10-year Anniversary of Women in Science and Technology at Argonne:

An Evaluation of its Past, Present, and Future

Prepared by WIST Re-Evaluation Subcommittee (RESC)
WIST Steering Committee
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ACKNOWLEDGMENTS

Members of the Women in Science and Technology (WIST) Re-evaluation Subcommittee (RESC) of the WIST Steering Committee: Starting at the 10-y anniversary celebration of WIST at Argonne National Laboratory (ANL) in October 2000, members of the WIST Re-evaluation Subcommittee set out to evaluate the strengths and shortcomings of the WIST program during its first ten years and to use the insights gained to re-set the directions of WIST toward a stronger and more effective future. Thanks go to all original members of the RESC (Section 6) and to those who contributed during the report evaluation period. Each person dedicated more effort over a longer period of time than any of us originally anticipated. Let us hope that the fruits of our labor provide a lasting benefit to future women in science and technology (S&T) at Argonne.

ANL S&T Women: We owe special thanks to all of the 103 ANL S&T women who filled out the WIST survey. They provided the basis for Section 3 of this report. Because of their interest, we hope to have formulated a plan for the future that relates in a meaningful way to their needs.

Authors of WIST Status Report #1: We acknowledge the considerable effort of an Argonne WIST Statistics Group that generated a first Status Report circulated in April 2001 upon which Section 4 of this report is patterned (Szpunar et al., 2001). We acknowledge the investment and leadership of Carole Szpunar (IPD) in bringing that earlier document to its timely completion and circulation.

OTD: We thank Dr. Hermann Grunder, Director, Argonne National Laboratory, for his request in November 2000 to develop the databases presented in both Section 4 of this report and the earlier Status Report (Szpunar et al., 2001). We would like to thank Dr. Beverly Hartline, Deputy Director, Argonne National Laboratory, for her dedication to the cause of WIST at Argonne and for her strong support, encouragement, and guidance during preparation of this report.

Other members of OTD whom we thank for their significant contributions over time to WIST at Argonne are:

- Dr. Alan Schriesheim, the ANL Laboratory Director who supported establishment of WIST's first formal funded core program in 1990;
- Dr. Joseph Asbury, Deputy to the Laboratory Director under Dr. Schriesheim and first Chair of the WIST Steering Committee;
- Dr. Frank Fradin, a member of ANL management, who, along with Drs. Schriesheim and Asbury, ultimately "got it" regarding the challenges of S&T women at ANL and gave his strong and consistent support in a number of important areas.

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1. OVERALL EXECUTIVE SUMMARY

MISSIONS OF WIST AND THE LABORATORY

The Women in Science and Technology (WIST) program is a resource of people and projects that supports the Laboratory policy "to effectively utilize the diverse talents of all of our employees and to pursue an environment where each individual is valued for his or her contributions and uniqueness."[1] Argonne National Laboratory (ANL) goals for FY03 include:

- Improve communication
- Ensure that Argonne's people excel
- Increase efficiency and effectiveness
- Deliver outstanding performance

Participants in the Argonne WIST program play an integral role in helping to fulfill the above Lab-wide goals.

The specific mission of the ANL WIST program is to provide leadership and resources to the Laboratory to:

- Ensure the success of women in scientific and technical positions at the Laboratory and elsewhere;
- Support and implement projects that encourage, develop and utilize the full potential of women in science and technology; and
- Promote movement to equity within Argonne so as to contribute to a best-in-class R&D institution.

Toward this end, WIST participants carry out multiple important projects that support career development of ANL women in science and technology (S&T) and reach out to young women interested in S&T careers. WIST also supports Laboratory efforts to broaden the diversity of its S&T workforce, including in the area of underrepresented minorities.

INTRODUCTION

At its 10th anniversary, the Argonne WIST Steering Committee decided to formally review the effectiveness of the WIST program to date and, based on this review, recommend program goals for the future. To that end, a WIST **R**e-**E**valuation **S**ub-**C**ommittee (RESC) was formed that carried out the following actions:

- Conducted survey of S&T women at ANL to identify needs and concerns
- Compiled data on the number and grade level of S&T women to determine their status
- Reviewed and revised structure, mission and goals of WIST to address current needs and climate
- Generated recommendations for action by WIST and ANL management

The results of these efforts are contained in this report. The results presented in this Overall Executive Summary provide highlights of the full report.

THE FIRST 10 YEARS (Section 2)

Core Structure. A distinguishing characteristic of WIST is the establishment and funding, by ANL management, of a formal core structure for the program. Compensation by the Office of the Director (OTD) for a WIST Program Initiator (WPI) position started in 1990. By establishing this position, ANL management recognized both the value of WIST initiatives and the significant effort expended to coordinate them. Funding at 30% effort for two years allows the WPI to hire a postdoctoral associate (or equivalent) to maintain her scientific or engineering program, compensating for the 2-year redirection of her effort to WIST activities. A WIST Steering Committee guides her efforts, providing valuable input to program direction.

Accomplishments. An essential, overarching accomplishment of WIST that cannot be overemphasized is WIST's provision of a mechanism for and facilitation of communication. Throughout its history, WIST has provided a clear and direct channel for communication:

- Between the female S&T staff and the highest levels of ANL management
- Among the female S&T staff at ANL

A second important accomplishment of WIST is its provision of continuity of purpose through multiple transitions of personnel and programs within the Office of the Director, HR and the Diversity Program Office at Argonne. This foundation in communication and continuity of purpose has enabled WIST to identify issues and implement projects that work toward the WIST goals.

Finally, WIST members have invested in many projects that support the WIST mission related to Outreach, In-reach, and Workplace Equity. These include an annual Science Careers in Search of Women conference for high-school young women, a Survival Skills workshop for ANL S&T women, a First Friday Forum for informal mentoring and networking, an Introduce a Girl to Engineering Day for middle-school girls, and WIST sponsorship of notable speakers for the Laboratory Director's Special Colloquium, including Nancy Hopkins of MIT and Virginia Valian of Hunter College.

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[1] Argonne's Equal Employment Opportunity/Affirmative Action Statement, memo from the Laboratory Director, October 1, 2002.

Open Issues. Several issues that the WIST program had originally hoped to impact proved to be intractable to WIST alone. These include:

- Increasing the numbers of women in S&T positions at ANL
- Increasing the numbers of ANL women in S&T management positions
- Workplace equity issues, including salary

These issues ultimately require sustained effort by ANL management and HR, with WIST providing support and resources.

THE PRESENT (Sections 3 & 4)

WIST Survey (Section 3)**.** Current concerns and needs of Argonne S&T women were identified through a WIST program survey circulated in December 2001. Survey results demonstrated that workplace equity was a central concern of Argonne's female S&T workforce. For example, 85% of respondents identified **pay equity** and **grade level equity** as "very important" or "important" goals for WIST to work toward. The six WIST goals identified as most important, ordered high to low, were (Figure 3.4; see attached, this section):

- Pay equity
- Grade level equity
- Career development
- Promotion
- Recognition of technical achievements
- Networking

In the survey, women expressed enthusiasm for their work and ambition for career advancement: 35 aspired to be group leader, 22 section leader, and 15 division director out of 103 respondents.

Four top barriers to advancement perceived by more than 50% of respondents (ordered high to low) were:

- "Good ol' boy" system
- Lack of opportunities or assignments required to advance
- "Glass ceiling" constraints
- Work/family balance

Results of the WIST survey (Section 3) provide information that will help shape the future of WIST at Argonne.

Database Report (Section 4). In November 2000, Laboratory Director, Dr. Hermann Grunder, requested assembly of a database that would compare the ANL workforce with available S&T applicant pools for the particular mix of disciplines at Argonne. The principle results for S&T women demonstrate that:

- Women represented 13.6% of regular exempt 700-series employees in September 2002 (ANL-E + ANL-W) (Table 4.1). This percentage was higher than all previous years (Figure 4.6; see attached, this section). In 30% of the Laboratory divisions (7 of 23), representation of S&T women was considerably lower than for the Laboratory as a whole: 0-5% women, 3.3%, mean (Figures 4.1-4.4). BIO (39%) and EA (31%) had the highest percentages of S&T women.
- 700-series women would have represented 16.9% if employee populations reflected estimated availability pools for the mix of disciplines at ANL, representing a shortfall of 67 S&T women if there were no change in numbers of S&T men (Figure 4.6, see attached, this section; Table 4.5).
- 700-series women peaked at grade level 705, the starting position for PhD staff members, and fell off dramatically above grade level 707; in contrast, numbers of 700-series men were essentially equal from 705 to 708 (Figure 4.5; see attached, this section). Only 3% of women were senior scientists (709, 710) compared to 12% of men. No women were at level 710.
- Median salaries of U.S. women scientists and engineers lagged behind those of men by $14,000/year in 1999 (most recent NSF database) (National Science Foundation, 2002). Argonne women expressed a strong need to know whether their salaries were equitable with those of their comparable peers and frustration that salary information was not readily accessible.

THE FUTURE (Section 5)

Data gathered by the RESC demonstrated that **workplace equity** and **career advancement/job satisfaction** were central concerns of S&T women at Argonne. In Section 5, the important issues are summarized and specific actions listed for what WIST can do and what ANL management can do, both regarding these areas of concern and regarding the general interest of the Laboratory to broaden its support of groups traditionally underrepresented in science and technology.

WHAT WIST CAN DO

Examples of what WIST can do, by area of concern, are (see Section 5 for all 17 recommendations):

WORKPLACE EQUITY

1) **Support ANL management** in actions taken to address workplace equity issues (see suggestions below, "What Management Can Do").

CAREER ADVANCEMENT/JOB SATISFACTION

2) **Continue Survival Skills Workshop** to guide career development of S&T women.
3) **Review membership of committees that evaluate employee performance** and identify committees on which women are well and poorly represented. Promote increase of women on committees showing under-representation.
4) **Promote ANL awards for S&T women and nominate S&T women for outside awards** to increase recognition/visibility of highly accomplished S&T women.
5) **Create searchable database of S&T women at Laboratory**, including biographies that provide grade level status. This database would, among other things, identify staff members who could serve as mentors and provide information regarding what is needed for promotion.
6) **Generate WIST information packet/brochure/pamphlet for all new employees** to increase communication of information about WIST.
7) **Interact with new employees**, for example, by introducing them at First Friday Forum, holding breakfast for new employees (both women and men) and providing information about WIST.
8) **Develop a centralized WIST resource library** of books, videos.
9) **Work to set up a DOE-wide project modeled after The Committee on the Advancement of Women Chemists (COACh)**. COACh's active advisory board of senior women chemists directly addresses the slow progress that is being made in reaching gender equity in professions in the chemical sciences through education, training, and research. Networking among board members provides support to S&T women in positions of leadership.

BROADEN THE SUPPORT OF DIVERSITY AT ANL

10) **Help Argonne establish a Diversity Task Force** (see below).
11) **Have WPI play a leadership role** in the ANL Diversity Task Force.
12) **Have WIST program participants throughout the Laboratory work closely with Diversity Task Force members** to share experiences, identify commonalities, and participate together in WIST activities, including First Friday Forum, Steering Committee meetings, and careers conferences.

WHAT MANAGEMENT CAN DO

Examples of what management can do, by area of concern, are (see Section 5 for all 20 recommendations):

WORKPLACE EQUITY

1) **Retain WIST Program Initiator (WPI) position** – S&T woman, rotating position, 30% effort for two years.
   Jobs of WPI:
   - Initiate workplace equity/career advancement projects that address WIST goals
   - Facilitate programs that reach out to young women interested in S&T careers
   - Serve as WIST point person to world outside of Argonne
   - Respond to concerns of individual S&T women as needed
   - Play integral role in proposed ANL **Diversity Task Force** (see below)
2) **Fund WPI for Argonne West** – S&T woman, rotating position, 10% effort for two years. To date, initiation and coordination of WIST projects at ANL-W have been carried out with no support for time expended. The ANL-W WIST facilitator has provided valuable support to the Laboratory that will be hard to continue on a volunteer basis.
3) **Aggressively recruit S&T women and increase their representation in senior-level scientist and management positions at the Laboratory**. Specific actions that could further hiring and retention of S&T women are:
   - Institutionalize WIST as a formal resource for Lab-wide candidate identification.
   - Notify WPI when Lab hires new S&T females, to provide opportunity for communication with WIST.
   - Make mandatory both accountability and education of managers regarding diversity issues. Strictly apply zero tolerance policy regarding sexual harassment.
4) **Conduct formal evaluation of workplace equity at Argonne.** Take lead role among National Laboratories to align with the highly prestigious 9-University Consortium comprising MIT, Harvard, Stanford, CalTech, UMich, Yale, UC-Berkeley, Princeton, UPenn, whose leaders have agreed to:
   - Analyze the salaries and the proportion of other university resources provided to women faculty.
   - Work toward a faculty [ANL staff] that reflects the diversity of the student body [estimated available candidate pools].
   - Recognize that this challenge will require significant review of, and potentially significant change in, the procedures within each university [ANL], and within the scientific and engineering establishments as a whole.
   - Reconvene within a year to share information on initiatives that will be launched to address the problem.

5) **Apply a Lab-wide approach of transparent decision-making** on decisions regarding salary, grade level, and resource allocation (equipment, postdocs, etc).

CAREER ADVANCEMENT/JOB SATISFACTION

6) **Continue to support projects that provide for career development of ANL S&T women.** These include the Survival Skills Workshop Series, Science Careers in Search of Women (SCSW) Conference, and Introduce a Girl to Engineering Day (IGED).
7) **Continue to support Director's Special Colloquia that address diversity issues,** for example, Drs. Nancy Hopkins (MIT, '00) and Virginia Valian (Hunter College, '01). Schedule Maria Goeppert-Meyer Scholars as Director's Special Colloquium speakers.
8) **Provide strong support to women in senior Lab management positions** through mentoring, upper-management validation, and other internal actions.
9) **Identify "diversity champions" at the Laboratory** who, for example, could enable item 8) above. Qualifications of diversity champions are "care and concern" for others, as well as ability to link diversity to institutional goals and communicate those linkages to rest of organization (Wording from Los Alamos Diversity program).
10) **Re-activate mentoring program at Argonne.** Males in S&T have many role models at all levels of the Laboratory and obtain the benefits of mentoring naturally. For S&T women, opportunities are scarce for mentoring by other women via natural interactions, making a formal mentoring program particularly effective for career development of S&T women.

BROADEN THE SUPPORT OF DIVERSITY AT ANL

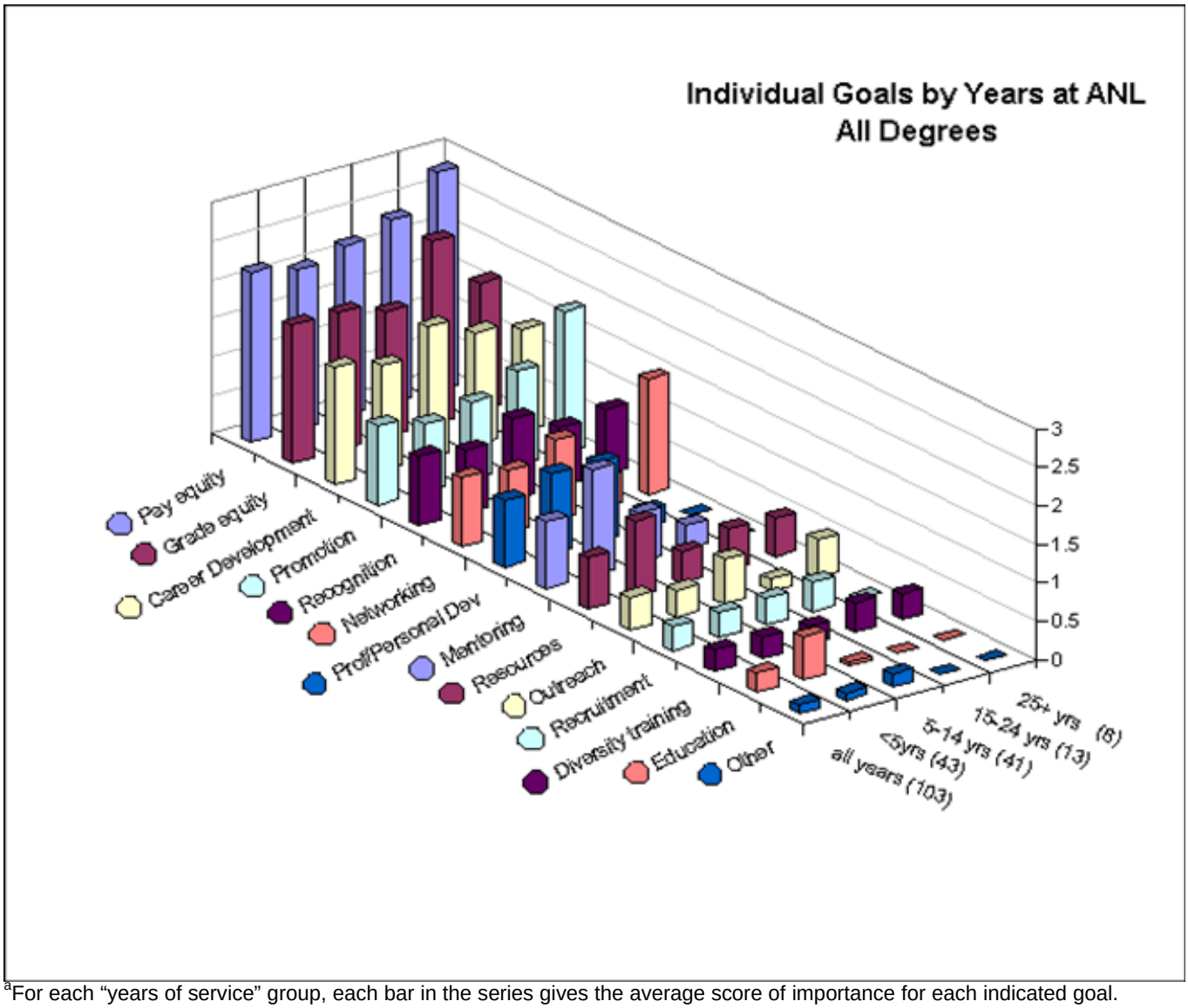
11) **Establish a Diversity Task Force**, appointed by Laboratory Director, comprising Laboratory "diversity champions" (see 9 above), WIST Program Initiators from ANL-E and ANL-W, plus representatives of other groups traditionally underrepresented in science and engineering that the Laboratory identifies. Task force would:
    - Study status of employees in underrepresented groups
    - Make plan of action for Laboratory based on study results
    - Draw from experience of analogous **MIT Council on Faculty Diversity** (see Section 5).
12) **Consider establishing a Diversity Advisory Council** of experienced high-level professionals from within and outside the Laboratory whose charge it would be to guide the Laboratory on Diversity issues. Suggested members include Nancy Hopkins (MIT Professor and member of MIT Council on Faculty Diversity), Cherry Ann Murray (ANL Board of Governors), Shirley Ann Jackson (President Rensselaer Polytechnic Institute), Shirley Malcolm (AAAS), representatives from the American Physical Society Committee on Women in Physics and the National Society of Black Physicists, male ANL leaders identified as 'Diversity Champions' (see 9 above).

RECONFIGURATION OF WIST

A plan was developed to reconfigure the WIST program such that it would better meet the needs of the Laboratory and its S&T women. This plan recommended that Argonne and WIST:

- **Retain the WIST Program Initiator (WPI) position**, with the WPI playing a major role on the proposed **Diversity Task Force** (see above and Section 5)
- **Fund a WPI for Argonne West** (10% effort)
- **Reconfigure the WIST Steering Committee** (see Section 5)
- **Establish WIST grass roots points of contact in each division at Argonne**
- **Conduct broad-based WIST business meetings**, at least quarterly, to improve communication among S&T women regarding WIST projects

Figure 3.4. Question 5: Of the goals listed, please identify which four are most important to YOU as a woman in science and technology at Argonne[a]

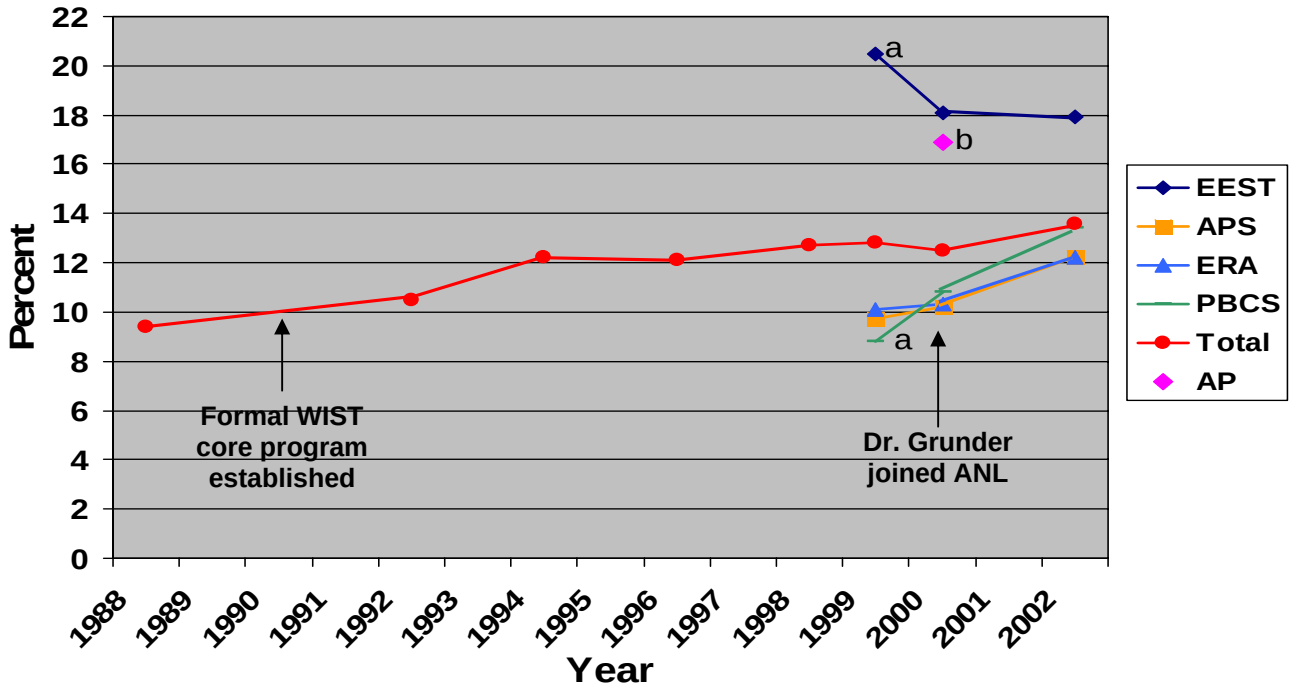


[a]For each "years of service" group, each bar in the series gives the average score of importance for each indicated goal. Bars for all groups were ordered according to high-to-low order of importance for the 'all years' group. Total number of respondents for each group is shown in parentheses. If all respondents in given group ranked given goal as #1 in importance, score would be 5.

Interpretation of chart: This chart provides insight into WIST goals that were most important to S&T women at Argonne and how these goals varied in importance with duration of employment at Argonne. Considering the first multicolor row of bars designated "all years" of service, results show that S&T women ranked (high to low) pay equity, grade level equity, career development, promotion, recognition of technical achievements, and networking among S&T women as the six most important goals for WIST to address at Argonne.

Going across a given goal, it can be seen that importance varied with duration of employment at Argonne. For example, mentoring (lavender row), access to resources (maroon), and educational opportunities (melon) were most important to women with <5 years of employment, while mentoring and education were not listed as a top 4 goal by any of the women with 25+ years. In contrast, the goals of pay equity (lavender), promotion (light turquoise) and networking among S&T women (melon) peaked in importance among women with 25+ years of employment.

Figure 4.6
Percentage of S&T Women over Time



[a]Striking decrease in percentage women in EEST and corresponding increase in PBCS from 1999 to 2000 reflect transfer of Biosciences Division from EEST to PBCS ALDship during this period.
[b]AP (availability pool) = percentage of women in estimated availability pools for Argonne's mix of S&T disciplines (~16.9%) (availability pool estimates provided by HR for 09/00.)

Interpretation of graph: This graph shows changes with time in the percentage of regular exempt 700-series S&T staff members who were women, with breakdown by ALDship for the latest years. Data were taken from annual Affirmative Action Program reports and provided by members of Human Resources Division of Argonne. Also presented as single point for 2000 is the percentage value that would be present if ANL S&T employees reflected availability pools (AP) estimated for that year (see Section 4 for details).

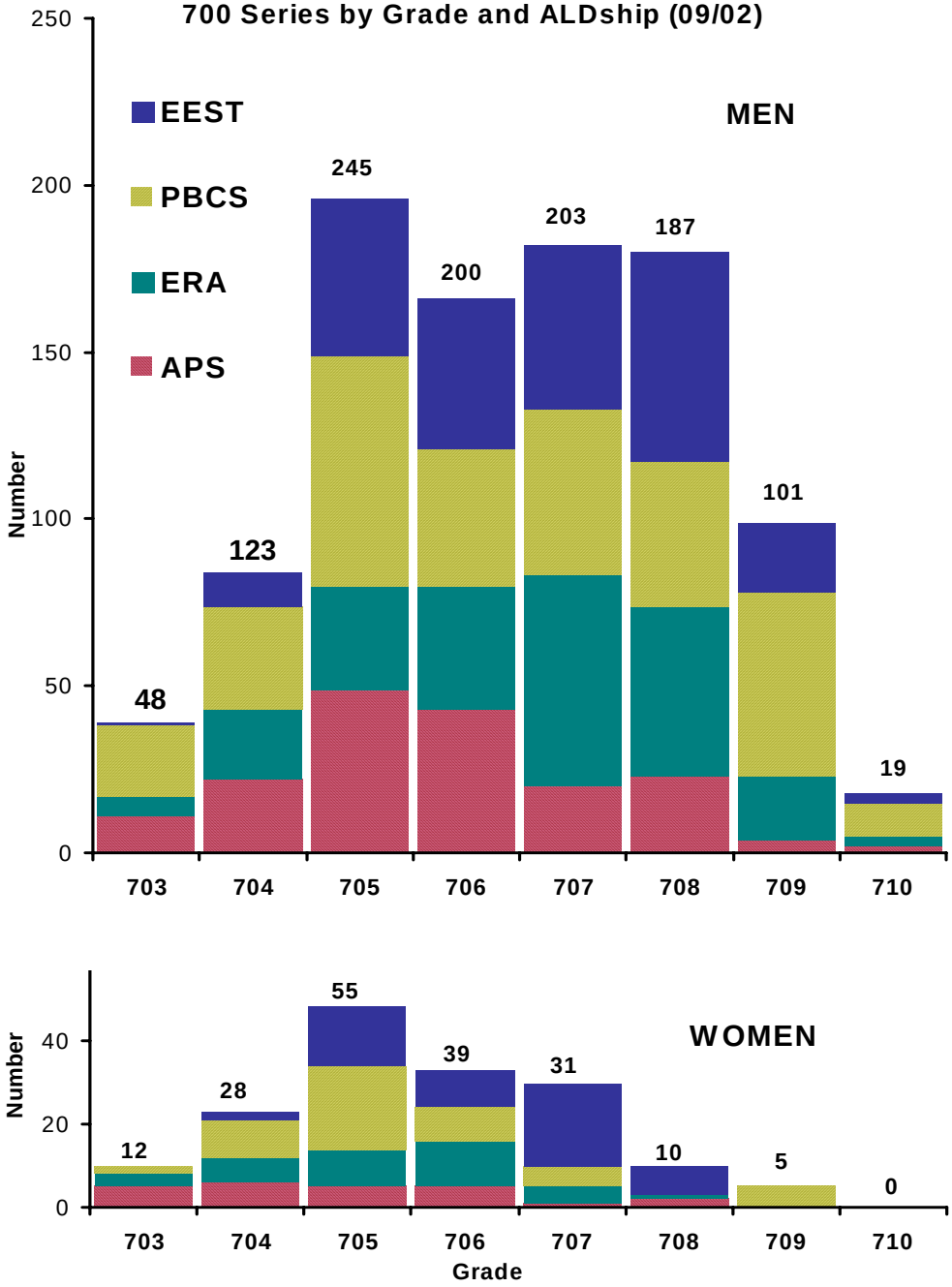
Several aspects are of note:

1) In 2002, S&T women were at a higher percentage, 13.6%, than in any other year, and had increased from 12.5% in 2000. The latter rise may reflect efforts of the new ANL administration, Drs. Grunder and Hartline, who took office in 2000/2001.

2) There was a sustained rise from about 10% women to about 12% women after establishment of the formal core of the WIST program at Argonne in 1990. The WIST program may have contributed positively to hiring and retention of S&T women during this period. (An analogous graph of MIT S&T women was called the "pancake" graph because it was totally flat at ~10% women over a similar time period) (N. Hopkins, personal communication).

3) The "availability pool" (AP) of ~16.9% S&T women is above any percentage value in Argonne's history, but the Laboratory has reduced the 'gap' by one quarter in the last two years. Continued significant effort will be needed to bring Argonne's female S&T staff in line with estimated availability pools for the Argonne mix of disciplines.

Figure 4.5. Numbers of Men and Women in 700 Series by Grade and ALDship (09/02)



Interpretation of Chart: This chart shows the number of regular exempt 700-series employees employed at each level at Argonne in September 2002, including both ANL-E and ANL-W. Data are presented separately for men and women and, for each gender, broken down by ALDship.

Results show that there were many more 700-series men (1126) than women (180) comprising the four indicated ALDships. In addition, while men populated the first four levels of PhD employees (705-708), women peaked at the starting level for PhD employees (705), and fell off sharply above level 707, with no women at 710. This peak for women at level 705 could reflect a number of factors: 1) new PhD hires at entry level, 2) delay of promotions, 3) lack of retention, and 4) few hires of women at higher levels.

2. THE FIRST TEN YEARS (1990-2000)

INTRODUCTION

The WIST program is a resource of people and projects that supports the Laboratory policy "to effectively utilize the diverse talents of all of our employees and to pursue an environment where each individual is valued for his or her contributions and uniqueness."[2]

The WIST program has evolved over time; however, the current mission statement captures the original vision for WIST. The mission of the Argonne National Laboratory WIST program is to provide leadership and resources to Argonne National Laboratory to:

- Ensure the success of women in scientific and technical positions at the Laboratory and elsewhere;
- Support and implement programs that encourage, develop and utilize the full potential of women in science and technology; and
- Promote movement to equity within Argonne so as to contribute to a best-in-class R&D institution.

In fulfilling this mission, the WIST program contributes to the Argonne National Laboratory FY03 goals to:

- Improve communication
- Ensure that Argonne's people excel
- Increase efficiency and effectiveness
- Deliver outstanding performance

In addition, WIST facilitates programs that support the HR objectives within the Argonne National Laboratory Institutional plan including:

- Improve the quality of work life to foster a work environment that promotes staff satisfaction, individual contribution, and organizational effectiveness.
- Develop Laboratory leadership and staff capabilities through targeted management training and skill development opportunities.
- Provide services that promote the well-being and productivity of Argonne employees.

BRIEF HISTORY

Initially called the Women in Science (WIS) program, a core structure consisting of a funded WIS Program Initiator position and a WIS Steering Committee was officially proposed in 1990 by an *ad hoc* group of women at ANL. However, the seeds for WIST were sown in 1946 by a few pioneering women in the early years of ANL, when women comprised ~8% of the ANL S&T staff. In the 1970s, female scientists from ANL were instrumental in founding a very active Chicago Area Chapter of the Association for Women in Science (AWIS). In 1979, a group of ANL women scientists discussed issues of concern to women employees with Laboratory Director Walter Massey. In 1982 and 1984 women participated in workshops for junior high and high school girls and their teachers and counselors called *Helping her LOOK AHEAD*. In 1987, Mildred Dresselhaus, a member of the ANL Board of Governors, defined opportunities and barriers for women.

The *ad hoc* group that proposed the core structure for the WIS program negotiated with Laboratory management for approximately ten months and agreed on a program structure that was officially established in October, 1990. In 1993 WIS was broadened to WIST to incorporate women from both scientific and technical fields.

Although the proposed ANL WIS program was an outgrowth of outreach/educational activities, it was recognized from the beginning that promoting the career development, recruitment, and retention of women must be a major component of WIS activities if outreach activities were to be successful. Therefore, WIST program activities were designed to fulfill one or more of the following objectives:

- Foster and encourage young women as students to broaden their horizons by considering careers in science and technology (in a broad sense, including mathematics, engineering, and others).
- Promote and support hiring new female scientists at all levels of Argonne (entry, mid, and upper-level positions) to diversify and strengthen the workforce.
- Nurture and support existing female staff scientists at Argonne to ensure equity in merit status and research opportunities.

Over the years, WIST has sponsored a variety of events and projects. Ongoing WIST activities focus extensively on both external outreach efforts and networking within the Laboratory. Recent activities reflect a

[1]Argonne's Equal Employment Opportunity/Affirmative Action Statement, memo from the Laboratory Director, October 1, 2002.

broadening of efforts that support retention and promotion of scientific and technical women already employed by Argonne. In the following sections, we list some of the many accomplishments of the WIST program, as well as the challenges for the future.

CORE STRUCTURE

A distinguishing characteristic of WIST is the establishment, by ANL management, of a formal funded core structure for the overall program. As we re-evaluate and look to the future of WIST, it is important to briefly review the strategy that underlies the structure of WIST. A detailed description of the entire WIST program and its mission can be found in Section 7 of this report.

The core of the WIST program consists of a **W**omen in Science and Technology **P**rogram **I**nitiator (WPI) and a WIST Steering Committee. The WPI is an R&D staff member who serves for a two-year term, devotes 30% of her time to the ANL WIST program effort, and reports to the Office of the Laboratory Director, which funds the position. The rotating nature of the position ensures that the WPI will work closely with Laboratory management but is not a part of Lab management. By remaining on the R&D staff, the WPI continues to gain first-hand insight into the concerns of the female technical staff. Compensation for the WPI recognizes the value of WIST activities and the effort expended to coordinate them. Funding of 30% effort allows the WPI to hire a postdoctoral associate (or equivalent) to maintain her scientific or engineering program, compensating for the redirection of her effort to WIST activities. Functions of the WPI include:

- Assist in the design and development of WIST program activities,
- Plan and coordinate the program for the annual *Science Careers in Search of Women Conference* in cooperation with the Division of Educational Programs and more than 100 volunteer female scientists, engineers, technologists, and other staff; and,
- Assist, as requested, in recruiting and affirmative action activities geared toward attracting and retaining technical staff from under-utilized groups in cooperation with HR.

The WPI receives guidance from the WIST Program Steering Committee, which helps to set priorities and provides feedback on decisions. This committee is organized around the groups within ANL that are potentially impacted by and interested in the activities of the WPI. The membership currently includes representatives from the Office of the Director, the technical staff (including WPI from ANL-West), the Division of Educational Programs, Human Resources Division, and the WPI's supervisor.

In addition to the WPI, a volunteer WPI-W coordinates activities at Argonne West. Currently the role of WPI at ANL-W is unfunded. The scope of the WIST program at ANL-W has grown over time, and the activities coordinated at ANL-W cannot continue on a volunteer-only basis.

ACCOMPLISHMENTS

An essential, overarching accomplishment of WIST that cannot be overemphasized is WIST's provision of a mechanism for and facilitation of communication. Throughout its history, WIST has provided a clear and direct channel for communication:

- Between the female S&T staff and the highest levels of ANL management
- Among the female S&T staff at ANL

A second important accomplishment of WIST is its provision of continuity of purpose through multiple transitions of personnel and programs within the Office of the Director, HR and the Diversity Program Office at Argonne. This foundation in communication and continuity of purpose has enabled WIST to identify issues and implement projects that work toward the WIST goals.

Since inception of the formal funded core of the WIST program in 1990, WIST has provided Argonne with a number of successful activities. These activities were significantly enabled by the WPI and strongly supported by a large cadre of volunteer female S&T staff members. The activities fall into three broad areas that relate to the WIST goals of Outreach, Inreach and Equity. Accomplishments in each area are summarized below.

OUTREACH

Historically, the primary and the most successful WIST activities have involved education/outreach, including the:

- ***Science Careers in Search of Women Conference***, which was first held in 1987 and targeted college women. Since 1990, the yearly conference has targeted high school students in the greater Chicago area and has been the most important and successful WIST activity.
- ***Graduate School Mentoring Day***, which was held twice, was successful in attracting several talented female postdocs to ANL.

- ***Luncheons for Summer Students and Teachers***, which were held sporadically.
- ***Booklets****: Graduate School and Beyond* and *College and Beyond.* These "survival guides" for female students were published based on panels from the *Science Careers Conference* and were very well received.
- ***Saturday Science Lecture Series***, a series of scientific presentations delivered on Saturday mornings by ANL S&T women to high school women and men. A modified version of this series was taken up by the Division of Educational Programs as one of their activities.
- ***Introduce a Girl to Engineering Day***, an annual program begun in 2002. Middle school girls visit ANL and "shadow" a woman engineer for a day to gain first-hand experience about the engineering profession.
- ***ANL-W Take Your Child to Work Day*** in support of the national effort to provide insight into careers for our daughters and sons.
- ***"Math Counts" Program***, ANL-W staff members support this program to improve math skills and promote math to middle school students.

INREACH

Other WIST activities have served to fulfill the objectives of hiring and promoting S&T women to diversify and strengthen the workforce and supporting career development of ANL women through:

- ***Technical Women's Symposia****,* conferences showcasing research of ANL S&T women, were held twice.
- ***Division Director Searches****,* WIST assisted in two division director searches by providing names of potential candidates.
- ***Travel Support Program***, which provided support for ANL technical women to travel to conferences to recruit S&T staff while also presenting scientific talks.
- ***Newsletter, Website and WISTTALK*****.** A newsletter was published briefly. It was superceded by a WIST website and WISTTALK, an electronic mail list.
- ***Seminar Series on Survival Skills for Women Scientists and Engineers***, launched in 2002. This monthly six-session workshop series was designed to assist women scientists and engineers in developing skills for career advancement.
- ***ANL-W Long Distance Learning Program & Brown Bag Seminars,*** organized by the ANL-W WPI, support the professional development of S&T women at ANL-W.

EQUITY

The WIST program has endeavored to raise the awareness of both management and staff at Argonne regarding issues related to equity in status and research opportunities and to initiate actions to address concerns. Actions that have required the combined efforts of WIST and Laboratory management aimed at promoting equity include:

- ***DOE Reviews of Laboratory Programs for Women****.* ANL WIST planned and hosted the first DOE Review of Laboratory Programs for Women in .1990. Results of the review showed Argonne at the forefront with the establishment of a funded core for the WIST program including the WPI position. Other laboratories subsequently established similar programs and positions.
- ***Co-Sponsorship of Director's Colloquia*** featuring prominent female scientists, including ANL Maria Goeppert Mayer fellows and speakers on S&T women's issues, notably Drs. Nancy Hopkins (MIT), Virginia Valian (Hunter College) , and Deborah Rolison (Naval Research Center).
- ***Visit by American Physical Society Team.*** The ANL WPI led early preparations for the January 2002 visit of the APS Committee on the Status of Women in Physics (CSWP) team. This effort was proposed by a female staff member and ultimately facilitated by ANL management. The visit made Argonne the first National Laboratory to have the climate for women physicists evaluated by that team.
- ***Analysis of Status of ANL S&T Women***, an earlier report on the status of ANL S&T women, titled "Argonne National Laboratory's Scientific and Technical Workforce in the Context of the National Pool: A Status Report", which was distributed in April, 2001 (Bhattacharyya et al, 2001)
- ***Women's Committee in Advanced Photon Source ALDship.*** This recently-established committee was prompted by the visit of the CSWP team (above) and seeks to identify and address needs of women in at the APS.
- ***INEEL Woman of the Year***, ANL-W staff members participate in the organization of and sponsor candidates for this annual award recognizing women's professional achievements and contribution to the community.

OPEN ISSUES

Some issues that the WIST program had originally hoped to impact have been intractable for WIST alone, and can be most effectively addressed by ANL management. WIST can help identify and clarify these issues and can facilitate communication regarding management actions to address the issues. Open issues include:

- ***Increasing the number of women in S&T positions at ANL***. By initiating and facilitating programs and activities that aim to improve the climate for women at the Laboratory, WIST can make a significant

contribution and assist Argonne in meeting its contractual diversity performance measure to increase the number of S&T women at the Laboratory. However, the use of the WIST program as a resource for recruiting talented technical women has not been institutionalized at ANL. Most recruitment is not open; thus, in most cases, the network of technical women that we have created at ANL is not queried or used in searches to fill vacant positions.

- ***Increasing the numbers of ANL women in S&T management positions.*** Section 4 presents a comparison of the status of S&T women vs. men at Argonne as a whole and within each Division. Results demonstrate that S&T women do not populate the upper grade levels of the Laboratory. In addition, S&T women are not currently represented in technical management positions at the level of division director and above.
- ***Increasing the level of workplace equity***. WIST program projects have been unable to significantly impact workplace equity at Argonne except to clearly demonstrate via survey (Section 3) that this area is of primary interest and importance to ANL S&T women.
- ***Continuing successful projects***. Of the projects described above, only the *Science Careers in Search of Women Conference*, the First Friday Forum, and the Maria Goeppert Mayer award have continued throughout the first ten years of the WIST program. Many of the beneficial activities have been suspended due in part to a lack of sustained resources.

OTHER PROGRAMS THAT AFFECT ANL S&T WOMEN

Two projects that affect ANL S&T women predate formation of the formal core program of WIST. These projects address the WIST mission but in some aspects remain separate from its core organization:

- ***First Friday Forum (F^3),*** an informal monthly meeting of ANL S&T women that addresses a range of topics from scientific research to career development. F^3 has been held since 1987.
- ***Maria Goeppert Mayer Award,*** recognizing and promoting women's technical excellence, provides opportunities for an outstanding woman scientist or engineer to conduct innovative research utilizing the special environment and capabilities offered by Argonne. This award was established by Dr. Fred Cafasso (CHM, retired) and is implemented by a Lab-wide committee appointed by the Laboratory Director.

3. ANL 2002 WIST PROGRAM SURVEY

EXECUTIVE SUMMARY

Results of the WIST Program Survey indicate that Argonne S&T Women request that WIST focus future efforts on concerns regarding equity in salary, grade level, and career development opportunities. The results support this report's recommendation that ANL management and Human Resources review these issues and work with WIST and others to help build programs that effectively and proactively address these areas of concern.

BACKGROUND

In December 2001, a WIST Program Survey questionnaire was designed and circulated to Argonne S&T women. This survey provided a unique opportunity for S&T women to give feedback to WIST leaders and ANL management regarding their work environment in general and WIST activities specifically. Of the 150 surveys distributed, 103 were completed and returned, including 11 from ANL-W.

Survey questions were developed by a subcommittee of the WIST Steering Committee and were grouped into three categories: 1) Demographics, 2) ANL WIST Program, and 3) ANL Environment. Presented here are highlights of the results. The actual survey, with numerical responses to each question provided in contrasting color, is appended to this chapter.

RESULTS HIGHLIGHTS

Demographics

Professional degree and job function. Argonne S&T women were highly educated and most were employed in research. More than half (56-58%) of the 103 women who returned the WIST survey had a PhD as their highest degree and basic/applied research as their main job function (Figure 3.1A, 1B) (Q23, Q26). Twenty-nine percent had an MS/MA and 11% a BS/BA as their highest degree. The largest job categories were Scientist/Engineer (38%) and Assistant Scientist/Engineer (16%) (Q22).

Length of ANL employment and years since highest degree. Many S&T women were relatively new to Argonne and early in their careers. For example, about half (46%) of the PhD- and BS-level female staff members were in their first 5 years of employment at Argonne, and most (58%) received their highest degree in the last 14 years (Figures 3.2&3.3). At all degree levels, percentages of women fell off sharply after 14 years, with only 8-23% employed for 15 years or more (Figure. 3.2). Comparing males to females,[a] results indicate that about twice the proportion of S&T women vs. men were new to Argonne (0-5 y service) (34-38% vs. 17%, respectively) and had 0-15 years since their highest degree (58% vs. 33%, respectively) (Table 3.1, Q24, Q27).

ANL WIST Program

WIST awareness and participation. Essentially all women had heard of WIST (95%), and 32% were currently participating (Q1,2). Nearly half of all women (48%) had participated in WIST in the past; only 31% had never participated.

WIST goals. With establishment of the WIST Program Initiator position and the WIST Steering Committee in 1990, WIST participants and Laboratory management under the leadership of Dr. Alan Schriesheim began to shift focus from outreach to issues related to the status of S&T women at the Laboratory, including increasing their numbers and identifying S&T women for positions of leadership at ANL. Survey results reported here indicate that career issues are now a dominant interest of WIST. For example, when asked to rate goals according to their importance, S&T women identified *pay equity* and *grade level equity* as the two most important WIST goals (Q4-5). Figure 3.4 ("all years" row) demonstrates that the six WIST goals most important to the S&T women at ANL, ordered high to low, were:

- Pay equity
- Grade level equity
- Career development
- Promotion
- Recognition of technical achievements
- Networking

As also shown in Figure 3.4, the extent of importance of some WIST goals varied with duration of employment at Argonne, with pay equity highest in importance for women in the 25+ years category, and mentoring highest among women in the < 5years category. Promotion and networking were also higher than average in importance among the women with 25+ years of employment, while grade level equity was highest in importance among those employed for 15-24 years.

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[a]Where reasonable, male to female comparisons are provided. The demographics of the 103 WIST survey women, who were from all disciplines, were nearly identical to those of the 34 women physicists who filled out the ANL Environmental (Workplace) Assessment Survey of the American Physical Society (Table 1, Q1-6). Therefore, the 111 male physicists who responded to the American Physical Society Survey were most likely also very similar in demographics to ANL males of all disciplines. These results lend credibility to the comparisons made here and in later sections of the111 male physicist responses vs. 103 WIST female responses, for cases where similar questions were asked in both surveys (Table 3.1).

ANL Environment

Job Satisfaction. Essentially all S&T women felt that their work at Argonne was important (95%) (Q7a). They indicated that their work was enjoyable (78%) and that they were generally happy in their work (74%) (Q7b,c). Survey responses and comments clearly indicated that the women were dedicated professionals who believed in their work and took their jobs seriously. Fewer than half of the women (45%), however, indicated that they would advise young female students to take the path they did (Q7d).

Salary and Grade Level. Salary and grade level equity were identified as concerns by a significant proportion of the respondents. For example, approximately 25-30% of women indicated that they either *strongly disagreed* or *disagreed* with the statements: "My salary (27%), grade level (35%), and recognition & benefits (24%) are currently equitable with those of my comparable peers" (Q8c,e; 9b,c). As shown in Figure 3.5, concerns regarding salary and grade level equity varied with duration of employment at Argonne. Recent hires (< 5 years) felt most strongly that their salaries were appropriate, while long-term employees felt least strongly (25-34 years). Confidence in salary equity with peers was clearly lowest among the long-term employees (Figure 3.5, 4th bar from end). It should be noted that a portion of responders did not complete questions related to equity citing difficulty in assessing equity with peers due to lack of information.

These results of the WIST Survey are reflected in the greater concern expressed by female vs. male physicists regarding equity in career advancement opportunities and salary level (Table 3.1, Parameters 7 and 8, *strongly disagree*). Together, the WIST and American Physical Society survey results demonstrate that workplace equity is a concern of Argonne's female S&T workforce and support the recommendation that ANL management and HR review these issues and work with WIST and others to address them.

Work Environment. Most S&T women (80%) agreed that their workplace environment was acceptable (Q13a), and a majority (64%) reported that their work environment was free from inappropriate remarks (Q13f). Seventeen percent had heard comments that negatively impacted their communication and relationship with co-workers and supervisors (Q13f). In addition, less than half (44%) felt that they were included in impromptu hallway or lunchtime technical and strategy discussions to the same extent as their peers (Q13d). Most respondents felt that, in groups, their ideas were listened to equally to those of others, by their peers (73%) and by management (60%) (Q13b,c). Efforts to enhance lab culture appear to have had some positive impact. Continued education to expand employee understanding of unconscious yet persistent gender-based biases in the work place, on the part of both female and male employees and supervisors, would contribute to establishing and maintaining a positive workplace environment for all employees.

Career Advancement. Women in S&T were interested in and planning for career advancement. About 1/3 of responders currently had, or had had, a mentor at Argonne, and a similar fraction were, or had been, a mentor to a co-worker (Q14b,c). The following numbers of the 103 women aspired to management positions: 35, group leader; 22, section leader; 15, division director (Q16). Although women were interested in moving into positions of increased responsibility, many felt those positions were not available to them and that the current system was limiting. The four top barriers to advancement perceived by more than 50% of respondents (ordered high to low) were (Q15b) (Figure 3.6):

- "Good ol' boy" system
- Lack of opportunities or assignments required to advance
- "Glass ceiling" constraints
- Work/family balance

As shown in Figure 3.6, concerns varied with duration of employment at Argonne. For example, women employed < 5 years perceived work/family balance as a bigger barrier than average and those employed for 15-24 years perceived the glass ceiling to be a bigger barrier than the average for all responders.

Results indicated that career paths at Argonne in both science and management were not well known to the S&T women. A review of career paths and a clearer identification of those paths would be beneficial to all employees, particularly minorities, who do not have abundant role models to provide natural guidance on career development pathways.

In written comments (e.g., Q6), survey respondents stressed the importance of continuing the current level of commitment of top management to WIST issues. Similarly, they expressed that WIST should continue efforts to bring issues to management's attention and to help build programs that address these issues.

4. STATUS OF SCIENTIFIC AND TECHNICAL WOMEN AT ANL

EXECUTIVE SUMMARY

The database presented in this report demonstrates that:

Overall Representation

- Argonne 700-series women,[3] East and West combined, comprised 13.6% of all regular exempt 700-series employees in September 2002, compared to 8.9% in September 1990 (Table 4.1)
- Thirty percent of ANL divisions (7/23) had considerably lower representation of 700-series women (0-5%, 3.3% mean): (BTC, ET, FAC, HEP, PHY, RAE, TD) (Figures 4.1-4.4)
- S&T women would have comprised 16.9% of 700-series employees if employee populations had reflected September 2000 estimated availability pools for the mix of disciplines at ANL. This increase would represent 67 additional women, if numbers of men were unchanged (Table 4.5)
- S&T women appeared to be more underrepresented at Argonne than at other major National Labs. (In 1995, an official DOE-wide survey showed ANL was 11% S&T women; other major National Labs were 14% to 21%)

Distribution among grade levels

- ANL 700-series women (East and West combined) peaked at grade level 705, with 8% above 707 compared to 26% for men; correspondingly, 3% of women were senior scientists (709, 710) compared to 11% of men. No women were at level 710. (Figure 4.5)

Other

- Women represented 30% of members of strategic Lab-wide committees (Table 4.4).
- NSF salary data indicated that median annual salaries of U.S. women scientists and engineers lagged behind those of men by $14,000 in 1999, considering all degreed employees. Deficits were clearly lowest for new degree holders but were still ~$10,000 per year for PhD-level computer scientists/mathematicians and engineers (Table 4.6). Salary data for ANL employees were not accessible for comparison.

BACKGROUND

In November 2000, when Dr. Hermann Grunder started his term as Director of Argonne National Laboratory, a group of 15-20 leaders of the Women in Science and Technology (WIST) program at Argonne met with him to provide insight into and request support for their goals. These goals fell into two categories:

- “Inreach” – promote equity in hiring, promotion, retention, and professional development of S&T women at Argonne
- Outreach – guide and inspire young women interested in pursuing careers in S&T

For many years, Argonne has effectively encouraged young women to pursue careers in S&T and provided them with excellent role models. Increasing the percentage of women in scientific and technical positions at Argonne, especially senior and leadership positions, has been a more intractable challenge. WIST leaders requested management support for the goals to:

- Significantly increase the number of S&T women at Argonne
- Implement programs that would effectively increase retention, promotion, and professional development of S&T women at Argonne.

At this meeting, Dr. Grunder requested assembly of a dataset that would compare the ANL workforce with available S&T pools for both women and minorities. The purpose was to put the representation of S&T women at ANL into perspective with respect to available pools for the specific mix of S&T disciplines at Argonne and to help expand the diversity vision of the Laboratory to encompass other groups underrepresented in science and technology. Data presented in this Section are the product of a WIST group assembled to provide a final report in response to Dr. Grunder’s request. Members of this group were Maryka Bhattacharyya (BIO), Kathy Harkay (ASD), Kirsten Laurin-Kovitz (NE), Natasha Meshkov (ES), Eliane Lessner (PHY), and Maria Petra (XFD). They worked closely with Eve Gohoure, Argonne’s Diversity Program Officer, to access information and formulate insights. Sources included Argonne’s annual Affirmative Action Program reports (Argonne National Laboratory, 1999, 2000, 2002) and the most recent National Science Foundation report on salaries of U.S. scientists and engineers (National Science Foundation, 2002). The Section presented here was patterned after an earlier WIST Status Report, which was finalized under the leadership of Carole Szpunar (IPD-MED), with input from Maryka Bhattacharyya (BIO), Kathy Harkay (ASD), Natasha Meshkov (ES), and Maria Torres (CMT/HEP) (Szpunar et al., 2001).

[3] In this report, the term “700-series women” means regular exempt 700-series women.

SUMMARY OF RESULTS

Representation of S&T Women in September 2002: Overall and by ALDship and Division

Overall

- ANL S&T women (East and West combined), numbering 199, made up 13.6% of the 700-series employees in September 2002 (Table 4.1)
- ANL-W S&T women, numbering 21, made up 11.5% of ANL-W 700-series employees in September 2002 (ANL/HR, personal communication)

Energy and Environmental Science and Technology (EEST)

- Fifty-two 700-series women were employed in EEST in September 2002, representing 18% of the 291 700-series employees (Table 4.1)
- Nearly half of these women (25) were in two divisions – Decision and Information Sciences and Environmental Assessment (Figure 4.1)
- Energy Technology had the fewest women – 2 women, or 3% of total (Figure 4.1)
- In all divisions, representation of women fell off sharply above grade level 707 compared to men. For example, 13% of women compared to 36% of men were at grade level 708 and above (Figure 4.1). No EEST women were senior scientists (709, 710) (Figure 4.1)

Advance Photon Source (APS)

- Twenty-four 700-series women were employed in APS in September 2002, representing 12% of the 198 700-series employees (Table 4.1)
- The APS Operations Division employed half of the APS women (Figure 4.2)
- Forty-five percent of the APS women compared to 19% of men were at grade levels below 705. Two of the 24 APS women were above grade level 707; no APS women were senior scientists (709, 710) (Figure 4.2)

Engineering Research and Analysis (ERA)

- Fifty-five 700-series women were employed in ERA in September 2002, representing 12% of the 396 700-series employees from both ANL-E and ANL-W (Table 4.1)
- Half of all ERA women (53%) were in the Chemical Technology Division (Figure 4.3)
- One of the 55 women was above grade level 707; no ERA women were senior scientists (Figure 4.3)

Physical, Biological, and Computing Sciences (PBCS)

- Forty-nine 700-series women were employed in PBCS in September 2002, representing 13% of the 369 700-series employees (Table 4.1)
- Biosciences and Math & Computer Sciences Divisions had 36% and 19% women, respectively, among the 700-series employees, representing 55% of all PBCS women. The Chemistry and Materials Sciences Divisions accounted for most of the remaining women (Figure 4.4)
- The High Energy Physics, Physics, and Pulsed Neutron Source Divisions had 3 or fewer women per Division, representing 2% to 7% of the 700-series employees in these divisions (Figure 4.4)
- The 5 female senior scientists in this ALDship represented 10% of all PBCS S&T women, compared to 20% senior scientists among the men (Figure 4.4)

Career Development of S&T Women at Argonne

A second parameter regarding representation of S&T women at ANL is distribution among grade levels.

Distribution of 700-Series Women and Men by Grade Level and ALDship. As shown in Figure 4.5, the distribution of 700 series women in 2002 peaked at grade level 705 – the entry level for PhD S&T staff members. Representation of S&T women fell off dramatically above level 707, with only 3% senior scientists (5/180) and all 5 of them from one ALDship, PBCS. This distribution contrasted to that of the 700-series men, who displayed essentially no fall-off among the 705-708 levels and 12% senior scientists (120/1126).

At Argonne, a smaller pipeline of entry-level S&T women cannot explain the low proportion of senior women, because Argonne's workforce has comprised approximately 10% S&T women since Argonne began in 1946 – long enough for S&T women to advance in equal percentages to men if career development paths had been equivalent. A dearth of S&T women in senior and leadership positions suggests the presence of historical barriers to the advancement of S&T women at Argonne.

Changes with Time in Representation of 700 Series Women and Men by ALDship. From 2000 to 2002, the first two years with Drs. Grunder and Hartline as Director and Deputy Director of Argonne, the percentage of 700-series women at Argonne increased by several percentage points, both in total and individually in each ALDship except EEST (Tables 4.2-4.3, Figure 4.6). In addition, the percentage of S&T women became higher by several percentage points in 2002 than at any earlier time for which comparable data were obtainable (Figure 4.6, red line). These percentage increases represented a net increase of 18 S&T women from 2000 to 2002, with PBCS increasing by 13, ERA by 10, and APS by 4 women, countered by a decrease of 5 women in EEST (Tables 4.1-4.3). It should be noted that the decrease in EEST women was accompanied by a parallel decrease in men from EEST such that the percentage of S&T women in EEST showed little change with time (Figure 4.6, Tables 4.2-4.3).

Representation of S&T Women on Strategic Lab-Wide Committees. In 2002, women represented 11% to 75% of the members of Lab-wide committees whose responsibilities influence the climate for S&T women at Argonne (Table 4.4).

Comparison to Other National Laboratories

In 1995, DOE conducted a survey of S&T women at the National Laboratories, the latest official survey of this kind (Brookhaven National Laboratory, 1995). At the time of the survey, Argonne employed 11% women scientists and engineers, while other comparable national laboratories ranged from 14% (Brookhaven National Laboratory) to 21% (Pacific Northwest National Laboratory). Argonne currently employs 14% S&T women (Table 4.1, Figure 4.6).

Representation of S&T Women Compared to their Availability for ANL Mix of Disciplines

Availability Estimates. The ANL Human Resources Department publishes its scientific and technical employment statistics relative to "weighted availability" estimates of the workforce pool in its annual Affirmative Action Plans (AAP) for ANL-E and ANL-W (Table 4.5). The availability estimates reflect Argonne's hiring environment. Argonne jobs are categorized according to EEO job groups that are specific to ANL and include 16 job groups representing mostly 700-series scientific and technical employees (blue text lines, Table 4.5). The estimates of availability change with time and draw on information regarding national and local workforce pools, annual educational institutional data, as well as internal availability from feeder jobs as appropriate.

Availability Estimates Applied to ANL Setting. The ANL AAPs identify specific EEO job groups in which the availability estimate for women exceeds employment. In September 2000, underutilization was identified for management scientific, electrical engineering, and chemistry job groups at ANL (red number lines, Table 4.5).

Availability estimates are also used by ANL on an annual basis to evaluate placement rates into each EEO job group. That is, ANL compares the percentage of women moved into a given job group, either by hire or promotion, to the "weighted availability" estimate for that group. The Laboratory is required to make good faith efforts to have its placement rates in underutilized job groups effectively reflect estimated availability.

Availability Estimates Applied in this Report. The availability estimates reported in the ANL AAP provided a basis for comparing the representation of women in the ANL S&T workforce to available pools, as requested by Dr. Grunder. These estimates reflect factors specific to the Argonne work environment and are better than others that WIST members could have obtained from other sources. Members of ANL HR expressed strong concerns regarding this approach. They indicated that the availability estimates applied in this way could be perceived as quotas, if shortfalls in female representation were calculated based upon these estimates and the Laboratory were called upon to hire women equivalent to the shortfalls. For the purpose of fulfilling the specific and reasonable request to evaluate representation of S&T women for the specific mix of job groups at Argonne, however, value was placed on using the AAP estimates of availability, and results are reported here.

Comparison of ANL S&T Workforce to Available Pools. In September 2000, Argonne's employment percentages for women resided numerically below the weighted availability percentages in 14 of the 17 700-series S&T job groups (Table 4.5); 10 job groups employed S&T women at less than 80% of the availability estimates (one guide for identifying underutilization/placement goals).

Percentage shortfalls were translated to numbers of persons, using the total number of persons in each job group. Results show that shortfalls represented 67 women for the mainly 700-series job groups (60 staff, 7 supervisors) (blue job groups, Table 4.5). Electrical engineers and chemists accounted for 17 and 10 of the 67 women, respectively.

In September 2000, the 17 EEO job groups identified as mainly 700-series employees comprised 193 women out of 1443 total employees at ANL-E and ANL-W, or 13.4% women. This percentage is very similar to that of 12.5% for the actual 700-series women in September 2000 (Table 4.2, 181/1448); this similarity in make-up provides validity to these EEO job groups representing 700-series women.

With an increase of the 67 women indicated above, the percentage of S&T women at Argonne would have risen to 16.9% (244/1443).

These data provide a realistic estimate of the nature and size of the underrepresentation of S&T women at Argonne, given the specific mix of disciplines at ANL. They provide a stimulus and justification for ANL to devise and implement a proactive plan to increase the hire, promotion, and retention of S&T women at Argonne.

Salary

National Science Foundation salary data for 1999 show that women scientists and engineers in general were paid less than their male counterparts (Table 4.6) (National Science Foundation, 2002). Median annual salaries for women scientists and engineers were $14,000 less than for men, considering all employment groups. Salary discrepancies were clearly smallest among the newest employees (<5 years since degree). At the doctorate level, computer scientists/mathematicians and engineers showed male-to-female deficits even at the starting level, with women earning median salaries $10,600 and $8,000 less, respectively, than men at <5 years since degree (Table 4.6). For all disciplines, male to female discrepancies grew with increased years since degree.

The question of whether Argonne women scientists/engineers were paid less than men scientists/engineers could not be addressed for the purposes of this report, as salary data were not available to the authors of this report. However, there is no clear reason to believe that female vs. male comparisons of salary by grade level, years of service, or years since the PhD would not show similar trends at Argonne as in the rest of the U.S.

5. PLAN FOR THE FUTURE, WITH RECOMMENDATIONS

INTRODUCTION

This section should be viewed as a starting point for the future of WIST at Argonne. Issues and goals are identified based on earlier sections of this report. Many actions are recommended that address the latter issues and goals. The aim is to identify all ideas that arose during numerous WIST planning sessions, with minimal attempt to balance the weights of one recommendation vs. another. It is envisioned that these recommendations will be championed by the next WIST Program Initiator, in consort with a reconfigured WIST Steering Committee and new Division-based grass roots Points of Contact for effective communication and continued implementation of WIST projects. The latter plan for a reconfiguration of WIST is presented in the final part of this section.

In his first formal meeting with WIST leaders in November, 2001, Dr. Grunder requested that WIST help recommend a program for the Laboratory that would broaden the base of support for diversity at ANL. Issues and actions related to this area are presented here along with the WIST-specific issues and actions.

IDENTIFICATION OF ISSUES AND GOALS

A sound plan for the future is based on a set of prioritized goals. WIST-related goals identified in this report as most important to ANL S&T women fall into two major categories: Workplace Equity and Career Advancement/Job Satisfaction.

As requested by Dr. Grunder, additional issues and goals are identified that address the challenge of broadening the base of support for diversity at ANL.

WORKPLACE EQUITY

- **Pay equity**
- **Grade level equity**

were goals of high importance to 85% of S&T women (Survey Q4).

CAREER ADVANCEMENT/JOB SATISFACTION

Women were enthusiastic about their work and ambitious for career advancement: 35 aspired to be group leader, 22 section leader, and 15 division director out of 103 survey respondents (Survey Q16).

After workplace equity goals, next in importance were those related to career advancement (Survey Q4, Q5):

- **Career development**
- **Promotion**
- **Recognition of technical achievements**
- **Networking among ANL women**

Perceived barriers to advancement define issues important to achieving the goals of S&T women. Four top barriers perceived by more than 50% of respondents (ordered high to low) were:

- **"Good ol' boy" system.** A significant proportion of S&T women felt outside of the mainstream of planning for hires, promotions, program planning. Male-to-male connections form naturally when males make up >80% of employee populations both within and outside of the Laboratory. These connections naturally guide actions when new hires are sought and programmatic decisions are made. A concerted and dedicated effort needs to be invested to change the status quo.
- **Lack of opportunities or assignments required to advance.** See "Good ol' boy" system bullet point for explanation.
- **"Glass ceiling" constraints.** The dearth of S&T women in upper grade level positions (Figure 4.5) gives the appearance of a "glass ceiling" to career advancement at Argonne. Women have comprised 10-12% of the 700-series employees for many years (Figure 4.6). The fact that S&T women peak at grade level 705, the entry level for PhD S&T employees, needs to be addressed.
- **Work/family balance.** There have been significant increases in percentages of women obtaining advanced degrees in science and engineering disciplines for at least ten years. Analysts conclude that continued low representation of S&T women in the workplace and in upper level positions needs to be explained by factors other than a dearth of S&T women in the pipeline (National Academy of Sciences/National Research Council, 2000). One question that needs to be seriously addressed is how we can effectively provide workplace support to both women and men who start a demanding career at the same time that they invest maximum lifetime effort in raising a family. With insufficient support in this area, society is such that women leave the workforce in greater numbers than men.

OTHER WIST ISSUES

Other issues that S&T women at Argonne identified as important in the WIST Survey (Section 3) were:

- **Need for improved communication** regarding actions taken and resources available that address concerns of female S&T staff
- **Feeling of isolation among S&T women**
- **Large percentage of S&T women not participating in WIST** at time of survey (68%)

BROADER SUPPORT FOR DIVERSITY AT ARGONNE

One of Argonne's missions is to enhance the workplace environment such that all employees can work up to their full potential. For members of minority groups, interacting with peers of similar background has been shown to increase utilization of their talents. Value is also derived from members of different groups learning and interacting with one another.

S&T women comprised 13.6% of regular exempt 700-series employees in September, 2002. This percentage is in range of that reported for Asian S&T employees at Argonne in the past. However, it appears that far fewer Hispanics, African Americans, and Native Americans are part of Argonne's S&T staff. In addition, other groups traditionally underrepresented in science and technology careers may be identified as requiring support in order to fully live up to their scientific and technical potential.

WHAT WIST CAN DO

WIST at Argonne plans to continue to strongly support ANL management, the Division of Educational Programs, and Human Resources in implementing their collective goals to bring forward the best talent of S&T women at the Laboratory and reach out to inspire young women interested in careers in S&T. That means continuing to conduct the Science Careers in Search of Women conference for high-school young women, the Introduce a Girl to Engineering Day for middle-school young women, the Survival Skills Workshop for early-career S&T women at the Laboratory, informal mentoring and networking among S&T women at the First Friday Forum (FFF), and more.

Actions presented here are those that WIST recommends to specifically address the goals and issues identified in this report and summarized above. These recommended actions, including those regarding broadening the support for diversity at Argonne, are the product of many discussions during meetings of the RESC. We envision that the WIST Program Initiator, with counsel from the WIST Steering Committee, will prioritize and work to implement these many recommendations.

WORKPLACE EQUITY

1) **Provide substantive support and input to ANL management** on actions taken to address workplace equity issues (see "What Management Can Do" below for actions in which WIST should become involved). Examples of how WIST can support workplace equity actions include:
    - Serve as a formal resource for Lab-wide identification of highly qualified female job candidates
    - Contribute to an evaluation of workplace equity at Argonne, providing the technical expertise and interest of Argonne S&T women.
    - Play an important role in the proposed Argonne Diversity Task Force (see below) as a way for WIST to embrace Laboratory outreach to other groups traditionally underrepresented in science and technology. Use WIST experience to empower the Diversity Task Force.

CAREER ADVANCEMENT/JOB SATISFACTION

As in the case of workplace equity, WIST is limited in how effectively it can directly influence career advancement of S&T women at Argonne. The goal of both ANL management and WIST is to reward talent and productivity independent of gender and minority status. Many studies have shown that this goal is important to work toward and difficult to implement (Valian, 1999). Working together with ANL management will be an important aspect of what WIST can do.

To this end, RESC members have developed the following ideas that WIST can implement to help support this goal:

2) **Review representation of S&T women on committees that evaluate performance** and identify committees on which women are well and poorly represented. Include employee performance review committees within each division and programmatic review committees from outside the Lab, e.g., University of Chicago Review Committees.
3) **Identify characteristics of individual division management and culture** that appear to promote or deter career development of S&T women, based on the data (Section 4) showing strong variations between divisions with respect to S&T women.

WHAT WIST CAN DO, cont'd

4) **Promote Pacesetter awards for S&T women and nominate S&T women for outside awards**, e.g., "YWCA Outstanding Women of DuPage County," awards within professional societies, etc.
5) **Create searchable database of S&T women at Laboratory**, including biographies that provide grade level status. This database would, among other things, enable identification of staff members who could serve as resources for mentoring and information regarding what is needed for promotion.
6) **Get feedback from S&T women who leave the Laboratory**. This feedback would provide insight into what WIST and the Laboratory might do to increase retention of ANL S&T women.
7) **Provide information to staff** on how to document persistent workplace harassment. Knowing how to officially document harassment can give strength to those dealing with such experiences.
8) **Work to set up a DOE-wide project like COACH modeled after The Committee on the Advancement of Women Chemists (COACh)**. COACh's active advisory board of senior women chemists directly addresses the slow progress that is being made in reaching gender equity in professions in the Chemical Sciences through education, training, and research. Networking among board members provides support to S&T women in important positions of leadership.

OTHER WIST ISSUES:

Large percentage of S&T women not participating in WIST at time of survey

9) **Re-configure WIST organization** to reach broader base of S&T women (see plan below).

Improve Communication, Networking among ANL Women; Address Feelings of Isolation

10) **Generate WIST information packet/brochure/pamphlet for all new employees**, providing them with information about WIST.
11) **Interact with new employees** by, for example, introducing them at FFF, holding breakfast for new employees – both women and men, providing information about WIST.
12) **Develop centralized WIST resource library** of books, videos.
13) **On WIST website, put link to the American Physical Society report** on their visit to Argonne and link to IUPAP; post the ANL reply to American Physical Society/CSWP.
14) **Prepare WIST display for Argonne Open House** as a means to communicate WIST activities among ANL employees and the community.
15) **Arrange for ANL newsletter article** featuring information on the WIST website and the wisttalk listserv, again to improve communication of WIST activities to those who might benefit from becoming involved.

BROADER SUPPORT FOR DIVERSITY AT ARGONNE

Starting with the vision described above (see Identification of Issues and Goals), members of WIST developed a plan whereby Argonne might reach out to employees in other groups traditionally underrepresented in science and engineering. This plan starts with formation of a:

Diversity Task Force

- Appointed by the Laboratory Director
- Comprised of Argonne "diversity champions" (see above), WIST Program Initiators from ANL-E and ANL-W, and representatives of other groups traditionally underrepresented in science and engineering that the Laboratory identifies

16) **The WPI would play a major role in the proposed Task Force**, applying the WIST experience to help study the status of employees in underrepresented groups. The resulting studies would provide:

- Motivation for action
- A basis for developing an effective action plan – analogous to the plan presented here for WIST

17) **Task Force members, including the WPI, would be responsible for translating the reports into an action plan for the Laboratory**. Although WIST members worked on devising a plan to address diversity more broadly at Argonne, there was common sentiment that the plan would be far better and more applicable when made with informed input from members of the underrepresented groups to be served.

Approaches and actions recommended by the **Diversity Task Force** would be identified with input from a **Diversity Advisory Council** (described below, see "What Management Can Do"). WIST program participants throughout the Laboratory envision working closely with Diversity Task Force members to share experiences, identify commonalities, and participate together in WIST activities, including First Friday Forum, Steering Committee meetings, and careers conferences.

WHAT ANL MANAGEMENT CAN DO

Since their arrival at Argonne, Dr. Hermann Grunder and Dr. Beverly Hartline have provided significant support to the WIST program and it goals. For example, from 2000 to 2002, the percentage of S&T women rose to its highest level (13.6%) since Argonne began (Figure 4.6). With strong support from the directorate, including considerable leadership from Dr. Hartline, Argonne became the first major National Laboratory to be visited by a highly respected team from the American Physical Society, who evaluated the climate for women physicists at Argonne. Follow-up action from this visit led Dr. Murray Gibson to establish a "Committee on Women at the Advanced Photon Source" chaired by Dr. Elizabeth Moog. A Survival Skills Workshop for early career ANL women in science and engineering was held for the first time. Information from Affirmative Action Program reports was made available for this report through the Diversity Program Office of ANL/HR. All of these actions took investment and dedication from the leaders of Argonne, working together with participants in the WIST program. WIST program participants look forward to continued success in working with management to implement activities that will help WIST and the Laboratory address issues identified in this report.

A number of concerns regarding **workplace equity** and **career advancement/job satisfaction**, identified in the WIST survey, cannot be addressed by WIST participants alone. They require Argonne management to take action on behalf of all ANL staff members. Actions are recommended and issues are identified that ANL management can address in these two areas. In addition, suggestions are presented regarding management's effort to **broaden the base of support for diversity** at the Laboratory:

WORKPLACE EQUITY

1) **Retain WIST Program Initiator (WPI) position** – S&T woman, appointed by Laboratory Director, rotating, 30% effort for two years. Jobs of WPI would be:
   - Play an important role in the proposed **Diversity Task Force** (see below) as a way for WIST to embrace Laboratory outreach to other groups traditionally underrepresented in science and technology. Use WIST experience to empower Diversity Task Force.
   - Initiate workplace equity/career advancement actions that address WIST issues (identified above)
   - Continue to develop and facilitate programs that reach out to young women interested in science and technology
   - Serve as WIST point person to world outside of Argonne
   - Respond to concerns of individual S&T women as needed

2) **Fund WPI for Argonne West** – S&T woman, appointed by Laboratory Director, rotating, 10% effort for two years. To date, initiation and coordination of WIST efforts at ANL-W have been carried out with no support for time expended. The WPI has provided valuable support to the Laboratory that will be hard to continue on a volunteer basis.

3) **Aggressively recruit S&T women and increase their representation in senior-level scientist and management positions at the Laboratory**. Specific actions that could further hire and retention of S&T women are:
   - Institutionalize WIST as a formal resource for Lab-wide candidate identification, in collaboration with HR. For example, as lab policy, access WIST as resource for all 800 series hires; HR would notify WPI, with deadline for providing input.
   - Formally identify WIST to DD/DH as resource for job candidate identification.
   - Notify WPI when Lab hires new S&T females, to provide opportunity for communication with WIST.
   - Make mandatory both accountability and education of managers regarding diversity issues and actions. Strictly apply zero tolerance policy regarding sexual harassment.

4) **Conduct formal evaluation of workplace equity** at Argonne. In doing so, **take lead role among National Laboratories to align with highly prestigious 9-University Consortium** comprising MIT, Harvard, Stanford, CalTech, UMich, Yale, UC-Berkeley, Princeton, UPenn, which held workshop in February, 2001. At this workshop, the institutions' leaders agreed to (http://www.umich.edu/~urecord/0001/Feb05_01/2.htm):
   - Analyze the salaries and the proportion of other university resources provided to women faculty.
   - Work toward a faculty [*ANL staff*] that reflects the diversity of the student body [*available job candidate pools*].

WHAT ANL MANAGEMENT CAN DO, cont'd

- Recognize that this challenge will require significant review of, and potentially significant change in, the procedures within each university [*ANL*], and within the scientific and engineering establishments as a whole.
- Reconvene within a year to share information on initiatives that will be launched to address the problem.

5) **Have WIST Program Initiator (WPI) and other WIST representatives actively participate** in ANL evaluation of workplace equity proposed in 4) above. During meetings of the WIST Reevaluation Subcommittee, S&T women expressed an interest in this task and had important ideas of how this evaluation could be done well. Involving S&T women in this evaluation is in line with the approach taken by members of the above 9-member Consortium.

6) **Consider having Argonne/University of Chicago join above 9-Member Consortium** [see 4) above] as first National Laboratory to become involved in formal nationwide effort to address issues of diversity in the workplace
7) **Apply a Lab-wide approach of transparent decision-making** on decisions regarding salary, grade level, and resource allocation (equipment, postdocs, etc)

8) **Devise way to support managers who support diversity.** For example, list Diversity-related training courses and Laboratory events sponsored by WIST and other groups on manager and employee evaluation forms such that managers can gain credit for having participated, either by directly attending or providing funding for employee participation.

9) **Implement family-friendly policies at Argonne**, e.g., work-at-home, part-time, re-entry "postdoc" program after career break

CAREER ADVANCEMENT/JOB SATISFACTION

10) **Continue to support projects that provide for career development of ANL S&T women.** These include Survival Skills Workshop Series, Science Careers in Search of Women (SCSW) Conference, Introduce a Girl to Engineering Day (IGED). It was identified that activities such as SCSW and IGED, although outreach activities, also introduce ANL S&T women to one another and generate enthusiasm within the Laboratory work environment. The Career Development Workshop was aimed at young staff women; related needs among post-docs or midcareer ANL women were identified.

11) **Continue to support Director's Colloquia that address diversity issues.** For example, Nancy Hopkins, Virginia Valian. Schedule MGM Scholars as Director's Colloquium speakers.

12) **Provide strong support to women in senior Lab management positions** through mentoring, upper-management validation, and other internal actions. When S&T women rise to leadership positions, they become increasingly isolated from female peers. Credible authority figures can successfully legitimize their role and promote success for all concerned. (See item 14 below for potential action).

13) **Develop approach to change the 'schema' of ANL S&T employees** – term used by Virginia Valian in her book, "Why so slow?" – such that persons in decision-making positions at the Lab truly understand and value Argonne's aim of achieving diversity at all levels of responsibility. (See item 9 above for one action toward this goal).

14) **Identify Diversity "champions" at Laboratory** who enable items 12) and 13) above. Qualifications of diversity champions are "care and concern" for others, as well as ability to link diversity to institutional goals and communicate those linkages to rest of organization (Wording from Los Alamos Diversity program).

15) **Re-activate mentoring** program at Argonne. S&T males have many role models at all levels of the Laboratory and obtain the benefits of mentoring naturally. For S&T women, opportunities are scarce for mentoring by other women via natural interactions, making a formal mentoring program particularly effective for career development of S&T women.

16) **Designate ALD representative** to evaluate career development in each ALDship regarding male-to-female equity of opportunity, e.g., conferences attended, talks given at Argonne, committee representation.

WHAT ANL MANAGEMENT CAN DO, cont'd

17) **Enforce *Zero Tolerance Policy* on workplace harassment**. Take harassment reports seriously and insist that conditions change. Survey results show that 17% of S&T women had encountered comments, etc, that negatively impacted their ability to function on the job. All employees need to understand their obligation to foster an environment free from all forms of harassment. All-hands meetings on harassment are ineffective and generate mockery. Smaller sessions that intentionally mix people from different parts of the Laboratory make it less likely that people will stay in their own groups and "hide" from the issues.

18) **Increase effectiveness of communication of what constitutes workplace harassment.** For example, a foreign-born S&T female staff member experienced harassing behavior and asked if this treatment was part of the American culture. Continued training is needed such that all employees have clear guidelines of what constitutes harassment and what to do when it occurs.

BROADER SUPPORT FOR DIVERSITY AT ARGONNE

19) **Establish a Diversity Task Force**, appointed by Laboratory Director, comprising Laboratory "diversity champions" (see 14 above), WIST Program Initiators from ANL-E and ANL-W, plus representatives of other groups traditionally underrepresented in science and engineering that the Laboratory identifies. Task force would:
    - Study status of employees in groups traditionally underrepresented in science and technology.
    - Make plan of action for Laboratory based on study results.
    - Draw from experience of analogous **MIT Council on Faculty Diversity**

Pertinent information regarding the **MIT Council on Faculty Diversity** is given on the following websites:
http://web.mit.edu/communications/orgchart/offices/facdiv.html
http://web.mit.edu/newsoffice/tt/2000/sep13/diversity.html

Text from Website #1:

The charge to the **MIT Council on Faculty Diversity**…..is to address the status and under-representation of women and minorities on the faculty, with a special emphasis on science and engineering.

The Council mechanism…..brings together faculty [*ANL staff members*] with a special knowledge of an important issue for the university into a close working relationship with members of the administration so that they can devise and implement solutions to facilitate institutional change as needed.

The Council on Faculty Diversity has three co-chairs…..Provost Robert Brown, Associate Provost Phillip Clay, and Professor Nancy Hopkins [and nine additional members including] the Deans of the Schools of Science and Engineering. [*Note high level of Council leaders*]

Text from Website #2:

The Council is to consider all aspects of faculty [*ANL staff*] development:

- Design programs and policies to increase their number and to promote retention.
- Examine policies and processes for faculty hiring within MIT [*staff hiring at ANL*], and making recommendations on how to improve faculty searches and recruitment of women and minority candidates.
- Create programs and policies that are sensitive to the need to balance an academic [*ANL*] career with a family life.
- Establish an open and inclusive environment for a diverse faculty [*ANL staff*] that promotes involvement in leadership throughout MIT [*Argonne*].

20) **Consider forming an *Argonne Diversity Advisory Council*** (DAC) made up of high-level professionals who guide the Laboratory on WIST and other Diversity issues. Could include, for example, Nancy Hopkins (MIT Professor and member of MIT Council on Faculty Diversity), Cherry Ann Murray (ANL Board of Governors), Shirley Ann Jackson (President, Rensselaer Polytechnic Institute), Shirley Malcolm (AAAS), representatives from the American Physical Society Committee on Women in Physics and the National Society of Black Physicists, and male ANL leaders identified as 'Diversity Champions'. The DAC would meet annually to review progress of the Diversity Task Force and recommend actions. Individual programs, such as WIST, could seek advice from the DAC on new initiatives. The role of DAC would be to evaluate broad program goals and vision rather than initiate and manage program activities.

RE-CONFIGURATION OF WIST

Experiences of the first ten years indicate that the ANL WIST organization could be better optimized to:

- Reach broader base of S&T women
- Get participation of high-level professionals, especially males, who serve as 'champions' for WIST
- Ensure funding for WIST Program Initiator (WPI) position is effectively used in WPI's Division
- Increase communication among S&T women and all employees
- Improve effectiveness of Steering Committee
- Support WPI position at ANL-W

To address these issues, the following plan for re-configuring WIST was developed:

1) Work to retain WIST Program Initiator (WPI) position – S&T woman, rotating, 30% effort for two years. Position posted, applicants evaluated by Steering Committee, recommendation made to Lab Director, Lab Director appoints WPI. **New requirement:** Application includes buy-in from applicant's Division, with plan for how WPI funds will be utilized to further her career capabilities during WPI term.

Jobs of WPI would be:

- Initiate workplace equity/career advancement actions that address WIST issues identified above
- Continue to develop and facilitate programs that reach out to young women interested in science and technology
- Serve as WIST point person to world outside of Argonne
- Respond to concerns of individual S&T women as needed
- Play an important role in the proposed **Diversity Task Force** (see above) such that WIST embraces Laboratory outreach to other groups traditionally underrepresented in science and technology. Use WIST experience to empower **Diversity Task Force**.

2) Work to obtain funding for WPI for Argonne West – S&T woman, 10% effort for two years. To date, initiation and coordination of WIST efforts at ANL-W have been carried out with no support for time expended. The WPI has provided valuable support to the Laboratory that will be hard to continue on a volunteer basis.

3) Re-configure WIST Steering Committee –to represent a broader base of support that includes ANL males, and to facilitate improved communication at the grass-roots level.

New Steering Committee would comprise:

- Representative of Office of Director, to serve as Committee Chair
- One ALD (rotated among ALDs)
- One senior-level manager from ANL-W
- ANL Diversity Program Officer
- Division of Educational Programs Representative (e.g., Division Director)
- WPIs (ANL-E and ANL-W)
- Former WPI
- Two S&T women from each ALDship (8 S&T women)
- One member at large

S&T women would apply for Steering Committee membership in response to an advertised position. Existing committee members would review applications and appoint new members. Meetings would be called by WPI(s) and held at least quarterly. S&T women members would have 3-y overlapping terms.

4) Establish Grass Roots Points of Contact – New position to reach broader base of women. As one example, S&T woman would be identified in each Division who relates both to the Steering Committee representative from her ALDship and to all of the S&T women in her Division.

5) Conduct broad-based WIST business meetings at least quarterly to improve communication among S&T women regarding WIST projects.

6. WIST Re-Evaluation Subcommittee (RESC) Membership

The WIST Re-Evaluation Subcommittee, first convened in October 2000, was composed of the following members (in alphabetical order):

Bakul Banerjee, FermiLab (formerly APS)
Maryka Bhattacharyya, Chair and WIST Program Initiator
Kathy Harkay, ASD
Kirsten Laurin-Kovitz, NE
Natasha Meshkov, ES
Tijana Rajh, CHM
Carole Szpunar, IPD-MED
Marcia Maria Campos Torres, CMT/HEP
Marion Thurnauer, CHM

Through time, **additional WIST participants** actively contributed to this report. These include:

Eliane Lessner, PHY
Dongqi Li, MSD
Elizabeth Moog, XFD
Maria Petra, XFD
Deborah Quock, PHY

7. WIST Mission Statement, with listing of WIST Program Initiators and Steering Committee Members

Argonne National Laboratory's
Women in Science and Technology (WIST) Program
A Guide for the WPI and the Steering Committee

Purpose

Established by the Laboratory Director in 1990, Argonne's funded Women in Science and Technology core program supports DOE's commitment to recruit, retain and promote women to diversify and strengthen the scientific workforce. This commitment has continued over the years[4] and was most recently stated in a series of initiatives announced by Secretary Richardson on September 6th of this year.[5] The initiatives include specific tasks related to science education, recruitment and promotion of women, training and mentoring programs targeted at women and workplace improvements. Argonne shares DOE's commitment and the WIST program conducts outreach and development activities to strengthen and fulfill that commitment.

Mission Statement

Provide leadership and resources to Argonne to ensure the success of women in scientific and technical positions at the Laboratory and elsewhere; support and implement programs that encourage, develop and utilize the full potential of women in science and technology; and promote movement to equity within Argonne so as to contribute to a best-in-class R&D institution.

Program Objectives

1. Foster and encourage girls as students to broaden their horizons by considering careers in science and technology as potential female scientists (in a broad sense, including mathematicians, engineers, and others).
2. Promote and support the hiring of new female scientists with sufficient credentials to all levels of Argonne (entry, mid, and upper-level positions) to diversify and strengthen the workforce.
3. Nurture and support existing staff female scientists at Argonne to ensure equity in merit status and research opportunities.

Program Strategies

1. Facilitate open communication between the Laboratory and women staff members.
2. Provide input to and evaluation of Argonne policies, procedures, and records especially regarding hiring, promotions, and salaries of women.
3. Partner with other organizations within Argonne to provide educational seminars for career and professional development targeted for women.
4. Recognize women's technical achievements and promote excellence through awards and symposiums.
5. Promote science education through special events and speakers bureau.
6. Support women through mentoring, networking, and training programs.
7. Serve as a sounding board for women's concerns and act as an advocate for women to promote change at Argonne.

Methods

The Women in Science and Technology (WIST) program is a resource of people and projects that is supported by a funded core structure. The core structure of the WIST program consists of a **W**omen in Science and Technology **P**rogram **I**nitiator (WPI) and a WIST Steering Committee.

The WPI is an R&D staff member who serves for a two-year term, devotes 30% of her time to the ANL WIST program effort, and reports to the Office of the Laboratory Director, which funds the position. The rotating nature of the position ensures that the WPI will work closely with Laboratory management but is not a part of Lab management. By remaining on the R&D staff, the WPI continues to gain first-hand insight into the concerns of the female technical staff. Compensation for the WPI recognizes the value of WIST activities and the effort expended to coordinate them. Funding of 30% effort allows the WPI to hire a postdoctoral associate (or equivalent) to maintain her scientific or engineering program, compensating for the redirection of her effort to WIST activities. Functions of the WPI that appear in the official job description are:

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[4] DEPARTMENT OF ENERGY REVIEW OF LABORATORY PROGRAMS FOR WOMEN - STRATEGIC PLAN January 10, 1995

[5] Women in Science, Ensuring a Strong Scientific Workforce for the Future, Secretary Richardson's Initiatives, September 6, 2000.

- Assist in the design and development of WIST Program activities,
- Plan and coordinate the program for the annual *Science Careers in Search of Women* Conference in cooperation with the Division of Educational Programs and more than 100 volunteer female scientists, engineers, technologists, and other staff; and,
- Assist, as requested, in recruiting and affirmative action activities geared toward attracting and retaining technical staff from under-utilized groups in cooperation with HR.

In addition to the WPI at ANL-E, a volunteer WPI-W coordinates activities at Argonne West. Currently the role of WPI at ANL-W is unfunded. The scope of the WIST program at ANL-W has grown over time, and the activities coordinated at ANL-W cannot continue on a volunteer-only basis.

Following is a presentation of functions of the WIST program at ANL:

Program Functions:

1. Monitoring and Analysis to Establish Equity
   - hiring, promotion, and salaries study/database
   - retention and succession planning
   - staff concerns survey
   - evaluation of funding opportunities, procedures, and costs
   - performance evaluation process review

2. Promoting Excellence and Raising Awareness of Women's Contributions
   - recognition of women's technical achievements – awards, events
   - outreach and communication with other organizations

3. Facilitating Communication
   - Lab to staff – by encouraging women's participation in lab-wide committees, supporting open hiring and promotion processes, etc.
   - Staff to staff – by encouraging participation in WIST programs (networking, mentoring, outreach, etc.) and developing and/or making available information resources on women's status in science and technology

4. Education (to assist women in meeting work environment challenges)
   - guidance on building successful research programs at Argonne
   - career and professional development seminars (assertiveness training, negotiating skills, "getting ahead at Argonne", etc)
   - mentor training
   - work and family issues

5. Supporting women staff members
   - mentoring and coaching
   - networking events (luncheons)
   - First Friday Forums

Current WIST Program Activities:

First Friday Forum
Science Careers in Search of Women
Women's Technical Symposium(s)
Maria Goeppert Mayer Award
etc.

Proposed WIST Program Activities:

Saturday Science Series
Networking and mentoring programs
Career Development Seminar Series
etc.

Program Administration

The WIST Program Initiator receives guidance from a WIST Program Steering Committee, which helps to set priorities and provides feedback on decisions. This committee is organized around the groups within ANL that are potentially impacted by and interested in the activities of the WPI. The membership currently includes representatives from the following: Office of the Director (Committee Chair), the female technical staff (including the former WPI and the WIST Coordinator for ANL-West), the Division of Educational Programs, Human Resources Division, and the WPI's supervisor.

Existing Duties of the Steering Committee:

1. Serve as search committee and provide recommendations to the Chair for the WIST Program Initiator (WPI) and the WIST Coordinator for Argonne-West.
2. Discuss programmatic priorities with the WPI, provide guidance on tasks to be accomplished, and provide support to the WPI, as needed.
3. Discuss WIST Program issues that arise.
4. Assess the WPI's progress and provide Chair with an annual evaluation (including input from the WPI).
5. Evaluate the effectiveness of the WPI position itself.
6. Advise the Chair on appointment of technical staff committee members.

Proposed Duties of the Steering Committee:

1. Identify and develop new/expanded opportunities at Argonne to advance scientific and technical contributions by women scientists, integrated with the Laboratory's (and DOE's) missions, strategic plans, and programs.
2. Promote and establish such opportunities and monitor their progress at Argonne.
3. Advise Laboratory management regarding pertinent issues and policies related to nurturing potential, attracting new, and rewarding existing high-caliber female scientific staff; propose and advance specific actions for study and implementation by Laboratory management.
4. Ensure the openness of Laboratory-wide studies and evaluations demonstrating the appropriateness of professional women's pay rates, grade levels, and promotional opportunities; where warranted, monitor Laboratory efforts to rectify.

Existing Duties of WPI

1. Serve as principal organizer of women's career conference at ANL.
2. Identify ANL women to participate in recruiting
3. Establish speaker file of talented women scientists
4. Seek outside funding for WIST programs
5. Promote effective movement of female scientific staff into management
6. Promote involvement of women in DEP programs
7. Publicize WIST program

Proposed Duties of WPI (additional)

1. Identify and develop programs for career development and staff retention
2. Conduct survey of women staff members to identify concerns
3. Identify and develop programs on work/family issues
4. Work with HR to identify trends in hiring, promotion and retention of women

Proposed Membership of the Steering Committee

Laboratory Management

Chair - OTD representative
ANL-West management representative
HR Diversity Program Office representative
DEP representative

Laboratory Programmatic and Technical Staff

Previous WPI
WIST coordinator - ANL-W
ESH representative
APS representative (#1)
APS representative (#2)
EEST representative (#1)
EEST representative (#2)
PBCS representative (#1)
PBCS representative (#2)
ER representative (#1)
ER representative (#2)

ANL WIST Program Initiators

1. Maryka Bhattacharyya (1990-1992)
2. Marion Thurnauer (1992-1994)
3. Betsey Curlin (1994-1996)
4. Ruth Reck (1996-1998)
5. Tina Kilmer (1998-1999)
6. Maryka Bhattacharyya (1999-2003)

WIST Steering Committee Members (2003)

Laboratory Management:

Beverly Hartline (OTD), Chair
Carol Quinn (HR)
William Vroman (ANL-W)
Eve Gohouré (DPO/HR)
Harold Myron (DEP)

Laboratory Programmatic and Technical Staff

Shelly Havlovick, WIST Coordinator (ANL-West)
Kirsten Laurin-Kovitz (TD)
Lee Makowski (BIO)
Tijana Rajh (CHM)
Carole Szpunar (IPD)
Marion Thurnauer (CHM)
Marcia Torres (CMT)

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Table 3.1 Comparison of results of WIST Survey to those of American Physical Society Survey

Parameter	Percentage of Responders[a] WIST females	APS females	APS males
1. Age			
< 25 y	1	0	2
25-55y	83	79	76
>55y	16	21	22
2. Job Category			
SA/EA/SA/ES	14	18	11
AS/AE	16	15	11
S/E	38	41	50
SS/SE	**7**	**9**	**19**
Postdoc	8	15	4
Other	17	3	5
3. Job Function			
Research support	19	29	27
Basic/applied research	58	68	56
Research administration/ management	15	0	17
Other	8	--	--
4. Years at ANL[b]			
0-5y	**34 (39)**	**38 (47)**	**17 (20)**
5. Years since highest degree/years as scientific professional			
0-14y	**58**	**58**	**33**
15-24y	28	15	26
25-34y	9	18	30
35+y	5	9	10

Parameter	Percentage of Responders[a] WIST females	APS females	APS males
6. Highest degree			
BS	11	9	13
MS	29	15	14
PhD	56	76	67
Other	2	0	5
7. Male vs female career advancement opportunities are			
equal	Q8c(d)	Q14	Q14
Strongly agree	**9 (8)**	**6**	**41**
Agree	26 (17)	20	34
Neutral	12 (14)	24	12
Disagree	19 (23)	15	5
Strongly disagree	**14 (12)**	**20**	**1**
8. Salary level is commensurate with knowledge, skills and abilities/experience	Q8a	Q17	Q17
Strongly agree	8	12	10
Agree	39	35	44
Neutral	18	15	23
Disagree	19	18	20
Strongly disagree	**11**	**18**	**3**

[a]Total number of responders were 103 WIST females, 34 APS females, 111 APS males. Percentages highlighted in red identify responses that differed substantially between males and females.

[b]Categories other than 0-5y did not match between the two surveys, making comparisons not possible for other categories. Percentage values with no parentheses are for staff excluding postdoctorals; values in parentheses are higher and include postdoctorals.

Table 4.1. Percentages of Regular Exempt 700-Series Women By ALDship and for Total Population – 09/30/02

ALDship	Numbers of Persons on 09/30/02			% Women
	Women	Men	Total	
EEST	52	239	291	17.9
APS	24	173	197	12.2
ERA[a]	55	396	451	12.2
PBCS	49	318	367	13.4
OTHER[b]	19	137	156	12.2
Sum	199	1263	1462	13.6

[a]Includes ANL-E and ANL-W. Data provided by Human Resources.
[b]Includes ECT, EQO, OTD, PBC, PFS

Table 4.2. Percentages of Regular Exempt 700-Series Women by ALDship and for Total Population – 09/30/00

ALDship	Numbers of Persons on 09/30/00			% Women
	Women	Men	Total	
EEST	57	258	315	18.1
APS	20	176	196	10.2
ERA[a]	45	391	436	10.3
PBCS	36	298	334	10.8
OTHER[b]	23	144	167	13.8
Sum	181	1267	1448	12.5

[a]Includes ANL-E and ANL-W. Data provided by Human Resources.
[b]Includes ECT, EQO, ESH, OTD, PFS

Table 4.3. Percentages of Regular Exempt 700-Series Women by ALDship and for Total Population – 09/30/99

ALDship	Numbers of Persons on 09/30/99			% Women
	Women	Men	Total	
EEST	76	294	370	20.5
APS	18	167	185	9.7
ERA[a]	46	408	454	10.1
PRA (PBCS)	27	279	306	8.8
OTHER[b]	23	143	166	13.8
Sum	190	1291	1481	12.8

[a]Includes ANL-E and ANL-W. Data provided by Human Resources.
[b]Includes ECT, EQO, ESH, OTD, PFS

Table 4.4. Representation of Women on Strategic Lab-Wide Committees, 2002

	Member		
ANL Committee	**TOTAL**	**FEM**	**%**
Argonne Fellow Committee	11	2	18.2%
CDAC - Cultural Diversity Advisory Committee	NA*	NA*	--
DRC - Director's Review Committee for the Director's Competitive Grants	21	4	19.0%
Director's Special Colloquium Committee	4	2	50.0%
Human Resources Reduction-in-Force Advisory Committee	25	12	48.0%
Institutional Biosafety Committee	8	3	37.5%
Laboratory Director's Award Committee	8	3	37.5%
LDOC-HP - Laboratory Director's Oversight Council - Hires and Promotions	7	1	14.3%
Management Council	14	3	21.4%
Outstanding Service Award	7	5	71.4%
PACT - Programmatic Administrative Coordinators Team	6	4	66.7%
POC-HP - Programmatic and Operations Committee - Hires and Promotions	32	4	12.5%
Strategic and Programmatic Planning Council	9	1	11.1%
WIST - Women in Science and Technology Program Steering Committee	12	9	75.0%

*NA = Information not available / Could not determine the members

Table 4.5. Representation of S&T Women (ANL-E & ANL-W) Compared to their Estimated Availability for ANL Mix of Disciplines (09/00)[a]

Job Group & Name	Total at ANL A	Weighted Availability Estimate, Females B	Percentage Females Employed at ANL C	Number of Females to Reflect Estimated Availability D (AxB/100)	Number of Females Employed at ANL E (AxC/100)	Difference between Employed Population and Availability Estimate (Number of Women) (E–D)
ANL-E 1A Executives	6	19.93%	16.67%	1	1	0
1B Administrative Mgmt	37	50.07%	37.84%	18	14	–4
1C Management Scientific	79	11.99%	3.80%	9	3	–6
1D Supervisory Scientific	221	15.39%	12.22%	34	27	–7
1E Supervisory Administrative	60	39.44%	46.67%	23	28	+5
1F Support Supervisors	16	29.99%	25.00%	4	4	0
ANL-W 1A Scientific Management	69	12.20%	8.70%	8	6	-2
1B Administrative Mgmt	21	15.10%	38.10%	3	8	+5
S&T 700-Series SUBTOTAL	**221**	**15.39%**	**12.22%**	**34**	**27**	**–7, +0**
Official & Manager TOTAL	**509**	**19.65%**	**17.88%**	**100**	**91**	**–19, +10**
ANL-E 2A Atmos/Earth/Marine/Space	22	13.57%	13.64%	2	3	0
2B Chemical Engineering	27	11.59%	3.70%	3	1	–3
2C Electrical Engineering	95	18.25%	1.05%	17	1	–17
2D Civil/Mech Engineering	113	7.7%	3.54%	8	4	–5
2E Nuclear/Reactor Eng	62	7.44%	1.61%	4	1	–4
2F Chemistry	101	29.42%	19.80%	29	20	–10
2G Mining/Petrol & Other Eng	11	13.09%	9.09%	1	1	–1
2H Computer Science	188	25.61%	23.40%	48	44	–5
2I Environmental Engineering	107	18.16%	18.69%	19	20	0
2J Admin Support/Plant	197	67.93%	63.96%	133	126	–8
2K Legal	6	25.40%	33.33%	1	2	0
2L Ceramic/Metallurgl/Material	61	12.17%	8.20%	7	5	–3
2M Mathematics/Statistics	6	27.01%	0.00%	1	0	–2
2N Biological/Biomedical/Agri	25	43.04%	36.00%	10	9	–2
2O Physics	198	12.29%	11.11%	24	22	–3
2P Medical	4	61.84%	50.00%	2	2	–1
2S Other Specialties	40	43.65%	37.50%	17	15	–3
2T Environ Health & Safety	6	25.14%	0.00%	1	0	–2
ANL-W 2B Scientists/Engineers	160	12.10%	12.50%	19	20	+1
2C Administrative	42	13.40%	28.57%	5	12	+7
S&T 700-Series SUBTOTAL	**1222**	**17.18%**	**13.58%**	**210**	**166**	**–60, +1**
Professional Staff TOTAL	**1471**	**23.86%**	**20.94%**	**351**	**308**	**–68, +8**
700-Series GRAND TOTALS: ANL-E	**1283**	**17.54%**	**13.48%**	**225**	**173**	**–67, +0**
ANL-W	**160**	**12.10%**	**12.50%**	**19**	**20**	**–0, +1**
ANL-E + ANL-W	**1443**	**16.91%**	**13.37%**	**244**	**193**	**–67, +1**

[a]Values for columns A, B, and C are from annual ANL Affirmative Action Program report. Values for columns D, E and F were calculated, rounding down as per whole person approach to measuring shortfalls. Job groups in blue are those that HR indicated comprise mainly regular exempt 700-series employees. Red number lines indicate job groups for which B vs C necessitate their identificatioin in the AAP for Laboratory placement goals. Bolded red percentage values in final row provide requested comparison of actual percentage S&T women (13.37%) to the value if employee populations reflected estimated availability pools for mix of ANL discipoines (16.91%).

Table 4.6. Median annual salaries of U.S. scientists and engineers, by highest degree attained, occupation,sex, and years since degree: 1999

Highest degree, occupation, and sex	Employed S&Es, total	Years since degree							
		<5 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35+ years
ALL DEGREE LEVELS[1]									
All S&E occupations.									
Male	64,000	48,000	58,000	65,000	70,000	70,000	72,000	75,000	70,000
Female	50,000	40,000	48,000	56,600	59,000	58,000	60,000	60,000	50,000
Scientists by broad field									
Computer/math scientists									
Male	65,400	55,000	63,000	68,500	71,000	70,000	73,000	70,000	65,000
Female	58,000	50,000	54,000	59,000	60,300	60,000	62,000	60,000	S
Life/related scientists									
Male	51,000	30,000	43,000	50,000	62,000	60,000	62,700	70,000	72,100
Female	39,000	28,000	40,000	45,000	54,300	54,000	50,000	57,000	40,000
Physical/related scientists									
Male	56,000	34,000	46,000	59,300	65,000	69,000	65,000	74,000	74,000
Female	41,400	33,000	41,400	52,000	50,000	54,000	50,000	54,000	S
Engineers									
Male	65,000	49,000	59,000	65,000	70,000	73,000	75,000	76,000	72,000
Female	55,500	47,000	57,300	60,200	60,500	60,000	S	S	S
Managers/administrators.									
Male	75,000	50,000	65,000	70,000	80,000	80,000	80,000	84,000	80,000
Female	51,000	39,900	48,000	58,000	56,400	60,000	56,000	50,000	49,000

NOTES:

The term "Scientists and Engineers" (S&Es) includes all persons who have ever received a bachelor's degree or higher in a science or engineers (S&E) field, plus persons holding a non-S&E bachelor's or higher degree who were employed in a S&E occupation during either the 1993, 1995, 1997, or 1999 SESTAT surveys.
Table includes all full-time employed S&Es who earned a salary of not more than $150,000.
Figures are rounded to nearest hundred.

KEY:

S = Suppressed for reasons of confidentiality and/or data reliability

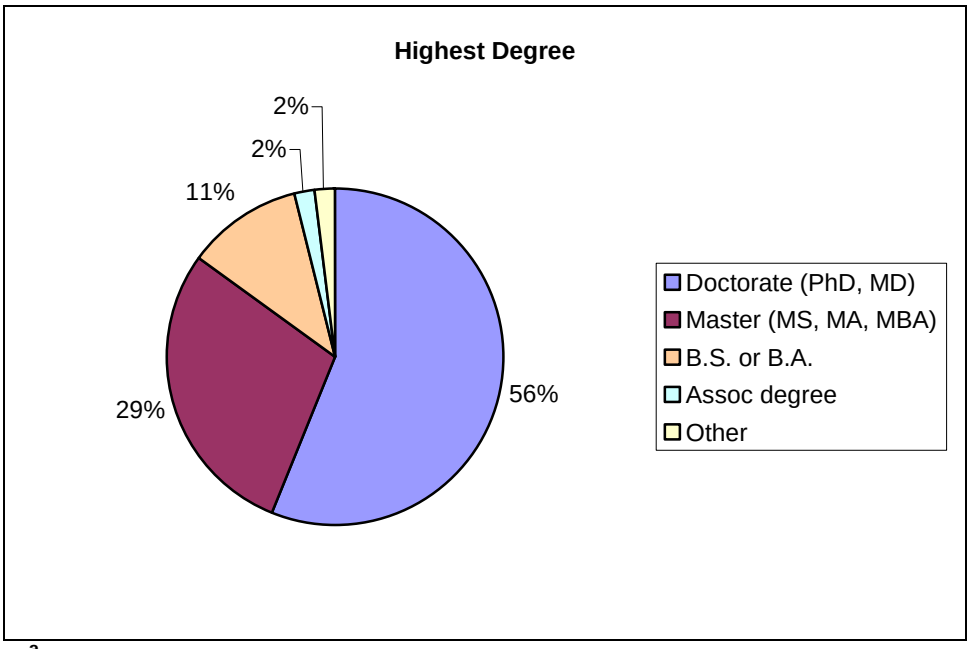
Table 4.6 cont'd. Median annual salaries of U.S. scientists and engineers, by highest degree attained, occupation, sex, and years since degree: 1999

Highest degree, occupation, and sex	Employed S&Es, total	Years since degree							
		<5 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35+ years
DOCTORATE									
All S&E occupations.									
Male	70,000	54,000	63,000	70,000	75,000	80,000	80,000	85,000	85,000
Female	55,000	41,400	53,000	58,500	66,000	66,800	70,000	71,000	75,000
Scientists by broad field									
Computer/math scientists									
Male	74,000	63,600	70,000	76,000	77,200	78,000	75,000	80,000	80,000
Female	62,000	53,000	61,000	71,000	66,800	69,500	68,000	S	S
Life/related scientists									
Male	65,000	33,000	53,800	65,500	75,000	76,000	78,000	85,000	84,000
Female	53,000	32,000	54,200	60,000	64,000	67,500	80,000	75,000	S
Physical/related scientists									
Male	70,000	49,400	60,000	70,000	77,500	82,500	78,000	86,000	93,000
Female	61,000	48,700	63,000	54,000	78,000	84,000	70,000	S	S
Engineers									
Male	80,000	66,000	74,500	80,000	85,000	90,000	92,000	95,000	90,000
Female	67,800	58,000	72,000	77,000	84,000	90,900	S	S	S
Managers/administrators.									
Male	92,000	75,000	76,000	90,000	100,000	95,000	98,000	105,000	100,000
Female	70,000	59,500	65,000	91,000	70,000	94,000	52,000	S	S

NOTES: The term "Scientists and Engineers" (S&Es) includes all persons who have ever received a bachelor's degree or higher in a science or engineers (S&E) field, plus persons holding a non-S&E bachelor's or higher degree who were employed in a S&E occupation during either the 1993, 1995, 1997, or 1999 SESTAT surveys.
Table includes all full-time employed S&Es who earned a salary of not more than $150,000.
Figures are rounded to nearest hundred.

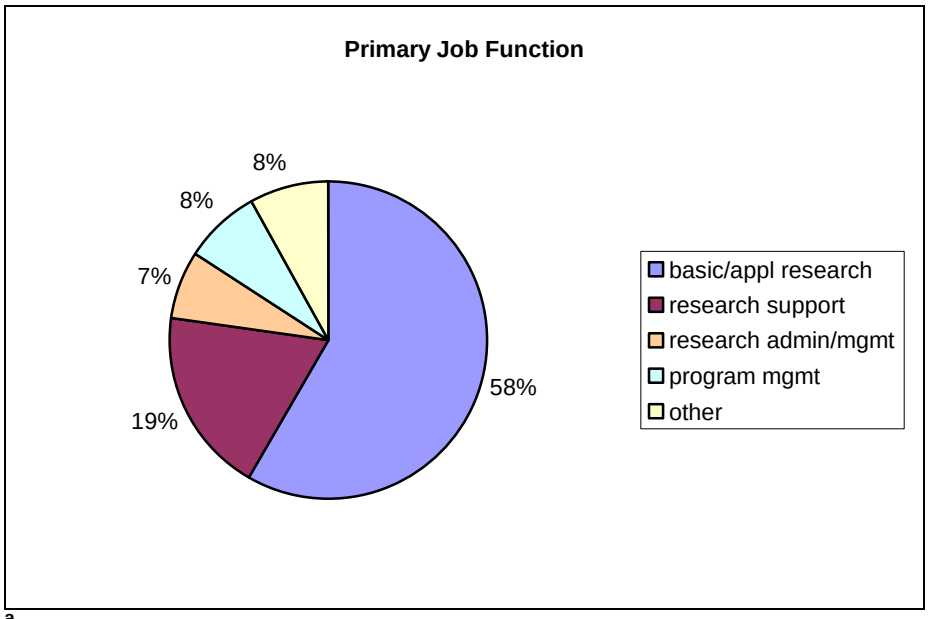
KEY: S = Suppressed for reasons of confidentiality and/or data reliability

Figure 3.1A Question 26: What is your highest degree?[a]



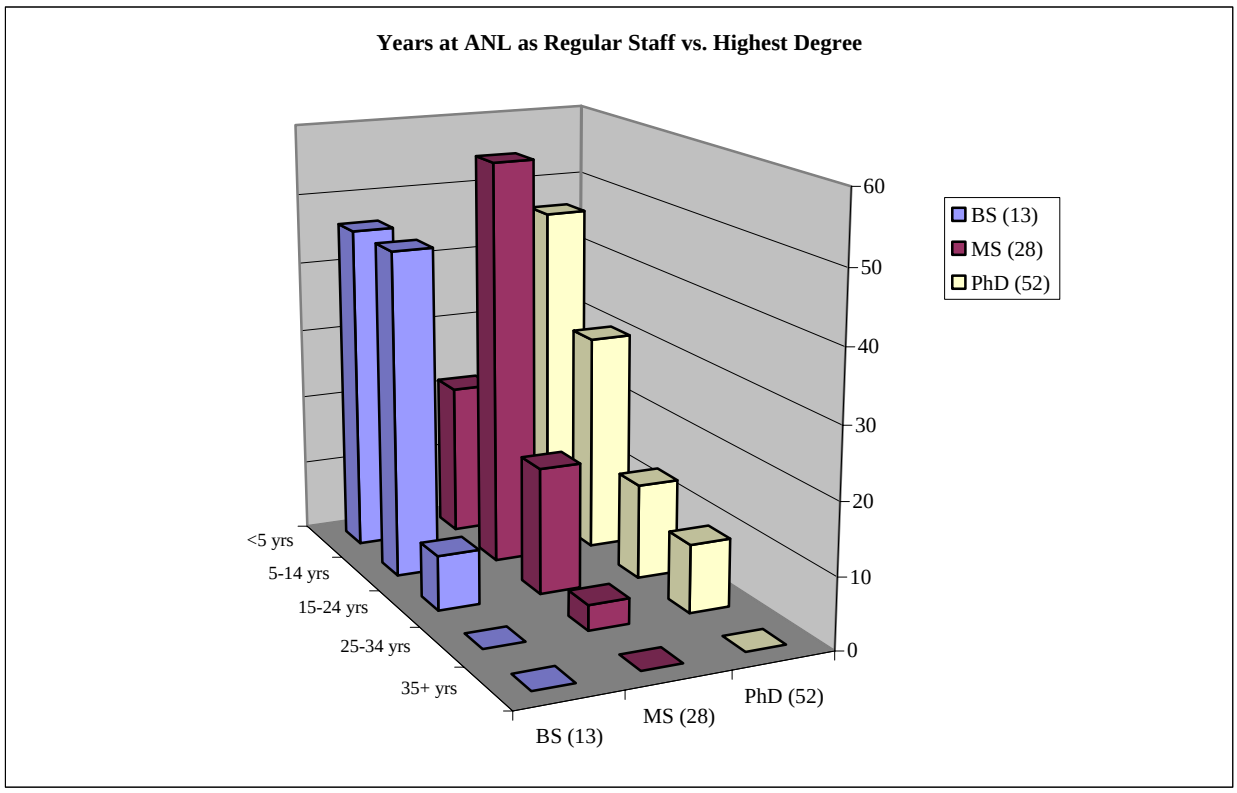
[a]100 responders answered this question of 103 total responders.

Figure 3.1B Question 23: What is your primary job function?[a]



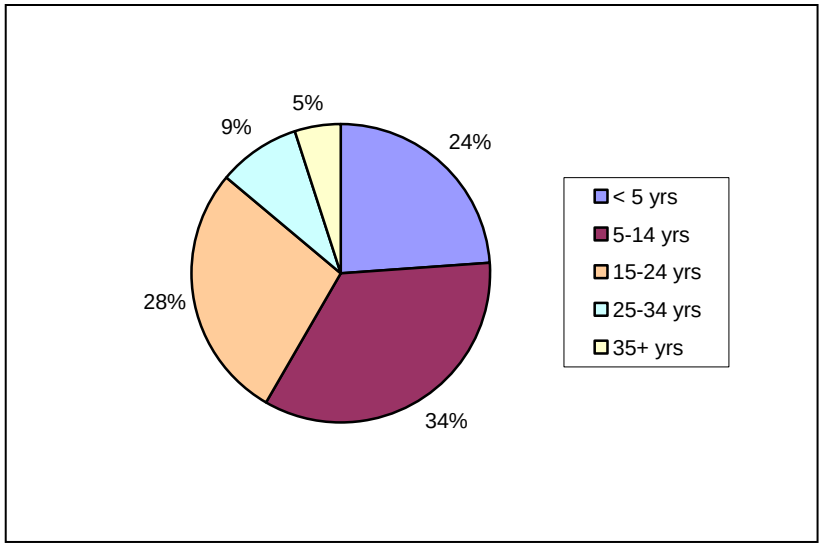
[a]100 responders answered this question of 103 total responders.

Figure 3.2 Question 24: How long have you been employed at Argonne as regular staff?[a]



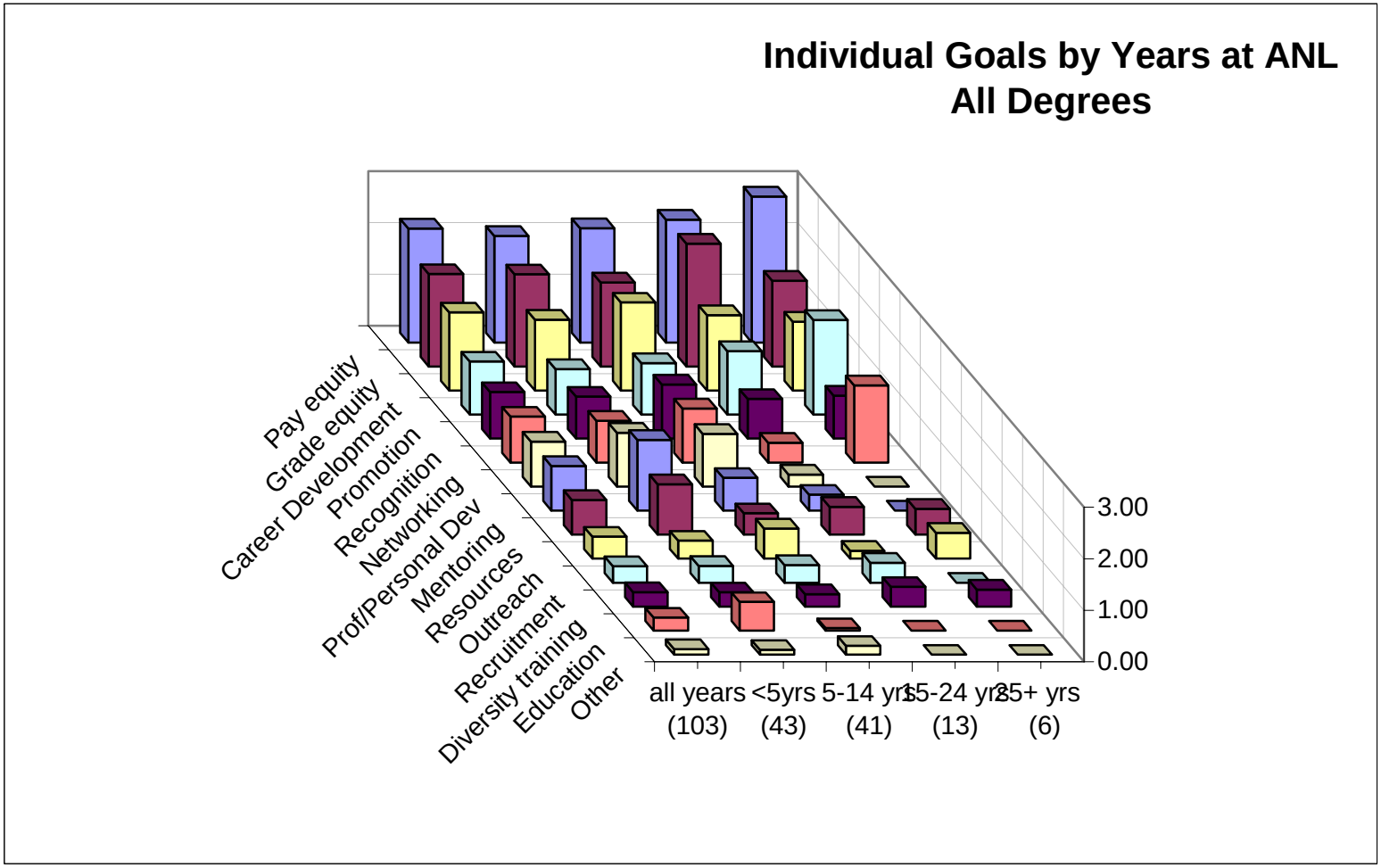
[a] For each degree and duration of employment group, bar height gives percentage of S&T women with that degree for that duration of employment group. Total number of women in each degree group is shown in parentheses.

Figure 3.3 Question 27: How many years since receiving your highest degree?[a]



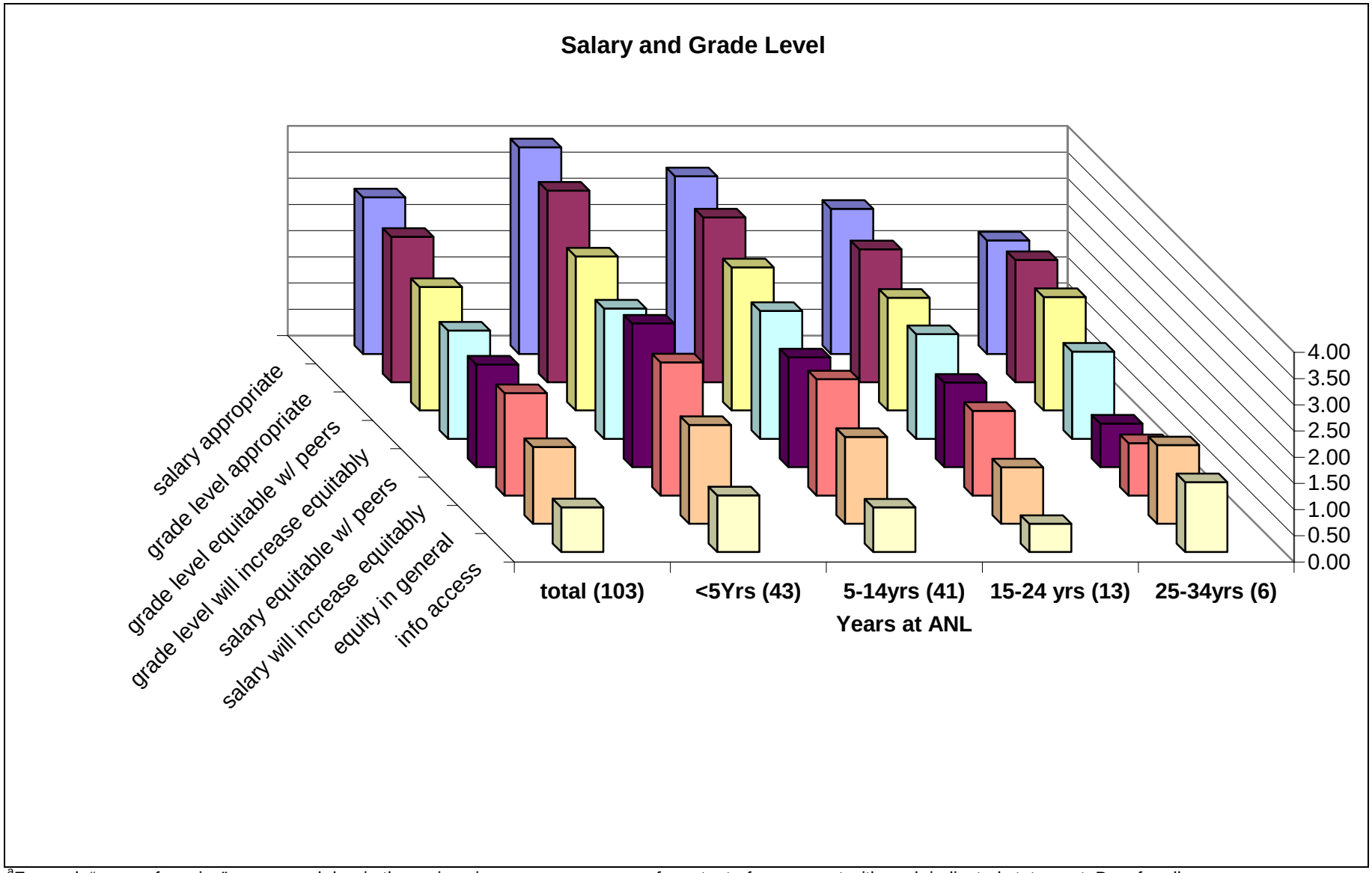
[a]101 responders answered this question of 103 total responders.

Figure 3.4 Question 5: Of the goals listed, please identify which four are most important to YOU as a woman in science and technology at Argonne[a]



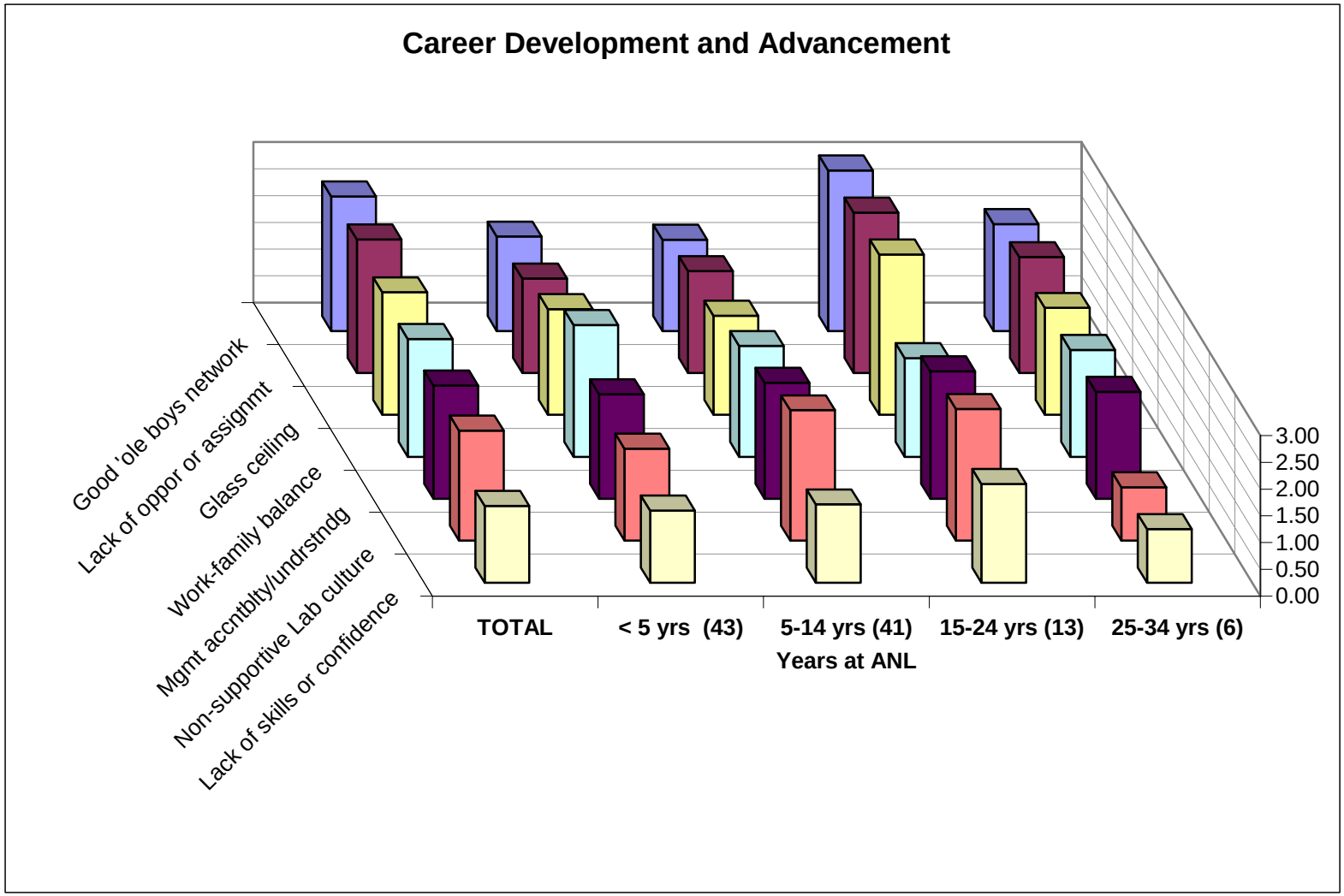
[a]For each "years of service" group, each bar in the series gives the average score of importance for each indicated goal. Bars for all groups were ordered according to high-to-low order of importance for the 'all years' group. Total number of respondents for each group is shown in parentheses. If all respondents in given group ranked given goal as #1 in importance, score would be 5.

Figure 3.5 Question 8: Perceptions regarding equity in salary, grade level[a]



[a]For each "years of service" group, each bar in the series gives an average score for extent-of-agreement with each indicated statement. Bars for all groups were ordered according to high-to-low order of agreement for the 'all years' group. Total number of respondents for each group is shown in parentheses. If all respondents in given group strongly agreed with statement, bar height would be 5.00.

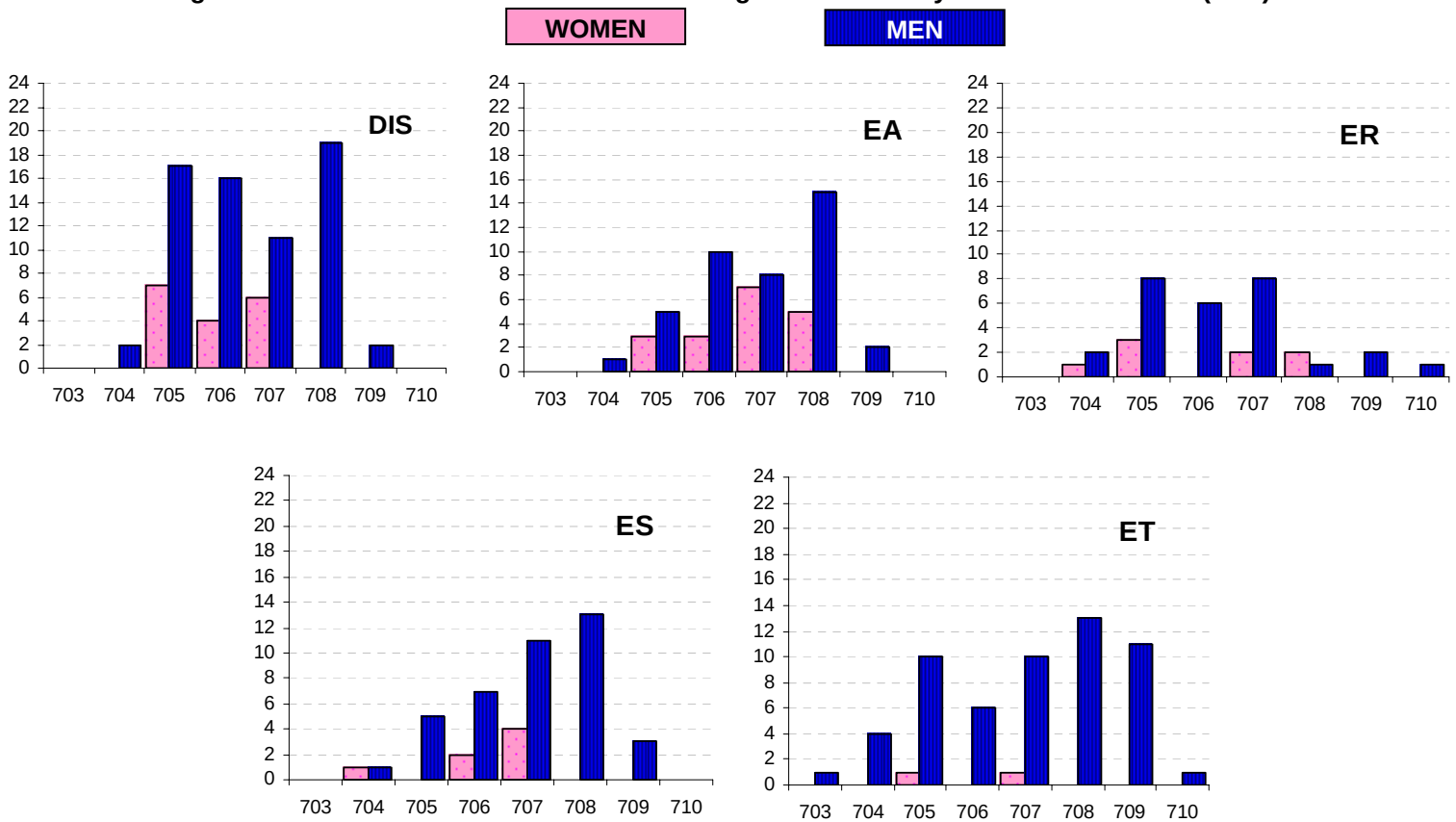
Figure 3.6 Question 15: Perceptions regarding barriers to career advancement[a]



[a]For each "years of service" group, each bar in the series gives an average score for extent-of-concern expressed regarding indicated barrier to career advancement. Bars for all groups were ordered according to high-to-low order of concern for the 'all years' group. Total number of respondents for each group is shown in parentheses. If all respondents in given group *strongly agreed* that given barrier was concern to them, bar height would be 5.00

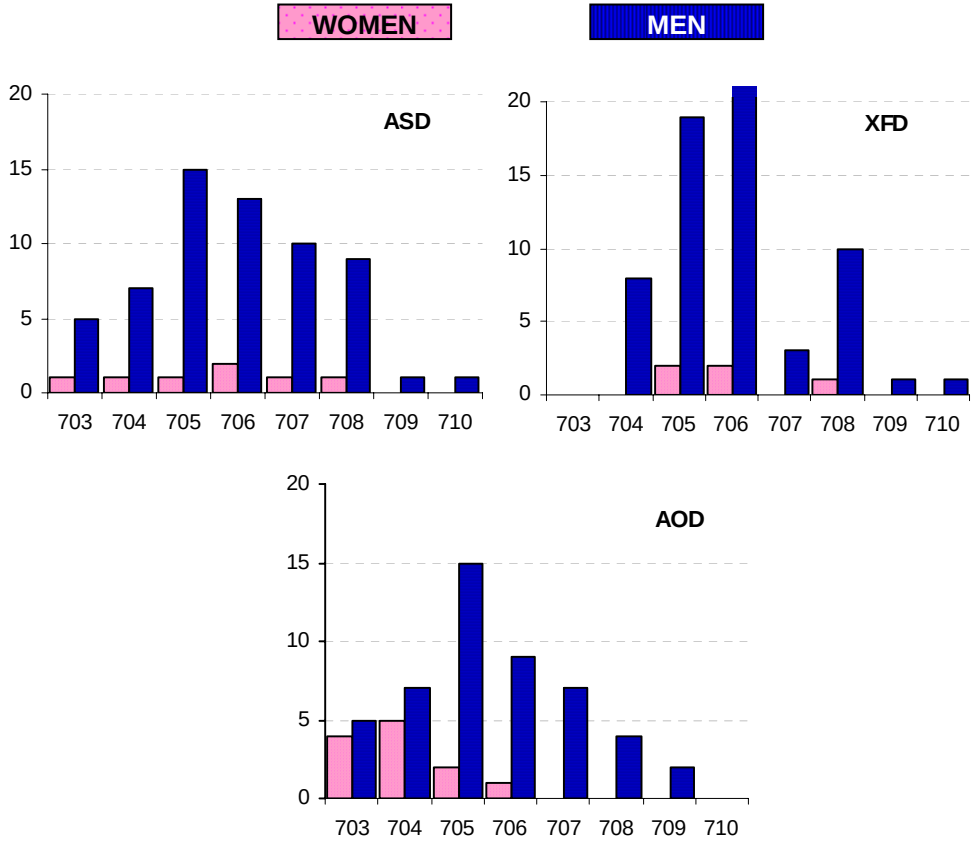
Grade	BTC		DIS		EA		ER		ES		EST		ET		EEST	
	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN
703	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
704	0	0	0	2	0	1	1	2	1	1	0	0	0	4	2	10
705	0	2	7	17	3	5	3	8	0	5	0	0	1	10	14	47
706	0	0	4	16	3	10	0	6	2	7	0	0	0	6	9	45
707	0	1	6	11	7	8	2	8	4	11	0	0	1	10	20	49
708	0	0	0	19	5	15	2	1	0	13	0	2	0	13	7	63
709	0	0	0	2	0	2	0	2	0	3	0	1	0	11	0	21
710	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	3
Total	0	4	17	67	18	41	8	28	7	40	0	3	2	56	52	239
700s	**0%**	**100%**	**20%**	**80%**	**31%**	**69%**	**22%**	**78%**	**15%**	**85%**	**0%**	**100%**	**3%**	**97%**	**18%**	**82%**
708 & higher	**0%**	**100%**	**0%**	**100%**	**23%**	**77%**	**33%**	**67%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**7%**	**93%**

Figure 4.1. Numbers of Men and Women in Argonne's EEST by Division and Grade (9/02)



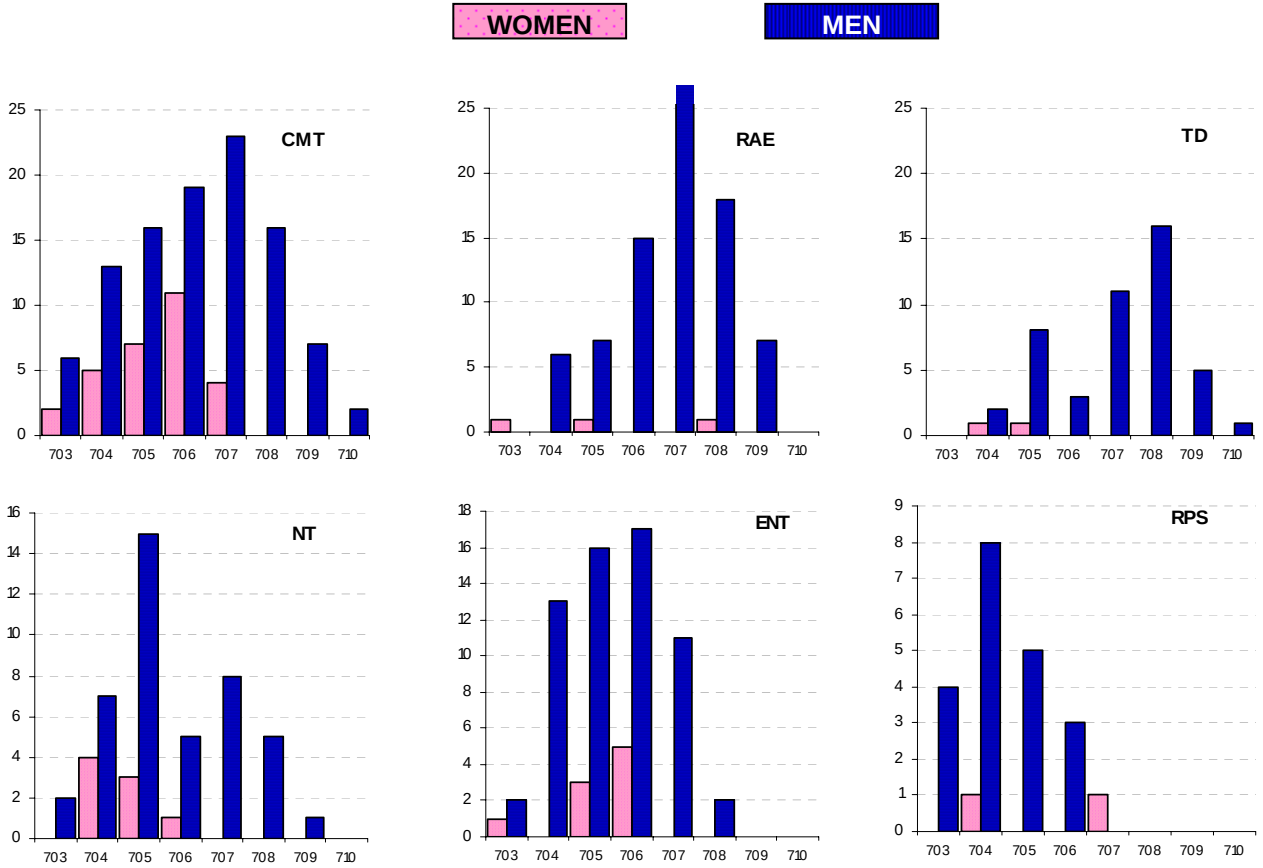
Grade	ASD		XFD		AOD		APS	
	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN
703	1	5	0	0	4	5	5	10
704	1	7	0	8	5	7	6	22
705	1	15	2	19	2	15	5	49
706	2	13	2	21	1	9	5	43
707	1	10	0	3	0	7	1	20
708	1	9	1	10	0	4	2	23
709	0	1	0	1	0	2	0	4
710	0	1	0	1	0	0	0	2
Total	7	61	5	63	12	49	24	173
700s	**10%**	**90%**	**7%**	**93%**	**20%**	**80%**	**12%**	**88%**
708 & higher	**8%**	**92%**	**8%**	**92%**	**0%**	**100%**	**6%**	**94%**

Figure 4.2. Numbers of Men and Women in Argonne's APS by Division and Grade (9/02)



	CMT		RAE		TD		ED /ERD		ERA		NT		ENT		RPS		FAC		ERA	
Grade	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN
703	2	6	1	0	0	0	0	0	0	0	0	2	1	2	0	4	1	2	5	16
704	5	13	0	6	1	2	0	0	0	0	4	7	0	13	1	8	0	11	11	60
705	7	16	1	7	1	8	0	0	0	0	3	15	3	16	0	5	1	13	16	80
706	11	19	0	15	0	3	0	0	0	0	1	5	5	17	0	3	0	9	17	71
707	4	23	0	28	0	11	0	1	0	0	0	8	0	11	1	0	0	2	5	84
708	0	16	1	18	0	16	0	1	0	0	0	5	0	2	0	0	0	0	1	58
709	0	7	0	7	0	5	0	0	0	3	0	1	0	0	0	0	0	0	0	23
710	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	4
Total	29	102	3	81	2	46	0	2	0	4	8	43	9	61	2	20	2	37	55	396
700s	**22%**	**78%**	**4%**	**96%**	**4%**	**96%**	**0%**	**100%**	**0%**	**100%**	**16%**	**84%**	**13%**	**87%**	**9%**	**91%**	**5%**	**95%**	**12%**	**88%**
708 & higher	**0%**	**100%**	**4%**	**96%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**0%**	**0%**	**0%**	**0%**	**1%**	**99%**

Figure 4.3. Numbers of Men and Women in Argonne's ERA by Division and Grade (9/02)



Grade	BIO		CHM		HEP		MCS		MSD		PHY		PNS		PBCS	
	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN
703	0	5	0	0	0	3	1	0	0	1	0	2	1	10	2	21
704	6	3	1	1	0	3	0	8	1	4	0	6	1	6	9	31
705	5	7	0	7	0	6	6	14	6	16	3	9	0	10	20	69
706	1	3	1	7	1	9	3	6	1	6	0	9	1	1	8	41
707	1	6	3	9	0	13	1	3	0	10	0	5	0	4	5	50
708	0	1	0	11	0	4	0	9	0	11	0	4	0	3	0	43
709	3	3	2	9	0	6	0	4	0	12	0	15	0	4	5	53
710	0	0	0	0	0	1	0	3	0	3	0	2	0	1	0	10
Total	16	28	7	44	1	45	11	47	8	63	3	52	3	39	49	318
700s	**36%**	**64%**	**14%**	**86%**	**2%**	**98%**	**19%**	**81%**	**11%**	**89%**	**5%**	**95%**	**7%**	**93%**	**13%**	**87%**
708 & higher	**43%**	**57%**	**9%**	**91%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**0%**	**100%**	**5%**	**95%**

Figure 4.4. Numbers of Men and Women in Argonne's PBCS by Division and Grade (9/02)

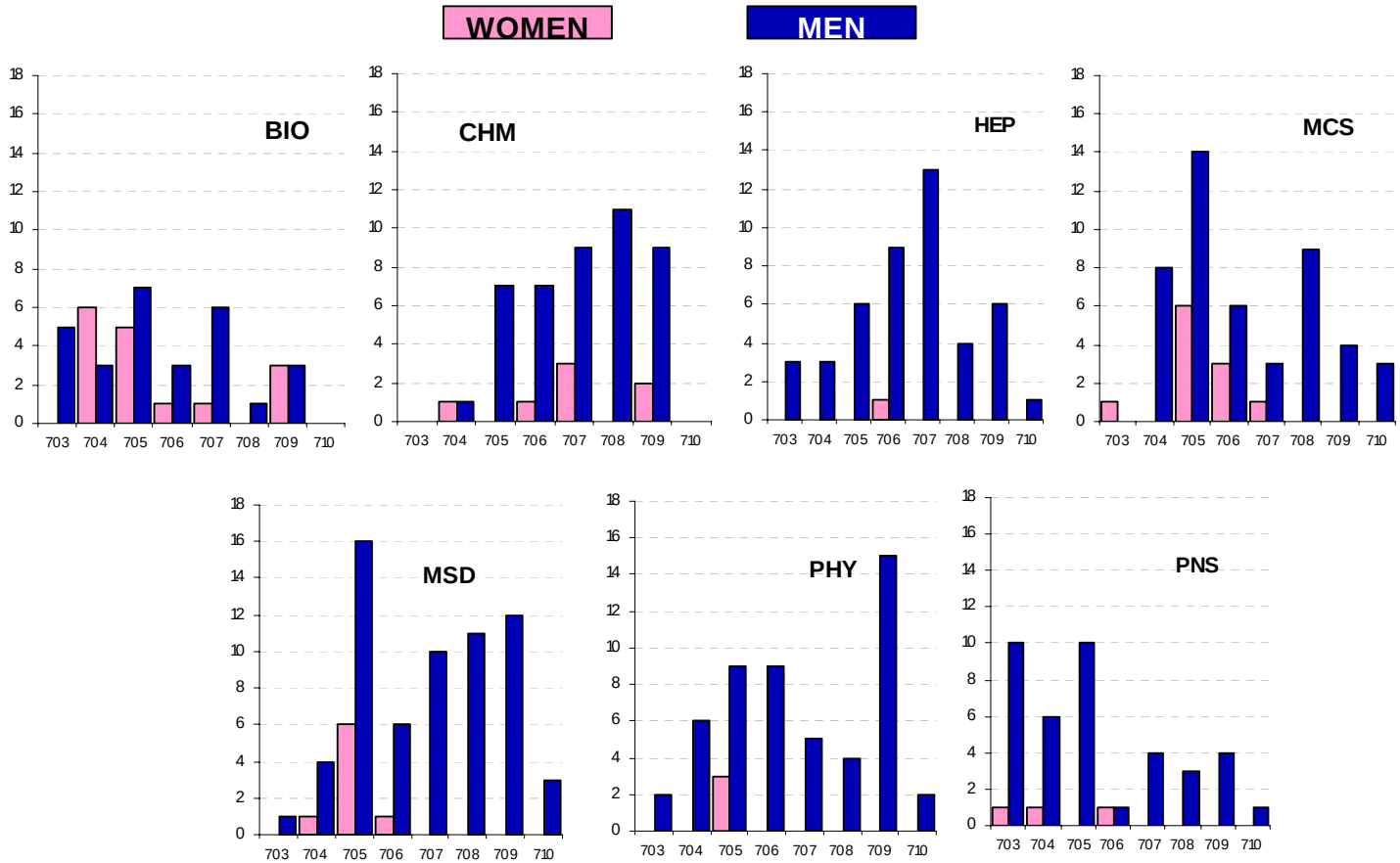
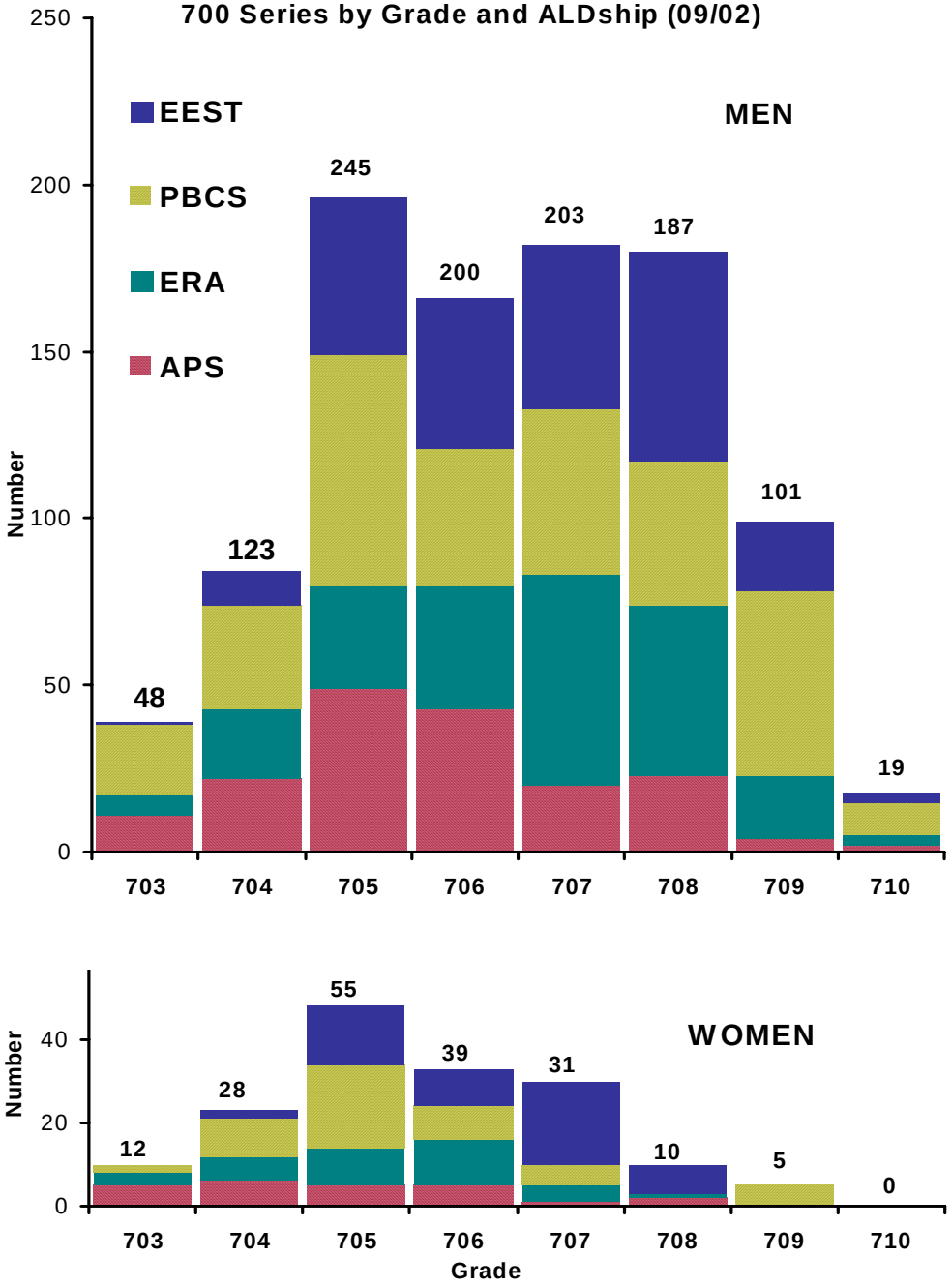


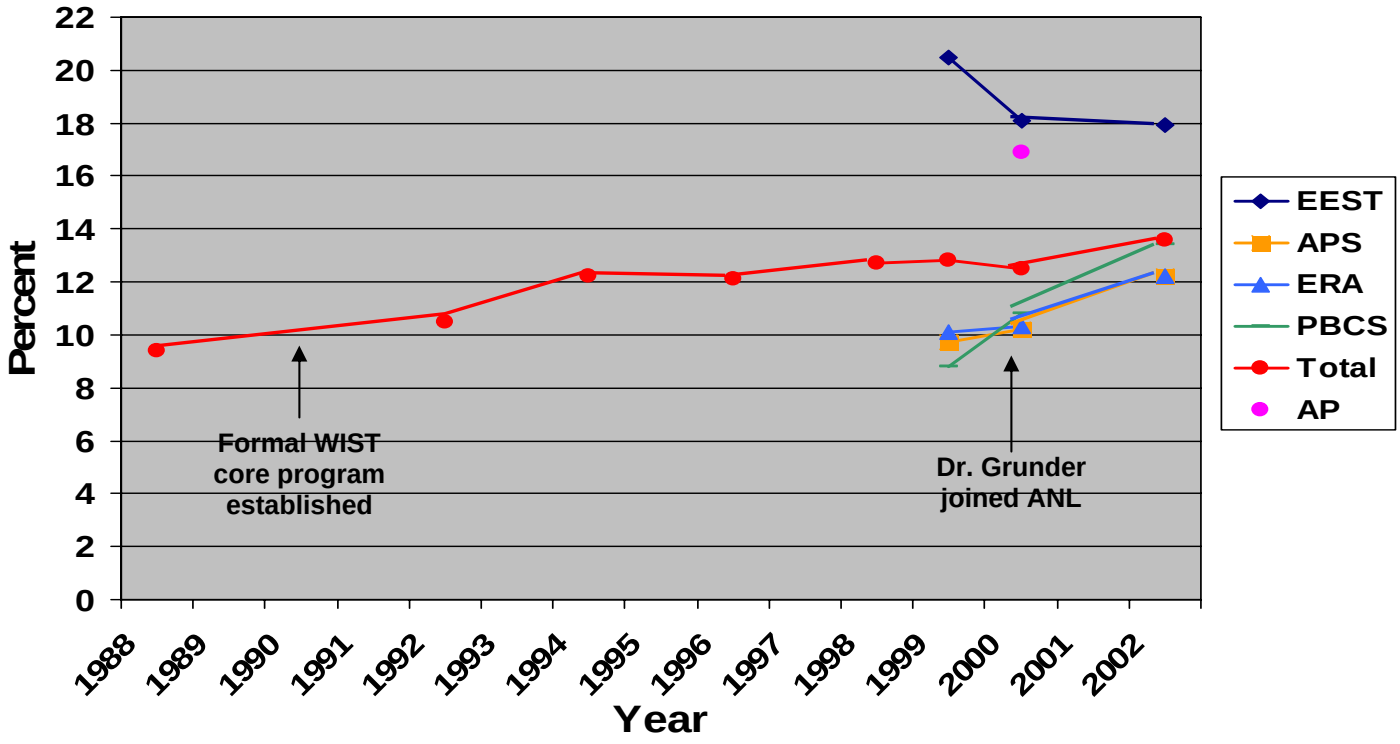
Figure 4.5. Numbers of Men and Women in 700 Series by Grade and ALDship (09/02)



Interpretation of Chart: This chart shows the number of regular exempt 700-series employees employed at each level at Argonne in September 2002, including both ANL-E and ANL-W. Data are presented separately for men and women and, for each gender, broken down by ALDship.

Results show that there were many more 700-series men (1126) than women (180) comprising the four indicated ALDships. In addition, while men populated the first four levels of PhD employees (705-708), women peaked at the starting level for PhD employees (705), and fell off sharply above level 707, with no women at 710. This peak for women at level 705 could reflect a number of factors: 1) new PhD hires at entry level, 2) delay of promotions, 3) lack of retention, and 4) few hires of women at higher levels.

Figure 4.6
Percentage of S&T Women over Time



[a]Striking decrease in percentage women in EEST and corresponding increase in PBCS from 1999 to 2000 reflect transfer of Biosciences Division from EEST to PBCS ALDship during this period.
[b]AP (availability pool) = percentage of women in estimated availability pools for Argonne's mix of S&T disciplines (~16.9%) (availability pool estimates provided by HR for 09/00.)

Interpretation of graph: This graph shows changes with time in the percentage of regular exempt 700-series S&T staff members who were women, with breakdown by ALDship for the latest years. Data were taken from annual Affirmative Action Program reports and provided by members of Human Resources Division of Argonne. Also presented as single point for 2000 is the percentage value that would be present if ANL S&T employees reflected availability pools (AP) estimated for that year (see Section 4 for details).

Several aspects are of note:

1) In 2002, S&T women were at a higher percentage, 13.6%, than in any other year, and had increased from 12.5% in 2000. The latter rise may reflect efforts of the new ANL administration, Drs. Grunder and Hartline, who took office in 2000/2001.

2) There was a sustained rise from about 10% women to about 12% women after establishment of the formal core of the WIST program at Argonne in 1990. The WIST program may have contributed positively to hiring and retention of S&T women during this period. (An analogous graph of MIT S&T women was called the "pancake" graph because it was totally flat at ~10% women over a similar time period) (N Hopkins, personal communication).

3) The "availability pool" (AP) of ~16.9% S&T women is above any percentage value in Argonne's history, but the Laboratory has reduced the 'gap' by one quarter in the last two years. Continued significant effort will be needed to bring Argonne's S&T staff in line with estimated availability pools for the Argonne mix of disciplines.

Argonne National Laboratory's
Women in Science and Technology (WIST) Program Survey
With Results in Blue

ANL WIST PROGRAM

1. Have you heard of Argonne's WIST program?

98 yes
5 no.

If yes, how did you hear about WIST?

45 Attendance at WIST-related events
41 From female colleague(s)
40 Argonne News

Other sources of information: Invitations to WIST events; Argonne website (3x); Was WIST founder (2x); SCSW conference; Division; Section Manager; Email announcement; Long-time participant; DOE program review ~10 y ago

2. Have you participated in WIST activities?

33 currently
49 in the past
32 no

3. Which of the following WIST activities have you heard of (HO) or participated in (PI)?

HO	PI	
84	60	a. Science Careers in Search of Women Conference (annual careers conference for high school young women)
66	37	b. WIST-initiated Lab Director's Special Colloquia (N Hopkins, MIT, '00; V Valian, Hunter Coll, '01)
63	47	c. First Friday Forum (informal monthly noon-time discussion among Laboratory women)
55	10	d. WIST Steering Committee (guides WIST Program Initiator)
51	2	e. WIST Program Initiator (WPI: position held by ANL S&T woman; appointed by Lab Director; paid to invest 30% effort over 2 y period to help initiate WIST activities) (i.e.Have you been WPI?)
50	29	f. WIST Technical Symposia (featuring ANL S&T women and Chicago area graduate students and postdocs; held at ANL 1994, 1996)
42	9	g. Saturday Science at Argonne lecture series (New hands-on lecture series by ANL S&T women for high school young women and men)
40	26	h. WISTALK (email network among women at ANL)
		i. Other: Graduate school mentoring days; Lunches with female grad students; Visitor's center kiosk; Luncheons with female students and faculty; Monthly ANL-W meetings and service projects (3x)

Written comments included: 1) problems for several women who work offsite regarding participation in WIST; 2) lack of effective publicity; 3) down side of WIST Technical Symposia because real peers not present (males).

4. Please rate the following goals **for WIST** at Argonne (fill in appropriate numbers).
5 Very Important (VI) **3** Important (I) **1** Somewhat Important (SI) **0** Not Important/Not Applicable (NI/NA)
Numbers given are: average score (AS) of importance followed by number of responders rating a given goal as 5 (VI), 3 (I), 1 (SI), or 0 (NI/NA) in importance, for each goal. Answers are listed high to low according to average score of importance. Note: AS for goal = 5.00 if all responders rated it as very important.

AS	VI	I	SI	NI/NA	
3.92	66	22	8	2	a. Pay equity
3.91	66	22	7	2	b. Status/Grade level equity
3.69	54	35	5	1	c. Women's career development
3.45	53	26	12	5	d. Promotion of women
3.44	49	32	13	3	e. Networking among ANL women
3.37	49	29	15	4	f. Recognition of women's technical achievements
3.32	46	33	13	2	g. Women's personal & professional development
3.21	45	30	16	5	h. Research resources equity (Lab space, Division funds, LDRD funds, etc.)

3.08	41	31	19	3	i. Recruitment of women
3.05	35	41	16	3	j. Mentoring
2.81	36	28	25	6	k. Education on women's issues
2.51	24	36	31	4	l. Outreach to external S&T women & students
2.45	26	31	29	9	m. Diversity-sensitivity training for management

In written comments, retention of S&T women at Argonne was identified as an important WIST goal that had not been listed. Also identified were importance of an S&T women's support group to connect to other career women, and workplace support for career vs. personal responsibilities for childcare, eldercare, etc., which typically fall on women more than men.

5. Of the goals listed above, please identify below which four are most important to **YOU** as a woman in science and technology at Argonne. (Note that some respondents marked 5 goals, so 5 levels of importance were assigned to identified goals).

Numbers given are: average score of importance (AS) (Scores were 5 for 1st in importance, 4 for 2nd in importance, 3 for 3rd in importance, 2 for 4th in importance, 1 for 5th in importance), followed by number of responders ranking a given goal as 1st, 2nd, 3rd, 4th, and 5th in importance, for each goal. Answers are listed high to low by average score. AS for goal = 5.00 if all respondents identified it as 1st in importance. Value in parentheses is total of women who scored given goal as one of top 5.

AS	1st	2nd	3rd	4th	5th	
2.21	23	15	13	7	0	a. Pay equity (58)
1.80	13	20	10	5	0	b. Status/Grade level equity (48)
1.51	12	11	15	3	1	c. Women's career development (42)
1.03	5	6	13	9	0	d. Promotion of women (33)
0.90	4	11	5	7	0	e. Recognition of women's technical achievements (27)
0.89	8	5	8	4	0	f. Networking among ANL women (25)
0.87	6	10	2	7	0	g. Women's personal & professional development (17)
0.86	8	4	7	6	0	h. Mentoring (25)
0.67	5	2	6	9	0	i. Research resources equity (Lab space, Division funds, LDRD funds, etc.) (23)
0.43	3	5	1	3	0	j. Outreach to external S&T women & students (12)
0.4	3	0	3	4	1	k. Recruitment of women (11)
0.28	2	2	2	2	1	l. Diversity-sensitivity training for management (9)
0.25	1	2	0	6	1	m. Education on women's issues (10)
0.11	0	1	1	2	0	n. Other (4)

Written comments included several that identified 'educating management' as an important goal for WIST. One person put it this way:

> *A main problem is that the management doesn't quite see the issues and think they are objective. So they may not feel that they need or can do anything about it. Make both the ANL management and everyone else aware that (1) there ARE women's issues here; (2) they impact ANL's well-being; (3) we CAN do something about it.*

6. What do you think WIST should be doing to address WIST issues?

NOTE: Original responses are given here. All references that might identify specific person have been removed.

Specific Action Items

- Some kind of electronic forum would be extremely useful for women who work off-site.
- Survey is a good start. Listen to wants and needs of women.
- Encourage more ANL women to be involved. WIST activities should be more aggressively promoted so women are aware of them.
- More symposia
- More publicity – maybe some more 'social' events (like lunch) to help women become acquainted.
- First address the visibility issue by advertising events sponsored by WIST to all the Lab (i.e. Argonne News, website, etc)
- Stay away from 'social' projects. Implement a mentoring program for males & females
- More consistent seminars at West. Establish regular programs with local schools.
- Hold social hours – say once a month for ANL women to casually interact and network.
- More educational seminars on women's issues (Hopkins and Valian were good); 'how to' seminars for women; mentoring program + training in being a mentor.

Overall Strategy

- Concentrate on the issues determined by this survey as statistically the most important ones and reserve the remaining for later scrutiny.
- I hope you received good input from this survey regarding what female S&T staff need from the program. Many of the issues may be addressed more effectively on a Division vs. Laboratory level – Division-based WIST sections may be worth considering.
- WIST should publicize the work of the outstanding women scientists in the Lab. This would be an incentive for other women at the Laboratory to create a network that will enhance the scientific research performed.
- 1) Recruitment of women (focus); 2) Recruitment and mentoring women students; 3) Training specific for women professional development; and 4) Networking women through activities/training/lectures.
- Continue with the science careers in search of women conference. Delve into pay equity and promotion equity issues. Publish list of women at Argonne, years of service, grade level, and Division (if possible w/o violating privacy of personal info).
- Publicize existing pay and status/grade level disparities (if they exist).
- Address research opportunities and let ANL technical women know about these opportunities (i.e., calls for proposals, jobs…), maybe through a web site or newsletter.
- Push for equal pay --- I think recruiting more women is a mistake unless they are QUALIFIED! Back in the 90's we had a push for more women and they gave us a bad name because they were not qualified to work here. We don't need that again!
- Allocate resources to support career development of women S&T's in the cases where these women don't have adequate Division support. Make opportunities for junior women to meet with more senior women to 'learn the ropes'.
- Focus on providing a workable mentoring program – with follow up. I do not think WIST should be the group to fix the pay equity problem. It is illegal for the lab and should be taken care of by legal and HR.
- Involve ANL-W women, not just the ones at ANL-E.

Role of Management

- Make both ANL management and everyone else aware that 1) there ARE women's issues; (2) they impact ANL's well-being; (3) we can do something about it.
- Continue pushing. Recommend moving diversity office directly under Lab Director
- Assess status of lab on women's issues and educate lab management on where we are doing well or not.
- Work and parenting – HR and ANL Director – DOE policy on the issue.
- Work with upper management. There seems to be a disconnect.
- Continue to bring to attention of Lab management
- Accurately identify where inequity problems really exist and work with management to correct them, but also recognize where progress has been made and where women are on an equal footing.
- Establish communication between woman scientists and the administration
- Management should do lots more, rather than WIST
- How do you get senior lab management to take this issue of women's equity seriously -- that is a very hard nut to crack.
- Involve congressional representatives and DOE/DOD management.
- Needs high level support
- Demand greater attention from management and human resources.
- Come up with formal plan, get upper management buy-in, and implement the plan, which should include action steps and something to measure success.

General Advice or Observations

- Get facts – don't just look like a feminist group.
- Continue current programs
- Keep on working on it!
- Keep trying to address these difficult issues – don't give up.
- Don't know
- I do not know how WIST operates and if it could influence this.
- Never give up!
- Needs a 'mission' – shouldn't be a gripe group.

ARGONNE ENVIRONMENT

Note that you will be asked to communicate how you perceive your own position at Argonne and also your perception of the position of ANL women scientists/engineers in general. Though your perception may feel like it is not based on firm data, the collective survey results may help to identify the need for more data regarding a given issue.

In a number of places, you will be asked to compare your position to that of a group of your 'comparable peers', i.e., peers with similar credentials, skills and grade level, who may be male or female. To do this in a meaningful way, you may first want to specifically identify a small group of persons whom you consider to be your comparable peers at Argonne.

Please rate the following statements using the scale provided below (fill in each blank with the appropriate number)
5 Strongly Agree (SA) **4** Agree (A) **3** Neutral (N) **2** Disagree (D) **1** Strongly Disagree (SD) **0** Not Applicable to Me or Don't Know (NA/DN)
Numbers given are: average score (AS) for extent of agreement, followed by numbers of responders who rated the statements as 5 (SA), 4 (A), 3 (N), 2 (D), or 1 (SD). For each category, answers are listed high to low by average score. Note: AS = 5.00 if all respondents strongly agreed.

7. **Job Satisfaction**

AS	SA	A	N	D	SD	
4.54	51	46	9	1	0	a. My work at Argonne is important.
3.93	25	55	16	5	2	b. My work at Argonne is enjoyable.
3.81	18	58	18	7	2	c. I am generally happy in my work.
3.16	16	30	25	21	8	d. I would advise young female students to take the path I did.

Comments related a wide range of feelings with respect to job satisfaction, depending on the individual's experience; no clear trend of satisfaction or dissatisfaction was identified.

8. **Salary & Grade Level**

AS	SA	A	N	D	SD	
2.99	8	40	19	20	11	a. My salary level is appropriate to my knowledge, skills and experience.
2.78	8	38	11	23	15	b. My grade level is appropriate to my knowledge, skills and experience.
2.36	9	27	12	20	14	c. My grade level is currently equitable with that of my comparable peers.
2.04	8	17	14	24	12	d. My grade level will continue to increase equitably with that of my comparable peers
1.96	7	19	16	15	13	e. My salary level is currently equitable with that of my comparable peers
1.95	5	16	16	27	10	f. My salary level will continue to increase equitably with that of my comparable peers
1.45	0	12	12	26	13	g. In general, there is equity in salary/grade level for Argonne women scientists/engineers relative to their comparable peers
0.84	1	5	9	11	13	h. I can access information regarding equity of my own salary and grade level from HR's Diversity Program Office

Many written comments expressed the view that responders did not have the information to compare themselves to their comparable peers with regard to salary and grade level equity.

9. **Recognition & Benefits**

AS	SA	A	N	D	SD	
4.28	51	39	8	3	0	a. I consider work benefits other than salary and grade level to be important (professional recognition, job assignments, access to in-house funds, Lab-wide committee assignments, travel).
3.28	18	38	20	14	8	b. I have attained recognition at Argonne in ways other than salary and grade level.
2.58	10	33	14	17	8	c. I have attained these other work benefits at Argonne at a level and of a kind similar to those of my comparable peers
2.48	10	31	16	13	8	d. I will continue to attain recognition at Argonne in ways other than salary and grade level similar to my comparable peers
1.86	4	20	12	24	8	e. Recognition & benefits other than salary and grade level for Argonne women scientists/engineers is equitable relative to their comparable peers

Most written comments indicated that responders had a hard time comparing themselves to their peers because of too little information and insight. One person solved the problem of not enough recognition at Argonne by seeking and attaining recognition outside of Argonne, after which internal recognition followed. Post-docs and STAs identified their concern regarding the lack of benefits for persons in their positions.

10. **Resources** .

AS	SA	A	N	D	SD	
2.50	14	39	7	4	3	a. I have access to appropriate lab space
2.38	13	38	6	4	2	b. My access to lab space is similar to that of my comparable peers
1.98	9	27	10	6	9	c. I am able to take control of or redirect my research as allowed in my job description.
1.43	8	12	6	13	15	d. I currently have, or in the past have received, research program funds from within my division
1.80	6	22	11	12	10	e. My access is similar to that of my comparable peers

11. I have submitted group effort research proposals in response to the suggestions/encouragement of

AS	SA	A	N	D	SD	
1.61	11	22	1	8	3	a. my management
1.29	7	18	2	9	2	b. my peers
1.40	12	11	5	10	5	c. I have received or expect to receive research funding for said efforts.

12. I have submitted <u>individual</u> research proposals in my area(s) of interest based on the guidance/encouragement of

AS	SA	A	N	D	SD	
1.12	7	13	2	8	6	a. my management
0.97	2	13	5	10	5	b. my peers
1.04	7	9	2	12	6	c. I have received or expect to receive research funding for said efforts.

Comments on resources were both positive and negative. Two comments indicated concern regarding equitable distribution of funds for group-funded projects once the money comes in.

13. **Work Environment** .

AS	SA	A	N	D	SD	
3.96	28	54	13	5	3	a. My workplace environment is acceptable
						In group meetings, my ideas are listened to equally to those of others in the group
3.60	23	52	13	3	3	b. by my peers
3.29	15	47	19	8	3	c. by my management
2.86	11	34	19	21	5	d. I am included in impromptu hallway/lunchtime technical and strategy discussions to the same extent as my peers.
2.25	4	28	20	19	2	e. Overall, the ideas of Argonne women scientists and engineers are listened to equally to those of their peers.
1.97	7	10	11	29	37	f. I hear inappropriate jokes/comments/rumors that negatively impact my communication and relationship with co-workers and supervisors.
1.92	5	21	18	5	5	g. Overall, S&T women at Argonne are included in impromptu hallway/lunchtime technical and strategy discussions to the same extent as their peers.

Comments generally described the experience of S&T women being in a minority and not being included or listened to. One telling comment stated that "'management' is highly diverse; some men listen to women and some don't" – implicit in this somewhat positive statement is the assumption that 'management' are men not women.

14. **Mentoring & Career Development**

AS	SA	A	N	D	SD	
2.42	7	26	19	16	21	a. My division management has been helpful to me regarding my career and skillset development
2.15	11	24	3	20	21	b. I currently have, or have had, a mentor at Argonne
2.06	7	24	8	21	15	c. I currently am, or have been, a mentor to a co-worker at Argonne
1.37	2	3	16	16	39	d. Argonne HR has been helpful to me regarding my career and skillset development

Comments were about 2:1 in favor of responders having positive vs. negative support of their career development from mentors, Division management, and WIST. Some persons were clearly frustrated and others were satisfied.

15**. Career Advancement**

AS	SA	A	N	D	SD	
4.22	50	39	8	2	1	a. Career advancement is important to me.
2.92	23	34	13	5	1	b. I perceive major barriers/concerns regarding my career advancement. These include:

AS	SA	A	N	D	SD	
2.51	23	24	7	13	1	"Good ole' boy" system
2.50	21	19	16	12	4	Lack of opportunities or assignments required to advance
2.29	16	21	15	12	3	"Glass ceiling" constraints
2.20	16	19	12	15	5	Work/Family balance
2.12	13	20	12	16	5	Lack of effective management accountability and understanding regarding diversity issues
2.06	9	21	16	16	3	Non-supportive Lab culture
1.44	4	11	8	21	18	Lack of essential skills or confidence to advance
0.13	1	2	0	0	0	Other_____

AS	SA	A	N	D	SD	
2.95	34	21	6	11	10	c. Family responsibilities have had or will have a significant impact on my career advancement.
2.49	30	15	11	4	5	d. On-site daycare is important.

Comments spoke mainly to day care issues (their importance and expense) and the importance of the attitude, understanding, commitment, and leadership communicated by top management in dealing with barriers to the advancement of S&T women at the Lab.

Additional Questions

16. What areas of Laboratory responsibility might you like to try in the future?

35 group leader	22 section leader	13 administrative research
13 associate division director	15 division director	15 Laboratory management
12 WIST program initiator	34 Lab-wide committees	other

Comments included:

- Don't see opportunity to lead as I would like to (4 of 7 comments)
- Not interested. I like to do science.
- Am group leader; would like to be full manager or section head!

17. What additional funding, training, or support, if any, would be helpful to your career?

Reponses (total of 34) related to:

- Education (10/34 responses)
- Mentoring/Networking (7/34 responses)
- Funding (8/34 responses)
- Work/Family Balance (2/34)

18. What support policies, procedures, or personnel items might be of help to you or your family?

Responses (total of 15) related to:

- Work/family Balance (11/15!), for example, part time, flex time, job-sharing, leaves of absence
- Access to in-house research funds (2/15)

19. Would you like to be included on the WISTTALK email network? _____ Yes __no

email address: _____

DEMOGRAPHICS:

This information will be kept confidential and used strictly for the purpose of obtaining statistics. No data will be communicated that allows individuals to be identified.

20. *What is your age?*

1.Under 25 years	1
2.25-34 years	16
3.35-44 years	39
4.45-54 years	28
5 .55 years or over	16
Total:	100

21. *What is your gender?*
1.M 0
2.F 102

22. *What is your job category?*

1.Scientific/Engineering Assistant, Scientific Associate, Engineering Specialist	14
2.Assistant Scientist/Engineer	16
3.Scientist/Engineer	38
4.Senior Scientist/Engineer	7
5.Post Doctoral Appointee	8
6.Other Professional:	17
Total:	100

23. *What is your primary job function?*

1.basic/applied research	59
2.research support	19
3.research administration/management	7
4.program management	8
5.other	8
Total:	101

24. *How long have you been employed at Argonne as regular staff?*

1.less than 5 years	37
2.5-14 years	40
3.15-24 years	13
4.25-34 years	6
5.35 years or more	0
Total:	96

25. *How long have you been/were you employed at Argonne as temporary/other staff?*

1.less than 5 years	52
2.5-14 years	19
3.15-24 years	1
4.25-34 years	0
5.35 years or more	1
6.No answer	30
Total:	103

26. *What is your highest degree?*

1.Associate degree	2
2.Bachelor (B.S. or B.A.)	11
3.Master (M.S., M.A. or M.B.A)	29
4.Doctorate (Ph.D. or M.D.)	56
5.Other	2
Total:	100

27. *Years since receiving highest degree?*

1.less than 5 years	24
2.5-14 years	35
3.15-24 years	28
4.25-34 years	9
5.35 years or more	5
Total:	101

28. *In which field did you receive your highest degree?* _____

29. *Do you have degrees in multiple disciplines?* 37 yes 59 no
Total: 96

30. *What is your grade level?*

1.600 series	10
2.700-703	9
3.704-705	29
4.706-707	31
5.708 and above	8
6.800 series	1
7.other	3
Total:	91

31. *Years at current grade level*

1.less than 5 years	67
2.5-14 years	26
3.15-24 years	1
4.25-34 years	0
5.35 years or more	0
Total:	94

32. *What is your division?* Results omitted because specific individuals could be identified as respondents.

Name (optional) _____

Additional Comments:

Of the 27 additional comments,

- 4 were positive regarding WIST or the survey
- 3 were negative regarding WIST – not enough time for WIST, not hitting the mark, no help
- 4 praised their position at ANL
- 6 expressed frustration regarding some aspect of ANL
- 2 related to work/family balance issues