

THE VISITING SCIENTIST PROGRAM IN TENNESSEE

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During the school year 1965-66, the Tennessee Academy of Science conducted its fourth Visiting Scientist Program for the high schools of Tennessee. This report is specifically for the past year, but includes a summary of four year period during which the program has operated. The National Science Foundation graciously granted funds to make the program financially possible. Officers of the Academy have maintained contact with members of the Administrative Staff of the Tennessee State Department of Education in Nashville and are in agreement regarding the guiding principles of the program. The general objectives of the Visiting Scientist Program as set forth by the National Science Foundation were adopted as the objectives of the program in Tennessee. The operation of the program has continued in the hands of a director who has reported regularly to the Executive Committee of the Academy. The program was designed to get a large number of professional scientists to make visitations in local high schools in Tennessee, and in these visitations perform a variety of services which might increase the interest of students in science as an important part of their education and as a possible career.

The Director has worked from his office in the Physics Department of the University of Tennessee. He has been assisted by a secretary working approximately one-half time. The office facilities of the Department of Physics have been at the disposal of the Director.

The Visiting Scientist Program was conceived to be divided into four parts or phases, as follows: (1) establishment of a roster of visiting scientists, (2) development of publicity and promotion of the program, (3) execution or direct operation of the visitation program itself, and (4) preparation of summaries and evaluation of the program. A tentative calendar of activities called for the establishment of the roster of visiting scientists during the summer, a campaign of publicity and promotion during the early fall months, and the scheduled visitations to be made during the remainder of the school year.

An invitation was sent to all the scientists who had served the previous year to continue. The majority elected to serve again. Several fields of science and some regions of the state were not well represented. A few nominated persons were invited to become members of the roster. A special effort was made to add more mathematicians and engineers. In the end, a roster was compiled of 102 scientists, mathematicians, engineers, and physicians to serve as official Visiting Scientists. The official roster was printed in a booklet, along with explanations and instructions to schools and teachers.

An initial press release was made by the President of the Academy as soon as the grant from the National Science Foundation was announced in April, 1965. Of

prime importance was a letter of endorsement of the program sent from the Tennessee Commissioner of Education to all school superintendents of city and county school systems in September. Accompanying this letter was an announcement by the Director explaining the program to the superintendents. This announcement sheet was also mailed to more than 500 school principals and supervisors in the state. After this communication concerning the program to the school officials of the state, the Director made an announcement concerning the availability of the program through the office of the News Bureau of the University of Tennessee. This reached many county and small town newspapers throughout the state. Oral announcements were made at the three regional science teacher meetings in the state during the fall. A copy of the Roster was mailed to more than 2200 high school science and mathematics teachers, together with material for initiating an invitation. This was so effective that no additional solicitation was necessary to insure the success of the program.

Insofar as possible, the visitation program was operated through the use of a set of forms and form letters. As soon as an invitation was received, the request was stapled to an office form used to keep track of all subsequent steps of procedure, steps which culminated in the school visitation and ended with letters of thanks to the school and the scientist for participation in the program. The letter of thanks to the scientist accompanied the check from the treasurer for his services.

In addition to this routine procedure, many visitations were facilitated by personal correspondence on the part of the Director and some by long distance telephone calls. This latter became necessary in cases involving bad weather and in cases involving too little time between invitation and visit.

Each request for a visitation was assigned a serial number, and a file established for each particular visitation. All information, form letters, and special correspondence pertaining to a particular visit were thus held together throughout the program. The serial number of the visitation was noted by the name of the school in a copy of the Directory of High Schools for Tennessee, and also noted by the name of the visiting scientist in the office copy of the roster. A summary sheet was constructed which allowed each step of the procedure to be checked for each visitation, thus showing at a glance the status of the entire program. The work of the secretary was programmed from this record, and the operation was exceptionally smooth.

Schools were encouraged to request the services of scientists living close enough to include the total visitation within one day. Justification for visits requiring overnight trips was requested in several instances. No request was denied for reasons of distance, but

the announced policy was helpful in keeping down expenses.

The most significant single problem in the operation of the program was getting the school to submit a schedule of activities to the visiting scientist in time for the visitor to plan his visit. The failure of the school to plan the program ahead of the visit has necessitated more phone calls than any other cause. Another continuing but diminishing problem is the misunderstanding that visiting scientists should make the same talk to a succession of science classes, omitting any opportunity for conferences with teachers and students.

The director has not received any really adverse criticism of the program from any source. A few comments and suggestions were submitted in the nature of minor criticism of procedural matters. Most of these have been taken care of by alterations in the form letters. In general, there is widespread acceptance of the program by schools and continuing satisfaction expressed by the scientists who make the visits. This latter point is well illustrated by the fact that of the 102 scientists on our current roster, 90 have indicated a willingness to serve next year.

The efforts of the director to promote the program have varied. The first year a serious error was made in channelling information through principals' offices. This was totally ineffective. Direct approach to classroom teachers was used during the succeeding years. The effort was so successful that the third year's program was committed before the end of December. Many subsequent requests had to be refused for lack of funds. During the fourth year, the promotional activities were more accurately tailored to the available program, and everyone making a request was served with no refusals and no unexpended funds.

The extent to which the high schools of the state have been reached from year to year has varied. In the beginning of the program, the director discouraged one school receiving more than one visitation during the year. More experience with the program has led to a realization that some teachers can make effective use of multiple visitations. Of the 450 high schools in Tennessee, 130 received visitations in 1965-1966. No detailed count has been made for all four years, but a sample indicated about a 30% turnover in the schools visited from one year to the next. This would indicate that nearly 300 different schools have been visited during the four year period. Schools in 80 of the 96 counties of Tennessee have been visited.

Table I shows numerical summaries of the major activities of the visiting scientists throughout the four year period. A careful examination of this table shows some definite trends. The director has made a serious effort to guide the program away from a public speaking activity to a science counselling service. The limited success of this endeavor is reflected in (a) the increase in the number of meetings with single science classes in contrast to the leveling off or slight decline in larger groups; (b) the increase in the number of meetings with small student groups; (c) the increase in the

number of meetings with school counsellors in contrast with the decrease in the number of meetings with school principals. Not reflected in this table is the general consensus expressed regarding the ineffectiveness of large auditorium programs.

TABLE I, A FOUR YEAR SUMMARY OF ACTIVITIES OF THE VISITING SCIENTIST PROGRAM IN TENNESSEE

	4 year total	1962-3	1963-4	1964-5	1965-6	
VISITS BY FIELDS						
Astronomy	31	10	8	6	7	
Biology	167	39	40	40	48	
Chemistry	102	34	20	25	23	
Engineering	11	—	3	5	3	
General Science	31	12	12	4	3	
Geology	28	9	8	8	3	
Mathematics	157	14	45	42	56	
Medicine	16	5	3	6	2	
Physics	63	18	15	10	20	
Psychology	11	—	—	4	7	
Total No. of Visitations	617	141	154	150	172	
TALKS						
Auditorium Groups	350	57%*	56%	66%	55%	51%
Groups of Science Classes	559	91%	71%	103%	101%	87%
Single Science Classes	411	62%	35%	74%	67%	90%
Science Clubs	149	24%	11%	22%	50%	15%
Groups of Science Teachers	266	43%	36%	47%	45%	44%
Groups of Students	60	10%	10%	10%	11%	14%
Adult Groups	23	33%	4%	3%	7%	1%
CONFERENCES						
Principals	257	44%	43%	45%	41%	38%
Individual Students	310	50%	40%	52%	70%	41%
Librarians	28	5%	3%	2%	6%	7%
Counsellors	161	26%	22%	22%	27%	33%

Any quantitative evaluation of the Visiting Scientist Program in Tennessee would entail information not readily accessible. Some response from college students who major in science would be appropriate. Such an inquiry could become a very expensive operation. Another point of attack in any inquiry regarding the success of the program would be the reaction of the science teachers who have participated. Considerable thought should be given to a questionnaire that could be sent to all the science teachers who have sponsored a visiting scientist. Because of teacher turnover, not all such teachers could be reached. It could be predicted that responses would range all the way from indifference to anecdotal accounts of really inspiring contacts between students and visiting scientists. An endeavor of this sort might be considered as a special project in itself and conducted as a pilot operation in a selected area.

More than twenty years ago the writer endeavored to do some field work with high school science teachers. Brief visits were made to more than fifty high schools in East Tennessee. Conferences were conducted in various centers within easy reach of teachers. The teachers were appreciative and expressed a desire for some continuing service of an advisory nature. The task soon became an impossible one. All this leads me to say that

* The percentages shown are with regard to number of visits, not schools. Thus there were 57% as many auditorium groups visited as there were school visitations in the four year period, and there were 11% as many science clubs visited as there were visits made during 1962-3. More than 100% means that some schools had more than one hour of a particular activity during one visit.

my work as director of the Visiting Scientist Program in Tennessee for four years has been very, very gratifying, since a hundred men have done so well a job which was impossible for one to do. The cooperation of these men as Visiting Scientists has been phenomenal. Although some of the classroom teachers in the early part of the program apparently seized upon the services of the program as opportunists, there has been a growing understanding of the goals of the program on the part of science teachers. There is still a long future for this type of service in the schools of Tennessee.

I am leaving the work as director with considerable reluctance. The press of new duties at the University of Tennessee, together with the feeling that a younger man could bring fresh impetus to the program, has led me to lay aside this particular work at this time. May I voice thanks to all those in the National Science Foundation and the Tennessee Academy of Science, who with patience and understanding, have made my task pleasant.