

UNIVERSITY OF CALIFORNIA, BERKELEY

Department of Chemistry

September 13, 1967

Mr. Thomas D. Fontaine
Associate Director (Education)
National Science Foundation
Washington, D.C. 20550

Dear Mr. Fontaine:

[Introductory paragraph not shown here]

We are gratified to learn that you view the URP program as "one of the most important programs of the Undergraduate Division." We would be inclined to go further and state that we view it as one of the most effective programs of the NSF's entire program, not only of its Undergraduate Division. We assume that one of the aims of the NSF is to encourage larger numbers of qualified students to make the decision to become practicing scientists. If such is the case, we believe that money spent for summer support for the researches of students at the undergraduate level is money invested at perhaps one of the most sensitive junctures of the student's decision-making processes. Although we would not want to argue against the existence of NSF Graduate Fellowships, we would urge -- so long as the NSF is required to operate within a non-increasing budget as has been the case for at least fiscal years 1966 and 1967 -- that it would be desirable to decrease the proportion of its budget put into graduate fellowships (at which level a student's commitment to chemistry has already been made and a variety of assistantships and fellowships are available to him) and to divert the corresponding amount of assistance at a level where students need encouragement and the financial wherewithal to test their capacities for research. In most institutions there is no source of support for undergraduate research other than the URP program.

Having observed the success of the URP program in stimulating and supporting student research participation, and having observed the extremely high proportion of participants who have elected to go on to graduate school, we are naturally concerned to note from your tables that there has been a marked increase in recent years in the percentage of proposals which have been turned down presumably because of shortage of funds for the program. From the figures which you have given me covering all disciplines for the years 1959 through 1967, I have calculated for chemistry that the percentage of proposals receiving favorable action dropped from 84% in 1959 to 76% in 1960, to a low of 44% in 1966, followed by an increase to 57% in 1967. (It is interesting to note that, although the percentage of approved proposals increased in 1967 over 1966, the percentage increase is not due to an absolute increase in the number of favorable actions but due to a marked decrease in the number of proposals. One wonders whether the sharply reduced number of applications in 1967 may have occurred at least partially as the result of discouragement with the high turn-down rate in 1966).

It will be clear from the nature of the questions submitted to you on behalf of MACTLAC in my letter of March 9 that another major concern of our organization is the dismayingly small number of grants going to smaller schools. Your figures given in answer to my questions 2 and 5 corroborate our fears, namely, that the

percentage of proposals receiving favorable action is strikingly smaller in the small schools than in the large, Ph.D.-granting institutions. In 1967, for example, 64% of the proposals received from Type 1 institutions (those granting 100 or more doctorates in science) were approved, while only 35% of the proposals from Type 7 institutions (100 to 199 baccalaureates in science) and only 11% of the proposals from Type 8 institutions (50 to 99 baccalaureates in science) received favorable action. In answer to our question No. 7 you state that it was your feeling that "We can provide maximum benefits to participating students regardless of whether the institutions at which the project is carried out is large or small." In view of this position it is surprising that there is such a large discrepancy in the grant award figures for the two types of institution. It could be argued, of course, that the proposals from the large institutions are of higher quality. Having no means of judging that point, I cannot present evidence to the contrary, but we would be chagrined indeed if we were forced to believe that the percentages just quoted could be taken to be in direct proportion to the relative merits of the proposals from the two types of institution. As you well know, those of us at the quality liberal arts colleges strongly feel that our departments have something very special to offer the undergraduate in the form of close student-professor contacts, an advantage which is of special importance to the neophyte researcher. We wonder if your evaluation panels assign sufficient weight to this factor in evaluating proposals.

I would like to emphasize one final point with respect to the desirability of increased level of support of URP at the liberal arts colleges, a point which at first sight seems self-seeking for those of us in liberal arts colleges, but which is an item of considerable importance to maintaining and upgrading chemical education in general. I believe that there are few who will not agree that student participation in research at the undergraduate level is highly important, and that the faculty research involvement associated with such programs is of great importance to the faculty member and to the vitality of the department as well as to the student participants. At the universities there are generally a good number of other research programs involving the participation of graduate students and post-doctoral students from which the professor and the department build their reputations. But at a liberal arts college, where research moves more slowly because of the lower productivity of undergraduates compared to graduate and post-doctoral students, there do not usually exist the industrial and defense contracts which are logically enough placed at larger institutions able to turn out results more quickly. In many liberal arts colleges, then, the chief support of research activity is the NSF-URP program. We strongly feel that the chemical world in general would benefit from the stimulus provided by an increase in the number of URP grants awarded to deserving liberal arts colleges.

This has been a lengthy letter, and I am sorry that it was so long delayed, but I did want to give careful analysis and thought to your report before commenting on the information which you so kindly provided. Thank you for your cooperation.

Yours sincerely,

John W. Coutts
President, MACTLAC, 1966-67

cc: Mr. McGuire, NSF
Dr. Richard Bayer
Dr. Richard Ramette

A TABLE OF REPRESENTATIVE GENERAL REQUIREMENTS

College	Total Req.	Nat Sci.	Soe Sci.	Humanities	Total gen. req.
BELOIT	120+4	4 SEM (2 LAB) Math distributed	3 hrs (inc Nat Sci exempt)	4 SEM + FLANG (inc Art, Music, Speech) (2) HOURS	55
CARLETON	124+ 6 SEM RE.	Bio 6-8 Phy. 6-8 (1) FLVS 6 HOURS OUT	6 HRS	Rhetoric 3-6 Lit 3-6 FILANG 0-19 (3) Phil. 6 E STUDENT'S MASTER DIV	58
LAWRENCE	120+4	8 HRS LAB Sci	Eng Hist 6 (or EXAM) Soe. Sci.	Fresh Studies 3 FOR LANG. 16 (3) LIT 6 BY EXAM THEN LIT, FINLEY PHIL OR REL 6	50
GRINWELL	120+4 4 SEM PE 2 HRS HEALTH	11 HOURS Bio 9 Phis 1 yr LAB	Eng. Hist 4	Commun 8-10 FOR LANG 19 (30) RELIG 3 FINE ART 3	45 plus add. deduct per coll 9 concentration.
WOOSTER	120+4	11 HOURS 4 HRS LAB	12 HOURS LIT 6 comp dept	INT LIBERAL ST 6 RELIG 6 - Phil Phil 6 - Phil 6-9 Concepts Art 3 FINE ART 3 (3)	56
OBERLIN	120+4	one yr + 8 HOURS	3 HOURS	EAR 5-6, PL 0-14 LIT 6, FINLEY 3 PHIL 3, REL 3 (3)	51
ROBART & W.S.	120+6 SEM RE.	2 yrs - 12 HRS Math 6 "	ANCE HIST 2 (inc LANG 10 HRS Sci. Exam) SOE EXAM in SOCIAL	HIST 7 LIT 10 EXAM 6, FIL. 10 (26) WEST CIVILIZ. STUDIES -	47 ⁴⁵⁻⁴⁷ minus possibly add 57
REED	120+4	2 YRS 18 hrs	6 HRS	HUMANITIES 14 FLANG 0-19 (23)	48
POMONA	120+6	Bio 6 Phis 6 U.S. 2 HRS most excl	2 YEAR CHEMISTRY 12 HRS	ENG 6; LIT, ART, MUS 12; PHIL REL 12 No FL. (30)	54
OCCIDENTAL	122+2	12 hrs	History of Civ	24 - Eng 4, Speech 4, For. L 0-8 BIO 0-4	56
HAVERFORD		4 courses 12 hrs	4 courses 12 hrs	For. L 0-4, (10) LIT, Phil, Art 12	50
DART 57-58 Cat.	120+4	3 SEM 1 yr LAB	12 hours	Eng 6-10, REL 6, PHIL 3, Art-Music 4, FLANG 0-19 (3)	64
AVERAGE OF SCHOOLS FROM 1747 PERS	123.1		8.7 (inc. 4 Occid. Hist 0-10) 2.6 to 3.0 plus 20 for Scie. 12 HRS	30.3 (includes 1/2 Occid. Hist. 10 HRS)	51.3

