

**Report from the Site Visit to Brookhaven National Laboratory (BNL)
Nuclear and Particle Physics Directorate (NPP)
Organized by the
Committee on the Status of Women in Physics
Of the American Physical Society
September 23-24, 2019**

Table of Contents

Introduction and Background	2
Overall Climate of Brookhaven and NPP	3
Communications and Decision Making	4
Work-Life Balance and Family Friendliness	5
Culture and Trust Building	6
Documenting, Tracking, Measuring, and Disseminating Progress	7
Recommendations with Suggestions	8
Appendices	
Appendix 1. Site Visit Agenda	13
Appendix 2. Site Visit Team	14
Appendix 3. Policies & Other Materials Provided to the Team	15
Appendix 4. Summary of Pre-Visit Climate Survey	16
Appendix 5. A Perspective on Climate and How to Improve It	17

Introduction and Background

At the request of Berndt Mueller, Associate Laboratory Director (ALD) for the Nuclear and Particle Physics (NPP) Directorate, the American Physical Society's (APS) Committee on the Status of Women in Physics (CSWP) organized and conducted a climate site visit on September 23-24, 2019 (see Appendix 1 for agenda). The purpose of the visit was to assess the climate for women and ethnic/racial minorities in the Directorate, as well as to provide advice to the Directorate's leadership on how to improve inclusiveness, retention, recruitment, and advancement of women and ethnic/racial minorities.

The Site Visit Team (Appendix 2) consisted of four female physicists and one male physicist from national laboratories, universities, and the APS. Team members' collective experience included various physics-related fields, accelerators, laboratory and university management, promotion, tenure, outreach to and advancement of women and ethnic/racial minorities, and being national facility users and operators. Prior to the visit, the team reviewed demographic data on the workforce of NPP, several human-resource policies (listed in Appendix 3), the results of the APS climate survey, and the results of BNL's recent lab-wide CultureIQ® engagement survey. During the visit, we requested and received additional information for NPP, regarding affirmative action utilization and availability by job category and gender/race/ethnicity, and diversity of applicant pools.

During the visit, the team met with over 125 members of NPP in a dozen different meeting groups (see Appendix 1). An informal reception allowed one-on-one or small-group conversations between team members and additional staff. In addition, individuals were invited to provide confidential email or other input to the Team—a communication channel utilized by 14 people. All information has been factored into our impressions and recommendations. We have organized this report to focus on communications and decision making, work-life balance and family friendliness, culture and trust building, and tracking and disseminating progress, with recommendations at the end.

The Review Team would like to thank ALD, Berndt Mueller, for the invitation and his commitment to improving the inclusion, diversity, and climate of NPP; Fran Capasso for excellent administrative and logistics support; the Liaison Committee for supporting the visit—especially its chairperson Christina Blas-Cruz, for her leadership and for providing very useful information in advance; and Laboratory Director Doon Gibbs for joining NPP leadership and the APS Team on short notice for post-closeout discussions.

Overall Climate of Brookhaven and NPP

The Site Visit Team received a report summarizing the APS Climate Survey administered in NPP, including short comments from respondents. In addition, we received several separate reports providing detailed quantitative and comparative results from the CultureIQ® engagement survey administered Lab wide by Brookhaven in June. The APS Survey had a response rate of about 40%, and it substantially oversampled women. Appendix 4 provides a brief summary of the APS Survey responses prepared by the Team.

It is clear from the APS Survey that the majority of both men and women find the climate in NPP to be favorable and supportive. However, for men, the positive majorities are larger, and on every survey item, women are slightly less positive, suggesting that women and men experience the NPP climate somewhat differently. This difference is especially visible regarding discriminatory remarks or insensitive comments, where about half of women but only about 20% of men report having heard or experienced these.

From the CultureIQ® survey, it seems that NPP is comparable to the Benchmark “Best Companies to Work for” in safety, alignment, growth and development, and engagement (-1 to +3). It is worse (-8 to -14) in agility, inclusion and diversity, collaboration, and efficiency. Compared with the remainder of BNL, however, NPP is somewhat more positive (+2 to +7) in all dimensions. We urge NPP not to be complacent about its relative “superiority” within Brookhaven, as its future success requires being among the best nationally. Although the APS Climate survey did not collect or sort on racial/ethnic demographics, the CultureIQ® survey did, revealing that on most factors, blacks at BNL are less positive than other groups, while Asians are much more positive than other groups.

The comments on the APS survey, from the focus groups, and in emails are consistent with these generalities, confirming the shared and strong sense of pride in being part of BNL and NPP, commitment to the mission, and disparities between the experiences of men and women and between those of underrepresented racial/ethnic minorities compared with whites and Asians. Fear of retaliation is palpable, at least for some. Other serious issues affect international visa holders—especially from China, compared with US citizens and permanent residents. Recent Federal government actions and requirements seem to be triggering these concerns. Moreover, with respect to hiring, some individuals who have served on search committees voiced concerns about the ability of females and underrepresented minorities in the candidate pools for scientific and technical positions to do the job, if hired. NPP can tackle these issues and work toward a climate that is inclusive, supportive, and empowering of all.

Although the Site Visit was invited by and focused on NPP, clearly the climate within the Directorate is influenced strongly by the climate, policies, infrastructure, and practices of the Laboratory as a whole, which, in turn, are responsive to the policies and requirements of the U.S. Department of Energy and its Management and Operating contract with Brookhaven Science Associates. The Team recognizes these important drivers, but did not attempt to disaggregate factors under the control of NPP from those imposed on the Directorate.

Communications and Decision Making

Communication was a shared concern of the groups that met with the Team, with many members of NPP being unaware of how or why decisions are made and action taken, especially with regard to behaviors that affect climate and inclusiveness. We learned through email that some individuals, in some of the groups convened to meet with us, did not feel safe to share their views, experiences, and opinions candidly in the presence of others in the same focus group.

- Many employees are unaware of the results from various reviews and assessments of the Lab and/or Directorate regarding diversity, inclusiveness and climate, and any responses to the recommendations that resulted. For example, we were asked what BNL had done in response to the 2010 APS Climate Site Visit, and what progress had been made.
- Concern was expressed about how decisions are made on some issues, and whether the process followed, accountability, and consequences are appropriately similar for all individuals. Communicating, at least in aggregate, the corrective actions in a given period could improve the morale of affected individuals and reduce this kind of behavior when it becomes widely known that there are consequences for perpetrators.
- Several individuals remarked that things have improved, and that there is good communication with the Laboratory Administration. Specifically, participants in at least one Group that met with the Team mentioned that they felt they had a reasonable connection with the Laboratory Director. Other employees raised concerns about what they saw as a growing divide between Management and non-management employees, characterizing changes as moving from a “university environment” to a “factory environment”.
- The growth of “class distinctions” will erode the effectiveness of Lab and NPP operations, and it can be addressed to some degree by timely, open, two-way communications on issues and concerns.
- Concerns noted in various meetings that the lab is taking an institutionally protective approach as opposed to an employee-advocacy stance. While there are clearly issues that require a protective stance, the affected individuals are

not well informed. Therefore, they are feeling marginalized, and this situation can increase a growing divide.

- Several groups voiced concerns about the role and actions of BNL's Human Resources (HR) group in recruiting and hiring. HR has hired specific recruiters that are assigned to and spend time physically located in NPP to facilitate a close partnership in recruiting and hiring. However, HR's role and processes are not well understood by some, and many NPP employees don't see how HR works collaboratively with groups to improve hiring, suggesting a lack of awareness and a need for better or more communication from and with HR.
- The communication and work environments vary among different units across BNL and within NPP, suggesting that communications channels range in effectiveness. Some groups have effective communications and group members feel well informed. They are aware of appropriate steps being taken to address various issues. However, members of other groups are unaware of these steps or plans, or how they might help shape the work environment.
- The path to promotion does not seem to be clear to many employees in various position types. Further, many employees sense that promotion is impossible or that rules regarding promotion are bent for certain individuals and not others. These feelings impact motivation and satisfaction with employment. There is also a worry that organizational knowledge, historical knowledge, and skills are being lost as longstanding employees retire.
- Mentoring is one of the most effective strategies for developing and retaining staff in all types of positions at all levels. Within NPP, mentoring approaches and effectiveness range widely, and mentoring is not readily available to everyone. Brookhaven says it has implemented a lab-wide mentoring program available to non-union BNL employees. Perhaps it is not well known. Moreover, ideally mentoring would be available to employees at all levels and all types of positions.

Work-Life Balance and Family Friendliness

Attracting and retaining highly-skilled early-career employees to work at NPP is critical to the future of the Directorate. Quality-of-life issues were mentioned independently by several of the groups. One issue cited repeatedly is the complete lack of convenient childcare, following the closure of BNL's childcare facility. Another common issue was the lack of a place where employees and visitors/users could meet informally, following closure of the Brookhaven Center. We also heard that there is no food service on weekends, and there is no public transportation to get off site. The commuter shuttle only operates during regular office hours on weekdays—not well matched to the times that NPP scientists and technical staff work. This schedule makes the Long Island Railroad service impractical for workers

who need to be at the Lab into the evening. These problems are particularly acute, because the Laboratory is isolated, and students, visitors, and employees without vehicles have few to no transportation options.

There was near unanimity and considerable unhappiness regarding poor communication about the reasons for eliminating these valued, long-standing conveniences that had supported a high quality of life and favorable work-life balance at Brookhaven. We heard from Management that they are aware of concerns, taking them seriously, and making progress to address at least some of them.

These issues have a direct, negative impact on many employees, but the negative impact falls disproportionately on workers with young families. When both parents work, as is often the case, the lack of convenient, high-quality childcare can be a logistical showstopper. The lack of a place for employees to meet informally particularly affects visitors and new employees, because they either have no nearby homes or are not established in communities outside of the Lab. Lack of food service in the off-hours and weekends, together with the lack of weekend and after-hours transportation for those without cars is problematic for visitors and students living on site. The highly-restricted hours of shuttle operation increase the isolation.

Culture and Trust Building

Trust between employees and management and within and across teams and groups is an important factor in the climate, culture, and success of any organization (see Appendix 5). The most consistent attribute of organizations that are diverse and inclusive, is that everyone has some awareness of, respect for, and empathy for the experiences and perspectives of people in different positions and people from different socio-demographic, racial/ethnic, cultural, and gender identities and backgrounds. For the most part such awareness seems poorly developed at NPP.

This Climate Site Visit concentrated on NPP's environment supporting diversity and inclusion. BNL has a thorough and detailed written inclusion and diversity plan for 2019, that reportedly has been judged exemplary by DOE. NPP management expresses strong support for inclusion and diversity. NPP has two appointed diversity and inclusion committees (one in the Physics division, that has existed for several years and a newer one for NPP overall) with somewhat overlapping membership, to advise on and facilitate progress toward establishing a culture of diversity/inclusion.

It appeared to the Site Visit Team that Management's desire for an inclusive and diverse culture is sincere, that the sincerity is not uniformly recognized by

employees, and that the cultural transformation is at a very early stage. Moreover, having a thorough plan and making progress toward a cultural transformation are two different things. It is not automatic that having a plan will drive the transformation, particularly if it is long and not read by many. Many employees are skeptical about Management's commitment, because they doubt that if they report incidents of inappropriate behavior the perpetrators will incur consequences. They are concerned that, and shared a few anecdotes in which, those who report such behavior are the ones who suffer.

Cultural transitions are hard and can take many years. One example from the DOE National Laboratory System is the safety transformation, driven by Admiral Watkins, when he was Secretary of Energy from 1989 to 1993. Over a few years, the Laboratories evolved from a "business as usual" approach to safety with a priority on getting the job, done to a strong "safety culture," comparable to the best in industry. That transformation was painful, but the laboratories are now much safer places, while continuing to achieve outstanding scientific and technical results. We suggest that there might be lessons from the "safety-culture" transformation that could help achieve the desired climate. Another source of strategies was developed by NSF's ADVANCE program, including resources from the Women in Science and Engineering Leadership Institute (WISELI) at the University of Wisconsin-Madison (<https://wiseli.wisc.edu/>) and from Hunter College's Gender Equity Project (<http://www.hunter.cuny.edu/genderequity/>), among others. Appendix 5 shares excerpts from one of WISELI's documents on improving climate.

Documenting, Tracking, and Measuring Progress

BNL Lab-wide and the NPP directorate, in particular, have been proactive in requesting several APS Climate Site Visit Teams to review and assess the climate situation in various groups and collaborations and provide recommendations to the leadership. The recommendations are intended to guide interventions or changes that can phase out practices that might hamper participation by women and underrepresented minorities, people with disabilities, and those with non-conforming gender identities. Three site visits occurred prior to this one. In 2010 there was a Lab-wide site visit, and 4 years ago, two site visits were conducted for the STAR and Phoenix collaborations, respectively (including their BNL groups). In addition, the Lab has in place trainings and recently conducted the lab-wide CultureIQ® survey. These reviews help demonstrate that BNL and NPP leadership are taking climate seriously. A stated goal of NPP leadership is to position NPP so that it is on a path to be successful in 20 years: not stagnating or stuck in the past, but evolving and performing among the best in the world. The APS climate site visits were requested to make progress toward this end.

However, when we looked at the Directorate overall, the demographic diversity does not reflect the demographics in the country or even the New-York/Long-Island region, in terms of race/ethnicity, gender, and age. Unfortunately, we were not provided with data or other information to track progress from 2010 or NPP's implementation of recommendations from previous site visits. Moreover, it appeared that little progress has been made since the first APS site visit in 2010. In addition, the NPP directorate still has very low representation of ethnic/racial minorities and women, and seemingly persistent problems retaining women scientists.

Recommendations for NPP

Bold, numbered items are the seven recommendations from the Site Visit. They are stated here, because each one applies to more than one of the topics covered in this report. Beneath each recommendation we provide a few specific suggestions, not as a checklist, but for consideration. Most of the suggestions originated with one or more NPP members, through the APS climate survey, or in their meetings or email communications with us.

1. Share this report with all members of NPP and follow up within about 3 months with a written summary of actions taken or planned that apply to or respond to each recommendation.

- Organize frequent open communications events or other channels between (i.e., 2-way) management and scientific, technical, and administrative employees (e.g., an open forum where management will respond to any question raised by employees, publish or discuss the key points discussed at Lab Director's meetings or meetings of the ALDs with lab management).

2. Document, track, measure, and share progress toward implementation of the *Inclusion and Diversity Plan* and the recommendations from this and previous climate site visits.

- Develop a centralized mechanism by which, to document and make broadly available the recommendations and major comments from the site visits, surveys, and other Lab initiatives for recruiting and retaining underrepresented groups.
- Develop a plan on how to address the recommendations that is aligned with the vision and the agenda of the NPP directorate and the Laboratory with the corresponding short- and long-term milestones.
- Develop mechanisms to track, evaluate and measure success of a solution put in place and procedures to revise the plans as needed.

- Develop and communicate clear expectations and mechanisms for accountability at all levels.
- Communicate racial/ethnic/gender demographic data for NPP annually to staff, overall on hires and other parameters
- When communicating data on progress in improving demographic diversity, include information on the available pool to build awareness among employees and acknowledging management's attention to the issues. For example, include fraction of women hired into each level and how this compares to the available pool (in physics, women make up 20% of the graduating PhDs, and comparing the new hire rate of women to this number will be telling, while the fraction of women who are graduating with AA degrees from technical colleges might be substantially less, and should inform perceived progress in job classifications requiring this credential).
- Provide statistics on incidents of inappropriate behavior and consequences, when possible, to demonstrate that actions are being taken.
- Annually review initiatives that work toward a more inclusive and transparent culture. Publicly discuss how the initiatives are evolving and their impact, including on hiring and promotion.
- Give credit to employees in performance evaluations for service on important committees, such as for inclusivity and diversity, and for outreach and other efforts peripheral to their positions.

3. Drive culture change to create an environment that is welcoming to; supportive of; and accelerates recruitment, retention, career-pathways for, and advancement of women and individuals from underrepresented groups, especially in scientific, technical, and management positions.

- Communicate to everyone in the directorate why climate issues are important and how a welcoming and mutually supportive environment will help NPP recruit and retain the best women and people from underrepresented groups, contributing to the success of NPP.
- Revise all organization charts to spell out the first names, which subtly sends the message that box occupants are people with valued and diverse identities.
- Educate all employees on topics including, but not limited to: sexual harassment, discrimination policies, effective and culturally attuned mentoring, and procedures for reporting issues.

- Share the Lab's and directorate's *Diversity and Inclusion Plan* with employees, including information on how the plan is being implemented and any metrics to be watched to judge progress and success.
- Accelerate recruitment of, improve retention of, communicate career-pathways for, and promote advancement of women and underrepresented minorities within NPP.
- Whenever a review or assessment important to many employees is conducted, promptly share with employees the results of the review/assessment along with plans to address findings and recommendations.
- Management at all levels must be vocal and clear that there is zero tolerance for inappropriate behaviors that undermine inclusivity and diversity. Ensure that issues/complaints ARE investigated AND addressed promptly, and "close the loop" with affected employees.
- Provide more opportunities for people at different levels, in different positions (e.g. management, engineers, physicists, technicians, and staff), from different backgrounds and cultures, and in different groups to interact with each other.
- Consider diversity when developing career pathways and "succession plans."
- Consider including new and early-career employees on important committees, so that they may interact with more senior and experienced individuals, and so that these committees can benefit from their ideas and perspectives.
- Involve everyone, including white males and individuals with power/stature, in shaping the climate, and hold them accountable for valuing and implementing inclusiveness.
- Consider re-establishing the ombudsperson position or one similarly independent and empowered, and consider developing a public FAQ to outline issues (e.g., standards of ethical behavior).

4. Strongly encourage BNL to solve the infrastructure barriers to positive work/life balance, such as convenient childcare, transportation, informal networking venues, conveniently located lactation rooms, partner-hiring approaches, and other necessities of life for staff and for visitors. If these solutions are part of the Discovery Park, don't delay their implementation until that vision is realized, but provide "stop-gap" solutions as soon as possible.

- Consider establishing an early-career advocacy group to help prioritize the needs and actions so that solutions support work-life balance of early-career employees, who are generally in positions with limited voice.
- Visibly support and assist employees who could be adversely affected by new government requirements, such as the recent conflict-of-interest declarations and visa issues.

5. Develop effective training opportunities within a coherent professional-development program to help drive the culture change toward full inclusivity and diversity.

- Include frequent, meaningful, engaging, and interactive training on sexual harassment, explicit and implicit bias, micro-aggression, cultural humility, cross-cultural communication, front-stander strategies and expectations (to overcome by-stander/observer tendencies), and mentoring, among other topics.
- Some mandatory training is likely needed, but the content and delivery mode of all sessions, *especially mandatory sessions*, must be effective and meaningful (not rote compliance).
- Evaluate the training and include mechanisms to improve it to serve NPP and employee needs and catalyze the desired climate improvements.
- Resources from NSF ADVANCE (see Appendix 5 for an example) and other sources outside BNL and the DOE National Laboratory system would be valuable to consult.

6. Strengthen the partnership between HR and NPP.

- Make it a standard practice to consult with NPP to obtain meaningful input for the job descriptions, required and preferred qualifications, members of search committees, and hiring decisions for any Human Resources Department (HR) personnel to be deployed to the Directorate.
- The HR Department should develop a strategy for actively understanding the needs and concerns of hiring managers and bring hiring managers together across different levels of employees to ensure that broader conversations occur regarding capabilities, policies, and success metrics in hiring and administrative actions (disciplinary, retention, etc.).
- Ensure HR processes with respect to promotion, discipline, and other matters affecting all employees are transparent, well communicated, and well understood across all job categories and units.

- Encourage BNL to decouple compliance and enforcement responsibilities from the Diversity Office and expand its incentives and resources for catalyzing inclusion, diversity, and culture change.
- Provide support for international employees dealing with visa issues or affected by requirements that cause them to feel unwelcome.

7. Provide opportunities for employees, especially junior employees, to be mentored by multiple individuals, including from within and outside their workgroup, and provide training in cultural humility and effective mentoring skills across cultural, demographic, and national lines.

- Provide effective mentorship to junior employees on pathways to promotion.
- Require employees in supervisory roles to be trained in effective mentoring so that they can serve as mentors to junior members and enable the transfer of knowledge, skills, and organization culture.
- Make efforts to ensure that promotion criteria and any rules for evaluating performance are transparent, understood by all employees, and implemented uniformly.
- Consider including methods to enhance awareness of and acceptance of gender roles and identity preferences

**Appendix 1
Site Visit Agenda**

AGENDA

APS Climate Site Visit Schedule
September 23 – 24, 2019

Meetings will be held in Physics, Building 510, either Room 3-192 (3rd floor) or Room 1-224 (1st Floor)

Monday, September 23, 2019

Time	Event	Attendees
7:30 AM – 8:30 AM	Executive Breakfast/Initial Meeting with Management (Room 3-192)	NPP Division Heads
8:30 AM – 9:15 AM	BNL APS Liaison Team Meeting (Room 3-192)	Z. Altinbas, E. Aschenauer, C. Blas-Cruz, C. Brutus, J. Haupt, M. Pleier
9:15 AM – 9:30 AM	Break	
9:30 AM – 10:30 AM	Group 1 (Room 1-224)	Minority Admin. Staff, Engineers, IT, Post-Docs, Scientific Staff, Technicians
10:30 AM – 11:30 AM	Group 2 (Room 3-192)	Female Admin. Staff, Engineers, IT, Post-Docs, Scientific Staff, Technicians
11:30 AM – 1:00 PM	Lunch/Group 3 (Room 3-192)	I & D Council (NPP & Physics)
1:00 PM – 2:00 PM	Group 4 (Room 1-224)	Engineers
2:00 PM – 3:00 PM	Group 5 (Room 3-192)	Early Career/Post Docs
3:30 PM – 4:00 PM	Reception (Lobby – Berkner Hall)	
4:00 PM – 5:00 PM	Executive Session (Room 1-224)	APS Team Only

Tuesday, September 24, 2019

Time	Event	Attendees
7:45 AM – 8:30 AM	Breakfast (Room 1-224)	NPP HR Manager, Team & Shirley Kendall
8:30 AM – 9:30 AM	Group 6 (Room 3-192)	Technicians
9:30 AM – 10:30 AM	Group 7 (Room 1-224)	Senior Scientists
10:30 AM – 11:30 AM	Group 8 (Room 3-192)	Tenure-track Scientists
11:30 AM – 12:30 PM	Group 9 (Room 1-224)	Asian Admin. Staff, Engineers, IT, Post-Docs, Scientific Staff, Technicians
12:30 PM – 2:30 PM	Lunch – Executive Session (Room 1-224)	APS Team Only, with Shirley Kendall for a few minutes at 12:30 pm
2:30 PM – 3:00 PM	Closeout (Room 1-224)	NPP Heads, Physics I&D Chair, and APS Liaison Committee
3:00 PM – 3:45 PM	Post-Closeout Discussions	Doon Gibbs, Berndt Mueller, Thomas Roser, & Hong Ma

Appendix 2 Site Visit Team

Beverly Karplus Hartline, Ph.D., Chairperson

Vice Chancellor for Research & Dean of the Graduate School
Montana Technological University

Geraldine Cochran, Ph.D.

Assistant Professor of Physics & Physics Education
Rutgers University

Latifa Elouadrhiri, Ph.D.

Senior Staff Scientist for Hall B
Jefferson Lab

Theodore Hodapp, Ph.D.

Director of Project Development
Senior Advisor to the Department of Education and Diversity
American Physical Society

Marion White, Ph.D.

Senior Scientist
Advanced Photon Source
Argonne National Laboratory

Appendix 3 Policies and Other Materials Provided to the Site Visit Team

Policies

1. *Inclusion and Diversity Plan for Fiscal Year 2019*. 42 pages.
2. *Workplace Lactation Policy*, effective February 1, 2019. 3 pages.
3. *Respectful Workplace Policy* (Poster).
4. *Equal Opportunity and Affirmative Action (EOAA) Policy Statement*, 10/22/2018.
5. *Anti-Retaliation Policy*, October 2018. 6 pages.
6. *Anti-Harassment, Including Anti Sexual Harassment, Policy*, October 2018.

Presentations

1. *Early Career Workforce at BNL*, Megan Quadrant (date unknown)
2. *Brookhaven Lab Engagement Survey June 2019: Physics vs NPP*.
3. *Brookhaven Lab Engagement Survey June 2019: Magnet vs NPP*
4. *Brookhaven Lab Engagement Survey June 2019: Instrumentation vs NPP*
5. *Brookhaven Lab Engagement Survey June 2019: CAD vs NPP*
6. *Brookhaven Lab Employee Engagement Survey June 2019: NPP*, 6 August 2019

Other Materials

1. NPP Workforce Demographics Table

JOB CLASSIFICATION/RACE	MALE				FEMALE				GRAND TOTAL	FEMALE % of TOTAL EMPLOYEES
	WHITE	UM	OPC	TOTAL MALE	WHITE	UM	OPC	TOTAL FEMALE		
Management	13	1	1	15	4	0	1	5	20	25.00%
Scientist	112	2	41	155	8	2	7	17	172	9.88%
Post-doc	19	1	22	42	6	2	2	10	52	19.23%
Information Technology	59	2	13	74	3	1	8	12	86	13.95%
Engineer/Scientific Associate	117	15	22	154	11	0	8	19	173	10.98%
Administrative	2	0	1	3	27	7	2	36	39	92.31%
Technician	196	14	4	214	3	2	1	6	220	2.73%
TOTAL	518	35	104	657	62	14	29	105	762	13.78%

Racial/Ethnic demographics: UM: 6.4%; OPC: 17.5%; White: 76.1%
[Not separating foreign nationals]

2. 2018-2019 AAP Table Comparing Incumbency to Availability and Placement Goals for NPP by Job Group
3. Table of BNL Applicant Activity and Demographics from 10/1/2017 through 9/30/2018 (two fiscal years)

Appendix 4

Summary of APS Pre-Visit Climate Survey

Prior to the Site Visit, and in accordance with the American Physical Society's (APS) procedure for climate visits, a climate survey was administered at NPP. The survey was completed online, and the Site Visit Team was sent a report about one week prior to the Site Visit, graphically summarizing answers to 13 Likert-scale questions and whether or not the respondent had experienced or witnessed sexual harassment within the organization. Respondents were also asked to self-identify as male, female, non-gender conforming, or "additional identity," and their role within the organization, such as management, scientist, post-doc, IT, engineer/scientific associate, technician, or administrative.

Overall, about 30% of NPP male employees and about 60% of the female employees responded to the survey, so about 25% of the survey responses were from women, compared with their presence in the Directorate at about 14%. About half of the women had administrative roles, with about a quarter being engineers/scientific-associates. For the men, about 40% were scientists, about 10% were managers, about 20% were engineer/scientific associates, and about 15% were technicians. Roughly 3% identified as non-gender conforming or with an additional identity. The non-gender-conforming and additional-identity respondents were too few in number to summarize or to compare with men and women.

The vast majority of respondents know whom to speak with if faced with sexual harassment or racial discrimination. A large majority, but slightly fewer, know how they would address sexual harassment or racial discrimination. About half of women but only about 20% of men reported reading or hearing discriminatory remarks or insensitive comments from other members of the organization.

With respect to questions about how they and other people in the organization are treated, their successes being highlighted, knowing what they need to do to be successful, having their mistakes highlighted, being held to the same standards, feeling valued by their organization or by their division, and fitting in, the majority of both men and women find the climate to be favorable and supportive. However, for men, the positive majorities are larger, and on every survey item, women are slightly less positive, suggesting that women and men experience the NPP climate somewhat differently.

Appendix 5

A Perspective on Climate and How to Improve It

Excerpts from a paper, "Climate Change at the University of Wisconsin-Madison: What changed, and did ADVANCE have an impact?"¹

"For purposes of this paper, we define "climate" as follows: The atmosphere or ambience of an organization as perceived by its members. An organization's climate is reflected in its structures, policies, and practices; the demographics of its membership; the attitudes and values of its members and leaders; and the quality of personal interactions. (UW-Madison, 2002).

Using this definition, we see that some elements of climate might be easier to change and improve than others. The "structures, policies, and practices" can be altered by institutional leaders to improve the working experiences of women faculty. Increasing the numbers of women faculty can address the "demographics of its membership." However, it is the element of climate described as "attitudes and values of members" and the "quality of personal interactions" that is the commonly-understood meaning of "climate." It is these vague, interpersonal elements of climate that may be the most difficult to change, because it requires the changing of individual attitudes and behaviors."

"How might one think about improving climate in an academic setting? Carnes, Handelsman, Sheridan, and Fine (2005) proposed thinking about changes in attitude related to an increasing acceptance of diversity in the academic workplace as occurring in a series of stages. In the first stage (precontemplation), faculty members are unaware that a climate "problem" exists. They do not realize that women and other underrepresented groups in their departments do not feel welcome, and when presented with evidence of such differential experiences, they often blame the women or the underrepresented persons as simply "not fitting in." In the second stage (contemplation), faculty members begin to understand that women and other underrepresented faculty members are experiencing a "chilly climate" and see this as problematic. The third stage (preparation) is a period when faculty prepare to make some change, such as taking a personal inventory of their own behaviors, or seeking out workshops, books, or references for advice. During the fourth stage (action), faculty members actually change their attitudes and behaviors, creating a warm and welcoming climate for all faculty. Finally, the fifth stage (maintenance) describes the process of examining behaviors and making adjustments to continually ensure that climate remains positive for all. Using this framework, Carnes and her colleagues theorized that improving campus climate means moving the attitudes and behaviors of faculty member from the "precontemplation" stage through to the "maintenance" stage, and they designed survey items to measure this change on one campus as part of a project funded by the National Science Foundation (NSF)."

¹ <https://wiseli.wisc.edu/published-papers/climate-change-university-wisconsin-madison-changed-advance-impact/> by Jennifer Sheridan, Christine Pribbenow, Eve Fine, Jo Handelsman, and Molly Carnes (2007)