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ABSTRACT

This report summarizes information and discussion from a 1993 workshop on the Summer Research Opportunities Programs (SROPs). These programs are designed to enhance doctoral research opportunities and mentoring for minority graduate students. The present publication is intended to serve as a guide for those wishing to develop or strengthen SROPs on their campuses. It looks at the following aspects of the programs: organization and administration (infrastructure, staffing, articulation of objectives and expectations); scope and eligibility; faculty involvement; outreach and student recruitment; student selection; faculty-student matching; design of program activities (workshops, field trips, research reports, and concluding banquet); and program evaluation. Guidelines are also presented for the faculty's role, for establishing the parameters of student participation, and for building institutional capacity for SROPs. Elements of a successful program are enumerated. Appended materials include the agenda of the 1993 workshop and a list of workshop participants and institutional affiliations. (MSE)

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**ENHANCING THE MINORITY PRESENCE IN  
GRADUATE EDUCATION VI:**

CGS

**CATALYST FOR SUCCESS:  
THE SUMMER RESEARCH  
OPPORTUNITY PROGRAM**

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Enhancing the Minority Presence in Graduate Education V: Summer Research  
Opportunity Programs—Voices and Visions of Success in the Pursuit of the Ph.D. 1994

Nancy A. Gaffney, Editor

**ENHANCING THE MINORITY  
PRESENCE IN GRADUATE  
EDUCATION VI:**

**CATALYST FOR SUCCESS:  
THE SUMMER RESEARCH  
OPPORTUNITY PROGRAM**



**COUNCIL OF GRADUATE SCHOOLS**

Margaret Daniels Tyler  
Dean in Residence 1992-1993

**Enhancing the Minority Presence in Graduate Education VI:**

**CATALYST FOR SUCCESS:  
SUMMER RESEARCH OPPORTUNITY PROGRAMS**

Nancy A. Gaffney, Editor

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## FOREWORD

This is a companion volume to *Summer Research Opportunity Programs: Voices and Visions of Success in Pursuit of the Ph.D.*, which presented interviews with participants in a selected group of SROPs. This volume follows with a summary of the views, opinions, and experiences of a group of students, faculty, and administrators from over sixty universities who met together to discuss what they had learned about the elements of successful SROP programs. In essence, it is a users manual for the development, improvement, and operation of SROPs and will be useful to any institution considering such activities.

We want to acknowledge the contribution of Kay Hancock, who served as rapporteur at the meeting. We also express our appreciation to the Ford Foundation for their support of these activities.

Jules B. LaPibus  
President  
Council of Graduate Schools  
Winter 1995

## INTRODUCTION

Summer Research Opportunity Programs (SROPs) in graduate schools across the nation encourage young students, especially those underrepresented in the academy, to pursue the Ph.D. Since the mid-1980's, more than 140 universities have established such programs. The CGS publication, *Enhancing the Minority Presence in Graduate Education V: Voice and Visions of Success in Pursuit of the Ph.D.: The Summer Research Opportunity Program*, profiled students, faculty, and administrators who are engaged in this successful program model.

SROPs generally have three primary objectives:

- to provide participants with research experience in an environment consisting of faculty, graduate students, and professional role models;
- to encourage participants to consider pursuing the Ph.D. degree; and
- to motivate participants to consider careers in the academy.

The benefits include:

- introducing students to the excitement, challenge and character of research and scholarship through the process of discovery;
- helping students with academic potential to gain confidence and overcome doubts about their abilities to succeed in high-performance environments; and
- exposing faculty at host institutions to talented students.

The primary element of a successful SROP is institutional commitment. First and foremost, faculty participation as research mentors must be encouraged, recognized and valued by the institution in tangible ways, ultimately in the review process for promotions and tenure. Long-term, preferably line-item financial commitment is important so that the annual planning process is not constrained or limited by fiscal uncertainty. A solid financial core can also lend credibility to requests for supplemental funding from foundations and the corporate sector. Graduate departments must welcome people of color into the community of scholars and take advantage of every opportunity to provide information, encouragement and support.



In addition, both faculty mentors and students must understand their roles and responsibilities in this enterprise. Students are to be actively and intimately engaged in the faculty mentors' research agenda. This challenges both parties to commit the requisite time and attention. Finally, a system for data collection and evaluation must be put in place to gauge the impact of the program on the student and the institution, and to provide feedback for the process of continual improvement.

SROP initiatives represent the tangible commitment of faculty and staff to catalyze interest and expand opportunities for students of color, while simultaneously building personal and institutional relationships that should aid these students in their pursuit of the Ph.D. In December of 1993, a workshop on SROPs was held in conjunction with the annual meeting of the Council of Graduate Schools. Over 100 people attended, representing over sixty universities. This publication provides insights from an array of programs now in existence, for those who wish to develop, enhance, or strengthen SROPs on their campuses. The experiences of the institutions reflected in this document can be used to develop a blueprint for success.

## **ORGANIZATION AND ADMINISTRATION**

The size and administrative structure of SROPs vary greatly. At one end of the spectrum is the program established in 1986 by the Committee on Institutional Cooperation (CIC), a consortium of fifteen institutions—thirteen Big Ten Universities, the University of Chicago, and Pennsylvania State University, which had a collective total of over 700 SROP students on its constituent campuses in the summer of 1994. Research opportunities at CIC institutions are available in all fields. Most other university programs are smaller, confined to individual campuses, or limited to one disciplinary area such as the biological or biomedical sciences.

### ***Infrastructure***

The cornerstone of a successful SROP is a competent administrative staff. It may involve several individuals including a program administrator, university staff, and graduate students. In many institutions, faculty within the graduate department initiate and administer the SROP, with an associate or assistant dean serving as the program manager. The manager must:

- clarify, communicate and frequently review the SROP's purposes, strategies, and plans;
- place students in supportive environments;

- insist on excellence from faculty, staff and student;
- provide guidelines and support to faculty mentors and student participants; and
- develop an appropriate system of rewards, audits, and controls to assure program efficiency and effectiveness.

Planning involves a definition of what needs to be done. A checklist could be developed to help assure that all the necessary things are done regularly. The problem with checklists, however, is that they can become ritualized substitutes for thought and substance. Although they may be designed to achieve coverage, they do not always require that staff continually look, listen, think, or get involved. The purposeful manager will systematically analyze and respond to the experiences of the students, the needs of the faculty, institutional climate, resource demands, etc. Because there is often a gulf between the idea and the reality, it is important to adjust, transform and adapt while listening intently and regularly.

Also, the program manager must provide leadership on the various issues of diversity—differences of race, color, age, sex and culture. It is often acknowledged that differences among people can provide a starting point for the development of broad perspectives and new ways of viewing problems. But the reality is that differences can also create discomfort and conflict. As a result, the manager must face the critical challenge of finding the most effective way to encourage faculty and students to do the work of building authentic relationships, especially with people they may regard as different. Students must be empowered to wrestle with the complexities of a new environment and, perhaps, embrace different ideas and perspectives. Faculty mentors must be encouraged to maintain a dialogue with the student within which honest, constructive feedback is shared. Administrative leadership in this area will require a deliberate commitment to help students and faculty develop truly collaborative working relationships.

For these reasons, guidelines must be prepared for faculty, staff and student participants that clearly articulate program objectives, responsibilities and expectations. Staff should be accessible and communicate with faculty and students weekly to discuss progress, and any problems that may arise. In addition, an approachable staff that includes members of the ethnic group(s) represented in the program is extremely desirable.

### ***Scope and Eligibility***

Just as an institution must decide whether its SROP will accommodate students in only one, a few, or all disciplines, it must also determine whether to recruit students from several underrepresented ethnic groups, or only one. Institutional priorities and capacity, funding sources, geographic location, and historical relationships will influence that decision. SROP objectives will determine whether students will be brought in after their freshman, sophomore, or junior years. Although most SROPs are designed for undergraduates, the model can be effective for post matriculants preparing to enter graduate school as well. SROPs generally span 8-10 weeks during the summer months, but program length may also vary according to the resources available and other logistical constraints.

### ***Faculty Involvement***

The support and cooperation of faculty are key to the success of the SROP. Factors which contribute to increased faculty support are strong institutional commitment to the SROP at top levels of the administration; the ability of the program manager to establish good relationships with faculty; and the demonstrated success of the SROP in meeting its objectives. Including faculty in program planning and development has proven to be an effective way to increase and enhance their participation. The preparation of faculty via reference materials, workshops and conferences to increase their awareness of student needs and issues is one way of supporting their involvement. Faculty attention is a critical factor in sparking undergraduate interest in research and graduate education.

### ***Outreach and Recruitment***

An effective outreach program can be achieved with serious effort, commitment, and enthusiasm. There are opportunities for reaching your targeted population through national student organizations and advertising in school newspapers and magazines. A carefully planned telephone marketing campaign can be used to solicit applications, follow-up on mail inquiries, and build a contact list at key institutions. How the program administrative staff designs promotional literature, responds to inquiries, and works with prospective candidates will determine the effectiveness of outreach efforts. Personal contact is key. A powerful and long-lasting impression is often formed on the basis of how the SROP is presented, and who presents it. However, it is important to remember that the recruitment process begins with the first point of contact and continues through program completion. The students' experiences in the SROP will go a long way toward encouraging or discouraging future participants. Word-of-mouth is an extremely important public relations medium.

Overall, there are long-term advantages to building relationships with relevant individuals, organizations, and institutions. The idea is to build bonds that last. These relationships require the creation and constant nurturing of systems to manage them. In particular, be aware of four familiar steps:

- *Awareness.* Show that the SROP is an opportunity, and that the opportunity has benefits. Example: send periodic one-page program reports to key people at 'feeder' campuses.
- *Assessment.* It becomes important to ask, "How are we doing?" "How are we fulfilling the student's needs and expectations?" Example: provide and encourage feedback from the student and the student's advisor at the home institution.
- *Accountability.* Establish regular reporting on individual and institutional relationships, so that these can be weighed against other measures of performance. Example: solicit pre- and post-program information from faculty, students, staff, and home institution advisors.
- *Actions.* Establish routines and communications on the basis of their impact on the relationship. Constantly reinforce awareness with information. Example: encourage faculty mentors to visit 'feeder' campuses, and encourage program alumni to talk about their experiences.

Large research universities may choose to structure partnership arrangements with one or more institutions with significant minority student populations. Others may decide to develop national mailing lists for their annual program announcements. Regional institutions are well-positioned to develop relationships with local smaller colleges or liberal arts schools. Many of the universities represented at the Workshop had targeted students at Historically Black Colleges and Universities (HBCUs), Hispanic-serving institutions such as those who are members of the Hispanic Association of Colleges and Universities (HACU), or the 25 or more tribal colleges represented through the Consortium for Graduate Opportunities for American Indians.

To attract students to an SROP before they make other commitments, the program must send out its publicity in the fall semester and set its application deadline early in the spring semester.

## ***Student Selection***

Interested students typically are asked to submit an application form, a transcript, a statement of purpose, and one or two letters of support from faculty members. Standard criteria for SROP student selection includes an evaluation of the student's motivation and potential as indicated by grades, course work, faculty assessment, and the written statement. Members of the admissions committee (which may include faculty, staff, SROP alumni, and other graduate students) evaluate individual applications. Their assessments are then reviewed by the program manager who usually makes final the decisions within the context of mentor and resource availability.

Given the overwhelming numbers of applications received by existing programs, it has been relatively easy to take the path of least resistance and provide positions to successful students who have high grade point averages. However, experience at several universities suggests that some sophomores and juniors who have lower grade point averages can benefit significantly from a SROP experience. They may consider graduate school after participating in the program and developing personal relationships with faculty members. Frequently, they are sufficiently motivated to earn higher grades when they return to their home institutions.

## ***Faculty/Student Matching***

Program administrators must take great care in selecting capable and committed mentors, taking into consideration issues of temperament, research constraints, tenure pressures, etc. Most importantly, the mentor's awareness of and commitment to program objectives is critical. Program managers should look for several attributes in mentor selection:

- ongoing research activity;
- a collegial atmosphere in the laboratory or research group;
- availability for the duration of the program; and
- the role of graduate students and postdoctoral associates in the mentor's research group.

There are a number of different approaches to faculty/student matching. In most cases, the program administrator will consider student interests and faculty research, then make logical assignments, usually with assistance from faculty and staff in the department. On some campuses, students are given information regarding faculty

members' research areas and asked to interview and select the person(s) with whom they would like to work after they arrive on campus.

The number of students placed in a laboratory or research group can vary and is determined by the time, space, and capacity the faculty mentor has available. However, there can be great advantage to having more than one student per site, especially in the humanities and social sciences where research can often be a fairly solitary experience.

Regardless of the nature of the research site, it is a good sign when students know they can succeed, when they exert the effort to learn everything they need to know, and when they apply that passion and knowledge with imagination.

### ***Programming***

Program activities generally focus on the development of research and technical skills. This is supplemented by information, usually provided by faculty, about graduate programs and careers in research and teaching. In addition to being part of a research group, students attend workshops designed to increase their research capabilities and self confidence, to encourage them to enter top-notch graduate programs, and to prepare them to successfully pursue an advanced degree. Supplemental activities and social programs round out the SROP. These activities may include:

- *Weekly Workshops:* These special interest meetings can be held to address the development of research skills, preparation for standardized examinations, application to a graduate school, identifying and securing financial support for graduate school, life in graduate school, the life of faculty, etc.
- *Field Trips:* These activities may be purely social or related to the research enterprise. They range from a 4th of July picnic to a tour of a major research facility.
- *Research Reports:* The student is usually required to prepare an abstract with slides or overheads, and give a 15 minute verbal presentation on the research project.
- *Concluding Banquet:* Along with the opportunity to celebrate the accomplishments of the students, the banquet provides a platform for a 'role model' to provide encouragement and inspiration as a keynote speaker.

## ***Evaluation.***

Evaluation is absolutely essential. Program monitoring with emphasis on accountability and assessment is mandatory. Evaluation enables program staff to determine which aspects of the program are effective, and which may benefit from new approaches. By assessing the student before and after participation in the program, the program manager can document changes in confidence, attitudes, perceptions, and intellectual maturity. Feedback on every element of the program must be solicited from students as well as faculty mentors. Serious attention must be given to the development of survey instruments, evaluation forms, and structured interviews. An impact study may be conducted by outside evaluators to determine if the program objectives are being met. Data collected through monitoring and evaluation activities should be added to the database and may be used to inform future needs assessment, goals development, and ultimately, program efforts. In addition, both internal and external funding sources will appreciate, if not require, program accountability.

## **FACULTY GUIDELINES**

Based on the experiences of SROPs represented at the Workshop and of practitioners who deal with the personal and academic development of college students, faculty mentoring is the most critical component of a successful summer research experience, especially when the mentor:

- ensures that the student is fully engaged in the life of the laboratory or research group;
- defines a distinct research project that will allow the student to understand the nature of independent research;
- invests time in the development of the student;
- shares information about the culture and demands of the research environment;
- communicates with the student in a forthright and honest manner; and
- provides constructive and critical feedback on the student's progress.

Ideally, a faculty mentor and SROP student will develop a relationship that extends beyond the summer research project. Some students, involved in programs on

their own campuses, continue working on research projects throughout the year, and often into a second summer.

Staying in touch with SROP students at other institutions requires energy and inventiveness. Faculty mentors and students can plan some structured activities to keep in touch with each other. Communicating by e-mail, when available, may be a good way for the relationships to continue.

Faculty mentors can also play a crucial role in helping SROP students get into graduate school. The mentor can write or call colleagues to attest to the student's ability to do graduate work based on SROP performance. A successful undergraduate research experience may be one of the best predictors of success in graduate school.

A quality mentoring relationship will create an atmosphere of mutual trust and respect which can be beneficial to both parties. The benefits to the student are obvious. The experience faculty gain from working closely with SROP students and program staff can create a heightened sensitivity to the issues that concern students of color and those underrepresented in the academy. As was noted by a faculty mentor in attendance at the Workshop, "SROPs can connect all of us to the excitement and discovery of knowledge, and to the way we transmit that knowledge through teaching and mentorship."

## **STUDENT GUIDELINES**

In correspondence sent to students before they arrive on campus, staff members and faculty should indicate their eagerness to answer any questions, to discuss the nature and content of the research experience, or to assist with any problems that may arise. The names and telephone numbers of the program staff and faculty mentor should be provided to the student upon arrival. Responsibilities and expectations should be clearly communicated to the student in advance and may be included in a letter identifying the mentor and enclosing a research summary, a telephone number, information on housing and travel arrangements, an airline ticket and a campus map. These guidelines may include information on:

- the stipend amount;
- number of hours to be spent in research lab or setting;
- research abstract;
- research paper (if required);



- attendance at weekly meetings; and
- the final presentation and banquet.

A list of things students should bring to campus (cooking utensils, blankets, linen, etc.) is helpful, and may be particularly important for those students moving from an area of the country where climate and housing conditions may be quite different. Whenever appropriate, indicate dates, times, and locations.

Experience suggests that conversations between the faculty mentor and student, in advance, provide an opportunity for testing compatibility and interest in the project. In addition, a set of operating principles—the ground rules—must be established. Expectations regarding attendance, participation, accomplishments, assignments, and behavior should be clearly articulated, verbally and in print. The student must understand that s/he is to:

- be a serious student who is willing to learn;
- be receptive to critical and constructive advice;
- be open and straightforward when dealing with the mentor;
- conform to the research hours and mode of operation of the program;  
and
- be prepared to work hard.

Upon arrival, it is helpful for the student to receive the first stipend payment. Orientation activities, which include greetings by staff and former SROP participants, a tour of the facility, and a welcoming reception by the Dean, are recommended. Early identification of problems is essential. The staff should be accessible to both the faculty and the students. Finally, hold weekly staff meetings to discuss the student's progress.

## **BUILDING INSTITUTIONAL CAPACITY**

The development of strategic and financial frameworks for the SROP provides an excellent opportunity to assert institutional leadership. Key institutional advocates can be instrumental in stimulating academic, business, political, as well as other sectors to engage in dialogue and action leading to the formation of partnerships and alliances.

The first step is to "Know thyself". Assess institutional strengths and weaknesses. Inventory, map and mobilize strengths for a successful SROP initiative. It will be important to know, for example, which departments are prepared to make a specific, strong and public commitment to engaging students previously underrepresented in graduate programs. How many of these students are currently represented on campus in the undergraduate division? How many of these students continue on to graduate school? Do they currently have opportunities to engage in research? Are there local college campuses with a diverse student population? Examine institutional policies and programs. Determine the scope and composition of your 'market'. What would diversity mean on your campus? Does your student population reflect the composition of the local community? the state population? national demographics? Which ethnic or cultural groups do you hope to attract?

After a rigorous institutional assessment, clarify SROP purposes, strategies and plans and review them frequently. The key lies in identifying and mobilizing institutional abilities and assets, connecting them in ways that multiply their power and effectiveness, and involving local institutions in the effort. When a clear sense of institutional commitment has been established, invite potential partners from the public and private sectors to join your program planning and strategic fund raising sessions. Identify those parties most inclined to be supportive and likely to make a contribution. Do not overlook the obvious (especially local) partnership opportunities. Current wisdom suggests that comprehensive, systemic and/or collaborative strategies are more effective and therefore more marketable.

It is important for an SROP to seek many ways of publicizing its message and its work; do not simply assume that if it is doing good work it will be funded. The SROP must demonstrate responsiveness to the communities and students it seeks to serve and must communicate its purpose and commitment clearly and forcefully.

Secure financial underpinnings are critical to the success of the SROP. Fiscal uncertainty can constrain or limit the annual planning process. Long-term, line-item financial commitment would provide the soundest foundation for a SROP, but these programs generally rely on a mixture of internal and external funds. Uncertainty about funding is, unfortunately, a concern of many SROP program managers.

There are a number of expenses, both in-kind and direct, associated with running an effective SROP. Basic expenses generally include:

- weekly stipends;
- travel allowance;

- incidental costs;
- health center access;
- publications; and
- administrative overhead.

Enhancements to the program include:

- room and board;
- tuition and fees when course work is incorporated;
- faculty research allowance;
- gymnasium privileges;
- field trip(s); and/or
- concluding banquet.

Institutional funding can come from a variety of sources, including the offices of the chief academic officer and dean. External funding sources include foundations, corporations, individuals, and federal agencies which may provide support through several mechanisms:

- traditional research grant programs;
- special initiatives; and
- administrative supplements to existing grants for the support and recruitment programs for individuals from underrepresented minority groups.

Corporate sponsorship is an option which can establish a network of contacts involving the corporation, faculty, and promising undergraduates. For example, corporations may support students in particular majors, or students who would like to work in a general area of research. When a company suggests a general area of research, a faculty member may develop, along with a student, a specific and substantive project plan.

Remember that systematized methods of fundraising are the most successful. SROP management will need data to develop effective and innovative fundraising techniques, that maximize chances of success.

## **ELEMENTS OF SUCCESS**

Summer Research Opportunity Programs vary greatly in size and scope. Certain elements, however, are crucial to the success of all programs. Blueprints for SROPs that include the following elements will help institutions build strong summer research programs with the potential to increase the presence of students of color in graduate education:

- long-term institutional commitment and support;
- a well thought-out organizational structure;
- a competent administrator and diverse and devoted staff members;
- involvement of college deans and department heads to encourage faculty participation;
- a system of incentives and rewards for faculty participation as research mentors (strong faculty involvement helps institutionalize an SROP);
- departmental assistance in selecting competent and caring faculty advisors/mentors;
- careful selection of students based on letters of recommendation and statements of purpose as well as grade point averages;
- clearly defined expectations, spelled out in printed guidelines, for the roles and responsibilities of both faculty members and students before, during, and after the program;
- a well-structured research experience that is mutually satisfying to student and mentor and assures the student that he or she has the potential to do graduate work;
- supplementary activities that stimulate students' interest in attending graduate school, inform them about the graduate school admissions

process, and educate them about the skills they will need to survive and thrive in graduate school;

- a system of data collection and evaluation to assess the impact of the program on the student and the institution, and to provide feedback for change and improvement;
- staying in touch with the SROP student at summer's end, encouraging the student to attend graduate school, and supporting the student's application with letters of recommendation and, if necessary, personal calls to colleagues on the student's behalf; and
- networking and collaboration among SROP institutions and between SROP faculty members at the universities hosting the program and the students' undergraduate faculty advisors.

There is no substitute for the kind of understanding that comes from sustained exposure to others—individuals as well as institutions. SROPs provide opportunities, not just for research, but for:

- more experience in intergroup relationships;
- communication with other people;
- better understanding of other people; and
- the exploration of whole new areas of involvement through the medium of shared experience in research and discovery.

The experience of those involved in SROPs—students, faculty, administrators, and others—clearly demonstrates the value of this approach and provides a solid basis for the development of similar programs at institutions not currently engaged in this kind of activity.

## APPENDICES

### INVITATIONAL WORKSHOP AGENDA



#### *CATALYST FOR SUCCESS: THE SUMMER RESEARCH OPPORTUNITY PROGRAM*

December 5-6, 1993  
Hyatt Regency on Capitol Hill, Washington, DC

#### - A G E N D A -

#### Sunday, December 5, 1993

- |                |                                      |   |
|----------------|--------------------------------------|---|
| 7:30 am        | Registration<br><i>Yorktown Wall</i> |   |
| 8:00 am        | Welcome<br><i>Yorktown</i>           | Jules B. LaPidus, President, CGS  |
| 8:15 am        | Introductions<br><i>Yorktown</i>     | Margaret Daniels Tyler, Assistant<br>Dean, MIT<br>CGS Dean in Residence, 1992-93  |
| 8:30-10:00 am  | Alumni Panel<br><i>Yorktown</i>      | Tuajuanda Jordan-Starck,<br>Postdoctoral Associate,<br>University of Cincinnati, College<br>of Medicine, Department of<br>Pharmacology and Biophysics<br><br>John Wallace, Jr., Postdoctoral<br>Fellow, University of Michigan,<br>Institute for Social Science |
| 10:00-10:30 am | Break                                |   |

10:30-12:00	Administrators Panel <i>Yorktown</i>	Elaine Copeland, Associate Dean, University of Illinois at Urbana
		Jean Girves, Associate Director, Committee on Institutional Cooperation (CIC) and Director, Alliance for Success
		Victor Rodwell, SROP Program Director and Mentor, Professor of Biochemistry, Purdue University
12:00-1:00 pm	Lunch <i>Columbia A</i>	
1:00-2:30 pm	Faculty Panel <i>Yorktown</i>	David Dalton, SROP Faculty Mentor, Professor of Chemistry, and Associate Dean for Research and Graduate Studies, Temple University
		George Sanchez, SROP Faculty Mentor, Professor of History, University of Michigan
2:30-3:00 pm	Break	
3:00-4:30 pm	Faculty Panel <i>Yorktown</i>	James Anderson, SROP Faculty Mentor, Professor of Education, University of Illinois at Urbana
		D. Michael Pavel, Professor of Education, University of California at Los Angeles
5:00-6:00 pm	Reception <i>Columbia A</i>	
6:00-9:00 pm	Dinner <i>Columbia B</i>	Edwin J. Nichols, Clinical/Industrial Psychologist and Director, Nichols & Associates

**Monday, December 6, 1993**

7:30 am            Registration  
                      *Columbia Wall*

8:30-10:00 am    Agency Panel  
                      *Yorktown*

Elvira Doman, Program Director,  
Integrated Animal Biology,  
National Science Foundation

Clarise Gayland, Director, Office  
of Environmental Equity,  
Environmental Protection Agency

Anthony Rene, Assistant Director,  
Referral Liaison, National Institute  
of General Medical Sciences,  
National Institutes of Health

Vicki Payne, Program Manager,  
Women and Minority  
Participation in Graduate  
Education Programs, Department  
of Education

10:00-10:30 am    Break

10:30-12:30 pm    Roundtable Discussion Sessions

12:30 pm            Commencement

Margaret Daniels Tyler

This meeting is funded by the Ford Foundation.



## WORKSHOP PARTICIPANT LIST

Greg Aloia  
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Illinois State University

Earl Anderson  
Professor of English  
Cleveland State University

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