E. Holbrook, J. Herbert Hollomon, Jr., Thomas C. Kavanagh, James N. Landis, Clarence H. Linder, Clark B. Millikan*, Nathan M. Newmark, W. H. Pickering*, Simon Ramo, Arthur E. Raymond*, Thomas K. Sherwood*, J. A. Stratton*, C. G. Suits*, F. E. Terman*, Charles Allen Thomas*, and Ernst Weber. Harold K. Work, associate dean, school of engineering and science, New York University, is executive secretary.—JOHN WALSH

Faculty: New Federal Survey Shows Distribution by Field and Differences in Salaries

A recently released report† on a survey by the Office of Education provides a rough and ready assessment of how the approximately 137,000 teaching faculty in American 4-year institutions of higher education are distributed according to teaching fields and what they are paid.

The survey showed that in the 18 primary teaching areas covered by the survey, median salaries for the 1962–1963 academic year were highest in law, engineering, physical sciences, psychology, and biological sciences, in that order. The five lowest-paid areas from the bottom were the health fields, home economics, English, physical education, and fine arts.

Some caveats have to be observed, however, because statisticians' methods often conceal as well as reveal. For example, the low rating on the salary scale of the health fields is partly explained by the lumping together of medicine and dentistry, in which teaching salaries are high, with pharmacy, nursing, and other health fields, in which teaching salaries are lower. High pay for senior medical school faculty no doubt accounts for the fact that the highest annual salary—by $5000—in any area noted in the survey is the $25,000 for professors at the 90th percentile of pay ranks of faculty with calendar-year contracts in the health fields.

Special circumstances also account for teachers of law having the highest median salaries for the academic year —$12,000, compared with a $7700 median for teachers in all subjects. Only 1 percent of the total faculty teach law, and the teachers of law counted in the survey were generally senior faculty in university professional schools.

Therefore, some caution is in order in approaching the survey, but it does offer a useful look at the gross characteristics of what the surveyors call the faculty "universe." And a more detailed and highly refined version of the study is due later.

In terms of median academic-year salaries for both university and college teachers, engineers draw the highest salaries in the scientific and technical fields. The median for engineering faculty is $8700; for physical sciences, $8500; for biological sciences, $8100; and for mathematics, $7700. In psychology, which is allotted a separate category, the median is $8200, and in the social sciences, $7800.

Regional differences in salaries were marked mainly in that institutions in the Southeast paid substantially lower salaries than colleges and universities in other parts of the country. The median academic-year salary in the Southeast was $6800, compared with $8000 in the North Atlantic area, $7900 in the West and Southwest, and $7800 in the Great Lakes and Plains region.

The divergence in pay was sharpest at the professorial level. Professors' salaries were from $1000 to $6000 a year lower in the Southeast than in other regions, while at the assistant professor level the differences in several fields were not so conspicuous.

It will probably surprise few to learn that universities, private and public, pay more on the average than 4-year colleges. The figures, again for the academic-year median for all ranks, are $8400 for the universities and $7200 for the colleges.

Covered by the survey were not only colleges and universities but independently operated teachers colleges and 4-year schools of technology. Junior colleges were not included, nor were theological schools, schools of art, or independent schools of medicine, law, or business.

The Higher Education Surveys Section of the Office of Education's Division of Educational Statistics designed and conducted the survey. About 13,000 responses were used to provide a representative "sample" of slightly less than 10 percent of the total teaching faculty. The Office of Education says the survey is the first full-scale study of its kind to be made in the United States.

The survey indicates that more than a third of teaching faculty are in the fields of engineering, mathematics, and the physical and biological sciences. The most populous primary teaching area, and perhaps the broadest category, was social sciences—including anthropology, economics, history, political science and government, social work and sociology—with 12.3 percent of the total faculty.

Next came fine arts, with 9.7 percent. Both English and journalism and physical sciences had 8.6 percent of the total faculty. (Under the survey definition, physical sciences included physics, chemistry, and geology and other earth sciences.) Biological sciences had 7.9 percent of the faculty; engineering, 6.9 percent; the health fields, 4.7 percent; and psychology, 2.8 percent.

The survey also appeared to confirm the assumption that there are richer and poorer institutions, among both private and public institutions, but that the richest and the poorest are private.

At the lower end of the pay scale, for example, professors of biological sciences at the 10th percentile (in respect to salary) made $8900 a year in public universities and colleges, compared with $6700 for those in private institutions. Near the top of the scale, on the other hand, the gap closes. At the 90th percentile, professors of biological sciences were paid $13,900 in public institutions and only $400 less in private colleges and universities. In the physical sciences the professor at the 90th percentile in the private university or college was paid slightly more than his counterpart in the publicly controlled university—$15,500 as compared with $15,300—and in engineering the advantage for top men was even more pronounced—$17,000 for academic-year salary in the private sector against $14,500 in the public.

The study results seem to bear out the assumption, fairly widely held in academia, that faculty in scientific and technical fields are more affluent than faculty in the social sciences and, especially, the humanities. It is true that a comparison of academic-year salaries shows no really dramatic differences among fields. And, particularly in the case of faculty with tenure, salaries in some other fields—foreign languages and business and commerce, for example—equal or exceed salaries in the scientific and technical areas. But the academic-year contract salaries, of course, do not reflect the income which

(*Continued on page 1074*)

† *Teaching Faculty in Higher Education, 1962–63; Primary Teaching Areas and Contract Salaries*, publication OE53022, for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.; price, 20¢.

(*Continued from page 982*)

may be gained by engineering and science faculty through industrial and government consulting, nor the opportunities for summer employment on research projects.

Faculty in the nonscientific disciplines on calendar-year contracts in general had much lower salaries than engineers, scientists, and mathematicians on the same sort of contracts, and this difference, as much as any thing, seems to reflect the real advantage of the latter group in the academic market place.—J.W.

Announcements

Science & Public Policy, a new AAAS magazine, will begin publication on an experimental basis on 1 June.

The magazine, which is now scheduled for publication every other month, will contain public affairs articles that have previously appeared in *Science,* as well as other material. It is being distributed without charge to government officials, research administrators, and others interested in public policy matters involving science and technology. Complimentary copies are available to *Science* subscribers upon request. (*Science & Public Policy,* 1515 Massachusetts Avenue, NW, Washington, D.C. 20005)

A conference on **viral diseases of poikilothermic vertebrates** is scheduled 23–26 September in New York. Approximately 45 papers will be presented, dealing with histopathology, immunity, etiology, cytology, electron microscopy, and tissue culture of fishes and amphibians. (S. F. Snieszko, Eastern Fish Disease Laboratory, Leetown, P.O. Kearneysville, W. Va. 25430)

The establishment of a $15 million fund at Massachusetts Institute of Technology, earmarked for basic research in the **physical sciences**, was announced Monday. It includes a $5 million personal gift from Alfred P. Sloan, Jr., the remainder being from the Alfred P. Sloan Foundation. The money, according to Sloan, is to be used to help correct the imbalance he feels exists between basic and applied research. The fund will be managed by three administrators appointed by the M.I.T. Corporation's executive committee. Although primarily for research in physical sciences, it may also be used in areas where development in physical sciences impinges on other disciplines. Money from the fund may also be allocated for use in institutions other than M.I.T.

Grants, Fellowships, and Awards

A graduate fellowship in **electrochemistry** has been established at Columbia University, in honor of Samuel Ruben, inventor of the mercury dry cell and of the dry electrolytic capacitor. The $1000 fellowship is presented by the P. R. Mallory Foundation. Applications should be sent to H. B. Linford, Department of Chemical Engineering, Columbia University, New York.

Courses

An advanced seminar in **theoretical metallurgy** is scheduled 15 June to 7 August at the University of Denver's Denver Research Institute. It will consist of five lectures on "energetics in metallurgical phenomena," each to be delivered daily for 1 to 2 weeks, and supplemented by regularly scheduled informal discussion sessions. Attendance is open and there are no fees. Postdoctoral participants are eligible for stipends of $100 per week plus travel and dependency allowances; predoctoral stipends of $50 a week, plus travel allowances, are available. (M. D. Robbins, Denver Research Institute, University of Denver, Denver, Colo. 80210)

Scientists in the News

Columbia University's C. **F.** Chandler medal for achievement in pure or applied chemistry has been presented to **Henry Taube**, professor of chemistry at Stanford University. He was cited for pioneering work in the mechanisms of inorganic reactions.

Victor T. Tomberg, formerly with Kollsman Instrument Corp., New York, has been appointed senior research associate in the research department of neurosurgery, at the medical school of New York University.

Earl R. Parker, professor of metallurgy and director of the Institute of Engineering Research at the University