m. on Sunday; it is closed on New Year's Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

STUDENT AFFAIRS AND STUDENT SERVICES

Honor System

All work in the school is performed in accordance with Student Honor Committee regulations. Suspected violations of the system are investigated by the Student Honor Committee, which is composed of representatives of all four classes. In accepting a place in the Medical School, the enrolled student affirms willingness to support the Honor System and recognizes that he is subject to the rules and regulations of the school and University.

Student Body

Number of students per class (1972/73) is as follows: Freshmen—83; Sophomores—74; Juniors—78; Seniors—63. The present student body comes from 35 states and two foreign countries.

Vanderbilt Society of Historical Medicine

The society was organized by the Class of 1953 for the purpose of encouraging awareness and appreciation of our medical heritage in the medical school community. Regular dinner meetings are held at which speakers are invited to present papers for discussion. In the interest of fostering "a clear view of the panorama of medicine," membership in the society is open to both students and faculty. Demonstrations and displays of books and pictures of historical significance are provided through the courtesy of the Medical Library.

Student Health Service

1. A physical examination by the family physician is required of all new students, prior to registration.

2. For the protection of themselves and others against communicable diseases, all new medical students receive their chest x-rays and tuberculin skin tests during their orientation. All new students are required to have a vaccination against smallpox within three years, tetanus toxoid immunization within three years, and current polio immunization. Immunizations for typhoid and diphtheria are highly recommended, but not required.

3. The University operates the Student Health Service and Infirmary for students with mild illnesses. For major illnesses, students are admitted to Vanderbilt University Hospital. At hours when the Student Health Service is closed, students may receive medical care at the Emergency Service of the Vanderbilt University Hospital. A student identification card must be presented. Certain prescription medications and services by a private physician which are not covered by the insurance will be paid for by the student. Students should consult the health insurance brochure for the limits and exclusions of insurance coverage.

4. *Student Insurance Plan.* Full-time students at Vanderbilt are required to have adequate hospitalization insurance coverage, and all full-time students will automatically be covered with hospital insurance at the time of their registration. The annual premium will be \$33.60, which is in addition to tuition. Coverage extends from the time of registration until September 1 of the following year, whether a student remains in school or is away from

the University. This plan is designed to provide liberal hospital, surgical, and in-hospital medical care benefits. A student who does not wish to subscribe to the University's insurance plan must present, within one month of registration, proof of adequate coverage under another policy. Married students who wish to provide hospital insurance for their families must apply and pay an additional premium. All inquiries as to details should be directed to Blue Cross-Blue Shield of Tennessee, 502 James Robertson Parkway, Nashville, Tennessee 37219. Telephone (615) 256-6188.

5. The Health Service has the policy of maintaining complete health records on all students. If a student is admitted to a hospital, seen in an emergency room, or seen by a private physician, he should request that his physician forward a summary of his illness and treatment to the Health Service.

The University reserves the right in its discretion to require the withdrawal of a student for physical or mental reasons. Students withdrawn under such circumstances may be readmitted upon demonstration that the condition requiring withdrawal has been corrected.

LIVING ARRANGEMENTS

Medical students who desire to live in University housing will be housed in apartments (furnished and unfurnished) in Lewis, Morgan, and Oxford Houses. Married students with small families will be assigned to Lewis and Morgan. Apartments are rented on a nine-month lease agreement for the academic year, with a separate June-to-mid-August lease agreement for the summer session. Leases are renewable sixty days prior to expiration. These apartment buildings will not close for vacation periods.

Students may apply for an apartment alone or with one or two roommates. One-bedroom apartments could be assigned to two students. Two-bedroom apartments could be assigned to three students. One or two students may live in a studio apartment.

A \$50 housing reservation deposit is required at the time of reservation. Request for refund of the deposit will be considered if the cause for the request is judged to be a matter beyond the applicant's control and if the request, in writing, is received by July 1.

Assignments are made with the understanding that assignees are eligible for occupancy only while enrolled as full-time students at Vanderbilt, and that the apartment will be vacated immediately after the occupant ceases to be a student. The University reserves the right to require any occupant to vacate the apartment at any time and for any reason, a reasonable notice having been given. Inquiries concerning housing should be addressed to the Office for Student Life, Housing Office, Branscomb Quadrangle, Vanderbilt University, Nashville, Tennessee 37240.

University Dining Facilities

Vanderbilt University Food Services comprises Rand Dining Hall, Branscomb Dining Hall, the Divinity Refectory, and the Commodore Room Snack Bar.

A liberal board plan which offers interchangeable dining and selection

of meals may be contracted for by the semester at \$200 for 52 percent of all meals offered exclusive of holidays or recess periods. Additional coverage (\$40 for 10 percent) is available.

Automobiles

Students who intend to operate cars on the campus must register them with the Department of Safety. Students are reminded that parking spaces are not available for all cars registered, and are urged to secure off-campus parking during the school year.

Traffic violations which occur on the campus subject the violator to monetary fines, possible removal of parking privileges, and cost of removal of improperly parked vehicles, and may result in further disciplinary action for repeated or flagrant violations of automobile regulations.

Athletic Facilities

Vanderbilt Memorial Gymnasium may be used by medical students and their families. Facilities include an enclosed swimming pool. Tickets to basketball and football games may be purchased at reduced rates.

EXPENSES AND FINANCIAL AID

THE minimum annual expense of a student in the School of Medicine, exclusive of clothes and incidentals but including living accommodations, is estimated as amounting to approximately \$4,200.

TUITION AND FEES

The University reserves the right to change the schedule of tuition and fees without further notice.

Tuition (<i>Subject to change in 1973/74</i>).....	\$2,400
<i>Tuition and fees and other University charges are due and payable not later than thirty days after the date of billing each school year. An arrearage in tuition for any session must be paid before grades are posted to the student's record.</i>	
Application Fee (<i>To accompany final application form only</i>).....	\$10
Diploma Fee (<i>Charged to graduating students</i>).....	\$10
Student hospitalization and accident insurance.....	\$33.60

First-year medical students who are also three-year students at Vanderbilt University are required by the College of Arts & Science to pay a \$60 fee.

Students who register for the regular courses in the Medical School must pay the full tuition each year. There will be no exception to this requirement.

Graduate students who enroll in regular courses in the medical curriculum for credit toward an academic degree and later become candidates for the degree of Doctor of Medicine may be required to pay the full tuition as indicated above.

Students withdrawing from the University for any reason are not entitled to any return or repayment of tuition, fees, room rent, or any other regular charges or assessments, and the University will not be liable for the return or refund of same.

MICROSCOPES, BOOKS, AND EQUIPMENT

Each student is required to possess a standard four-objective microscope and a suitable substage light.

The minimum cost of books is approximately \$150 a year. Purchases made at the Vanderbilt Book Store are on a cash basis.

All students must acquire hemocytometers and ophthalmoscopes during the second year.

Students also must have clean white laboratory coats.

FINANCIAL ASSISTANCE

Education leading to the degree of Doctor of Medicine requires a careful consideration of financial commitment by the prospective student. Thus, financial planning to meet subsistence and educational costs of a medical education is an important part of the student's planning toward medical school.

Scholarships, fellowships, loans, and financial aid awards are available at Vanderbilt. Loans and scholarships through Vanderbilt Financial Aid awards are made solely on the basis of demonstrated financial need to meet costs basic to the student's subsistence and educational program which cannot be met by the student's personal resources or resources otherwise reasonably available to him.

It should be emphasized that financial aid from school sources must be considered a supplement to personal resources rather than the primary source of funds necessary to attend school. Present financial aid programs are not fully meeting financial aid requests of students. Favorable consideration for financial aid is based upon an acceptable application and budgetary statement together with the availability of funds. Our ability to fund approved requests for financial aid depends upon adequate annual federal funding of the Health Professions Financial Aid Program and the magnitude of gifts for financial aid from alumni and friends of the medical school. Recent experience has been that most approved financial aid requests have been met for items basic to the student's subsistence and education from a combination of sources including the student's personal assets, school sources and others.

Financial aid for needy medical students is not limited to those funds available through the Medical School. A prominent and important source of financial aid for needy medical students beyond that available through the Medical School is the guaranteed loan program of the federal government—Office of Education. The Office of Education provides through its sponsorship a loan program which may enable medical students to borrow money directly from savings and loan associations, credit unions, banks, or other participating lenders. The general outline for this program was established by federal law, but each state administers the program according to a slightly different procedure. Medical students may borrow up to a maximum of \$2,500 per year in most states. If the adjusted family income of the medical student is under \$15,000 per year, the federal government will pay the full interest charged on this loan while the student is attending school and prior to the beginning of the repayment period. Financial aid from this source is best approached by the student contacting his own hometown bank inasmuch as this is a bank-to-student loan, with the federal government guaranteeing the loan and the medical school certifying the applicant borrower is an accepted or enrolled medical student.

Another prominent or potential source of financial aid beyond that available directly from the Medical School is the American Medical Association's guaranteed loan program. A medical student may borrow up to a maximum of \$1,500 per year from this program once the student has completed one semester of medical studies satisfactorily. The American Medical Association underwrites the guarantee on this program to the bank which lends the

financial aid to the needy medical student. Present indication is that the federally guaranteed financial aid program will become a more prominent source of financial aid for medical students as the more direct Health Professions Financial Aid Program supported by the government becomes less prominent. The wise student who is in need of substantial financial aid would be well advised to consult his hometown banker at an early date concerning financial aid through the federally guaranteed Higher Education Act Program.

Students in need of financial aid are encouraged to consider carefully the problems related to applying for and receiving financial aid through several funds which require service as part of the repayment. Several of these plans place the student at a considerable disadvantage in the event that his career plans change. Students considering financial aid from a source which carries an obligation for service as repayment are encouraged to consult the medical school prior to entering into any contracts of this nature.

The Vanderbilt student is assured that the school will do its best to find or recommend sources sufficient to meet demonstrated financial needs basic to subsistence and education during the period of enrollment. The needy student must also recognize his own responsibility to fund a major portion of the cost of attending medical school, making application for aid from school sources only when other aid is unavailable. Needy students must be prepared to utilize a combination of financial aid sources from both school and nonschool sources to meet acceptable budgets. Financial aid is subject to application and review annually and awarded on the basis of demonstrated financial need, as this relates to the availability of funds. Financial aid is awarded independent of scholastic standing, race, color, or national origin accordingly with Title VI of the Civil Rights Act of 1964.

Students desiring more specific information about financial aid resources should write to the Director for Student Services, Vanderbilt School of Medicine, Nashville, Tennessee 37232.

Scholarships and fellowships are described on page 30.

ALPHA KAPPA KAPPA ALUMNI ASSOCIATION FUND. These funds are made available to students by alumni of the Alpha Kappa Kappa medical fraternity.

THE WILLIAM A. DIMMICK MEDICAL FUND. This fund has been established by friends to honor the Reverend William A. Dimmick. It is to be used for the education of worthy medical students as a revolving loan fund.

THE HERBERT ESKIND MEMORIAL FUND. This fund honoring the memory of Mr. Herbert Eskind was established by members of his family. This revolving loan is awarded each year to a medical student on the basis of demonstrated financial need, providing the recipient with a minimum stipend of \$750.

GALE F. JOHNSTON LOAN FUND. The funds donated by Gale F. Johnston at the suggestion of his wife Miriam are to be used as a revolving loan fund for students in the School of Medicine.

THE IKE J. KUHN FUND. This revolving loan is provided by a bequest from the will of Mr. Ike J. Kuhn, and is awarded in the School of Medicine to a worthy man or woman born and reared in any of the states commonly known as the "southern states."

LIFE & CASUALTY INSURANCE COMPANY FUND. The funds made available to Vanderbilt University are to be used as a revolving loan fund for students in the School of Medicine.

THE THOMAS L. MADDIN, M.D., FUND. This fund is provided by a bequest from the will of Mrs. Sallie A. C. Watkins in memory of Dr. Thomas L. Maddin to be used by some worthy young man for medical education at Vanderbilt.

THE JAMES PRESTON MILLER TRUST. This trust, left by the will of James P. Miller in memory of his father, James Preston Miller, provides funds to assist in the medical education of deserving young men and women at Vanderbilt University. Residents of Overton County, Tennessee, are to be given first preference, and other residents of Tennessee to be given second preference.

ROBERT E. SULLIVAN MEMORIAL FUND. Through the generosity of Robert E. Sullivan a fund has been established to assist worthy and deserving medical students in meeting their financial obligations.

THE THOMAS W. RHODES FELLOWSHIP. Funds provided by the will of Georgine C. Rhodes were left to Vanderbilt University for the purpose of establishing one or more fellowships in the School of Medicine.

THE THOMPSON STUDENT SCHOLARSHIP FUND. This fund is to be used as a scholarship fund for students in the School of Medicine from middle Tennessee.

THE JOE AND HOWARD WERTHAN FOUNDATION FUND. The funds made available by this foundation to Vanderbilt University are to be given or loaned to those students in the School of Medicine needing financial assistance.

ROANE-ANDERSON COUNTY MEDICAL SOCIETY FUND. The amount of \$500 is allocated in the form of a revolving loan to a needy medical student, with preference being given to students from Roane, Anderson, and Morgan Counties of Tennessee where possible.

J. F. FOX SCHOLARSHIP IN MEDICINE. This fund was established in memory of Dr. J. F. Fox, a Vanderbilt graduate, and provides for annual assistance to students in the School of Medicine as a revolving loan fund based on scholarship, promise, and financial need.

THE HEALTH PROFESSIONS STUDENT LOAN PROGRAM. The Health Professions Educational Assistance Act of 1963 authorizes the establishment of student loan funds to be administered by the School of Medicine. The maxi-

imum amount that can be borrowed during an academic year is \$3,500 based on demonstrated need. Financial assistance information and applications may be obtained from the Director of Student Services, Vanderbilt School of Medicine.

THE HEALTH PROFESSIONS SCHOLARSHIP PROGRAM. This program is designed to enable talented students from low income families to undertake the study of medicine. Financial assistance applications and information may be obtained from the Director of Student Services, Vanderbilt School of Medicine.

EMPLOYMENT OPPORTUNITIES FOR WIVES

Nashville is a middle-sized city (500,000) affording employment opportunities common to an industrial, business, and educational center. Major employers include Vanderbilt University, two national insurance companies, and the state government. Every attempt is made to find a position within the University for wives of students who have demonstrated skills in secretarial work, office routine, or laboratory work, or who have patient care skills such as nursing, or x-ray technology. If interested in a position on the University campus, student wives should contact the Vanderbilt Employment Center, Baker Building, Twenty-First Avenue at West End Avenue, Nashville, Tennessee 37232.

SCHOLARSHIPS AND FELLOWSHIPS

SCHOLARSHIPS

Vanderbilt University School of Medicine has a number of scholarships available to worthy applicants with distinguished scholastic records. Information and application forms may be obtained from the Director of Student Services, Vanderbilt School of Medicine.

JUSTIN POTTER MEDICAL SCHOLARSHIPS. The Justin Potter Medical Scholarships commemorate Mr. Justin Potter, a Nashville business man, industrialist, and financier. These scholarships were established in 1963 by Mr. Potter's family and are awarded by the Committee on Admissions of Vanderbilt University School of Medicine and the Justin Potter Medical Scholarship Committee. They are awarded annually to five applicants who have legally established residences in any of the following southern states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, or Virginia.

Stipends of \$3,000 annually shall be awarded to each of the five successful candidates and, once awarded, shall continue at this rate for four years contingent upon satisfactory performance.

Method of selection of the Justin Potter Scholars is as follows: the Committee on Admissions of Vanderbilt University School of Medicine recommends to the Justin Potter Medical Scholarship Committee candidates who desire this scholarship, merit consideration, and have received an official invitation to attend Vanderbilt. Selected candidates are invited to Nashville to visit with the committee (candidates will be reimbursed for their expenses). The committee composed of outstanding business men, physicians, and educators will make the final selection, the five successful candidates being designated "Justin Potter Medical Scholars."

THE ALEXANDER WORTH McALLISTER FOUNDATION FUND. The funds made available by this foundation (in conjunction with special school funds) are to be awarded to black medical students who have demonstrated their financial need.

STUDENT RESEARCH FELLOWSHIPS

Student research under the sponsorship of members of the faculty of the preclinical and clinical departments is endorsed as an integral part of the elective medical curriculum. Fellowships are usually awarded for the summer months or on a part-time basis during the academic year. Current stipends vary from \$750 to \$990 for the summer programs depending upon experience. Funds for fellowship support are available through the Committee on Fellowships and Scholarships on a competitive basis and from individual departments within the Medical School. Funds are provided from a variety of sources, including the United States Public Health Service, Lederle Laboratory Division of American Cyanamid Company, Ford Foundation, the Tobacco Industry Research Foundation, the Allergy Foundation of America, and the Middle Tennessee Heart Association. Research projects may be taken as electives for credit but without remuneration. Special arrangements can be made for participation in research programs abroad or in other medical schools within the United States.

HONORS AND AWARDS

FOUNDER'S MEDAL. This medal is awarded to the student in the graduating class of the School of Medicine who in the judgment of the Executive Faculty has achieved the strongest record in the several areas of personal, professional, and academic performance in meeting the requirements for the Doctor of Medicine degree during four years of study at Vanderbilt.

ALPHA OMEGA ALPHA. A chapter of this medical honor society was established by charter in the School of Medicine in 1923. Not more than one sixth of the students of the fourth-year class are eligible for membership and only one half of the number of eligible students may be elected to membership during the last half of their third year. This society has for its purpose the development of high standards of personal conduct and scholarship, and the encouragement of medical research. Students are elected into membership on the basis of their scholarship, character, and originality.

THE BEAUCHAMP SCHOLARSHIP. This scholarship, founded by Mrs. John A. Beauchamp in memory of her husband who was for many years superintendent of the Central State Hospital in Nashville, is awarded to the student showing the greatest progress in neurology and psychiatry and who is otherwise worthy and deserving.

THE MERRELL AWARD IN PATHOLOGY. Established in 1953 by the William S. Merrell Company, this award of \$150 is provided annually for the two most outstanding papers on research in the field of pathology by Vanderbilt University medical students. The author of the first-place paper will be awarded \$100 and the author of the second-place paper, \$50. Candidates for the award should submit their papers to the Committee on Fellowships and Scholarships.

THE ROCHE AWARD. This award, a gold wrist watch provided by Roche Laboratories, is presented to the medical student with the highest cumulative scholastic rank after two years of medical school.

THE ALBERT WEINSTEIN PRIZES IN MEDICINE. Three prizes, established in memory of Albert Weinstein, M.D., are awarded at graduation to senior students who, in the opinion of the faculty of the Department of Medicine, merit recognition for high scholastic attainment and the qualities which characterize the fine physician.

Dr. Albert Weinstein was graduated from Vanderbilt University in 1926 and as founder's medalist from Vanderbilt University School of Medicine in 1929. Following training at Vanderbilt and Johns Hopkins he returned to Vanderbilt as chief resident in medicine, 1933-1935, and served as a distinguished member of the faculty and clinical professor of medicine until his death on October 1, 1963. Despite a busy and successful practice, Dr. Weinstein contributed regularly to the medical literature and maintained a major interest in the teaching of medical students. These prizes were established in 1964 by contributions from friends, associates, and former patients of Dr. Weinstein.

DEAN'S AWARD FOR STUDENT RESEARCH PRESENTATION. A prize of \$100 is awarded for the most outstanding research paper presented by a medical student.

THE UPJOHN AWARD. This award is given each year to a medical student in the graduating class who has distinguished himself with an outstanding record of achievement throughout medical education from the several standpoints of scholastic, personal, and professional achievement, as well as performance as a member of the Vanderbilt community. The Upjohn Award is provided through the interest and generosity of the Upjohn Pharmaceutical Company.

THE AMOS CHRISTIE AWARD IN PEDIATRICS. Established in 1970 by an anonymous donor, this award provides \$250 to the student in the graduating class who has demonstrated the outstanding qualities of scholarship and humanity embodied in the ideal pediatrician. The award honors Dr. Amos Christie, professor of pediatrics, emeritus, and chairman of the Department of Pediatrics from 1943 to 1968.

ADMISSION

THE School of Medicine selects its students from the following three categories:

1. Graduates of a college or university of recognized standing.
2. Seniors in absentia of a college or university of recognized standing who will be granted the bachelor's degree by their colleges after having completed successfully one year of work in the School of Medicine. A properly accredited statement to this effect from the colleges shall accompany all applications for admission as seniors in absentia. A form is furnished for this purpose.
3. Students of U.S. or foreign universities of recognized standing who have completed three years of collegiate education may be admitted to the School of Medicine at the discretion of the Committee on Admissions.

Eighty-three students, both men and women, are admitted to the first-year class. Admission to the School of Medicine is competitive, and is based upon the judgment of the Admissions Committee. Students are selected on the basis of the quality of their college work and general fitness for the successful study of medicine at Vanderbilt.

Decisions regarding an invitation to study at the Vanderbilt School of Medicine are made by the Committee on Admissions and are based upon an evaluation of the applicant's ability, preparation, motivation, and suitability to function at Vanderbilt as a medical student and thereafter as a physician in general practice, in one of the specialties, in research medicine, or in other endeavors based upon the M.D. degree. There are no limitations on selection based upon state of residence, sex, race, or religious preference.

MINIMUM REQUIREMENTS

Every candidate must present evidence of having satisfactorily completed during his college course the following minimum requirements, in which a semester hour is the credit value of sixteen weeks' work consisting of one hour of lecture or recitation or at least two hours of laboratory work:

1. *Biology.* Eight semester hours including laboratory work. The course may be general biology, zoology, or zoology and botany, or similar studies in biological science, but not more than half may be botany.
2. *Chemistry.* A minimum of 16 semester hours is required. Eight of these must be in general inorganic chemistry including laboratory work. A minimum of 8 semester hours credit in organic chemistry is required, covering aliphatic and aromatic compounds and including lab work.
3. *Physics.* Eight semester hours are required including laboratory work. It is desirable that emphasis be placed on quantitative laboratory work.
4. *English and Composition.* Six semester hours.

Students are urged to take courses in college which will strengthen their foundation in basic natural and social sciences, mathematics, and their cultural background.

MEDICAL COLLEGE ADMISSION TEST

The Medical College Admission Test is given under the auspices of the Association of American Medical Colleges, and is required of applicants to Vanderbilt. It is given twice a year at most universities and colleges. Since the examination score is used by medical schools in the selection of applicants, students should take the test, at the latest, in the spring prior to the time application is submitted.

The score made on this examination will be used by the Committee on Admissions in considering applications for admission to the School of Medicine, together with the scholastic record and evaluations.

APPLICATION PROCEDURE FOR ADMISSION

As a convenience to the applicant, Vanderbilt School of Medicine participates in the American Medical College Application Service. All application materials may be obtained through AMCAS by writing:

American Medical College Application Service
Association of American Medical Colleges
Suite 301
1776 Massachusetts Avenue Northwest
Washington, D. C. 20036

The Committee on Admissions evaluates the initial application received through the application service. Applicants receiving favorable initial review are invited to file a final application which includes an interview and a request for letters of evaluation. Applications are received any time after July 1 and before November 15 preceding an anticipated September enrollment date.

Successful applicants who receive official invitations are required to make a deposit of \$50. This deposit is credited toward the payment of the first tuition and is returnable until March 1, in the event the student does not matriculate.

ADMISSION TO ADVANCED STANDING

Applicants who have satisfactorily completed two years of study at approved medical schools may be considered for admission to the third-year class where space exists and when the applicant meets the following requirements:

1. Application for advanced standing must be filed. A deposit of \$50 is required of successful applicants.
2. Applicants must furnish evidence of having satisfied the conditions of admission and of having completed all the work required of students in the class they desire to enter.
3. Applicants must present a certificate of honorable dismissal from the medical school they have attended and be eligible for continuing enrollment in their medical school of origin if they so desire.

4. Completed applications and supporting credentials for advanced standing must be received in the Office of Student Services no later than July 15 preceding the September for which the applicant is applying for enrollment to advanced standing. Decisions concerning advanced standing are made as soon as practical upon the availability of the completed application and information regarding the availability of class space as known to the Committee.

Further information concerning admission to advanced standing should be addressed to the Director of Student Services, Vanderbilt School of Medicine.

REGULATIONS

HONOR SYSTEM

THE University reserves the right, through its established procedures, and by registration the student acknowledges this right, to modify the requirements for admission and graduation; to change the arrangement or content of courses, the texts and other materials used, the tuition and other fees; to alter any regulation affecting the student body; to refuse admission or readmission to any student at any time, or to require the withdrawal of any student at any time, should it be deemed in the interest of the University or of the student.

ALL work in this University is conducted under the Honor System. For the successful operation of the Honor System the cooperation of every student is essential. A Student Honor Committee exists for the purpose of investigating cases of violation of this system. In accepting a place in the Medical School, the enrolled student affirms willingness to support the Honor System and recognizes that he is subject to the rules and regulations of the school and University.

EXAMINATIONS AND PROMOTIONS

Successful completion of the courses of the medical curriculum and scholastic standing are determined by the character of the student's daily work and the results of examinations. Examinations may be written, oral, or practical, and may be held in conjunction with each course or at the end of the academic year. The quality of work of each student is considered, usually at the end of each semester, by a committee composed of the instructors responsible for his more important courses. Promotion is considered by a committee of the faculty at the end of each academic year. The committee, upon the recommendation of the several departments, recommends to the Executive Faculty those students for promotion who have demonstrated personal, professional, and intellectual achievement consistent with faculty expectations for these students at their particular stage of development toward the Doctor of Medicine degree. Students who are deficient in a major area or areas will be required to complete additional efforts satisfactorily in order to remedy deficiencies. Students who are deficient in a major undertaking or who demonstrate a marginal performance in a major portion of their work may be denied further enrollment.

Students who fail in two major courses or fail a re-examination in a major course may be required to withdraw from the school. Students who have had no reported failures may be required to withdraw from the school if their work has been of a generally marginal quality. Students may be given credit for a subject by re-examination, but failures remain on their records, and may be counted as a cause for requesting withdrawal, provided another failure in a major course occurs.

The Vanderbilt Medical School has one of the lowest attrition rates in the country. The faculty and administration take an active interest in

assuring that each student achieves to the maximum of his capability. Advisers, both student and faculty, are available to assist students. Staff members of the Office of Medical Education are also available to assist students toward the successful development of their plans.

LEAVE OF ABSENCE

A leave of absence may be granted by the Dean with the concurrence of the Executive Committee of the Executive Faculty for a period not to exceed one year for purposes of special approved studies or for recuperation from illness. Such leave of absence may not exceed one year. Should it be necessary for a student to absent himself for a period greater than one calendar year, it would be necessary for that student to make formal re-application and be considered in the regular way by the Admissions Committee unless special action approving a more lengthy leave of absence is established by formal action through the Executive Faculty.

Major Courses are as follows:

First year—Biochemistry, Gross Anatomy, Histology, Neuroanatomy, and Physiology.

Second year—Methods in Clinical Science, Microbiology, Pathology, and Pharmacology.

Third year—Medicine, Obstetrics-Gynecology, Pediatrics, Surgery, Psychiatry, Neurology, and Orthopedics.

Fourth year—Elective experiences in basic science and/or clinical areas.

Any student who indicates by his work or his conduct that he is unfit for the practice of medicine may be required to withdraw from the school at any time.

Any student who fails to pass a course will be required to remove the failure before being permitted to enter the courses of the next academic year.

REQUIREMENTS FOR DOCTOR OF MEDICINE DEGREE

Candidates for the degree of Doctor of Medicine must be mature and of good moral character. They must have spent at least four years of study or its equivalent as matriculated medical students. The last two years of this study must have been in this school. They must have completed satisfactorily the medical curriculum, have passed all prescribed examinations, and be free of indebtedness to the University. Students fulfilling these requirements will be recommended for the degree of Doctor of Medicine.

NATIONAL BOARD EXAMINATIONS

All second-year students are required to take for credit Part I of the National Board Examinations in June following completion of second year studies, and all fourth-year students are required to take for credit Part II of the National Board Examinations in the spring of the fourth year. Performance on National Board Examinations is significant to student promotion as one of several performance criteria considered by the Promotions Committee.

BASIC SCIENCE EXAMINATIONS

Approximately twenty states now require examinations on the basic science subjects (anatomy, bacteriology, chemistry, pathology, and physiology) as a preliminary to medical licensing examinations. Since the various states are not uniform in their requirements a considerable impediment to movement of physicians from state to state by reciprocity is created. Each student is urged to achieve certification in the basic sciences as soon as possible.

EXTRACURRICULAR WORK

The Medical School does not regulate the outside work of its students though the Medical School does take the firm position of discouraging outside work. No outside commitments may be assumed by the medical student which obligate him in a way that can compromise his responsibilities at the Medical School. The student is encouraged to evaluate carefully his obligations outside the regular curriculum in order that his progress and work in Medical School will be in no way jeopardized. In any instance in which the work is considered prejudicial to the student's education, he may be required to discontinue it.

INSTRUCTION LEADING TO THE M. D. DEGREE

The curriculum is divided into a basic set of required courses taken by all students and elective courses which may be chosen. Required courses constitute the nucleus of medical education at Vanderbilt; elective courses are an integral part of each student's educational experience in the Medical School, but allow considerable flexibility of individual curricula. Each student is assigned a faculty adviser to aid in the selection of elective courses, and the program of electives must be approved by the Associate Dean for Education.

All electives are courses for credit, graded on the same basis as required courses, and are nonremunerative. The following types of courses may be elected: lecture series; specialty clinics; clinical clerkships or research experience, at Vanderbilt or other institutions; Vanderbilt undergraduate or graduate courses.

Two hours each week have been designated for presentations of school-wide interest, e.g., lectureships, medical society meetings, student papers. The attendance of all students and faculty is expected.

Students are encouraged to participate in the summer research fellowship program.

The Medical School curriculum is scheduled in conjunction with the common University calendar, and is divided on a semester basis.

The medical curriculum at Vanderbilt is under constant review by both faculty and students, and is subject to timely change as recommended by the Committee of Education and approved by the Executive Faculty of the Medical School.

First year: Most of the year is spent in the study of anatomy, biochemistry, and physiology. All day Wednesday and Saturday morning (during the second semester) are reserved for study and electives. Electives available to the freshman cover a wide range of subjects, e.g., Fundamental Principles in Use of Radioisotopes, Topics in General Physiology, Medicine in Families and the Community, Medical Genetics, Principles of Anthropology.

Second year: Courses include Microbiology, Pathology, Pharmacology, Medical Statistics, Preventive Medicine, and Psychiatry. Students begin the study of patients during the second semester, when all the clinical departments cooperate in giving the student an introduction to history taking, physical examination, and laboratory study of patients through a series of lectures, demonstrations, and individual practice by the student. A variety of electives may be taken, either on Wednesday or at scattered times through the week.

Third year: Ward clerkships in Medicine, Obstetrics-Gynecology, Psychiatry, Neurology, Orthopedic Surgery, Pediatrics, and Surgery occupy the third year. Students have close contact with a limited number of selected patients under the supervision of attending physicians and house staff.

Fourth year: During one semester seniors serve as clinical clerks in electives in the Outpatient Service. Here they have opportunity to see disease in its earlier stages, when diagnosis is more difficult, under conditions of office practice, and with opportunities for follow-up examinations and observation over relatively long periods.

Seniors have an entire semester designated as elective for inpatient clerkships. The opportunities for use of this elective semester include research fellowships in a clinical or preclinical department, at Vanderbilt or other institutions; advanced ward clerkships in clinical areas; combinations of variety of specialty clinics and lecture courses. The flexibility of the fourth-year curriculum gives the student maximum opportunity for individual development.

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00-12:00	Biochemistry	Anatomy		Anatomy	Biochemistry	Anatomy
1:00-4:00	Biochemistry	Anatomy		Anatomy	Biochemistry	
4:00-5:00		Student-Faculty Hour		Student-Faculty Hour		

1st YEAR SPRING SEMESTER

Schedule of Courses

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00-12:00	Anatomy	Physiology		Physiology	Anatomy	
1:00-4:00	Anatomy	Physiology		Physiology	Anatomy	
4:00-5:00		Student-Faculty Hour		Student-Faculty Hour		

1. Elective time is unshaded.
2. Most freshmen should take 4-5 elective hours each semester.
3. The Tuesday Student-Faculty Hour will be used for special lectures and personality development presentations.

2nd YEAR FALL SEMESTER

Schedule of Courses

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00	Pathology			Pathology	Pathology	Microbiology
9:00						
10:00						
11:00						
12:00						
1:00	Methods in Clinical Science	Psychiatry		Microbiology	Microbiology	
2:00		Med. Stat.				
3:00		Epidemiology Prev. Med.				
4:00		Student-Faculty Hour					Student-Faculty Hour

1. Elective time is unshaded.

2. Most sophomores should take 4-5 elective hours each semester.

3. Clinical-pathological conferences will routinely be given in the Tuesday Student-Faculty Hour.

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00				Radiology		
9:00	Pharmacology	Methods in Clinical Science		Psychiatry	Pharmacology	Pharmacology
10:00						
11:00			Preventive Medicine			
12:00						
1:00	Methods in Clinical Science	Methods in Clinical Science		Methods in Clinical Science	Pharmacology	
2:00						
3:00						
4:00		Student-Faculty Hour		Student-Faculty Hour		

1. Elective time is unshaded.
2. Most sophomores should take 4-5 elective hours each semester.
3. Clinical-pathological conferences will routinely be given in the Tuesday Student-Faculty Hour.

3rd YEAR

Schedule of Courses

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Wards: 10 weeks, Medicine; 10 weeks, Surgery; 5 weeks, Pediatrics; 5 weeks Obstetrics and Gynecology; 5 weeks, Psychiatry, 2½ weeks, Neurology; 2½ weeks, Orthopedic Surgery					
1:00-4:00						
4:00 P.M.	29 hrs Surgery 8 hrs Orthopedic Surgery 6 hrs Neurology	Student-Faculty Hour	23 hrs Medicine 20 hrs Pediatrics	Student-Faculty Hour	12 hrs Radiology 13 hrs Anesthesiology 12 hrs Ob-Gyn 6 hrs Psychiatry	

1. Elective time is unshaded.
2. Minimal elective hours = 0
3. Clinical-pathological conferences will routinely be given in the Tuesday Student-Faculty Hour.

3rd YEAR (1st half)

Rotation, in groups of one-sixteenth of class

STUDENT GROUP	1st 5 weeks	2nd 5 weeks	3rd 5 weeks	4th 5 weeks	
1	Medicine	Medicine	Surgery	Surgery	
2					
3					
4					
5	Psychiatry	Neu	Medicine	Medicine	
6					Orth
7		Orth			
8		Neu			
9	Pediatrics	Ob-Gyn	Psychiatry	Neu	
10					
11					Orth
12					Neu
13	Ob-Gyn	Pediatrics	Neu	Psychiatry	
14					
15					Orth
16					Neu
	Surgery	Surgery	Pediatrics	Ob-Gyn	
	Surgery	Surgery	Ob-Gyn	Pediatrics	

3rd YEAR (2nd half) *Rotation, in groups of one-sixteenth of class*

STUDENT GROUP	5th 5 weeks		6th 5 weeks		7th 5 weeks		8th 5 weeks	
	1	Pediatrics		Ob-Gyn		Psychiatry		Neu	Orth
2							Orth	Neu
3	Ob-Gyn		Pediatrics		Neu	Orth	Psychiatry	
4					Orth	Neu		
5	Surgery		Surgery		Pediatrics		Ob-Gyn	
6								
7					Ob-Gyn		Pediatrics	
8								
9	Medicine		Medicine		Surgery		Surgery	
10								
11								
12								
13	Psychiatry		Neu	Neu				
14			Orth	Orth	Medicine		Medicine	
15	Neu	Orth	Psychiatry					
16	Orth	Neu						

4th YEAR

Rotation, in groups of one-sixth of class

Semester A 18 weeks clerkship assignments
 Semester B 18 weeks clinic assignments

Student Group	FALL SEMESTER			SPRING SEMESTER		
	1st unit	2nd unit	3rd unit	1st unit	2nd unit	3rd unit
1	A	A	A	B	B	B
2	A	A	A	B	B	B
3	A	A	A	B	B	B
4	B	B	B	A	A	A
5	B	B	B	A	A	A
6	B	B	B	A	A	A

Semester B includes surgery clinics, pediatrics clinics, general medicine clinics, and a rotation at night in Emergency Room.

LECTURESHIPS

ALPHA OMEGA ALPHA LECTURE. The Alpha Omega Alpha Honor Medical Society invites each year a scientist of prominence to deliver a lecture before the students, faculty, and local members of the medical profession. The first lecture was given during the school year 1926-1927.

THE BARNEY BROOKS MEMORIAL LECTURESHIP IN SURGERY. In 1952 through the generosity of a Vanderbilt alumnus an annual lectureship was established to honor the memory of Dr. Barney Brooks, formerly professor of surgery and head of the department and surgeon-in-chief of the Vanderbilt University Hospital. As a fitting memorial to Dr. Brooks these lectures have been given by physicians who have made distinguished contributions in clinical or investigative surgery. The first Barney Brooks Memorial Lecture in Surgery was given during the spring of 1953.

THE ABRAHAM FLEXNER LECTURESHIP. In the fall of 1927 Mr. Bernard Flexner of New York City gave \$50,000 to Vanderbilt University to establish the Abraham Flexner Lectureship in the School of Medicine. This lectureship is awarded every two years to a scientist of outstanding attainments who shall spend as much as two months in residence in association with a department of the School of Medicine. The first series of lectures was given in the fall of 1928.

PAULINE M. KING MEMORIAL LECTURESHIP. This lectureship was established in 1962 by Mr. Robert F. King of Klamath River, California, as a memorial to his wife. Each year a distinguished thoracic or cardiovascular surgeon is invited by the Department of Surgery to lecture at Vanderbilt University School of Medicine. The first Pauline M. King Memorial Lecture was given in the spring of 1963.

PAUL DUDLEY LAMSON MEMORIAL LECTURE. This annual lectureship was instituted in 1965 in memory of Dr. Lamson who was professor of pharmacology and chairman of the Department of Pharmacology at Vanderbilt University from 1925 until his retirement in 1952. A prominent pharmacologist is brought to the Vanderbilt campus each year under the sponsorship of the alumni and staff of the Department of Pharmacology.

GLENN A. MILLIKAN MEMORIAL LECTURE. This lectureship was established in 1947 by the members of the then second-year class. It has subsequently received support by means of a capital fund by Dr. Glenn Millikan's father and mother, Dr. Robert A. Millikan and Mrs. Gretna B. Millikan, and friends. Contributions have been made to the fund by members of the founding class and other students. The lectureship is maintained to provide a distinguished lecturer in physiology.

HUGH J. MORGAN VISITING PROFESSORSHIP IN MEDICINE. This visiting professorship was established in 1959 through the generosity of faculty, former house officers, and friends of the late Dr. Hugh J. Morgan who served as professor of medicine and chairman of the department at Vanderbilt University School of Medicine from 1935 through 1959. As a tribute to Dr. Morgan and his outstanding qualities as a superior clinician, the De-

partment of Medicine invites a distinguished physician to spend one week in residence during which time he assumes the teaching duties of the professor of medicine with students, house officers, and faculty. The first visiting professorship was awarded in 1959.

THE COBB PILCHER MEMORIAL LECTURE. In 1950 the Pi Chapter of the Phi Chi Medical Fraternity established the Cobb Pilcher Memorial Lecture to honor the memory of Dr. Pilcher, formerly associate professor of surgery, distinguished neurosurgeon, and a member of Phi Chi fraternity. Each year a lecturer of prominence is selected. The first lecture was given in 1950.

INSTRUCTION LEADING TO THE M.D. AND PH.D. DEGREES

Some students may be oriented toward careers in academic or investigative medicine. These students may wish to consider a combined M.D.-Ph.D. program. In order to facilitate the development of teachers and medical investigators who are capable in clinical and basic medical sciences, a combined course of study leading to both the M.D. and Ph.D. degrees has been established. The combined degree program at Vanderbilt is essentially a seven-year program. The student pursues both medical and graduate courses and research in the area of his major graduate emphasis. Simultaneously he must fulfill all of the requirements of the Medical School for the M.D. degree, and those of the Graduate School for the Ph.D. Initially, the M.D.-Ph.D. student usually enrolls in courses in medical school for the basic science years.

Students interested in pursuing combined studies seek admission to the Medical and Graduate Schools respectively through the Admissions Committee, in the case of the Medical School; and the Department and Dean in the case of the Graduate School. Although admission to combined studies may be approached from an initial enrollment in either Graduate or Medical School by seeking and obtaining admission to the other school, *it is usually best to assure admission to the Medical School early, as class size is very limited.*

Once the student has gained admission to both the Graduate School and Medical School, approval for combined studies is achieved through application to the Graduate Education Committee. Approval by the Committee provides the student with the option of joint and alternate enrollment in Graduate and Medical Schools, and joint credit in coursework approved for such joint credit.

Those students approved for the combined M.D.-Ph.D. studies may wish fellowship support, and may apply for fellowship support and a tuition allowance through application and approval by the Committee on Fellowships of the Medical School. In accepting approval for joint M.D./Ph.D. fellowship support, the student agrees that M.D./Ph.D. studies will be his principle effort and further agrees not to undertake concurrently any other gainful employment or effort without the formal approval of the committee and school officers responsible for joint M.D./Ph.D. studies.

Scheduling of combined studies is flexible and individual schedules are developed in conjunction with the Associate Dean for Medical Education, the student's graduate adviser, and the chairman of the student's major department. Under most conditions, the program is divided into several phases. The first phase usually includes the two basic science years in Medical School during which the student is usually enrolled full time in Medical School. During the period thereafter the student meets his residency requirements in the Graduate School and follows a flexible program of graduate and medical studies in a combination suited to the student's plan as approved by the Medical and Graduate Schools. Such flexibility and combined effort en-

able the student to combine M.D. and Ph.D. studies in a way which strengthens each through efforts in the other, as well as to keep a more current knowledge than would be possible if each were studied separately. The combined degree program has many advantages in that it does save a certain amount of time in the total length of the process of obtaining the two degrees. The primary advantage, however, is that the student is concurrently involved in basic laboratory science and research and in medical studies, and upon graduation has knowledge which is up-to-date and current in these areas, and further, he is at a point of independent contribution and creativity in the basic medical sciences.

More detailed information about the M.D.-Ph.D. program may be obtained from the Office of Student Services, Vanderbilt School of Medicine.

The committee making fellowship awards meets to determine recipients during January and July each year.

ADVANCED PROFESSIONAL TRAINING AND RESEARCH

The primary responsibility of the School of Medicine is education of medical students. In addition, there are active programs for graduate students in the preclinical sciences, for postdoctoral interns and residents, and for postdoctoral research trainees. At present, 730 students, trainees, technicians, and aides are receiving instruction at the school.

INTERNSHIP AND RESIDENCY TRAINING

Students preparing for the practice of medicine usually spend one or more years in house staff training. Such experiences at Vanderbilt are particularly varied and well supervised. Applicants for positions are carefully chosen, and make up a competent and stimulating group which has considerable responsibility in medical student teaching.

The faculty of the School of Medicine has professional responsibilities in Vanderbilt, Veterans, and Nashville General Hospitals. Most patients in these hospitals are cared for by members of the intern and resident staff.

Vanderbilt University Hospital is a referral center and consequently has a patient population with complex medical and surgical problems. Nashville General Hospital is a community-owned facility in which many of the patients present advanced manifestations of disease. Veterans Administration Hospital is adjacent to the Vanderbilt Medical Center, and is extensively used for student and house staff teaching.

RESIDENCIES AND FELLOWSHIPS

THE HUGH J. MORGAN RESIDENCY IN MEDICINE. In May of 1962, Mrs. Julia T. Weld of New York City generously made available a yearly gift to support the chief residency in medicine named after the late Dr. Hugh J. Morgan, professor of medicine at Vanderbilt from 1935-1959. The awarding of the residency is announced each fall for the following July. The Hugh J. Morgan Residency allows the Department of Medicine to award an adequate salary to this important faculty position.

DR. COBB PILCHER-WILLIAM HENRY HOWE FELLOWSHIP IN NEUROSURGERY. In December 1945, the William Henry Howe Fellowship in Neurosurgery was established in the School of Medicine of Vanderbilt University. This fellowship was made available to the University by the late Dr. Pilcher and has been continued by the generosity of his family and friends.

POSTDOCTORAL COURSES

Courses in individual departments are made available by special arrangement. These courses are under the direction of the Director of Continuing Education and the chairman of the department concerned. Courses may be

offered at any time during the year for periods of varying length. Only a limited number of physicians can be admitted to any course. Inquiries should be addressed to the Director of Continuing Education.

Fees for special courses are decided by the Dean and the Director of Continuing Education in cooperation with the chairman of the department in which the instruction is provided.

COURSES TOWARD MASTER'S AND PH.D. DEGREES

Candidates for the degree of Master of Science or of Doctor of Philosophy may pursue work in the medical sciences given in the Medical School, either in regular courses or in special elective courses, provided such students are accepted by the heads of departments concerned and are registered in the Graduate School of the University. Graduate work in the medical sciences is regulated by the faculty of the Graduate School. Candidates for graduate degrees should apply to the Dean of the Graduate School.

Candidates for the degree of Master of Science in hearing and speech sciences may pursue work in these fields in the Bill Wilkerson Hearing and Speech Center and the School of Medicine. Graduate work in this division is regulated by the faculty of the Graduate School. Candidates should apply to the Registrar of the Graduate School.

ENDOWED RESEARCH CHAIRS

THE JOE AND MORRIS WERTHAN CHAIR OF EXPERIMENTAL MEDICINE. Through the generosity of the Werthan family of Nashville, this professorship was established in 1951 for the purpose of furthering research in the general field of internal medicine. The present holder of the chair is Dr. Elliot V. Newman.

THE LUCIUS E. BURCH CHAIR OF REPRODUCTIVE BIOLOGY AND FAMILY PLANNING. In December of 1967, the Department of Obstetrics and Gynecology received funds, through the generosity of an anonymous donor, to establish this professorship, the purpose of which is to further research in basic reproductive biology and applied family planning. The chair is named for Dr. Lucius E. Burch, dean of the School of Medicine from 1913 until 1920, and chairman of the Department of Obstetrics and Gynecology until his retirement in 1945. Dr. Bert W. O'Malley, professor of obstetrics and gynecology, is the first man to receive this appointment.

THE PAUL W. SANGER CHAIR OF EXPERIMENTAL SURGERY. Through the generosity of the late Dr. Paul W. Sanger, graduate in Vanderbilt Medical School's class of 1931, distinguished surgeon of Charlotte, North Carolina, and former president of the Vanderbilt Medical Alumni, this professorship was established in 1969 and funded in collaboration with the Department of Surgery for the purpose of furthering research in surgical biology and in the general field of surgery.

THE MILDRED THORNTON STAHLMAN CHAIR IN PERINATOLOGY. The generosity of Mr. James C. Stahlman established this professorship in perinatology. The chair to be established in this new field of medical research will reinforce this program over an indefinite period of time.

THE MARY GEDDES STAHLMAN CHAIR IN CANCER RESEARCH. Through the generosity of Mr. James C. Stahlman, this professorship was established in 1972 for the purpose of furthering studies in cancer research. This professorship will provide funds to help establish Vanderbilt as a national center for cancer research.

EDWARD CLAIBORNE STAHLMAN CHAIR IN PEDIATRIC PHYSIOLOGY AND CELL METABOLISM. This professorship was established in 1972 by Mr. James C. Stahlman for studies in pediatric physiology and cell metabolism.

ENDOWED RESEARCH FUNDS

THE RACHEL CARPENTER MEMORIAL FUND. This fund was established in 1933 by a gift of \$5,000 from Mrs. Mary Boyd Carpenter of Nashville. The income derived from this fund is to be used for education in the field of tuberculosis.

THE BROWNLEE O. CURRY MEMORIAL FUND FOR RESEARCH IN HEMATOLOGY. A memorial fund created by the friends of Brownlee O. Curry, the income from which is being used for the support of research in the field of hematology.

THE JACK FIES MEMORIAL FUND. The sum of \$5,000 was given to Vanderbilt University by Mrs. Hazel H. Hirsch as a memorial to her son, Jack Fies, the income from which is to be used to support research in the important field of neurological surgery. It is hoped that subsequent donations may be made by those who may be interested in creating a larger fund for this phase of research.

THE JOHN B. HOWE FUNDS FOR RESEARCH. In January 1946, the members of the family of the late John B. Howe established two funds in the University to be known as the John B. Howe Fund for Research in Neurosurgery and the John B. Howe Fund for Research in Medicine. The expenditures from the funds for neurosurgery and medicine are administered through the Department of Surgery and the Department of Medicine.

THE MARTHA WASHINGTON STRAUS-HARRY H. STRAUS FOUNDATION, INC. The foundation provides support for research in the Department of Medicine in the field of cardiovascular diseases.

THE LESLIE WARNER MEMORIAL FUND FOR THE STUDY AND TREATMENT OF CANCER. This fund was established in 1932 in the memory of Leslie Warner of Nashville, Tennessee. It consists of \$7,200, of which \$3,600 was contributed by the nieces and nephews of Mrs. Leslie Warner.

COURSES OF STUDY

SCHOOL OF MEDICINE DEPARTMENTS

<i>Anatomy</i>	55
<i>Anesthesiology</i>	57
<i>Biochemistry</i>	58
<i>Hearing & Speech Sciences</i>	62
<i>Medical Administration</i>	66
<i>Medicine</i>	67
DERMATOLOGY.....	71
<i>Microbiology</i>	78
<i>Neurology</i>	80
<i>Obstetrics & Gynecology</i>	81
<i>Ophthalmology</i>	115
<i>Orthopedic Surgery</i>	85
<i>Pathology</i>	87
<i>Pediatrics</i>	89
<i>Pharmacology</i>	95
<i>Physiology</i>	98
<i>Preventive Medicine & Public Health</i>	100
BIostatistics.....	100
<i>Psychiatry</i>	104
HUMAN BEHAVIOR.....	105
<i>Radiology</i>	110
<i>Surgery</i>	113
DENTISTRY.....	114
NEUROLOGICAL SURGERY.....	115
ORAL SURGERY.....	116
OTOLARYNGOLOGY.....	116
PEDIATRIC SURGERY.....	116
PLASTIC SURGERY.....	116
THORACIC AND CARDIAC SURGERY.....	117
UROLOGY.....	117



Courses in the 500 series make up the curriculum of the medical student. Required medical school courses are numbered 501 to 519. Elective medical school courses are numbered 521 to 599. Those courses carrying credit in the Graduate School are indicated by a 300 series number before or after the title. Figures in brackets in 300 series course descriptions indicate semester hours of credit in the Graduate School.

Descriptions of elective courses include the class year to which the course is available, number of clock hours per week, semester offered, and length of course if less than a semester.

Anatomy

JACK DAVIES, M.D., *Professor of Anatomy and Chairman of the Department*

JOEL E. BROWN, Ph.D., *Professor of Anatomy*

VIRGIL S. LEQUIRE, M.D., *Professor of Anatomy*

JAMES W. WARD, Ph.D., M.D., *Professor of Anatomy*

R. BENTON ADKINS, JR., M.D., *Associate Professor of Anatomy*

ALVIN M. BURT III, Ph.D., *Associate Professor of Anatomy (On leave 1972-73)*

G. RODMAN DAVENPORT, Ph.D., *Associate Professor of Anatomy*


LUCILLE H. AULSEBROOK, Ph.D., *Assistant Professor of Anatomy*

JOHN A. FREEMAN, M.D., Ph.D., *Assistant Professor of Anatomy*

LOREN H. HOFFMAN, Ph.D., *Assistant Professor of Anatomy*

LUKE H. MONTGOMERY, *Assistant Professor of Anatomy*

WILLIAM H. OLSON, M.D., *Assistant Professor of Anatomy*

 The Department of Anatomy offers courses leading to the Ph.D. degree. Courses described below which are numbered in the 300 series are offered primarily for that program but are open to medical students by special arrangement.

501. HISTOLOGY. (322) This course gives the student a familiarity with the normal structure of the principal tissues and organs of the body. Fresh tissues are used wherever possible for the demonstration of normal cellular function, and in analyzing the characteristics of particular cells. SPRING. [3] *Dr. Davenport and Dr. Hoffman.*

502. GROSS ANATOMY. (321) This course is devoted to a systematic dissection of the human body. The instruction is largely individual and the work of the student is made as independent as possible. FALL. [7] *Dr. Adkins and Staff.*

503. NEUROLOGY. (323) A basic course with emphasis upon a systematic study of the neuroanatomy and physiology of the human nervous system. Correlated features of neurochemistry and neuropharmacology are considered and clinical material is utilized to emphasize the basic anatomy and physiology. Four hours of lecture and four hours of lab per week. Prerequisite: a background in biology and chemistry. [4] *Dr. Ward and Staff.*

521. DEVELOPMENTAL BIOLOGY. (333) First, Second, Third, and Fourth years. A comprehensive multidisciplinary approach to the developmental biology of the mammalian cell. Lectures will cover chromosomal structure and function; sex determination and cell and organ differentiation; mitosis, cell cycles, cell populations; fertilization and implantation; egg development and biochemical differentiation; neuroendocrine (pituitary-hypothalamic hormonal axis) control mechanisms; gonadal function and

steroid synthesis; mechanism of steroid hormone regulation of protein synthesis in target tissues; synthesis and mechanism of action of pituitary trophic peptides; organ maturation, teratology and cancer. The biochemical endocrinology of reproduction and the regulation of cell and organ development will be heavily emphasized. This course is presented as a fundamental aspect of biologic science. Sessions will be given by faculty actively engaged in research in the above fields of development and molecular biology. (Obstetrics and Gynecology 521). Three hours per week. SPRING. [3] *Dr. Bert W. O'Malley (Lucius E. Burch Professor of Obstetrics and Gynecology), and Staff.* (Not offered 72/73.)

522. NORMAL AND ABNORMAL HUMAN DEVELOPMENT (EMBRYOLOGY). Second and Fourth years. A systematic review of human embryology with special emphasis on abnormal development. Two hours per week. SPRING. *Dr. Davies.*

523. ADVANCED NEUROLOGY. (324) Second and Fourth years. An intensive systemic study of the relations, structures, and function of the various parts of the central nervous system is made with the aid of gross specimens and dissections, serial sections of brain stems, and experimental demonstrations. The lectures and/or discussions form the framework upon which concepts of the nervous system functions are developed. Three hours per week, first twelve weeks. SPRING. [2] *Dr. Ward and Staff.*

524. ELECTIVE COURSE IN MEDICAL ETHICS. First, Second and Fourth years. The elective course will introduce problems in medical ethics to be presented by competent authorities in medicine, law, religion, psychology, sociology, and public health administration. Typical subjects to be discussed will be those most relevant to modern medical practice, such as: abortion, birth control, the dying patient, euthanasia, congenital abnormalities, drug use and abuse, doctor-patient relationships, use and abuse of public funds, genetic control, etc. Discussion of these topics will be in the form of an introductory statement followed by open discussion. Panels of experts will be used when practical and necessary. Two hours per week. FALL. *Dr. Davies.* (Not offered 1972/73.)

525. NEUROPHYSIOLOGY SEMINAR. First, Second, and Fourth years. This seminar will cover basic properties of nerve membranes, nerve-muscle junctions, and synapses. The techniques of both the neurophysiology of single cells and the characterization of the circuitry of ensembles of neurons will be discussed; examples will include vertebrate retina and cerebellum. Topics in sensory physiology, including the visual CNS and skin sensation, will also be included. Two hours per week. SPRING. *Dr. Brown and Dr. Freeman.*

527.1 LESSONS IN SURGICAL ANATOMY. Fourth year. Weekly review of surgical anatomy for medical students and for interns and surgical residents. Special areas of surgical interest will be reviewed with the aid of dissections and demonstrations. Embryological implications will be explained. Four hours per week. FALL. *Dr. Adkins.*

527.2 LESSONS IN SURGICAL ANATOMY II. Fourth year. Weekly review of

surgical anatomy for medical students and for interns and surgical residents. Special areas of surgical interest will be reviewed with the aid of prosections and demonstrations. Embryological implications will be explained. Students will also demonstrate gross anatomical structures in gross anatomy coursework to beginning students. Eight hours per week. FALL. Dr. Adkins.

528.1 BIOMEDICAL ELECTRONICS I. First, Second, and Fourth years. A basic course of twelve lectures and demonstrations in electronics for those with little or no experience in the field. Electronic fundamentals including theory of vacuum tubes, solid state devices, amplifiers, etc., are included. One hour per week, first twelve weeks. FALL. Mr. Montgomery.

528.2 BIOMEDICAL ELECTRONICS II. First, Second, and Fourth years. Lectures and demonstrations illustrating application of electronic equipment in the biomedical area. This course covers a wide range of instrumentation including special measurement and recording equipment, special stimulators, simple computers ("averagers"), etc. Prerequisite: Biomedical Electronics I. One hour per week, first twelve weeks. SPRING. Mr. Montgomery.

581. RESEARCH FELLOWSHIP IN ANATOMY. Fourth year. Research opportunities are available by arrangement in the following: (a) electron microscopy, (b) histochemistry and histology, (c) embryology, (d) human development. Full time for twelve or eighteen weeks. Dr. Davies and Staff.

327. EXPERIMENTAL METHODS IN NEUROLOGY. Conferences and research upon special phases of the structure and function of the nervous system. This course is designed to meet the needs of students desiring special training in neurology. [1-6] Dr. Ward.

329. EXPERIMENTAL METHODS IN HISTOLOGY. Research and conferences in special phases of the techniques and their principles of histology. The work is designed for the particular student's interests and includes general histological methods and special methods such as those of the electron microscope. [1-6] Dr. Davies and Staff.

330. SEMINAR IN ANATOMY. SPRING & SUMMER. [1-2] Staff.

399. RESEARCH. Staff.

Anesthesiology

BRADLEY E. SMITH, M.D., *Professor of Anesthesiology and Chairman of the Department*

CHARLES B. PITTINGER, M.D., *Professor of Anesthesiology*

JOANNE L. LINN, M.D., *Associate Professor of Anesthesiology*

GEOFFREY BERRY, M.B., Ch.B., *Associate Clinical Professor of Anesthesiology*
 LAWRENCE G. SCHULL, M.D., *Associate Clinical Professor of Anesthesiology*
 ILDEFONSO A. ALCANTARA, M.D., *Assistant Professor of Anesthesiology*
 THOMAS B. CALDWELL III, M.D., *Assistant Professor of Anesthesiology*
 PONG MOON CHANG, M.D., *Assistant Professor of Anesthesiology*
 GOVIND P. GARG, M.D., *Assistant Professor of Anesthesiology*
 BASEL M. MIXON, JR., M.D., *Assistant Professor of Anesthesiology*
 PAULA F. CONAWAY SANDIDGE, M.D., *Assistant Professor of Anesthesiology*
 JAMES SUMPTER ANDERSON, JR., M.D., *Assistant Clinical Professor of Anesthesiology*
 MICHAEL W. BERTZ, D.D.S., *Instructor in Anesthesiology*
 EROL GENCA, M.D., *Instructor in Anesthesiology*
 ESTHER C. JANOWSKY, M.D., *Instructor in Anesthesiology*
 GEETA VASUDEO, M.B., B.S., *Instructor in Anesthesiology*

501. ANESTHESIOLOGY. This course for third year students consists of a series of lectures on some aspects of anesthesiology applicable to the general practice of medicine. Among the topics presented will be: preoperative evaluation of the patient; premedication, selection of anesthetic agent and technique; local anesthesia, resuscitation, and oxygen therapy. One hour per week for twelve weeks. *Dr. Smith and Staff.*

502. OPERATIVE SURGERY AND ANESTHESIOLOGY. A laboratory course for third-year students offered jointly by the departments of Surgery and Anesthesiology to provide experience in anesthesia and experimental surgery. Students work in groups of four, rotating responsibilities so that each receives experience in anesthesia. (See Surgery 502.) Three hours per week for twelve weeks. *Staff.*

521. PHARMACOLOGY ANESTHESIA. (325) Fourth year. The objectives of this course are to consider: a) current concepts of general and local anesthetic mechanisms of action in terms of physico-chemical and pharmacologic principles of absorption, distribution, biotransformation, and elimination; b) toxicologic phenomena such as hepatotoxicity of fluorinated agents, nephrotoxicity of methoxyflurane, convulsive activity, malignant hyperthermia, antibiotic-induced paralysis, oxygen toxicity, and other hazards of hyperbaric anesthesia, barbiturates, and porphyria, ionic calcium disturbances, etc. (Pharmacology 530) One hour per week. FALL. *Dr. Pittinger.*

561. CLERKSHIP IN ANESTHESIOLOGY. Fourth year. Didactic and operating room experience in the conduction of anesthesia, including pre- and post-anesthetic care. Full time, six-week units. *Dr. Smith and Staff.*

Biochemistry

- JOHN G. CONIGLIO, Ph.D., *Professor of Biochemistry and Acting Chairman of the Department*
- HARRY P. BROQUIST, Ph.D., *Professor of Biochemistry and Director, Division of Nutrition*
- STANLEY COHEN, Ph.D., *Professor of Biochemistry*
- LEON W. CUNNINGHAM, Ph.D., *Professor of Biochemistry*
- WILLIAM J. DARBY, M.D., Ph.D., *Professor of Biochemistry; Professor of Medicine in Nutrition*
- PAUL GHALIOUNGUI, M.D., *Visiting Professor of Biochemistry (Nutrition)*
- WAYLAND J. HAYES, JR., Ph.D., M.D., *Professor of Biochemistry*
- CHARLES S. ROBINSON, Ph.D., *Professor of Biochemistry, Emeritus (Died December 15, 1971)*
- E. NEIGE TODHUNTER, Ph.D., *Visiting Professor of Nutrition*
- OSCAR TOUSTER, Ph.D., *Professor of Biochemistry*
- JAN VAN EYS, Ph.D., M.D., *Professor of Biochemistry*
- JAMES P. CARTER, M.D., *Associate Professor of Biochemistry (Nutrition)*
- WILLARD R. FAULKNER, Ph.D., *Associate Professor of Biochemistry*
- TADASHI INAGAMI, Ph.D., D.Sc., *Associate Professor of Biochemistry*
- GEORGE V. MANN, M.D., Sc.D., *Associate Professor of Biochemistry*
- ROBERT A. NEAL, Ph.D., *Associate Professor of Biochemistry; Acting Director, Center in Toxicology*
- BERT W. O'MALLEY, M.D., *Associate Professor of Biochemistry*
- ARTHUR R. SCHULERT, Ph.D., *Associate Professor of Biochemistry*
- CONRAD WAGNER, Ph.D., *Associate Professor of Biochemistry*
- BENJAMIN J. WILSON, Ph.D., *Associate Professor of Biochemistry*
- ROBERT N. BRADY, Ph.D., *Assistant Professor of Biochemistry*
- FRANK CHYTIL, Ph.D., C.Sc., *Assistant Professor of Biochemistry*
- JAMES T. DAVIS, Ph.D., *Assistant Professor of Biochemistry*
- SAMUEL J. DiMARI, Ph.D., *Assistant Professor of Biochemistry*
- RAYMOND D. HARBISON, Ph.D., *Assistant Professor of Biochemistry*
- KENNETH J. LEMBACH, Ph.D., *Assistant Professor of Biochemistry*
- P. GALEN LENHERT, Ph.D., *Assistant Professor of Biochemistry*
- GARETH A. MAIR, D.Phil., *Assistant Professor of Biochemistry*
- GEORGE E. NICHOLDS, Ph.D., *Assistant Professor of Biochemistry (Nutrition)*
- J. DAVID PUETT, Ph.D., *Assistant Professor of Biochemistry*
- LAKEN G. WARNOCK, Ph.D., *Assistant Professor of Biochemistry*
- L. THOMAS BURKA, Ph.D., *Research Associate in Biochemistry*
- WILLIAM M. GROGAN, Ph.D., *Research Associate in Biochemistry*
- KAZUO MURAKAMI, Ph.D., *Research Associate in Biochemistry*
- DAVID E. ONG, Ph.D., *Research Associate in Biochemistry*
- JEROME A. ROTH, Ph.D., *Research Associate in Biochemistry*
- RICHARD SAVAGE, Ph.D., *Research Associate in Biochemistry*
- YASUNOBU SUKEDA, Ph.D., *Research Associate in Biochemistry*
- CAROL WASLIEN, Ph.D., *Research Associate in Biochemistry*

The Department of Biochemistry offers courses leading to the Ph.D. degree. Courses described below which are numbered in the 300 series are offered primarily for that program but are open to medical students by special arrangement.

501. BIOCHEMISTRY. (321) Lectures on the chemistry and metabolism of carbohydrates, proteins, lipids, nucleoproteins, and on the chemistry and function of enzymes, vitamins, and other factors related to cellular metabolism and body processes. FALL. [3] *Staff*.

502. BIOCHEMISTRY LABORATORY. (322) This laboratory course accompanies Biochemistry 501 and emphasizes chemical, physical, and physiologic aspects of topics presented there. FALL. [4] *Staff*.

520. NUTRITIONAL BIOCHEMISTRY LABORATORY. First and Second years. Laboratory instruction illustrating current methods and instruments for estimating the macronutrients and micronutrients in blood and urine in relation to nutritional status. Three hours per week. Prerequisite: 321 or equivalent. SPRING. *Dr. Broquist*.

521. FUNDAMENTAL PRINCIPLES IN USE OF RADIOISOTOPES IN BIOLOGY AND MEDICINE. First year. The first six weeks of this course are used to present fundamental principles of nuclear physics and tracer methodology necessary for understanding the use of radioisotopes in biology and medicine. Lecture review: elementary nuclear physics; basic principles of tracer methodology; the design of experiments illustrating different types of radioisotopes; safety practices in use of radioisotopes in biology; and the use of necessary instrumentation. Laboratory work includes experiments with different beta and gamma emitters in typical physiological or biological experiments. The second six weeks will deal with clinical applications of radioisotopes. We discuss the use of tracers in imaging organs and tumors and the use of tracers in *in vitro* and *in vivo* kinetic and metabolic studies, including radiography. Special considerations on radiation safety in the use of radioactive isotopes in medicine are presented. Students participate in clinical studies and laboratory experiments. Three hours per week, first twelve weeks. FALL (Radiology 523). *Dr. Coniglio, and Dr. A. Bertrand Brill and Dr. Dennis D. Patton of the Department of Radiology*.

522. TOXICOLOGY (336). Second and Fourth years. Lectures, discussion, and assigned reading on the principles of toxicology with emphasis on metabolic and biochemical considerations. Subjects covered include naturally occurring toxicants, mycotoxins, bacterial toxins, chemical additives, residues of agricultural chemicals and other environmental contaminants. Two hours per week. FALL. [2] *Dr. Hayes, Dr. Neal, Dr. Wilson, and Dr. DiMari*.

523. FUNDAMENTALS OF HUMAN NUTRITION. (328) Second and Fourth years. Lectures and assigned readings covering the biochemical basis of nutritional disorders and the application of this information to prevention and management of human disease. Course arranged in conjunction with Nutrition Rounds Biochemistry 530 which will illustrate and amplify the

material discussed in the lectures. (Medicine 523, Pediatrics 523) One hour per week. FALL & SPRING. [1] *Dr. Mann and the Staff of the Division of Nutrition.*

524.1. ADVANCED BIOCHEMISTRY I. (331) Fourth year. Lectures and discussions of lipid biosynthesis and oxidation, the chemistry and metabolism of complex lipids and polysaccharides, control mechanisms in carbohydrate metabolism, oxidative phosphorylation, and photosynthesis. Prerequisite: a course in general biochemistry. Two hours per week. SPRING. [2] *Dr. Brady, Dr. Coniglio, and Dr. Warnock.*

524.2. ADVANCED BIOCHEMISTRY II. (332) Fourth year. Lectures and discussions of the metabolism of nucleic acids and proteins. Among the topics to be considered are: DNA replication in bacterial and animal cells, the characterization and function of chromosomal proteins, the mechanisms of RNA and protein synthesis in various biological systems. Prerequisite: a course in general biochemistry. Two hours per week. SPRING. [2] *Dr. Cohen and Dr. Lembach.*

525. MINERAL DISPOSITION IN MAN AND HIS ENVIRONMENT. First and Second years. This course will focus on the biochemical role of minerals in the mammalian organism, followed by evaluation of real or potential effects of both natural and man-induced environmental variations, and possible toxicological and nutritional implications thereof. Two hours per week. Prerequisite: 321 or equivalent. SPRING. *Dr. Schulert.*

526. BIOCHEMISTRY AND DIFFERENTIATION. First, Second, and Fourth years. Formal lectures and student seminars. A course designed to acquaint the student with the biochemical aspects of development and differentiation. One hour per week. SPRING. *Dr. Cohen.* (Not offered 1972/73.)

527. NUTRITIONAL BIOCHEMISTRY. (335) First, Second, Third, and Fourth years. A discussion of the role of carbohydrates, lipids, proteins, vitamins and minerals in the nutrition of higher animals, with emphasis on current nutritional and biochemical knowledge of these areas. One hour per week plus assigned readings. Prerequisite: 321 or equivalent. SPRING. [2] *Dr. Broquist.*

528.1. CLINICAL BIOCHEMISTRY I. (337) Second and Fourth years. A course correlating basic biochemical principles with the pathophysiology of diseased states. Chemical homeostasis is treated through discussions of the metabolic mechanisms for maintaining this state and of the methodology of evaluating it. Illustrative case reports of typical metabolic derangements are reviewed. (Medicine 524.1, Pediatrics 528.1) One hour per week. FALL. *Dr. Faulkner and Dr. van Eys.*

528.2. CLINICAL BIOCHEMISTRY II. (338) Second and Fourth years. Attention is directed to the altered intermediary metabolism of inherited disorders and to the development and changes in metabolic pathways during infancy and childhood. The material is presented throughout the course by lectures, seminars, assigned reading, and selected patient reviewers. (Medicine 524.2, Pediatrics 528.2) One hour per week. SPRING. *Dr. van Eys and Dr. Faulkner.*

529. LIPID CHEMISTRY, METABOLISM, AND TRANSPORT. (329). First, Second and Fourth years. Lectures, discussions, and assigned readings in the chemistry, intestinal absorption, transport, and metabolism of lipids. Emphasis will be placed on the normal regulation of these processes and their alteration in pathological conditions. Prerequisite: a general course in biochemistry. (Physiology 529). One or two hours per week. SPRING. *Dr. Conglio and Dr. Meng.*

530. NUTRITION ROUNDS. Fourth year. Clinical material demonstrating nutritional problems in causation or management of disease will be presented by the students. The material will illustrate the subjects discussed in the lecture series (B-523). Students may register for either semester although both are recommended. It is desirable that the registrants have completed one semester or are registered in or audit 523 concurrently. (Medicine 530 and Pediatrics 530). One hour every other week. FALL & SPRING. *Dr. Carter.*

531. CHEMICAL MECHANISMS OF ENZYME CATALYSIS. (334) Fourth year. Lectures and discussions of the chemical mechanisms and kinetics of catalysis. Representative enzymes from each of the major classes will be considered. Prerequisite: a course in general biochemistry and an advanced course in organic chemistry or permission of the instructor. Two hours per week. SPRING. [2] *Dr. Inagami, Dr. Neal, and Dr. DiMari.*

581. RESEARCH FELLOWSHIP IN BIOCHEMISTRY. Fourth year. Research opportunities under the guidance of appropriate staff members in any of the broad areas represented in the Department of Biochemistry. The time and schedule of presentations will be arranged and can be individualized to a considerable extent. Students are encouraged to pursue research on a continuing basis and for a minimum of three months. Longer periods are more desirable. Full time for twelve or eighteen weeks. *Dr. Conglio and Staff.*

582. RESEARCH FELLOWSHIP IN NUTRITION. Fourth year. Clinical and metabolic research in man or experimental animals conducted under the direction of members of the staff. Students are encouraged to pursue research on a full-time basis for a minimum of three months. Selected students may participate in studies abroad (in the Middle East or elsewhere) in the current research program of the Division of Nutrition. Full time for twelve or eighteen weeks. *Dr. Broquist and Staff.*

583. SPECIAL PROBLEMS IN NUTRITION. First, Second, and Fourth years. Individualized study of advanced topics or research in nutrition. Experimental laboratory and clinical studies will be offered under the guidance of a member of the staff of the Division. Six hours per week. FALL & SPRING. *Dr. Broquist and Dr. Mann.*

584. PRECEPTORSHIP IN BIOCHEMISTRY. Fourth year. An opportunity for intensive review of basic biochemistry. Students will participate as instructors in the teaching of the course to freshman medical students and at the same time participate in graduate experiences, seminars, and research

in the department. Full time for twelve or eighteen weeks. *Dr. Coniglio and Staff.*

599. **BIOCHEMISTRY SEMINAR (327).** First, Second, and Fourth years. This is a student seminar designed to familiarize medical and graduate students with current research developments in biochemistry, to afford the students an opportunity to review critically a variety of subjects, and to gain experience in presenting and critically appraising such investigations. Prerequisite: a course in fundamental biochemistry. One hour per week. FALL & SPRING. [1] *Dr. Coniglio and Staff.*

323. **SPECIAL PROBLEMS AND EXPERIMENTAL TECHNIQUES.** This course affords students an opportunity to master advanced laboratory techniques while pursuing special problems under direction of individual members of the faculty in areas of their specialized interests. Admission to course, hours, and credit by arrangement. [2-4] *Staff.*

324. **USE OF RADIOACTIVE TRACERS IN METABOLISM.** This course is an introductory one in the application of radioisotopes to the study of metabolism, and is intended for graduate students in biochemistry, biology, physiology, and related fields. Two lectures and one three-hour laboratory. Prerequisite: consent of instructor. SPRING. [3] *Dr. Coniglio.* (Not offered 1972/73.)

326. **BIO-ORGANIC CHEMISTRY.** Lectures and discussion on the isolation, structural chemistry, and synthesis of biochemically important substances and on the relation of structure to biological activity. Prerequisite: an advanced course in organic chemistry or consent of instructor. Two lectures per week. FALL. [2] *Dr. Touster.*

333. **CHEMISTRY OF BIOPOLYMERS.** A course describing the physical and chemical methods employed in the study of biopolymers. Among topics to be considered are: sequencing and modifications, structures, hydrodynamics, spectroscopy, diffraction methods, and the thermodynamics and kinetics of conformational changes. Both general theory and applications will be considered. Prerequisite: elementary physical chemistry. FALL. [3] *Dr. Cunningham, Dr. Mair, and Dr. Puett.*

399. **RESEARCH.** *Staff.*

Hearing & Speech Sciences

FREEMAN McCONNELL, Ph.D., *Professor of Audiology and Chairman of the Division of Hearing and Speech Sciences*

RONALD GOLDMAN, Ph.D., *Professor of Speech Pathology*

JAY SANDERS, Ph.D., *Professor of Audiology*

ROBERT COLEMAN, Ph.D., *Associate Professor of Speech Science*

KATHRYN BARTH HORTON, M.S., *Associate Professor of Speech and Language Pathology*

RUSSELL LOVE, Ph.D., *Associate Professor of Speech and Language Pathology*

M. JANE COLLINS, Ph.D., *Assistant Professor of Audiology*

M. ANN GANNAWAY, M.S., *Assistant Professor of Speech Pathology*

F. JOSEPH KEMKER, Ph.D., *Assistant Professor of Audiology*

ANN B. SITTON, M.S., *Assistant Professor of Clinical Audiology*

MARTHA E. LYNCH, M.S., *Instructor in Speech and Language Pathology*

BERTHA R. SMITH, M.A., *Instructor in Aural Rehabilitation*

The Division of Hearing and Speech Sciences of the Division of Allied Health Professions offers work leading to the master's and the Ph.D. degrees in the following areas: audiology, speech and language pathology, and speech science. Information on regulations and requirements may be found in the catalogue of the Graduate School. The research, teaching and clinical programs associated with this program are housed in the Bill Wilkerson Hearing and Speech Center adjacent to the Vanderbilt University campus at the corner of Nineteenth Avenue, South, and Edgehill Avenue.

220. INTRODUCTION TO HEARING AND SPEECH SCIENCES. A study of the psychoacoustic and physiologic correlates of verbal communication, together with a classification and analysis of speech, hearing, and language disorders and their social, psychological, educational, and vocational implications. SPRING. [3] *Miss Lynch and Mrs. Sitton.*

230. ARTICULATION DISORDERS. A study of the etiology, evaluation, and management of articulatory defects in children and adults. FALL. [3] *Miss Gannaway.*

231. STUTTERING. A review of the significant research in the field of stuttering, with emphasis on etiology and therapy. Consideration of the management of fluency disturbances. FALL. [3] *Dr. Goldman.*

232. CLEFT PALATE AND RELATED DISORDERS. A study of the etiology, diagnosis and management of speech defects associated with structural anomalies and physiological dysfunction, with major emphasis on cleft palate. FALL. [2] *Dr. Love.*

233. CEREBRAL PALSY AND RELATED DISORDERS. A study of speech disturbances related to neurological dysfunction with major emphasis on cerebral palsy. SPRING. [3] *Dr. Love.*

234. COMMUNICATION DISORDERS IN SCHOOL CHILDREN. A study of the prevalence and types of speech, hearing, and language disorders in school children. Programs of identification, conversation, and remediation. SPRING. [3] *Miss Gannaway.*

240. TESTING OF HEARING. A study of the theory and practice of hearing measurement with emphasis on basic pure-tone audiometric techniques. Consideration of causative factors in hearing loss and evaluation of audiometric results. FALL. [3] *Dr. Sanders.*

241. SPEECH AND LANGUAGE DEVELOPMENT OF THE ACOUSTICALLY HANDICAPPED. A consideration of the theories and problems encountered in the development of speech and language in acoustically handicapped children. SPRING. [3] (Offered on demand.)

245. PRINCIPLES OF SPEECHREADING. Study and analysis of various methods for developing visual communication skills in handling hearing impaired children and adults. FALL. [2] *Miss Smith.*

246. AURAL REHABILITATION. Principles, methods and electroacoustic instrumentation involved in the use of residual hearing for optimum speech and language functioning in the hearing impaired. SPRING. [2] *Miss Smith.*

300. NEURO-ANATOMICAL BASES OF SPEECH AND HEARING. Structure and function of the central nervous system with emphasis on integrative activity as related to both normal and deviate oral and aural communication. FALL. [2] *Mr. Coleman and Miss Collins.*

301. ANATOMY AND PHYSIOLOGY OF SPEECH. Structure and function of the neuromuscular system involved in breathing, phonation, resonance and articulation. Emphasis on fundamental physiological principles of speech production. FALL. [3] *Dr. Coleman.*

302. ANATOMY AND PHYSIOLOGY OF HEARING. Structure, function, and pathology of hearing. Psychoacoustic theories. SPRING. [3] *Dr. Collins.*

303. EXPERIMENTAL PHONETICS. Study of research methods, instrumentation, and findings in the field of experimental phonetics. SUMMER. [3] *Dr. Coleman.*

304. THE DEVELOPMENT OF SPEECH AND LANGUAGE. A consideration of the nature of language and speech. Communication in animals and man. The stages of normal language development; psycholinguistic, neurophysiological and psychodynamic theories of language acquisition. SUMMER. [3] *Dr. Love.*

305. DIAGNOSTIC PROCEDURES IN AUDIOLOGY AND SPEECH PATHOLOGY. Diagnostic tests and procedures for children and adults with impaired hearing or defective speech. Techniques for screening areas important to normal speech and language development. Case history techniques. Clinical observation and report writing required. Prerequisite: consent of instructor. FALL. [3] *Mrs. Horton.*

306. LANGUAGE DISORDERS OF CHILDREN. A study of the language, behavioral symptomatology, and treatment of language-impaired children. Consideration of differential diagnostic techniques for aphasia, central and peripheral auditory disorders, mental retardation, and emotional disturbances. SPRING. [3] *Mrs. Horton.*

307. SEMINAR: CHILDHOOD LANGUAGE DISORDERS. An analysis of the disciplines, theories, and practices pertaining to developmental, organic

and psychological language disturbances in children. SUMMER. [3] *Mrs. Horton.*

308. PSYCHOACOUSTIC INSTRUMENTATION. The incorporation of laboratory procedures and electronic instrumentation into the design and conduct of research in audiology and speech science. Consideration of electronic theory, research instrumentation, and electrical and acoustical measurement. SPRING. [3] *Dr. Coleman.*

311-312. RESEARCH PROBLEMS IN AUDIOLOGY AND SPEECH PATHOLOGY. Recommended for all graduate students in the division who anticipate completion of a doctoral dissertation. FALL & SPRING. [2-2] *Staff.*

315-316. EXPERIMENTAL OTOLARYNGOLOGY. Clinical and/or research participation in otolaryngology medical clinics, temporal bone bank, vestibular, cochlear physiology, or familial deafness laboratories. FALL & SPRING. [2-2]

321. ADVANCED CLINICAL STUDY AND PRACTICE: SPEECH PATHOLOGY. Assigned readings and written reports combined with participation in the clinical program in speech pathology. Course may be repeated for credit. FALL, SPRING, SUMMER. [2] *Staff.*

322. ADVANCED CLINICAL STUDY AND PRACTICE: AUDIOLOGY. Assigned readings and written reports combined with participation in the clinical program in audiology. Course may be repeated for credit. FALL, SPRING, SUMMER. [2] *Mrs. Sirton.*

331. APHASIA. A study of the aphasic language disturbances including symptomatology, etiology, differential diagnosis, and training. Emphasis on adult problems. Prerequisite: 230 and 240. FALL. [3] *Dr. Love.*

335. SEMINAR IN SPEECH PATHOLOGY. Review of significant literature in the field of speech pathology. Directed study in assigned subject areas. SUMMER. [2] *Dr. Goldman.*

336. SEMINAR: VOICE DISORDERS. Study of theories of voice production, with emphasis upon pathology and malfunctions which produce voice defects. Procedures for group and individual management. Prerequisite: 230 and 232. FALL. [3] *Dr. Coleman.*

340. THE SELECTION AND USE OF HEARING AIDS. A study of the research and theory of clinical selection of hearing aids. The principles of speech audiometry in assessing the usefulness of residual hearing. Clinical observation required. Prerequisite: 240. SPRING. [3] *Dr. Collins.*

341. SEMINAR IN AUDIOLOGY. Review of significant literature in the field of audiology. Directed study in assigned subject areas. SUMMER. [2] *Dr. McConnell.*

342. ADVANCED CLINICAL AUDIOLOGY. Special tests and exploratory

techniques in audiologic assessment; instrumentation and testing rooms; and conduct of the audiologic clinic. SPRING. [3] *Dr. Sanders.*

343. SEMINAR: MILITARY AND INDUSTRIAL AUDIOLOGY. Hearing conservation principles in the armed forces and in industry. Programs for employee protection and the reduction of noise hazard in the environment. [3] FALL. *Dr. McConnell.*

344. SEMINAR: RESEARCH IN STUTTERING. An intensive review of current research relating to the etiologic and therapeutic variables in stuttering. Particular emphasis on the relations among the various learning theories and the treatment of stuttering. SPRING. [3] *Dr. Goldman.*

347. PSYCHOLOGY AND EDUCATION OF THE DEAF. History of education of the deaf. Study of the research literature on the effects of hearing impairment on the social, intellectual, and psychological development of the individual. Societal reactions to deafness. SPRING. [3] *Dr. McConnell.*

351. SPECIAL PROBLEMS IN SPEECH PATHOLOGY. Study of areas and problems not included in other courses in speech pathology, chosen to fit the student's interest and the needs of their programs. Course may be repeated for credit up to a maximum of 12 hours. FALL, SPRING, SUMMER. (Variable credit: 1-6 each semester.) *Staff.*

352. SPECIAL PROBLEMS IN AUDIOLOGY. Study of areas and problems not included in other courses in audiology, chosen to fit the students' interests and the needs of their programs. Course may be repeated for credit up to a maximum of 12 hours. FALL, SPRING & SUMMER. (Variable credit: 1-6 each semester.) *Staff.*

369. MASTER'S THESIS RESEARCH. [0] *Staff.*

388. INDEPENDENT STUDY AND READINGS IN SPEECH PATHOLOGY. [3] *Staff.*

389. INDEPENDENT STUDY AND READINGS IN AUDIOLOGY. [3] *Staff.*

399. PH.D. DISSERTATION RESEARCH. *Staff.*

Medical Administration

JOHN E. CHAPMAN, M.D., *Chairman of the Division of Medical Administration*

JOHN E. CHAPMAN, M.D., *Professor of Medical Administration*

CHARLES C. TRABUE IV, M.D., *Associate Professor of Medical Administration*

JAMES K. COOPER, M.D., *Assistant Professor of Medical Administration*

THOMAS W. HAINES, Ph.D., *Assistant Professor of Medical Administration*

T. MARKS HODGES, B.L.S., *Assistant Professor of Medical Administration*

HUGH R. VICKERSTAFF, M.H.A., *Assistant Professor of Medical Administration*

JOSEPH F. GLASS, LL.B., *Instructor in Medical Administration*

521. MAIN CURRENTS IN MEDICINE AND MEDICAL EDUCATION. First, Second, and Fourth years. A course designed to acquaint the medical student with trends in American medical education, past and present, with special emphasis on the medical student, selection and school environment; the process of learning in the context of the medical curriculum; medical curricular trends and changes; evaluation programs for students and education; the role of the AMA, AAMC, government, and foundations in medical education; the modern medical center as a place of learning, service, and research in medicine; and related topics which influence the education of physicians. One hour per week. SPRING. *Dr. Chapman.*

522. NATIONAL ISSUES IN HEALTH CARE. First and Second years. Issues selected will be those that may have significant effect on how health care is provided in the future. Topics will include: national health insurance; peer review and other health evaluation; health planning on national, community, and event levels; health maintenance organizations; non-physicians giving health care; emergency health systems; solutions to the rural health program; multiphasic screening; advanced technology and future projections; and others. Each topic will be considered in three phases: a short introductory lecture for background purposes, individual reading by students of selected articles, and a seminar discussion of the topic. Guest seminar leaders will be included. One hour per week. SPRING. *Dr. Cooper.*

Medicine

- GRANT W. LIDDLE, M.D., *Professor of Medicine and Chairman of the Department*
THOMAS E. BRITTINGHAM, M.D., *Professor of Medicine*
WILLIAM J. DARBY, M.D., Ph.D., *Professor of Medicine in Nutrition*
ROGER M. DES PREZ, M.D., *Professor of Medicine*
GOTTLIEB C. FRIESINGER II, M.D., *Professor of Medicine and Head of the Division of Cardiology*
ERIC ENGEL, M.D., *Professor of Medicine and Head of the Division of Genetics*
(On leave 1972/73)
ROBERT CARL HARTMANN, M.D., *Professor of Medicine and Head of the Division of Hematology*
RUDOLPH H. KAMPMEIER, M.D., *Professor of Medicine, Emeritus*
M. GLENN KOENIG, M.D., *Professor of Medicine and Head of the Division of Infectious Diseases*
ANN STONE MINOT, Ph.D., *Professor of Medicine, Emerita*
ELLIOT V. NEWMAN, M.D., *Harvie Branscomb Distinguished Professor for 1972/73 and Joe and Morris Werthan Professor of Experimental Medicine*
JOHN A. OATES, M.D., *Professor of Medicine*
THOMAS F. PAINE, JR., M.D., *Professor of Medicine*
STEVEN SCHENKER, M.D., *Professor of Medicine and Head of the Division of Gastroenterology*
JOHN B. YOUNG, M.D., *Professor of Medicine, Emeritus*
THOMAS BOWMAN ZERFOSS, M.D., *Professor of Medicine, Emeritus*

F. TREMAINE BILLINGS, M.D., *Clinical Professor of Medicine*
LAURENCE A. GROSSMAN, M.D., *Clinical Professor of Medicine*
HOLLIS E. JOHNSON, M.D., *Clinical Professor of Medicine, Emeritus*
SAMUEL S. RIVEN, M.D., C.M., *Clinical Professor of Medicine, Emeritus*
ADDISON B. SCOVILLE, JR., M.D., *Clinical Professor of Medicine*
HARRISON J. SHULL, M.D., *Clinical Professor of Medicine*
W. DAVID STRAYHORN, M.D., *Clinical Professor of Medicine, Emeritus*
CLARENCE S. THOMAS, M.D., *Clinical Professor of Medicine, Emeritus*
A. BERTRAND BRILL, M.D., Ph.D., *Associate Professor of Medicine*
RICHARD E. BRYANT, M.D., *Associate Professor of Medicine*
OSCAR B. CROFFORD, JR., M.D., *Associate Professor of Medicine and Head of the*
Division of Diabetes and Metabolism

JOHN M. FLEXNER, M.D., *Associate Professor of Medicine*
RICHARD FRANCE, M.D., *Associate Professor of Medicine, Emeritus*
H. EARL GINN, M.D., *Associate Professor of Medicine and Head of the Renal*
Division

ROBERT A. GOODWIN, M.D., *Associate Professor of Medicine*
SANFORD B. KRANTZ, M.D., *Associate Professor of Medicine*
WILLIAM W. LACY, M.D., *Associate Professor of Medicine*
GEORGE V. MANN, Sc.D., M.D., *Associate Professor of Medicine in Biochemistry*
ZELL A. MCGEE, M.D., *Associate Professor of Medicine*
ALAN S. NIES, M.D., *Associate Professor of Medicine*
BERT W. O'MALLEY, M.D., *Associate Professor of Medicine*
DAVID N. ORTH, M.D., *Associate Professor of Medicine; Investigator,*
Howard Hughes Medical Institute

LOYD H. RAMSEY, M.D., *Associate Professor of Medicine*
WILLIAM D. SALMON, JR., M.D., *Associate Professor of Medicine*
DAVID G. SHAND, Ph.D., M.B., B.S., *Associate Professor of Medicine*
BRUCE SINCLAIR-SMITH, M.B., B.S., *Associate Professor of Medicine*
PAUL E. SLATON, JR., M.D., *Associate Professor of Medicine*
JAMES D. SNELL, JR., M.D., *Associate Professor of Medicine*
W. ANDERSON SPICKARD, JR., M.D., *Associate Professor of Medicine*
ROBERT T. TERRY, M.D., *Associate Professor of Medicine, Emeritus*
PAUL E. TESCHAN, M.D., *Associate Professor of Medicine*
CRAWFORD W. ADAMS, M.D., *Associate Clinical Professor of Medicine*
BENJAMIN J. ALPER, M.D., *Associate Clinical Professor of Medicine*
THOMAS F. FRIST, M.D., *Associate Clinical Professor of Medicine*
FRED GOLDNER, JR., M.D., *Associate Clinical Professor of Medicine*
HERMAN J. KAPLAN, M.D., *Associate Clinical Professor of Medicine*
J. ALLEN KENNEDY, M.D., *Associate Clinical Professor of Medicine*
THOMAS GUV PENNINGTON, M.D., *Associate Clinical Professor of Medicine*
ROBERT H. ALFORD, M.D., *Assistant Professor of Medicine*
JAMES K. COOPER, M.D., *Assistant Professor of Medicine*
EDWARD J. BATTERSBY, M.D., *Assistant Professor of Medicine*
RONALD D. BROWN, M.D., *Assistant Professor of Medicine*
FRANK CHYTIŁ, Ph.D., C.Sc., *Assistant Professor of Medicine*
G. DEWEY DUNN, M.D., *Assistant Professor of Medicine*
PHILIP W. FELTS, M.D., *Assistant Professor of Medicine*
FRANCIS W. GLUCK, M.D., *Assistant Professor of Medicine*
STANLEY GRABER, M.D., *Assistant Professor of Medicine*
JACEK HAWIGER, M.D., *Assistant Professor of Medicine*

MURRAY HEIMBERG, M.D., *Assistant Professor of Medicine*
 DONALD P. ISLAND, B.S., *Assistant Professor of Medical Research*
 H. KEITH JOHNSON, M.D., *Assistant Professor of Medicine*
 LEWIS B. LEFKOWITZ, JR., M.D., *Assistant Professor of Medicine*
 SAMUEL R. MARNEY, JR., M.D., *Assistant Professor of Medicine*
 L. CLIFFORD MCKEE, M.D., *Assistant Professor of Medicine*
 M. ANN MELLY, Ph.D., *Assistant Professor of Medicine*
 ANDREW M. MICHELAKIS, Ph.D., M.D., *Assistant Professor of Medicine*
 WILLIAM M. MITCHELL, M.D., Ph.D., *Assistant Professor of Medicine*
 JAMES M. PERRY, JR., M.D., *Assistant Professor of Medicine*
 WILLIAM SCHAFFNER, M.D., *Assistant Professor of Medicine*
 STEPHEN SCHILLIG, M.D., *Assistant Professor of Medicine*
 RAPHAEL SMITH, M.D., *Assistant Professor of Medicine*
 TIMOTHY W. STEVENS, M.D., *Assistant Professor of Medicine*
 WILLIAM J. STONE, M.D., *Assistant Professor of Medicine*
 CHARLES STROTT, M.D., *Assistant Professor of Medicine*
 ANNE SWEENEY, M.A., *Assistant Professor of Medical Social Work*
 PHILLIP J. WALKER, M.D., *Assistant Professor of Medicine*
 FREDERICK A. WILSON, M.D., *Assistant Professor of Medicine*
 JAMES P. WILSON, M.D., *Assistant Professor of Medicine*
 JOHN R. WOODS, M.D., *Assistant Professor of Medicine*
 SAMUEL S. WRIGHT, M.D., *Assistant Professor of Medicine*
 WILLIAM J. CARD, M.D., *Assistant Clinical Professor of Medicine*
 ORRIE A. COUCH, JR., M.D., *Assistant Clinical Professor of Medicine*
 FREDERIC E. COWDEN, M.D., *Assistant Clinical Professor of Medicine*
 WILLIAM EWERS, M.D., *Assistant Clinical Professor of Medicine*
 ROBERT M. FINKS, M.D., *Assistant Clinical Professor of Medicine*
 ALAN L. GRABER, M.D., *Assistant Clinical Professor of Medicine*
 JOHN HOOPER GRISCOM, M.D., *Assistant Clinical Professor of Medicine*
 THOMAS B. HALTOM, M.D., *Assistant Clinical Professor of Medicine*
 AUBREY B. HARWELL, M.D., *Assistant Clinical Professor of Medicine*
 H. CAMPBELL HAYNIE, M.D., *Assistant Clinical Professor of Medicine*
 RALPH W. MASSIE, M.D., *Assistant Clinical Professor of Medicine*
 CULLEN R. MERRITT, M.D., *Assistant Clinical Professor of Medicine*
 HARRY L. PAGE, M.D., *Assistant Clinical Professor of Medicine*
 JAMES N. THOMASSON, M.D., *Assistant Clinical Professor of Medicine*
 CHARLES B. THORNE, M.D., *Assistant Clinical Professor of Medicine*
 RUSSELL D. WARD, M.D., *Assistant Clinical Professor of Medicine*
 JOHN LANIER WYATT, M.D., *Assistant Clinical Professor of Medicine*
 THOMAS G. ARNOLD, JR., B.S., *Martha Washington Straus-Harry H. Straus*
 Instructor in Biophysics in Medicine
 JAMES D. BOMBOY, JR., M.D., *Instructor in Medicine*
 KERRY JOHN BREEN, M.B., B.S., *Instructor in Medicine*
 JEFFREY W. BULLARD, M.D., *Instructor in Medicine*
 LAWRENCE C.B., CHAN, M.B., B.S., *Instructor in Medicine*
 JOHN P. COMSTOCK, M.D., *Instructor in Medicine*
 URIEL X. CULLUM, M.D., *Instructor in Medicine*
 JANICE DOUGLAS, M.D., *Instructor in Medicine*
 MARCIO C. FEREZ, M.D., *Instructor in Medicine*
 JURGEN FROLICH, M.D., *Instructor in Medicine*
 JOHN R. GRAYBILL, M.D., *Instructor in Medicine*

LAWRENCE P. GUZIEL, M.D., *Instructor in Medicine*
 ROBERT W. HARRISON, M.D., *Instructor in Medicine*
 ALLEN B. KAISER, M.D., *Instructor in Medicine*
 ADELAIDE H. HOHANNES, M.S.S.W., *Instructor in Medical Social Work*
 JOHN W. HOLLIFIELD, M.D., *Instructor in Medicine*
 EDWIN L. LAMBERTH, JR., M.D., *Instructor in Medicine*
 JON H. LEVINE, M.D., *Instructor in Medicine*
 JOHN E. LILJENQUIST, M.D., *Instructor in Medicine*
 ROBERT M. METCALFE, M.D., *Instructor in Medicine*
 WENDELL E. NICHOLSON, B.S., *Instructor in Medicine*
 ROBERT RHODES, M.D., *Instructor in Medicine*
 JEAN ROUGHGARDEN, M.D., *Instructor in Medicine*
 DENNIS A. STOUDEE, M.D., *Instructor in Medicine*
 GRAFTON THURMAN, M.D., *Instructor in Medicine*
 STEPHEN S. THURMAN, M.D., *Instructor in Medicine*
 HIROKO WATANABE, M.D., Ph.D., *Instructor in Medicine*
 JOHN MCDOWELL WOLFF, M.D., *Instructor in Medicine*
 S. DONALD ZAENTZ, M.D., *Instructor in Medicine*
 ARTHUR RAY ANDERSON, M.D., *Clinical Instructor in Medicine*
 EDWARD E. ANDERSON, M.D., *Clinical Instructor in Medicine*
 EDWIN B. ANDERSON, M.D., *Clinical Instructor in Medicine*
 H. R. ANDERSON, M.D., *Clinical Instructor in Medicine*
 JAMES ERWIN ANDERSON, JR., M.D., *Clinical Instructor in Medicine*
 WILLIAM C. ANDERSON, M.D., *Clinical Instructor in Medicine*
 PAUL H. BARNETT, M.D., *Clinical Instructor in Medicine*
 JACK M. BATSON, M.D., *Clinical Instructor in Medicine*
 ALFRED D. BEASLEY, M.D., *Clinical Instructor in Medicine*
 WARREN BARTON CAMPBELL, M.D., *Clinical Instructor in Medicine*
 ROBERT T. COCHRAN, M.D., *Clinical Instructor in Medicine*
 CLIFTON R. CLEAVELAND, M.D., *Clinical Instructor in Medicine*
 THOMAS J. DAVIS, M.D., *Clinical Instructor in Medicine*
 JAMES C. ELLIOTT, JR., M.D., *Clinical Instructor in Medicine*
 IRWIN B. ESKIND, M.D., *Clinical Instructor in Medicine*
 HOWARD R. FOREMAN, M.D., *Clinical Instructor in Medicine*
 JAMES P. GREGORY, M.D., *Clinical Instructor in Medicine*
 MILTON GROSSMAN, M.D., *Clinical Instructor in Medicine*
 HERBERT N. HARKLEROAD, M.D., *Clinical Instructor in Medicine*
 ROBERT M. HOLLISTER, M.D., *Clinical Instructor in Medicine*
 JOSEPH E. HURT, M.D., *Clinical Instructor in Medicine*
 IRA T. JOHNSON, M.D., *Clinical Instructor in Medicine*
 ROBERT M. JOHNSON, M.D., *Clinical Instructor in Medicine*
 JOHN P. KINNARD, JR., M.D., *Clinical Instructor in Medicine*
 OTTO MORSE KOCHTITZKY, M.D., *Clinical Instructor in Medicine*
 ALEXANDER C. McLEOD, M.D., *Clinical Instructor in Medicine*
 CARL E. MITCHELL, M.D., *Clinical Instructor in Medicine*
 FRED D. OWNBY, M.D., *Clinical Instructor in Medicine*
 FRANK M. REMBERT, M.D., *Clinical Instructor in Medicine*
 LENOR S. RIBEIRO, M.D., *Clinical Instructor in Medicine*
 HOWARD E. ROSEN, M.D., *Clinical Instructor in Medicine*
 MARVIN J. ROSENBLUM, M.D., *Clinical Instructor in Medicine*
 SOL A. ROSENBLUM, M.D., *Clinical Instructor in Medicine*

ROBERT M. ROY, M.D., *Clinical Instructor in Medicine*
 HERBERT J. SCHULMAN, M.D., *Clinical Instructor in Medicine*
 JOHN ROBERT SCHWEIKERT, M.D., *Clinical Instructor in Medicine*
 CHARLES GORDON RENNICK SELL, M.B., B.Chir., *Clinical Instructor in Medicine*
 ABRAM C. SHMERLING, M.D., *Clinical Instructor in Medicine*
 LUTHER E. SMITH, M.D., *Clinical Instructor in Medicine*
 MURRAY W. SMITH, M.D., *Clinical Instructor in Medicine*
 PAUL R. STUMB, M.D., *Clinical Instructor in Medicine*
 EDWARD L. TARPLEY, M.D., *Clinical Instructor in Medicine*
 SAM H. TRAUGHBER, M.D., *Clinical Instructor in Medicine*
 STANLEY E. VERMILLION, M.D., *Clinical Instructor in Medicine*
 W. CARTER WILLIAMS, JR., M.D., *Clinical Instructor in Medicine*
 LAWRENCE K. WOLFE, M.D., *Clinical Instructor in Medicine*
 ROBERT A. BRANCH, M.B., Ch.B., *Research Associate in Medicine*
 JERE COMPTON, B.S., *Research Associate in Medicine*
 MATTHEW E. CONOLLY, M.B., B.S., *Research Associate in Medicine*
 C. DEAN DRIVER, *Research Associate in Medicine*
 WILLIAM DAVID HANKINS, Ph.D., *Research Associate in Medicine*
 THOMAS R. HARRIS, Ph.D., *Research Associate in Medicine (On leave 1972/73)*
 N. V. PANIKER, Ph.D., *Research Associate in Medicine*
 HILDA RATNER, B.A., *Research Associate in Medicine*
 NANCY ROGERS, M.S., *Research Associate in Medicine*
 EDWIN G. STANT, JR., Ph.D., *Research Associate in Medicine*
 ROY H. WOODY, *Research Associate in Medicine*

DERMATOLOGY

ROBERT N. BUCHANAN, M.D., *Clinical Professor of Dermatology and Head of the Division*
 FRANK G. WITHERSPOON, M.D., *Assistant Clinical Professor of Dermatology*
 JAMES R. HAMILTON, M.D., *Clinical Instructor in Dermatology*
 BERNARD J. PASS, M.D., *Clinical Instructor in Dermatology*
 BRUCE P'POOL, M.D., *Clinical Instructor in Dermatology*
 HOWARD LEE SALYER, M.D., *Clinical Instructor in Dermatology*

S.D.I. LABORATORY METHODS IN CLINICAL SCIENCE. An interdepartmental course designed to acquaint the student with the basic laboratory techniques, methods, principles, and procedures employed in clinical medicine. Weekly meetings for a total of twenty-four weeks with the initial twelve weeks devoted entirely to hematologic laboratory methods and theory. Following this, such topics as parasitology, principles of roentgen diagnosis, clinical bacteriology, urinalysis, renal function tests, laboratory tests in neurology, examination of stool and gastric content, and examination of joint fluid, will be covered. Basic format of course is a one-hour lecture in which theory and clinical indications for laboratory methods will be stressed. Following this, there will be a laboratory period of two hours at which time demonstrations and the practical application of lecture material will be stressed. During the laboratory, students will be divided into small groups or units with individual instructors and assistants. Precise outlines

and laboratory guides will be distributed. *Dr. Hartmann, Dr. Flexner, Dr. van Eys, Dr. Krantz, Dr. Graber, Dr. Rhodes, Dr. Schenker, Dr. Carter, Dr. Burko, Dr. Koenig, Dr. Ginn, Dr. Fenichel, and Dr. Emerson.*

501.2. PHYSICAL DIAGNOSIS. Education of sophomore medical students in diagnosis of disease by the art of examination at the bedside and in the laboratory, emphasizing the significance of information gained in the basic science courses as applied to clinical medicine. SPRING. *Dr. Pennington.*

502. CLINICAL CLERKSHIP. One-third of the third year-class are assigned to the medical wards for ten-week periods. During the medical clerkship, time is divided equally between the Vanderbilt University Hospital and the Veterans Administration Hospital. The medical wards at Vanderbilt University Hospital comprise seventy-five ward beds used in teaching, plus an additional twenty-one beds in the Clinical Research Center. The Veterans Administration Hospital has approximately 100 teaching beds. At Vanderbilt University Hospital these services include patients with diseases of the nervous system and the skin in addition to general medical patients. At the Veterans Administration Hospital there is a separate neurologic ward to which clinical clerks are assigned for two weeks during their medical clerkship. In addition, there is an active pulmonary service which functions within the medical service at the Veterans Administration Hospital. Patients are under the care of members of the faculty of medicine. Sub-departmental areas are organized for teaching and clinical research as well as management of patients. The clinical clerkship is regarded as the backbone of the student's training in medicine, and represents the most intensive inpatient experience offered within the department. It is believed that learning is most vivid through direct experience with patients, obtaining histories, doing physicals and laboratory studies amplified by reading and by intensive contact with members of the house staff and teaching staff. Students are given considerable responsibility under the close supervision of the teaching staff. Additional instruction is carried out during rounds with the Chief of Service. In these sessions clinical clerks present cases for discussion and criticism and the more important fields of internal medicine are covered. Instruction in dermatology consisting of a series of clinics and clinic demonstrations is held once weekly within the Veterans Administration Hospital. Ward work is supplemented by numerous teaching and subspecialty conferences held throughout the academic year. *Dr. Liddle, Dr. Brittingham, Dr. Des Prez, Dr. Salmon, Dr. Buchanan, and members of the faculty of the Department of Medicine.*

503. CLINICAL LECTURES AND DEMONSTRATIONS. A series of eighteen amphitheater clinics held bimonthly throughout the year. Cases and discussions on diseases of importance in medicine are presented. One hour per week. *Dr. Liddle, Dr. Brittingham, and Staff.*

504. MEDICAL OUT-PATIENT CLINIC. During the fourth year, each student is assigned one morning clinic period a week in the outpatient department. This experience gives the fourth-year student major responsibilities for patient work-up and care in an environment that provides

supervision and consultation from many branches of medicine. The long term care and follow-up of ambulatory patients and further refinement of skills in history taking and physical examination are stressed. During this period the student becomes acquainted with the resources which other services can bring to bear in the cooperative management of patients with chronic disease. *Dr. Spickard, Dr. Graber, Dr. Gluck, and Staff.*

ELECTIVES IN MEDICINE. The Department of Medicine has many specialty divisions. Students in the third and fourth years may elect special clinical research work within any division of the Department of Medicine. In general, these electives follow the lines noted in the courses below. It should be indicated, however, that flexible arrangements can be worked out on an individual basis through consultation with the faculty member who will assume responsibility for supervision and guidance of the student. Such special electives must be cleared through Dr. Liddle and the Associate Dean for Education.

521. **TOPICS IN CLINICAL IMMUNOLOGY.** Fourth year. Lectures in pathogenesis and mechanisms of recovery from certain allergic, infectious, and infection-induced immune disorders. Mechanisms of cellular, humoral, and complement-mediated immunity will be covered. Inflammatory responses, atopy, immune injury due to antigen-antibody complexes and immune injury to platelets will be discussed. One hour per week. **SPRING.** *Dr. Marney, Dr. Daniel G. Colley (Assistant Professor of Microbiology), Dr. Alford, Dr. Bryant, and Dr. Des Prez.*

522. **A FRESH BREATH OF AIR.** First, Second, and Fourth years. Patient demonstrations and lectures providing correlation of the important clinical pulmonary disorders with their disturbances in anatomy and physiology. Designed to give a basic understanding of the mechanisms of pulmonary diseases to all who aspire to be internists, pediatricians, anesthesiologists, or surgeons, and to those others who want to have answers for pulmonary questions on national and state boards. One hour per week. **SPRING.** *Dr. Snell, Dr. Des Prez, Dr. Goodwin, and Staff.*

523. **FUNDAMENTALS OF HUMAN NUTRITION (328).** Second and Fourth years. Lectures and assigned readings covering the biochemical basis of nutritional disorders and the application of this information to prevention and management of human disease. Course arranged in conjunction with Nutrition Rounds (Biochemistry 530) which will illustrate and amplify the material discussed in the lectures. (Biochemistry 523, Pediatrics 523) One hour per week. **FALL & SPRING.** [1] *Dr. Mann and the staff of the Division of Nutrition.*

524.1 **CLINICAL BIOCHEMISTRY I.** Second and Fourth years. A course correlating basic biochemical principles with the pathophysiology of diseased states. Chemical homeostasis is treated through discussions of the metabolic mechanisms for maintaining this state and of the methodology of evaluating it. Illustrative case reports of typical metabolic derangements are reviewed. (Biochemistry 528.1 and Pediatrics 528.1) One hour per week. **FALL.** *Dr. Willard R. Faulkner (Associate Professor of Biochemistry) and Dr. van Eys.*

524.2. CLINICAL BIOCHEMISTRY II. Second and Fourth years. Attention is directed to the altered intermediary metabolism of inherited disorders and to the development and changes in metabolic pathways during infancy and childhood. The material is presented throughout the course by lectures, seminars, assigned reading, and selected patient reviewers. (Biochemistry 528.2 and Pediatrics 528.2) One hour per week. SPRING. *Dr. van Eys and Dr. Faulkner.*

526. CLINICAL PHARMACOLOGY. Fourth year. Lectures and clinical seminars on the pharmacological basis of therapeutics and on the clinical use and evaluation of drugs. (Pharmacology 522) One hour per week. FALL. *Dr. Oates and Staff.*

527.1 CLINICAL ELECTROCARDIOGRAPHY I. Second, Third, and Fourth years. Electrophysiology of impulse formation and conduction lead systems and conventions of recording; electrocardiographic interpretation of clinically important disorders of rhythm; technics of pharmacologic and electrical control of rhythm disturbances. One hour per week. FALL. *Dr. Battersby.*

527.2 CLINICAL ELECTROCARDIOGRAPHY II. Second, Third, and Fourth years. Principally concerned with the interpretation of the adult's scalar electrocardiogram for abnormalities other than rhythm; introduction to vector cardiography; limited review of the pediatric electrocardiogram. 527.1 is suggested though not required prerequisite. One hour per week. SPRING. *Dr. Battersby.*

529. TOPICS IN INFECTIOUS DISEASES. Fourth year. A lecture course dealing with selected topics in infectious diseases. This course will stress pathogenesis, host-parasite relationships, diagnosis, and treatment. One hour per week. FALL. *Dr. Koenig and Staff.*

530. NUTRITION ROUNDS. Fourth year. Clinical material demonstrating nutritional problems in causation or management of disease will be presented by the students. The material will illustrate the subjects discussed in the lecture series (B-523). Students may register for either semester although both are recommended. It is desirable that the registrants have completed one semester or are registered in or audit B-523 concurrently. (Biochemistry 530 and Pediatrics 530). One hour every other week. FALL & SPRING. *Dr. James P. Carter (Associate Professor of Biochemistry).*

532. LECTURES ON RENAL PATHOPHYSIOLOGY. Second and Fourth years. Twelve informal seminars will concern renal-electrolyte pathophysiology. The first lecture will survey the history of renal physiology and the ambivalence of current attitudes toward the relevance of science. Basic renal physiology and hydrogen ion and electrolyte metabolism will be reviewed. These parameters will then be related to clinical situations with particular emphasis on sodium, water, and hydrogen ion imbalances. Two hours per week, first twelve weeks. FALL. *Dr. Ginn.*

533. MEDICAL GENETICS AND CYTOGENETICS. First and Second years. This course includes six introduction lectures on Mendelian inheritance, pedi-

gree patterns, inbreeding, population genetics, and genetic counseling. The remaining ten lectures are devoted to acquisitions and problems in the field of human cytogenetics and dwell on sex chromosome and autosomal anomalies both in congenital and acquired clinical disorders. One hour per week, first sixteen weeks. FALL. *Dr. Engel.*

534. FUNCTIONAL ANATOMY AND PHYSIOLOGY OF THE CARDIOVASCULAR SYSTEM: CLINICAL CORRELATION. First year. (a) Applied and functional anatomy of the renal, neonatal, cerebral, coronary, and pulmonary circulations: glomerular and tubular perfusion of the kidney. Counter current mechanisms. The coronary circulation and anastomotic adaptations. Perinatal changes in fetal circulation. Pulmonary capillary and ventilation perfusion relationships. Cerebral arteriography in heart disease. (b) Topical issues in physiology and biochemistry: physiology, pulse wave transmission. Venous hemodynamics. Systemic arterial control mechanisms. Cardiac output. Myocardial contractility. Starling Law of the Heart. Physiology of muscular exercise. Biochemistry, tissue oxygen delivery. Myocardial metabolism. Myocardial oxygen consumption. Adenyl cyclase and neurohormonal control. Lipogenesis and lipoprotein transport systems. Excitation contraction coupling. (c) Clinical correlations: eight clinical correlative sessions will be arranged in the second half of the spring semester. These demonstrations will provide broad based approaches to the subjects of edema formation, chest pain, dyspnea, ventricular dysfunction, hypertension, cyanosis, hemoptysis, and arrhythmias. Two hours per week. SPRING. *Dr. Friesinger, Dr. Sinclair-Smith, and Staff.*

534.I INTRODUCTION TO SELECTED CLINICAL CARDIOVASCULAR TOPICS AND CLINICAL LABORATORY METHODOLOGY. Second year. Introductory hemodynamics and non-invasive techniques: The graphic recording of data obtained by both direct and non-invasive techniques is stressed. Lecture demonstrations will reinforce the course in physical diagnosis as well as introducing the student to established non-invasive techniques, e.g. phonocardiography, pulse wave recording, echo-cardiography. Two hours per week first eight weeks, one hour per week second eight weeks. FALL. *Dr. Friesinger, Dr. Sinclair-Smith, and Staff.*

535. HISTORY OF MEDICINE. First, Second, Third and Fourth years. The general plan of the course is a brief chronological outline, starting with primitive medicine, continuing up through the eighteenth century. This is followed by lectures on special subjects and on such outstanding contributors to medicine as Vesalius and Harvey. Toward the end of the year two or more lectures will be devoted to the advances in the nineteenth century. One hour per week. FALL & SPRING. *Dr. Harry S. Shelley (Associate Professor of Urology, Emeritus) and Dr. Adams.*

537. POLLUTION OF THE ENVIRONMENT. Fourth year. Participation in Chemistry 150A "Chemistry and the Problems of Society" taught by Dr. David J. Wilson. Dr. Schaffner will be the tutor of a maximum of five medical students. The course requires as prerequisite only one year of Chemistry. It meets once a week, 7-8 p.m. A lecture series will survey the spectrum of environmental problems, but projects by the students are the

core of the course. Students will seek out and define actual or potential environmental problems in the greater Nashville area. Rigorous reports will be required and will be reviewed by experts within the University and the community. One hour per week for year. *Dr. Schaffner.*

538. **ADVANCED COURSE IN HISTORY OF MEDICINE.** Fourth year. The advanced course in History of Medicine will be open to junior and senior students and will cover material that should be of interest to those who have had more clinical experience than freshmen. It will consist of lectures, discussions and individual project work, and will be given only in the second semester. One hour per week. *SPRING. Dr. Shelley.*

539. **CARDIAC CATHETERIZATION LABORATORY EXPERIENCE.** Fourth year. The basic aims of an experience in the cardiac catheterization laboratory are two-fold: (a) to enable the students to correlate the historical and physical findings of various cardiac disease with the pathophysiological derangements measured in the laboratory. (b) to acquaint the student with the techniques employed in performing these measurements. In order to accomplish these aims the student will interview and examine selected patients to be catheterized, observe the catheterization, and analyze and interpret the resulting data. This portion of the elective should then encompass a broad experience in cardiovascular diseases, cardiac pathophysiology, and the techniques employed in the cardiac catheterization laboratory. Three hours per week, six-week units.

543. **MEDICAL SPECIALTY CLINICS.** Fourth year. Clinical experience in the following specialties is available to the student: Allergy, Cardiology, Dermatology, Diabetes, Endocrinology, Gastroenterology, Hematology, Chest and the Psychotic and/or Geriatric Patient. Three hours per week, six-week units. *Dr. Liddle and Staff.*

561. **CLERKSHIP IN MEDICINE.** Fourth year. A clinical clerkship on the wards of Nashville General Hospital for those who wish to extend their third year experience. Under supervision of the faculty and housestaff will include rotation between wards and emergency room. Full time, six-week units. *Dr. Paine.*

561.I. **CLERKSHIP ON MODEL PRIVATE TEACHING UNIT.** Fourth year. A student may serve as a second intern on a model private teaching unit, otherwise staffed by five attending physicians, one assistant resident, and one regular intern. This group will be responsible for approximately fifteen private patients of the attending physicians. The philosophy of the unit is that the excellent "established" physician caring for his interesting patients and sharing the responsibility with physicians-in-training should provide the ideal arrangement for teaching clinical medicine. Full time, six-week units. *Dr. Liddle and Staff.*

562. **GASTROENTEROLOGY CLERKSHIP.** Fourth year. This clerkship offers a broad experience in all clinical phases of gastroenterology including diseases of the hepato-biliary system and pancreas. Seminars, rounds, and evaluation of current literature are regularly scheduled. Full time, six-week units. *Dr. Schenker and Staff.*

563. HEMATOLOGY CLERKSHIP. Fourth year. Active participation in Hematology OPD, journal clubs, seminars, marrow conferences, and ward rounds at Vanderbilt University Hospital and Veterans Administration Hospital. Laboratory experience in specialized hematologic, radioisotope and blood banking techniques are available. Concurrent enrollment in Hematology Clinic, Medicine 543.7, and Pediatric Hematology Clinic, Pediatrics 543.8, and some morning hematology clinics during clerkship enrollment. Full time, six-week units. *Dr. Hartmann and Dr. Flexner.*

565. CLERKSHIP ON CLINICAL RESEARCH CENTER WARD. Fourth year. The Clinical Research Center ward is operating at full strength with 21 beds under the aegis of all divisions of the Hospital. Most of the patients are medical and are a particularly selected and complicated group with a wide variety of diseases. Regular rounds will be made with the house staff and investigators, and there will be an opportunity to attend the Clinical Research Conferences. Full time, six-week units. *Dr. Newman and Staff.*

566. CLERKSHIP IN PULMONARY DISEASE. Fourth year. The basic form of the clerkship is that of a modified substitute internship. Selected patients will be assigned to the care of the student for initial work-up and continuing care. Rounds and conferences will emphasize chest x-ray interpretation, the pathogenesis and treatment of tuberculosis and fungus diseases, pulmonary physiology and pathophysiology, and some emphasis on general problems of infectious diseases. Full time, six-week units. *Dr. Goodwin, Dr. Bryant, Dr. Snell, and Staff.*

567. CLERKSHIP IN RENAL PATHOPHYSIOLOGY. Fourth year. This clerkship offers active participation in the evaluation of patients with kidney disease and fluid-electrolyte imbalance, in biopsy procedures, and in renal-electrolyte rounds as well as experience in the hemodialysis program for acute and chronic renal failure. Optional pathophysiology seminars, research experience, and Journal Club. Full time, six-week units. FALL & SPRING. *Dr. Ginn and Staff.*

568. CLERKSHIP IN INFECTIOUS DISEASES. Fourth year. During the clerkship the student will evaluate patients with problems of infection on the wards of Vanderbilt University Hospital or VA Hospital. He will be an active participant in the management and follow-up of these patients and will attend all the regularly scheduled rounds, conferences, and seminars of the Infectious Disease Division. Full time, six-week units. *Dr. Koenig.*

570. SUMMER CLERKSHIP IN MEDICINE. Third year. The basic third year medical clerkship will be offered as an elective in the summer on the medical wards of Veterans Administration Hospital. Students will be responsible for initial work-up and participate in the continuing care of three or four new patients a week under the supervision of the intern and resident. Rounds with attending physicians (twice a week), Chief of Service (three times a week) and Chief Medical Resident (once a week), as well as specialty conferences, offer opportunities for presentation and discussion of cases. This course may not be substituted for Medicine 502. Full time summer twelve weeks. *Dr. Salmon, Dr. Des Prez, and Staff.*

571. CLERKSHIP IN CLINICAL PHARMACOLOGY. Fourth year. During the clerkship the students will evaluate patients with general problems in drug therapy, drug toxicity, and drug interactions. In addition, he will participate in the diagnosis and pharmacologic therapy of patients with hypertension. He will attend the hypertension clinic and the seminars and rounds of the Clinical Pharmacology Division. (Pediatrics 565 and Pharmacology 561). Full time, six-week units. *Dr. Nies, Dr. John T. Wilson (Associate Professor of Pharmacology), Dr. Oates, and Staff.*

573. CLERKSHIP, CARDIOLOGY. Fourth year. General clinical cardiologic experiences consisting of patient workups, review of laboratory data obtained and attendance at division conferences and seminars. In certain instances the student may participate in selected simple clinical research projects. Full time, six-week units. *Dr. Freisinger and Staff.*

~~663~~ Research opportunities are available in all divisions of the Department of Medicine for selected students. Certain specific opportunities are outlined below.

581. RESEARCH FELLOWSHIPS IN INFECTIOUS DISEASES. Fourth year. A program consisting of approximately 70 percent time on a research project, 30 percent in clinical work with problems related to infection. Full time for twelve or eighteen weeks. *Dr. Koenig and Staff.*

582. FELLOWSHIP, NEW METHODS IN ELECTROCARDIOGRAPHY. Fourth year. The student may participate in research projects involving the computer analysis of electrocardiographic signals; power spectrum analysis of ECG signals especially as it relates to the genesis of arrhythmias; alteration of the ECG frequency spectrum by drugs; derivation of new diagnostic parameters in exercise electrocardiography; research in support of NASA Skylab program which includes assessment of the effects of prolonged weightlessness on the heart and methods of quantitating electrocardiographic changes during space flight, visits to NASA facilities. Background in engineering, physics or mathematics helpful. Two months minimum. *Dr. Raphael Smith.*

583. FELLOWSHIP, PEDIATRIC CARDIOVASCULAR RESEARCH. Fourth year. Research opportunities in ongoing projects related to cardiovascular physiology and pharmacology will be provided. These projects will be in the areas of myocardial performance and cardiovascular developmental pharmacology. Special arrangement for summer activity by instructor. By appointment after prior discussion. Six to twelve months. *Dr. Graham and Dr. Atwood.*

584. RESEARCH FELLOWSHIP IN NUCLEAR MEDICINE. Fourth year. New applications of radioisotopes in medicine, use of digital computers in image analysis, and tracer kinetics studies, metabolic studies with new radiopharmaceutical agents, and flow studies using radiotracers are under investigation currently. Special projects and questions arising from existing projects will be identified to meet the interests and background of individual students. Twelve hours per week, or full time for twelve weeks. *Dr. Brill, Dr. Edward V. Staab (Associate Professor of Radiology), Dr. Johnson, and Staff.*

585. RESEARCH FELLOWSHIP IN CLINICAL PHYSIOLOGY. Fourth year. Students interested in participating in any research project being conducted by the staff members of the Division of Clinical Physiology (cardiac, pulmonary, and renal) are offered training on a selective basis. These fellowships provide undergraduate trainees with excellent early exposure and experience in the foundation and methodology of research work. Full time for twelve or eighteen weeks. *Dr. Newman and Staff.*

586. FELLOWSHIP, PROBLEMS OF ISCHEMIC HEART DISEASE. Fourth year. Problems in coronary physiology and clinical expressions of ischemic heart disease. A variety of possibilities exist. A decision on the study problem is reached after discussion with the individual student. Most projects involve the evaluation of the clinical and/or clinical laboratory manifestations of patients hospitalized with ischemic heart disease; e.g., pre-infarction syndromes, course of myocardial infarction, laboratory manifestations, and findings in ischemic heart disease, (including exercise electrocardiography and arteriography) are among such projects. In selected instances, physiological studies in the animal laboratory may be available to the student. Twelve weeks minimum.

587. FELLOWSHIP, PEDIATRIC CARDIOLOGY. Fourth year. An intensive clinical involvement in the diagnostic and therapeutic activities of the pediatric cardiology team will be provided. The student would be directly involved in the care of pediatric medical and surgical cardiovascular patients, both as inpatients and as outpatients. During the elective the student would become experienced in recording and interpretation of phonocardiograms, vectorcardiograms, and electrocardiograms. The student would also become familiar with cardiac catheterization of infants and children and would assist in calculation and interpretation of the catheterization and angiocardigraphic data. Full time, six-week units. *Dr. Graham and Dr. Atwood.*

588. RESEARCH FELLOWSHIP IN HEMATOLOGY. Fourth year. A program consisting of approximately 80 percent time on a specific research project and 20 percent time in correlative clinical work. Full time for twelve or eighteen weeks. *Dr. Hartmann and Staff.*

595. SEMINAR, CLINICAL ELECTROCARDIOGRAPHY AND ELECTROPHYSIOLOGY. Fourth year. Designed for those who wish to extend their experience in the interpretation of electrocardiograms and vectorcardiograms; the diagnosis and treatment of cardiac arrhythmias including methods such as His bundle recordings, cardiac pacing, electrical conversion of arrhythmias, and pharmacological control of cardiac arrhythmias; and the indications and methods for exercise stress testing. Three hours per week. Six-week units. *Dr. Raphael Smith.*

596. FUNDAMENTALS OF BIOMEDICAL ENGINEERING. First, Second, Third, and Fourth years. A one-semester course designed for the student with an interest in physiological systems as related to biomedical engineering. Intended largely to acquaint biomedical engineering students with the physiology of several of the human systems (notably heart, lung, kidney, nerve and blood) and with the concepts and mathematics of engineering

modeling of these systems. Special lectures are included to familiarize the student with ongoing research activities. A laboratory session is included to familiarize the student with instrumentation in the biomedical area, simulate physical systems on the computer, investigate special problems, and attend special lectures and demonstrations. Prerequisite: consent of the instructor. Interested medical students should contact Dr. Battersby for either audit or credit arrangements. Four hours per week. SPRING. *Dr. J. R. Bourne.*

597. VISITING HEMATOLOGY LECTURE SERIES. Fourth year. A student managed, Meharry-Vanderbilt senior year elective course integrated with postgraduate education of the Regional Medical Program. Eight leading hematologists from other institutions in Tennessee will each spend one day visiting Meharry and Vanderbilt and give a clinic and general lecture open to the entire medical community. These sessions will be held on designated Thursdays at 4 p.m., four at Meharry and four at Vanderbilt. A period for seminars and social interaction for student and regional practitioner participants and guest lecturers will be included. One hour per week. FALL & SPRING. *Dr. Hartmann, Faculty Adviser.*

598. SEMINARS AND SELECTED TOPICS IN THE HISTORY OF MEDICINE. Fourth year. Students will participate in a seminar-type discussion of events and personalities in the history of medicine, each six-week period being distinct from others. One hour per week. FALL & SPRING. *Dr. Adams and Dr. Shelley.*

599. MEDICAL SEMINAR. Fourth year. Discussions with the medical house officers concerning acute medical problems. The seminars will be aimed at gaining a deeper understanding of pathophysiologic mechanisms, principles of treatment, and a practical approach to management. Students will prepare cases or topics for presentation, read pertinent references, and participate in the discussions. Two hours per week. FALL & SPRING. *Chief Medical Residents and Staff.*

Microbiology

ALBERT S. KAPLAN, Ph.D., *Professor of Microbiology and Chairman of the Department*

SIDNEY P. COLOWICK, Ph.D., *American Cancer Society—Charles Hayden Foundation Professor of Microbiology*

JOHN H. HASH, Ph.D., *Professor of Microbiology*

TAMAR BEN-PORAT, Ph.D., *Associate Professor of Microbiology*

SIDNEY HARSHMAN, Sc.D., *Associate Professor of Microbiology*

WILLIAM M. MITCHELL, M.D., Ph.D., *Associate Professor of Microbiology*

JOHN P. ROBINSON, Ph.D., *Associate Professor of Microbiology*

DANIEL G. COLLEY, Ph.D., *Assistant Professor of Microbiology*

M. ANN MELLY, Ph.D., *Assistant Professor of Microbiology*

JANE L. NOBLE, Ph.D., *Assistant Professor of Microbiology*

FRANCES C. WOMACK, Ph.D., *Assistant Professor of Microbiology*
MARYDA COLOWICK, M.S., *Instructor in Microbiology*
PEGGY R. BORUM, Ph.D., *Research Associate in Microbiology*
LI-YAO CHENG, Ph.D., *Research Associate in Microbiology*
JOHN S. ERICKSON, Ph.D., *Research Associate in Microbiology*
JONG-HO JEAN, Ph.D., *Research Associate in Microbiology*
DENG-FONG LIAU, Ph.D., *Research Associate in Microbiology*

The Department of Microbiology offers courses leading to the Ph.D. degree. Courses described below which are numbered in the 300 series are offered primarily for that program but are open to medical students by special arrangement.

501. MICROBIOLOGY (324). Lectures and laboratory exercises. The important bacterial, mycotic, parasitic, and viral infections are considered from the standpoint of etiology, epidemiology, pathogenesis, immunology, and laboratory diagnosis. Ten hours of lectures, seminars, and laboratory exercises. Prerequisite: Biochemistry 501-502 or equivalent. FALL. [6] Staff.

521. ADVANCED TOPICS IN MICROBIOLOGY (328). Second and Fourth years. Consists of a lecture series on selected topics. The course may be taken once in each of the following subject area. Two hours per week.

1. MICROBIAL TOXINS AND ENZYMES. Includes regulation of production of toxins and enzymes, and their mode of action. Prerequisite: 501 and Biochemistry 501 or Molecular Biology 280 or equivalent. SPRING. [2] *Dr. Colowick and Dr. Mitchell.* (Not offered 1972/73.)

2. ANTIBIOTICS AND MICROBIAL METABOLISM. Includes the chemistry and mode of action of antibacterial and antiviral agents, discussed in relation to the unique features of microbial structure and metabolism upon which their specificity is based. Prerequisite: 501 and Biochemistry 501 or Molecular Biology 280 or equivalent. SPRING. [2] *Dr. Hash and Dr. Robinson.* (Not offered 1972/73.)

3. IMMUNOCHEMISTRY. Includes the structure and biosynthesis of gamma globulins, and their role in normal cell function as well as in the immune response. Prerequisite: 501 and Biochemistry 501 or Molecular Biology 280 or equivalent. SPRING. [2] *Dr. Harshman and Dr. Colley.* (Not offered 1972/73.)

4. BASIC VIROLOGY. Includes interaction of oncogenic and virulent viruses with their host cells, discussed at the cellular and molecular levels. Prerequisite: 501 and Biochemistry 501 or Molecular Biology 280 or equivalent. SPRING. [2] *Dr. Kaplan, Dr. Ben-Porat and Dr. Noble.*

522. LECTURES ON RESEARCH PROGRESS IN MOLECULAR BIOLOGY (350a-350b). Second and Fourth years. A course cosponsored by the departments of

Microbiology, Physiology, and Molecular Biology, in which members of these and other departments present their own research activities in relation to current problems in their field. First semester: biophysical aspects will be stressed, including the application of modern physicochemical techniques to studies of macromolecules and enzyme action. Second semester: physiological aspects will be stressed, including the molecular basis of the function of specialized tissues, and the mechanisms for metabolic control of gene action and multi-enzyme systems. First and second semesters may be taken independently. (Physiology 522). Two hours per week. FALL & SPRING. [2-2]

523. ADVANCED IMMUNOCHEMISTRY LABORATORY. (329) First, Second, Third, and Fourth years. This course offers an opportunity for supervised laboratory study of selected topics of current immunochemical interest. Students will select their own laboratory projects from such topics as: antibody biosynthesis, antigen bioprocessing, haptenic units of Rh and agglutination factors, and immunologic paralysis and suppression. Prerequisite: consent of instructor. One lecture and two laboratory periods per week. Seven hours per week. SPRING. *Dr. Harshman and Dr. Colley.* (Not offered 1972-1973.)

581. EXPERIMENTAL METHODS IN MICROBIOLOGY (327). Second and Fourth years. A rotating program of laboratory work concerned with: (a) regulation of bacterial metabolism; (b) structural studies on bacteria, bacterial and mammalian viruses; (c) techniques in immunochemistry involving antibody synthesis, mechanism of antibody-antigen reaction, and assay of antibody reactions; (d) enzyme studies involving physicochemical properties, kinetics, thermodynamics and mechanisms of action. (Physiology 522) Admission to course, hours, and credit by arrangement. Six hours per week. FALL & SPRING. *Staff.*

582. RESEARCH FELLOWSHIP IN MICROBIOLOGY. Fourth year. A research fellowship with one member of the staff, involving an intensive study in one of the areas listed under course 581. Full time for twelve or eighteen weeks. FALL, SPRING, OR SUMMER. *Staff.*

331. SPECIAL SEMINARS. Selected topics of current interest. [1] *Staff.*

399. RESEARCH. *Staff.*

Neurology

GERALD M. FENICHEL, M.D., *Professor of Neurology and Chairman of the Department*

H. CARL HAYWOOD, Ph.D., *Professor of Neurology*

JAMES W. WARD, Ph.D., M.D., *Professor of Neurology*

BERTRAM E. SPROFKIN, M.D., *Clinical Professor of Neurology*

CHARLES E. WELLS, M.D., *Associate Professor of Neurology*

WILLIAM M. CLARK, M.D., *Associate Clinical Professor of Neurology*

FRANK R. FREEMON, M.D., *Assistant Professor of Neurology*
L. WILLIAM McLAIN, JR., M.D., *Assistant Professor of Neurology*
WILLIAM H. OLSON, M.D., *Assistant Professor of Neurology*
ROBERT ROELOFS, M.D., *Assistant Professor of Neurology*
JOHN SLOAN WARNER, M.D., *Assistant Clinical Professor of Neurology*
ROBERT T. COCHRAN, M.D., *Clinical Instructor in Neurology*

501. CLINICAL CLERKSHIP. All members of the third-year class are alternately assigned to the neurology wards for two and one-half weeks. Students are given direct responsibility for the evaluation and care of patients under the supervision of house staff and faculty. This brief exposure is intended to provide the students with an approach to patients with diseases of the nervous system. *Dr. Fenichel and Staff.*

521. INTRODUCTION TO CLINICAL NEUROLOGY. First year. This series of weekly discussions is intended to compliment the Neuroanatomy course. The sessions will include patient demonstrations, clinical-basic science correlations, methods of diagnosis, and systems of therapy. The course demonstrates the importance of neuroanatomy and physiology in the understanding of neurological disease. One hour per week. SPRING. *Dr. Fenichel.*

541. CLINIC, ADULT NEUROLOGY. Fourth year. Students will be assigned new patients to be evaluated and will have an opportunity to discuss diagnosis and management with a member of the attending staff. Three hours per week, six-week units. FALL & SPRING. *Dr. McLain and Staff.*

542. CLINIC, PEDIATRIC NEUROLOGY. Fourth year. This clinic offers experience with problems in child development, diseases of the nervous system, and multiple handicaps. Students will evaluate and manage a variety of pediatric neurology problems and present them to a member of the staff. (Pediatrics 543.7) Three hours per week, six-week units. *Dr. Fenichel.*

561. CLERKSHIP IN NEUROLOGY. Fourth year. Students will serve as externs on the neurology service of the Vanderbilt University Hospital. Their responsibilities will be equivalent to those of interns on the service and include all clinics, conferences, and rounds. Full time, six-week units. *Dr. Fenichel and Staff.*

562. CLERKSHIP IN NEUROLOGY-BAPTIST HOSPITAL. Fourth year. Students will serve as the neurology house officers at the Baptist Hospital. Responsibilities will include admission evaluation, daily care, and diagnostic procedures. Full time, six-week units. *Dr. Warner and Staff.*

563. CLERKSHIP IN NEUROLOGY-VETERANS ADMINISTRATION HOSPITAL. Fourth year. Students will serve as externs on the neurology service of the Veterans Administration Hospital. The responsibilities will be equivalent to those of interns on the service and include all clinics, conferences, and rounds. *Dr. McLain and Staff.*

Obstetrics & Gynecology

- DONALD A. GOSS, M.D., *Professor of Obstetrics and Gynecology and Chairman of the Department*
- JOHN C. BURCH, M.D., *Professor of Gynecology, Emeritus*
- BERT W. O'MALLEY, M.D., *Lucius E. Burch Professor of Obstetrics and Gynecology*
- NICHOLAS VORYS, M.D., *Visiting Professor of Obstetrics and Gynecology*
- JOHN S. ZELENIK, M.D., *Professor of Obstetrics and Gynecology*
- D. SCOTT BAYER, M.D., *Clinical Professor of Obstetrics and Gynecology*
- G. SYDNEY McCLELLAN, M.D., *Clinical Professor of Obstetrics and Gynecology*
- EDWIN LEA WILLIAMS, M.D., *Clinical Professor of Obstetrics and Gynecology*
- STANLEY R. GLASSER, Ph.D., *Associate Professor of Obstetrics and Gynecology (Research)*
- MARIE-CLAIRE ORGBIN-CRIST, Ph.D., *Associate Professor of Obstetrics and Gynecology (Research)*
- PIERRE SOUPART, M.D., Ph.D., *Associate Professor of Obstetrics and Gynecology (Research)*
- ROGER B. BURRUS, M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- EVERETT M. CLAYTON, JR., M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- B. KIMBROUGH HIBBETT III, M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- JAMES W. JOHNSON, M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- C. GORDON PEERMAN, JR., M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- HOUSTON SARRATT, M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- WILLARD O. TIRRILL, JR., M.D., *Associate Clinical Professor of Obstetrics, Emeritus*
- ROBERT H. TOSH, M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- FRANK H. BOEHM, M.D., *Assistant Professor of Obstetrics and Gynecology*
- ANGUS M. G. CROOK, M.D., *Assistant Professor of Obstetrics and Gynecology*
- DAVID L. DI PIETRO, Ph.D., *Assistant Professor of Obstetrics and Gynecology (Research)*
- ANTHONY R. MEANS, Ph.D., *Assistant Professor of Obstetrics and Gynecology (Research)*
- WILLIAM T. SCHRADER, Ph.D., *Assistant Professor of Obstetrics and Gynecology (Research)*
- THOMAS C. SPELSBERG, Ph.D., *Assistant Professor of Obstetrics and Gynecology*
- DAVID O. TOFT, Ph.D., *Assistant Professor of Obstetrics and Gynecology*
- LARRY T. ARNOLD, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
- RUSSELL T. BIRMINGHAM, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
- BENJAMIN H. CALDWELL, JR., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*

ROBERT L. CHALFANT, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 GEORGE B. CRAFTON, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 JAMES WOOD ELLIS, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 RALPH R. KLING, JR., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 ROLAND D. LAMB, M.D., *Assistant Clinical Professor of Gynecology*
 HORACE T. LAVELY, JR., M.D., *Assistant Clinical Professor of Gynecology*
 SAMUEL S.O. NWOSU, M.B., Ch. B., *Assistant Clinical Professor of Obstetrics and Gynecology*
 HOMER M. PACE, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 ROY W. PARKER, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 ROBERT C. PATTERSON, JR., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 THOMAS F. WARDER, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
 HARRY BAER, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 JAMES M. BRAKEFIELD, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 JOE MICHAEL EDWARDS, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 CHARLES M. GILL, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 PAUL A. GREEN, JR., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 ROBERT J. GRIFFON, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 ERICH B. GROOS, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 CHARLIE JOE HOBODY, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 CHARLES H. HUDDLESTON, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 ORRIN LESTER JONES, JR., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 H. NEWTON LOVVORN, JR., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 JAMES B. MILLIS, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 PHILIP A. NICHOLAS, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 WILLIAM D. SUMPSTER, JR., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 ARTHUR SUTHERLAND, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 NORMAN E. WITTHAUER, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 BENJAMIN J. DANZO, Ph.D., *Research Associate in Obstetrics and Gynecology*

502. CLINICAL CLERKSHIP. One-eighth of the third-year class is assigned for five weeks of a semester. An introductory experience in inpatient obstetrics and gynecology is obtained. Approximately one-third of the experience will be at the Nashville General Hospital. *Dr. Goss, Dr. Crook, and Dr. Johnson.*

521. DEVELOPMENTAL BIOLOGY. First, Second, Third, and Fourth years. A comprehensive multidisciplinary approach to the developmental biology of the mammalian cell. Lectures will cover chromosomal structure and function; sex determination and cell and organ differentiation; mitosis, cell cycles, cell populations; fertilization and implantation; egg development and biochemical differentiation; neuroendocrine (pituitary-hypothalamic hormonal axis) control mechanisms; gonadal function and steroid synthesis; mechanism of steroid hormone regulation of protein synthesis in target

tissues; synthesis and mechanism of action of pituitary trophic peptides; organ maturation, teratology and cancer. The biochemical endocrinology of reproduction and the regulation of cell and organ development will be heavily emphasized. This course is presented as a fundamental aspect of biologic science. Sessions will be given by faculty actively engaged in research in the above fields of developmental and molecular biology. (Anatomy 521). Three hours per week. SPRING. (Not offered 1972/73.)

523. SEX COUNSELING. Third and Fourth years. This interdepartmental course aims to give students a better understanding of psychosexual problems so that they may gain competence in counseling patients. It will include such topics as premarital counseling; impotence and frigidity; sexual deviations; child sexuality; standards of sexual behavior. (Surgery 527, Psychiatry 531) One hour per week. FALL. *Dr. Robert K. Rhamy (Professor of Urology, Department of Surgery), Dr. Stephen C. Cappannari (Associate Professor of Human Behavior, Department of Psychiatry), Dr. Goss, Dr. Glasser, and Dr. Fishbein.*

524. HUMAN SEXUALITY. First and Second years. The purpose is to introduce the first or second year medical student to the physiological, psychological and sociological information relating to all phases of human sexual behavior. The content of the course will include considerations of reproductive physiology; human sexual response; family planning; sexual attitudes, behavior and myths; sexual aberrations; and the interaction of sexuality and society. This course is intended to serve as a prerequisite to Surgery 527, Sex Counseling. (Surgery 528, Psychiatry 533) One hour per week. SPRING. *Dr. Cappannari, Dr. Glasser, Dr. Rhamy, and others.*

525. VAGINAL EXFOLIATIVE CYTOLOGY. Fourth year. A laboratory exercise to learn normal and abnormal exfoliative cytology of the female genital tract along with tissue biopsy correlation. Hormone endocrine changes will be emphasized. (Pathology 528) One hour per week. FALL & SPRING. *Dr. Mauricio and Staff.*

542. GYNECOLOGY CLINIC. Fourth year. Both new gynecology and follow-up patients are seen during this period. New gynecology patients are worked-up by the students and checked by the house officer or consultant. During this time, postoperative cases are also seen. Three hours per week, six-week units. FALL & SPRING. *Dr. Johnson, Dr. Goss, and Dr. Crook.*

543. OBSTETRICAL AND GYNECOLOGICAL CLINICS. Fourth year. Experience in the following clinics is available to the student: Tumor, Medical Obstetric, Family, Rh Obstetrical, or Routine. These clinics count toward obstetrics-gynecology requirements for graduation. Three hours per week, six-week units. FALL & SPRING. *Staff.*

561. CLERKSHIP IN OBSTETRICS AND GYNECOLOGY. Fourth year. Clinical clerkship in obstetrics-gynecology at Vanderbilt University Hospital or Nashville General Hospital. Inpatient and outpatient services on both obstetrics and gynecology, night call on rotational basis. Weekly clinical and pathology conferences. Full time, six-week units. *Dr. Goss, Dr. Crook, Dr. Johnson, and Staff.*

581. RESEARCH FELLOWSHIP IN OBSTETRICS AND GYNECOLOGY. Fourth year. Students may work with any member of the faculty on a problem relating to experimental aspects of reproductive biology. The laboratories and animal quarters of the department will be made available to the student. A written and oral report of the research will be required. Twelve hours per week, six-week units. *Dr. Di Pietro and Dr. Soupart.*

582. CLINICAL RESEARCH IN OBSTETRICS AND GYNECOLOGY. Fourth year. Students will work with a member of the faculty on any problem relating to the diagnosis or treatment of an obstetrical-gynecological disease. Research will be carried out in the library, medical records room, outpatient and inpatient areas, and laboratories of the department. A written and oral report of the research will be required. Three hours per week, six-week units. *Staff.*

598. SEMINAR IN ENDOCRINE AND INFERTILITY. Fourth year. This seminar will present an overall survey of gynecologic endocrine problems with special emphasis on endocrine infertility. Selected patients presenting various endocrine problems will be interviewed and their management discussed in detail. Three hours per week, second or fifth six weeks. *Dr. Goss and Dr. Northcutt.*

Ophthalmology

JAMES H. ELLIOTT, M.D., *Professor of Ophthalmology and Chairman of the Department*

GEORGE W. BOUNDS, JR., M.D., *Clinical Professor of Ophthalmology*

G. ALLEN LAWRENCE, M.D., *Clinical Professor of Ophthalmology*

HENRY CARROLL SMITH, M.D., *Clinical Professor of Ophthalmology, Emeritus*

JOHN STEVENS ANDREWS, JR., Ph.D., *Associate Professor of Ophthalmology and Director of Ophthalmic Laboratories*

WALLACE H. FAULK, JR., M.D., *Associate Clinical Professor of Ophthalmology*

FOWLER HOLLABAUGH, M.D., *Associate Clinical Professor of Ophthalmology*

KATE SAVAGE ZERFOSS, M.D., *Associate Clinical Professor of Ophthalmology, Emerita*

DENIS M. O'DAY, M.D., *Assistant Professor of Ophthalmology*

JOHN B. BOND III, M.D., *Assistant Clinical Professor of Ophthalmology*

ABRAHAM PACHA CHEIJ, M.D., *Assistant Clinical Professor of Ophthalmology*

L. ROWE DRIVER, M.D., *Assistant Clinical Professor of Ophthalmology*

PHILIP L. LYLE, M.D., *Assistant Clinical Professor of Ophthalmology*

LEE ROY MINTON, M.D., *Assistant Clinical Professor of Ophthalmology*

FRED A. ROWE, M.D., *Assistant Clinical Professor of Ophthalmology*

WILKES H. DAVIS, M.D., *Instructor in Ophthalmology*

ROY C. EZELL, M.D., *Clinical Instructor in Ophthalmology*

WALTER W. FREY, M.D., *Clinical Instructor in Ophthalmology*

ROBERT H. HENDERSON, M.D., *Clinical Instructor in Ophthalmology*
JAMES P. LODEN, M.D., *Clinical Instructor in Ophthalmology*
J. RALPH RICE, M.D., *Clinical Instructor in Ophthalmology*

501. METHODS IN CLINICAL SCIENCE. Introduction to Ophthalmology. Second year. This interdepartmental core curriculum is designed to acquaint the students with the techniques, approach and methods of clinical science. Two periods of two hours are devoted to didactic lectures on diagnostic techniques and instrumentation used routinely by ophthalmologists. The class then is divided into small tutorial groups and each student has exposure to a faculty member for a one and one-half hour period for detailed instruction in the use of the direct ophthalmoscope. *Dr. Elliott and Staff.*

502. OPHTHALMOLOGY CLINICAL CLERKSHIP. Third year. During the third year each student will be assigned to ophthalmology for one week. During this one week period the student is assigned to a resident full time and is responsible for patient work ups, presentation to the Chief of Service on Tuesday prior to surgery, operating room experience, and receives lectures in the afternoon on prescribed topics. An examination is given at the completion of this rotation. This period of time is during the surgical sub-specialty rotation. *Staff.*

526. BASIC COURSE IN OPHTHALMOLOGY. Second and Third year. Consists of lectures on the basic and clinical aspects of ophthalmology. Subjects covered are: basic anatomy of the eye, the pupil, ocular motility, optic nerve disease and papilledema, differential diagnosis of the red eye, visual pathways and perimetry, retinal disease, pediatric ophthalmology, the eye signs of systemic diseases and ocular neoplasms. One hour per week. *SPRING. Dr. Elliott and Staff.*

561. CLERKSHIP IN OPHTHALMOLOGY. Fourth year. An intensive clinical experience in ophthalmology which includes inpatient, outpatient and operating room assignments. A one to one supervision by the resident staff and Ophthalmology Department staff. At the completion of this clerkship a student should have mastered all basic ophthalmology exam techniques including visual acuity, external exam, indirect ophthalmology and visual fields. Full time, six-week units. *Dr. Elliott and Staff.*

Orthopedic Surgery

PAUL P. GRIFFIN, M.D., *Professor of Orthopedic Surgery and Chairman of the Department*

S. BENJAMIN FOWLER, M.D., *Clinical Professor of Orthopedic Surgery*

EUGENE M. REGEN, M.D., *Clinical Professor of Orthopedic Surgery, Emeritus*

ARTHUR LEROY BROOKS, M.D., *Associate Professor of Orthopedic Surgery*

GEORGE K. CARPENTER, M.D., *Associate Clinical Professor of Orthopedic Surgery, Emeritus*

HARRY BUGEL, M.D., *Assistant Professor of Orthopedic Surgery*
 WARREN CASTLE, M.D., *Assistant Professor of Orthopedic Surgery*
 JOHN F. CONNOLLY, M.D., *Assistant Professor of Orthopedic Surgery*
 CHARLES W. EMERSON, JR., M.D., *Assistant Professor of Orthopedic Surgery*
 J. JEFFERSON ASHBY, M.D., *Assistant Clinical Professor of Orthopedic Surgery,*
Emeritus
 ROBERT C. CODDINGTON, M.D., *Assistant Clinical Professor of Orthopedic*
Surgery
 DON L. EYLER, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 DONALD L. GAINES, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 ARNOLD HABER, JR., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 JERRY CHEEK HUNT, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 FRANK E. JONES, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 JOHN R. JONES, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 A. BRANT LIPSCOMB, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 ANDREW H. MILLER, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 THOMAS F. PARRISH, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 EUGENE M. REGEN, JR., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 JOHN C. BROTHERS, M.D., *Clinical Instructor in Orthopedic Surgery*
 JOE G. BURD, M.D., *Clinical Instructor in Orthopedic Surgery*
 GEORGE K. CARPENTER, JR., M.D., *Clinical Instructor in Orthopedic Surgery*
 G. WILLIAM DAVIS, JR., M.D., *Clinical Instructor in Orthopedic Surgery*
 MARK DOYNE, M.D., *Clinical Instructor in Orthopedic Surgery*
 HAROLD A. FERGUSON, M.D., *Clinical Instructor in Orthopedic Surgery*
 CHARLES M. HAMILTON, M.D., *Clinical Instructor in Orthopedic Surgery*
 JOHN W. LAMB, M.D., *Clinical Instructor in Orthopedic Surgery*
 LAWRENCE P. LAUGHLIN, M.D., *Clinical Instructor in Orthopedic Surgery*
 JOHN M. MILLER, M.D., *Clinical Instructor in Orthopedic Surgery*
 CHARLES G. NORTON, M.D., *Clinical Instructor in Orthopedic Surgery*
 ROBERT V. RUSSELL, M.D., *Clinical Instructor in Orthopedic Surgery*
 NORMAN L. SIMS, M.D., *Clinical Instructor in Orthopedic Surgery*
 E. DEWEY THOMAS, M.D., *Clinical Instructor in Orthopedic Surgery*
 JOHN M. WAMPLER, M.D., *Clinical Instructor in Orthopedic Surgery*

301. METHODS IN CLINICAL SCIENCE: INTRODUCTION TO ORTHOPEDIC SURGERY. A series of lectures and demonstrations is presented in association with the course Methods in Clinical Science. Emphasis is placed upon the examination of the musculoskeletal system, assessment of normal and abnormal gait, standard measurement and recording of ranges of joint motion and muscle strength. Case presentations illustrate the basic mechanism of deformity and disability. *SPRING. Staff.*

302. INTRODUCTION TO CLINICAL ORTHOPEDIC SURGERY. A series of eight lectures is presented in the third year, covering traumatic and non-traumatic musculoskeletal conditions. Emphasis is placed upon the physiologic approach to the treatment of these problems. *Staff.*

303. ORTHOPEDIC INPATIENT SERVICE. During the third year each student group will be assigned to Orthopedic Surgery for two and one-half weeks. The two and one-half weeks will be spent with the students participating in ward patient care, clinic assignments, operating room experience, and

daily conferences. The student will be given a listing of materials he is expected to learn. Salter's textbook, *Disorders and Injuries of the Musculoskeletal System*, will be the standard text. *Staff*.

504. ORTHOPEDIC OUTPATIENT SERVICE. Outpatient experience in orthopedic surgery is coordinated with the general surgery and other clinics. (See Surgery 504.)

521. EMERGENCY CARE OF THE INJURED. Fourth year. This course on emergency care of the injured includes discussion and demonstration of all major concepts of care of the injured. It is a multidepartmental course coordinated by Orthopedic Surgery. It is particularly designed to fill the gap of the current curriculum in a systematic and concentrated review of the care of major injuries. It is also slanted toward both military and civilian problems. One hour per week. *SPRING. Staff*.

543. ORTHOPEDIC SURGERY SPECIALTY CLINICS. Fourth year. Experience in the following specialty clinics is available to the student: Cerebral Palsy, Hand, Crippled Children. Three hours per week, six-week units.

561. CLERKSHIP IN ORTHOPEDIC SURGERY. Fourth year. An intensive clinical experience in orthopedic surgery including inpatient, outpatient and operating room assignments. Supervision is by the resident staff and the Orthopedic Department staff. The clerk will participate in the full activities of the department and may be assigned to (a) children's orthopedics (State Crippled Children's Clinics and Vanderbilt), (b) Nashville General Hospital, Veterans Administration Hospital and Vanderbilt University Hospital. Full time; six-week units. *Staff*.

563. NON-CLERKSHIP IN ORTHOPEDIC SURGERY. First, Second, Third, and Fourth years. This clerkship is designed for the student who is interested in fields other than orthopedic surgery but who would participate in the areas of joint activity between orthopedic surgery and related departments. For example, the clerkship might encompass all the radiologic studies which occur in orthopedic surgery during the period of the clerkship and would give the student an opportunity to participate in the areas of mutual activity. Similar arrangements may be worked out with any particular area of interest. It is topic- and patient-oriented rather than along the traditional lines of departmental service responsibility. Full time or part time, six-week units. *Staff*.

581. RESEARCH FELLOWSHIP IN ORTHOPEDIC SURGERY. Fourth year. An opportunity for supervised experience in research related to the musculoskeletal system. Elements of project design and methods of assessment, development, and application of laboratory equipment, controlled small animal experiments, and background correlative study will be emphasized. Currently active research projects in areas of biomechanics of bone, biochemical-biomechanical correlation, acute circulatory disorders in the extremities, scoliosis, and fat embolism are suggested topics, although other projects of particular interest to the fellow are equally acceptable. Each student will be given individual supervision by a staff member. Twelve to eighteen weeks. *Staff*.

Pathology

VIRGIL S. LEQUIRE, M.D., *Professor of Experimental Pathology and Acting Chairman of the Department of Pathology*

WILLIAM J. CHEATHAM, M.D., *Professor of Pathology*

ROBERT D. COLLINS, M.D., *Professor of Pathology (On leave 1972/73)*

WILLIAM H. HARTMANN, M.D., *Professor of Pathology*

BARTON MCSWAIN, M.D., *Professor of Surgical Pathology*

JOHN L. SHAPIRO, M.D., *Professor of Pathology*

HAROLD W. BROWN, Sc.D., M.D., *Clinical Professor of Pathology*

FRANK C. WOMACK, M.D., *Clinical Professor of Pathology*

RICHARD D. BUCHANAN, M.D., *Associate Professor of Pathology*

ROBERT G. HORN, M.D., *Associate Professor of Pathology*

HAROLD L. MOSES, M.D., *Associate Professor of Pathology*

BERTRAM E. SPROFKIN, M.D., *Associate Clinical Professor of Neuropathology*

JOHN BROWN THOMISON, M.D., *Associate Clinical Professor of Pathology*

MARY E. GRAY, Ph.D., *Assistant Professor of Experimental Pathology*

DAVID L. PAGE, M.D., *Assistant Professor of Pathology*

WILLIAM J. SHASTEEN, M.D., *Assistant Professor of Pathology*

HARRY G. BROWNE, M.D., *Assistant Clinical Professor of Pathology*

RUFUS JACK FREEMAN, M.D., *Assistant Clinical Professor of Pathology*

JERRY K. HUMPHREYS, M.D., *Assistant Clinical Professor of Pathology*

THOMAS C. LITTLEJOHN, LL.B., M.D., *Assistant Clinical Professor of Forensic Pathology*

JAMES M. PHYTHON, M.D., *Assistant Clinical Professor of Pathology*

FRED W. RYDEN, Ph.D., M.D., *Assistant Clinical Professor of Pathology*

MYRON HOLSCHER, D.V.M., Ph.D., *Instructor in Pathology*

JOSEF K. KORINEK, M.D., *Instructor in Pathology*

PAULETTE G. LANKFORD, B.S., *Instructor in Pathology*

LILIA D. MAURICIO, M.D., *Instructor in Pathology*

SHIRLEY SCHUFFMAN, B.A., *Instructor in Pathology (Electron Microscopy)*

LARRY L. SWIFT, Ph.D., *Instructor in Pathology*

MARIE TALLMAN WASSON, B.S., *Instructor in Pathology*

MAURICE M. ACREE, JR., M.D., *Clinical Instructor in Pathology*

The Department of Pathology offers courses leading to the master's and the Ph.D. degrees.

501. GENERAL AND SPECIAL PATHOLOGY (321). General and special pathology presented by lectures, demonstrations, discussions, and laboratory work. Gross and microscopic lesions characteristic of various diseases are studied and correlated. [10] *Dr. Horns and Staff.*

521. DISEASES OF LABORATORY ANIMALS (325). Second and Fourth years.

The pathology of naturally acquired diseases in common laboratory animals is studied. Emphasis is placed on the recognition and interpretation of conditions which could influence experimental results. FALL. *Dr. Holscher and Staff.*

522. COMPARATIVE PATHOLOGY (324). Second and Fourth years. Etiology, clinical findings, pathogenesis, gross and microscopic lesions of selected diseases of domestic and laboratory animals are studied and correlated. Emphasis is placed on those diseases that resemble closely similar disease processes in man. Their value as experimental models is assessed. Prerequisite: Pathology 521, or prior approval. SPRING. *Dr. Holscher and Staff.*

524. NEUROPATHOLOGY CASE PRESENTATIONS. Second and Fourth years. Interesting autopsy cases with manifestations of neurologic disease will be presented, followed by demonstrations of anatomic lesions. One hour per week. FALL. *Dr. Moses and Neurology Staff.*

525. NEUROPATHOLOGY AND ITS CLINICAL CORRELATION. First, Second, Third, and Fourth years. In a series of weekly lectures and clinic-pathologic demonstrations the anatomic, physiologic, and pathologic aspects of nervous system disease will be integrated. Designed for medical students at any level. One hour per week. FALL. *Dr. Sprofskin.*

527. TROPICAL DISEASES. Fourth year. To stimulate interest in global medicine, the pathogenesis and diagnosis of infectious diseases (primarily tropical and subtropical in distribution) will be emphasized. Two hours per week. SPRING. *Dr. James P. Carter (Associate Professor of Biochemistry) and Dr. Harold W. Brown.*

528. VAGINAL EXFOLIATIVE CYTOLOGY. Fourth year. A laboratory exercise to learn normal and abnormal exfoliative cells of the female genital tract along with tissue biopsy correlation. Hormone endocrine changes will also be stressed. (Obstetrics & Gynecology 525) One hour per week. FALL & SPRING. *Dr. Mauricio and Staff.*

561. CLERKSHIP IN PATHOLOGY. Fourth year. Senior students will participate in all departmental activities, with responsibility in teaching and autopsy service. Investigative work as desired. Full time, six-week units. *Dr. Shapiro and Staff.*

562. SURGICAL PATHOLOGY CLERKSHIP. Fourth year. Work with the Director of the Surgical Pathology Laboratory in processing gross and microscopic material from current cases. Emphasis will be made to introduce the student to the place that the Surgical Pathology Laboratory enjoys with reference to diagnostic investigations throughout the hospital. Appropriate short research projects will be available for the interested student. Full time, six-week units.

581. EXPERIMENTAL METHODS IN PATHOLOGY. (322) Fourth year. Research and conferences in special techniques as applied to study of disease.

Among the fields available are: (a) electron microscopy, *Dr. Horn and Dr. Moses*; (b) histochemistry and cytochemistry, *Dr. Horn and Dr. Moses*; (c) autoradiology, *Dr. Horn and Dr. Moses*; (d) inflammation, *Dr. Collins and Dr. Horn*; (e) virology, *Dr. Cheatham*; (f) tissue culture, *Dr. Cheatham and Dr. Thomison*; (g) hematology, *Dr. Gray*; (h) lipid transport, *Dr. LeQuire and Dr. Gray*. Admission, hours and credit by arrangement. FALL & SPRING.

82. RESEARCH IN PATHOLOGY. (399) Fourth year. Opportunities for research are offered in the following areas: the experimental and theoretical aspects of host-parasite relationships, structural and functional alterations of cells, tissues, and organs resulting from toxic agents, metabolic abnormalities, genetic defects, and neoplasms. Hours and credit by arrangement.

Pediatrics

DAVID T. KARZON, M.D., *Professor of Pediatrics and Chairman of the Department*
 RANDOLPH BATSON, M.D., *Professor of Pediatrics*
 AMOS CHRISTIE, M.D., *Professor of Pediatrics, Emeritus*
 GERALD M. FENICHEL, M.D., *Professor of Pediatrics*
 MILDRED STAHLMAN, M.D., *Professor of Pediatrics*
 JAMES C. OVERALL, M.D., *Clinical Professor of Pediatrics, Emeritus*
 WILLIAM A. ALTEMEIER III, M.D., *Associate Professor of Pediatrics*
 DAN M. BURR, M.D., *Associate Professor of Pediatrics; Investigator, Howard Hughes Medical Institute*
 JAMES P. CARTER, M.D., *Associate Professor of Pediatrics*
 WILLIAM D. DONALD, M.D., *Associate Professor of Pediatrics*
 THOMAS P. GRAHAM, JR., M.D., *Associate Professor of Pediatrics*
 JAMES A. O'NEILL, JR., M.D., *Associate Professor of Pediatrics*
 SARAH H. SELL, M.D., *Associate Professor of Pediatrics*
 DAN VAN EYS, Ph.D., M.D., *Associate Professor of Pediatrics*
 JOHN T. WILSON, M.D., *Associate Professor of Pediatrics*
 JOE M. STRAYHORN, M.D., *Associate Clinical Professor of Pediatrics*
 WILLIAM O. VAUGHAN, M.D., *Associate Clinical Professor of Pediatrics*
 THOMAS S. WEAVER, M.D., *Associate Clinical Professor of Pediatrics*
 GERALD F. ATWOOD, M.D., *Assistant Professor of Pediatrics*
 WILLIAM F. FLEET, M.D., *Assistant Professor of Pediatrics*
 HAKAN SUNDELL, License, *Assistant Professor of Pediatrics*
 LUTHER A. BEAZLEY, M.D., *Assistant Clinical Professor of Pediatrics*
 EUGENE L. BISHOP, JR., M.D., *Assistant Clinical Professor of Pediatrics*
 HEARN G. BRADLEY, M.D., *Assistant Clinical Professor of Pediatrics, Emeritus*
 SAM W. CARNEY, JR., M.D., *Assistant Clinical Professor of Pediatrics*
 NORMAN M. CASSELL, M.D., *Assistant Clinical Professor of Pediatrics*
 ERIC MARTIN CHAZEN, M.D., *Assistant Clinical Professor of Pediatrics*
 WILLIAM M. DOAK, M.D., *Assistant Clinical Professor of Pediatrics*
 RAY L. DUBUISSON, M.D., *Assistant Clinical Professor of Pediatrics*
 JOHN P. FIELDS, M.D., *Assistant Clinical Professor of Pediatrics*
 RALPH GREENBAUM, M.D., *Assistant Clinical Professor of Pediatrics*
 CHARLES HIRSHBERG, M.D., *Assistant Clinical Professor of Pediatrics*

LEONARD J. KOENIG, M.D., *Assistant Clinical Professor of Pediatrics*
JOSEPH F. LENTZ, M.D., *Assistant Clinical Professor of Pediatrics*
OLUSOLA A. OYEMADE, M.B., Ch.B., *Assistant Clinical Professor of Pediatrics*
JAMES S. PRICE, M.D., *Assistant Clinical Professor of Pediatrics*
DAN S. SANDERS, JR., M.D., *Assistant Clinical Professor of Pediatrics*
CHARLES GORDON RENNICK SELL, M.B., B.Chir., *Assistant Clinical Professor of Pediatrics*

JOSEPH STERANKA, M.D., *Assistant Clinical Professor of Pediatrics*
RICHARD P. TABER, M.D., *Assistant Clinical Professor of Pediatrics*
DAVID D. THOMBS, M.D., *Assistant Clinical Professor of Pediatrics*
DOROTHY JEAN TURNER, M.D., *Assistant Clinical Professor of Pediatrics*
WILLIAM BROWN WADLINGTON, M.D., *Assistant Clinical Professor of Pediatrics*
ETHEL WALKER, M.D., *Assistant Clinical Professor of Pediatrics*
ARVILLE V. WHEELER, M.D., *Assistant Clinical Professor of Pediatrics*
ERLE E. WILKINSON, M.D., *Assistant Clinical Professor of Pediatrics*
EUGENE A. DOLANSKI, M.D., *Instructor in Pediatrics*
NANCIE R. SCHWEIKERT, M.D., *Instructor in Pediatrics*
LINDSAY K. BISHOP, M.D., *Clinical Instructor in Pediatrics*
ROBERT EDWARD BURR, M.D., *Clinical Instructor in Pediatrics*
E. THOMAS CARNEY, D.D.S., *Clinical Instructor in Pediatrics*
PAUL C. W. GOMEZ, M.B., B.S., *Clinical Instructor in Pediatrics*
ROBERT H. HUTCHESON, JR., M.D., M.P.H., *Clinical Instructor in Pediatrics*
WILLIAM C. KING, D.M.D., *Clinical Instructor in Pediatrics*
SOL L. LOWENSTEIN, M.D., *Clinical Instructor in Pediatrics, Emeritus*
DEWEY G. NEMEC, M.D., *Clinical Instructor in Pediatrics*
L. WILLARD PARKER, D.M.D., *Clinical Instructor in Pediatrics*
HARVEY SPARK, M.D., *Clinical Instructor in Pediatrics*
JACK TURNER SWAN, M.D., M.P.H., *Clinical Instructor in Pediatrics*
G. WALLACE WOOD, M.D., *Clinical Instructor in Pediatrics*
THOMAS B. ZERFOSS, JR., M.D., *Clinical Instructor in Pediatrics*
J. LARS VICTORIN, M.D., *Visiting Lecturer in Pediatrics (Research)*
ROBERT B. COTTON, M.D., *Research Associate in Pediatrics*
LINDA J. DUKE, Ph.D., *Research Associate in Pediatrics*
ALEXANDER TSIANTOS, M.D., *Research Associate in Pediatrics*

501. METHODS IN CLINICAL SCIENCE: INTRODUCTION TO PEDIATRICS. As an integral part of the course Methods in Clinical Science, a series of lectures will be given in the second year. These lectures will prepare the students for their clinical experiences in the third year. Additionally, students are rotated through the department in small tutorial groups. SPRING.
Dr. Karzon and Staff.

502. CLINICAL CLERKSHIP. One-eighth of the third-year class is assigned to the pediatric wards for five weeks. Students participate in all phases of diagnosis and treatment of a wide variety of illnesses of children and infants. A portion of the clerkship includes work with selected infants in the premature and intensive care nurseries. Bedside teaching rounds on the wards and nursery and seminars are held daily. *Dr. Karzon and Staff.*

503. PEDIATRIC OUTPATIENT SERVICE. During the senior year each student spends eighteen half-days in the pediatric outpatient service at Vanderbilt and Nashville General Hospitals. Students have major responsibility for

initial evaluation and management of acute and chronic childhood disease. Supervision is provided by full-time and voluntary faculty. *Dr. Karzon.*

504. CLINICAL LECTURES AND DEMONSTRATIONS. A series of eighteen amphitheater clinics held biweekly throughout the year. Cases and discussions on diseases of importance in pediatrics are presented. *Dr. Karzon.*

521. SIGNPOSTS OF HUMAN GROWTH AND DEVELOPMENT. First year. A series of demonstrations on growth of children using ward and clinic material. Deviations from the normal growth pattern and congenital abnormalities will be shown. One hour per week, third and fourth six weeks. *Dr. Karzon and Staff.*

523. FUNDAMENTALS OF HUMAN NUTRITION (328). Second and Fourth years. Lectures and assigned readings covering the biochemical basis of nutritional disorders and the application of this information to prevention and management of human disease. Course arranged in conjunction with Nutrition Rounds Biochemistry-530 which will illustrate and amplify the material discussed in the lectures. (Medicine 523, Biochemistry 523) One hour per week. FALL & SPRING. [1] *Dr. Mann and the Staff of the Division of Nutrition.*

524. PEDIATRIC PATHOPHYSIOLOGY. Second and Fourth years. Lecture course concerning the special problems of the newborn child, alterations in normal physiology produced by various disease states, cardiac diseases, immune deficiency states, and metabolic disorders. One hour per week, eighteen weeks. FALL. *Dr. Stahlman, Dr. Karzon, and Staff.*

525. PEDIATRIC SURGICAL PROBLEMS. Fourth year. A combined course offered by the departments of Surgery and Pediatrics utilizing patient demonstrations and didactic lectures. Diagnosis, preoperative preparation, surgery, and postoperative care will be stressed. Course may be elected for units of six weeks to all year. (Surgery 525) One hour per week. FALL & SPRING. *Dr. Karzon, Dr. Thombs, Dr. O'Neill and Dr. Holcomb.*

526. PATHOGENETIC MECHANISMS IN CLINICAL INFECTIOUS DISEASE. Second and Fourth years. This course will deal with the pathophysiology of infectious diseases and will examine the mechanisms by which microbial agents (virus, bacteria and fungi) interact with the human host. It is designed primarily for second year students as a sequel to the required course in Microbiology, but fourth-year students will be welcome. This course will not duplicate material presented in the fourth-year elective, Topics in Infectious Diseases. Departments of Pediatrics and Medicine. One hour per week. SPRING. *Dr. Karzon, Dr. Koenig and Staff.*

527. PEDIATRIC WARD ROUNDS. Second year. Diagnostic and therapeutic problems on pediatric ward will be presented and discussed. Emphasis will be placed on pathophysiology and physical diagnosis. Pediatrics 524 recommended as a prerequisite but not required. Fourth, fifth and sixth six weeks. One hour per week. *Dr. Karzon and Staff.*

528.1. CLINICAL BIOCHEMISTRY I. Second and Fourth years. A course correlating basic biochemical principles with the pathophysiology of diseased states. Chemical homeostasis is treated through discussions of the metabolic mechanisms for maintaining this state and of the methodology of evaluating it. Illustrative case reports of typical metabolic derangements are reviewed. (Medicine 524.1, Biochemistry 528.1) One hour per week. FALL. *Dr. Willard R. Faulkner (Associate Professor of Biochemistry), and Dr. van Eys.*

528.2. CLINICAL BIOCHEMISTRY II. Second and Fourth years. Attention is directed to the altered intermediary metabolism of inherited disorders and to the development and changes in metabolic pathways during infancy and childhood. The material is presented throughout the course by lectures, seminars, assigned reading, and selected patient reviewers. (Medicine 524.2, Biochemistry 528.2) One hour per week. SPRING. *Dr. van Eys and Dr. Faulkner.*

529. INTRODUCTION TO CLINICAL PEDIATRICS. First Year. This course is offered to interested first year medical students, and nursing students in their second to fourth years. The goals of the course will be to acquaint these students with the approach to the pediatric patient with emphasis on growth and development and basic physical diagnosis. The use of screening procedures will be discussed as they relate to each organ system discussed. Other goals are: (a) to improve communication on the ward between nursing students, nurses, and physicians; (b) to prepare students for possible summer projects which relate to health care delivery problems; (c) to interest nursing students in nurse specialist programs. The course will consist of lectures from 6-9 p.m. Thursday evenings and clinical experience (minimum 2 hrs per week) at Nashville day care centers in conjunction with elective courses presently in the medical school curriculum. Three hours per week plus minimum of two hours at Nashville day care centers. SPRING. *Dr. Karz and Staff.*

530. NUTRITION ROUNDS. Fourth year. Clinical material demonstrating nutritional problems in causation or management of disease will be presented by the students. The material will illustrate the subjects discussed in the lecture series Pediatrics 523. Students may register for either semester although both are recommended. It is desirable that the registrants have completed one semester or are registered in or audit Pediatrics 523 concurrently. (Biochemistry 530 and Medicine 530). One hour every other week. FALL & SPRING. *Dr. Carter.*

531. HUMAN DEVELOPMENT: FUNDAMENTALS. First year. The course will include concepts of early child development, behavioral observational skills and the importance and method of the maternal interview. The opportunity will be available for working with infants and mothers in the Pediatric Clinic. Two hours per week, six-week units. *Dr. Wilson.*

532. METHODS OF DELIVERING PEDIATRIC MEDICAL CARE IN RURAL AREA. First, Second, Third, and Fourth years. In planned sessions under faculty supervision, working visits will be made to rural areas near Nashville where

opportunities will be available to participate in the activities of health personnel providing child care in clinic and home settings. Three hours per week, six-week units. *Dr. Karzon, Dr. Christie, and Staff.*

33. URBAN HEALTH PROBLEMS. First and Fourth years. Opportunity is provided to study and participate in problems of delivery of health care to the urban poor of Davidson County. Firsthand observation of the problems of Health Care Delivery Services (e.g., Medicare, Medicaid, food supplementation, welfare, availability of services) will be explored. Students will be encouraged to be active participants in the initiation and implementation of their own programs. Three hours per week, six-week units. *Dr. Karzon, Dr. Christie, and Staff.*

543. PEDIATRIC SPECIALITY CLINICS. Fourth year. Experience in the following special clinics is available to the student: Hematology, Human Development, Allergy, Cardiology, Neurology, Pulmonary, Endocrinology, Renal. Three hours per week, six-week units. *Dr. Karzon and Staff.*

61. CLERKSHIP IN PEDIATRICS AT VUH. Fourth year. The student shall serve as extern on the wards at Vanderbilt University Hospital. He shall have all associated responsibilities, including attendance at conferences. Full time, six-week units. *Dr. Karzon.*

62. CLERKSHIP IN PEDIATRICS AT NGH. Fourth year. The student shall act as extern on the ward, nursery, outpatient clinic and emergency room. He shall have all associated responsibilities including attendance at conferences at Nashville General Hospital and Vanderbilt University Hospital. Full time, six-week units. *Dr. Donald and Dr. Karzon.*

63.1. CLERKSHIP, SUMMER PEDIATRICS IV. Fourth year. The student will serve as an extern on the wards at Vanderbilt University Hospital or Nashville General Hospital. He shall have all associated responsibilities including attendance at all departmental teaching conferences. Registration only by permission of the departmental chairman. This clerkship may be substituted for credit for a fourth-year pediatric clerkship. Full time, six-week units. *Dr. Karzon and Staff.*

63.2. CLERKSHIP, SUMMER PEDIATRICS III. Third year. The student will act as clinical clerk on the wards and nursery at Vanderbilt University Hospital. He will work with selected patients under the supervision of housestaff and attending physicians and will attend all departmental teaching rounds and conferences. This clerkship may substitute for the required third year pediatric clerkship. Registration only by permission of the department chairman. Full time, six-week units. *Dr. Karzon and Staff.*

65. CLERKSHIP IN CLINICAL PHARMACOLOGY. Fourth year. During the clerkship the students will evaluate patients with general problems in drug therapy, drug toxicity, and drug interactions in both adults and children. In addition, he will participate in the diagnosis and pharmacologic therapy of patients with hypertension. He will attend the hypertension clinic and the seminars and rounds of the Clinical Pharmacology Division. (Medicine

571 and Pharmacology 561). Full time, six-week units. *Dr. Nies, Dr. Wilson, Dr. Oates, and Staff.*

566. CLERKSHIP IN RURAL HEALTH. Fourth year. The clerkship provides the opportunity to study and participate in health care in rural areas, including Appalachia. Opportunity will be offered to work with the people in rural poverty areas and the facilities and personnel concerned with health care. Students will be encouraged to be active participants in the initiation and implementation of their own programs. Full time, six-week units. *Dr. Karzon, Dr. Christie, and Staff.*

567. CLERKSHIP, AMBULATORY PEDIATRICS. Fourth year. General pediatrics and pediatric subspecialties, including Pediatric Acute Care (Emergency) Clinic. Full time, six-week units. (Limited to one student.) *Dr. Donald and Dr. Gomez.*

568. CLERKSHIP, PEDIATRIC CARDIOLOGY. Fourth year. This course will provide an intensive learning experience in heart disease in infancy and childhood. The scope of the course will include history taking, physical examination, and special techniques including electrocardiography, phonocardiography, vectrocardiography, cardiac catheterization analysis, and the use of radionuclides in diagnosis of heart disease. Full time, six-week units. *Dr. Graham and Dr. Atwood.*

569. CLERKSHIP, PEDIATRIC ENDOCRINOLOGY. Fourth year. Opportunity for clerkship in Pediatric Endocrine Clinic, involvement in inpatient endocrine problems in pediatrics and in internal medicine, attendance at rounds. Laboratory experiences in hormone assay and specific projects involving insulin release in different endocrine states and the role of GH, FSH, LH in growth and development. Full time, six-week units. *Dr. Burr.*

581. RESEARCH FELLOWSHIP IN NEWBORN PHYSIOLOGY. Fourth year. Fellowship offering a concentrated experience in the newborn nursery and the laboratory. For students with special interest in the field of newborn physiology. Full time for twelve or eighteen weeks. *Dr. Stahlman.*

582. RESEARCH FELLOWSHIP IN PEDIATRIC INFECTIOUS DISEASE. Fourth year. Fellowship on special problems in infectious disease in pediatrics. Special techniques, including immunofluorescent techniques, clinical microbiology, virology, immunology, and epidemiology may be included. Full time for six to eighteen weeks. FALL & SPRING. *Dr. Karzon, Dr. Sell and Dr. Fleet.*

583. RESEARCH FELLOWSHIP IN PEDIATRIC HEMATOLOGY. Fourth year. Fellowship offering first hand experience in the laboratory approach to pediatric hematologic problems. The student will participate in ongoing laboratory problems, teaching seminars, journal clubs, and clinical rounds. Full time for six to twelve weeks. FALL & SPRING. *Dr. van Eys.*

584. RESEARCH FELLOWSHIP IN PEDIATRIC PHARMACOLOGY. Fourth year. Fellowship on selected aspects of drug metabolism in the maturing animal.

as a model system. Special techniques and laboratory work in biochemical pharmacology. Six to eighteen weeks. *Dr. Wilson.*

85. RESEARCH FELLOWSHIP IN PEDIATRIC CARDIOLOGY. First, Second, Third, and Fourth years. Research opportunities in ongoing projects to cardiovascular physiology and pharmacology will be provided. These projects will be in the areas of myocardial performance, and cardiovascular developmental pharmacology. Current projects include right ventricular volumes and contractibility in congenital heart disease; non-invasive diagnostic methods in the diagnosis of congenital and acquired heart disease in children; effects of cardioactive drugs on neonatal (animal) muscle; distribution and metabolism of digitalis in full term and premature infants; postnatal development of catecholamine function in the mammalian heart; delineation of the digitalis receptor in the developing animal. Full time for three to twelve months with prior approval of instructor. *Dr. Graham and Dr. Arwood.*

Pharmacology

ALLAN D. BASS, M.D., *Professor of Pharmacology and Chairman of the Department*

MILTON T. BUSH, Ph.D., *Professor of Pharmacology*

GRAHAM CHEN, Sc.D., *Visiting Professor of Pharmacology*

WOLF-DIETRICH DETTBARN, M.D., *Professor of Pharmacology*

MURRAY HEIMBERG, Ph.D., M.D., *Professor of Pharmacology*

JOHN A. OATES, M.D., *Professor of Pharmacology*

B. V. RAMA SASTRY, D.Sc., Ph.D., *Professor of Pharmacology*

FRIDOLIN SULSER, M.D., *Professor of Pharmacology*

JOHN E. CHAPMAN, M.D., *Associate Professor of Pharmacology*

JOHN M. DAVIS, M.D., *Associate Professor of Pharmacology*

JAMES V. DINGELL, Ph.D., *Associate Professor of Pharmacology*

ERWIN J. LANDON, M.D., Ph.D., *Associate Professor of Pharmacology*

ANDREW M. MICHELAKIS, Ph.D., M.D., *Associate Professor of Pharmacology*

ALAN S. NIES, M.D., *Associate Professor of Pharmacology*

CHARLES B. PITTINGER, M.D., *Associate Professor of Pharmacology*

OAKLEY S. RAY, Ph.D., *Associate Professor of Pharmacology*

DAVID G. SHAND, M.B., B.S., *Associate Professor of Pharmacology*

JOHN T. WILSON, M.D., *Associate Professor of Pharmacology*

ELAINE SANDERS BUSH, Ph.D., *Assistant Professor of Pharmacology*

DANIEL M. BUXBAUM, Ph.D., *Assistant Professor of Pharmacology*


RAYMOND D. HARBISON, Ph.D., *Assistant Professor of Pharmacology*

DAVID JANOWSKY, M.D., *Assistant Professor of Pharmacology*

HOWARD A. KLAUSNER, Ph.D., *Assistant Professor of Pharmacology*

DENNIS E. SCHMIDT, Ph.D., *Assistant Professor of Pharmacology*

J. THROCK WATSON, Ph.D., *Assistant Professor of Pharmacology*
 HENRY G. WILCOX, Ph.D., *Assistant Professor of Pharmacology*
 GRANT R. WILKINSON, Ph.D., *Assistant Professor of Pharmacology*
 GERALD F. ATWOOD, M.D., *Instructor in Pharmacology*
 FRED C. FALKNER, Ph.D., *Instructor in Pharmacology*
 DAVID F. FITZPATRICK, Ph.D., *Instructor in Pharmacology*
 JURGEN FROLICH, M.D., *Instructor in Pharmacology*
 GEORGE HENDERSON, *Instructor in Pharmacology*
 H. JOSEPH SEKERKE, Ph.D., *Instructor in Pharmacology*
 BRIAN SWEETMAN, Ph.D., *Instructor in Pharmacology*
 JOHN D. ALVIN, Ph.D., *Research Associate in Pharmacology*
 KENNETH AULSEBROOK, Ph.D., *Research Associate in Pharmacology*
 ROBERT C. BOERTH, M.D., Ph.D., *Research Associate in Pharmacology*
 ROBERT A. BRANCH, M.B., Ch.B., *Research Associate in Pharmacology*
 LUCAS CHANG, Ph.D., *Research Associate in Pharmacology*
 MATTHEW E. CONOLLY, M.B., B.S., *Research Associate in Pharmacology*
 ABRAHAM DANON, M.D., Ph.D., *Research Associate in Pharmacology*
 J. H. HENGSTMANN, M.D., *Research Associate in Pharmacology*
 LEON JELLETT, M.D., *Research Associate in Pharmacology*
 MICHAEL LASKOWSKI, Ph.D., *Research Associate in Pharmacology*
 JOHN McEWEN, M.B., Ch.B., *Research Associate in Pharmacology*
 C. SOLER-ARGILAGA, M.D., *Research Associate in Pharmacology*
 THOMAS W. WILSON, M.D., *Research Associate in Pharmacology*
 HISAYOSHI YOSHIDA, M.D., D.M.Sc., *Research Associate in Pharmacology*
 JAMES YOUNG, M.D., *Research Associate in Pharmacology*

 The Department of Pharmacology offers courses leading to the master's and Ph.D. degrees. Courses described below which are numbered in the 300 series are offered primarily for that program but are open to medical students by special arrangement.

501. PHARMACOLOGY. (321) Lectures in which the reaction of the human organism to chemical substances is taken up in a systematic manner, and typical reactions demonstrated by animal experiments. Laboratory exercises in which the student has an opportunity to become familiar with pharmacological techniques. Five lectures a week and nine hours of laboratory work a week. SPRING. [8] *Dr. Bass and Staff.*

522. CLINICAL PHARMACOLOGY. Fourth year. Lectures and clinical seminars on the pharmacological basis of therapeutics and on the clinical use and evaluation of drugs. (Medicine 526) One hour per week. FALL. *Dr. Oates.*

523. PHARMACOLOGY OF THE PERIPHERAL NERVOUS SYSTEM. Second, Third, and Fourth years. The course will cover the sequence of cellular reactions that occur during normal function of peripheral autonomic and somatic

nerves and their respective end organs (smooth muscle, striated muscle, cardiac muscle, and glands). The topics to be discussed will include: dynamic and molecular aspects of neurohormone-tissue receptor interactions, changes in membrane permeability and polarization, excitation-secretion coupling, and excitation-contracting coupling. Major emphasis will also be placed on the actions of pharmacological agents that modify these cellular reactions. Prerequisite: Physiology 521. Four lecture hours per week. FALL. *Dr. Sastry.*

525. PHARMACOLOGY OF ANTICANCER AND ANTIMICROBIAL AGENTS. The relationship between the biology of the mammalian and microbial cell to the selective action of chemotherapeutic agents will be discussed with emphasis placed on the biological basis of chemotherapy. As fundamental background the first part of the course will survey the chemistry and biology of nucleic acids and the concept of antimetabolites to nucleic acids. The pharmacology of representative chemotherapeutic agents will then be presented in detail along with consideration of special problems of resistance and toxicity. SPRING. [2] *Dr. Landon.* (Not offered 1972/73.)

526. DRUG METABOLISM. Second and Fourth years. The pharmacological implications of drug metabolism will be emphasized. The enzymatic mechanisms of drug biotransformations and techniques for their investigation will be discussed. Prerequisite: Biochemistry 501. SPRING. *Dr. Dingell.* (Not offered 1972/73.)

527. PSYCHOPHARMACOLOGY. Second and Fourth years. Four separate but related courses will emphasize the neurological, pharmacological, neurophysiological, neurochemical, and behavioral aspects of psychotropic drugs. Besides presenting current theories on the mode of action of psychotherapeutic drugs, the use of these agents as tools to investigate brain function will also be considered. The significance of available biochemical pharmacological, and behavioral data, with regard to possible psychopathological processes in man, will be critically reviewed. Prerequisite: Anatomy 335. Individual courses offered include:

1. PHARMACOLOGY OF PSYCHOTROPIC DRUGS. Prerequisite: 521, and consent of instructor. SPRING. *Dr. Bush and Staff.*
2. NEUROCHEMICAL BASIS OF BEHAVIOR. SPRING. (Not offered 1972/73.)
3. BEHAVIORAL PHARMACOLOGY AND BEHAVIORAL CONTROL TECHNIQUES. Prerequisite: consent of instructor. FALL. *Dr. Ray and Dr. Barnett.*
4. NEUROPHYSIOLOGY. FALL. (Not offered 1972/73.)

528. ENDOCRINE PHARMACOLOGY. (323-2) Second and Fourth year. Emphasis placed on the mechanism of action of hormones and chemical agents used as substitutes for physiologically occurring hormones. Drugs used to modify action, synthesis, and release of natural hormones will be discussed. Two hours per week. FALL. [2] *Dr. Heimberg.* (Not offered 1972/73.)

530. PHARMACOLOGY OF ANESTHESIA. Fourth year. The objectives of this course are to consider: a) current concepts of general and local anesthetic mechanisms of action in terms of physico-chemical and pharmacologic

principles of absorption, distribution, biotransformation, and elimination; b) toxicologic phenomena such as hepatotoxicity of fluorinated agents, nephrotoxicity of methoxyflurane, convulsive activity, malignant hyperthermia, antibiotic-induced paralysis, oxygen toxicity, and other hazards of hyperbaric anesthesia, barbiturates and porphyria, ionic calcium disturbances, etc. Anesthesiology 521. One hour per week. FALL. *Dr. Pittinger.*

561. CLERKSHIP IN CLINICAL PHARMACOLOGY. Fourth year. During the clerkship the students will evaluate patients with general problems in drug therapy, drug toxicity, and drug interactions. In addition, he will participate in the diagnosis and pharmacologic therapy of patients with hypertension. He will attend the hypertension clinic and the seminars and rounds of the Clinical Pharmacology Division. (Medicine 571 and Pediatrics 565). Full time, six-week units. *Dr. Nies, Dr. Wilson, Dr. Oates, and Staff.*

581. RESEARCH FELLOWSHIP IN PHARMACOLOGY. Fourth year. The various areas of pharmacology including clinical pharmacology. Full time for twelve or eighteen weeks. FALL & SPRING. *Staff.*

598. SEMINAR IN NEUROBIOLOGY. (331a-331b) An interdepartmental seminar involving the departments of Pharmacology, Psychology, Psychiatry, and Anatomy. The topics covered relate to etiology of mental illness, behavioral psychology, and mechanism of action of drugs which are employed both as psychomimetic agents and psychotherapeutic agents. One hour per week. FALL & SPRING. [I-I] *Staff.* (Not offered 1972/73.)

599. SEMINAR IN PHARMACOLOGY. (330a-330b) Fourth year. Admission to course by arrangement. One hour per week. FALL & SPRING. [I-I] *Staff.*

399. RESEARCH. Experimental and theoretical aspects of the mechanism of action of chemical substances on cell, tissue, and organ function, especially in the following areas: cardiac pharmacology, cancer chemotherapy, antimetabolites as chemotherapeutic agents, metabolic fate of narcotic and tranquilizing drugs, design and synthesis of new molecules as possible chemotherapeutic substances. FALL & SPRING. Hours and credit by arrangement. *Staff.*

Physiology

CHARLES RAWLINSON PARK, M.D., *Professor of Physiology and Chairman of the Department*

EARL W. SUTHERLAND, JR., M.D., *Distinguished Professor of Physiology; Career Investigator, American Heart Association*

JOHN H. EXTON, M.B., Ch.B., Ph.D., *Professor of Physiology; Investigator Howard Hughes Medical Institute*

JOEL G. HARDMAN, Ph.D., *Professor of Physiology*

H. C. MENG, M.D., Ph.D., *Professor of Physiology*

- JANE H. PARK, Ph.D., *Professor of Physiology*
 ROBERT L. POST, M.D., *Professor of Physiology*
 OSCAR B. CROFFORD, JR., M.D., *Associate Professor of Physiology*
 R. J. HO, Ph.D., *Associate Professor of Physiology*
 TETSURO KONO, Ph.D., *Associate Professor of Physiology*
 DAVID M. REGEN, Ph.D., *Associate Professor of Physiology*
 EDWARD J. BATTERSBY, M.D., *Assistant Professor of Physiology*
 IAN M. BURR, M.D., *Assistant Professor of Physiology; Investigator, Howard Hughes Medical Institute*
 J. D. CORBIN, Ph.D., *Assistant Professor of Physiology; Investigator, Howard Hughes Medical Institute*
 L. WILLIAM McLAIN, JR., M.D., *Assistant Professor of Physiology*
 ANTHONY R. MEANS, Ph.D., *Assistant Professor of Physiology*
 SIMON PILKIS, Ph.D., *Assistant Professor of Physiology; Investigator, Howard Hughes Medical Institute*
 PHILIP W. FELTS, M.D., *Instructor in Physiology*
 ROGER A. JOHNSON, Ph.D., *Instructor of Physiology*
 MICHAEL CALDWELL, M.D., *Research Associate in Physiology*
 TIMOTHY M. CHAN, Ph.D., *Research Associate in Physiology*
 THOMAS H. CLAUS, Ph.D., *Research Associate in Physiology*
 DAVID L. GARBERS, Ph.D., *Research Associate in Physiology*
 EDWARD HILL, *Research Associate in Physiology*
 STANLEY KEELY, Ph.D., *Research Associate in Physiology; Visiting Investigator, Howard Hughes Medical Institute*
 MARGARET S. NEBLETT, Ph.D., *Research Associate in Physiology*
 MICHIOHIKO OGUCHI, M.D., *Research Associate in Physiology*
 ALBERT OTTEN, Dr. Med., *Research Associate in Physiology*
 GUENTER SCHULTZ, M.D., *Research Associate in Physiology*
 THOMAS SODERLING, Ph.D., *Research Associate in Physiology*
 CHARLES A. SUTHERLAND, Ph.D., *Research Associate in Physiology*
 KAZUYA TANIGUCHI, Ph.D., *Research Associate in Physiology*
 GOTARO TODA, M.D., *Research Associate in Physiology*
 HEINRICH WASNER, Ph.D., *Research Associate in Physiology*

The Department of Physiology offers courses leading to the Ph.D. degree. Courses described below which are numbered in the 300 series are offered primarily for that program but are open to medical students by special arrangement.

301. PHYSIOLOGY. (321) This course consists of lectures, conferences, and laboratory work, designed to cover the essentials in physiology for first year medical students. It or its equivalent is also required of all graduate students majoring in pyhsiology. SPRING. [8] *Dr. C. Park.*

321. TOPICS IN GENERAL PHYSIOLOGY. First year. The course will start with the basic cellular processes of accumulation, membrane transport,

bioelectric potentials, contraction, and secretion from the point of view of elementary applied physical chemistry. The discussion will extend to the operation of these processes in the function of erythrocytes, nerves, sensory receptors, muscles, glands, and excretory organs. When applicable the mechanism of the hormonal control of these cells will be included. One hour per week. SPRING. *Dr. Post.*

522. LECTURES ON RESEARCH PROGRESS IN MOLECULAR BIOLOGY. (350a-350b) Second and Fourth years. A course co-sponsored by the Departments of Microbiology, Physiology, and Molecular Biology, in which members of these and other departments present their own research activities in relation to current problems in their field. First semester: biophysical aspects will be stressed, including the application of modern physicochemical techniques to studies of macromolecules and enzyme action. Second semester: physiological aspects will be stressed, including the molecular basis of the function of specialized tissues, and the mechanisms for metabolic control of gene action and multi-enzyme systems. (Microbiology 522) First and second semesters may be taken independently. Two hours per week. FALL & SPRING. [2-2]

529. LIPID CHEMISTRY AND METABOLISM. (329). First, Second, and Fourth years. Lectures, discussions, and assigned readings in the chemistry, intestinal absorption, transport, and metabolism of lipids. Emphasis will be placed on the normal regulation of these processes and their alteration in pathological conditions. Prerequisite: a general course in biochemistry. (Physiology 529). One or two hours per week. SPRING. *Dr. Coniglio and Dr. Meng.*

581. RESEARCH FELLOWSHIP IN PHYSIOLOGY. Fourth year. Opportunities will be available in the fields of membrane transport and intermediary metabolism and in the hormonal control of these processes. Full time for twelve or eighteen weeks. *Dr. C. Park.*

582. ADVANCED PHYSIOLOGY. (323) Second and Fourth years. This course deals with special topics in physiology and consists of laboratory work and conferences. Prerequisite: 501 or equivalent. Hours and credit by arrangement. FALL & SPRING. *Dr. C. Park and Staff.*

322. PHYSIOLOGICAL TECHNIQUES AND PREPARATIONS. A course designed for advanced students. Hours and credit by arrangement. *Dr. C. Park.*

399. RESEARCH. *Staff.*

Preventive Medicine & Public Health

ROBERT W. QUINN, M.D., C.M., *Professor of Preventive and Social Medicine and Chairman of the Department of Preventive Medicine and Public Health*

RICHARD O. CANNON, M.D., *Professor of Hospital Administration*

LESLIE A. FALK, D.Phil., M.D., *Clinical Professor of Preventive Medicine and Public Health*

- ALVIN E. KELLER, M.D., *Clinical Professor of Preventive Medicine and Public Health, Emeritus*
- LEWIS B. LEFKOWITZ, JR., M.D., *Associate Professor of Preventive Medicine and Public Health*
- EUGENE W. FOWINKLE, M.D., M.P.H., *Associate Clinical Professor of Preventive Medicine and Public Health*
- HUGH ALFRED DAVIES, Ph.D., *Assistant Professor of Preventive Medicine*
- ANNE SWEENEY, M.A., *Assistant Professor of Medical Social Work*
- W. CARTER WILLIAMS, M.D., M.P.H., *Assistant Professor of Preventive Medicine and Public Health, Emeritus*
- JOSEPH M. BISTOWISH, M.D., M.P.H., *Assistant Clinical Professor of Preventive Medicine and Public Health*
- RUTH M. HAGSTROM, M.D., M.P.H., *Assistant Clinical Professor of Preventive Medicine and Public Health*
- G. DUDLEY NELSON, M.D., M.P.H.&T.M., *Assistant Clinical Professor of Preventive Medicine and Public Health*
- C. B. TUCKER, M.D., M.P.H., *Assistant Clinical Professor of Preventive Medicine and Public Health, Emeritus*
- MICHAEL ZUBKOFF, Ph.D., *Assistant Clinical Professor of Preventive Medicine*
- THERESA SCOTT CARTER, M.S.S.W., *Instructor in Medical Social Work*
- DOROTHY JEAN TURNER, M.D., *Instructor in Preventive Medicine*
- WILDER WALTON HUBBARD, M.D., *Clinical Instructor in Preventive Medicine and Public Health*
- CON O. T. BALL, *Research Associate in Preventive Medicine and Public Health*
- PANUEL NYE LOWRY, M.A., *Research Associate in Preventive Medicine and Public Health*

BIostatISTICS

- CHARLES F. FEDERSPIEL, Ph.D., *Associate Professor of Biostatistics and Director of the Division*
- WILLIAM K. VAUGHN, Ph.D., *Assistant Professor of Biostatistics*
- ROGER VANDER ZWAAG, Ph.D., *Assistant Professor of Biostatistics*
- HOMER A. SPRAGUE, M.P.H., *Instructor in Biostatistics*
- AILEEN EZELL, M.P.H., *Clinical Instructor in Biostatistics*
- YAW CHIN HO, Ph.D., *Assistant Clinical Professor of Biostatistics*

502. EPIDEMIOLOGY: GENERAL PRINCIPLES AND MEDICAL STATISTICS. Before classes begin in the fall, a memo will be circulated to the students mentioning that a programmed text in medical statistics will be available for them to study at their convenience during the first four weeks of the semester. On the first four Tuesday afternoons (2-4 p.m.) of the semester a series of lectures on health services will be presented. At the end of the first four weeks an examination will be given covering the material in medical statistics utilizing the notation and covering the material of the programmed text. Those who get a passing grade on this examination will be excused from the formal sessions. Those who do not pass will be re-

quired to attend the lectures during the succeeding seven weeks of the fall semester. The lectures in medical statistics given during the second seven weeks will be an intensive coverage and review of material discussed in the programmed text. At the twelfth session then, any students who did not pass the pre-course examination in medical statistics will be required to take the examination. During the final six weeks of the semester the material formally presented in epidemiology (PM 501) will be covered. An attempt will be made during the last six weeks to illustrate how the basic design of studies and the technical tools of biostatistics play an important role in epidemiologic research studies. Two hours per week. FALL. *Dr. Federspiel, Dr. Quinn, and Dr. Lefkowitz.*

503. PRINCIPLES OF PUBLIC HEALTH AND PREVENTIVE MEDICINE. A course of lectures intended to provide the second year student with the preventive point of view in the practice of medicine, to make him aware of the major health problems and of the changing nature of major health problems, and to acquaint him with the organized forces working for the advancement of public health. The following subjects are among those considered: epidemiology, etiology, modes of transmission and methods of prevention and control of communicable diseases; vital statistics; maternal and infant hygiene; the venereal disease problem; the more common occupational diseases; civilian defense and disaster control; school hygiene; principles of housing; water supplies and sewage disposal, and population problems. Clinical preventive medicine is emphasized in relation to cardiovascular diseases; diabetes, cancer, and the problems of geriatrics are presented. Stress is placed on principles in public health administration at international, national, state, and local levels and their relation to the practitioner of medicine. Twenty-one hours. FALL & SPRING. *Dr. Quinn and Staff.*

521. MEDICINE IN FAMILIES AND THE COMMUNITY. First year. Three afternoons are spent in discussion-seminars on the relevance of the practice of preventive medicine to continuing and comprehensive care. Medical care is emphasized from the point of view of individualized consideration of patients for the maintenance of good health and rehabilitation from ill health, taking account of family factors and general community environment. Comprehensive care means health promotion, prevention of disease through immunization and health education, maternal and infant health guidance and periodic health evaluation; early diagnosis and treatment, disability limitation, and rehabilitation. Case presentations and discussion of families with medical problems illustrating the points above will be made in another three afternoons. Field visits are made to the Bill Wilkerson Hearing and Speech Center, Metropolitan Health Department, Senior Citizens' Center (seminar on aging), and Central State Hospital (geriatrics pavillion). Medical economics and current and passed medical legislation are presented in appropriate detail. (Psychiatry 535) Three hours per week, last twelve weeks. FALL. *Dr. Quinn and Staff and Dr. Stephen C. Cappannari (Associate Professor of Human Behavior).*

522. APPLIED EPIDEMIOLOGY. Second year. The principles of epidemiology are applied to the study of infectious, non-infectious, and chronic diseases and conditions such as accidents. Factors influencing the occurrence and

distribution of various diseases and conditions are studied with the ultimate objective of developing programs for their prevention and control. Application of epidemiologic methods are demonstrated by means of exercises and problems. Tuberculosis, rheumatic fever, syphilis, and chronic bronchitis are taken as examples of chronic diseases which have a profound physical, emotional, economic, and social effect on the patient, his family, and the community. The epidemiology and natural history of these illnesses are considered in detail, with case presentations and discussion of prevention and control. One hour per week. SPRING. *Dr. Quinn and Dr. Lefkowitz.*

523.1. BIOMETRY I. Third and Fourth years. Discussion of the analysis of data arising from laboratory experimentation in the biological and medical sciences. Emphasis is placed on general biological models and inference based on analysis of variance techniques. Particular attention is given to methods of multiple comparisons, the single degree of freedom, and the assumptions underlying analysis of variance. Three hours per week. FALL. *Dr. Federspiel.*

523.2. BIOMETRY II. Third and Fourth years. Advanced topics and analytical methods for data resulting from biological research. Various experimental designs and their corresponding models and analyses are discussed. Emphasis is placed on multiple regression techniques. Prerequisite: Preventive Medicine 523.1. Three hours per week. SPRING. *Dr. Vander Zwaag*

525. POPULATION PROBLEMS AND FAMILY PLANNING. First, Second, and Fourth years. An introduction to population problems and family planning. It includes the causes of overpopulation and underpopulation; the problems created by overpopulation, in relation to food supply and nutrition, environmental sanitation and education. The biology of human reproduction, adaptation, and selection, sex practices, and population change are considered in as much detail as possible. The course ends with consideration of community and individual methods for limiting family size. (Psychiatry 532) One hour per week, last twelve weeks. FALL. *Dr. Quinn, Dr. Stephen C. Cappannari (Associate Professor of Human Behavior, Department of Psychiatry, and Dr. Robert K. Rhamy (Professor of Urology, Department of Surgery).*

527. CLINICAL TRIALS AND MEDICAL SURVEYS. Third and Fourth years. Design, execution, and analysis of clinical trials; interpretation of results. Observational surveys and experimental trials. Examination and criticism of relevant literature. Two hours per week. SPRING. *Dr. Federspiel.*

528. SAMPLING. Third and Fourth years. Development of sampling methods with emphasis on sample selection from human populations, construction of frames, choice of sampling unit, stratified sampling, subsampling and double-sampling designs, ratio, and regression estimates. Three hours per week. SPRING. *Mr. Sprague.*

529. SAMPLING PROJECT. Third and Fourth years. To be elected concurrently with Sampling. May be carried out in conjunction with other departments, medical school faculty, or local agencies. One hour per week. SPRING. *Staff.*

530. BIOASSAY. Fourth year. Statistical techniques employed in assessing the potency of biologic compounds through the use of living organisms. Prerequisite: Preventive Medicine 523.2 or equivalent. Two hours per week. SPRING. *Dr. Federspiel.*

531. INTERDISCIPLINARY SEMINAR: PROBLEMS IN HEALTH CARE DELIVERY. First, Second, Third, and Fourth years. Students from undergraduate schools and graduate programs in law, sociology, political science, and medicine and other fields are offered an intensive review of the health care delivery system with supervised discussion, readings and lectures on several aspects not usually included in the medical curriculum in detail. Lecturers and panel members are drawn from numerous schools and departments in the University center (including Peabody, Fisk, Meharry) and from the community and beyond. Subject matter centers around health needs, demands for health services, organization of services, problems of current health care systems, innovations in delivery, costs of meeting demands and needs. The opportunity for medical students to broaden their perspective of the health industry is the main purpose of offering this course to them. The Urban and Regional Development Center is the coordinating unit for this series and the Department of Preventive Medicine and Public Health is responsible for the medical student's participation. Two hours per week. SPRING. *Dr. Lefkowitz, and James F. Blumstein (Assistant Professor of Law) and Staff of the Urban and Regional Development Center.*

541. INTRODUCTION TO COMPREHENSIVE MEDICAL CARE. First year. There will be two introductory sessions dealing with student-family relations and the kind of interviewing appropriate for home visits. Each student will be assigned one family from the roster of the Vanderbilt Family Clinic (see Preventive Medicine 542). He will visit this family at its home three times during the semester. He will discuss his visit with clinical advisers, public health nurses, social workers, and classmates. Students completing this course will be offered the opportunity to continue family visits for the remainder of their years at Vanderbilt. Additional assignments will be given as an introduction to community health. Each student will accompany a visiting nurse from the Metropolitan Health Department on a regular visit to a home-bound patient. He will also receive an orientation to the Family Planning Service of Metropolitan Nashville and observe a family planning clinic in operation. Two hours per week. SPRING. *Dr. Quinn, Dr. Lefkowitz, Dr. Turner, Dr. James W. Johnson (Associate Clinical Professor of Obstetrics and Gynecology), and Dr. John E. Chapman (Associate Professor of Pharmacology).*

542. CLINICAL EXPERIENCE IN FAMILY AND COMMUNITY MEDICINE. Fourth year. Half-day sessions once a week. Choice or combination of experiences in Vanderbilt Family Clinic—evaluation and planning of medical care for individual members of families. Specific medical and social problems are illustrated. Students will be assigned patients on basis of interest. Vanderbilt Out-Patient Clinics—special interest case follow-up (e.g., chest, diabetes); general community health services—clinical clerks in Metropolitan Health Department Clinics, observers in public health home nursing services, environmental sanitation program, venereal disease contact inves-

tigation, TB control, etc.; conferences with practitioners—selected problems. Participating physicians will use private patients' medical histories to illustrate principles of diagnosis, treatment, and follow-up to serve as a background for a more general discussion of private medical practice in physicians' offices. Conferences can also be arranged with clergymen (pastoral counselors) and other professionals dealing with problems related to medicine and health. Three hours per week, six-week units. *Dr. Quinn, Dr. Lefkowitz, Dr. Johnson, and Dr. Turner.*

Psychiatry

- MARC H. HOLLENDER, M.D., *Professor of Psychiatry and Chairman of the Department*
- HARRY S. ABRAM, M.D., *Professor of Psychiatry*
- HENRY P. COPPOLILLO, M.D., *Professor of Psychiatry*
- JOHN M. DAVIS, M.D., *Professor of Psychiatry*
- CHARLES E. GOSHEN, M.D., *Professor of Psychiatry*
- FRANK H. LUTON, M.D., *Professor of Psychiatry, Emeritus*
- WILLIAM F. ORR, M.D., *Professor of Psychiatry*
- WARREN W. WEBB, Ph.D., *Professor of Psychiatry (Clinical Psychology)*
- CHARLES E. WELLS, M.D., *Professor of Psychiatry*
- OTTO BILLIG, M.D., *Clinical Professor of Psychiatry*
- DAVID BARTON, M.D., *Associate Professor of Psychiatry*
- DAVID JANOWSKY, M.D., *Associate Professor of Psychiatry*
- ROBERT W. ADAMS, JR., M.D., *Associate Clinical Professor of Psychiatry*
- VIRGINIA KIRK, Ph.D., *Associate Clinical Professor of Clinical Psychology, Emerita*
- ROBERT M. REED, M.D., *Associate Clinical Professor of Psychiatry*
- JOSEPH WEINREB, M.D., *Associate Clinical Professor of Psychiatry*
- ROBERT T. CORNEY, M.D., *Assistant Professor of Psychiatry*
- J. EMMETT DOZIER, JR., M.D., *Assistant Professor of Psychiatry*
- JOSEPH FISHBEIN, M.D., *Assistant Professor of Psychiatry*
- FAY M. GASKINS, M.D., *Assistant Professor of Psychiatry*
- ALEX E. HARVEY, M.D., *Assistant Professor of Psychiatry*
- JESSE R. PEEL, M.D., *Assistant Professor of Psychiatry*
- HOWARD B. ROBACK, Ph.D., *Assistant Professor of Psychiatry (Clinical Psychology)*
- SARAH H. SELL, M.D., *Assistant Professor of Pediatrics in Psychiatry*
- MILDRED C. TATE, M.S.S., *Assistant Professor of Psychiatric Social Work*
- RAYMOND W. WAGGONER, JR., M.D., *Assistant Professor of Psychiatry*
- LAVERGNE WILLIAMS, M.S.S.W., *Assistant Professor of Psychiatric Social Work, Emerita*

JOHN A. WILSON, M.D., *Assistant Professor of Psychiatry*
 HENRY B. BRACKIN, JR., M.D., *Assistant Clinical Professor of Psychiatry*
 CHARLES CORBIN, JR., M.D., *Assistant Clinical Professor of Psychiatry*
 H. JAMES CRECRAFT, M.D., *Assistant Clinical Professor of Psychiatry*
 MAURICE HYMAN, M.D., *Assistant Clinical Professor of Psychiatry*
 HAROLD W. JORDAN, M.D., *Assistant Clinical Professor of Psychiatry*
 KENT KYGER, M.D., *Assistant Clinical Professor of Psychiatry*
 ALBERT R. LAWSON, M.D., *Assistant Clinical Professor of Psychiatry*
 LEONARD MORGAN, Ph.D., *Assistant Clinical Professor of Clinical Psychology*
 CHARLES B. SMITH, M.D., *Assistant Clinical Professor of Psychiatry*
 FRANK W. STEVENS, M.D., *Assistant Clinical Professor of Psychiatry*
 WILLIAM R. C. STEWART, M.D., *Assistant Clinical Professor of Psychiatry*
 C. RICHARD TREADWAY, M.D., *Assistant Clinical Professor of Psychiatry*
 NAT T. WINSTON, M.D., *Assistant Clinical Professor of Psychiatry*
 GUY ZIMMERMAN, M.D., *Assistant Clinical Professor of Psychiatry*
 MICHAEL L. CAMPBELL, Ph.D., *Instructor in Clinical Psychology*
 M. KHALED EL-YOUSEF, M.D., *Instructor in Psychiatry*
 ERLINE H. GORE, M.S.N., R.N., *Instructor in Nursing in Psychiatry*
 EDMON L. GREEN, M.D., *Instructor in Psychiatry*
 GEORGE W. HOSKINS, M.S.S.W., *Instructor in Psychiatry (Social Work)*
 SUSAN LEWIS, Ph.D., *Instructor in Psychiatry (Clinical Psychology)*
 JAMES E. MARTIN, M.S.S.W., *Instructor in Psychiatry (Social Work)*
 VERGIL L. METTS III, M.D., *Instructor in Psychiatry*
 JEAN P. SELIG, M.S.S.W., *Instructor in Psychiatry (Social Work)*
 ELIZABETH VORBUSCH, M.D., *Instructor in Psychiatry*
 HANS VORBUSCH, M.D., *Instructor in Psychiatry*
 NELL WEBB, B.S.N., R.N., *Instructor in Nursing in Psychiatry*
 HARVEY ASHER, M.D., *Clinical Instructor in Psychiatry*
 WILLIAM E. COOPWOOD, M.D., *Clinical Instructor in Psychiatry*
 JUDITH M. DAVIS, M.D., *Clinical Instructor in Psychiatry*
 ROBERT N. REYNOLDS, M.D., *Clinical Instructor in Psychiatry*
 LOUIS SAMPSON, M.D., *Clinical Instructor in Psychiatry*
 WILLIAM F. SHERIDAN, JR., M.D., *Clinical Instructor in Psychiatry*
 WILLIAM H. TRAGLE, M.D., *Clinical Instructor in Psychiatry*
 FU' AD G. ASHKAR, M.D., *Lecturer in Psychiatry*
 MARGARET G. EVANS, Ph.D., *Lecturer in Psychoanalysis*

HUMAN BEHAVIOR

STEPHEN C. CAPPANNARI, Ph.D., *Professor of Psychiatry (Anthropology) and Head
 of the Division of Human Behavior*
 JOHN PATE, Ed.D., *Associate Professor of Human Behavior*
 GARY GRENHOLM, M.A., *Assistant Professor of Human Behavior*
 RICHARD BRUEHL, Ph.D., *Assistant Clinical Professor of Human Behavior*

501. PSYCHIATRY. This course acquaints the second year student with the diagnosis, etiology, and treatment of the basic psychiatric disorders. Case presentations are used to demonstrate the major disorders discussed in the lecture series. *Dr. Barton and Staff.*

503. PSYCHIATRY CLERKSHIP. A five-week block of time in which adults with various psychiatric problems are studied in an inpatient and outpatient setting by third-year students. Patient care, ward rounds, conferences, lectures, demonstrations of psychiatric, psychological, and social work practices. *Dr. Hollender and Staff.*

504. PERSONALITY DEVELOPMENT. First Year. This series of lectures and presentations provides a survey of the development and integration of the physical, psychological, and social determinants of personality. The achievement of health and emotional well-being through effective development and adaptation to environmental circumstances is emphasized in an attempt to present health and well-being as a state other than simply the absence of an identifiable disease. The course provides a framework for the consideration of psychosocial factors in the practice of medicine. FALL. *Dr. Coppolillo and Staff.*

523. PSYCHOSOCIAL ASPECTS OF LIFE-THREATENING ILLNESS AND THE TERMINAL STAGES OF LIFE. Third and Fourth years. This course involves patient interviews and presentations of relevant topics followed by group discussion. Along with interviews of patients with life-threatening illness there will be presentations of relevant dimensions of the subject such as the theological dimension, the philosophical dimension, the family dimension, responses of the hospital milieu, grief and bereavement, problems of palliation and survival by machine (hemodialysis) and life threatening illness in children. The course is limited in numbers of students to encourage group discussion. One hour per week. SPRING. *Dr. Barton and Dr. Flexner.*

524. PSYCHIATRY THROUGH LITERATURE. Third and Fourth years. One book (novel, biography, or autobiography), chosen by the class, will be read and discussed in seminar each month. (One evening per month). The personality, life style, defense mechanisms, and psychopathology of the characters and authors will be examined and related to clinical situations. Three hours per month. *Dr. Wells.*

525. UNSOLVED PROBLEMS OF LAW, MEDICINE AND SOCIETY. Fourth year. Seminar concerns the relationship of the physician to the legal and social regulatory processes. Also an inquiry into the extent of physicians' present and possible involvement in treatment and prevention of narcotics addiction, delinquency, criminality, alcoholism, organ transplantation, etc. Faculty from Psychiatry and School of Law. Two hours per week. SPRING. *Dr. Orr and Dr. Cappannari, and Mr. Karl P. Warden (Professor of Law, School of Law).*

526. SPECIAL PROBLEMS IN COMMUNITY MENTAL HEALTH. Fourth year. Here the student focuses on a particular problem which in itself is disruptive to the mental health of a community but which must be handled internally in

that community. Alcoholism, drugs, delinquency, insanity, retardation, neglect, poverty—and the institutions and agencies designed to deal with these problems become the topic of interest and the subject for exploration and involvement. Six hours per week (by arrangement) six-week units. *Dr. Orr and Staff.*

527. MAN AND HIS WORKS. Fourth year. This course is open to selected fourth-year students interested in the effects of culture, past and present, upon man, and the forces and stresses that have produced the culture. This course will be an informal evening meeting, and students' wives are invited to attend. Two hours per week. SPRING. *Dr. Orr and Dr. Cappannari.*

529. PRINCIPLES OF ANTHROPOLOGY. First and Second year. This course in aspects of general anthropology is especially designed for medical students who have had no previous formal training in anthropology. Subjects to be covered include biological evolution of man and the development of races, emergence of language and culture, problems and significance of crosscultural comparisons in human behavior, man considered as animal and human. One hour per week. SPRING. *Dr. Cappannari.*

530. PRINCIPLES OF COMMUNITY PSYCHIATRY. Fourth year. This course is designed to give the student a working knowledge of important sociocultural aspects of mental health and illness. The course includes a survey of mental health needs of the community; a survey of community organization and planning; a review of salient epidemiological research in mental illness; principles of crisis theory and preventive intervention; and a survey of methods in mental health consultation. Two hours per week, twelve-week units. Alternate years. SPRING. *Dr. Reed.*

531. SEX COUNSELING. Third and Fourth years. This interdepartmental course aims to give students a better understanding of psychosexual problems so that they may gain competence in counseling patients. It will include such topics as premarital counseling; impotence and frigidity; sexual deviations; child sexuality; standards of sexual behavior. (Surgery 527, Obstetrics and Gynecology 523) One hour per week. FALL. *Dr. Cappannari and Dr. Fishbein, Dr. Robert K. Rhamy (Professor of Urology), and Dr. Donald A. Goss and Dr. Stanley P. Glasser of the Department of Obstetrics & Gynecology.*

532. POPULATION PROBLEMS AND FAMILY PLANNING. First, Second and Fourth years. An introduction to population problems and family planning. It includes the causes of overpopulation and underpopulation; the problems created by overpopulation in relation to food supply and nutrition, environmental sanitation and education. The biology of human reproduction, adaptation, and selection, sex practices, and population change are considered in as much detail as possible. The course ends with consideration of community and individual methods for limiting family size. (Preventive Medicine 525) One hour per week, last twelve weeks. FALL. *Dr. Robert W. Quinn (Professor of Preventive and Social Medicine), Dr. Cappannari, and Dr. Rhamy.*

533. HUMAN SEXUALITY. First and Second years. The purpose is to intro-

duce the first or second year medical student to the physiological, psychological, and sociological information relating to all phases of human sexual behavior. The content of the course will include considerations of reproductive physiology; human sexual response, family planning, sexual attitudes, behavior and myths; sexual aberrations and the interaction of sexuality and society. This course is intended to serve as a prerequisite to Surgery 527. One hour per week. SPRING. (Surgery 528, Obstetrics and Gynecology 524.) *Dr. Cappannari, Dr. Rhamy, Dr. Glasser, and others.*

534. ALCOHOL AND DRUG ADDICTION. First, Second, and Fourth years. Due to a sharp increase in use by the young, physicians in the future will be called on more and more to treat drug and alcohol related illness. This course will acquaint students with the socio-cultural, psychological, political, legal, and sexual aspects of drug and alcohol abuse. The course will emphasize direct patient contact and field observation. Fourth-year students will be given more responsibility for patient care. Two hours per week for first and second year students. Hours for fourth-year students to be arranged. SPRING. *Dr. Cappannari, Dr. Goshen, Dr. Janowsky, Dr. El-Yousef, and Others.*

535. MEDICINE IN FAMILIES AND THE COMMUNITY. First year. Three afternoons are spent in discussion-seminars on the relevance of the practice of preventive medicine to continuing and comprehensive care. Medical care is emphasized from the point of view of individualized consideration of patients for the maintenance of good health and rehabilitation from ill health, taking account of family factors and general community environment. Comprehensive care means health promotion; prevention of disease through immunization and health education; maternal and infant health guidance, and periodic health evaluation; early diagnosis and treatment; disability limitation; and rehabilitation. Case presentations and discussions of families with medical problems illustrating the points above will be made in another three afternoons. Field visits are made to the Bill Wilkerson Hearing and Speech Center, Metropolitan Health Department, Senior Citizens' Center (seminar on aging), and Central State Hospital (geriatrics pavilion). Medical economics and current and passed medical legislation are presented in appropriate detail. (Preventive Medicine 521) Three hours per week, last twelve weeks. FALL. *Dr. Quinn, Dr. Cappannari, and Staff.*

536. COMMUNITY SERVICES FOR THE HANDICAPPED. First and Second years. Students are introduced to the prime considerations involved in planning community services for the handicapped. They visit local facilities and choose an area of services to visit and study in depth. Using the format of a mock government unit the student then participates as health commission member developing proposals for improving, budgeting, and instituting rehabilitation care systems. (One hour class and field visits to be arranged.) One hour per week. FALL. *Dr. Pate.*

537. ORIGINS OF CONTEMPORARY TRENDS IN PSYCHIATRY. First and Second years. This course will identify a list of significant trends in contemporary psychiatry and then explore their histories. These will include: develop-

ment of psychiatric hospitals/mental institutions; development of psychological theories of human behavior; development of psychological treatment approaches; development of organic treatment approaches; and impact of the pseudo-sciences (mesmerism, phrenology, etc.). Each student will be asked to select a significant piece of classical literature to report on. FALL. Two hours per week. *Dr. Goshen.*

561. IN-PATIENT CLERKSHIP VETERANS HOSPITAL. Fourth year. The student is offered an intensive clinical experience with patients in the hospital as well as the outpatient department. The student will assume substantial responsibility for the diagnosis, treatment, and management of the patient. He will be furnished appropriate preceptorship to enable him to clarify and manage his patients' problems. He will also participate in various ward projects including group therapy and staff conferences. Students with individual projects will be encouraged and assisted. Full time, six-week units. *Dr. Fishbein.*

561.1. INPATIENT CLINICAL PSYCHIATRY OR RESEARCH CLERKSHIP AT PSYCHOPHARMACOLOGY THERAPY-RESEARCH UNIT, CENTRAL STATE HOSPITAL. Fourth year. During the clerkship, the student will, with responsibility, participate in the intensive psychotherapeutic treatment of a wide variety of seriously ill psychiatric patients in a ten-bed male-female therapeutic community setting. This experience will emphasize active participation in group therapy, milieu therapy, and all aspects of patient management including evaluation, diagnosis, and family therapy. During the clerkship the student will deal with the problems of psychotropic drug therapy, drug toxicity, and drug interactions. He will evaluate psychotic patients, participate in diagnostic procedures, and be involved in research concerning the biochemical factors of psychiatric illnesses and the clinical pharmacologic aspects of patient treatment. He may also, or alternatively, work on a research problem in the associated laboratory or on the ward. The clinical unit is located at the newly constructed Tennessee Neuropsychiatric Institute. Full time, six-week units. *Dr. Davis, Dr. Janowsky, and Dr. El-Yousef.*

561.2. CLERKSHIP IN ADOLESCENT PSYCHIATRY. Fourth year. The student works as a team member on an inpatient adolescent unit at Central State Hospital participating in the diagnostic and treatment phases of patient care. Experience in interviewing, diagnosis, and individual, group, and milieu therapies is included. Part time, nine hours per week, six-week units. *Dr. Gaskins, Dr. Campbell, and Staff.*

562. CLERKSHIP, ADOLESCENT PSYCHIATRY. Fourth year. The student works as a team member on an in-patient adolescent unit at Central State Hospital participating in the diagnostic and treatment phases of patient care. Experience in interviewing, diagnosis, individual, group, and milieu therapies is included. Six-week units. *Dr. Gaskins, Dr. Campbell and Staff.*

563. CLERKSHIP IN CHILD PSYCHIATRY. Fourth year. Available in this clerkship is the observation and participation in all aspects of the psychiatric evaluation of a child, survey of diagnostic groups and special

social problems (e.g., the foster child, the delinquent child) and methods of treatment. It may include work with parents, schools, and social agencies, and participation in the therapeutic milieu of an inpatient setting. Full time, six-week units. *Dr. Coppolillo and Staff.*

564. PSYCHIATRY OUTPATIENT CLERKSHIP. Fourth year. A clinical experience with the emphasis on the approach to the patient, clinical assessment and diagnosis, treatment planning, and brief treatment. Outpatient population (the ambulatory adult patient with primarily emotional problems) is from a broad section of the population, both socially and economically. This clerkship is not just for the student who is going into psychiatry, but is in many ways organized with the needs in mind of the student who is going into other specialties. Full time, six-week units. *Dr. Corney and Staff.*

565. PRACTICUM IN-PATIENT CLINICAL PSYCHIATRY OR CLINICAL PHARMACOLOGY AND RESEARCH PSYCHIATRY. Fourth year. A student may elect to come to the Vanderbilt Neuropsychiatric Institute for two or more times per week for not less than six weeks to become involved in the activities described under 561.1 mentioned above. An alternate schedule is one-half day per week for one semester. Part time, six-week units. *Dr. Davis and Dr. Janowsky.*

566. CLINICAL ELECTIVE AT ANOTHER MEDICAL CENTER. Fourth year. This clinical elective at another medical center is by special arrangement with the Department of Psychiatry. Full time, six-week units. *Dr. Barton.*

568. CLERKSHIP, CONSULTATION LIAISON PSYCHIATRY AND PERSONALITY ASSESSMENT IN MEDICAL AND SURGICAL PRACTICE. Fourth year. This elective offers the student extensive experience in the study and management of patients' emotional responses to illness and surgical procedures. The student will work closely with Dr. Abram and Dr. Webb making daily rounds to patients on the medical and surgical wards and becoming involved in ongoing research in a study of psychological adaptation to renal dialysis and transplantation. Included in the clerkship are practical exercises in the use of psychological testing methods for the study of personality assessment of patients in the general hospital setting. Theoretical rationale of test development, administration, interpretation, and use of test results is also covered. The student will have opportunity to collaborate with other members of the consultation service, including members from the social service division, nursing service, and pastoral counseling. The clerkship is designed to accommodate both students going into psychiatry and those who plan to enter other specialties. Full time, six-week units. *Dr. Abram, Dr. Webb and Staff.*

569. CLERKSHIP, COMMUNITY MENTAL HEALTH. Fourth year. In this clerkship the student participates in a variety of activities required of a mental health worker in a small urban community (Columbia, Tennessee). Referrals are received from the trouble areas of the community. Active liaison is maintained with the city schools, courts and jail, hospitals and Welfare Department through regular group consultations. In caring for

these patients, students work with judges, law enforcement officers, physicians, school principals, teachers, and welfare workers. Full time, six-week units. *Dr. Orr and Staff.*

598. DREAMS AND UNCONSCIOUS PHENOMENA. First, Second, Third, and Fourth years. The course is open to selected students in all four years and focuses on unconscious phenomena. The examination of dreams is used as the principle method of study. After preliminary reading and discussion of dreams and the unconscious, each student will select a project on which he will work and report his results to the group in seminar fashion for criticism and discussion. One hour per week. SPRING. *Dr. Orr.*

Radiology

JOHN R. AMBERG, M.D., *Professor of Radiology and Chairman of the Department*

JOSEPH H. ALLEN, JR., M.D., *Professor of Radiology*

A. BERTRAND BRILL, M.D., Ph.D., *Professor of Radiology*

HENRY BURKO, M.D., *Professor of Radiology*

VERNON A. VIX, M.D., *Professor of Radiology*

JOEL S. BEDFORD, Ph.D., *Associate Professor of Radiology*

MICHAEL BENDER, Ph.D., *Associate Professor of Radiology*

DENNIS D. PATTON, M.D., *Associate Professor of Radiology*

EDWARD V. STAAB, M.D., *Associate Professor of Radiology*

ROBERT J. BAGLAN, Ph.D., *Assistant Professor of Radiology*

JOHN J. CAROLAN, M.D., *Assistant Professor of Radiology*

THOMAS R. DUNCAN, M.D., *Assistant Professor of Radiology*

S. JULIAN GIBBS, D.D.S., Ph.D., *Assistant Professor of Radiology*

H. GASTON GRIGGS, Ph.D., *Assistant Professor of Radiology*

DONALD R. HARRIS, M.D., *Assistant Professor of Radiology*

JANET K. HUTCHESON, M.D., *Assistant Professor of Radiology*

R. EUGENE JOHNSTON, Ph.D., *Assistant Professor of Radiology*

ROBERT J. KING, B.S., *Assistant Professor of Radiology*

YING T. LEE, M.D., *Assistant Professor of Radiology*

THOMAS O. MCNAMARA, M.D., *Assistant Professor of Radiology*

M. F. NELSON, Ph.D., *Assistant Professor of Radiology*

CLYDE W. SMITH, M.D., *Assistant Professor of Radiology*

JOHN H. BEVERIDGE, M.D., *Assistant Clinical Professor of Radiology*

BURTON P. GRANT, M.D., *Assistant Clinical Professor of Radiology*

MINYARD D. INGRAM, M.D., *Assistant Clinical Professor of Radiology*

JOSEPH M. IVIE, M.D., *Assistant Clinical Professor of Radiology*

BEN R. MAYES, M.D., *Assistant Clinical Professor of Radiology*

JOSE A. AVILA, M.D., *Instructor in Radiology*

THOMAS W. SLOWEY, B.E., *Instructor in Radiology*

ANGELA M. HEARD, M.S., *Instructor in Radiology*
 BRENT A. SOPER, M.D., *Instructor in Radiology*
 WILLIAM T. FARRAR, M.D., *Clinical Instructor in Radiology*
 CLIFTON E. GREER, M.D., *Clinical Instructor in Radiology*
 WILLIAM M. HAMILTON, M.D., *Clinical Instructor in Radiology*
 ROBERT J. LINN, M.D., *Clinical Instructor in Radiology*
 JOHN R. OLSON, M.D., *Clinical Instructor in Radiology*
 RONALD E. OVERFIELD, M.D., *Clinical Instructor in Radiology*
 RICHARD P. OWNBEY, M.D., *Clinical Instructor in Radiology*
 W. FAXON PAYNE, M.D., *Clinical Instructor in Radiology*
 SAMUEL BENTON RUTLEDGE, M.D., *Clinical Instructor in Radiology*
 BURTON SILBERT, M.D., *Clinical Instructor in Radiology*
 JOHN M. TANNER, M.D., *Clinical Instructor in Radiology*

For first-year medical students, roentgen anatomy lectures are presented at the time of dissection of various systems.

501. METHODS IN CLINICAL SCIENCE: INTRODUCTION TO RADIOLOGY. A series of lectures and demonstrations is given to introduce the student to the use of radiographic methods in the study of various organ systems. Methodology in radiology is stressed. The course will also include an introduction to the utilization of radiant energy in the treatment of cancer. One hour per week. SPRING.

502. RADIOLOGY. For third-year students. Lectures and demonstrations with discussions of radiation hazards, radiographic diagnosis, and some therapy clinics. One hour per week for twelve weeks. FALL. *Staff*.

521. INTRODUCTION TO MEDICAL RADIOBIOLOGY. First, Second, and Fourth years. This course is aimed at providing a general appreciation of some of the effects of ionizing radiations on whole mammals, mammalian tissues, and mammalian cells. The genetic and somatic hazards of irradiation, the acute radiation syndrome, and general discussions of irradiation effects will be included. Methodology for evaluating radiosensitivity, repair mechanisms, time-dose relationships, protection and sensitization, and other phenomena will be discussed. Simple experiments to demonstrate certain aspects of radiobiology will be conducted. One hour per week. SPRING. *Dr. Bender, Dr. Bedford, Dr. Griggs, and Dr. Caldwell.*

522.1. COMPUTER APPLICATIONS IN MEDICINE I. First, Second, Third, and Fourth years. Discussions of different areas in which computers are being applied in medical research and in patient care. The discussions will be at an intuitive level and will not require previous knowledge of computers on the part of the students. The class will be conducted using informal panel discussions in which faculty, guests, and students will participate. One hour per week. FALL. *Dr. Brill and Staff.*

522.2. COMPUTER APPLICATIONS IN MEDICINE II. First, Second, Third, and

Fourth years. The organization of computer systems and computer programming will be taught with an emphasis on medical applications. The first semester course on Computer Applications in Medicine is not a prerequisite. One hour per week. SPRING. *Dr. Brill and Staff.*

523. FUNDAMENTAL PRINCIPLES IN USE OF RADIOISOTOPES IN BIOLOGY AND MEDICINE. First year. The first six weeks of this course are used to present fundamental principles of nuclear physics and tracer methodology necessary for understanding the use of radioisotopes in biology and medicine. Lecture review: elementary nuclear physics; basic principles of tracer methodology; the design of experiments illustrating different types of radioisotopes; safety practices in use of radioisotopes in biology; and the use of necessary instrumentation. Laboratory work includes experiments with different beta and gamma emitters in typical physiological or biological experiments. The second six weeks will deal with clinical applications of radioisotopes. We will discuss the use of tracers in imaging organs and tumors and the use of tracers *in vitro* and *in vivo* kinetic and metabolic studies, including radioautography. Special considerations on radiation safety in the use of radioactive isotopes in medicine are presented. Students participate in clinical studies and laboratory experiments. Three hours per week, first twelve weeks. FALL. (Biochemistry 521). *Dr. John G. Coniglio (Professor of Biochemistry), Dr. Brill, and Patton.*

524.1. INTRODUCTION TO NUCLEAR MEDICINE I. Second, Third, and Fourth years. After an introduction to basic instrumentation, the course will present applications of nuclear medicine techniques to clinical problems in the field of internal medicine, including kinetic and metabolic studies in endocrinology, hematology, and gastroenterology. Diagnostic and therapeutic procedures will be discussed in reference to the use of nuclear medicine in clinical decision-making and patient management. This is followed by discussions of nuclear radiology, i.e., the application of nuclear medicine techniques to diagnostic imaging problems. Studies of different body systems will include CNS, GI, GU, cardio-vascular, respiratory, bone, bone marrow, and endocrine. The relationships between organ visualization, morphology, and function will be discussed. Clinical decision-making will be stressed. In-vitro nuclear medicine is presented with discussions of radiopharmaceuticals in terms of composition, metabolic fate, compartment analysis and tracer kinetics, radiochemical purity, preparation, and uses; and discussions of laboratory techniques in diagnostic nuclear medicine including radioimmunoassay, competitive binding tests, and other laboratory procedures using radiopharmaceuticals. Five hours per week, fourth six weeks.

524.2 INTRODUCTION TO NUCLEAR MEDICINE II. First, Second, Third, and Fourth years. Instrumentation used in nuclear medicine procedures, including detectors and associated electronics, imaging systems, digital and analog systems. Basic physics of nuclear medicine, including basic electronics, nuclear physics interaction of radiation with matter, and measurement of radiation. Five hours per week, fifth six weeks.

561. CLERKSHIP IN RADIOLOGY. Fourth year. The student will rotate through the various divisions of the department. He will be considered

as a junior resident, will assist in procedures, and will attend all radiology conferences. Time will be made available for the study of cases in the teaching file library. Full time, six-week units. *Dr. Burko and Staff.*

562. CLERKSHIP IN RADIOTHERAPY. Fourth year. Participation in the diverse clinical activities of the Division of Radiotherapy will occupy the majority of the student's time. During the clerkship he will be responsible for the management of patients on treatment and will also participate in new patient evaluations and follow up examinations. He will be expected to attend the various conferences in the division. Emphasis will be in clinical oncology. Full time, six-week units. *Radiotherapy Staff.*

Surgery

- H. WILLIAM SCOTT, JR., M.D., *Professor of Surgery and Chairman of the Department*
HARVEY W. BENDER, JR., M.D., *Professor of Surgery*
HAROLD A. COLLINS, M.D., *Professor of Surgery*
JOHN H. FOSTER, M.D., *Professor of Surgery*
WALTER G. GOBBEL, JR., M.D., *Professor of Surgery*
BARTON McSWAIN, M.D., *Professor of Surgery*
JOHN L. SAWYERS, M.D., *Professor of Surgery*
BENJAMIN F. BYRD, JR., M.D., *Clinical Professor of Surgery*
W. ANDREW DALE, M.D., *Clinical Professor of Surgery*
ROLLIN A. DANIEL, JR., M.D., *Clinical Professor of Surgery*
LOUIS ROSENFELD, M.D., *Clinical Professor of Surgery*
MATTHEW WALKER, M.D., *Clinical Professor of Surgery*
R. BENTON ADKINS, JR., M.D., *Associate Professor of Surgery*
VERNON H. REYNOLDS, M.D., *Associate Professor of Surgery*
EDMUND W. BENZ, M.D., *Associate Clinical Professor of Surgery*
WALTER L. DIVELEY, M.D., *Associate Clinical Professor of Surgery*
HERSCHEL A. GRAVES, JR., M.D., *Associate Clinical Professor of Surgery*
JACKSON HARRIS, M.D., *Associate Clinical Professor of Surgery*
J. LYNWOOD HERRINGTON, JR., M.D., *Associate Clinical Professor of Surgery*
J. KENNETH JACOBS, M.D., *Associate Clinical Professor of Surgery*
MALCOLM R. LEWIS, M.D., *Associate Clinical Professor of Surgery*
ROBERT McCracken, M.D., *Associate Clinical Professor of Surgery*
DOUGLAS H. RIDDELL, M.D., *Associate Clinical Professor of Surgery*
DAUGH W. SMITH, M.D., *Associate Clinical Professor of Surgery, Emeritus*
WILLIAM S. STONEY, JR., M.D., *Associate Clinical Professor of Surgery*
ROBERT E. RICHIE, M.D., *Assistant Professor of Surgery*

RACHEL K. YOUNGER, B.A., *Assistant Professor of Surgery*
 WILLIAM C. ALFORD, JR., M.D., *Assistant Clinical Professor of Surgery*
 STANLEY BERNARD, M.D., *Assistant Clinical Professor of Surgery*
 ROBERT L. BOMAR, JR., M.D., *Assistant Clinical Professor of Surgery*
 CLOYCE F. BRADLEY, M.D., *Assistant Clinical Professor of Surgery*
 PAUL S. CRANE, M.D., *Assistant Clinical Professor of Surgery*
 HAROLD C. DENNISON, JR., M.D., *Assistant Clinical Professor of Surgery*
 GEORGE E. DUNCAN, M.D., *Assistant Clinical Professor of Surgery*
 WILLIAM H. EDWARDS, M.D., *Assistant Clinical Professor of Surgery*
 PARKER ELROD, M.D., *Assistant Clinical Professor of Surgery*
 JOHN L. FARRINGER, JR., M.D., *Assistant Clinical Professor of Surgery*
 JAMES C. GARDNER, M.D., *Assistant Clinical Professor of Surgery, Emeritus*
 SAM Y. GARRETT, M.D., *Assistant Clinical Professor of Surgery*
 CARL N. GESSLER, M.D., *Assistant Clinical Professor of Surgery*
 OSCAR F. NOEL, M.D., *Assistant Clinical Professor of Surgery*
 JEFFERSON C. PENNINGTON, JR., M.D., *Assistant Clinical Professor of Surgery*
 DAVID R. PICKENS, JR., M.D., *Assistant Clinical Professor of Surgery*
 ROBERT N. SADLER, M.D., *Assistant Clinical Professor of Surgery*
 CLARENCE S. THOMAS, JR., M.D., *Assistant Clinical Professor of Surgery*
 CHARLES C. TRABUE IV, M.D., *Assistant Clinical Professor of Surgery*
 WILSON H. BUTTS, B.A., *Instructor in Surgical Research*
 KENNETH L. CLASSEN, M.D., *Clinical Instructor in Surgery*
 BENJAMIN FISHER, M.D., *Clinical Instructor in Surgery*
 ROY G. HAMMONDS, M.D., *Clinical Instructor in Surgery*
 ROBERT A. HARDIN, M. D., *Clinical Instructor in Surgery*
 ROBERT W. IKARD, M.D., *Clinical Instructor in Surgery*
 JAMES P. LESTER, M.D., *Clinical Instructor in Surgery*
 M. CHARLES McMURRAY, M.D., *Clinical Instructor in Surgery*
 JOE M. MILLER, M.D., *Clinical Instructor in Surgery*
 I. ARMISTEAD NELSON, M.D., *Clinical Instructor in Surgery*
 ROY J. RENFRO, M.D., *Clinical Instructor in Surgery*
 LANSDON B. ROBBINS II, M.D., *Clinical Instructor in Surgery*
 JOHN K. WRIGHT, M.D., *Clinical Instructor in Surgery*
 ROSS S. WRIGHT, M.D., *Clinical Instructor in Surgery*

DENTISTRY

H. DAVID HALL, D.M.D., *Professor of Oral Surgery and Acting Head of the
 Division of Dentistry*
 E. THOMAS CARNEY, D.D.S., *Associate Clinical Professor of Dentistry*
 HERBERT ALLEN CROCKETT, D.D.S., *Assistant Professor of Dentistry*
 S. JULIAN GIBBS, D.D.S., Ph.D., *Assistant Professor of Dentistry*
 FELICE A. PETRUCELLI, D.D.S., *Assistant Professor of Dentistry*

JACK ALEXANDER TYSON, D.D.S., *Assistant Professor of Dentistry*
WILLIAM S. GRAY, D.D.S., *Assistant Clinical Professor of Dentistry*
FRED H. HALL, D.D.S., *Assistant Clinical Professor of Dental Surgery, Emeritus*
FRED M. MEDWEDEFF, D.D.S., *Assistant Clinical Professor of Dentistry*
JEFFREY B. CLARK, D.D.S., *Instructor in Dentistry*
WALTER W. SHIPLEY, D.D.S., *Instructor in Dentistry*
JAMES B. BAYLOR, D.D.S., *Clinical Instructor in Dentistry*
FRANK H. DEPIERRI, JR., D.M.D., *Clinical Instructor in Dentistry*
BARNETT J. HALL, D.D.S., *Clinical Instructor in Dentistry*
PERRY F. HARRIS, D.D.S., M.D., *Clinical Instructor in Dentistry*
WILLIAM C. KING, D.M.D., *Clinical Instructor in Dentistry*
L. WILLARD PARKER, D.M.D., *Clinical Instructor in Dentistry*

NEUROLOGICAL SURGERY

WILLIAM F. MEACHAM, M.D., *Clinical Professor of Neurological Surgery and Head of the Division*
CULLY A. COBB, JR., M.D., *Associate Clinical Professor of Neurological Surgery*
JOE M. CAPPS, M.D., *Assistant Clinical Professor of Neurological Surgery*
ARNOLD MEIROWSKY, M.D., *Assistant Clinical Professor of Neurological Surgery*
CHARLES D. SCHEIBERT, M.D., *Assistant Clinical Professor of Neurological Surgery*
ARTHUR G. BOND, M.D., *Clinical Instructor in Neurological Surgery*
JAMES W. HAYS, M.D., *Clinical Instructor in Neurological Surgery*
RAY W. HESTER, M.D., *Clinical Instructor in Neurological Surgery*

ORAL SURGERY

H. DAVID HALL, D.M.D., *Professor of Oral Surgery and Head of the Division*
SAMUEL O. BANKS, JR., D.D.S., *Clinical Professor of Oral Surgery*
ELMORE HILL, D.M.D., *Associate Clinical Professor of Oral Surgery*
EDWARD H. MARTIN, D.M.D., *Associate Clinical Professor of Oral Surgery*
CHARLES J. LADD, D.D.S., *Assistant Clinical Professor of Oral Surgery*
JACK CARLYLE SCHMITT, D.D.S., *Assistant Clinical Professor of Oral Surgery*

OTOLARYNGOLOGY

W. G. KENNON, JR., M.D., *Associate Clinical Professor of Otolaryngology and Acting Head of the Division*
GUY M. MANESS, M.D., *Clinical Professor of Otolaryngology, Emeritus*
RONALD GOLDMAN, Ph.D., *Associate Professor of Otolaryngology*
FREEMAN McCONNELL, Ph.D., *Associate Professor of Otolaryngology*
ROBERT COLEMAN, Ph.D., *Assistant Professor of Otolaryngology*
GLYDE ALLEY, JR., M.D., *Assistant Clinical Professor of Otolaryngology*

J. THOMAS BRYAN, M.D., *Assistant Clinical Professor of Otolaryngology*
JERRALL P. CROOK, M.D., *Assistant Clinical Professor of Otolaryngology*
WILLIAM L. DOWNEY, M.D., *Assistant Clinical Professor of Otolaryngology*
HERBERT DUNCAN, M.D., *Assistant Clinical Professor of Otolaryngology*
(Died July 6, 1971)
MICHAEL GLASSCOCK III, M.D., *Assistant Clinical Professor of Otolaryngology*
PERRY F. HARRIS, M.D., *Assistant Clinical Professor of Otolaryngology*
LARSON DALE BECK, M.D., *Clinical Instructor in Otolaryngology*
ANTHONY DRAKE CASPARIS, M.D., *Clinical Instructor in Otolaryngology*
WILLIAM G. DAVIS, M.D., *Clinical Instructor in Otolaryngology*
WILLIAM THOMAS MOORE, M.D., *Clinical Instructor in Otolaryngology*
ROBERT C. OWEN, M.D., *Clinical Instructor in Otolaryngology*

PEDIATRIC SURGERY

JAMES A. O'NEILL, JR., M.D., *Professor of Pediatric Surgery and Head of the Division*
GEORGE W. HOLCOMB, JR., M.D., *Associate Clinical Professor of Pediatric Surgery*
JOHN N. HENRY, D.D.S., *Clinical Instructor in Pediatric Surgery*

PLASTIC SURGERY

GREER RICKETSON, M.D., *Associate Clinical Professor of Plastic Surgery and Head of the Division*
BEVERLY DOUGLAS, M.D., D.Sc., *Clinical Professor of Plastic Surgery, Emeritus*
WILLIAM M. COCKE, JR., M.D., *Assistant Clinical Professor of Plastic Surgery*
JAMES H. FLEMING, JR., M.D., *Assistant Clinical Professor of Plastic Surgery*
CHARLES W. MACMILLAN, M.D., *Assistant Clinical Professor of Plastic Surgery*
KIRKLAND W. TODD, JR., M.D., *Assistant Clinical Professor of Plastic Surgery*
TAKIS PATIKAS, M.D., *Clinical Instructor in Plastic Surgery*

THORACIC AND CARDIAC SURGERY

HARVEY W. BENDER, JR., M.D., *Professor of Surgery and Head of the Division of Thoracic and Cardiac Surgery*
HAROLD A. COLLINS, M.D., *Professor of Surgery*
JOHN H. FOSTER, M.D., *Professor of Surgery*
WALTER G. GOBBEL, JR., M.D., *Professor of Surgery*
JOHN L. SAWYERS, M.D., *Professor of Surgery*
H. WILLIAM SCOTT, JR., M.D., *Professor of Surgery*
W. ANDREW DALE, M.D., *Clinical Professor of Surgery*
ROLLIN A. DANIEL, JR., M.D., *Clinical Professor of Surgery*
R. BENTON ADKINS, JR., M.D., *Associate Professor of Surgery*

WALTER L. DIVELEY, M.D., *Associate Clinical Professor of Surgery*
 JACKSON HARRIS, M.D., *Associate Clinical Professor of Surgery*
 J. KENNETH JACOBS, M.D., *Associate Clinical Professor of Surgery*
 ROBERT McCRACKEN, M.D., *Associate Clinical Professor of Surgery*
 DOUGLAS H. RIDDELL, M.D., *Associate Clinical Professor of Surgery*
 WILLIAM S. STONEY, JR., M.D., *Associate Clinical Professor of Surgery*
 ROBERT M. RICHIE, M.D., *Assistant Professor of Surgery*
 WILLIAM C. ALFORD, JR., M.D., *Assistant Clinical Professor of Surgery*
 WILLIAM H. EDWARDS, M.D., *Assistant Clinical Professor of Surgery*
 ROBERT N. SADLER, M.D., *Assistant Clinical Professor of Surgery*
 CLARENCE S. THOMAS, JR., M.D., *Assistant Clinical Professor of Surgery*

UROLOGY

ROBERT K. RHAMY, M.D., *Professor of Urology and Head of the Division*
 H. EARL GINN., M.D., *Associate Professor of Urology*
 HARRY S. SHELLEY, M.D., *Associate Professor of Urology, Emeritus*
 PAUL E. TESCHAN, M.D., *Associate Professor of Urology*
 EDWARD H. BARKSDALE, M.D., *Associate Clinical Professor of Urology, Emeritus*
 CHARLES E. HAINES, JR., M.D., *Associate Clinical Professor of Urology*
 OSCAR CARTER, M.D., *Assistant Clinical Professor of Urology*
 ALBERT P. ISENHOUR, M.D., *Assistant Clinical Professor of Urology*
 TOM E. NESBITT, M.D., *Assistant Clinical Professor of Urology*
 PHILLIP P. PORCH, JR., M.D., *Assistant Clinical Professor of Urology*
 JOHN M. TUDOR, M.D., *Assistant Clinical Professor of Urology*
 RICHARD I. TAPPER, M.D., *Instructor in Urology*
 ROBERT H. EDWARDS, M.D., *Clinical Instructor in Urology*
 ROBERT E. McCLELLAN, M.D., *Clinical Instructor in Urology*

501. METHODS IN CLINICAL SCIENCE. An interdepartmental course designed to acquaint the student with the techniques, methods, and basic principles necessary to take careful histories, perform thorough physical examinations, and to understand and utilize basic laboratory procedures employed in clinical medicine. Students are divided into small tutorial groups for intensive work with patients on the wards at Vanderbilt University Hospital, the Veterans Administration Hospital, and Nashville General Hospital. Similar tutorial groups are utilized in the laboratory where students learn methods for examining urine, blood, sputum, gastric contents, feces, and body fluids. An introduction to neurologic diagnostic methods is included in the course. Additional training is given in special problems which relate to examination of pediatric, surgical, and obstetrical patients. Radiological techniques are correlated with instructional sessions. Correlative sessions are interspersed with the above. In these sessions, methods by which the history, physical examination, and laboratory aids can be used to arrive at diagnosis and decisions regarding further study and treatment are conducted

by interdepartmental groups. *Dr. Liddle, Dr. Pennington, Dr. Hartmann, Dr. Minot, and the faculty of the Department of Medicine; Dr. Karzon and members of the Department of Pediatrics; Dr. Foster and members of the Department of Surgery; Dr. Goss and members of the Department of Obstetrics & Gynecology; members of the Department of Radiology; members of the Department of Pathology; members of the Departments of Anatomy, Pharmacology, and Biochemistry.*

502. CLINICAL CLERKSHIP. For ten weeks each student in the third-year class is assigned to the surgical divisions of the Vanderbilt University Hospital. Under the direction and supervision of the staff, the student takes histories, does physical examinations and assists the staff in the diagnostic evaluation and clinical management of assigned patients. Half of each student's period of clinical work is in general surgery, including thoracic, cardiovascular and pediatric services. The other five-weeks of the clinical assignment provide brief but concentrated rotations to services in neurosurgery, urology, ophthalmology, and otolaryngology. These rotations provide exposure to a variety of patients with problems in general surgery and in the special fields of surgery. Teaching rounds are held daily by members of the staff. Students go with their patients to the operating rooms where they are observers and assistants to the staff in surgery, the surgical specialties, and anesthesiology. Instruction in anesthesiology is given during operating room assignments by the members of that department. An integral part of this clerkship is the weekly three hour assignment in operative surgery and anesthesiology conducted in the S. R. Light Laboratory for Surgical Research by the Department of Surgery in collaboration with the Department of Anesthesiology. *Dr. Scott and Staff.*

503. SURVEY OF SURGERY. A series of clinical presentations and lectures is given which is designed to present a broad view of the clinical fields of surgery. Illustrative case presentations are made by third year surgical clerks. These discussions stress the correlation between basic biologic structure and function, pathologic alterations, and clinical manifestations. One hour per week for twenty-four weeks. FALL & SPRING. *Dr. Scott and Staff.*

504. SURGICAL OUTPATIENT SERVICE. Each fourth year student is assigned in rotation for six weeks to the surgical outpatient department of the Vanderbilt University Hospital. Here they serve as assistants in the outpatient clinics of general surgery, orthopedic surgery, and the tumor clinic. Various members of the surgical staff are in attendance to instruct the students in their work and discuss with them the diagnosis and treatment of the patients. *Dr. Reynolds, Dr. Adkins, and Dr. Arthur Leroy Brooks (Associate Professor of Orthopedic Surgery).*

521. DIAGNOSTIC SURGERY. Third year. Each session is initiated by a lecture which is followed by presentation of pertinent microscopic slides and roentgenograms. In the laboratory, fresh gross specimens and loan collections of slides are studied under supervision of resident and senior staff. The course correlates the clinical and roentgenologic manifestations and the gross microscopic changes of the common surgical diseases. Three hours per week for year. *Dr. Adkins and Staff.*

522. PRINCIPLES OF PLASTIC SURGERY. Fourth year. Instruction in the principles underlying the practice of plastic surgery, and their application to the correction of deformities and problems of reconstruction. Patients before and after operation will be used for study of methods and results. Includes a brief review of important research in this specialty. One hour per week. FALL. *Dr. Ricketson and Staff.*

523. CANCER. Fourth year. This is an interdepartmental course with few didactic presentations. Patients showing success or failure in the treatment of cancer are presented. Taught by members of the faculty of five clinical and two preclinical departments. May be taken either or both semesters. One hour per week. FALL & SPRING. *Dr. Sawyers.*

524. DENTAL MEDICINE. Fourth year. Lectures and discussions of those aspects of dentistry which have an important bearing on the practice of medicine. When applicable patients and case histories will be presented. Course content will depend somewhat on the specialty interest of students. Minimum of three students required for course to be offered. One hour per week. SPRING. *Dr. Hall.*

525. PEDIATRIC SURGICAL PROBLEMS. Fourth year. A combined course from the departments of Surgery and Pediatrics utilizing patient demonstrations and didactic lectures. Diagnosis, preoperative preparation, surgery, and postoperative care will be stressed. Course may be elected for units of six weeks to all year for a minimum of four students. (Pediatrics 525) One hour per week. FALL & SPRING. *Dr. Karzon, Dr. O'Neill, Dr. Holcomb, and Dr. Thombs.*

527. SEX COUNSELING. Third and Fourth years. This interdepartmental course aims to give students a better understanding of psychosexual problems so that they may gain competence in counseling patients. It will include such topics as premarital counseling; impotence and frigidity; "perversions" (including homosexuality); child sexuality; standards of sexual behavior. (Psychiatry 531, Obstetrics and Gynecology 523) One hour per week. FALL. *Dr. Rhamy, Dr. Stephen C. Cappannari (Professor of Human Behavior, Department of Psychiatry), Dr. Donald A. Goss (Professor of Obstetrics and Gynecology), and Dr. Stanley R. Glasser (Associate Professor of Obstetrics and Gynecology).*

528. HUMAN SEXUALITY. First and Second years. The purpose is to introduce the first or second year medical student to the physiological, psychological and sociological information relating to all phases of human sexual behavior. The content of the course will include considerations of reproductive physiology; human sexual response; family planning; sexual attitudes, behavior and myths; sexual aberrations; and the interaction of sexuality and society. This course is intended to serve as a prerequisite to Surgery 527, Sex Counseling. (Psychiatry 533, Obstetrics and Gynecology 524) One hour per week. SPRING. *Dr. Rhamy, Dr. Cappannari, Dr. Glasser, and others.*

529. MANAGEMENT OF VASCULAR SURGICAL PROBLEMS. Fourth year. Discussions of diagnosis and treatment of arterial, venous, and lymphatic prob-

lems utilizing patient demonstrations and visual aids. One hour per week; first, third, fourth, and six weeks. *Dr. Dale and Dr. Lewis.*

543. SURGICAL SPECIALTY CLINICS. Fourth year. Clinical experience in the following specialties is available to the student: Neurosurgery, General Surgery, Otolaryngology, Tumor, Tumor Chemotherapy, Vascular, Post-operative Care, Pediatric Surgery, Plastic Surgery, Minor Surgery, Urology, and Ophthalmology. Three hours per week, six-week units. *Dr. McSwain, Dr. Adkins, Dr. Cherry, Dr. Reynolds, Dr. Dale, Dr. Cocke, Dr. Rhamy, and Dr. Elliott.*

561. CLERKSHIP IN SURGERY, NGH. Fourth year. Students work under supervision of the surgical staff and resident in the diagnosis and treatment of patients with general and thoracic surgical problems and includes experience in Emergency Room. Will not involve patients studied by members of the third year class. Ward rounds daily. At Nashville General Hospital. Full time, six-week units. *Dr. Sawyers.*

561.1. CLERKSHIP IN SURGERY, VUH. Fourth year. Students work under supervision of the surgical staff and resident in the diagnosis and treatment of patients with general and thoracic surgical problems. Will not involve patients studied by members of the third year class. Ward rounds daily. At Vanderbilt University Hospital. Full time, six-week units. *Dr. Scott.*

561.2. CLERKSHIP IN SURGERY, VA. Fourth year. Students work under supervision of the surgical staff and resident in the diagnosis and treatment of patients with general and thoracic surgical problems. Will not involve patients studied by members of the third year class. Ward rounds daily. At Veterans Administration Hospital. Full time, six-week units. *Dr. Gobbel.*

561.3. CLERKSHIP IN SURGERY, ST. THOMAS HOSPITAL. Fourth year. The Department of Surgery of St. Thomas Hospital will offer credit clerkships in clinical surgery to fourth-year students of the Vanderbilt University School of Medicine as an elective course. These elective educational assignments will be offered during the summer months and the academic year 1971-72. The purpose of the clinical clerkship is to provide a learning experience for the student in a community hospital. The clinical clerk will work under the direction of the Chief of the Department of Surgery, the senior resident staff, and certain members of the active visiting staff of the Surgical Department. The student will have the opportunity to assist in the diagnostic work-up of staff and private patients on the surgical pavilions and participate in planning the total care of patients. The student will be expected to assist during surgical operative procedures performed on assigned patients and to observe and at times assist on other cases during the regularly scheduled operating day. The student will have the opportunity to accompany patients during special procedures in radiology or cardiovascular laboratories. The student will be expected to attend scheduled conferences, seminars, and ward rounds and to take active part in the discussions. The student will be involved in the functioning of the surgical service only in a teaching and learning capacity. Full time, six-week units. *Dr. Daniel.*

562. CLERKSHIP IN NEUROLOGICAL SURGERY. Fourth year. The student works with the resident staff on the neurosurgical service at Vanderbilt University Hospital participating in the diagnosis and management of patients with neurosurgical problems. Daily ward rounds. Full time, six-week units. *Dr. Meacham.*

563. CLERKSHIP IN CARDIOVASCULAR SURGERY. Fourth year. Provides experience in the diagnosis of cardiovascular disease, preoperative assessment, operative treatment, and postoperative management. Includes participation in research activities as applied to cardiovascular surgery. Full time, six-week units. *Dr. Bender.*

564. CLERKSHIP IN UROLOGY. Fourth year. The student works with the resident staff on the urologic service at Veterans Administration Hospital participating in the diagnosis and management of patients with urologic problems. Daily ward rounds. Full time, six-week units. *Dr. Rhamy.*

565. CLERKSHIP IN OTOLARYNGOLOGY. Fourth year. The student works with the ENT staff and resident on the ENT service at Vanderbilt University Hospital participating in the diagnosis and management of patients with otolaryngologic problems. Ward rounds daily. Full time, six-week units.

566. CLERKSHIP IN PEDIATRIC SURGERY. Fourth year. An opportunity for students to work on the pediatric-surgical floor, caring for children in preoperative, operative, and postoperative periods and attending both pediatric and surgical conferences. Full time, six-week units. *Dr. O'Neill.*

567. CLERKSHIP IN CANCER CHEMOTHERAPY. Fourth year. Inpatient and outpatient clinical experience with chemotherapeutic techniques and agents at Vanderbilt University Hospital. Full time, six-week units. *Dr. Reynolds.*

570. CLERKSHIP IN ORAL SURGERY. Fourth year. Senior medical and dental students will work with the residents and staff on the diagnosis and treatment of oral surgical problems. There will be substantial experience in extractions, alveoplasty and other similar procedures as well as involvement, at the appropriate level, in the care of more complicated conditions affecting the jaws and associated structures. Full time, six-week units. *Dr. Hall.*

581. LABORATORY RESEARCH IN SURGERY. Fourth year. Principles of surgical research and care are presented with the performance of procedures and conduct of investigative studies in collaboration with the full-time staff of the Department of Surgery. A detailed written report will summarize the investigative studies. At Veterans Administration Hospital or Vanderbilt University Hospital. Full time for six weeks. May be taken in afternoons for twelve weeks. *Dr. O'Neill, Dr. Foster and Dr. Gobbel.*

REGISTER OF STUDENTS

1972-73

FIRST-YEAR CLASS

Dave Almon Alexander (B.A., Vanderbilt)	Nashville, Tenn.
Joe Franklin Arterberry (B.S., Eastern Kentucky)	Colorado Springs, Colo.
Thomas William Ballard (B.S., Stanford)	Thousand Oaks, Calif.
Edwin Dale Batchelor (B.A., Tennessee)	Chattanooga, Tenn.
Robert Richard Brendt (B.A., Vanderbilt)	Hempstead, N. Y.
Carla Bloedel (B.A., Radcliffe)	Williamstown, Mass.
Geoffrey Keith Boecker (B.A., Austin Peay)	Clarksville, Tenn.
Harry Ward Brooks, Jr. (B.A., Maryville)	Maryville, Tenn.
Jeffrey Hilliard Brown (B.A., Harvard)	Tulsa, Okla.
Lewis Alan Brown (B.A., Washington University)	Cincinnati, Ohio
Ruskin Wells Brown (B.A., Vanderbilt)	West Palm Beach, Fla.
Richard Overton Cannon III (B.A., Vanderbilt)	Nashville, Tenn.
*Gary Ellis Carnahan (B.A., David Lipscomb)	Madison, Tenn.
Suzanne Bletterman Cassidy (B.A., Reed)	Nashville, Tenn.
John Frank Cherry (B.S.E.E., Purdue)	Huntington Beach, Calif.
Paul Gary Colman (B.A., Brooklyn College)	Brooklyn, N. Y.
Dan Ellis Connor (B.A., Vanderbilt)	Paducah, Ky.
Arthur John Cook (B.A., Vanderbilt)	Atlanta, Ga.
William Alton Curry (B.S., University of Alabama)	Carrollton, Ala.
Jeffrey Thomas Darnall (B.A., Brown)	Swarthmore, Pa.
David Bryan Dodson (B.A., Missouri)	Columbia, Mo.
David Ellis Dugger (B.E., Vanderbilt)	Granite City, Ill.
George Robert Duquette (Senior in absentia, Auburn)	Birmingham, Ala.
Eric Lee Dyer (B.S., Illinois, M.S., Chicago)	Montrose, Ill.
Margaret Anne Earley (B.A., Kansas)	Kansas City, Kans.
Charles William Eckstein (B.A., Iowa)	Iowa City, Iowa
Lester Franklin Elliott (B.A., Princeton)	Macon, Ga.
Thomas Samuel Evans (B.A., Rochester)	Shaker Heights, Ohio
Frederick Eli Finger III (B.S., North Carolina)	Kings Mountain, N. C.
Robert Stephens Foote (B.A., Vanderbilt)	Tryon, N. C.
Donald Lee Fylstra (B.S., Purdue)	Cincinnati, Ohio
John Pettry Greer (B.A., Vanderbilt)	Baton Rouge, La.
Bruce Barry Grill (B.A., Columbia)	Seaford, N. Y.
John Daniel Hainsworth (B.A., Stanford)	Los Altos, Calif.
James Warren Hendricks (Senior in absentia, Western Kentucky)	Clarksville, Tenn.
Stephen Gregory Hendrix (B.E., Georgia Institute of Technology)	Savannah, Ga.
Don Alan Henry (B.A., Arizona)	Tucson, Ariz.
James McCall Hinson (B.A., Missouri)	Kennett, Mo.
Patrick Chi-Ping Ho (B.S., Stetson)	Kowloon, Hong Kong
Hugh Douglas Holliday (B.A., Vanderbilt)	Nashville, Tenn.
Fred Marion Howard, Jr. (B.A., Berea)	West Lafayette, Ind.
John William Interlandi (B.A., Knox)	Addison, Ill.
Elizabeth Martin Jennings (B.A., Agnes Scott)	Gainesville, Ga.
Roy Ambrose Kite (B.A., Vanderbilt)	Phoenix, Ariz.
Mark Michael Kramer (B.A., Franklin & Marshall)	Westbury, N. Y.
Samuel James Kuykendall III (B.E., Vanderbilt)	Little Rock, Ark.
Marshall Edward Lewis (B.A., Yale)	Silver Spring, Md.
Philip Kremer Lichenstein (B.A., Harvard)	Mansfield, Ohio
Michael Albert Lojek (B.S., Boston College)	Brookline, Mass.
Thomas Lubin (B.S., Harvard)	Norwich, Vt.
Michael Allan Madden (B.A., Indiana)	Indianapolis, Ind.
Daniel Ernest Martin (B.S., Samford)	Headland, Ala.
James True Martin (B.S., Florida State)	Tallahassee, Fla.
John Milligan Mathis (B.S., Texas, M.S., Southwestern Medical)	Arlington, Tex.

*Special Student

Patrick Wallace Meacham (B.S., Western Kentucky).....	Nashville, Tenn.
Susan Louise Merwin (B.S., Auburn).....	Mobile, Ala.
William O'Neal Nash (B.A., Vanderbilt).....	Hillsboro, Ala.
Roy Parker McRae (B.A., Vanderbilt).....	Nashville, Tenn.
Frederick Early Pfeiffer II (B.A., University of the South).....	Orlando, Fla.
Richard Duncan Pinson (B.S., Wofford).....	Henderson, Ky.
James Robert Polk, Jr. (B.S., Stanford).....	Stanford, Calif.
Judson Edward Rogers (B.A., Vanderbilt).....	Moultrie, Ga.
Adam Arthur Rosenberg (B.A., Vanderbilt).....	Eastchester, N. Y.
Joe Cathey Rutledge (B.S., Southwestern at Memphis).....	Lewisburg, Tenn.
William Josiah Sanders IV (B.A., Vanderbilt).....	Tullahoma, Tenn.
Samuel Andrew Santoro, Jr. (B.S., Emory).....	West Palm Beach, Fla.
George Brevik Schimmel (B.A., Mississippi).....	Rolling Fork, Miss.
Lawrence Reed Shirley (B.A., Vanderbilt).....	Houston, Texas
James Gregory Sikes (B.S., Davidson).....	Statesboro, Ga.
Bryan Paul Simmons (B.S., Duke).....	Memphis, Tenn.
Charles Norman Spencer (B.A., Vanderbilt).....	Kingport, Tenn.
Peter Wallace Stacpoole (B.A., University of the South; M.S., San Francisco).....	Mill Valley, Calif.
Richard Sheldon Stahl (B.A., Emory).....	East Ridge, Tenn.
Raymond Charles Strickland (B.A., Duke).....	Vero Beach, Fla.
John Richard Sweeney (B.E., Vanderbilt).....	Concord, N. H.
John Shiu-Ming Tang (B.A., California).....	Hong Kong
Robert Emory Taylor (B.S., Butler; Ph.D., Purdue).....	Nashville, Tenn.
Clifford Randolph Tillman (B.A., Vanderbilt).....	Natchez, Miss.
Karl Steven Wagner (B.A., Oakland).....	Manistee, Mich.
Robert A. Warriner III (B.S., Tulane).....	Metairie, La.
William Walker Watson (B.A., North Carolina).....	Decatur, Ga.
Steven Weinreb (B.S., Dickinson).....	Brightwaters, N. Y.
David Cole Wymer (B. S., Davidson).....	Oak Ridge, Tenn.

SECOND-YEAR CLASS

Richard Clarke Agnew (B.S., Emory).....	Dalton, Ga.
Frank Milton Balis (B.S., North Carolina at Chapel Hill).....	West Palm Beach, Fla.
Alan Michael Birnbaum (B.A., Brown).....	Fresno, Calif.
Michael Robert Bishop (B.S., Purdue).....	Connerville, Ind.
Jorge Desiderio Blanco (B.A., Johns Hopkins).....	Mobile, Ala.
Michael Barry Brenner (B.A., Washington University).....	Cincinnati, Ohio
Hans-Georg Otto Bock (B.A., Vanderbilt).....	Tullahoma, Tenn.
Richard Edward Buller (B.S., California, Los Angeles).....	Rancho Santa Fe, Calif.
Alfred Samuel Callahan III (B.S., Massachusetts Institute of Technology).....	Columbus, Ga.
Goodloe Summers Chaffin, Jr. (B.S., Vanderbilt).....	Franklin, Tenn.
Mark Skien Chaplin (B.A., Kentucky).....	Lexington, Ky.
Ronald Joe Cinocca (B.S., Oklahoma City).....	McAlester, Okla.
Suzanne Solomons Colby (B.S., Pembroke).....	New London, Conn.
John Michael Conoyer (B.S., Southeast Missouri State).....	Saint Charles, Mo.
Michael Lee Craighead (B.A., Westminster).....	Jefferson City, Mo.
Henry Emile Cretella (B.A., Merrimack).....	Methuen, Mass.
Robert William Donnell (B.A., Westminster).....	DeSoto, Mo.
Charles Edwin Dyer (B.A., Murray State).....	Murray, Ky.
Luke Lamar Ellenburg, Jr. (B.A., Vanderbilt).....	Greenville, Tenn.
Harold Gerard Erath, Jr. (B.S., Loyola University, New Orleans).....	New Orleans, La.
Barbara Ann Fitzgerald (B.A., Washington University).....	Little Rock, Ark.
James Louis Fletcher, Jr. (B.A., Missouri).....	Gideon, Mo.
Edward Paul Fody, Jr. (B.S., Duke; M.S., Wisconsin).....	Baltimore, Md.
Myron Jeffrey Frank (B.S., City College of New York).....	Bronx, N. Y.
Caroline LeConte Gibbes (B.A., Sweet Briar).....	Columbia, S. C.
Alan Leonard Glaser (B.A., Pennsylvania).....	Edison, N. J.
David Bruce Glover (B.S., Washington University).....	Afton, Mo.
Neil Andrew Green (B.S., Union College).....	Newburgh, N. Y.
Michael George Gutknecht (B.S., New Mexico).....	Alamogordo, N. M.
Frederick Lee Haley (B.A., Johns Hopkins).....	Kingsport, Tenn.
Charles Russell Harris, Jr. (B.E., Vanderbilt).....	Nashville, Tenn.

Special Student

Robert Carl Hartmann, Jr. (B.S., University of Notre Dame)	Nashville, Tenn.
Karl Emil Hofammann III (B.A., Princeton)	Birmingham, Ala.
James Thurman Jakes (B.S., Wofford)	Aiken, S. C.
Walter Wing-Keung King (B.A., Wisconsin)	Hong Kong
Howard Raymond Knapp, Jr. (B.S., Washington University)	Red Bank, N. J.
Duncan Burwell McRae, Jr. (B.S., Virginia)	McRae, Ga.
Steven Alan Meixel (B.A., Duke)	Milford, N. J.
Alexander John Mercer (B.A., Emory)	Anderson, S. C.
Robert Morgan Moore (B.A., Vanderbilt)	Wilmington, N. C.
David Harvey Niver (B.A., Cornell)	Valley Stream, N. Y.
John William O'Donnell III (B.S., Tennessee)	Decatur, Ala.
John Sterling Pfeifer (Sr. in abs., Western Kentucky)	Alliance, Ohio
Charles Andrew Pickens (B.S., Davidson)	Spartanburg, S. C.
Robert Ervin Piston, Jr. (B.A., Vanderbilt)	Johnson City, Tenn.
Robert Sean Quinn (B.A., Yale)	Nashville, Tenn.
*Michael Stevens Rees (B.S., Massachusetts Institute of Technology)	Saint Petersburg, Fla.
William James Robbins (B.A., Brown)	Fanwood, N. J.
Mark Ryan (B.A., University of Notre Dame)	Annapolis, Md.
Mark Allan Schauss (B.S., Indiana)	Evansville, Ind.
Ernest Gerard Siciliano (B.A., Harvard)	Newton Centre, Mass.
Richard Michael Silver (B.S., Tennessee)	Silver Spring, Md.
Bruce Derryl Silverstein (B.A., Vermont)	Teaneck, N. J.
Aaron David Slater (B.A., Vanderbilt)	Indianapolis, Ind.
Harold Patton Smith (B.A., Texas, Austin)	Alice, Texas
Robert William Spohr (B.S., State University of N. Y., Stony Brook)	Peekskill, N. Y.
Richard Lewis Sribnick (B.S., South Carolina)	Columbia, S. C.
Deborah Jean Stewart (B.A., Vanderbilt)	Shelbyville, Tenn.
Gary Lester Stiles (B.S., St. Lawrence)	Glen Rock, N. J.
Charles Albert Stilwell, Jr. (B.A., Vanderbilt)	Macon, Ga.
Richard Edgar Strain, Jr. (B.S., Tulane)	Maryville, Tenn.
Gary Dennis Swanson (B.S., Marquette)	Eric, Pa.
Laykoon Tan (B.A., Pennsylvania)	Penang, Malaysia
William David Tench (B.S., Florida Presbyterian)	Oak Ridge, Tenn.
Joyce Bernice Thisse (B.S., Florida)	Tampa, Fla.
Donald Cross Townsend, Jr. (B.S., Purdue)	Baton Rouge, La.
Anthony Edward Dupuy Trabue (B.A., Vanderbilt)	Nashville, Tenn.
Aubrey Lee Tucker, Jr. (B.S., Southwestern at Memphis)	Memphis, Tenn.
John Boyd Turner (B.S., The Citadel)	Covington, Tenn.
Lyle Edward Wadsworth (B.S., Stetson)	Daytona Beach, Fla.
Kirk Robert Wilhelmus (B.A., Indiana)	Evansville, Ind.
Todd Scripps Wilkinson (B.A., Harvard)	Rumson, N. J.
Daniel Williams, Jr. (B.A., Emory)	Bradenton, Fla.
Robert Bruce Williams (B.A., Vanderbilt)	North Kansas City, Mo.
Susan Marie Wodicka (B.S., Vanderbilt)	Terre Haute, Ind.
Charles Michael Wolff (B.A., Emory)	Chattanooga, Tenn.

THIRD-YEAR CLASS

James Elisha Alexander, Jr. (B.A., Vanderbilt)	Memphis, Tenn.
Julian Power Alexander III (B.A., Vanderbilt)	Jackson, Miss.
Lee Scott Austin (B.S.E.E., Florida)	Fort Carlson, Colo.
David Edward Barnard (B.S., Stetson)	Saint Petersburg, Fla.
Edward John Bartle (B.S., Davidson)	Havertown, Pa.
Robert Burford Bashinsky (B.A., Vanderbilt)	Birmingham, Ala.
Victor Curtis Baum (B.A., Rochester)	North Woodmere, N. Y.
Stephen Mayes Becker (B.S., Kenyon)	Ossining, N. Y.
*Betsy Dianne Bennett (B.A., Vanderbilt)	Charlotte, Tenn.
Clem Henry Block (B.S., Kentucky)	Louisville, Ky.
*Michael Ray Boyd (B.S., Kentucky)	Lexington, Ky.
Teresa Sue Bratton (B.A., Vanderbilt)	Hartsville, Tenn.
John Bruno III (B.A., M.S., Vanderbilt)	Jackson, Miss.
Robert John Burckardt (B.S., Wisconsin)	West Bend, Wis.
Brian Richard Carlson (B.A., Gustavus Adolphus)	Denison, Iowa

*Special Student

James Leo Connolly (B.A., Merrimack).....	Woburn, Mass.
James Donald Coullahan, Jr. (B.S., United States Naval Academy).....	Nashville, Tenn.
Jeffrey Jay Cowan (B.A., Wisconsin).....	White Plains, N. Y.
Michael Edward Critchlow (B.S., Southeast Missouri).....	Sikeston, Mo.
Michael Leon Crowley (B.A., The Citadel).....	North Charleston, S. C.
Bruce Bepalow Dan (B.S., M.S., Massachusetts Institute of Technology).....	Memphis, Tenn.
Philip Lee Dutt (B.A., North Carolina at Chapel Hill).....	Lexington, Ky.
Richard Harding Edmondson (B.A., Vanderbilt).....	Clarksville, Tenn.
Anastasios G. Fermandis (B.S., City College of New York, M.A., Columbia).....	New York, N. Y.
Richard Van Fletcher, Jr. (B.A., North Carolina at Chapel Hill).....	Lookout Mountain, Tenn.
Cynthia Lee Foss (B.A., St. Olaf).....	Metuchen, N. J.
Charles Andrew Tessier Gill (B.S., Louisiana State).....	New Orleans, La.
*Zachary Dale Goodman (B.A., Vanderbilt).....	Fort Lauderdale, Fla.
Michael Sylvester Graff (B.S., Loyola).....	Sepulveda, Calif.
William Arthur Growdon (B.A., Vanderbilt).....	Little Rock, Ark.
Robert Lester Harbin (B.A., Virginia).....	Rome, Ga.
William Pickens Harbin (B.A., Vanderbilt).....	Rome, Ga.
Peter Harcy (B.S., City College of New York).....	Douglaston, N. Y.
Thomas Raymond Harris (B.S., M.S., Texas A&M; Ph.D., Tulane).....	Nashville, Tenn.
Don Puckett Herring (B.A., Indiana).....	Muncie, Ind.
Glenn David Hirsch (B.A., Vanderbilt).....	Mountain Home, Ark.
James William Hoback, Jr. (B.A., North Carolina at Chapel Hill).....	Chattanooga, Tenn.
Jack Tackett Hopkins, Jr. (B.A., Vanderbilt).....	Jackson, Miss.
Mark Clarence Houston (B.A., Southwestern at Memphis).....	Jackson, Tenn.
Timothy Kevin Hulsey (B.S., Western Kentucky).....	Bowling Green, Ky.
Robert Morrison James (B.A., Vanderbilt).....	Shawnee Mission, Kans.
Elaine Kennedy (B.A., Emory).....	North Charleston, S. C.
Thomas Preston Kennedy (B.S., Louisiana Polytechnic Institute).....	Zachary, La.
John Thomas Latham, Jr. (B.S., Furman).....	Greenville, S. C.
James Harvey Leech IV (B.A., Yale).....	Lexington, Ky.
Michael Francis Lubozynski (B.S., Notre Dame).....	Orlando, Fla.
Robert Elwood Mallard (B.A., Rochester).....	North Canton, Ohio
George Cary Martin (B.S., North Carolina State).....	Raleigh, N. C.
William Harvey McClanahan, Jr. (B.E., Vanderbilt).....	Nashville, Tenn.
James Edward McComb (B.S., Baylor).....	Phoenix, Ariz.
Thomas Leon McCurley (B.E., Vanderbilt).....	Picayune, Miss.
Charles Richard McKeen (B.A., Indiana).....	Bloomington, Ind.
George Randle McSwain (B.A., Vanderbilt).....	Ormond Beach, Fla.
Gary Eugene Meredith (B.A., Washington University).....	Saint Louis, Mo.
Carla Suzanne Miller (B.S., Illinois).....	Robinson, Ill.
Philip Reeves Morgan (B.S., Western Kentucky).....	Mayfield, Ky.
William David Patterson (B.A., Wooster).....	Maryville, Tenn.
Joseph Michael Plunkett (B.S., Wake Forest).....	Huntsville, Ala.
Richard John Plunkett, Jr. (B.S.E.E., M.S., Drexel).....	Holland, Pa.
Jack Elliot Rosenblatt (B.A., Vanderbilt).....	Miami, Fla.
Keith Joseph Rosing (B.S., Southern California).....	San Francisco, Calif.
Wilson Glover Russell (B.A., University of the South).....	Easley, S. C.
Michael Bliss Ryan (B.A., California).....	Glendale, Calif.
Robert Huston Schell (B.A., Vanderbilt).....	Owensboro, Ky.
Ernest Lee Schiller (B.A., Illinois Wesleyan).....	Kankakee, Ill.
Stephen Pierce Simmons (B.S., Tennessee).....	Knoxville, Tenn.
Walter Joseph Slizofski (B.S., Drexel Institute).....	Philadelphia, Pa.
Barbara Burns Snell (B.S., Maryland).....	Bethesda, Md.
Robert Barnett Strecker (B.A., Missouri).....	Columbia, Mo.
James Nelson Sullivan (B.A., University of the South).....	Clinton, S. C.
John Everett Surphin, Jr. (B.S., Millsaps).....	State College, Miss.
David John Switter (B.S., Mount Union).....	Massillon, Ohio
David Duane Tanner (B.S., Georgia).....	Eatonton, Ga.
William F. Thistlethwaite (B.A., Vanderbilt).....	Nashville, Tenn.
John Brown Thomison, Jr. (B.A., Vanderbilt).....	Nashville, Tenn.
James Langhorne Tompkins, Jr. (B.S., Hampden-Sydney).....	Richmond, Va.

Special Student

Thomas Vincent Vandergast (B.S., Villanova).....	Clifton Heights, Pa.
Philip Corby Van Hale (B.S., Loyola).....	San Marino, Calif.
*James Alex Waldron, Jr. (B.A., Hendrix).....	Pine Bluff, Ark.
William Bedford Waters (B.A., Vanderbilt).....	Knoxville, Tenn.
John William Welch, Jr. (B.A., Tennessee).....	Knoxville, Tenn.
Walter Wayne Wheelhouse, Jr. (B.A., Vanderbilt).....	Rushville, Ill.
Robert Henry Williams (B.A., Virginia).....	Lookout Mountain, Tenn.

FOURTH-YEAR CLASS

Ray Chandler Abney (B.S., Georgia).....	Athens, Ga.
Martin David Adams (B.S., East Tennessee State).....	Johnson City, Tenn.
Edwin Brabson Anderson, Jr. (B.S., Georgia Institute of Technology).....	Nashville, Tenn.
Milton Henry Anderson III (B.S., Yale).....	Evansville, Ind.
Sam Michael Ashby (B.S., Middle Tennessee State).....	Fayetteville, Tenn.
Clyde William Beck (B.A., California).....	Lemoore, Calif.
Charles Kelso Billings, Jr. (B.A., Vanderbilt).....	Johnson City, Tenn.
Gustav Arthur Blomquist (B.A., M.S., Brown).....	Rockville Centre, N. Y.
Samuel Cheung-Fai Chan (B.S., California State College at L.A.).....	Los Angeles, Calif.
John Blue Clark, Jr. (B.S., Davidson).....	Locust Valley, N. Y.
Louis Ward Close (B.A., Virginia).....	Signal Mountain, Tenn.
Gregory Wayne Cobb (B.S., Tennessee).....	Huntsville, Ala.
*Brian Cole (B.A., Oklahoma City).....	Altus, Okla.
John Roache Cook III (B.S., Kentucky).....	Lexington, Ky.
Richard John Davis (B.S., San Diego).....	Nashville, Tenn.
Bruce Laurence Decker (B.S., Albany College of Pharmacy).....	Scotia, N. Y.
John Holland Dixon, Jr. (B.S., Duke).....	Nashville, Tenn.
Bradford Wheatly Edgerton (B.A., Vanderbilt).....	Charlottesville, Va.
Owen Beverly Evans, Jr. (B.A., Vanderbilt).....	Decatur, Ala.
William David Ferraraccio (B.S., Washington & Lee).....	Bluefield, Va.
Richard Allen Fox (B.A., Tennessee).....	Shelbyville, Tenn.
Joel Leonard Hammer (B.A., Northeastern).....	Wallkill, N. Y.
William Eugene Harston (B.S., Western Kentucky).....	Scottsville, Ky.
William Haynes Heaton (B.S., Tufts).....	Severna Park, Md.
Asa Clyde Heflin, Jr. (B.A., Kentucky).....	Winchester, Ky.
Joseph Lambert Holliday (B.A., North Carolina at Chapel Hill).....	Chattanooga, Tenn.
Richard Tipton Hoos (B.A., Vanderbilt).....	Brentwood, Tenn.
Randolph Gray Hunter (B.A., Vanderbilt).....	Ashland, Ky.
Jonathan S. Jacobs (B.A., Rochester; D.M.D., Harvard).....	Long Beach, N. Y.
John Howard Judd, Jr. (B.S., Duke).....	Nashville, Tenn.
Vincent Lee Keipper (B.A., Gettysburg).....	Guilford, Conn.
William Taylor Mattingly, Jr. (B.A., Kentucky).....	Clay, Ky.
James Marion May (B.S., Yale).....	Las Vegas, Nev.
Joseph Patrick McEvoy (B.A., Manhattan).....	Brooklyn, N. Y.
Thurman Dwight McKinney (B.S., Western Kentucky).....	Morgantown, Ky.
*David Hoover Morgan (B.A., Vanderbilt).....	Williamsburg, Ky.
Thomas Michael Newman (B.S., Washington & Lee).....	Tampa, Fla.
John Francis Ogburn III (B.A., Duke).....	Winston-Salem, N. C.
John Murrah Passmore, Jr. (B.S., Davidson).....	Columbus, Ga.
Roger Earl Patnode (B.A., Drew).....	Keeseville, N. Y.
Hugh William Pettigrew (B.S., Baldwin-Wallace).....	Canton, Ohio
Floyd Raymond Porter (B.S., Tennessee).....	Spring City, Tenn.
Thomas Allen Powers (B.S.E.E., Duke).....	Atlanta, Ga.
Winchell Wing Quock (B.A., University of California, Berkeley).....	San Francisco, Calif.
James Albert Ramsey (B.A., North Carolina at Chapel Hill).....	Asheville, N. C.
James Scott Rawlings (B.S., Virginia Polytechnic Institute).....	Lookout Mountain, Tenn.
Jesse Huntsman Riggsby (B.A., Vanderbilt).....	Clarksville, Tenn.
David Herlie Robertson, Jr. (B.A., Vanderbilt).....	Dickson, Tenn.
John Cortright Schimmel (B.S., Davidson).....	Rolling Fork, Miss.
Michael Bruce Schwartz (B.A., State University of New York, Stony Brook).....	Flushing, N. Y.
James Robert Sheller (B.A., University of the South).....	Lafayette, La.
David Shraberg (B.A., Kentucky).....	Lexington, Ky.
William Marle Singletary (B.A., Vanderbilt).....	Thomasville, Ga.

*Special Student

Michael Gordon Sribnick (B.S., South Carolina)	Columbia, S. C.
Robert Franklin Stonerock, Jr. (B.S., Rollins)	Orlando, Fla.
Michael Clarke Trueblood (B.A., De Pauw)	Kirkwood, Mo.
Michael Edward Washburn (B.S., Ohio University)	Cincinnati, Ohio
William Noel Watson (B.S., Wisconsin)	Pewaukee, Wis.
Thomas Edward Wex (B.A., Johns Hopkins)	Oconomowoc, Wisc.
William White III (B.A., Kentucky)	Lexington, Ky.
Shelburne Duvall Wilson, Jr. (B.A., University of the South)	Mountain Home, Tenn.
Claude Henry Workman III (B.S., Southwestern at Memphis)	Memphis, Tenn.
Thomas Lynn Wright (B.S., Kentucky)	Lexington, Ky.

STUDENTS STUDYING FOR THE JOINT M.D.-PH.D. DEGREES

Betsy Dianne Bennett (B.A., Vanderbilt)	Charlotte, Tenn.
Hans-Georg Otto Bock (B.A., Vanderbilt)	Tallahoma, Tenn.
Michael Ray Boyd (B.S., Kentucky)	Lexington, Ky.
Richard Edward Buller (B.S., California)	Rancho Santa Fe, Calif.
Gary Ellis Carnahan (B.A., David Lipscomb)	Madison, Tenn.
Brian Cole (B.A., Oklahoma City)	Altus, Okla.
Zachary Dale Goodman (B.A., Vanderbilt)	Fort Lauderdale, Fla.
James Harvey Leech (B.A., Yale)	Lexington, Ky.
David Hoover Morgan (B.A., Vanderbilt)	Williamsburg, Ky.
William David Patterson (B.A., College of Wooster)	Maryville, Tenn.
Michael Stevens Rees (B.S., Massachusetts Institute of Technology)	Saint Petersburg, Fla.
Robert Barnett Strecker (B.A., Missouri)	Columbia, Mo.
James Alex Waldron, Jr. (B.A., Hendrix)	Pine Bluff, Ark.

INTERNSHIPS

CLASS OF 1972

John Frederick Altenburg	Mapleton, N. D.
United States Air Force Medical Center, San Antonio, Texas (<i>Rotating</i>)	
Landon Butler Anderson, Jr.	Celina, Tenn.
University of Virginia Hospital, Charlottesville, Virginia (<i>Surgery</i>)	
Ralph Ivan Barr	Hopkinsville, Ky.
University of Virginia Hospital, Charlottesville, Virginia (<i>Rotating</i>)	
Bill Gene Bell	Dickson, Tenn.
Naval Hospital, San Diego, California (<i>Rotating</i>)	
Thomas Poindexter Bersot	Louisville, Ky.
University of California Hospital, San Francisco, California (<i>Medicine</i>)	
Frederic Tremaine Billings III	Nashville, Tenn.
Vanderbilt University Hospital, Nashville, Tennessee (<i>Medicine</i>)	
Neil Art Breslau	Brooklyn, N. Y.
Medical Center of Vermont, Burlington, Vermont (<i>Rotating</i>)	
Steven James Burnham	Charlotte, N. C.
Vanderbilt University Hospital, Nashville, Tennessee (<i>Surgery</i>)	
Joe Moffatt Chisholm	Memphis, Tenn.
University of Miami Hospital, Miami, Florida (<i>Community Medicine</i>)	
Richard Alan Davidson	Lantana, Fla.
Vanderbilt University Hospital, Nashville, Tennessee (<i>Medicine</i>)	
James Daniel Dillon, Jr.	Nashville, Tenn.
Vanderbilt University Hospital, Nashville, Tennessee (<i>Surgery</i>)	
Elizabeth Wolfe Dow	Meridian, Miss.
Vanderbilt University Hospital, Nashville, Tennessee (<i>Pediatrics</i>)	
Robert Clayton Erickson II	Massillon, Ohio
Parkland Memorial Hospital, Dallas, Texas (<i>Surgery</i>)	
Raymond Edward Faught, Jr.	Clayton, Ala.
University of Virginia Hospital, Charlottesville, Virginia (<i>Medicine</i>)	
Marjorie Burgess Fowlkes	Trussville, Ala.
St. Joseph's Hospital, Denver, Colorado (<i>Rotating</i>)	
Thomas Ralph Fuller, Jr.	Johnson City, Tenn.
Barnes Hospital, St. Louis, Missouri (<i>Medicine</i>)	
Richard Lee Gallagher	Houston, Tex.
Yale-New Haven Medical Center, New Haven, Connecticut (<i>Pathology</i>)	
James Henry Gilfoil IV	Lake Providence, La.
Philadelphia General Hospital, Philadelphia, Pennsylvania (<i>Psychiatry</i>)	
Edward Rodman Green	Little Rock, Ark.
University of Texas Medical Center, Galveston, Texas (<i>Surgery</i>)	
Thomas Eugene Hanes	Atlanta, Ga.
Vanderbilt University Hospital, Nashville, Tennessee (<i>Pathology</i>)	
Benson Harvey, Jr.	Chattanooga, Tenn.
Mary Hitchcock Memorial Hospital, Hanover, New Hampshire (<i>Surgery</i>)	
James Brevard Haynes, Jr.	Murfreesboro, Tenn.
Parkland Memorial Hospital, Dallas, Texas (<i>Medicine</i>)	
Robert Ray Holcomb	Hackleburg, Ala.
William A. Shands Hospital, Gainesville, Florida (<i>Pediatrics</i>)	
Russell Bruce Hubbard	Wheeling, W. Va.
University Hospital of San Diego County, San Diego, California (<i>Psychiatry</i>)	
Toyohisa Ishii	Oklahoma City, Okla.
Vanderbilt University Hospital, Nashville, Tennessee (<i>Obstetrics and Gynecology</i>)	
Ronnie Andrew Kaler	Paducah, Ky.
University of Kansas Medical Center, Kansas City, Kansas (<i>Surgery</i>)	
Louis Jay Katzman	Bronx, N. Y.
Bellevue Hospital Center, New York, New York (<i>Surgery</i>)	
James Moore Keightley, Jr.	Harrodsburg, Ky.
City of Memphis Hospital, Memphis, Tennessee (<i>Medicine</i>)	
William Benjamin Kibler	Louisville, Ky.
Parkland Memorial Hospital, Dallas, Texas (<i>Surgery</i>)	

Edmund Pond Lawrence, Jr.	.....	Louisville, Ky.
Vanderbilt University Hospital, Nashville, Tennessee	(Surgery)	
Carl Allen Levy	.....	University City, Mo.
University of Illinois Medical Center, Chicago, Illinois	(Surgery)	
Ira Eugene Lew	.....	Providence, R. I.
Vanderbilt University Hospital, Nashville, Tennessee	(Psychiatry)	
Kenneth Frederick Luckmann	.....	Westfield, N. J.
Vanderbilt University Hospital, Nashville, Tennessee	(Medicine)	
Ronald Morgan Massy	.....	Macon, Ga.
George Washington Hospital, District of Columbia	(Medicine)	
George Patrick Maxwell	.....	Nashville, Tenn.
Johns Hopkins Hospital, Baltimore, Maryland	(Surgery)	
Albert Whitfield Morriss, Jr.	.....	Tyler, Texas
University Hospital of San Diego County, San Diego, California	(Surgery)	
Gary Elliott Penner	.....	Storrs, Conn.
San Diego Naval Hospital, San Diego, California	(Rotating)	
William Marshall Petric	.....	Louisville, Ky.
Duke University Medical Center, Durham, North Carolina	(Psychiatry)	
Ronnie Neal Rice	.....	Clarksville, Tenn.
North Carolina Memorial Hospital, Chapel Hill, North Carolina	(Surgery)	
William Wright Robertson, Jr.	.....	Mayfield, Ky.
University Hospital of San Diego County, San Diego, California	(Surgery)	
Arthur Allen Rosenblatt	.....	North Miami, Fla.
Cincinnati General Hospital, Cincinnati, Ohio	(Surgery)	
Don Albert Schweiger	.....	Portsmouth, Va.
Vanderbilt University Hospital, Nashville, Tennessee	(Medicine)	
Sally Sherard	.....	Anderson, S. C.
Vanderbilt University Hospital, Nashville, Tennessee	(Surgery)	
William Lewis Smead	.....	Nashville, Tenn.
Massachusetts General Hospital, Boston, Massachusetts	(Surgery)	
Frank Wilson Stevens, Jr.	.....	Nashville, Tenn.
North Carolina Memorial Hospital, Chapel Hill, North Carolina	(Medicine)	
Robert John Stine	.....	Maryville, Tenn.
Barnes Hospital, St. Louis, Missouri	(Surgery)	
Jonathan Nicholas Terhune	.....	Murray, Ky.
University of Kansas Medical Center, Kansas City, Kansas	(Medicine)	
David Lawrence Tharpe	.....	Nashville, Tenn.
University of Alabama Medical Center, Birmingham, Alabama	(Medicine)	
Ervin Magnus Thompson	.....	Mobile, Ala.
Presbyterian St. Lukes Hospital, Chicago, Illinois	(Medicine)	
Edmond Franklin Tipton	.....	Nashville, Tenn.
Vanderbilt University Hospital, Nashville, Tennessee	(Medicine)	
Henry Alan Unger	.....	Miami Beach, Fla.
Bellevue Hospital Center, New York, New York	(Surgery)	
David Lee VandenBerg	.....	Muskegon, Mich.
San Diego Naval Hospital, San Diego, California	(Medicine)	
Roger Bruce Vogelfanger	.....	Springfield, Va.
Vanderbilt University Hospital, Nashville, Tennessee	(Psychiatry)	
William Dean Wehunt	.....	Sumter, S. C.
Tripler General Hospital, Honolulu, Hawaii	(Rotating)	
Ralph Edwards Wesley	.....	Carlisle, Ky.
Vanderbilt University Hospital, Nashville, Tennessee	(Medicine)	
James Hayes Whiteside	.....	Glasgow, Ky.
Ohio State University Hospital, Columbus, Ohio	(Medicine)	
Betty Jean Williams	.....	Pond Creek, Okla.
Methodist Hospital, Houston, Texas	(Medicine)	
Robert Emmett Winton	.....	Raleigh, N. C.
University of Michigan Affiliated Hospitals, Ann Arbor, Michigan	(Pediatrics)	
Dennis Clifford Workman	.....	Sarasota, Fla.
Vanderbilt University Hospital, Nashville, Tennessee	(Psychiatry)	

MEDALS, PRIZES, AND SCHOLARSHIPS

FOR THE YEAR 1971-72

FOUNDER'S MEDAL FOR SCHOLARSHIP. Endowed by Commodore Cornelius Vanderbilt and given ever since to the graduate standing first in his class.

WILLIAM LEWIS SMEAD.....Nashville, Tenn.

THE ALBERT WEINSTEIN PRIZE IN MEDICINE. Established in memory of Albert Weinstein, M.D., and awarded to the senior student who has demonstrated high scholastic attainment and qualities which characterize the fine physician. *Award shared by:*

THOMAS POINDEXTER BERSOT.....Louisville, Ky.

JAMES BREVARD HAYNES, JR.....Murfreesboro, Tenn.

WILLIAM LEWIS SMEAD.....Nashville, Tenn.

DEAN'S AWARD FOR STUDENT RESEARCH PRESENTATION. Awarded for the most outstanding research paper presented by a medical student. *Award shared by:*

THOMAS POINDEXTER BERSOT.....Louisville, Ky.

JAMES BREVARD HAYNES, JR.....Murfreesboro, Tenn.

ROBERT EMMETT WINTON.....Raleigh, N. C.

BEAUCHAMP SCHOLARSHIP. Endowed, and awarded in the School of Medicine to the Department of Psychiatry.

ERVIN MAGNUS THOMPSON.....Mobile, Ala.

THE MERRELL AWARD IN PATHOLOGY. Awarded annually for outstanding research papers by Vanderbilt University medical students in the field of pathology.

THOMAS POINDEXTER BERSOT.....Louisville, Ky.

AMOS CHRISTIE AWARD. Awarded to a senior student for excellence in pediatrics.

THOMAS POINDEXTER BERSOT.....Louisville, Ky.

ALPHA OMEGA ALPHA

FOURTH-YEAR CLASS

Elizabeth Wolfe Dow.....	Meridian, Miss
Robert Clayton Erickson II*.....	Massillon, Ohio
Thomas Ralph Fuller, Jr.....	Johnson City, Tenn
James Brevard Haynes, Jr.....	Murfreesboro, Tenn
Louis Jay Katzman.....	Bronx, N. Y.
Sally Sherard.....	Anderson, S. C.
William Lewis Smead*.....	Nashville, Tenn
Frank Wilson Stevens, Jr.....	Nashville, Tenn
Robert John Stine*.....	Maryville, Tenn
William Dean Wehunt.....	Sumter, S. C.

*Elected in Third Year

THIRD-YEAR CLASS

William Haynes Heaton.....	Severna Park, Md
Thurman Dwight McKinney.....	Morgantown, Ky
James Robert Sheller.....	Lafayette, La

VANDERBILT UNIVERSITY HOSPITAL



D. GENE CLARK, M.H.A., *Acting Director*
JOHN K. MILES, M.S.H.A., *Associate Director*
WAYNE I. HAYES, M.S.H.A., *Assistant Director*
J. JACK HORN, M.B.A., *Assistant Director*
HEWITT ROGERS, *Assistant Director*
WILLARD R. FAULKNER, Ph.D., *Acting Director, Clinical Laboratories*
SALLY ANN SAMPLE, M.N., R.N., *Assistant Director for Nursing Service*
MACON SOMERVILLE, *Acting Director of Finance*
RICHARD G. BRUEHL, Ph.D., *Director, Pastoral Services*

DIRECTORS OF HOSPITAL SERVICES

DOROTHY FREDRICKSON, M.S., *Physical and Occupational Therapy*
AILEEN GRAVES, B.S., *Dietetic Service*
A. KEMPTON HAYNES, JR., S.T.B., *Chaplain*
ADELAIDE HOHANNES, M.S.S.W., *Social Service*
THOMAS M. HUTCHISON, *Housekeeping Service*
HENRY E. KORN, B.S., *Management Systems*
RUTH G. LAND, B.S., *Medical Records*
GROVER C. LYLES, *Laundry and Linen Service*
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