

THE UNIVERSITY OF MICHIGAN

COLLEGE OF ENGINEERING

ANNUAL REPORT OF  
ENGINEERING PLACEMENT

John G. Young  
Director

Stephen S. Attwood  
Dean

June, 1964

Engineering Placement Service  
Room 128H, West Engineering Bldg.



## TABLE OF CONTENTS

	<u>Page</u>
Introduction.....	2
Number of Graduates.....	3
Comments.....	3
Student and Alumni Activity.....	4
Number of Students Interviewing.....	4
Number of Interviews Conducted.....	4
Number of Interviews per Student.....	4
Number of Plant Visit Invitations per Student.....	4
Number of Plant Visits Accepted per Student.....	4
Interviewing by PhD Candidates.....	4
Postgraduate Plans.....	5
Number of Alumni Utilizing Placement Service.....	5
Comments.....	5
Employer Activity.....	6
Number of Employers Scheduling Interview Visits.....	6
Number of Interview Visits.....	6
Number of Offers per Student.....	6
Number of Employers Requesting Applicants by Mail.....	6
Comments.....	7
Starting Salaries Accepted.....	8
Comments.....	8
Positions Accepted.....	9
By Location.....	9
By Type of Work.....	9
By Type of Industry.....	9
By Size of Employer's Organization.....	9
Comments.....	9
Summer Positions.....	10
Comments.....	10

## ENGINEERING PLACEMENT

July 16, 1963 - June 5, 1964

A change in the University calendar, preparatory to instituting a tri-mester schedule, occasioned the earlier cut-off date indicated above.

The year was characterized by an evident continuation of the drop-off in the defense and space industry demand which started last year, and by a continued increase in demand from commercial industry. The net result was only a very small reduction in campus recruiting activity, as evidenced by the number of employers and interview visits. Students, however, responded to the situation with a substantial increase in interviewing effort and by maintaining the same average number of plant visits in spite of the reduction in vacation time available in this year's calendar.

In spite of the shift in demand, however, the proportion of students hired by the defense and space industry compared to others did not change appreciably, which may indicate a continued high demand for research and development type people in defense and space activities. This was also evidenced by the relatively slight decrease in the number of defense and space employers visiting the campus compared to the volume of reductions in government contract business.

A strong market for our graduates was further indicated by substantial increases in starting salaries at all degree levels and by the average number of offers remaining at the same level as last year.

The increase of last year in the proportion of students starting work in the Midwest or East at the expense of the West Coast continued, and an unusually large proportion of graduates started in operations and production work rather than research and development.

Advanced bookings for interview visits next year are about 10% behind this time last year, which may indicate some decline in recruiting intensity, but still a strong market.

NUMBER OF GRADUATES

PROGRAM	B.S.*			M.S.			Professional			Ph.D.		TOTAL IN EACH CLASS			TOTAL IN EACH PROG.	% IN EACH PROG.
	Aug '63	Dec '63	May '64	Aug '63	Dec '63	May '64	Aug '63	Dec '63	May '64	Dec '63	May '64	Aug '63	Dec '63	May '64		
Aero. & Astro.	5	27	31	6	8	10	4	2	1		4	15	37	46	98	10
Chemical	8	14	28	4	5	13				7	5	12	26	46	84	9
Civil	5	12	27	11	8	25			1	1	5	16	21	58	95	10
Electrical	19	52	59	22	18	32	1			5	8	42	75	99	216	22
Engrg. Math.	4	16	27									4	16	27	47	5
Engrg. Mech.	2	2	10		2	10				1	2	2	5	22	29	3
Engrg. Physics	1	4	19									1	4	19	24	2
Industrial	8	18	30		2	4				2	1	8	22	35	65	7
Instrumentation				14	6	9	1		1	1		15	7	10	32	3
Materials				1	1					1		1	2		3	0
Mechanical	12	28	41	10	24	24				11	4	22	63	69	154	15
Metallurgical	4	5	6	1	3	3				2	1	5	10	10	25	3
Meteorology		3											3		3	0
Nav. Arch. & Mar.	4	14	20		2	10						4	16	30	50	5
Nuclear				5	9	8				5	3	5	14	25	44	5
Science	1	4	14									1	4		5	1
TOTALS IN EACH CLASS	73	199	312	74	88	148	6	2	3	36	33	153	325	496	974	100%
% IN EACH CLASS	13	34	53	24	28	48	55	18	27	52	48	15	33	51		
TOTALS AT EACH DEGREE LEVEL		584			310			11			69		975			
% AT EACH DEGREE LEVEL		60%			32%			1%			7%		100%			

\* Includes graduates who received BS degree in more than one field.

COMMENTS

The total number of graduates increased about 3%, but this regained less than half of the decline of the previous year. The number of Ph.D.'s increased by 27%, however, for the largest number ever granted by the College in one year and more than twice the number granted six years ago.

The trend by programs was almost the exact inverse of last year with Aeronautical, Electrical, Mechanical, Instrumentation, and Nuclear all showing substantial increases compared to decreases last year. Similarly, Civil, Industrial, and Materials, which increased last year, showed decreases this year. Naval Architecture increased very substantially, Chemical continued to hold even, but Science continued to decline with only five graduates this year.

The proportion of advanced degrees continued to increase, but by only 1% compared to 3% last year.

STUDENT AND ALUMNI ACTIVITY

NUMBER OF STUDENTS INTERVIEWING	BS	MS	PhD	Total
Citizens* for Regular Employment	313	139	75	527
Citizens for Summer Employment	58	45	30	133
Non-citizens	49	55	27	131
Non-engineers	32	60	6	98
Totals	452	299	138	889

NUMBER OF INTERVIEWS CONDUCTED

FOR REGULAR EMPLOYMENT	Fall	Spring	Total
By Engineers, Citizens	2247	3951	6198
By Engineers, Non-citizens	322	307	629
By Non-engineers	195	235	430
Totals for Regular Employment	2764	4493	7257
FOR SUMMER EMPLOYMENT	335	1019	1354
Total for All Employment	3099	5512	8611

NUMBER OF INTERVIEWS, average per citizen accepting regular employment	BS	MS	PhD	Total
	12.0	11.1	3.5	10.9

NUMBER OF PLANT VISIT INVITATIONS, average per citizen accepting regular employment	BS	MS	PhD	Total
	3.9	6.6	5.5	4.9

NUMBER OF PLANT VISITS ACCEPTED, average per citizen accepting regular employment	BS	MS	PhD	Total
	2.8	4.5	3.9	3.4

INTERVIEWING BY PhD CANDIDATES

	Degree Expected		Total
	Before	After	
	Sept. '64	Sept. '64	
Number of Candidates Interviewing	54	42	96
Number of Interviews Taken	267	124	391
Average Interviews per Candidate	5.0	3.0	4.1

\* "Citizen" and "Non-citizen" refers to U.S. citizenship. Many non-citizens are available for temporary "practical training" employment only, usually for eighteen months following graduation.

POSTGRADUATE PLANS

	BS		MS		PhD		Total	
	No.	%	No.	%	No.	%	No.	%
To Accept Reg. Emplm't	142	44	73	40	24	69	239	44
To Continue School	126	39	44	24	0	0	170	32
To Military Service	49	15	39	21	3	8	91	17
To Return to Previous Emplm't	5	2	27	15	8	23	40	7
Totals	322	100	183	100	35	100	540	100

NUMBER OF ALUMNI UTILIZING PLACEMENT SERVICE..... 169

COMMENTS

Although the number of students interviewing decreased somewhat, especially for summer job applicants, the number of interviews per student increased so much that the total number of interviews conducted increased by nearly 18%.

In spite of the reduction in vacation time available during the first semester this year, the number of plant visits accepted actually increased slightly over last year.

The number of PhD candidates interviewing decreased to approximately the same level as in 1962-'63, but the average number of interviews per candidate increased by nearly 25%.

The proportion of students accepting regular employment or returning to previous employment was practically the same as last years, but there was some increase in the proportion going to military service at the expense of that continuing in school.

The number of alumni utilizing the placement service increased 6%, which was a little less than the increase last year.

EMPLOYER ACTIVITY

NUMBER OF EMPLOYERS SCHEDULING INTERVIEW VISITS	Fall	Spring	Total
	325	387	472*

NUMBER OF INTERVIEW VISITS

BY INDUSTRIES	Visits Scheduled	Visits Cancelled	Visits Completed	
			No.	%
Aircraft, Space Veh., & Components	81	14	67	11
Automotive & Mechanical Equipment	93	18	75	12
Chemical, Drugs, & Allied Products	126	8	118	19
Constr. & Bldg. Mat'ls. Mfgs.	12	1	11	2
Elect. Machinery & Equipment	59	5	54	9
Electronics & Instruments	54	17	37	6
Food & Beverage Processing	11	3	8	1
Glass, Paper, Pkg., & Allied Products	22	1	21	4
Metal & Metal Products	66	16	50	8
Petro. & Allied Prod. (inc. Nat. Gas)	35		35	6
Res. &/or Consulting Organizations	30	7	23	4
Tire & Rubber	9		9	1
Utilities-Public (inc. Trans.)	13	2	11	2
State & Local Government	41	11	30	5
Federal Government	57	12	45	7
Educ. or Res. Related to Education	16	1	15	3
Totals	725	116	609	100

BY SIZE OF EMPLOYER'S ORGANIZATION

	Visits Scheduled	
	No.	%
Large (Over 5000 employees)	467	67
Medium (Between 500 and 5000 employees)	189	27
Small (Less than 500 employees)	45	6
Totals	701	100

NUMBER OF OFFERS, average	BS	MS	PhD	Total
per citizen accepting regular employment	4.3	5.0	4.8	4.6

NUMBER OF EMPLOYERS REQUESTING APPLICANTS BY MAIL

Students for Regular Employment.....	207
Students for Summer and Part-time.....	53
Alumni with Experience.....	433

\* This total is the number of separate employers who scheduled visits during the year. Since more than half of these scheduled more than one visit, this total is not equal to the sum of the numbers of employers for fall and spring.



## EMPLOYER ACTIVITY

### COMMENTS

The number of employers scheduling visits increased slightly in the fall, but a drop-off in the spring resulted in a reduction of about 2% for the year.

The number of completed visits also decreased by 2%, in spite of some reduction in the proportion of cancellations.

The proportion of visits from the Aircraft, Space, and Electronics industries dropped off a total of 4% with a corresponding increase in the proportion from Metal and Metal Products. Other industries remained nearly the same.

After virtually no change for two years, the proportion of large employers increased 4% at the expense of medium-sized employers.

The average number of offers for all degree levels combined remained exactly the same as last year. This was the net result of small increases for BS and MS graduates and a decrease for PhD's.

The number of employers requesting students and alumni for regular employment by mail both decreased substantially compared to last year, but there was an increase in the number requesting students for summer and part-time work.

STARTING SALARIES ACCEPTED\*

(By citizens for regular employment, teaching positions omitted)

By Programs	BS		MS		PhD	
	No.	Aver.	No.	Aver.	No.	Aver.
Aero. & Astro.	24	\$638	5	\$751		
Chemical	13	618	9	756	5	\$1000
Civil	14	608	4	693	2	973
Electrical	33	628	16	781	5	1062
Engineering Mechanics	1	625	3	780	1	1040
Industrial	12	611			2	1000
Instrumentation			4	819		
Materials					1	1000
Mathematics						
Mechanical	24	616	21	749	6	1124
Metallurgical	1	600	1	750		
Naval Arch. & Marine	8	581	3	691		
Nuclear			6	804	1	1125
Physics	2	643				
Science	2	623				
Combined	5	657				
<b>Total No.</b>	<b>139</b>		<b>72</b>		<b>23</b>	
<b>Average Salary</b>		<b>\$622</b>		<b>\$757</b>		<b>\$1050</b>

By Industries	BS		MS		PhD	
	No.	Aver.	No.	Aver.	No.	Aver.
Aircraft, Space Vehicles, & Components	36	\$637	24	\$784	1	\$1155
Automotive & Mech. Equip.	18	610	9	752	1	1088
Chem., Drugs, & Allied Prod.	8	637	6	703	1	1000
Constr. & Bldg. Mat'ls. Mfrs.	12	631				
Elect. Machinery & Equip.	8	615	2	696	2	963
Electronics & Instruments	14	628	11	762	1	1000
Food & Beverage Processing	2	587				
Glass, Paper, Pkg., & Allied Products	2	646				
Metal & Metal Products	8	611	3	742		
Petro. & Allied Prod. (inc. Nat. Gas)	6	611	4	743	2	1038
Res. &/or Consulting Organ's.	3	648	5	821	3	1142
Tire & Rubber	2	613				
Utilities-Public (inc. Trans.)	8	606				
State & Local Government	5	607	1	651		
Federal Government	3	586	5	701		
Educ. or Res. Related to Educ.	2	674			12	1041
<b>Total No.</b>	<b>137</b>		<b>70</b>		<b>23</b>	
<b>Average Salary</b>		<b>\$622</b>		<b>\$757</b>		<b>\$1050</b>

\* No salaries reported by Professional degree graduates.

COMMENTS

Starting salaries increased substantially at all degree levels this year: 4.7% for BS, 6.8% for MS, and 5.4% for PhD's.

Aeronautical resumed the lead for BS salaries with Electrical quite close and followed by Chemical and Mechanical at a lower but almost equal level. Civil and Industrial were again close together at a still lower level.

The industries were led by Chemical, Air-space, and Research with Electronics and Construction also well above the average.

Note that in some categories too few salaries were reported to be statistically significant.

POSITIONS ACCEPTED

(By citizens for regular employment)

<u>BY LOCATION</u> (238 reported)	<u>%</u>	<u>BY TYPE OF WORK</u> (238 reported)	<u>%</u>
Michigan	27	Training Program	25
Other Midwest	21	Research & Development	35
East	27	Design or Systems Engrg.	23
West	22	Operations or Production	10
Other	3	Sales	2
	<u>100</u>	Teaching	5
			<u>100</u>

BY TYPE OF INDUSTRY (238 reported)

	<u>%</u>		<u>%</u>
Aircraft, Space Vehicles, & Components	27	Metal & Metal Products	5
Automotive & Mechanical Equip.	12	Petro. & Allied Prod. (inc. Nat. Gas)	5
Chem., Drugs, & Allied Prod.	6	Res. &/or Consulting Organ's.	5
Constr. & Bldg. Mat'ls. Mfrs.	5	Tire & Rubber	1
Elect. Machinery & Equip.	5	Utilities-Public (inc. Trans.)	3
Electronics & Instruments	12	State & Local Government	3
Food & Beverage Processing	1	Federal Government	3
Gl., Paper, Pkg., & Allied Prod.	1	Educ. or Res. Related to Educ.	6
	<u>100</u>		<u>100</u>

BY SIZE OF EMPLOYER'S ORGANIZATION (238 reported)

	<u>%</u>
Large (More than 5000 employees)	61
Medium (Between 500 and 5000 employees)	31
Small (Less than 500 employees)	8
	<u>100</u>

COMMENTS

The proportion starting in Michigan remained the same as last year, but Other Midwest States and the East Coast gained at the expense of the West Coast which declined to 22% as compared with 40% only two years ago.

Last year's shift from Production to Sales was reversed completely this year with the largest proportion ever reported going into Operations and Production work at the expense of Training Programs and Research and Development.

The classification of industries was changed this year to conform with the College Placement Council, but no significant change appeared in the distribution by industries or by size of employer.



SUMMER POSITIONS

A special survey of approximately 400 students registered for summer positions was made in early June with the following results reported through June 15.

STATUS OF APPLICANTS	Below				Total	%
	Jr.	Yr.	Jr.	Sr.		
Have Position	12		31	84	168	82
Still Looking	3		5	15	31	15
No Longer Want			1	3	6	3
Totals	15		37	102	205	100

AVERAGE MONTHLY SALARY	Below				Overall Average
	Jr.	Yr.	Jr.	Sr.	
Training Positions	412		429	449	453
Ordinary Work	343		379	426	447
Combined Average	363		403	436	450

COMMENTS

Although a large majority of applicants had accepted positions by June 15, there were a substantial number still available.

The largest number of positions, 37, was reported in the Automotive and Mechanical Equipment industries, followed by 27 in Education-related Research, mostly at the University, and 18 in the Chemical industries.

Salaries for training positions averaged considerably higher than for ordinary jobs except at the post-graduate level where many were employed on regular research work at relatively high rates.