

University Offers Ph.D. Degree in Education Beginning Next Fall

An advanced graduate program leading to the Doctor of Philosophy degree in education will begin in September of this year, President Russell announced this week.

The program was announced after a meeting of an advisory group of faculty members and education officials.

A few carefully chosen persons will be allowed to study under this program, which is designed to assist school administrative personnel in this state and throughout the South in carrying out more effectively their responsibilities as leaders in education.

The new degree will be offered by the university graduate school through the School of Education, with the collaboration of the College of Arts and Science and the Schools of Business Administration, Law, and Social Work.

ORGANIZING

Organizations which played an important part in formulating the Ph.D. program include the South Carolina Education Association, the South Carolina State Department of Education, the County School Superintendents Association, the Secondary School Principals Association, the South Carolina Association of School Administrators, and a consulting staff of experts on graduate education from the University of Chicago.

President Russell emphasized the doctorate program in education is being provided in response to repeated requests from a number of professional and civic groups in South Carolina. The program has been carefully planned over a period of 18 months by a university-wide committee, assisted by many individual school principals and superintendents, public officials, and leaders in education throughout the state.

The program will require two full years' work beyond the Master's degree or three full years beyond the Bachelor's degree, with at least one of the last two years being spent in full-time residence study at this university. Other requirements for the degree include a reading knowledge of at least one foreign language, proficiency in scholarly research, broad training in the field of education and in related areas of the social sciences, a dissertation, and a comprehensive examination.

A limited number of fellowships with stipends of from \$1,000 to \$1,500 for selected students will be available.

PROFESSIONAL TRAINING

Professional training of teachers began at the university in 1882, and the institution has long been the principal center in the state for graduate work in education. During 1953 a total of 113 Master of Education degrees and 13 Master of Arts degrees with a major in education were awarded, in addition to 92 Bachelor's degrees in education.

The teaching staff and library facilities of the School of Education are being expanded and strengthened in anticipation of the new doctoral program, President Russell said.

In addition to Dean Chester C. Travelstead, who came to the university this year from the University of Georgia, several professors have been added recently to the School of Education faculty. Dr. Newton Edwards, formerly of the University of Chicago, will begin his teaching duties here on

Civil Engineer Society Elects Orlando Prexy

Salvatore Orlando of Staten Island, N. Y., was elected president of the Walter E. Rowe Student Chapter of the American Society of Civil Engineers at the last meeting. He succeeds Raymond C. Johnson, of Charleston, who graduates this February.

Marion Campbell, Varnville, replaced Orlando as treasurer. These officers will serve for the duration of the spring term, along with Jack Lands of Spartanburg, vice-president, and Hammond Edwards of Columbia, secretary.

Orlando has been active in ASCE for the past two years, having served as treasurer and chairman of social committee, publicity committee, and activities committee.

February 1. Miss Margaret Rauehof, until this year a member of the faculty of the College of the City of New York, and Richard Crumley, who is completing his Ph.D. degree this year at the University of Chicago, joined the staff last September. Specialists in the fields of educational psychology, remedial reading, elementary education, curriculum and instruction, and library education, will be added to the faculty before the doctorate program begins next September.

"EDUCATIONAL STATESMANSHIP"

The aim of the university's doctorate program has been described by its planners as "educational statesmanship" because it is designed to help school leaders in (1) defining the role of education in American society; (2) adapting the structure for educational administration to social, economic, and political institutions; (3) relating education to community needs and resources; (4) applying knowledge of the learning process for the greatest growth of individuals in our society; and (5) assisting citizens and school personnel to work together in formulating, and carrying out, educational policies and programs adapted to the present and emerging needs of our people.

The persons admitted to the program will be expected to take an active part in its development. Through seminars and in other ways they will analyze carefully the present provisions for education and unmet educational needs in South Carolina. This work on the part of members of the group will be designed to contribute to their own development, to reveal measures needed for the improvement of education at all levels, and to indicate the requirements for personnel to bring about continuing improvement of education.

Applications for admission to the program may be made throughout the month of January. Selection of candidates, to be made by a committee of three men from the School of Education and two from the university at large, will be announced about March 15. Interested persons should address letters of inquiry to Dean W. H. Callcott of the Graduate School or to Dean Travelstead of the School of Education.

At the present time the Ph.D. is being offered by the university in the fields of history, chemistry, biology, and English.



UNIVERSITY ORCHESTRA REHEARSES . . . Part of the University Symphony Orchestra is shown here rehearsing in the Chapel under the direction of Anthony DiFilippo, conductor. The full orchestra, totaling around 60 members, will perform in a special concert at the Township Auditorium on January 20 at 8:30 p.m.

Johnson Gets Outstanding Senior Award

The American Society of Civil Engineers student chapter last week selected Raymond Johnson of Charleston as the outstanding graduating senior. Johnson graduates in February with a B.S. degree in Civil Engineering, and will receive a commission as second lieutenant in the Air Force.

Johnson will be presented a key of recognition and will receive free initiation into the parent chapter. Johnson majored in Theory of Electricity at Murray Vocational School in Charleston and graduated in June of 1949. Here he has been active in Chi Omega Literary Society, Lambda Chi Alpha social fraternity, and the American Society of Civil Engineers. He has held the offices of treasurer and president in ASCE. In addition he has been chairman of the Engineers Joint Council.

Law Officers Were Really Not Themselves

Last week the Gamecock ran a picture with the caption of "Law Federation Officers" on the front page. Through our error, there was a mistake in identification and the wrong picture was run. Last week's front page picture was not one of the Law Federation officers. The one we are now running is of those officers.



OFFICERS . . . The Law Federation, student body organization of the law school, has elected officers for the spring term. Seated is G. Ross Anderson, Jr. of Anderson, president. Standing, left to right, are George L. Dial III of Columbia, sergeant-at-arms; Emory B. Brock of Spartanburg, vice-president; and David N. Wilburn of Union, secretary-treasurer. (USC photo by Kern Powell)

ORCHESTRA

(Continued from page 1)

Choral Society during the season 1945-46 and music director of the Watergate Concerts of the National Symphony in Washington in the summer of 1947. He was music director of the Mozart Festival in Charlottesville, Va., in 1951.

Compositions by Bales include two National Gallery Suites, a ballad, film music, orchestral and chamber works, and songs, as well as transcriptions and choral pieces. He has also done considerable research in the 18th century American composers.

Among his recordings are the Charles Ives Third Symphony, Handel's Water Music, and Dettinen Te Deum, and Mozart's Seven Early Overtures, Third Horn Concerto and a Piano Concerto No.

16. Columbia Masterworks will release a recording of the Confederacy sometime this year.

Bales is a pioneer in the production of symphonic music for television. During 1951 he conducted telecasts on NBC with the National Gallery Orchestra in a program combining the art and music of different countries and schools. The program was selected by the New York Times as "the finest serious program of the year on television."

Prior to the performance of "The Confederacy" the university orchestra, under its regular conductor, Mr. DiFilippo, will perform Handel's "Water Music," and will accompany Carolyn Powell, Columbia pianist and graduate of the university, who will play Beethoven's "Fourth Piano Concerto."

Marriage Course Will Be Offered in Spring

Home and Family Life (Home-making 42) will be offered in the spring semester, according to Mrs. Louise P. Cole, head of the Home-making Department. This course is being taught after a lapse of a year.

The primary purpose of the elective course, which is open to both men and women students, is to teach them how to make a success of marriage and make it everything it is meant to be. Among the phases of married life included will be preparation for marriage, understanding the meaning of marriage, adjustment between husband and wife and parents and children.

On the practical side, finances will be discussed and the students taught how to make the most adequate use of the family income. Mrs. Cole said that financial bungling is one of the most frequent causes of divorce.

"The homes of our nation are a most valuable asset," she added. "Strong homes build a strong nation."

One of the interesting features of the course will be lectures and discussions by guest speakers. Included in the group will be a doctor, social worker, financial expert, realtor, lawyer, architect, psychologist, and a minister.

Civil Service Teacher Exams To Be Given

The United States Civil Service Commission has announced a new Elementary Teacher examination for filling positions in Indian Schools throughout the United States and in Alaska. The salary is \$3,410 a year.

Appropriate education is required. No written test will be given. The maximum age limit is 50 years (waived for persons entitled to veteran preference). Students who expect to complete all the required courses within 90 days of the date of filing applications may apply.

Full information regarding the examination, including instructions on how to apply, may be obtained at many post offices throughout the country or from the U. S. Civil Service Commission, Washington 25, D. C. Applications will be accepted until further notice.

National Guard Offering Aviation Cadet Training

The 157th Fighter-Bomber Squadron, South Carolina Air National Guard, has openings for young men interested in becoming pilots, Lieutenant Colonel William M. Riddle, squadron commanding officer, has announced.

Aviation cadet training is available, Lieutenant Colonel Riddle said, to unmarried young men between the ages of 19 and 26½ who have a high school education and can meet the physical standards established by the United States Air Force.

Young men who qualify can enlist in the 157th Fighter-Bomber Squadron for the sole purpose of attending cadet training. These men will be sent to an Air Force Aviation Cadet center for approximately one year, Lieutenant Colonel Riddle said, and after winning their wings will return to Columbia where they will serve their military obligation by flying Air Guard aircraft off Congaree Air Base as civilian airmen. Completion of the course also qualifies them for appointment to the grade of second lieutenant in the Air Guard and the Air Force Reserve.

"There is no guarantee," Lieutenant Colonel Riddle said, "that the present eligibility requirements will remain at that present level. They may be raised at any

exceptional opportunity for young men who want to receive the best in flying training with a minimum time. And this is certainly an interruption of their educational and civilian careers," he continued, in urging that high school graduates take advantage of the cadet training program before the opportunity is out of their grasp.

This germanium refining method keeps impurities down to less than 5 parts in a billion



In this refining apparatus, at Western Electric's Allentown, Pa. plant, germanium is passing through multiple heating zones in tandem, producing a bar containing impurities of less than 5 parts in a billion for use in transistors. Note heating coils on the horizontal quartz tube.

A new method of metal refining, currently in use at the Western Electric plant at Allentown, results in the production of germanium that is better than 99.9999995% pure — the highest degree of purity ever attained in a manufactured product.

The need for germanium of such exceptional purity came about when research by Bell Telephone Laboratories in the field of semi-conductors led to the development of transistors, which are manufactured by Western Electric.

The transistor is a tiny-crystal device which can amplify and oscillate. It reduces space requirements and power consumption to a minimum.

Germanium crystals of the size required in transistors do not occur in nature; they are artificially grown at Western Electric. At this stage in trans-

Various forms which germanium takes before being used in transistors are shown in this photo. Bar at top is an ingot of germanium after reduction from germanium dioxide. Next is shown the germanium ingot after the zone refining process used by Western Electric. Below the ingots are shown 3 germanium crystals grown by machine, 6 slices cut from these crystals, and several hundred germanium wafers ready for assembly into transistors.



for manufacture, other elements are introduced in microscopic quantities to aid in controlling the flow of electrons through the germanium. But before these elements can be introduced, it is necessary to start with germanium of exceptional purity, so that the impurities will not interfere with the elements that are deliberately added.

So Bell Telephone Laboratories devised an entirely new method of purification, known as zone refining, which was developed to a high-production stage by Western Electric engineers.

In zone refining a bar of germanium is passed through a heat zone so that a molten section traverses the length of the bar carrying the impurities with it and leaving behind a solidified section of higher purity. By the use of multiple heating zones in tandem, a number of molten sections traverse the bar. Each reduces the impurity content thus producing a bar which contains impurities in the amount of less than five parts per billion.

Because of the importance of the transistor in electronics, the zone refining process—like so many other Western Electric developments—has been made available to companies licensed by Western Electric to manufacture transistors.

This is one more example of creative engineering by Western Electric men. Engineers of all skills—mechanical, electrical, chemical, industrial, metallurgical, and civil—are needed to help us show the way in fundamental manufacturing techniques.



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