

Gender Equity in a Department of Energy National Laboratory: Report of a COACH-Sponsored Survey, Interviews, and Workshop Experience

Abstract

- The DOE Sponsored National Laboratories perform work considered crucial to sustaining national scientific and technical capabilities. Employing the most talented and accomplished scientists through tapping the nation's wide diversity of expertise is central to their success. Yet, only a small proportion of the research staff at national labs are women, and the percentages are even smaller in leadership positions, proportions that appear to be noticeably smaller than in the academic sector.
- COACH was invited to conduct a workshop on employee negotiations at one national lab in the spring of 2013 and, as part of this process, gathered information about the career concerns of women scientists at the lab. Data gathered from written surveys, formal interviews, and observations at the workshop indicate that the women were highly dedicated to their science and enjoyed their work. However, the vast majority also expressed concerns related to workplace climate, communication between management and staff, transparency of procedures and policies, and opportunities for advancement. While the majority of interviewees felt that they had not personally experienced gender inequities, they thought that other individuals and experienced them and/or that they were evident at an organizational level.
- Three general recommendations regarding COACH support for the lab were derived: 1) employee training regarding communication and management skills, career development and networking, work-life balance, and cross-cultural communication; 2) consultation on developing effective processes for promoting greater equity, and 3) monitoring the lab's progress in promoting equity.
- The success of the National Science Foundation sponsored ADVANCE program in promoting equity in the academic world is cited as a possible model for promoting equity in the national labs. Understanding the extent to which the concerns expressed by the women in the lab discussed in this report generalize to other settings is a crucial first step in the process.

**Gender Equity in a Department of Energy National Laboratory:
Report of a COACH-Sponsored Survey, Interviews, and Workshop Experience¹
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The Department of Energy (DOE) National Laboratories are one of the most important assets in the nation's research enterprise. The labs are charged with executing long-term government missions with substantial scientific and technological content, developing unique scientific capabilities beyond the scope of academic and industrial institutions, and developing and sustaining scientific and technical capabilities deemed critical by the government.² Given the importance of this mission it is crucial that the labs employ the most talented and accomplished scientists, tapping the nation's wide diversity of scientific expertise.

All of the national labs are operated by contractors selected competitively by the DOE and, like other government contractors, are obliged to promote equity and diversity in their workforce. Yet, achieving gender diversity continues to be challenging for these organizations. The focus of the labs' research and technology projects resides largely in the physical sciences and engineering, and the percentage of women on these research staffs is low. The representation of women is even lower in leadership positions, such as laboratory director, associate laboratory directors and division directors who oversee research activities. For example, in looking at the DOE Basic Energy Sciences Laboratories, the percentage of women in these positions range from 0% as Directors and Deputy Directors, to 8% for the equivalent of associate laboratory directors and only 10% of the nearly 90 research division director positions – figures that appear to be strikingly smaller than those found in comparable academic institutions or within the scientific fields as a whole.³

This report begins to examine the challenges of gender equity at national laboratories with a closer look at one national lab. In May 2013, at the invitation of the lab's organization of women scientists, COACH conducted a workshop on negotiations for employees and systematically gathered information about the ways in which COACH could work with that lab and other national labs. Attendees at the workshop completed a questionnaire regarding their career experiences, and over two dozen employees were interviewed regarding their careers, their work at the lab, and ways in which COACH could assist. This report summarizes the results of the survey, findings from the interviews, and insights gained from interactions at the workshop. It ends with a series of recommendations for follow-up activities both at the lab that was the focus of the analysis as well as for the national network of DOE funded laboratories.

The information gathered from the three sources was highly consistent. In general the results indicate that women scientists at the lab were highly dedicated to their science and enjoy their

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² http://science.energy.gov/~media/lpe/pdf/National_Laboratory_Definition_11-08.pdf

³ These data were obtained by examining the websites of individual laboratories and, when deemed necessary, clarifying the numbers with employees at individual labs.

work. There were many aspects that the employees reported valuing and appreciating. While there was variability in the nature and quality of their experiences, the vast majority also expressed concerns related to workplace climate, communication between management and staff, transparency of procedures and policies, and opportunities for advancement. The sections below provide more information on their views and the implications for ways in which COACH could provide assistance to the labs in the future.

COACH Survey of Lab Employees

In early May, 2013, a link to a web-based survey based on a standard format used with other COACH workshops was distributed to lab employees who had expressed interest in attending the workshop. Fifty women responded to the survey. Responses are summarized below.

Satisfaction with Work Life and Career

The first set of questions asked about the respondents' satisfaction with various elements of their career. Their answers are displayed in Table One and are ordered from areas where they expressed the least satisfaction to those where they expressed the greatest. The numbers in the table indicate the percentage saying that they were somewhat or very satisfied with an area. They indicate that the respondents were least satisfied with their scholarly productivity, mentoring that they receive, and recognition of their accomplishments, with only about two-fifths or fewer indicating satisfaction in these areas. They were most satisfied with their access to supplies, equipment, journals and scholarly materials. Almost three-fourths of the respondents also reported that they were somewhat or very satisfied with their job.

Three items in this set of questions could be compared to responses from women who attended COACH sponsored workshops for academic women: the questions about satisfaction with workload and salary and the question about general satisfaction with their work. In all cases the Lab women reported greater satisfaction, and the differences with the questions on workload and general satisfaction were statistically significant.⁴

Career Related Concerns

The second set of questions asked respondents about concerns they had with their careers. Table Two gives the percentage of respondents who indicated that an area was of considerable or great concern, with the responses ordered from least to greatest concern. Note that at least half of the respondents indicated considerable or great concern with all of the areas listed. The most concern was expressed for making progress in their field of work and the least for establishing credibility outside of their institution.

It was possible to compare the responses on all of these items to those from the academic sample, and a summary of these comparisons is in Table Three. Recall that a higher mean value indicates

⁴ Summary values on the five point scale for satisfaction with workload were mean = 2.74, s.d. = 1.20, and n = 79 for the academic women; mean = 3.41, s.d. = 1.15, n = 49 for the lab respondents; $t = 3.10$, $p = .002$. For satisfaction with salary, men = 2.90, s.d. = 1.26, n = 77 for the academic respondents; mean = 3.27, s.d. = 1.43, n = 49 for the lab respondents; $t = 1.52$, $p = .13$. The comparison for general satisfaction was with a different sample of academic women, but produced similar results, with mean = 3.00, s.d. = 1.18, and n = 24 for the academic women; mean = 3.73, s.d. = .99, n = 48 for the Argonne respondents; $t = 2.77$, $p = .007$.

that an area was of greater concern. Of the seven areas listed, there were significant differences in three. In two of these, finding a mentor and advancing to a position with more responsibility, the lab respondents expressed more concern. They expressed significantly less concern with establishing credibility outside their institution.

Confidence About Career Issues

A series of twelve questions asked respondents about confidence in various areas related to their careers. Table Four reports the percentage of respondents indicating that they were moderately or very confident about a particular area. The responses are ordered from areas with the least expressed confidence to those with the most. Note that there was no area in which more than three fifths expressed confidence, and several in which only very small minorities expressed confidence. Less than one-fifth of the respondents reported confidence that they could negotiate successfully for their own career, control their career destiny, or receive recognition for their accomplishments.

General Treatment of Women and Minorities

Two general, summary questions asked respondents about the extent to which female employees and employees “who are members of racial or ethnic minorities” are treated fairly. Almost two-thirds (63 percent) of the respondents either strongly or somewhat agreed that females were treated fairly. Slightly more (72 percent) gave this response regarding minorities. These answers did not differ significantly from those given by the academic women.

Mentoring and Advice

The respondents were asked if they had colleagues they could ask for advice regarding research, career advancement or relationships with colleagues. One-fifth to one-quarter reported that there was no one within their department to whom they could turn for help with these areas. About twice as many reported that there was no one in the rest of the lab who they could ask for help in these areas. When asked to rate the value of the advice, about half rated the advice they received as moderately or very valuable.

Interviews with Lab Women

Twenty-six interviews of women professionals employed at the lab were conducted in the spring of 2013. Nineteen interviews took place in a cubicle at the lab over a two day period in May, and the others were conducted via phone over the next two weeks. With respondents’ permission the interviews were taped and then transcribed. For those who preferred not to be recorded, the interviewer took extensive notes. The transcripts and notes were then used to summarize responses. No individuals have been identified in these summaries, nor have direct quotes been used. The respondents were given the opportunity to read the summaries to check for accuracy and to ensure that no comments could be used to identify an individual. Two respondents suggested slight additions to the document, all involving the ways in which COACH could help at this and other labs. These suggestions have been incorporated into the following discussion.

The interviews began with a question about respondents’ career paths. The answers indicated that they had varied positions and experiences. The interviewees represented all levels of the organizational structure, in positions from post-doctoral fellows to high level management posts,

and with tenure at the lab ranging from less than a year to over two decades. Most of the respondents were scientists, although a few were in high level support and/or managerial positions. All of the lab divisions appeared to be represented in the group.

When asked what they especially enjoyed and liked about their work, virtually all of the interviewees talked about their love for science, expressing great enthusiasm for their work. A majority of the respondents also noted their appreciation of the freedom to pursue their scientific interests and satisfaction with their professional contributions. A substantial number of women mentioned interactions with and support from others, including colleagues within their group, managers, outside sponsors, specific higher level administrators, and/or the WIST program. Others noted the importance of relatively flexible schedules, the international diversity of the staff and the presence of a high level of expertise in diverse scientific fields as a plus. Some mentioned their appreciation of the lab's location and facilities and programs, including areas such as day care, exercise classes, and garden plots.

While the interviewees mentioned numerous things that they liked about their work at The lab, there were several things that they found stressful or that they thought could be improved. All but three of the 26 women mentioned issues involving management procedures, policies and interactions. These included areas such as a lack of validation and recognition of the quality and amount of work that they did; issues of poor communication from managers; a lack of transparency in procedures and policies, especially in relation to salaries; few opportunities for professional advancement, especially in mid-career; distrust of and negative experiences with the Office of Human Resources, including lack of support in difficult financial transition periods; lack of consistency in policies and procedures from one area of the lab to another; and a lack of diversity within work groups. Less often mentioned, but raised by several respondents, were issues related to policies for maternal/paternal leave, the lack of support for extra child care expenses for parents required to travel for their work, problems in maintaining visibility within the profession and feelings of isolation, problems in networking outside and within the lab, and limited support staff and assistance. At least two people suggested that some of these problems and issues were related to policies and procedures of the Department of Energy rather than, or in addition to, the lab itself. Several respondents also mentioned changing experiences over time, for example having managers who were supportive at some points in their careers but having managers with limited interpersonal skills at other times. It should also be noted that the overall impression that the respondents gave varied substantially, with some being very happy with their experiences and others reporting experiences that were extraordinarily difficult and negative in nature.

The interviewer asked respondents about gender inequities at the lab, noting that women in the physical sciences in academe have reported problems in this area but that COACH was unsure how women in the labs perceived the issue. While the majority of the respondents felt that they had not personally experienced such inequities, they thought that other individuals had experienced them and/or that they were evident at an organizational level. The most common evidence cited for these perceptions was differences in rank, with women less likely to be represented in the higher levels. Many suspected that pay differentials also existed, but noted, as referenced above in the comment about transparency, the difficulties in finding hard data to test this hypothesis. Those who noted issues regarding their own experiences cited classifications of

their positions that did not reflect their responsibilities, salary offers that were low relative to peers, negative and demeaning interactions with co-workers, and issues with job assignments when children were young. Examples of more general issues at the lab included systematic gender disparities in pay, insufficient maternity leave policies, daycare that is not affordable for those at the lower pay ranges (especially support staff), and institutional resistance to part-time work. Some respondents noted recent attempts to address these issues including committees developed to address diversity, the recent proposal and hiring specifically related to equity, and success in moving to part-time employment when desired. Several cited their own actions and initiatives as ways in which issues were countered. Finally, some suggested that the issues were often generational and cultural in nature, with younger workers less likely to experience problems and the most negative views and interactions coming from older men as well as those from outside the United States.

The final question asked interviewees to reflect on ways in which COACH might be able to help people at this and other national labs and was prefaced by a brief description of the types of activities in which COACH engages. Virtually all of the respondents expressed interest in having COACH-sponsored workshops at the lab and the belief that they would be helpful. The most common request was for training in management and leadership skills. Many of those who mentioned this area stressed that the training should be for all, not just for women and not just for a few. Instead, the workshops should be designed to help build skills of all who work in the lab and to counter the problems that so many noted with communication from managers as described above. Many of the respondents were quite articulate in describing the importance of having a supportive work environment, explaining how it can help employees be more productive and produce better science, and indicating that managers could and should be taught skills needed to develop such settings. Mentoring workshops were also strongly favored, with most urging that workshops involve training for both mentors and mentees. A number urged the development of support for those at mid-career, with special attention to career development, ways to navigate the systems of the labs and academic worlds, ways to cultivate opportunities and network, and help in preparing for and planning career change. Strong support was also voiced for workshops devoted to work-life balance and communications/negotiations and some suggested providing help in working with people from varied cultural backgrounds. Several stressed the importance of having workshops for both women and men, and some suggested having rotating workshops, covering all of the areas on a scheduled basis. More than one respondent urged that the workshops and COACH's involvement be independent of the HR office in order to develop trust. Finally, some suggested that COACH help monitor equity issues at this and other labs and help the lab institutionalize improvements and action items related to diversity.

COACH Workshop on Negotiation Strategies

Approximately 50 lab employees attended a half-day COACH sponsored workshop on negotiation strategies in mid-May. Feedback regarding the workshop was overwhelmingly positive. The workshop attendees had a robust discussion regarding issues that they faced in the workplace. Many of the issues that arose in the interviews and surveys also appeared in the discussions at the workshops. The attendees very much enjoyed their scientific work. Yet, they also had a number of concerns regarding the workplace climate. Prominent among these were the

quality of management and leadership within the lab, the lack of transparency in review processes and lab procedures and policies, and issues with career progress and performance-related feedback.

Discussion

The data gathered from the surveys, interviews, and workshop suggest ways in which COACH could help support efforts for enhancing inclusion, diversity, and a positive workplace climate at the focus lab and, potentially at other labs. Each of these directions is described briefly in the first sub-section below. The second sub-section briefly discusses general issues regarding equity at national labs.

Recommendations for COACH Support at the Lab

Three general recommendations regarding COACH support were derived from the analysis: 1) Employee training, 2) Consultation on change processes, and 3) Monitoring progress.

On-going training for employees – The response of attendees to the COACH workshop was overwhelmingly positive, and virtually all of the interviewees suggested that COACH should provide workshops and training for lab employees. The most often mentioned need was for “leadership training,” helping employees develop communication and management skills. Other often expressed needs were for workshops that deal with mentoring skills (for both mentors and mentees), career development and networking, work-life balance, and communication across cultures. Workshops would be open to both men and women and for those at all levels of the hierarchy. They could also be offered on a regular, rotating schedule to allow for both reinforcement of skills that were learned and to help ensure broad-based participation.

Consultation for Change – Developing a more positive work environment is a time consuming and on-going process. It is often difficult to produce such change from within an organization, and objective consultation from outside groups can be very helpful in this process. COACH could consult, on a regular basis, with lab administration and specific interest groups within the lab, as plans are developed and implemented to promote a more positive, transparent, and equitable work environment.

Monitoring Progress – Finally, COACH could assist the lab by actively helping to monitor progress toward change. Such monitoring is needed both to assess the efficacy of various activities, such as the workshops, but also to monitor the progress that is being made to institutionalize improvements and action items related to diversity.

General Concerns Regarding Equity at National DOE Laboratories

Promoting equity and increasing the number of women in leadership roles at national labs will take the type of concerted effort that has led to increases in gender diversity in the nation’s top research universities. The nationwide ADVANCE program, sponsored by the National Science Foundation, is credited with being a significant contributor to these successes, with its support for understanding the issues women scientists face, then identifying best practices for addressing these issues and promoting equity and assisting in their implementation. Unfortunately, the

national labs have not experienced such dedicated efforts. While the results of the COACH survey and interviews described above provide a snapshot of issues at one lab, understanding the extent to which these results generalize to other laboratories is an important, and arguably necessary, step in formulating procedures to help all of the labs develop a more equitable organization and thus better accomplish their mission of developing and sustaining scientific and technical capabilities critical to the nation's future.

Table 1

Reported Satisfaction with Work Life and Career, Percentage Reporting Somewhat or Very Satisfied

Your scholarly productivity	29
Mentoring that you receive from others in your department	35
Recognition of your accomplishments by others	39
Mentoring that you receive from others in the field as a whole	43
Flexibility to choose and work on projects within your own interests	46
Your professional network outside of your institution/lab	48
Salary	51
The way you balance work and family life	52
Workload	55
Your department's support for balancing work and family life	56
Support for maintenance and repair of your research equipment	62
Access to supplies and equipment	71
Your job at this institution, overall	73
Access to journals and other scholarly materials	76

Note: Responses were on a five point scale, ranging from very dissatisfied to very satisfied.

Table Two

Percentage of Respondents Indicating A Career-Related Area was of Considerable or Great Concern

Establishing my credibility outside of my institution	50
Establishing my credibility where I work	57
Finding a mentor to help my career advancement	57
Advancing to a position with more responsibility	57
Keeping up with new knowledge, equipment and methods in my field	57
Improving my chances of advancement in my current position	59
Making progress in my field of work	65

Note: Responses were made on a five point scale, ranging from "no concern" to "great concern."

Table 3

Comparison of Concerns of Academic Sample and Lab Sample

	<u>Academic Sample</u>		<u>Lab Sample</u>		<u>t-ratio</u>	<u>prob.</u>
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>		
Establishing credibility where work	3.51	1.16	3.74	1.06	-1.11	0.27
Establishing credibility outside institution	3.99	0.99	3.46	1.10	2.73	0.007
Making progress in field	3.89	0.95	3.67	1.06	1.18	0.24
Finding mentor to help career	3.12	1.17	3.67	0.99	-2.70	0.008
Advancing to more responsibility	2.78	1.22	3.63	1.08	-3.91	0.0002
Keeping up with field	3.84	0.97	3.52	1.24	1.59	0.11
Improving advancement in current post	3.70	1.21	3.85	1.11	-0.67	0.51

Note: Responses were on a five point scale, with five indicating greater concern. Size of the academic sample ranged from 75 to 77; size of the Lab sample was 46.

Table Four

Percentage of Respondents Indicating they were Moderately or Very Confident About a Career-Related Area

Negotiate successfully for own career	7
Control career destiny	16
Receive recognition from department that deserve for accomplishments	18
Receive recognition from profession that deserve for accomplishments	18
Initiate and manage difficult conversations with colleagues	27
Initiate and manage difficult conversations with assistants	36
Get support from colleagues in field to be fully productive	42
Reach full potential as a productive scientist	47
Balance work and family responsibilities in a way that is personally satisfying	51
Provide convincing arguments in group settings	51
Get support from colleagues in workplace to be fully productive	53
Get support from workplace that need to be fully productive	56

Note: Responses were on a four point scale, ranging from "not at all confident" to "very confident."