



College of Arts and Sciences

Smith L. Holt, Ph.D., Dean

Neil J. Hackett, Ph.D., Associate Dean

Mary Rohrberger, Ph.D., Director of Curricular Affairs and Academic Services

Ann Schneider, Ph.D., Director of Research

Stanley D. Green, M.M., Director of Extension

William Ivy, Ph.D., Director of Student Services

Heads of Departments and Directors of Schools

Aerospace Studies, Colonel Glen Nemecek, M.A.

Art, Richard A. Bivins, M.F.A.

Botany and Microbiology, Glenn W. Todd, Ph.D.

Chemistry, Neil Purdie, Ph.D.

Computing and Information Sciences, Donald D. Fisher, Ph.D.

English, John K. Crane, Ph.D.

Foreign Languages and Literatures, John A. Schillinger, Ph.D.

Geography, Richard D. Hecock, Ph.D.

Geology, Gary F. Stewart, Ph.D. (acting)

Health, Physical Education and Leisure

School Director: George H. Oberle, P.E.D.

Assistant Director: Betty W. Abercrombie, Ed.D.

History, Joseph A. Stout, Jr., Ph.D.

Journalism and Broadcasting

School Director: Marian D. Nelson, Ed.D.

Mathematics, William H. Jaco, Ph.D.

Military Science, LTC Michael K. McWherter, M.A.

Military Studies Departments:

Coordinator: Smith L. Holt, Ph.D.

Music, Gerald Frank, D.M.A. (interim)

Philosophy, Edward G. Lawrey, Ph.D.

Physics, Geoffrey P. Summers, D.Phil.

Political Science, Joseph W. Westphal, Ph.D. (interim)

Psychology, Vicki Green, Ph.D. (interim)

Religious Studies, Kyle M. Yates, Jr., Th.D.

Sociology, Charles Edgley, Ph.D.

Speech Communication, James Hughey, Ph.D.

Speech and Language Pathology and Audiology, Cheryl Scott, Ph.D. (interim)

Statistics, J. Leroy Folks, Ph.D.

Theatre, Kenneth Cox, Ph.D.

Zoology, Jerry Wilhm, Ph.D.

The College of Arts and Sciences not only offers within itself a wide variety of programs in teaching, research and extension, but also underpins and reinforces all the other programs of the University as a whole.

Apart from strong programs in the basic natural and social sciences and in the liberal and fine arts, the College provides a number of more specialized and interdisciplinary strengths, and a variety of professional and pre-professional training. Its 25 academic units, of which 23 operate as departments and two as schools (Health, Physical Education and Leisure; and Journalism and Broadcasting) offer more than 75 degree programs at the bachelor's level, and in conjunction with the Graduate College, 23 master's and 14 doctoral degrees.

Freshmen who are not yet certain of their career or educational goals can enroll without declaring a major in the College of Arts and Sciences and make satisfactory progress toward most degrees, without wasting time or credits, for as many as three (or even four) semesters before they select their major field of study. Under the careful advising of the Office of Student Academic Services, they can explore possible specializations or combinations of subjects as they complete necessary basic courses.

The Department of Economics, which belongs administratively to the College of Business Administration, offers B.A. and B.S. degrees through the College of Arts and Sciences. The Department of Biochemistry, which belongs administratively to the College of Agriculture, offers the B.S. through the College of Arts and Sciences.

For further details, students should contact the heads or academic advisers of the departments in which they are interested; or for general information, the College's Office of Student Academic Services.

Graduate Work

Master's degrees are offered in most undergraduate subjects, with doctor's degrees available in many. (For details, see departmental entries below or consult the *Graduate Catalog*.)

Baccalaureate Degrees Offered

Detailed requirements for all degree programs and options are set out in the book *Undergraduate Programs and Requirements*, available in all Oklahoma colleges and high schools. Separate sheets, stating the requirements for any particular degree, may be obtained by application to the department or college in which the degree is offered.

Bachelor of Arts (B.A.): art, economics, English, French, geography, German, history, mathematics, music, philosophy, political science, psychology, radio-TV-film (production and performance), religious studies, sociology (with options in anthropology, corrections, pre-social work, gerontology, juvenile treatment, and child services), Spanish, and speech communication.

Bachelor of Science (B.S.): aerospace studies, biochemistry, biological sciences (with biomedical and ecology options), botany, chemistry, computer science, economics, geography, geology, health education (with options in school health and community health), physical education with teaching certificate, journalism (advertising, news-editorial, photojournalism, public relations), mathematics, medical technology, microbiology, military science, physics, physiology, political science (with options in public affairs, international public administration and criminal justice administration, public affairs: public law and legal systems, public affairs: para-legal), psychology, radio-TV-film (news and public affairs, and sales and management), recreation (with options in outdoor recreation, administration and management and therapeutic recreation), sociology (with options in anthropology, corrections, gerontology, pre-social work, juvenile treatment, and child services), speech communication, speech pathology, statistics, wildlife ecology (with options in communication, management, research and enforcement) and zoology.

Bachelor of Fine Arts (B.F.A.): (graphic art, art education and studio art), and B.A. are offered in art.

Bachelor Of Music (S.M.): (vocal certificate, instrumental certificate, combined certificate and performance) and B.A. are offered in music.

Bachelor of University Studies (B.U.S.): for the mature student who has an academic objective which cannot be fulfilled by any of the regular degree programs, an individual plan of study fitted to the particular needs of the student may be devised with the approval of the student's adviser, dean and the Office of the Vice-president for Academic Affairs and Research.

Second Bachelor's Degree. To secure a second bachelor's degree, a student must complete *a minimum* of 30 semester credit hours in addition to those required for the first degree. It is expected that *all* the hours for the second bachelor's degree will be devoted to any additional required courses in the area of concentration. The 30 additional hours are the minimum a student must take; the number actually needed depends on what a student must do to satisfy all the requirements for the second degree.

A student seeking a second degree in the College of Arts and Sciences at OSU should ask his or her second adviser to submit a degree plan for the second degree, clearly headed "second of two degrees," and showing how *all* the requirements of the second degree are to be satisfied. The plan should also state the major, date of award and total credit hours of the first degree, and indicate those courses which represent the minimum of 30 additional hours. The second degree plan should be sent to the College of Arts and Sciences Office of Student Academic Services within two weeks after the student's last pre-enrollment.

Note: Students wishing to complete degrees in two different colleges at OSU should consult with the offices of student academic services of both. Concurrent enrollment in two colleges is possible, but a student must be enrolled in

a college for at least two semesters before becoming eligible for a degree from that college.

Second Majors and Minors

If a student majoring in one field also completes the specified requirements for a "major" or a "minor" in other fields, the additional majors or minors may be noted on the student's transcript. Such specified requirements may be obtained from the student's own adviser or from the department in which the additional notation is sought. The student should, at the end of his or her senior year, ask the department head in the field of additional study to submit the request to the Office of Student Academic Services in the College of Arts and Sciences.

Honors Program

The A&S Honors Program provides academically talented students a chance to study, research and exchange ideas within a supportive community. Its purpose is to broaden the students' general university education through innovative academic experiences. The A&S Honors Program offers students the advantages of small classes as well as the excellent facilities and distinguished faculty of a large state university. The setting of the Honors Program, with an informal work space for the staff and for the students, fosters an atmosphere of cooperation and friendliness. It's easy to become involved in the Program and to find a place at the University.

Academic participation in the A&S Honors Program is flexible and varied. Interdisciplinary Honors Seminars are offered each semester which introduce students to the seminar approach to learning. Regular classes in nearly all the academic disciplines—mathematical sciences, natural sciences, and humanities and the social sciences—often have honors sections. These specially designated courses allow Honors students to fulfill their university general education requirements in small, enriched classes taught by the most sought-after faculty members. In addition, advanced honors students have the option of applying for the Honors Research Practicum. Successful applicants enjoy the opportunity of serving as research assistants in a one-on-one relationship with distinguished faculty actively engaged in advancing the knowledge of their particular fields. The Research Practicum is available for nearly all fields of study found in the College of Arts and Sciences. Students who complete the Research Practicum will have amassed useful experiences beneficial to graduate careers or the world of work.

Details of the Honors Program can be obtained from any department, or from the Arts and Sciences Student Academic Services office, LSE 202, or from Dr. Paul Bischoff, MS 501.

Area Studies Certificates

While completing requirements for a degree, and usually without increas-

ing the total number of credit hours required, students may also earn the following Area Studies Certificates.

(1) *International studies.* Area studies programs through the Center for Global Studies on Russia and Eastern Europe, Latin America, Africa and Asia are available. These 23-credit-hour programs (including five hours of a specific foreign language at the sophomore level) enable an undergraduate student to pursue an interdisciplinary and integrated curriculum leading to a certificate in a particular regional culture while majoring in a department of his or her choice, and thus acquire knowledge of a regional civilization while developing disciplinary expertise. Area study can provide a background and basis for specialized graduate study and research within a discipline or it can prepare a student for professional service abroad.

A certificate in Ancient and Medieval Studies is also available.

(2) *American Studies.* An interdisciplinary program involving various aspects of American history and culture can lead to a certificate in American Studies.

(3) *Native American Studies.* A certificate in Native American Studies may be earned through an interdisciplinary program in Native American history and culture.

Further information on all Area Studies Certificates may be obtained from the Office of the Dean of the College of Arts and Sciences.

High School Teaching Preparation

Students taking degrees in the College of Arts and Sciences may, by completing certain qualifying courses, receive state licensure for teaching in the secondary schools. Some programs, e.g. in physical education, cover grades K-12. Full details may be obtained from departmental advisers or from the Office of Teacher Education in the College of Education.

Students who wish to qualify for teaching licensure should consult as early as possible with the adviser in their field of interest, and should apply for admission to teacher education as soon as possible, and preferably before the end of their sophomore year.

It is usually possible to qualify for teaching licensure and the bachelor's degree within the 127 semester credit hours required for graduation. When it is not possible, students may meet the requirements for the degree and then complete the licensure requirements by taking additional courses in a summer session or, in some cases, by correspondence.

Full teaching certification is awarded by the State Department of Education when the licensed candidate has successfully completed a period of teaching in a school system.

Preprofessional Health-Related Programs

Pre-dentistry, Premedicine, Pre-osteopathic Medicine, Pre-podiatric Medicine, and Pre-veterinary Medicine. (See also *College of Agriculture*, Pre-veterinary options.) The preprofessional curricula for medical doctors, den-

tists and veterinarians, have the same basic core because they must prepare students for professional schools whose admission requirements are almost identical. These include a strong foundation in chemistry, biology and physics, the disciplines on which major advances in the health field depend. Included also are courses to develop written and spoken communication skills, which are highly important for a good relationship with patients, the public and other professionals.

Beyond this required core, preprofessional students may choose courses and a major as freely as any other students in the College of Arts and Sciences. While many students major in a science, there are other subject areas that are equally acceptable. Medical schools encourage study in the social sciences and humanities that contribute to the understanding of human beings in their entirety-their history and environment, their attitudes and values, their emotions, motivations, interpersonal relationships and cultural heritage. All of these may *affect* sickness and health. A knowledge of these may also enrich the lives of the professionals.

Although it is possible to apply for admission to a professional school after three years (two years for a few dental and veterinary schools), most students will have completed a bachelor's degree before entering. Preprofessional students at OSU choose a major and follow that degree plan, incorporating the courses that are required for professional school admission. Physiology majors are permitted, with the approval of their adviser, to earn a B.S. degree by transferring a maximum of 30 hours from a medical, dental, or veterinary school to complete the required 127 semester hours.

Some professional schools do not state a firm minimum grade-point average for admission, but a student should maintain better than a 3.00 grade-point average to be competitive. The specific admission requirements of medical and dental schools are compiled in catalogs available in the offices of each preprofessional adviser and in the Office of Student Academic Services. The OSU pre-veterinary course requirements are listed under "Pre-veterinary Medicine Curriculum" in the College of Agriculture.

All applicants for medical schools must take the Medical College Admissions Test (MCAT) and dental applicants must take the Dental Admission Test (DAT) prior to admission. The OSU College of Veterinary Medicine requires the general test of the Graduate Record Examination (GRE).

Chiropractic, Dental Hygiene, Nursing, Occupational Therapy, Optometry, Pharmacy, Physical Therapy, Physician's Associate, Radiologic Technology, Corrective Therapy and Athletic Training. These programs require a minimum of two years of general education course work before the final two or more years of professional clinical training. Health professions advisers help students plan individualized curricula that meet the admission requirements of the particular professional school programs that the students hope to enter.

Medical Technology: See *Department of Botany and Microbiology*.

Pre-law. Admission to law school may be obtained with *any* bachelor's degree and satisfactory completion of the Law School Admission Test.(LSAT) Generally, law schools do not state a minimum grade-point average for admission; however, a student should maintain better than a 3.00 grade-point average to be competitive.

A quality undergraduate program is fundamental to the development of basic skills and insights necessary for success in the legal profession. While no single curricular path is ideal, a broadly-based undergraduate program will serve the student well. To develop legal competence, the student's undergraduate education should emphasize elements of communication, critical understanding of the human institutions and values with which law deals, and creative power in thinking.

A prelaw student is free to pursue any undergraduate major of interest. The range of majors for students interested in law is very broad. In choosing a major, a student should avoid those which are narrowly focused on specific vocations. Of particular importance is the intensity and depth of the undergraduate program, which will demonstrate one's capacity to perform well at an academically rigorous level and develop one's fullest academic potential.

Many law schools recommend that students include the following as part of their plan of study: English composition, American government and politics, basic accounting, economics, English and American history, foreign languages and literature, statistics, mathematics, logic, philosophy and public speaking. A quality education with courses selected from a variety of disciplines which offer training in analytical reasoning and writing will prepare one for the rigors of law school.

Students who have no specific preference for an area of degree specialization and who are interested in learning the specific law school admission requirements, may seek counsel from an adviser in the Office of Student Academic Services.

Pre-social Work. A special undergraduate curriculum in pre-social work is administered as an option through the Department of Sociology. Interested students are invited to call at the Department office for an appointment with the social work adviser.

Corrections. A bachelor's program in corrections, offered by the Department of Sociology, provides academic background for work in juvenile and adult corrections and is also good preparation for the graduate program in corrections.

Criminal Justice Administration. A criminal justice administration program offered by the Department of Political Science provides an option under public affairs strongly oriented toward the administration of justice and police science.

Library Science. Students who wish sound undergraduate preparation for admission to an accredited graduate library school should consult the adviser in the preprofessional program for librarians (Library, Room 510) concerning lower-division courses and the selection of an appropriate major field. Special

aptitudes and interests are important in the selection of a specialization in librarianships. For general librarianship in public libraries, a humanities major is strongly advised, but specialists such as law or information-retrieval librarians are better served by undergraduate majors in social sciences or mathematics.

In the upper-division program, along with the required number of courses in the chosen Field of Concentration, students should take from 12 to 15 credit hours of basic library courses, including those usually required as prerequisites for the master's degree in library science. At least one modern foreign language is usually required, sometimes two, and a broad general background emphasizing the current literature of as many fields as possible is desirable. Students will receive individual attention to prepare them for the type of librarianship they prefer and for the graduate school of their choice.

Early admission to the preprofessional program will make it possible to avoid delay and to obtain a master's degree in as little time as two semesters.

Degree Requirements

Requirements given below apply to all degrees offered by the College of Arts and Sciences. Specific requirements for each degree program, which may exceed the minima prescribed by the College, are given in a separate book, *Undergraduate Programs and Requirements*. See also *University Academic Regulations* in this *Catalog*.

Responsibility and Assistance. The responsibility for satisfying all requirements for a degree, and for ensuring that a degree plan has been endorsed, rests with the student. Advisers help students to work out the most advantageous study plans. It is essential that students consult fully with their advisers and not restrict their visits to the pre-enrollment periods, when only brief encounters are possible.

Total Semester Credit Hours and Grade-point Average. The minimum number of semester credit hours for graduation is 127. The minimum grade-point average is 2.00. The 2.00 average must be earned overall, in all courses in the major subject and in the Field of Concentration.

Particular degree programs may specify higher grade-point requirements or exceed the 127 hours total. Details are given in *Undergraduate Programs and Requirements*.

General Education Requirements. The General Education Requirements for the degrees offered by the College are shown for each program in *Undergraduate Programs and Requirements*. They total 39 credit hours for the B.S. and B.A. degrees.

All degrees include a common core of 12 credit hours. *Three credit hours of American history and three hours of American government* are required by state law. These must be satisfied by HIST 1103 or 1483 or 1493 and POLSC 1013. *Six credit hours of English composition* is a University requirement, and this must

be satisfied by English 1113 and 1323 (or 1413, Freshman English Honors). Students who obtain a grade of "A" or "B" in ENGL 1113 may substitute ENGL 3323 for ENGL 1323. (See also *English Proficiency Examination*, below.)

The remaining 27 credit hours must be distributed as follows: 6 credit hours of social sciences, 6 hours of humanities, 8 hours of natural sciences, 3 hours of abstract and quantitative thought, 3 hours of communication systems, and 1 hour of elective.

College Requirements. In addition to the 39 hours of general education, the college requires 1 credit hour of orientation, A&S 1111 for both the B.A. and the B.S. degrees. For the B.S., nine additional hours of natural or mathematical sciences are required, as well as 3 additional hours from the humanities or arts. For the B.A., nine additional hours of humanities or arts are required, as well as 3 additional hours of natural or mathematical sciences. College requirements define the Arts and Sciences degrees.

Foreign Language Proficiency Requirement. For the B.A., the foreign language requirement is 10 credit hours in *one* foreign language. Five hours in one language and five in another do not satisfy the requirement. The ten hours represent the first year of work in the language in college and are roughly equivalent to two years of work in high school. The courses are normally 1115 and 1225. Proof of equivalent proficiency must be recorded on the student's transcript, by either advanced standing credit or completion of a second year course or above in the language. FRNCH and GRMN 3013, 3023, FRNCH and SPAN 4113, RUSS 3123, 4113, 4223 do not satisfy this requirement.

Non-Western Requirement (B.A. and B.F.A. only). One 3-hr. course of Non-Western studies from: (Social Sciences) GEOG 3363; HIST 3403, 3413, 3423, 3433; POLSC 3213, 3223, 3253, 3313; (Humanities) ART 3633, 4643; ENGL 4453 (Twentieth Century Novel in India); IDS 3103, 3503, 4113; PHILO 3943; REL 3403, 3413, 3533; second year work or above in Chinese or Japanese language or culture; A&S 3500 (African or Asian Area Studies Colloquium).

International Dimension (all degrees). Three hours of credit in courses which foster understanding of, or the ability to communicate with, peoples and cultures of other countries. Courses satisfying this requirement are designated "I" in this *Catalog*; and a list is available from any adviser or from the Office of the Dean of Arts and Sciences.

Scientific Investigation Requirement (all degrees). One course including an investigative laboratory giving experience with scientific method. Courses satisfying this requirement are designated "L" in this *Catalog*; and a list is available from any adviser or from the Office of the Dean of Arts and Sciences.

The Non-Western, International Dimension, and Scientific Investigation requirements may be satisfied by courses used also to satisfy any other part of a student's degree program (i.e., in General Education, Departmental, Field of Concentration, or Electives requirements). No additional hours are required.

Additional College Requirements. For both the B.S. and the B.A.: 6 hours of

general education or college requirements are to be taken at the 3000 level or above and 6 hours of college ENDWC (Enhanced Discussion/Writing Component) courses are to be included in a student's plan of study. A list of current college ENDWC courses may be obtained from any Arts and Sciences adviser or the Office of Student Academic Services.

The English Proficiency Examination. All candidates for a bachelor's degree must, unless they secure exemption, pass the University English Proficiency Examination. See *University Academic Regulation 3.6*.

Mathematics Proficiency Requirement. All candidates for a bachelor's degree must pass the Arts and Sciences Mathematics Proficiency Examination or satisfy one of the following conditions:

- (1) Receive a grade of "A" or "B" in MATH 1314, 1513, 1613, or 1715; or
- (2) Receive advanced standing credit for any one of the courses listed in number (1) above; or
- (3) Receive a grade of "C" or better in any calculus course, that is, MATH 2265, 2365, 2373, 2383, 2713.

Students are required to pass the Arts and Sciences Mathematics Proficiency Examination prior to filing a diploma application and are encouraged to take the examination toward the end of their junior year. The examination is administered, by appointment, to individual students by the Bureau of Tests and Measurements. A small fee will be charged for the administration and grading of the examination. Students who fail the examination will be required to take it again until they have demonstrated proficiency.

Field of Concentration. At least 40 semester credit hours of advanced work as specified by the department, including courses in the major and in supporting fields, must be completed. These 40 hours of advanced work constitute the student's Field of Concentration.

Upper-division Credit: 50 hours minimum. A student must successfully complete at least 50 semester hours of upper-division credit, i.e. credit in courses at the 3000 or 4000 level.

(These 50 hours will normally, but not necessarily, be listed in *Undergraduate Programs and Requirements* under "Field of Concentration.")

Hours in One Prefix: 42 hours maximum. If a student seeking a B.A. or B.S. degree takes more than 42 semester credit hours in one subject, including both lower-division and upper-division credit, the hours in excess of 42 will be added to the minimum total of 127 hours required by the College for a bachelor's degree. For example, if a department were to require 46 hours in one subject for a B.S. degree, the minimum requirement for a B.S. degree in that subject would be 133 hours. If a candidate for a B.A. in French has 46 hours of credit in French on his or her transcript, he or she must complete a total of 133 hours in order to graduate, instead of the stated total of 127.

This "42 hour maximum" applies to all courses taken in a subject, whether they are required or elective, with the exception of required courses in English composition and American history and government mandated by the state of Oklahoma.

Endorsement of Student's Plan (Graduation Check). Immediately after their last pre-enrollment, before their last semester, students must check with their advisers to ascertain that a degree plan has been sent to the Arts and Sciences Office of Student Academic Services.

Changes in Degree Plan. Once a degree plan has been submitted, a student will not graduate until all requirements on it have been fulfilled. Any deviation in the plan must be recommended by the adviser on a 'change in plan of study' card, and sent to the Arts and Sciences Office of Student Academic Services for approval.

Checklist of Graduation Requirements.

- (1) *Total hours.* Minimum 127 (see degree sheet). *Note:* Hours of "F" or "I," or for repeated courses unless officially approved in course descriptions in this *Catalog*, do not count. English 0103 (offered only at Oklahoma City Technical Institute) is a non-credit course. Mathematics 1113 is not applicable to a degree. Students must ascertain that grade reports for the removal of "I's" have been sent to the Office of the Registrar by the instructor who gave the "I."
- (2) *Grade point average.* See individual degree sheets for all grade-point minima, overall, in major, in concentration, in professional courses, in student-teaching, etc.
- (3) *Validity of credits.*
 - (a) No more than two courses in any one subject or (8 hours in biological science) may be used to satisfy the requirements in any area of General Studies.
 - (b) A course used in the Field of Concentration may not be used to satisfy any other degree requirement.
 - (c) Pass-no pass Grading System. Courses taken on this campus under the Pass-no pass Grading System (see *University Academic Regulations*) may be used only as elective hours. They cannot satisfy any other requirement (General Studies, Departmental, Field of Concentration, certification).
- (4) Regulations governing resident and transfer credit must be satisfied. Transfer credit with a grade-point average below 2.00 can be used toward graduation only if a GPA of 2.00 is earned at OSU at the time of graduation. (See *University Academic Regulations*)
- (5) All degree requirements listed above and specified in *University Academic Regulations* and *Undergraduate Programs and Requirements* must be satisfied.
- (6) *Exemption.* A student who believes that he or she has a valid reason for exemption for a College requirement should file with the Office of Stu-

dent Academic Services a written request which has been approved by his or her adviser. Although general and departmental requirements apply to transfer students, all or most of their previous work may be acceptable as substitutions. Students should consult their advisers.

Information for Students

Office of Student Academic Services. All students entering the College of Arts and Sciences are admitted through the Office of Student Academic Services. This Office is the center for students seeking (1) information about College and University requirements, and (2) academic, educational and vocational counseling. The Office designates advisers for students who have decided on their major. It also counsels those students who have not yet decided on their majors.

High School Preparation. Although no one pattern of course work is required in high school as preparation for enrollment in the College of Arts and Sciences, it is strongly recommended that high school students have: four units of English; three units of mathematics; three units of science; three units of social studies including American history, world history, and one-half unit of Oklahoma history; two units of foreign language; one unit of arts such as music, theater, painting.

The "Undeclared" Student. Since the program of general studies in the College of Arts and Sciences may include course work for as many as three of the first four semesters in college, it is possible for freshmen to enroll without being certain of their major field of study and yet make satisfactory progress toward most degrees. Many students enroll initially as undeclared students so that they may explore possibilities for a major field of study as they complete their required basic courses. They are encouraged to seek information from advisers in any department.

Changing Major or Changing College. Students in good standing may change their major or their college whenever they please. It is wise to discuss any such change with the current and the receiving advisers. A student wishing to change major or college should see the receptionist in the Arts and Sciences Office of Student Academic Services.

Credit by Advanced Standing Examination. Entering freshmen who believe that they can demonstrate sufficient mastery of a subject to earn advanced standing credit should write to the Office of the Registrar for a schedule of advanced standing examinations. The most popular examinations are in foreign languages, English, mathematics and American history and government. Other examinations, however, can be arranged.

Student Loads. The normal student load is 15-17 semester credit hours. Loads of more than 19 semester credit hours are permitted only by special permission from the Office of Student Academic Services and, as a rule, only to

students with grade-point averages of 3.00 or above.

Native Speaker Policy. A native speaker of a foreign language cannot enroll in or earn credit toward graduation in lower-division (1000- or 2000-level) courses in that language. A native speaker of a foreign language is defined as a person whose high-school level instruction was conducted principally in that language. Native speakers may occasionally have valid reasons for establishing credit in a lower-division course. Requests for such consideration should be directed to the dean of the student's college for recommendation to the head of the Department of Foreign Languages and Literature.

Undergraduate Financial Assistance. Students who are interested in undergraduate scholarships and loans should inquire at the University Office of Financial Aids, and see also *Financial Assistance for Students* in this *Catalog*.

Student Participation in Arts and Sciences Government. The College believes that student experience and viewpoint add a needed dimension to the formulation of academic policies and encourages student involvement.

Arts and Sciences Student Council.The Council meets regularly throughout the year and provides a constant channel for students' recommendations to the faculty and administration of the College.

Advertising: See *(School of) Journalism and Broadcasting*

Aerospace Studies: See *(Departments of) Military Studies*

Anthropology: See *Sociology*

Art

Associate Professor and Head Richard A. Bivins, M.F.A.

Professor Ronald P. duBois, M.A. **Associate Professors** Larry C. Avrett, M.F.A.; Nicholas W. Bormann, M.F.A.; Dean P. Bloodgood, M.F.A.; Ellen R. Murray Meissinger, M.F.A. **Assistant Professors** Lynda Halley, M.F.A.; Susan H. Hamlet, M.F.A.; Robert E. Parks, M.F.A.; Janice Pittsley, M.F.A.; David M. Roberts, M.F.A.; B. J. Smith, M.F.A.; Nancy B. Wilkinson, M.A.

The Department of Art provides courses for the following types of student needs: (1) general educational background, (2) major concentrations in art, (3) minor in art for other majors.

Two degrees are offered in art: Bachelor of Art (B.A.) requiring 40 credit hours with options in Studio Art and Art History and the Bachelor of Fine Arts (B.F.A.) requiring 60 credit hours in art. Students may choose one of two options in the B.F.A. program: Studio Art and Graphic Design. Fields of concentration available in both degree programs are drawing, painting, print-making, graphic design, ceramics, jewelry, metalsmithing, sculpture and art

history. Because of core curriculum department requirements, the freshman and sophomore years are virtually the same for all majors in art.

Students wishing teacher certification should contact the Teacher Education Program in the College of Education or their art adviser. Art majors must attain a grade-point average of 2.50 in art courses in order to qualify for licensure and graduation.

The Department of Art maintains an exhibition gallery, the Gardiner Art Gallery in the Bartlett Center for the Studio Arts, with approximately 200 linear feet of exhibition space and 2600 square feet of floor space. Works by artists of national and international reputation, faculty and student works and cultural artifacts are shown.

Biochemistry: See *College of Agriculture*

Biological Sciences: See *(Department of) Zoology*

Botany and Microbiology

Botany

Professor and Head Glenn W. Todd, Ph.D.'

Professors Eddie Basler, Ph.D.; Jerry J. Crockett, Ph.D.; James K. McPherson, Ph.D.; Paul E. Richardson, Ph.D. **Associate Professors** Becky B. Johnson, Ph.D.; James D. Ownby, Ph.D.; Ronald J. Tyrl, Ph.D. **Assistant Professors** David A. Francko, Ph.D.; Arthur J. Pollard, Ph.D.; David W. Meinke, Ph.D.

Botany is the science concerned with the study of plant life. Green plants are the constantly renewable source of food energy for all animals, including man, and it is important that they be thoroughly understood as survival and ecological balance depend upon this knowledge. As populations increase, the need for more and better supplies of food and fiber also increases. The study of botany underlies several applied sciences: agronomy, forestry, horticulture, plant pathology, range, lake and wildlife management.

To major in botany a student should have a strong interest in science with a good background in chemistry, physics and mathematics. Majors with a B.S. degree may qualify for secondary school science teaching licensure, for technical positions with the federal and state governments in plant inspection and plant introduction work, for plant breeding programs, and for various activities concerned with plants in private industry, such as plant biotechnology.

Facilities used in undergraduate teaching include well-equipped plant structure-function and ecology laboratories, constant-environment chambers, greenhouse facilities, a 160-acre 'ecology preserve' and herbarium with over 125,000 plant specimens. All of the faculty teach and do research in their specialty areas of botany: plant ecology, physiology, taxonomy, anatomy, develop-

ment and limnology. Graduate study toward the M.S. and Ph.D. degrees is available in these areas.

Microbiology

Professor and Head Glenn W. Todd, Ph.D.

Professor Norman N. Durham, Ph.D. **Associate Professors** Lavon P. Richardson, Ed.D.; Mark R. Sanborn, Ph.D.; Helen Vishniac, Ph.D. **Assistant Professors** Rebecca C. Craven, Ph.D.; Mary Grula, Ph.D.; Richard A. Ortez, Ph.D.; John W. Wills, Ph.D.

Microbiology is the study of microorganisms (i.e., fungi, bacteria, and viruses) and their relationship to higher organisms. Areas of practical and theoretical consideration that require some understanding of microorganisms include: public health and sanitation; biotechnology, genetic engineering; food production and preservation; industrial fermentations which produce chemicals, drugs, antibiotics, alcoholic beverages, and various foods; prevention and treatment of diseases of plants, animals and man; and biodegradation of toxic chemicals and other materials present in the environment. Most of the recent advances in our present understanding of genetics at the molecular level and in genetic engineering have resulted from research involving microorganisms.

Microbiologists work in federal and state departments of public health, the fermentation industry, laboratories of pharmaceutical companies, hospitals and medical schools, and research laboratories of universities, health centers, research foundations and private companies.

Students interested in careers in microbiology should have broad interests in the biological sciences and an aptitude for biology and chemistry. For some areas of specialization, an aptitude for mathematics and physics is also essential.

Departmental courses are designed to provide comprehensive training and the skills required for working with microorganisms, as well as a broad understanding of all aspects of microbial life. Many of the microbiology positions require graduate level studies. In addition to the B.S. degree, the department offers graduate studies leading to the M.S. and Ph.D. degrees in various areas of concentration including virology, microbial physiology, microbial genetics, microbial anatomy, immunology, and several applied areas.

Medical Technology. The program in medical technology is designed to give the student the broad general education and the highly technical skills that are required for a successful career in this important medical science. The minimum requirement for the B.S. degree in medical technology is three years of university work and one year of clinical laboratory education (internship) in an approved school of medical technology.

Clinical laboratory education. For the B. S. degree and certification, the students will, after three years of university work, complete one year of clinical laboratory education (internship) in a school of medical technology accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and currently affiliated with Oklahoma State University. Schools of medical

technology at the following hospitals are currently affiliated:

Baptist Medical Center, Oklahoma City, OK
Comanche County Memorial Hospital, Lawton, OK
Hillcrest Medical Center, Tulsa, OK
Jane Phillips Hospital, Bartlesville, OK
Mercy Health Center, Oklahoma City, OK
Muskogee General Hospital, Muskogee, OK
Norman Municipal Hospital, Norman, OK
Presbyterian Hospital, Oklahoma City, OK
Sparks Regional Medical Center, Ft. Smith, Ark.
St. Anthony's Hospital, Oklahoma City, OK
St. Francis Hospital, Tulsa, OK
St. John Medical Center, Tulsa, OK
St. Mary's Hospital, Enid, OK
Valley View Hospital, Ada, OK

Students entering their twelve months of internship must enroll in Medical Technology Clinical Laboratory (MTCL) courses for 12 credit hours during the equivalent fall and spring semesters and for 6 hours during the equivalent summer session, as follows: Fall - MTCL 4117, 4125; Spring - MTCL 4236, 4246; Summer - MTCL 4325, 4351. A grade of "I" will be given for the first two semesters of internship. Final letter grades will be awarded upon receipt of the final official transcript showing final letter grades in the six MTCL courses from the school of medical technology by the University medical technology coordinator. If a student fails to complete the entire 12-month internship, no course credit will be awarded. Students will pay the regular tuition for the credit hours in which they are enrolled, except that the facilities fees will be waived for the 30 hours of MTCL courses. Students who earn a B.S. degree prior to entering hospital internship will not be required to enroll and pay tuition during internship unless they desire to earn a second B.S. degree in medical technology.

Preprofessional courses. NAACLS requires a minimum of 16 hours of chemistry, including organic and/or biochemistry and 16 hours of biology, including immunology. The University requirement for the B.S. degree in medical technology is as follows: two semesters of general chemistry; organic chemistry and quantitative analysis; immunology and 10 additional credit hours of upper-division microbiology (physiology can be included in this 10 hours); college algebra and statistics.

Residence requirements. Although the MTCL courses are considered to be resident credit, the student is required to complete additional resident requirements from regular on-campus courses as follows: 24 hours of resident courses, including 18 hours of upper-division courses listed under the Field of Concentration on the current degree requirement sheet.

Grade-point average requirements. Students, to be qualified for the B.S. degree, must earn a grade-point average of not less than 2.00 overall and 2.00 in upper-

division major courses. Students with less than 2.80 overall grade-point average may find it difficult to gain acceptance to a school of medical technology under current conditions of competition.

Applications and admissions to internship. Students should apply directly to one or more schools of medical technology about 12 months prior to the beginning date for internship. Approximately 70 percent of students applying for internship are accepted, depending upon the degree of competition in any particular year. The decision on acceptance of any applicant is entirely at the discretion of the hospital-based school of medical technology. Enrollment is limited by the size of the classes in the affiliated hospital-based programs. Satisfactory completion of the clinical laboratory education is required for eligibility to take a certifying examination. The B.S. degree in medical technology is not dependent on a passing grade on the certifying examination.

Chemistry

Professor and Head Neil Purdie, Ph.D.

Regents Professors K. Darrell Berlin, Ph.D.; E. J. Eisenbraun, Ph.D.; Lionel M. Raff, Ph.D. Professors J. Paul Devlin, Ph.D.; I. Dwaine Eubanks, Ph.D.; Warren T. Ford, Ph.D.; Robert D. Freeman, Ph.D.; George Gorin, Ph.D.; Smith L. Holt, Ph.D.; Gilbert J. Mains, Ph.D.; Horacio A. Mottola, Ph.D.; Mark G. Rockley, Ph.D.; Donald L. Thompson, Ph.D. Associate Professors John I. Gelder, Ph.D.; Elizabeth M. Holt, Ph.D.; Louis P. Varga, Ph.D. Assistant Professors Richard A. Bunce, Ph.D.; Linda B. McGown, Ph.D. Instructors S. Daryl Larson, Ph.D. (adjunct); Mabel R. Stephanic, B.S.

Chemistry is the science that deals with the composition, structure and interactions of matter of all kinds. Materials obtained from the earth, such as ores, petroleum and natural gas, as well as those from plants and animals, such as food, fibers and antibiotics, are all studied and modified through chemical means. The chemist creates from natural products new and useful substances that add to the enjoyment of life for all of us. He or she creates new agents to combat pests that destroy great portions of our food supplies and new drugs to fight diseases of many kinds. Chemists lead the fight against pollution of our environment that results from rapid multiplication of our population and of our use of energy. Chemists are at the forefront of the search for new energy sources and for ways to better use existing sources of energy.

A great curiosity concerning the physical world should be characteristic of one who is considering chemistry as a profession. The student should want to learn more about the changes of materials and to use his or her knowledge for the betterment of life. The student should have an interest too in physics and mathematics since their principles are basic to the study of chemistry.

Chemists are employed by most large companies in this country, especially those that produce foods, medicines, fuels and materials. These chemists work in the areas of research, sales and quality control. Many chemists become

teachers in public schools or colleges. State and federal agencies employ chemists for research and analysis. Generally an M.S. or Ph.D. degree is desirable for those interested in research or college teaching.

The Department of Chemistry offers two bachelor's degrees: (1) a B.S. degree that is accredited by the American Chemical Society; and (2) a B.S. degree that requires less specialization. M.S. and Ph.D. degrees may be earned by those who wish graduate work in the areas of analytical, inorganic, organic or physical chemistry.

The chemical laboratories are modern and well-equipped with instruments for determination of properties of chemicals and studies of reactions. Individual laboratory work is encouraged.

Computing and Information Sciences

Professor and Head Donald D. Fisher, Ph.D.

Professors Donald W. Grace, Ph.D.; George E. Hedrick, Ph.D. **Associate Professors** John P. Chandler, Ph.D.; Michael J. Folk, Ph.D.; Robert D. Gumm, Ed.D. (adjunct) **Assistant Professors** Kelvin L. Davis, Ph.D.; Neal A. Fairley, Ph.D.; Arlen N. Long, M.S.; Sharilyn Thoreson, Ph.D. **Lecturers** Jo Ann Coram, M.A.; Pasi Jamnia, M.S. **Academic Counselor** Judith J. Edgmand

Computer science is concerned with theoretical and practical methods of storing, processing and communicating information by means of computers. Professional computer scientists obtain a formal education through the B.S., M.S. or Ph.D. degrees and apply their knowledge to many diversified fields of science, engineering, business and communications. Computer science offers opportunities to both specialists and generalists.

In little more than one human generation, the computer field has evolved from one associated primarily with engineering and scientific calculations of only casual interest to the layman, to a factor of significant influence in almost every aspect of modern life. Technical careers in computer architecture and software design, as well as applications in the business and scientific areas, require a thorough knowledge of the principles of computer science. In addition, most managers in any field require some familiarity with computers, not only to be able to understand and cope with them, but to incorporate them into their own decision-making processes.

The department offers the full range of degree programs-B.S., M.S. and Ph.D. The B.S. program consists of a computer science core curriculum with specialization in business applications, computer systems, scientific computation or computer architecture. Double majors linking computer science with other departments such as accounting and agricultural economics are available. The M.S. student may elect to specialize in programming languages, information systems, scientific computation or computer architecture. The Ph.D. degree is available to qualified students who wish to make original contributions to the field of computer science.

Most B.S. and M.S. graduates obtain positions in industry. About half of the Ph.D. graduates take university teaching and research positions and half are employed in industry.

An IBM 3081D computer with 16 megabytes of primary memory, supplemented by a VAX 11/780 and two IBM Series One computers, are available for both instructional assignments and research projects. A departmental UNIX-based Perkin-Elmer 3230 computer provides computational facilities for the Computing and Information Sciences experimental software development laboratory, a graduate student and faculty research laboratory. In addition, six Intel 286/310 microcomputers, with six attached terminals, two AT&T 3B2 micros and nine DEC Rainbow microcomputers are available for both research and instruction.

The Department participates in the CSNET and USENIX networks for computer science research and UNIX users. (UNIX is a trademark of Bell Laboratories.)

Economics: see *College of Business Administration.*

English

Professor and Head John K. Crane, Ph.D.

Professors David S. Berkeley, Ph.D.; Jane Marie Luecke, Ph.D.; John Milstead, Ph.D.; Mary H. Rohrberger, Ph.D.; Gordon Weaver, Ph.D.; Samuel H. Woods, Jr., Ph.D. Associate Professors Jack D. Campbell, M.A.; Leonard J. Leff, Ph.D.; William H. Pixton, Ph.D.; Peter C. Rollins, Ph.D.; O. Bruce Southard, Ph.D.; Jeffrey B. Walker, Ph.D.; Thomas L. Warren, Ph.D. Assistant Professors Paul J. Klemp, Ph.D.; Margaret F. Nelson, Ph.D.; Ravi Sheorey, Ph.D.; Sherry G. Southard, Ph.D.; Edward P. Walkiewicz, Ph.D. Visiting Assistant Professor Nuala M. Archer, Ph.D. Instructors Mary E. Arrington, M.S.; Jimmie J. Cook, M.A.; Helen L. Kientzle, M.A.; Mary L. Sare, M.S.

The Department of English offers basic service courses in composition and literature for all students in the University; required courses for teacher licensure and other professional programs requiring linguistic and literary competence; and advanced courses in linguistics, creative writing, technical and business writing, film and literature; and literature leading to B.A., M.A. and Ph.D. degrees in English.

Generally, a student with an ACT composite score of 24 or above and an ACT English score of 22 or above need not anticipate any difficulty as an English major. The student should also have at least a "B" grade-point average in high school English courses and a real desire to extend writing skills, reading range and command of language and literature.

Knowledge of language and literature qualifies a student for positions in college and high school teaching, in business, in government and in professional writing. Yet the capable student need not have in mind a specific career

when becoming an English major; many opportunities will appear in the progress toward a terminal degree. Any career is open to the English major that is open to most students with a liberal arts degree. Many English majors are in preprofessional work preparing for careers in law, medicine, the Armed Forces or the ministry. Publishing, advertising and social work offer a further variety of possibilities. Training in composition will develop an ability "to go right to the point"; and training in literature, by making a student familiar with diverse types of ideas, as well as individuals, will give a view-and review-of personal opinions and judgments clearly and consciously. The English major who chooses teaching as a career will be involved in the development of the most inexhaustible and the most valuable basic resource of our nation, its young people, at the secondary, college and university levels.

The English major, whether in liberal arts or secondary teaching, will have about 45 credit hours of lower- and upper-division English, 41 hours of lower-division general studies and 44 hours of elective or professional courses for the B.A. degree. For positions of more responsibility, either in liberal arts careers or in college and university teaching, the M.A. degree includes 30-32 hours beyond the B.A. degree; the Ph.D. degree, 60 hours beyond the M.A. degree.

Foreign Languages and Literatures

Professor and Head John A. Schillinger, Ph.D.

Professor Geoffrey Pill, D-es-L Associate Professors Cida S. Chase, Ph.D.; John J. Deveny, Jr., Ph.D.; Santiago Garcia, Ph.D.; Paul Y. Lin, Ph.D.; Robert L. Maurizzi, M.A.; Dorothy Schrader, Ph.D.; James D. Wells, M.A.; Harry S. Wohlert, Ed.D. Assistant Professors Hamilton H. Beck, Ph.D.; Luis Cortest, Ph.D.; Paul D. Epstein, Ph.D.; Perry J. Gethner, Ph.D.; John W. Howland, Ph.D.; John E. Joseph, Ph.D.; Juan M. Marcos, Ph.D.; David N. Wigtil, Ph.D. Instructors Dora M. Deveny, M.S.Ed.; Hildegund Wohlert, M.A.

The Department of Foreign Languages and Literatures offers French, German and Spanish as major fields of study. Minors may be earned in Chinese, French, German, Ancient Greek, Japanese, Latin, Russian and Spanish. Coursework in Italian is also offered, and other languages are scheduled whenever the demand justifies. Certificates of achievements are also awarded by the Department for course work in German, Russian and Spanish.

In all languages offered by the Department, elementary courses are available for students with no previous experience. Special intensive courses in French and Spanish (10 credit hours in 8 weeks) are offered in the summer session. Students with high school or equivalent foreign language experience will be placed at levels commensurate with their individual proficiency. A major in a foreign language is often supported by study of another language or work in other fields. Many language majors choose to qualify for an international area studies certificate. Several certificates, such as Russian and East European Studies, Asian Studies, Latin American and Hispanic Studies, and An-

cient and Medieval Studies, are available. A freshman with a good high school background in language can usually pursue two languages to the level of a major.

The study of foreign languages is a vital and humanizing part of a general education. In a rapidly changing world of shrinking geographical horizons, it offers new cultural insights, breaks down insularity, fosters discipline of thought and expression and leads to a better understanding of one's native language. Foreign language majors may expect to find openings in a wide variety of careers in law, medicine, government, industry and commerce, all of which require a good liberal arts degree. Job opportunities are greatly enhanced for those who combine foreign language study with a major or minor in other disciplines. Moreover, there is a growing demand for foreign language teachers in secondary education. Bachelor of Arts candidates may qualify for teaching licensure without increasing the number of hours required for graduation.

Additional options for study include literature, civilization and culture, and linguistics courses regularly taught in English. Courses are also offered in French and German for students who need only a reading knowledge of the language.

The M.S. degree in curriculum and instruction, with a specialization in French, German or Spanish, is available for prospective teachers of foreign languages in elementary and secondary education during regular and summer semesters.

Geography

Professor and Head Richard D. Hecock, Ph.D.

Professors George O. Carney, Ph.D.; Keith D. Harries, Ph.D.; Robert E. Norris, Ph.D.; John F. Rooney, Ph.D.; John D. Vitek, Ph.D. Associate Professors Jerry D. Croft, Ed.D.; James H. Stine, M.S.; Stephen W. Tweedie, Ph.D.; Stephen J. Walsh, Ph.D. Assistant Professors David R. Butler, Ph.D.; Stephen J. Stadler, Ph.D.

Geography is concerned with the surface of the earth and its immediate atmosphere. Geographers study the similarities, the differences and interactions among phenomena in this region. Geographers are interested in the economic, social, political and environmental qualities of places, and they are interested in how these attributes interact.

Geographers attempt to understand human behavior by answering such questions as: Where do people work? Where do they play? Where do they live? Why do people make these locational choices? What are the consequences of these decisions and behavior?

Because the physical environment is important in many explanations of spatial behavior and spatial patterns, geographers have traditionally concerned themselves with relationships between humans and their environment. What impact do people have on the land? What impact does the land have on people? How do people perceive their environment? How does this perception in-

fluence their activities?

Finally, geographers examine spatial patterns and behaviors in specific regional contexts. These analyses occur at many levels-world-wide, national and local. These kinds of studies lead to suggestions for change and improvement-the application of geography to contemporary rural, urban and regional problems. Thus many aspects of urban, regional and national planning are geographic in nature.

No academic discipline is closer to everyday practical life than geography, and the Department of Geography offers seven options that reflect the discipline's practical concern. Students may specialize in urban and regional planning, business or economic geography, environmental studies, area studies, geographic education, geographic techniques or remote sensing. A geography minor program is also available for those who see geography as complementary to another field of study.

Those who wish to study geography tend to be interested in their own surroundings and in other places. They also possess a curiosity for maps, the basic tool of the field. Students of geography will become familiar with remote sensing, computer graphics, statistics, and cartography-tools which facilitate geographic analysis.

Careers are available to the geography major or minor. Recent graduates have been employed in urban and regional planning, community development, locational analysis in both the public and private sector, resource planning and management, various forms of domestic and foreign service, cartography and teaching. Geography also provides an excellent foundation for a liberal education and is a good basis for a career in business, industry or government.

The Department of Geography offers the B.A. and B.S. degrees. An advanced program leading to the Master of Science degree is also available. Geography graduate students may want to be affiliated with the Environmental Science or Historical Preservation degree programs.

The Department possesses a cartographic laboratory. The Center for the Applications of Remote Sensing, directed by a geographer, has state-of-the-art digital processing capabilities. The Department has direct access to the University's computing facilities through both standard and graphics terminals. Strong support for the economic-business and urban-regional planning geography programs are provided by the College of Business Administration and the School of Architecture. Resources management, remote sensing and physical geography options are supplemented by offerings in agricultural economics, forestry, geology, soils, biology. and civil engineering.

Geology

Professor and Acting Head Gary F. Stewart, Ph.D.

Professors Zuhair Al-Shaieb, Ph.D.; R. Nowell Donovan, Ph.D.; Douglas C. Kent, Ph.D.; Arthur Hounslow, Ph.D.; Wayne A. Pettyjohn, Ph.D.; John E. Stone, Ph.D. **Associate Professors** Arthur Cleaves, Ph.D.; Stanley Finney, Ph.D. **Assistant Professors** Ibrahim Cemen, Ph.D.; Vernon Scott, Ph.D.

Geology is the science of the earth. As such, it utilizes information from the other physical and biological sciences, mathematics and engineering. In many ways it is a common meeting ground for these disciplines. Within geology are many different specialties, for example economic geology, petroleum geology, ground-water geology and paleontology. However, to specialize in any area normally requires graduate study.

To achieve success in geology a student must become reasonably proficient in the information acquired from basic courses in physics, chemistry, mathematics, and, to a lesser degree, statistics and computer science. Some additional work beyond the basic courses is expected in at least one of these areas of study.

Geologists are employed extensively in applied and pure research and in teaching. Applied research includes the exploration for and development of oil and gas fields, metallic and nonmetallic mineral deposits and reservoirs of ground water. The geologist is well-prepared to pursue and direct environmental studies. Careers in research may be found with private employers, governmental agencies or universities. Teaching positions in geology are available at all levels beginning with secondary education. As with most other sciences, more employment opportunities will be available to students with advanced training and a broad background. In general, careers as teachers at the college and university level and in research are open only to those with graduate training.

The Department of Geology at OSU offers a broadly-based rather than a specialized undergraduate program. The program leads to a B.S. degree in geology, which prepares the student for employment with industry or for graduate study. The Department also offers graduate work leading to the M. S. degree, with specialization in applied fields such as petroleum geology, hydrogeology, economic geology, and environmental geology, as well as in the classical areas of paleontology, stratigraphy, geomorphology, structural geology and sedimentology.

School of Health, Physical Education and Leisure

George H. Oberle, *Director*

Betty W. Abercrombie, *Assistant Director and Chairman, Department of Physical Education*

Mary Frye, *Assistant Director, Leisure Services*

C. F. Schelsky, *Assistant Director, Colvin Center*

Betty Edgley, *Chairman, Department of Health*

Lowell Caneday, *Chairman, Department of Leisure*

A. B. Harrison, *Program Director, Health and Fitness Center*

Steven Edwards, *Coordinator, Graduate Studies*

Mac L. McCrory, *Coordinator, Health and Fitness Center*

Kent Bunker, *Coordinator, Intramurals*

Kirk Wimberley, *Coordinator, Outdoor Adventure*

Ada Van Whitley, *Coordinator, Recreation*

Professors Betty W. Abercrombie, Ed.D.; John G. Bayless, Ed.D.; Aix B. Harrison, Ph.D.; George H. Oberle, P.E.D.; James H. Rogers, Ph.D. Associate Professors Fred DeLacerda, Ph.D.; Betty M. Edgley, Ed.D.; Steven W. Edwards, Ph.D.; Jerry J. Jordan, Ed.D.; Donna L. Payne, Ph.D.; Milton D. Rhoads, Ed.D.; Myr-Lou Rollins, M.A.; E. Pauline Winter, M.A. Assistant Professors Kent Bunker, M.R.Ed. (adjunct); Lowell M. Caneday, Ph.D.; Christine Cashel, Ed.D.; Mary Frye, Ed.D.; Sandra Gangstead, Ph.D.; Mac L. McCrory, Ed.D. (adjunct); Vicki McKeeman, Ph.D.; Steven W. Moyer, Ed.D.; C.F. Schelsky, M.S.; Ada Whitley, M.S.; Kirk Wimberley, M.R.Ed. (adjunct) Adjunct Instructors Larry J. Bilhartz, M.S.; Florence Cottrell, M.S., A.T.C.; Jeffrey Fair, M.S., A.T.C.; Charles Hageman, M.S.; Margaret Rebenar, B.S. Academic Counselor Jane Mitchell, M.S.

The School of Health, Physical Education and Leisure (HPEL) is a multi-faceted organizational unit encompassing three academic departments: health, physical education, and leisure; four leisure service programs, recreation, intramurals, sports clubs, and outdoor adventure; and the Health and Fitness Center. The programs of the School provide a complex of curricular and cocurricular endeavors emphasizing the dual role of meeting the continuous need for enriching and broadening the scope of the individual, and at the same time, preparing the individual professionally for useful service to mankind.

Specific information for each academic department will be found under the headings of *Health, Leisure and Physical Education*.

Graduate Programs. For students wishing to receive advanced preparation in the fields of health, physical education, or leisure sciences, the School of HPEL offers graduate studies leading to the M.S. degree. In physical education, specialization may be in administration, pedagogy, or motor behavior. Specialization in health includes physiology of exercise, wellness, kinesiology/biomechanics, and other allied health science areas. In leisure sciences, specialization may be in therapeutic recreation, administration and management, or outdoor recreation. In cooperation with the Department of Educational Administration and Higher Education, the School of HPEL of-

fers an Ed.D. degree with specialization as a generalist in health, physical education or leisure sciences. For more details on graduate plans and requirements, consult the *Graduate Catalog*.

Academic Departments

Health

The Department of Health offers a selection of two major undergraduate professional preparation tracks. Track one emphasizes school health education which prepares the student to teach health in a public or private school system. Track two, community health education, is a nonteaching track that provides students with an expertise in developing community-based instructional programs in community and public health agency settings. In addition, track two will provide the student with the expertise to develop fitness and wellness programs within school, university, hospital and industrial settings. A student may combine both tracks by completing a student teaching internship required by track one and also completing a community health internship required by track two. A minor program is offered within the school health track, as well as in the community health track. A minor is also offered in athletic training that will meet state licensure requirements. The Department of Health also offers courses which can contribute to a student's general education, as well as supporting degree requirements for selected disciplines across the campus.

Leisure

The Department of Leisure provides students with three basic academic services: (1) students may earn a Bachelor of Science degree in recreation, (2) students from other disciplines may earn a minor in recreation as a generalist offering, and (3) students from throughout the University may enroll in leisure course offerings to meet their particular needs and interests related to fitness and the wise use of leisure time.

The Bachelor of Science degree in recreation earned in the Department of Leisure is designed to give students a professional foundation for careers in recreation and leisure services. Three emphasis areas are provided for developing greater competencies in administration and management, therapeutic recreation and outdoor recreation. The curriculum prepares students for professional opportunities in recreation program services for Armed Forces, camps, outdoor recreation areas, churches, colleges, unions, fitness centers, schools, youth-servicing agencies, and institutions serving special populations such as the ill, disabled, handicapped, aged and incarcerated.

The purpose of the general studies courses in the Department of Leisure is to assist individuals in the development of capabilities for use of personal

leisure. Courses are designed to provide individuals with the knowledge and skills necessary to appreciate the importance of activity and physical fitness for everyday living in both working and leisure time pursuits; to assist them in developing a satisfactory level of performance in such leisure time activities as sports, dance and aquatics, and to give a basic understanding of the body and its functions.

Physical Education

The Department of Physical Education includes a curriculum designed to prepare well-qualified teachers of physical education for elementary and secondary schools; to offer services to school systems in a continuous effort to improve the total educational program; and to provide support courses for other teaching certification programs. Upon receiving the B.S. in physical education and health, and subject to passing an appropriate curriculum examination, the graduate will be qualified for state licensure to teach these subjects in grades K-12. Minor tracks offered through the Department include athletic coaching, elementary physical education, secondary physical education, dance and adapted physical education.

For students not interested in teaching physical education, the department offers tracks in sports science and sports management. The sport science program is designed to educate the student about the fundamental nature of human movement from a scientific perspective. It prepares the student for further study at the graduate level in either the physiological or psychological dimension of human performance.

The sports management track is designed to prepare students to direct, coordinate, and program sports programs in settings other than schools.

Health and Fitness Center

The Health and Fitness Center hosts a variety of adult fitness and exercise programs. Housed in the Colvin Physical Education Center, the Health and Fitness Center provides a complete Adult Fitness Evaluation for persons on campus, in the Stillwater area, and in communities outside the Stillwater area utilizing the Mobile Laboratory.

The Cardiac Rehabilitation Unit is a part of the Health and Fitness Center and provides aggressive Phase II and III cardiac rehabilitation for patients in the Stillwater area.

In addition to the aforementioned programs, the Health and Fitness Center also provides several credit and non-credit classes in contemporary health issues. This unique combination provides many opportunities for students to receive practical "hands-on" experience with scientific testing equipment and actual patients and clients on a day-to-day basis.

The Leisure Services Programs

The Leisure Services Programs are designed to provide equipment, space and professional assistance in helping University students and staff members and their families pursue individual recreation interests. Located in the Colvin Center and Annex are facilities for 32 activities including racquetball, gymnastics, basketball and swimming. In addition, areas for soccer, football, rugby, softball, archery, tennis, jogging, sailing, canoeing and hiking are made available for student and staff use.

Recreation. Through the recreation program, the staff of the Colvin Center offers a variety of noncredit instructional programs each semester to students, faculty, staff and their dependents. Specialty services include poolside dances and movies, International Olympics, married student recreation, freshman programming, and extension services for visiting groups. Instructional programs for adults include yoga, noon fitness, evening fitness, beginning karate, advanced karate, tennis, racquetball, swimming, scuba, water exercises, exercise to music, aerobic dance, weight training, massage, country swing, ballet and belly dancing. Instructional programs for dependents include beginning gymnastics, intermediate gymnastics, beginning swimming, intermediate swimming, karate, creative dance and rhythmic gymnastics (3-4 years). Free children's activity programs are offered prior to the dependent's instructional program each Saturday morning.

Intramurals. The intramurals program at Oklahoma State University is an important part of student life on campus. The goal is to offer a wide variety of sports experience for each student, regardless of skill or ability, to develop carry-over sports skills for life, to encourage physical activity, to develop habits of fair play and to provide for leadership development. Programs are available for both men and women (23 different activities), as well as participation in co-recreational activities.

Sport Clubs. The Leisure Services Program advises and helps organize the active sport clubs on campus, which are governed by the Sports Club Council. The Council is chartered by the University and its officers are elected students. This Council develops sports club policies, sets priorities and functions as the official representative for all sports clubs. The Leisure Services Program provides the adviser for this council. Membership in all sports clubs is open to all students. If a group of students is interested in starting a sports club, the coordinator will assist them.

Active sports clubs are Auto Club, Bowling, Cricket, Crew, Cycling, Fencing, Karate, Lacrosse, Racquetball, Riflery, Rugby, Sailing, Scuba, Skydiving, Soccer, Squash, Snow Skiing, Volleyball, Waterskiing, Weightlifting and Wilderness Pursuits.

Outdoor Adventure. Another thrust of the program is the OSU Outdoor Adventure Program. Organized trips are led by professional staff and trained

students. The student's choice of activity will lead to the top of the mountains, over rocks and down rivers. The wilderness trips are designed to offer an opportunity for developing outdoor skills, but even more importantly, to develop and explore the individual, other people and the surroundings.

A children's summer camp at Camp Redlands, Lake Carl Blackwell, and a challenge ropes course at the Redlands site as well as the OSU Aquatic Center (Lake Carl Blackwell) are included in the varied offerings. The management and development of the 80-acre Camp Redlands for use by University and community groups has recently been incorporated into this program.

An extensive rental and purchase of quality outdoor equipment is available through the Leisure Services Program at the Adams House.

History

Professor and Head Joseph A. Stout, Jr., Ph.D.

Oppenheim Professor Emeritus LeRoy H. Fischer, Ph.D. **Professor Emeritus** Theodore L. Agnew, Ph.D. **Professors** W. David Baird, Ph.D.; Bernard W. Eissenstat, Ph.D.; H. James Henderson, Ph.D.; Alexander M. Ospovat, Ph.D.; Robert M. Spaulding, Ph.D.; Joseph A. Stout, Ph.D. **Associate Professors** Neil J. Hackett, Ph.D.; Helga H. Harriman, Ph.D.; George F. Jewsbury, Ph.D.; Glenna C. Matthews, Ph.D.; Richard C. Rohrs, Ph.D.; James M. Smallwood, Ph.D.; Michael M. Smith, Ph.D.; John A. Sylvester, Ph.D. **Assistant Professors** W. Roger Biles, Ph.D.; John P. Bischoff, Ph.D.; Paul J. Hiltbold, Ph.D.; James L. Huston, Ph.D.; Etta L. Perkins, Ph.D.

History is the record, explanation and interpretation of the totality of man's activities. The study of history is unique in its concern for the time factor in man's development. History enhances the individual's knowledge of himself and gives perspective and deeper meaning to contemporary events. Courses in the Department of History are intended to give the student a broad understanding of the evolution of civilizations, peoples, countries and institutions, and an insight into the meaning of this evolution, as well as to prepare graduates for many types of employment.

Because history is basic to many special fields, the Department's instruction is designed to aid students interested in education, law, journalism, scientific and technical disciplines, public service and business administration. Students in colleges other than the College of Arts and Sciences who wish to pursue the study of history are encouraged to enroll in courses of interest. The Department of History offers a number of courses that satisfy general studies requirements in the social sciences and the humanities. It participates actively in the Honors Program and offers to its majors the option of pursuing a special plan of study leading to a departmental Honors certificate. The Department of History also participates actively in the Area Studies Program.

Graduate work leading to M.A. and Ph.D. degrees is offered in the following fields: American history to 1865, American history since 1865, ancient

history, medieval history, early modern European history, modern European history, English history, Latin American history, East Asian history, Russian history, history of science, state and regional history and historic preservation.

School of Journalism and Broadcasting

Advertising, Journalism, Public Relations, Radio-TV-Film

Professor and Director Marian D. Nelson

Professors Harry E. Heath, Jr., Ph.D., Walter J. Ward, Ph.D. **Associate Professors** Marshall E. Allen, M.A.; Thomas R. Hartley, M.S.; Frederick L. Kolch, M.A.; Philip E. Paulin, Ed.D., William Rugg, Ph.D.; William R. Steng, Ed.D. **Assistant Professors** Michael J. Bugeja, M.S.; Charles A. Fleming, M.S.; Brooks Garner, M.S.; Jack G. Harrison, M.A.; Elisabeth John, M.Ed.; Maureen Nemecek, Ph.D.; Charles Overstreet, M.S.; Donald Reed, B.A.; Gregory Stefaniak, Ph.D.; John Tiger (visiting); Sheila Wisherd, M.S. **Instructor** William R. Jackson, M.A. **Lecturers** Elisabeth Schillinger; Diane Sears-Bugeja

At Oklahoma State University, the professional areas of mass communication are grouped in the School of Journalism and Broadcasting (SJB). These areas seek to complement each other with a minimum of duplication.

A modern democratic society cannot live by its ideals if its mass media practitioners are merely competent technicians who worry less about *what is* reported to the people than *how* it is reported. Citizens must have accurate information about social, political and economic problems as well as knowledge of actions taken by government agencies at all levels. From village council to Supreme Court, there can be no exception from the rule that public business *is* the public's business.

To speak to people through radio, television or the printed page requires a knowledge of the people to whom one wishes to speak and an understanding of the world in which they live. Therefore, the curricula of the School of Journalism and Broadcasting are designed to offer more than training in communication techniques. Three-quarters of the SJB student's time at the University is devoted to a liberal education in the arts and sciences. At the same time, the student gains competence in a professional field through courses in the School.

In brief, then, the purposes of the School of Journalism and Broadcasting are:

- (1) To provide thorough, broadly-based professional education for the mass-media professions;
- (2) To encourage liberal and cultural background in the arts, literature, languages, and social, biological and physical sciences;
- (3) To promote scholarly research and professional performance;
- (4) To provide future media leadership through the preparation of high school

and college educators and their participation in professional communication associations;

- (5) To emphasize high standards of ethics and responsibility in mass communication.

Graduate Study. The M.S. degree in mass communication and the Ed.D. degree in higher education with specialization in mass communication are offered in the School's graduate program. The Ed.D. degree is offered in cooperation with the College of Education.

Special Requirements. Any student who elects a specific option from those listed in succeeding pages should meet with an SJB faculty adviser as soon as possible. The ability to type a minimum of 30 words a minute is required for registration in all writing courses beginning with Newswriting I (JM 2113). In addition, competence in typing is expected of all majors in the School. Prospective students are advised to prepare for this requirement before enrolling at the University. Proficiency in typewriting can be demonstrated by a high school grade of "C" or better in typewriting or by passing a School typewriting test.

Advertising

Ideas ranging from the introduction of new products and services to public service messages are communicated to mass audiences through advertising. Advertising also provides the economic base for mass media-newspapers, radio and television, magazines, cable-thus freeing them from the political control found in many countries.

Upon a strong liberal arts foundation, majors in advertising build educational experiences which prepare them for work in copywriting and layout, production, management, media selection, market analysis, sales and campaign planning. Basically, the program focuses on decision-making and problem-solving, and includes courses in marketing, psychology, sociology, management and economics. Opportunities for part-time jobs, summer internships and participation in the Advertising Club round out the student's experience.

The Oklahoma State University advertising curriculum is accredited by the Accrediting Council on Education in Journalism and Mass Communications. This means it has the approval of leaders in both education and the advertising profession. The program is affiliated with the American Association of Advertising Agencies, the Advertising Federation of America and the Point of Purchase Advertising Institute.

Journalism

News coverage today has gone beyond routine reporting on police and city hall activities. The modern newspaper or broadcasting station tries to spotlight the diverse components of our complex society. This objective calls for writers with broad interests and special knowledge in politics, religion, science, business, economics, art and public welfare. From the ranks of these reporters come the future print and broadcast journalists.

Options offered in journalism:

News-editorial-This program prepares students for writing and editing positions on newspapers, magazines, trade journals, in radio and television news departments, in book editing and publishing.

Photojournalism-Careers filled by these graduates include newspaper, magazine and industrial photography, television newsfilm, and public relations graphics.

Teaching licensure-This program, taken in the College of Education, prepares students to teach journalism at the high school level.

Technical communication-Students may combine agriculture and journalism or home economics and journalism to prepare for specialized work in technical writing and editing. These programs are developed in cooperation with the Colleges of Agriculture and Home Economics.

Community journalism-This option, for those who plan eventually to own or manage weekly or small daily newspapers, requires experience in news, advertising and management, and thus requires a wide range of courses both within and outside the School of Journalism and Broadcasting. This program is an individualized one and should be entered only with the advice and consent of the SJB Director.

Journalism majors assist in the publishing of a campus newspaper, *The Daily O'Collegian*, and in the newsroom of radio station KOSU, located in the School. Many juniors and seniors find this work a source of revenue to assist them in the cost of their education. Advanced news-editorial students also spend one summer on an internship with a commercial newspaper or broadcasting station, and some spend the spring or fall semester on a daily newspaper. Some hold part-time jobs as campus correspondents for various publications or work for media in the Stillwater area. Part of the laboratory work in JM 2113, 2133, 3083 and 3123 is done on the *O'Collegian* or other publications.

The news-editorial curriculum is accredited by the Accrediting Council on Education in Journalism and Mass Communications, and this approval is endorsed by the American Newspaper Publishers Association, American Society of Newspaper Editors, Southern Newspaper Publishers Association and other highly regarded media groups. The journalism program is affiliated with the Oklahoma Press Association, Southwestern Journalism Congress, Society of Professional Journalists, Association for Education in Journalism and Mass Communications and the Graphic Arts and Technical Foundation.

Public Relations

Public relations practitioners perform a variety of tasks. As writers, they prepare news releases, speeches, trade-paper and magazine articles, texts of booklets, radio and television copy, product information and stockholder reports. They may supervise the company newspaper, magazine or newsletter, or other company communication programs.

The public relations option is related to and draws upon both advertising and news-editorial curriculum, as do the public information departments of government, business and industry. The public relations program is affiliated with the Society of National Association Publications, International Association of Business Communicators, and the Public Relations Society of America.

Radio-TV Film

The programs in radio-television-film are designed to prepare students for careers in broadcasting. They offer graduates a chance to develop abilities in announcing, production, copywriting, news, documentary, sports, sales and management.

The undergraduate degree is offered in these professional options:

*Production and performance-*For students who wish to hold on-the-air jobs in broadcasting or who desire to prepare for positions as directors and producers of radio and television programs.

*News and public affairs-*For students who wish to write, edit and produce news, discussion and documentary programs for broadcasting stations, networks and cable companies.

*Sales and management-*For students who wish to write, sell and produce commercial messages, and to move into management and/or ownership positions on radio and television stations.

The facilities of the University's color-equipped Telecommunications Center, and two full-time radio stations, KOSU and KVRO, and an electronic news-gathering laboratory (ENG), make it possible for majors to acquire experience along with professional studies. Radio-television-film is affiliated with the National Association of FM Broadcasters, University Film Association, Radio Advertising Bureau, Oklahoma Association of Broadcasters, National Association of Broadcasters, Radio-Television News Directors Association, Broadcast Education Association and National Public Radio.

Mathematics

Professor and Head William H. Jaco, Ph.D.

Associate Professor and Associate Head James W. Maxwell, Ph.D. **Professors**

Jeanne L. Agnew, Ph.D.; Douglas B. Aichele, Ed.D.; Hermann G. Burchard, Ph.D.; James R. Choike, Ph.D.; Donald S. Coram, Ph.D.; Paul F. Duvall, Ph.D.; Benny D. Evans, Ph.D.; Gerald K. Goff, Ed.D.; John M. Jobe, Ph.D.; Jerry A. Johnson, Ph.D.; Marvin S. Keener, Ph.D.; Ignacy I. Kotlarski, Ph.D.; Hiroshi Uehara, Ph.D. **Associate Professors** Alan C. Adolphson, Ph.D.; Dale E. Alspach, Ph.D.; Dennis E. Bertholf, Ph.D.; Murray M. Blose, M.S.; Joel K. Haack, Ph.D.; John E. Hoffman, M.A.; J. Robert Myers, Ph.D.; Wayne B. Powell, Ph.D.; John E. Wolfe, Ph.D. **Assistant Professors** J. Brian Conrey, Ph.D.; Amit Ghosh, Ph.D.; David C. Ullrich, Ph.D.; Rodney I. Yager, Ph.D.

Contemporary mathematics is concerned with investigations into far-reaching extensions of such basic concepts as space and number and also with the formulation and analysis of mathematical models arising from varied fields of application. Mathematics has always had close relationships to the physical sciences and engineering. As the biological, social and management sciences have become increasingly quantitative, the mathematical sciences have moved in new directions to develop interrelationships with these subjects.

Mathematicians teach in high schools and colleges and work in industry and government. In industry mathematicians usually work in research, although they have become increasingly involved in management. The firms employing the largest number of mathematicians are in the aerospace, computer, electronics and communications industries. In industry a mathematician typically serves either in a consulting capacity, giving advice on mathematical problems to engineers and scientists, or as a member of a research team composed of specialists in several fields. Among the qualities which he or she should possess are breadth of interests and outlook, the ability to think abstractly and a keen interest in problem solving.

An undergraduate specializing in mathematics will begin with calculus or sometimes with college algebra and trigonometry. Well-prepared students are encouraged to establish credit in elementary courses by passing advanced standing examinations. All majors take courses in differential equations, modern algebra and analysis. The remainder of the field of concentration is determined by the student's interests and future plans. Courses are available that serve as preparation for graduate work, for high school teaching and for employment in industry. Students are encouraged to acquire proficiency in computer programming and to take substantial work in related fields in which they have a special interest.

Many of the more challenging positions in mathematics require study beyond a bachelor's degree. In particular, teaching in a junior college requires at least a master's degree and possibly a doctorate. Approximately 25 percent of the students receiving a bachelor's degree in mathematics go on to graduate work. The Department of Mathematics offers programs leading to the degrees

of Master of Science and Doctor of Philosophy. In addition, the Department cooperates with the College of Education in offering a Doctor of Education degree in preparation for teaching mathematics in college.

Medical Technology: See *(Department of) Botany and Microbiology*

Microbiology: See *(Department of) Botany and Microbiology*

Military Science: See *(Departments of) Military Studies*

Departments of Military Studies

Coordinator Smith L. Holt, Ph.D.

In agreement with the U.S. Air Force and the U.S. Army, OSU recognizes separate departments of Aerospace Studies and of Military Science as integral academic and administrative departments of the University. These two departments are administered within the framework of the College of Arts and Sciences. The two departments provide instruction under the basic and advanced Reserve Officers' Training Corps (ROTC) programs.

Scholarships. Both the Army and Air Force ROTC offer full scholarships each year for students enrolling in the program. ROTC scholarships provide full payment of tuition, fees and books plus \$100.00 per month subsistence allowance. Applications for 4-year scholarships may be obtained through local high school principals or advisers and the ROTC departments. Information concerning 2- and 3-year scholarships (male and female) may be obtained by direct contact with the ROTC departments located on campus in Thatcher Hall. (Telephone 624-4131 for Army and 624-4255 for Air Force.)

Degree Programs. A Bachelor of Science degree in aerospace studies or military science is offered in the College of Arts and Sciences upon completion of 127 semester credit hours. It combines ROTC training with the College's general education and degree requirements and the opportunity to develop strong programs in a wide variety of other fields. The curricula for these degrees prepare the student for further professional work and for duty with the Armed Forces.

Flexibility. ROTC at OSU offers a variety of programs, giving the student considerable flexibility in charting a path to commissioning in the Army or the Air Force. Programs are designed so that individuals in all OSU colleges, departments and majors can tailor their academic/ROTC curriculum in order to attain commissioned status. Opportunities also exist in both Army and Air Force ROTC for the student to "test the water" early in his or her academic

program by participating in basic familiarization courses. Those interested in learning more about ROTC at OSU, or in enrolling, are urged to contact the professor of Aerospace Studies or professor of Military Science in Thatcher Hall on campus.

Aerospace Studies

Professor of Aerospace Studies and Head Col. Glen E. Nemecek, M.A.

Assistant Professors Maj. R. G. Bergdoll, M.B.A.; Cpt. D. R. Baker, M.A.; Cpt. J. D. Smith, M.S. Staff TSgt. B. R. Rowley; SSgt. D. E. Cavender.

The Air Force ROTC basic program consists of one classroom hour and one leadership laboratory period per week for one credit hour per semester during the freshman and sophomore years. The advanced AFROTC program (junior and senior years) is open on a competitive basis to any student having two years of enrollment remaining. The advanced courses each include three classroom hours per week and one hour of leadership laboratory for three semester hours of credit. Class work and laboratory involvement are designed to prepare the student for his or her future role as a leader in the U.S. Air Force. No military obligation is incurred for non-scholarship students enrolling in the freshman and sophomore courses. Students in the advanced program must successfully complete at least three hours of English composition and a mathematics reasoning course. Those students accepting an AFROTC scholarship must successfully complete at least one semester of a modern foreign language.

Students (male and female) completing the advanced Air Force ROTC program are commissioned as second lieutenants in the U.S. Air force. Candidates for flight training incur an active service duty commitment of five or six years, commencing with completion of flight training. Nonflying officers have a four-year commitment. During their initial active duty, officers compete for the opportunity to attain career status.

For those physically qualified and accepted as pilot candidates, AEROS 4554 is offered at no cost to the student. This course covers the ground school requirements for the FAA Private Pilot Examination, and also provides thirteen hours of flight training at the Stillwater Airport.

Military Science

Professor of Military Science and Head LTC Michael K. McWherter, M.A.

Assistant Professors MAJ Marion Brown, B.S.; MAJ John C. Matousek, B.S.; CPT Inez V. Sass, B.S.; CPT Rand A. Rindels, B.S. Staff SFC James M. Correu

Students desiring to expand the scope of their education, while preparing for a dynamic and rewarding career as an officer in the United States Army,

active duty, National Guard, or Army Reserve, choose the Army Reserve Officer Training program as an adjunct to their chosen field of study. With courses dealing in a wide range of subjects from leadership to tactics, taught both indoors and out, the Army ROTC program trains 75 percent of all officers commissioned each year.

The Army ROTC program consists of a basic course and an advanced course. Students desiring to see what the program is like may enroll in up to nine hours of Military Science with no commitment to the United States Army. During this basic course, emphasis is placed upon leadership, war gaming, individual tactics, rappelling, land navigation and survival. All lower-division ROTC courses are open to the entire university community regardless of year in school.

Students committing themselves to a commission in the United States Army are permitted to enroll in the Army ROTC advanced course upon completion of the basic course or equivalent. The advanced course consists of ten hours of academic work taken during the junior and senior year. In addition, participation in a six-week summer camp is mandatory. The advanced course emphasizes further development of leadership skills, offensive and defensive tactics, physical conditioning, ethics, military law, professional and basic military knowledge and skills. Additionally, advanced course students are responsible for use of required military skills as they act as assistant instructors during laboratory periods, plan leadership laboratories, plan and conduct field training exercises and are responsible for coordinating and supervising departmental extracurricular activities.

Students interested in the Department of Military Science are encouraged to visit with departmental faculty members at any time for further information concerning departmental course offerings and class sequence. A number of two- and three-year scholarships are available through the Department. Prior enrollment in Military Science is not a prerequisite for departmental scholarship application.

Music

Associate Professor and Interim Head Gerald Frank, D.M.A.

Professors Hoover P. Fisher, D.M.E.; Stanley Green, M.M. **Associate Professors** Marian Abbott, M.M.; Peter Amstutz, D.M.A.; John Enis, M.M.; William McMurtry, Ph.D.; Paul Montemurro, M.A.; Wayne Muller, M.E.; Carol-Jean Planthaber, M.M.; Evan Tonsing, M.M.; Sunny VanEaton, M.A. **Assistant Professors** Robert Anderson, M.M.; Karen Carter, M.S.; Glenn Dowlen, M.M.; Eric Fried, D.M.A.; Richard Kastendieck, M.A.; Jerry McCoy, D.M.A.; Gwen Powell, B.M.; Thomas Walker, M.M.; **Instructor** Thora duBois, M.M.

The study of music at OSU is designed to increase the student's understanding and appreciation of music through the development of skills as listener,

composer and performer. The student desiring a major in music chooses from the following: (1) Bachelor of Music (B.M.) in performance, (2) B.M. in vocal music education, (3) B.M. in instrumental music education, (4) B.M. in vocal and instrumental music education, (5) B.M. in music with elective studies in business, and (6) Bachelor of Arts (B.A.) in Music. In addition, the Bachelor of University Studies allows the interested music student to major in music while earning a second major in an outside field.

Professional instruction is provided for the student preparing for a career in performance; teaching of music in public school, college or private studio; and the music business. The OSU undergraduate degrees are also excellent preparation for church positions and for graduate school.

The student planning to major in music at the university level should consider his or her background carefully. It should include a strong interest in music during high school years and a talent for performance in vocal or instrumental music. Individual lessons, fundamental theory knowledge, and basic piano ability will also be helpful.

Opportunities are also available to the student not majoring in music. All ensembles (choirs, opera, marching band, wind ensemble, jazz bands and orchestra), individual lessons, and courses are open to the major and nonmajor alike and offer academic credit.

An active scholarship program provides assistance to majors as well as nonmajors. Students are invited to write for audition information.

Music on campus yields an enriching flow of concerts and recitals by students and faculty members. The Department also supports an active extension program, providing opportunities for individuals outside of the University.

The Department of Music is accredited by the National Association of Schools of Music. Students wishing to major in music should contact the Department of Music to arrange for an entrance audition and interview.

Philosophy

Associate Professor and Head Edward G. Lawrey, Ph.D.

Professors Richard W. Eggerman, Ph.D.; Neil R. Luebke, Ph.D. **Associate Professors** David L. Levine, Ph.D.; Robert T. Radford, Ph.D.; Walter G. Scott, Ph.D. **Assistant Professors** John R. Bosworth, M.A.; Michael R. Taylor, Ph.D.

Philosophy is an intellectual activity to be practiced and a subject matter to be studied. As an activity, philosophy seeks to analyze, evaluate, and often reformulate the ideas, principles and arguments by which we understand and explain our experience and by which we direct and justify our behavior. No area of experience or behavior-aesthetic, political, religious, scientific or moral-is immune to philosophical consideration. The writings produced by great philosophers are worthy of study as models of thought and as artifacts of historical influence and cultural significance. In this latter role philosophy

is historically related to the development of every academic discipline.

Courses offered in philosophy fall into three general groups: broad introductory courses which cover a variety of topics, historical courses which proceed chronologically through a sequence of thinkers, and special topic or field courses. Some offerings combine the latter two characteristics. No undergraduate course is intended primarily for majors. Juniors and seniors often find that an upper-division philosophy course related to their area of concentration can supply needed breadth and depth to their studies.

Students may pursue work in philosophy as part of their general education, as a support to their major area of concentration, as a minor, as a major leading to a B.A. degree, as a second major or in connection with a graduate program. The department offers an M.A. degree in philosophy and cooperates in other degree programs on the doctoral level. Persons interested in graduate work in philosophy should consult the *Graduate Catalog*. Philosophy majors have an excellent educational base from which to pursue careers in teaching, the ministry, law, government service and private business of many sorts. They have available to them one of the most flexible programs offered at the University, for the minimum philosophy requirements include only two lower-division introductory courses, two upper-division historical survey courses and 21 hours of additional unspecified philosophy courses numbered 3000 or above which permit up to 38 hours of related and elective study in other areas. A minor or a second major in philosophy will complement any other area of study. A philosophy minor requires 18 hours of unspecified philosophy courses, 12 of which must be numbered 3000 or above.

Physics

Professor and Head Geoffrey P. Summers, D.Phil.

Regents Professor James N. Lange, Ph.D. Professors Larry E. Halliburton, Ph.D.; Elton E. Kohnke, Ph.D.; Earl E. Lafon, Ph.D.; Joel J. Martin, Ph.D.; Kimball A. Milton, Ph.D.; Richard C. Powell, Ph.D.; Delbert L. Rutledge, Ed.D.; Mark A. Samuel, Ph.D.; Hugh L. Scott, Ph.D.; William A. Sibley, Ph.D.; N.V.V.J. Swamy, Ph.D.; Paul A. Westhaus, Ph.D.; Timothy M. Wilson, Ph.D. Associate Professors Bruce J. Ackerson, Ph.D.; George S. Dixon, Ph.D.; H. James Harmon, Ph.D. Assistant Professors Craig Y. Allison, Ph.D.; Lawrence I. Fleishman, Ph.D.; Stephen W. McKeever, Ph.D.; P. O. Shull, Ph.D.

Cosmology and the physical origin of the universe, the use and development of lasers, the nature of the fundamental particles that make up an atomic nucleus, the properties and development of new and exotic materials, and the formulation of predictive theoretical models to describe nature are some of the subjects pursued by physicists. A professional physicist needs to possess critical skills of observation and evaluation. The development of these skills in both experimental and theoretical work provides the focus of the undergraduate program and prepares a student for a career in either applied or pure physics.

Physics majors acquire a versatility which makes them highly competitive for careers in industrial research and development, national laboratories and academia.

The physics program provides a common basis of physics, mathematics and other sciences for the first two undergraduate years. A physics major continues beyond these courses in an individually tailored program in the Department's options program. The final two years are designed to suit the student who anticipates graduate research, as well as those who will seek employment immediately after graduation. The choices offered to undergraduates are in the form of physics options which reflect their career goals. Options exist in pure physics, materials science, biophysics, engineering physics, chemical physics and geophysics. Many of these options include selected courses in engineering, computer science, biological science and geophysics. With this versatility students can choose (in consultation with their advisers) a program which will suit their evolving career goals in the latter part of their undergraduate studies. Continued communication, beginning with the student's first semester in the Department of Physics establishes a productive rapport between the physics major and his or her faculty adviser. A physics minor is also possible and the requirements can be obtained from the department head.

Physiology: See *Department of Zoology*

Political Science

Professor and Interim Head Joseph W. Westphal, Ph.D.

Regents Service Professor Harold V. Sare, M.A. **Distinguished Lecturer** Henry L. Bellmon, B.S. **Professors** Raymond N. Habiby, Ph.D.; Bertil L. Hanson, Ph.D.; James L. Lawler, Ph.D., J.D.; Clifford A.L. Rich, Ph.D.; Robert L. Spurrier, Jr., Ph.D. **Associate Professors** Robert Darcy, Ph.D.; Ann L. Schneider, Ph.D.; Franz A. Morales von Sauer, Ph.D.; **Assistant Professors** Barrie E. Blunt, Ph.D.; Anthony E. Brown, Ph.D.; James A. Davis, Ph.D.; Robert E. England, Ph.D.; William M. Parle, Ph.D.; **Instructor** Danny M. Adkison, Ed.D.

Political science is the study of politics and government at the local, state, national and international levels. It is concerned with struggles for power and the exercise of power in the form of institutions, laws and public policies.

Political science seeks to reveal the patterns of behavior associated with politics, to discern the decision-making process in government, to explain the functioning of political and governmental institutions, to appraise alternatives to public policy and to assess government's role in society.

The principal fields of study in political science are political theory, public law, comparative politics, international relations, public administration, public policy, and American political behavior. Students may receive the Bachelor of Arts degree in political science with a concentration in any of the fields of study. The Bachelor of Science degree in political science is offered with a con-

centration in public affairs-international public administration, public affairs-public law, public affairs-paralegal, and public affairs-criminal justice administration.

Political science graduates enjoy a variety of career opportunities-staff positions with international, federal, state and local government agencies, teaching positions in college and high school, policy analysis positions with governments, businesses, civic groups and foundations, and in journalism, public relations, partisan politics, and, via law school, the legal profession.

The Department of Political Science offers graduate work leading to the M.A. degree with a concentration in one of the following seven fields: theory, public law, public policy, comparative politics, international relations, public administration and American political behavior. The public administration and public policy program emphasizes policy design, policy analysis and policy evaluation as well as administration.

Pre-law: Many degrees are applicable. See *Arts and Sciences preprofessional degree programs*.

Premed and Pre-vet: Many degrees are applicable. See *Arts and Sciences preprofessional degree programs*.

Psychology

Associate Professor and Interim Head Vicki Green, Ph.D.

Professors Larry T. Brown, Ph.D.; H. Stephen Caldwell, Ph.D.; Donald K. Fromme, Ph.D.; Arthur E. Harriman, Ph.D.; William E. Jaynes, Ph.D.; James L. Phillips, Ph.D.; William W. Rambo, Ph.D.; Kenneth D. Sandvold, Ph.D.; Robert S. Schlottmann, Ph.D.; Robert F. Stanners, Ph.D.; Robert J. Weber, Ph.D.

Associate Professors Bob Helm, Ph.D.; Larry Hochhaus, Ph.D.; James Price, Ph.D.; Bill C. Scott, Ph.D. **Assistant Professor** Pamela G. Dorsett, Ph.D.

Adviser Iris Eby, M.S. **Instructor** Brenda Heredia, M.S. (adjunct)

Undergraduate study in psychology provides a background which may be of value to students in personal, social, educational and vocational situations. Many students are better able to understand and deal with their own behavior and that of others as a result of such training. Moreover, the course of study involves examination of some of the major social problems of our time and explores ways of coping with these problems.

A bachelor's degree in psychology is useful in a wide number of occupations in business, education and industry. The range of positions obtained by graduates covers almost all occupations requiring direct personal contact with other people. Some examples are supervision, training, sales, public relations and interviewing. Also included are positions with city, state and federal agencies, and in applied research. Although there is no licensure or certificate to

teach psychology in the schools, it is possible to get a teaching certificate or licensure in social studies education with endorsement in psychology while pursuing a major in psychology. Persons interested in such teaching should contact the Office of Teacher Education. (See "Teacher Education Programs" elsewhere in this *Catalog*.)

Employment in the professional field of psychology almost always requires a graduate degree. Psychologists with advanced degrees have relatively exclusive claim to some semiprofessional and professional positions. The Department offers entry to those positions through the M.S. and Ph.D. degrees. Faculty interests and typical programs of graduate study lie primarily in the areas of experimental, clinical social and child clinical psychology. However, offerings in other departments can be used to develop graduate programs in human factors, biological psychology, organizational psychology, community psychology, developmental psychology and quantitative psychology. Moreover, an applied M.S. program is available in mental health.

Public Relations: *See (School of) Journalism and Broadcasting*

Radio-TV-Film: *See (School of) Journalism and Broadcasting*

Religious Studies

Professor and Head Kyle M. Yates, Jr., Th.D.

Professors Lionel Arnold, Ph.D.; Hyla S. Converse, Ph.D.; Azim A. Nanji, Ph.D.; Robert F. Weir, Ph.D. **Associate Professors** Joseph F. Byrnes, Ph.D.; Kenneth Dollarhide, Ph.D. **Assistant Professors** Dennis E. Smith, Th.D.; James S. Thayer, Ph.D.

Courses in religious studies are a vital part of a liberal arts education. The field involves the objective study of religious belief, literature and practice around the world. Opportunity is given for serious and objective study of these aspects in relation to major religions of past and present cultures. Special attention is given to the historical bases of world religions as well as to their effect upon present-day societies, in both the East and West. The courses offered are varied enough for concentrated work in several world religions, biblical studies, religious thought, and religion and culture.

Courses are open to all students without regard to personal views or affiliations. No attempt is made to indoctrinate or to force a particular view upon the student. Emphasis is always placed on the academic study of religion rather than the practice of a particular form of religion.

The undergraduate courses enable students to satisfy humanities requirements and also provide an excellent background for many types of graduate professional programs. The wide variety of course offerings makes possible quality preparation for further work in seminaries and graduate schools. The

training and experience of the faculty in varied academic traditions both in this country and abroad make possible the broadest type of counseling on advanced programs leading to careers in religion.

A degree program in religious studies is available for the student desiring a major or minor in the field of study. Interdisciplinary approaches provide for study in the field of religion either as preparation for further advanced work, as specific preparation for teaching, or as an attempt to understand the phenomenon of religion in its complexity.

The curriculum is not designed exclusively or even primarily for those seeking careers in religion. It meets the need of all who desire a well-rounded education which explores and appreciates the human search for deeper meaning to finite life in terms of relationship to the infinite.

Sociology

Professor and Head Charles Edgley, Ph.D.

Professors Gene Acuff, Ph.D.; Donald Brown, Ph.D.; Jack Bynum, Ph.D.; Ivan Chapman, Ph.D.; Richard Dodder, Ph.D.; Thomas Murton, Ph.D. (visiting); Larry Perkins, D.S.S.; Harjit Sandhu, Ph.D. Associate Professors George Arquitt, Ph.D.; Larry Hynson, Ph.D.; Kenneth Kiser, Ph.D. Assistant Professors Patricia Bell, Ph.D.; Kathleen McKinney, Ph.D.; Carol Olson, Ed.D. (adjunct); Marjorie Schweitzer, Ph.D.; Edgar Webster, Ph.D. Academic Counselor Martha McMillian, Ed.D.

Sociology is the study of people as they live their lives in society. The emphasis is on understanding why people act as they do in a particular society, community or social group.

Many different points of view are represented in the faculty listed above. Some believe that a scientific explanation is central to understanding people in society; others believe that human values and subjective understandings should be the major emphasis in sociology. In all cases, there is an agreement that sociology is an exciting field of study.

The courses in sociology are designed to help the student (1) understand the influence of society on individuals, (2) apply this understanding to social issues, and (3) provide the technical skills needed to do both. Topics covered include anthropology, corrections, social problems and deviance, research methods, social organization, social psychology, social work and theory. Many undergraduate majors elect to have a supervised work-related intern experience in a social agency of their choosing. A full-time adviser is available to assist undergraduate students in the selection of courses and to answer their many questions related to career planning. Faculty members are also available to assist and advise students.

B.A. and B.S. degrees are offered in sociology. Both B.A. and B.S. degrees include applied options in corrections, pre-social work, social gerontology, juvenile treatment and child services. The general sociology degree has career

path options including social aspects of law, social aspects of medicine, organizations and administration, social research and analysis, urban/population trends and issues, and minorities/women's studies. At the graduate level, master's and doctoral programs in sociology and a master's in corrections are available.

Anthropology

Anthropology is the study of humankind in all its similarities and differences, both biological and behavioral. As an academic discipline it covers a wide range of subject matter ranging from fossil remains related to early human forms and the biological characteristics of contemporary human populations (physical anthropology) to scientifically excavated remains of past societies (archaeology) to behavior within contemporary human societies (cultural anthropology). Offerings in anthropology provide students with a basic introduction to the ideas and principles found in these three subdisciplines.

Regular course offerings include an emphasis on North American Indian culture and archeology, women's roles in different cultures, and aging from a cross-cultural perspective. Other courses deal with anthropological methods and theory.

Students wishing to emphasize anthropology in their studies may take a B.A. or a B.S. degree in sociology with an option in anthropology.

Speech Communication

Professor and Head James Hughey, Ph.D.

Associate Professors Paul Harper, Ph.D.; James Stiff, Ph.D.; Mike Stano, Ph.D.

Instructor Sena Harper, Ed.D.

The Department of Speech Communication affords a variety of opportunities for students who wish to become involved in the excitement of a changing world. Not only does the Department offer academic subjects leading to both undergraduate and graduate degrees, but students are afforded an opportunity to gain practical experience in interpersonal and public communication.

In speech communication, students are prepared for positions in industry and business and are qualified to work with interpersonal communication problems. Graduate work in this area increases the student's career opportunities in the field of communication consulting. In addition, the Department's concern with related areas, such as sociology, business and psychology, allows the admission of graduate students with undergraduate preparation in some of these fields.

Speech and Language Pathology and Audiology

Associate Professor and Interim Head Cheryl Scott, Ph.D.

Associate Professor Nancy Monroe, Ph.D. **Assistant Professors** Gary J. Beeby, M.A.; Arthur L. Pentz, Ph.D. **Instructors** Ann Davidson, M.A.; Carol Headrick, M.C.D.; Jan Marks, M.S.; Susan Richardson, M.S.

The Department of Speech and Language Pathology and Audiology prepares students through the master's level to serve handicapped individuals of all ages who exhibit speech, language and/or hearing disorders. The undergraduate program is a preprofessional degree program. It first emphasizes the study of the development and functioning of the individual who presents normal speech, language and hearing. It also stresses academic and clinical practicum experiences in the nature, symptoms and treatment of those who possess various kinds of communication disorders.

The master's level program is designed to provide students with intensive course work in the various communication disorders and exposure to a wide variety of challenging clinical activities. This includes a full time, off-campus clinical internship for at least eight weeks which serves as an excellent transition from on-campus practicum to an actual professional position after graduation. Students who graduate from this Department are prepared to take positions in public schools, hospitals, community speech and hearing centers, private practices and other related settings. All graduates meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association and licensure by the state in speech and language pathology. In addition, almost all students elect to earn the state teaching certificate. The program is nationally accredited.

Statistics

Professor and Head J. Leroy Folks, Ph.D.

Professors Lyle Broemeling, Ph.D.; P. Larry Claypool, Ph.D.; Richard Dodder, Ph.D.; Ignacy I. Kotlarski, Ph.D.; Ronald W. McNew, Ph.D.; David L. Weeks, Ph.D. **Associate Professors** Robert Darcy, Ph.D.; Nitis Mukhopadhyay, Ph.D.; William D. Warde, Ph.D. **Assistant Professor** Linda J. Willson, Ph.D.

Statistics is the science of learning from data. It is concerned with the development of theory and with the application of that theory to the collection, analysis and interpretation of quantitative information.

Because statistics is important in many scholarly disciplines, a degree in statistics provides the opportunity to enter not only the statistics profession but also many other fields which make extensive use of statistics. The areas of application include agriculture, the biological sciences, engineering, the physical

sciences, the social sciences, education, business and home economics, among others. Statistics also promises to be important in emerging endeavors such as pollution and environmental research, energy utilization and health-care administration.

Those who pursue the study of statistics should be interested in scientific inquiry and should have a good mathematical background. In addition it is desirable that they have a genuine interest in some other subject which uses statistics.

Careers in government, industry and education, involving the disciplines previously mentioned, are open to the statistics graduate. In government and industry a statistician usually serves as a researcher or as a consultant to research scientists and decision-makers. In education, of course, the teaching function is added to those of research and consultation. In almost all careers, the statistician uses the computer.

The Department of Statistics offers the B.S. and M.S. degrees to those interested in applications of statistics, and the Ph.D. degree to those who wish to make original contributions to the theory of statistics.

The Statistical Laboratory operates within the Department to provide statistical consulting to researchers-both faculty and student-across the campus.

Theatre

Professor and Head Kenneth Cox, Ph.D.

Professors Jerry L. Davis, Ph.D. **Associate Professor** Martha Sharp, M.F.A.

Assistant Professors Billye Sue Harmon, M.F.A.; Mary Anne Hempe, M.F.A.

The program in theatre provides the student with course work and practical experience in all areas of theatre. The degree programs are broadly based with academic, humanistic and artistic approaches to the subject matter. Training in theatre typically involves not only the most obviously theatrical disciplines such as acting, but also considerable technical skills, literary and historical knowledge, artistic expression, and self-discipline.

Study of theatre can lead to many careers besides those in the performing arts. Fields where theatre study can be especially helpful include business management, salesmanship, law, politics, teaching, counseling, ministerial professions, or any career area where self-awareness and effective personal communication are essential.

Ambitious seasons of varied productions offer practical experience for both majors and nonmajors. A vigorous student organization, the University Theatre Guild, develops theatre-related projects and provides many services to the production program.

Students with a major interest in theatre may elect either a Bachelor of Arts or a Bachelor of Science degree in theatre. Students interested in prepar-

ing to teach theatre and speech in grades 7-12 may choose B.A. or B.S. degrees in speech-theatre education. A strong component of theatre courses may also be included in the individualized curriculum leading to the Bachelor of University Studies degree.

Wildlife Ecology: See *Department of Zoology*

Zoology

Professor and Head Jerry Wilhm, Ph.D.

Professors Calvin G. Beames, Jr., Ph.D.; L. Herbert Bruneau, Ph.D.; Eugene Maughan, Ph.D. (adjunct); Rudolph J. Miller, Ph.D.; John W. Thornton, Ph.D.; Dale W. Toetz, Ph.D. **Associate Professors** John A. Bantle, Ph.D.; John S. Barclay, Ph.D.; James T. Blankmeyer, Ph.D.; Sterling L. Burks, Ph.D.; Calvin C. Cunningham, Ed.D.; Anthony Echelle, Ph.D.; Stanley F. Fox, Ph.D.; James Harmon, Ph.D.; Jerry G. Hurst, Ph.D.; Helen Miller, Ph.D.; James H. Shaw, Ph.D. **Assistant Professors** Tracy Carter, Ph.D. (adjunct); Michael E. Douglas, Ph.D.; Margaret S. Ewing, Ph.D.; James Lish, Ph.D. (adjunct); Deborah Meinke, Ph.D. (adjunct); Larry Talent, Ph.D.

The Department of Zoology offers degree programs in zoology, wildlife ecology, biological sciences and physiology.

Zoology

Zoology, the study of animals, provides a background for many applied and professional careers. Environmental and evolutionary biology receive major emphases in the zoology program. Since most of the important biological problems facing man today are ecological, the Department has developed a broad program with emphasis on ecology.

The B.S. degree curriculum in zoology is designed to provide a background of basic biology and some specialization in that area of zoology in which the student wishes to develop his or her career. To become a zoologist the student must have a good foundation in the related fields of chemistry, physics, mathematics, statistics, and botany. The B.S. degree in zoology requires courses in cell biology, ecology, evolution, genetics, and vertebrate and invertebrate zoology.

The Department offers graduate programs leading to the M.S. and the Ph.D. in zoology, with major emphasis in aquatic ecology, vertebrate zoology and physiology.

Wildlife Ecology

The wildlife ecology program involves comprehensive study in the conservation of renewable natural resources, emphasizing an optimum balance between wild animal populations and habitat requirements. Courses in the wildlife program fulfill the requirements for many other applied and professional

careers.

Undergraduates majoring in wildlife ecology may choose from four options: management, research, communications and fisheries. The management option emphasizes applied wildlife ecology, while the research option offers the best preparation for graduate study. Under the communication option, biological training is combined with course work in journalism, social sciences and the uses of electronic media. All four options lead to a B.S. degree in wildlife ecology.

Assisting in graduate training is the Oklahoma Cooperative Fish and Wildlife Research Unit. Cooperatively funded by the Oklahoma Department of Wildlife Conservation, the U.S. Fish and Wildlife Service, the Wildlife Management Institute and Oklahoma State University, this unit conducts research and demonstration projects and disseminates information obtained through such research. The unit functions in cooperation with the Department of Zoology in which unit leaders hold academic rank and serve as members of the faculty.

Both the M.S. and the Ph.D. degrees are offered specifically in wildlife ecology.

Biological Sciences

A B.S. degree in biological sciences is available for students wishing to obtain a broad program encompassing all of the life sciences. By including appropriate course work in their programs, students can obtain licensure to teach in the secondary schools. Requirements for admission to dental, medical and other health-related professional schools can be met through the biomedical option of the biological sciences degree.

Physiology

Physiology is a division of zoology that deals with the mechanisms and controls of the life processes of animals including man. Since its goal is to explain these processes on the basis of chemical and physical laws, the students of physiology must obtain a strong background in both the physical and biological sciences. The bachelor's degree in physiology requires participation in undergraduate seminars and course work in general biology, genetics, gross and microscopic anatomy, algebra, trigonometry, general physics, general chemistry, organic chemistry, biochemistry, and quantitative chemistry, as well as course work in mammalian and cellular physiology and pharmacology.

The undergraduate degree in physiology is intended primarily as preparation for graduate school or a medically-related professional school (human or veterinary). With its relatively large number of free electives, the B.S. degree in physiology is also an excellent liberal arts experience.

Graduate programs leading to the M.S. or Ph.D. degrees in physiology are offered by this faculty in conjunction with the graduate faculty of the Department of Physiological Sciences of the College of Veterinary Medicine.