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ABSTRACT

Presented is the final report of a conference on women in science careers held in October 1978, in which 350 women students participated from 35 colleges near Dubuque, Iowa. Conference presentations and panel discussion topics are briefly summarized, and outside speakers are listed. Student evaluations are included. (CS)

FINAL TECHNICAL REPORT

WOMEN IN SCIENCE CAREER WORKSHOP

Name of Institution: Clarke College, Dubuque, Iowa

Name of Project Director: Sister Mary L. Caffery, Ph.D.
Department of Chemistry
Clarke College
Dubuque, IA 52001

Grant/Proposal No.: SPI78-06527

Starting Date of Project: July 1, 1978

Date of Workshop: October 12, 1978

Termination Date of Project: June 30, 1979

CONTENTS

I. What Was Accomplished

A. The Workshop

Registration for the Women in Science workshop opened at 8:30 AM on October 12, 1978. Junior and senior science majors from Clarke helped in the registration process. A questionaire - Appendix 1- was distributed to each student registering. The student participants received a folder containing the program, luncheon tickets, evaluation form, name badge, a note pad and pen, and copies of the following:

- "Women in Science and Technology, Careers for Today and Tomorrow", American College Testing Publications, Iowa City, Iowa, 1976.
- Financial Aid: A Partial List of Resources for Women, from The Project on the Status and Education of Women
- "Meet the Industrial Woman" in ExxonUSA, Second Quarter, 1978, Volume XVII, No. 2.

Each student selected two scatter sections and picked up tickets for these at registration. Drivers filled in requesitions for travel reimbursement. Coffee, milk and rolls were served.

At 9:30, after a welcome by Clarke president Dr. Meneve Dunham, the keynote speaker was introduced by the Project Director, Sr. Mary L. Caffery. Dr. Estelle Ramey's address "Is Scientific Ability in the Head or in the Hormones?" was enthusiastically received by the 240 registered participants, twenty-three faculty members from the visiting colleges and about 200 members of the Clarke community-faculty, juniors and seniors. It would be impossible to understate the significance of Dr. Ramey's contribution to the day. It was her talk which received the highest evaluations on the day of the workshop and which was remembered on the follow-up evaluation six months later.

Following the keynote address, participants proceeded to the scatter sessions of their choice. By using a color coded ticket system for these sessions, we were able to provide fairly even distribution of numbers in the AM and PM sessions. The scatters lasted about one hour. Speakers were provided with pertinent sections of the grant proposal outlining the format and the goals of the workshop. Prior to the Workshop day they received a list of suggested questions on which they might base their presentation. The list was adapted from material in "Science Career Exploration for Women" by W.A. Smith and K.M. Stroup, a publication of the National Science Teachers Association.

Booths displaying career materials were set up near the area where the scatter sessions were held. Biology, chemistry, psychology, sociology computer science, engineering and mathematics career materials were available. One difficulty we had was in lack on control of distributing this material. We had ordered about 100 copies of each phamplet and booklet, assuming that each participant might be interested in two or three or the six areas represented. Instead, the first students in the area picked up one of everything available and we ran out of many of the materials very rapidly. The booths also featured posters on careers and were "staffed" by junior and senior science major so there was some value even after the materials were gone.

The afternoon scatter sessions began at 1:45 PM. Question boxes were available in each classroom during the morning scatters and participants had been directed to place questions for the concluding panel in them by 1:30. These were collected and during the PM scatter, the project director and assistant project director gathered them and made final plans for the panel.

The panel discussion was moderated by Dr. Patricia Hemmindinger, assistant project director. All seven speakers participated in a lively discussion on combining professional and personal life-styles. The invited speakers represented a variety of age groups, life-styles and academic degrees. The youngest at 25 was expecting her first child in November, the oldest at 60+ was a grandmother. Two were single, the remaining were married. Two had bachelor's degrees, one the M.S. and the remaining four were Ph.D.'s. The main questions that were treated were the following.

-How can you give ultimate concentration to long years of learning a field and still stay in touch with real life and real people?
-What suggestions do you have for women who encounter criticism from peers, friends, family, spouses, regarding career choice?
-Is it possible to set aside time each day for family or close inter-personal ties?
-Is it important to be active in civic and community affairs? Can you find the time?
-Does your career dominate your life-style and leave you little time for leisure? Can you at times put your career out of your life and really enjoy your self.
-How do you deal with overt and covert sexist attitudes and actions involving your peers?
-What particular problems does a single woman face?
-Is there any financial support available for women like me--32, just returned to school, husband 100% opposed and unable to get support because of husbands level of income.

The Workshop concluded at about 4:30 PM with the evaluation period. Approximately 75% of the participants turned in the form which they had received in the morning.

A follow up evaluation was conducted in March of 1979 to determine more lasting impressions of the workshop. The participants received a small poster with a quote from the keynote address at this time.

B. Publicizing the Event

The initial announcement of the workshop was made in a news release on July 5, 1978. This contained the name of the keynote speaker and a general description of the program and goals. In late September, a further release was sent to the local newspapers in each city in which a college was located who were invited to send participants. This coincided with the invitation process described in section C below. TV and radio coverage on the workshop day was facilitated by the Clarke College Public Relations Director. TV coverage was carried by two stations in the area and numerous short radio stories were broadcast.

C. Selection of Participants

On August 18, the project director wrote to the Deans of 35 colleges within a 100 mile radius of Dubuque. They were invited to send the name of a faculty member who would serve as contact person on their campus. By early September, 28 colleges responded with the names of persons willing to serve in that capacity.

On September 12, a mailing was prepared containing the following:
- -a press release for the campus newspaper
- -posters
- -information fliers on speakers and program
- -application forms
- -criteria for selection of participants and time line for invitations
- -a questionaire for the faculty member to gather statistical information (i.e. number applying, hours worked on program etc.)
- -a stamped envelope to return applications

The faculty members were asked to return the applications by the end of September. On receipt of the applications at Clarke, personal letters were sent to each applicant informing them of their acceptance and providing a campus map and preliminary program. Clarke students were invited to apply by the same process used on other campuses.

Although we were operating on a rather tight time schedule, I believe the method we used to publicize the workshop to students was effective. The key to our success in getting the full contingent on which we planned was the cooperation of the faculty contacts on other campuses and at Clarke. In three cases especially, women faculty members at the University of Wisconsin-LaCrosse, Blackhawk College and Luther College were extremely enthusiastic about the program and were responsible for a large number of applicants and participants. In the future I would follow a similar process but attempt it on a slightly longer time frame.

D. Selection of Outside Speakers

During the time we were preparing the grant application an article on Dr. Estelle Ramey appeared in The Chronicle of Higher Education stating her work for and interest in women in science. Our president had heard her speak and was impressed with her enthusiasm and manner. The project director contacted her at that time to determine her willingness to serve as keynote speaker if we were funded. On receipt of the grant, we telephoned her to extend an official invitation and to set the date for the workshop. Dr. Ramey accepted immediately so we were able to use information about her in the initial press release.

Other contacts were made by the project director as follows. All of the contacts were made by phone with follow-up letters containing information about the workshop, goals and schedule.

The personnel office of the Mathematics Division at Argonne National Laboratories was contacted for suggestions for the field of computer science. He recommended Margaret Butler, Director of the National Energy Software Center. She accepted.

The Clarke faculty in the sociology department gave the project director several names of women in the field of medical sociology. The first person contacted declined because she was pregnant and due at the time of the workshop. Dorothy Douglas accepted was enthusiasm and even rearranged other previous commitments in order to participate.

A personal friend of the project director who is a member of the Chicago Section of the ACS supplied the names of several women in the area of industrial chemistry. Inara Brubaker was contacted first and accepted immediately.

The assistant project director reached Dr. June Chance at her summer residence and secured a verbal acceptance. The project director later confirmed the invitation and acceptance.

Sorrel Brown, the agronomist, saw our press release in the Des Moines Register and called the project director to offer her services. She had participated in a similar program as a graduate student and wanted to tell other women about her field. After receiving further information about her background, she was invited to participate.

In attempting to secure a mathematician, we contacted one of our alumnae who works as a city planner in Dubuque. She declined as she did not feel competent to represent the field at this time. Through another older alumnae we secured the names of several young women actuaries. One declined because she was preparing for acturial examinations at the time. Patricia Wangberg accepted.

By contacting the above speakers by phone and securing acceptances from a few before inviting others, we were able to get the diversity of life-style we had hoped for. The project director was impressed with the willingness of each woman contacted to help other women who were interested in science.

II. Information on Student Participants

A total of 240 freshmen and sophomore women from colleges and universities within a 100 mile radius of Dubuque registered for the workshop. In addition, many Clarke upperclassmen attended sessions during the day as space permitted. It is estimated that about 350 young women participated to some extent in the workshop. Table 1 shows the home institution of the registered participants.

Table 1. Home Institution of Participants in the Women in Science Workshop at Clarke College.

State	2-year Colleges	4-year Colleges
IOWA	Clinton Community College - 4 Hawkeye Institute of Technology - 10 Kirkwood Community College - 6 Mt. St. Clare College - 7 Northeast Iowa Vocational and Technical School - 6	Clarke College -75 Coe College - 10 Loras College - 4 Luther College - 9 Marycrest College - 8 Mt. Mercy College - 4 St. Ambrose - 5 U. of Dubuque - 3 U. of Iowa - 2 U. of Northern Iowa -8 Upper Iowa - 2
ILLINOIS	Blackhawk College - 17 Highland Community College - 6 Sauk Valley College - 8	Augustana College -2
WISCONSIN	Western Wisconsin Technical Institute - 1 U. of Wisconsin Center at Baraboo -10 at Richland Center - 8 at Rock County - 8	Beloit College - 5 U.of Wisconsin at Lacrosse - 10 at Platteville - 10 at Whitewater - 8
TOTALS	from 2-year colleges 65 from 4-year colleges 175	

A questionaire distributed at registration revealed the following information about the participants. The figures represent a percentage of those registered and in some cases shows separate figures for the participants from 2-year and 4-year colleges.

A. High School Preparation

1. Science Background

Currently Attending a	Years of High School Science 1 - 1.5	2 - 2.5	3 - 3.5	4	> 4.
4-year college	5.1%	22.0%	31.0%	32.0%	6.9%
2-year college	19.4%	34.0%	34.0%	11.0%	1.5%

Subject Areas Studied

Biology	92.3%	Physical Science	6.4%
Chemistry	67.7%	AP Biology	3.0%
Physics	20.0%	AP Chemistry	1.7%
Anatomy/Physiology	16.1%	Earth Science	1.7%

2. Mathematics Background

Currently Attending a	Years of High School Mathematics 1 - 1.5	2 - 2.5	3 - 3.5	4	> 4
4-year college	1.0%	23.6%	32.0%	38.5%	3.4%
2-year college	11.5%	37.7%	27.9%	23.0%	0%

Subject Areas Studied

Algebra	91.0%	Pre-Calculus, Calculus or Adv. Math	17.1%
Geometry	74.0%		
Advanced Algebra	41.5%	Computer Programming	4.2%
Trigonometry	20.0%		

3. Extracurricular Activities in Science/Math

Did you participate in science related summer activities while in high school?

8.9% yes 25.3% no 55.1% none available

Did you participate in high school science or math clubs?

24.3% yes 70.0% no 6.4% none available

Did you participate in high school psychology or sociology clubs?

5.5% yes 84.6% no 10.6% none available

4. Rank in class

What was your approximate high school rank?

55.5% upper tenth
23.1% upper fourth
11.5% upper third
7.7% upper half
2.1% upper two-thirds

5. Attitude

What was your attitude toward math and science in high school?

71.9% liked math — 26.8% disliked math
85.8% liked science — 9.2% disliked science

B. Source of Encouragement

Who encouraged you to consider math and/or science as a possible career?

33.5% parent — 32.6% teacher — 20.9% counselor
13.0% relative — 14.6% friend — 0.4% spouse

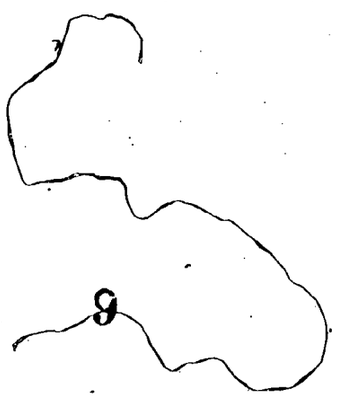
Why did you decide to attend the Women in Science Workshop?

40% wanted more information about career options
8% wanted more information about a specific fields
7% was interested in life-styles of women with careers
10% sounded interesting
4% a faculty member encouraged me

There were many single responses to this open ended question.

C. Ethnic Background

48 % Caucasian
1.5% Mexican-American
0.7% Black
0.3% Chinese
50 % no response



D. Year in College

39.8% Freshman
36.8% Sophomore
23.3% no response (A number of non-traditional age women students attended who are not classified by class.)

III. Information on Applicants Not Selected

On the advice received from M. Joan Callanan, Program Manager for Women in Science, on July 12, 1978, regarding difficulties with "no-shows" at similar workshops, we extended about 300 invitations to 29 institutions in the designated area. Including the invitations extended to Clarke students, this almost doubled the ratio of number of invitations extended to participants expected. Judgement of applicant suitability was left to the faculty contact on each campus with instructions regarding the criteria stated in the grant application. All Clarke freshmen and sophomores interested in the sciences were invited. Table 2. indicates the outcome of the selection process. In only two cases did the participating institutions receive considerably more applications than places offered. The project director extended the invitation to all who applied when it was evident that we had space.

Table 2. Information regarding applications for the Women in Science Workshop at Clarke College.

	Number of Colleges Contacted	Number of Colleges That Responded	Total Invitations Extended	Applications Received	Accepted	Registered
IOWA						
4-year	12	10	118	73	71	55
2-year	8	6	67	42	40	33
Clarke			150	74	74	74
ILLINOIS						
4-year	3	1	10	8	8	2
2-year	4	3	37	44	43	31
WISCONSIN						
4-year	6	5	48	37	37	32
2-year	5	4	34	10	10	11
TOTAL	38	29	464	288	283	238

IV. Information on Participating Staff, Consultants, Outside Experts

A. Clarke Faculty and Staff

Dr. Mary L. Caffery, Assoc. Prof. of Chemistry-Project Director
Dr. Patricia Hemmindinger, Asst. Prof. of Psychology-Assistnat Project Director
Louise Ottavi, M.A., Career Counseling Center -Consultant

Department Resource Persons
Sr.Dorothy Hollahan, MA, Assoc. Prof. of Sociology
Sr.Marianne Joy, M.S., Assoc. Prof. of Computer Science
Sr.Diana Malone, Ph.D. Assoc. Prof. of Chemistry
Sr.Carol Spiegel, M.S., Instructor in Mathematics
Dr. Denis Zusy, Ph.D., Assoc. Prof. of Biology

B. Faculty Contacts on Other Campuses

Thomas C. Gibbons, Physics Department, Clinton Community College
Ms. Betty Baenziger, Mathematics Department, Kirkwood C. College
Donna Story and Karla Burns, Northeast Iowa Vocational Technical School
Ms. Marion Johnson, Chemistry Department, Mt. St. Clare College
Ms. Sarah Turner, Health Services Dept., Hawkeye Institute of Technology
Martha Grotzinger, Biology Department, Blackhawk College
Gail Rung, English Department, Blackhawk College
Verena Aarthun, Biology Department, Highland Community College
Mary Weller, Sauk Valley College
Dr. Marion Rice, Biology Department, U of Wisconsin Center, Rock County
Dr. Floyd Blackmore, Biological Sciences Division, U of Wisconsin Center, Richland
Dr. Patricia Travis, Geology/Geography Dept., U of Wisconsin, Bareboo
Kenneth W. Balts, Western Wisconsin,Technical Institute
Julia A Schutte, Biology Department, Coe College
Dr. Steve Mosiman, Natural Science Division, Loras College
Dr. Carolyn Mottley, Chemistry Department, Luther College
William Totherow, Marycrest College
Dr. Zinnia C. Lim, Chemistry Department, Mount Mercy College
Dr. Mary Vinje, Biology Department, St. Ambrose College
Dr. Carl Osuch, Science Division, U. of Dubuque
Prof. Barbara Stay, Zoology Department, U of Iowa
Dr. Jean Amos, Biology Department, U of Northern Iowa
Dr. James R. Janecke, Science Division, Upper Iowa University
Dr. Anna Wartman, Chemistry Department, Augustana College
Dr. Christine Fahlund, Biology Department, Beloit College
Patricia Robinson, Chemistry Department, U of Wisconsin-Lacrosse
Ms. Betty Wruck, Chemistry Department, U of Wisconsin-Platteville
Sr. LaVonne Abts, Chemistry Department, Viterbo College

C. Outside Experts

Keynote Speaker — Estelle R. Ramey, Ph.D.
Department of Physiology and Biophysics
School of Medicine
Georgetown University
Washington, D.C. 20007

Dr. Ramey, past president of the Association of Women in Science, is professor of physiology and biophysics at Georgetown University Medical School. She has taught extensively--at Queens College, Columbia University, the University of Tennessee and the University of Chicago School of Medicine, where she earned her Ph.D. in endrocrinology. Her research interests are represented by more than 150 published articles and two books.

Agronomy — Sorrel Brown, M.S.
Chevron Chemical Company
P.O. Box 731
Des Moines, IA 50303

Sorrel Brown, a field agronomist at Chevron, earned her undergraduate degree in psychology and master's degree in soil science at Arizona State University. She also attended the Electronic Computer Programming Institute and has worked as a plant pathologist and ecologist for the Arizona Public Service Utility Company. Her research includes work in soil fertility, plant nutrition, and soil and water management.

Chemistry — Inara Brubaker, Ph.D.
Universal Oil Products Co.
Des Plaines, IL 60016

Inara Bruker is presently a research chemist for Universal Oil Products. She has worked for several major corporations including Proctor and Gamble and Monsanto. She completed her M.S. and Ph.D. in chemistry at Ohio State University. In 1977, she was named a Chemistry and Public Affairs Fellow by the American Chemical Society.

Computer Science — Margaret Butler
Argonne National Laboratory
9700 South Cass Avenue
Argonne, IL 60439

Margaret Butler, Director of the National Energy Software Center at Argonne received the A.B. degree in mathematics from Indiana University. She has been eagaged in computer science research since the beginnings of that field and has contributed some 50 papers to scientific literature. The major activity of NESC is the collection, review, testing, maintainance, and distribution of a library of software developed by the Department of Energy and Nuclear Regulatory Commission.

Psychology — Professor June Chance, Ph.D.
Department of Psychology
University of Missouri-Columbia
Columbia, MO 65201

June Chance, a professor of psychology at the University of Missouri has done research in the area of child and adolescent personality development and is the author of a book on the subject. She attended the University of Maryland where she received her undergraduate and master's degree and Ohio State University for her Ph.D. in clinical psychology.

Medical Sociology — Dr. Dorothy Douglas
School of Nursing
University of Wisconsin-Madison
Madison, WI 53706

Dorothy Douglas, a professor in the School of Nursing at the University of Wisconsin, received her Ph.D. in Sociology from the University of California-Davis. Her undergraduate studies were completed at Boston University, Washington University and St. Louis University. She hold the MSN degree in Nursing. She has served as a consultant for the Veteran's Administration Central Office in Washington, D.C. and is a veteran herself.

Mathematics — Patricia Wangberg
Luthern Mutual Life Insurance Co.
Heritage Way
Waverly, IA 50677

Patricia Wangberg, Assistant Vice-President and Associate Actuary of the Luthern Mutual Life Insurance Company, received her bachelor's degree from Luther College in Iowa with a double major in Mathematics and Economics. She specializes in general acturarial sciences and received her Fellowship in the Actuary Society in 1977.

D. Total Person-Months spent on Project

Professional Staff:	Project Director	240 hrs
	Assistant Project Director	72
	Career Counselor	5
	Faculty at Clarke and other campuses	120
	Public Relations Director	14
	451 hrs	= 3.75 person months

Clerical Staff:	Secretarial	20 hours
	Student aides	45 hours
	65 hours	= 0.4 person months

V. Results of Evaluation

Based on the evaluations conducted on the workshop day and in March 1979, we judge the workshop a success in meeting the three goals we had set in our proposal: to make young women aware of choices, to encourage them to aspire to a career in science and to make them aware of satisfactions that come with a career in science. Full copies of the evaluation results are found in Appendix II. Summarizing briefly:

-Two things you liked best about the workshop
  the keynote address (101)
  the panel discussion (33)
  the range of the speakers' backgrounds (23)
  the speakers (23)
-Two things you liked least about the workshop
  I would have liked to have heard more than just two scatter sessions. (26)

In the follow-up questionaire in March of 1979, five months after the workshop, the students were asked to indicate two key ideas that had remained with them from the workshop. The most frequently mentioned were:

-Women can have any career they choose but they have to <u>work</u> for it.
-There are many options in science
-It is possible to combine family, marriage and a career.

The one area which we could have given more emphasis to was that of providing advice about appropriate undergraduate experience ne necessary for careers in science. This came through as a weak area in both the October and March evaluations. In the future especially if high school students were involved, this would need to be given higher priority.

VI. Other Pertinent Information

The keynote address, the panel and all scatter sessions were taped with the permission of the speakers. These tapes were made available at cost to participating institutions. A total of 29 tapes were ordered. The most frequently requested (9) was the keynote address by Dr. Ramey.

As a result of information obtained in preparing the workshop and stimulation to promote careers for women in science, the project director has spoken to six different high school chemistry classes about careers in chemistry. She has also been in closer contact with three junior colleges in trying to promote the bacculaurate de degree in science and mathematics.

The grantee institution is in the process of developing a career center and has benefited greatly from the materials generated as a result of the workshop.

VII. Recommendations

I fully support the change in guidelines for FY 79 which allows high school students to be invited. This is a crucial age to capture the interest of the young. I believe that even younger students (i.e. high school freshmen and sophomores) could profit from the experience.

I regret that the FY 79 guidelines limit the honoraria of the guest lecturers to $183 per day. From information I have gathered from men working in industry and receiving consultant fees for outside activities, $500 per day or $90 per hour seems to be the standard. I realize that the fee paid to the keynote speakers for our workshop was substantially higher than this and received criticism from the reviewers. However, after hearing the speaker and seeing the enthusiasm she generated, I believe her presence was worth every penny!!

I recommend that project directors be advised to make close contacts with faculty members (preferably women faculty members) on other campuses which may be involved in the project. It was only through the cooperation and enthusiasm of the faculty members at Clarke and on the 29 other campuses that we were able to get our full number. Students need personal stimulation!

CLARKE COLLEGE WOMEN IN SCIENCE CAREERS WORKSHOP

EVALUATION

Thank you for sharing your expertise with us today. Would you please help us evaluate the experience by responding to the following items. Please rate each event with which you had some experience by placing an X on the five-point scale. If the event was not applicable to you, check N.A. We invite your comments and suggestions so that we can plan for the future.

KINDLY RETURN TO S. MARY LOU CAFFERY BEFORE YOU LEAVE.

	Outstanding 5	Very Good 4	Good 3	Poor 2	Unsatisfactory 1	Did Not Participate N.A.	Suggestions/ Comments on Back
1. Communications about workshop I received before coming to Clarke	( )	(3)	(2)	( )	( )	( )	( )
2. Clarity of task you were to perform	( )	(5)	( )	( )	( )	( )	( )
3. Transportation to/from Dubuque	( )	(2)	(2)	( )	( )	(1)	( )
4. Informal session at Ramada Inn on Wed. evening	( )	(1)	(3)	(1)	( )	( )	( )
5. Accommodations at Ramada Inn	( )	(1)	(1)	( )	( )	( )	( )
6. Your student hostess	( )	(5)	( )	( )	( )	( )	( )
7. Keynote address	(1)	(1)	( )	( )	( )	( )	( )
8. Location for Scatter I & II	(1)	(4)	( )	( )	( )	( )	( )
9. Reaction of students in Scatter I	( )	(3)	(2)	( )	( )	( )	( )
10. Reaction of students in Scatter II	( )	(3)	(1)	(1)	( )	( )	(1)
11. Luncheon	( )	(3)	(2)	( )	( )	( )	( )
12. Final Panel Discussion	( )	(2)	(3)	( )	( )	( )	(1)
13. Timing of activities	(1)	(4)	( )	( )	( )	( )	( )
14. Informal interaction with students	(1)	(3)	( )	(1)	( )	( )	( )

ow would you rate your experience of participating in the Workshop?

15. ( ) ( ) ( ) (3) (2)
Hardly Worthwhile — Extremely Worthwhile

16. (4) (1) ( ) ( ) ( )
Involving, interesting and enjoyable experience — Uninvolving, dull and boring experience

17. (5) ( ) ( ) ( ) ( )
Organized and well-planned — Disorganized and poorly planned

STUDENT

WOMEN IN SCIENCE CAREERS WORKSHOP

EVALUATION

Now that the workshop is over, please assist us by completing this evaluation and returning it to the ushers after the Panel Discussion.

In the space before each statement, record the number that best describes YOUR reaction.

1	2	3	4	5
Strongly Disagree	Disagree	No Opimion	Agree	Strongly Agree

	1	2	3	4	5
The workshop was organized and well-planned.	0	0	1	61	117
The workshop offered me insights and information on science careers for women.	0	1	8	110	61
The workshop encouraged me to aspire to a science career.	0	0	31	81	64
The workshop provided advice about appropriate undergraduate experiences -- both curricular and extra-curricular -- needed for careers in science.	2	17	37	93	28
The workshop provided an opportunity for me to interact with women scientists and other participants.	0	5	30	102	41
The workshop made me aware of personal satisfaction possible as a result of or in addition to a career in science.	0	1	15	88	74
I considered the workshop an involving, interesting and worthwhile experience.	0	0	1	71	107

--OVER--

EVALUATION (continued)

In the space provided, please rate the speakers and arrangements using the number scale:

1 Unsatisfactory	2 Poor	3 Good	4 Very Good	5 Outstanding	0 Did not attend

	0	1	2	3	4	5
Registration procedures and on-campus arrangements	5	0	1	47	95	24
Estelle R. Ramey, Keynote Speaker	4	0	0	1	10	163
Sorrel Brown, Agronomist	113	0	0	11	28	15
Inara Brubaker, Research Chemist	101	0	1	24	26	14
Margaret Butler, Computer Science and Engineering	118	0	0	15	18	9
June Chance, Psychology	82	8	17	34	16	9
Dorothy J. Douglas, Medical Sociology	78	0	2	14	39	33
Patricia Wangberg, Mathematics	123	0	2	7	25	3
Departmental displays and handouts	4	0	8	66	79	10
Panel Discussion: Combining Career and Personal Life	9	0	2	23	67	48

LIST THE TWO THINGS YOU LIKED BEST ABOUT THE WORKSHOP.

Being around other women who are interested in science.
The keynote address. (101)
The design of the program was excellent.
The panel discussion was very helpful and made some points clearer about combining a career and a family. (33)
The keynote speaker really generated a feeling of unity as far as women and careers, particularly in the sciences, is concerned. She was very encouraging.
I liked the emphasis on women and how we had the opportunity to listen to women who had experienced so much and who hold such high positions in their careers.
Very well organized, but more handouts; good panel discussion.
It allowed me to see how science careers are opening up to the female; and to think more widely of the positions I could with hold.
Panel discussion was a great aid in seeing how different women cope with the problems of working and caring for a family.
The chance to hear the experiences that the individual speakers have gone through.
The speakers encouraged me to learn about myself: wants, needs and plans for the future in which certain careers can fulfill.
Sorrell Brown -- determined, background in getting ahead.
Food. (12)
The range of the speakers' backgrounds. (23)
The scatter sessions. I liked being able to pick what I wanted to hear about, rather than getting stuck listening to a little bit of everything.
I enjoyed the general ideas on aquiring an education and a career.
Information about job opportunities.
Dr. Douglas. (9)
Handouts as a source of information. (4).
June Chance did a very excellent job.
Seeing this campus and this part of the country.
Friendly atmosphere.
Computer Science lecture. (2)
Positive attitude.
Emphasis on flexibility.
Location of workshop close to home.
Ability to ask questions.
Sorrel Brown (2)
Speakers. (23)
Scatter groups (13)

LIST THE TWO THINGS YOU LIKED LEAST ABOUT THE WORKSHOP.

I would have liked to have heard more than just two speakers. (26)
There wasn't enough time to know the staff members.
Not enough information on Psychology.
Too much free time.
Presentations should explain more exactly what the person does rather than as much background.
Wish I could have had two days to attend workshops.
Sessions too short.
There wasn't much opportunity to get to know any of the other participants of the workshop.
They did not have a speaker for veterinary medicine which is an increasingly popular choice for women.

LIST THE TWO THINGS YOU LIKED LEAST ABOUT THE WORKSHOP. (continued)

I was in a scatter group in which I could not hear; even after the speaker was asked to speak up, which she did not.
The hard seating.
I thought some (few) of the speakers avoided a few of the specific questions asked. They gave fine lectures but didn't seem to adequately relate to the questions in specifics. But overall it was very good.
I would have liked to meet and speak with Dr. Ramey.
Some aspects weren't long enough: Panel Discussion.
None of the areas were oriented towards lab work in biology or medical fields.
Not enough doughnuts. (4)
Did not give actual ideas of careers.
The person running around with the camera was very distracting.
Out of all the speakers present not one was or belonged to a minority group.
Displays were inadequate, need wider variety of material.
Lack of a male viewpoint.
Too much time between sessions, the sessions were slightly longer than they needed to be.
Mrs. Ramey is somewhat offensive, but it would be worse if she were not allowed to be herself.
The panel discussion seemed a little numb, plus the moderator wasn't close enough to the mike.
The food at Coe was better.
Not enough pamphlets.
Needed larger span of fields.
Coffee -- should have lemonade instead
It should have been planned either earlier in the school year or in the summer when it could have immediately helped in planning college courses.
Math session.
Inability to hear.
The Medical Sociology was not directed to the Medical aspect enough.
After a meal, a warm room and a mellow speaker are not a good combination.
Instead of only concentrating on their specialty--it would be better to try to tell about various job opportunties in a certain field.
A crowded lobby and hot stuffy rooms.
I was hoping the biology would cover anatomy and physiology.
Rest room facilities.

PLEASE MAKE ANY ADDITIONAL COMMENTS THAT WOULD HELP US PLAN FUTURE WORKSHOPS.

Next time there is a workshop like this I feel that a scatter session on the pre-professional programs such as pre-optometry, medicine, pharmacy, etc. should be included. Also it should be opened to all classes (frosh-senior) because there are a lot of juniors and seniors that still don't know what fields to go into.
There should be other workshops for other phases of careers, not just science.
Sorrell Brown (Agronomist) was an excellent speaker, but I do not feel that she was a fair representative of the bio-sciences. She spoke mainly of chemistry and lab analysis--not of bio. How about getting a genetics counselor for next workshop?!
Too much free time which could have been better utilized in scatter sessions.
Allow participants to attend more sessions by shortening the time between sessions or possibly making it an overnight type of thing.
Was extremely pleased with Mrs. Brubaker; because of her and her presentation I think I will definitely consider chemistry in my future. I also liked the spirit of the speakers.

PLEASE MAKE ANY ADDITIONAL COMMENTS THAT WOULD HELP US PLAN FUTURE WORKSHOPS. (continued)

Definitely have Dr. Ramey back for the introductory speech.
I wish there was a chance to hear more than 2 speakers.
Offer a workshop in laboratory work, zoology work, and/or medicine human and animal.
Keep up the good work on choosing a variety of speakers and great organization.
Have advisors speak more about careers in the fields and what they do in an ordinary workday. Not so much all their rewards and accomplishments but what they did and how they went about getting them would be better.
Panel discussion could have been longer.
Better choice of date (how about week after midterms)
Update some of the literature offered in departmental displays.
Women on final panel were introduced as "Dr. Smith, head of some science, wife and mother of 2." Would you introduce a man as "husband and father of 2?" I'm not saying it's wrong, just noting.
Include a few men so that all viewpoints and options will be made available.
This workshop kept me from possibly dropping out of college. I was beginning to get very discouraged and overly grade conscious. I got some badly needed support and encouragement.
Great job! Would be eager to come again, even if on a weekend. The speakers were excellent, and I had a chance to talk to some of the most diversified people I've come come across. Keep up the good work--I'd like to do this again sometime.
Some way to intermingle with students from other schools--exchange ideas, etc. More discussion would have been helpful. Wish I could go to more! Excellent workshops!
Better displays and more handouts. Are there any programs for which upper-classmen can be involved in to help their schooling? Programs at companies, labs, etc....
Much more diversity in the field of biology next time.
Men need to learn many of these things that women are already aware of.
Very well organized and helpful.
Perhaps an extra category or emphasis on health sciences -- medicine, nursing, vetinarians, etc.
Don't change a thing--your hospitality and organization is overwhelming.
Plan it for a weekend -- allow more small group discussion.
As a P.N.S. I enjoyed Dr. Douglas' presentation.
I am thinking of becoming a nurse, I would have liked to hear more information on that field.
I found this a very positive helpful experience. The professionals I listened to were great at showing us what to expect in looking for jobs, researching them and getting experience as a prerequisite for jobs, etc.
Include speakers in the fields of animal technology and criminal science/law enforcement.
An outline on what was being discussed by the scientist would have been more helpful in determining which sessions are most important.
Stagger lunch.
Would have liked to talk to a younger woman who knew more about the job market today--not 20 years ago.
Give info about courses that should be taken in college.
More than one person in each department so that two or three aspects could have been presented.
It might be helpful to be able to ask questions one to one with the speakers after each session.
In large rooms it would be beneficial to have microphones.
It is much easier to learn more in depth by being able to speak with someone over lunch, etc.

WOMEN IN SCIENCE CAREERS WORKSHOP

EVALUATION

Now that the workshop is over, please assist us by completing this evaluation and returning it to the ushers after the Panel Discussion.

In the space before each statement, record the number that best describes YOUR reaction.

1 Strongly Disagree | 2 Disagree | 3 No Opinion | 4 Agree | 5 Strongly Agree

	1	2	3	4	5
The workshop was organized and well-planned.	0	0	0	3	19
The workshop offered insights and information on science careers for women.	0	0	1	11	10
The workshop encouraged students to aspire to a science career.	0	0	0	10	12
The workshop provided advice about appropriate undergraduate experiences -- both curricular and extra-curricular -- needed for careers in science.	0	3	2	12	5
The workshop provided an opportunity for students to interact with women scientists and other participants.	0	2	0	11	9
The workshop made me aware of personal satisfaction possible as a result of or in addition to a career in science.	0	0	1	7	14
I considered the workshop an involving, interesting and worthwhile experience.	0	0	0	4	18

-OVER-

EVALUATION (continued)

In the space provided, please rate the speakers and arrangements using the number scale:

1 Unsatisfactory	2 Poor	3 Good	4 Very Good	5 Outstanding	0 Did not attend

	0	1	2	3	4	5
Registration procedures and on-campus arrangements	0	0	0	2	8	10
Estelle R. Ramey, Keynote Speaker	0	0	0	0	2	20
Sorrel Brown, Agronomist	12	0	0	1	4	
Inara Brubaker, Research Chemist	10	0	1	2	4	1
Margaret Butler, Computer Science and Engineering	10	0	0	0	3	3
June Chance, Psychology	14	0	0	3	1	0
Dorothy J. Douglas, Medical Sociology	8	0	0	2	4	6
Patricia Wangberg, Mathematics	13	0	0	0	3	1
Departmental displays and handouts	0	0	0	7	9	1
Panel Discussion: Combining Career and Personal Life	0	0	2	3	9	0

LIST THE TWO THINGS YOU LIKED BEST ABOUT THE WORKSHOP.

Relaxed comfortable conference.
Speakers,were very informal in their presentation which made the participants at ease with regard to asking questions.
Inspiration of the keynote speaker. (8)
The input and willingness to help of each panelist.
Variety of women represented.
Excellent organization.
Excellent facilities
Excellent speakers. (4)
I liked the way the women told about some of their personal lives -- this was helpful in seeing the total woman.
Opportunity to meet such impressive women.
Excellent. Should be continued every year -- I'm sure it will change the lives of many who attended.
The most beneficial aspect of the workshop for college freshmen and sophomores is to interact with outstanding women.

LIST THE TWO THINGS YOU LIKED LEAST ABOUT THE WORKSHOP.

The scope of the science careers was limited.
Somehow the scatter sessions were slightly disappointing. I believe some of the "nuts & bolts" of the women in science were missing.
I think you should have had a theoretical/experimental biologist.
More on combining family and career is needed.
No representative from Medical Field: technology, research or related.
Instead of 2 scatter sessions 1 hour each, would have preferred 4 scatter sessions 1/2 to 3/4 each.
Too much on personal lives -- a bit more on day-to-day job and on research, info, etc., even if over students' heads.
Wish there had been opportunity to hear more than two speakers. But it was well paced.
Poor sound during the last panel discussion.

PLEASE MAKE ANY ADDITIONAL COMMENTS THAT WOULD HELP US PLAN FUTURE WORKSHOPS.

I would suggest that the scatter groups be smaller in the future--perhaps have half the participants in other activities.
I felt everything was well planned, I enjoyed the day very much. I am going back to my job with a few things to think about.
Would it be possible to have 3 panelists in place of the 2?
Taxpayers' money was well spent.
I would like to have attended more scatter sessions.
Would be nice to have speakers trained in science but who have a career in another field (example; law).
Need material on campuses earlier -- more time to notify students and get information to newspapers, etc.
Pre-organization of workshop well done.

WOMEN IN SCIENCE CAREER WORKSHOP

FOLLOW-UP QUESTIONAIRE

MARCH 12, 1979

Instructions: Please respond to the following questions according to your thoughts and feelings at this time using the rating scale indicated.

1 Strongly Disagree	2 Disagree	3 No Opinion	4 Agree	5 Strongly Agree

	1	2	3	4	5
The workshop offered me insights and information on science careers for women.	-	1	2	75	28
The workshop encouraged me to aspire to a science career.	-	5	19	41	41
The workshop provided advice about appropriate undergraduate experiences--both curricular and extracurricular-- needed for a career in science.	1	22	18	54	11
The workshop provided an opportunity for me to interact with women scientists and other participants.	-	4	13	60	29
The workshop made me aware of personal satisfaction possible as a result of or in addition to a career in science.	-	4	8	47	47
I considered the workshop an involving, interesting and worthwhile experience.	-	-	3	39	64
I have shared ideas or information from the workshop with students who did not attend.	-	4	14	61	27
I found the career materials (booklets, financial aid resources, etc.) useful.	-	10	22	50	24

TOTAL QUESTIONAIRES RETURNED BY 239 PARTICIPANTS: 106(44%)

-MORE-

In the space below, please list two key ideas that have stayed with you from the Women in Science Workshop.

Capable women can have any career they choose IF they work for it. (34)
There are many options for careers in science. (11)
Competitive (agressive) attitude is necessary and desirable. (10)
Women must support each other. (10)
Career, marriage and family can be combined. (16)
Never put yourself down. (8)
Women are important to science. They look at things from a different angle. (6)
Women are already in many science fields. (2)
Science careers are interesting and rewarding. (3)
Don't be intimidated about entering a "mans'" field. (4)
All the studying, ups and downs, and doubts I'm going through now as an undergraduate will be worth it in the long run. (3)
We should be pround to be women, intelligent, strong human beings. (2)
I never realized how my concept of weakness of women involves my attitudes about everything.
I'm as good as a man or better.
Career choices do not have to be permanent. (3)
Home and family relationships can be more meaningful if a woman if fulfilled in her career.
For some women marriage and career don't mix.
Problems are unavoidable but manageable. (3)
It was inspiring that it was possible for these busy women (the speakers) to take time for us.
The speakers were happy (satisfied) in their lives. (2)
Women may have a preference in being hired today but they will only be kept if they are competent.
Always try for the biggest (best) opportunity.
It is sometime necessary to accept a position which is not what is desired in order to gain experience and move ahead.
Physical handicaps are no barrier. (2)
Working well with people is important.
Women have the same potential as men.
Get involved in professional socities.
Women have never been as pampered as men would have them believe.
Stay out of stereotypical roles. (2)
You need to take math and related subjects in college -i.e. math and physics- for chemistry. (2)
Having so may women tegether and wanting a science career was inspiring.
Women have a responsibility to contribute to science.
Set high goals.
Your idea of yourself is your only limit.
There is room for capable women.
Science is worth the struggle.
No one (male or female) should let intelligence go to waste.
Women are making progress. (2)
Women are the key to the future.
It gave me more confidence.
Strongly encouraged graduate school. (3)
There are women willing to help.
Actuaries work with math and people.
I want a career in science.
I can do it! (2)
Don't give up.
Women have as many opportunities as men today. (3)