Submitted 11-17-70

A proposal to

National Science Foundation

(Italy/U.S. Science Cooperation)

for extension of

Exchange Program in Genetics and Molecular Biology
Between Research Scientists from the Departments of Genetics of the
Universities of Stanford and Pavia

January 1, 1971 - December 31, 1973

(GB-7785)

Submitted by:

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Italy/U.S. Science Cooperation

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"The Departments of Genetics of Stanford and Pavia, Italy, respectively, wish to undertake a formal collaborative project in genetics and molecular biology.

The present proposal from Stanford closely parallels one submitted by Pavia to the Consiglio Nazionale delle Ricerche of Italy.

The two departments have enjoyed a very close de facto relationship in the past, as exemplified by the exchanges listed on (Attachment 1). These repeated exchanges have resulted in the elaboration of a number of joint research projects in genetics and molecular biology in which both U.S. and Italian scientists participate. It will be very useful for the continuation of these projects if they could be corroborated by an even stronger exchange of people and ideas from the two departments."

This statement, quoted from our original proposal which went into effect May 1, 1968, properly characterizes the program whose extension is the subject of the present request. Attachment 2 lists the faculty and staff from Pavia who visited Stanford during 1968-70, the period of the Stanford/Pavia grant, and those from Stanford who visited Pavia. Attachment 3 lists the publications that have emanated from the program to date.

The program has, in our judgment, been most rewarding to both sides; it has also been beset by a number of difficulties. These include the disparity of administrative practices between the U.S. and Italian agencies in dealing with grants and advance commitments, which nevertheless had to be synchronized under the terms of reference of the program. In Attachment 4 is the text of a statement

of approval from the Consiglio Nazionale delle Ricerche, which authorizes the Italian side of the Stanford/Pavia project, to the extent of L. 29,900,000, and which is valid through 1971. In practice, the validity of the program is intended to be of longer range, and we therefore request a three-year commitment from the NSF, with the understanding that the new funds to be released in 1972 and 1973 will be made available only on the condition that a corresponding approval has been negotiated with the Italian CNR. We face a problem of potential stalemate here, and it would certainly expedite the negotiation of such agreements if some understanding of the NSF's longer range interest could be formalized in response to the present proposal. The program has been held in abeyance from June 30, 1970, pending the renegotiation of this renewal.

Equally important are the shifts of faculty, which will have a profound, basically salutary effect on the program. These include (1) Professor Walter Bodmer's resignation from Stanford to take a chair at Oxford, and (2) Professor Cavalli's appointment as a Professor of Genetics (in residence) at Stanford. Bodmer and Cavalli have collaborated closely, as between Stanford and Pavia, and this had constituted a very important link in the program. They will continue to do so, but of course under other auspices, insofar as Bodmer has moved.

Professor Cavalli will move to Stanford February 1, 1970, while retaining many important ties to academic life in Italy. As a full-fledged member of the Stanford faculty, he will play the major role in facilitating the exchange of students and faculty with his parent institution, Pavia. It is understood that the present proposal is not intended to bear responsibility for Cavalli's move to the United States, which has been actively discussed between us for twenty years. This having eventuated, however, it creates an extraordinarily fertile opportunity for furthering scientific cooperation in molecular biology between the two countries, for Cavalli has a large following of students and fellows in Italy with whom he expects

to maintain the closest ties. For our part, the visiting scientists have been inspiring and enthusiastic guests who have contributed a great deal to the efficacy of the department, and the like of whom we look forward to seeing in the future. We know they share these expectations.

The collaboration will be, as in the past years, connected with the entire research program of the Genetics Department, with assignments to individual professors in accordance with the special interests of the visitor. Attachment 5 summarizes these areas of interest. In addition to the formal, laboratory research, several faculty members are also involved in various science policy studies, which may well be a matter of special interest to some visitors.

A special laboratory and office has also been designated at Stanford for the regular use of the Italian visiting scientists. In addition, the experimental facilities of the Department will be freely available, including modern analytical instrumentation for biochemical genetics, reference room, information retrieval aids, and access to a time-shared, remote-terminal computer system, with system programming support.

The budget which follows will give more specific details of plans for the initial period of the renewal.

STANFORD/PAVIA 1/1/71 - 12/31/71

Personnel		Requested from NSF	
Genetics Dept., Stanford:			
Prof. J. Lederberg		--	
Prof. L. Cavalli-Sforza		--	
Prof. E. Shooter		--	
Prof. L. Herzenberg		--	
Prof. A. Ganesan		--	
E. Levinthal, Sr. Scientist		--	
A. Duffield, Res. Assoc.		--	
Louise Wang, Sr. Res. Asst.	(12 mo.)	11,000	
Secretary (50% time)	(6 mo.)	3,700	
Visiting Fellows from Pavia: (foreign travel from Italian sources)			
Silvana Santachiara	(12 mo.)	12,000)	Neurochemistry (Prof. Shooter)
Pier Franco Pignatti	(12 mo.)	8,000)	
Carlo Motessi	(12 mo.)	8,000)	Mathematical genetics (Prof. Cavalli)
Aldo Cori	(12 mo.)	6,000)	
Prof. Orio Ciferri	(5 mo.)	10,000	Molecular biology (Prof. Lederberg)
Total salaries		58,700	
Staff benefits	8 mo. @ 13.9%, 4 mo. @ 15.2% = 14.33%	8,412	
Total Personnel			67,112

Travel (Stanford visitors to Italy)		
Howard Cann, M.D* (r.t. SFO/Milan)	950	(Sabbatical fellowship at Pavia)
L. Cavalli-Sforza " "	950	(Lectures, recruitment, adminis-
J. Lederberg " "	950	trative arrangements with Pavia)
A. T. Ganesan " "	950	(6 mo. fellowship at Pavia - may be either 1971 or 1972)
Mark Skolnick (one way, Milan/SFO)	475	(completion of graduate work at Pavia and resumption at Stanford)
Per diem for short term Stanford visitors to Italy:		
L. Cavalli-Sforza (10 days @ $25/day)	250	
J. Lederberg " "	250	
Total Travel		4,775
Computer Time		9,000
Laboratory Supplies & Chemicals		5,000
TOTAL DIRECT COSTS		$85,887
INDIRECT COSTS (59% of salaries)		34,633
TOTAL AMOUNT REQUESTED		$120,520

*Dr. Cann is an Associate Professor of Pediatrics at Stanford; see listing of previous exchanges.