



**Washington University
In St. Louis
Title IX Compliance Report**



Department of Physics

**Office of Diversity and Equal Opportunity
June 2013**

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I. INTRODUCTION

NASA conducted a compliance review of the Washington University in St. Louis (WUSTL or the University) Department of Physics (Physics, the Department, or the program), to ensure that beneficiaries of NASA grants have equal opportunity, without regard to sex, to pursue, participate in and benefit from academic research, career development opportunities, extracurricular and other educational activities. The review was conducted under Title IX of the Education Amendments of 1972, and NASA's implementing regulations and policy, which prohibit discrimination on the basis of sex in educational programs and activities receiving Federal financial assistance.¹ In the absence of discrimination complaints filed under Title IX, NASA selects grant recipients for review based on neutral criteria, for example, the amount of grant money the recipient is currently awarded. In this case, NASA did not receive any type of discrimination complaint about WUSTL or its Physics Department. WUSTL was selected based on neutral criteria.

A. Background

NASA Title IX regulations provide for periodic review of NASA grant recipients.² These regulations became effective in November 2000. NASA's Title IX compliance program received further impetus with the July 2004 report of the Government Accountability Office (GAO), which recommended that Federal agencies conduct onsite compliance reviews.³ In addition, NASA's 2005 authorizing legislation requires the Agency to conduct at least two Title IX compliance reviews annually.⁴ NASA has been involved in many Title IX related compliance activities since the regulations were issued in 2000, conducting a number of limited-scope "desk-audit" as well as onsite reviews of grant recipients.

B. Objectives and Scope

NASA sought to achieve the following key objectives in conducting this review:

Objective 1

Evaluation of WUSTL's compliance with NASA Title IX regulations, specifically to:

- Assess the Title IX Coordinator's role and functioning; confirm the existence of Title IX policy and procedures and the quality of their dissemination; evaluate Title IX grievance procedures and the effectiveness of their implementation; and review Title IX self-evaluation efforts, specifically regarding the WUSTL program under review; and

¹ Title IX of the Education Amendments, as amended (20 U.S.C. §§ 1681-1688); Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance, 14 C.F.R. Part 1253; NASA Policy Directive 2081.1A, Subject: Nondiscrimination in Federally Assisted and Federally Conducted Programs of NASA - Delegation of Authority.

² See 65 Fed. Reg. 52,859 (Aug. 30, 2000). Enforcement Procedures, 14 C.F.R. § 1253.605 (incorporating compliance requirements of Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d)).

³ Government Accountability Office, *Gender Issues: Women's Participation in the Sciences Has Increased, but Agencies Need to Do More to Ensure Compliance with Title IX* (July 2004) (July 2004 GAO Report). Included in the Report's recommendations was that "the Administrator of NASA continue to implement its compliance review program to ensure that compliance reviews of grantees are periodically conducted." (p. 28).

⁴ See NASA Authorization Act of 2005, 42 U.S.C. § 16798(b). Note that NASA's most recent authorizing legislation does not include this provision; however, as the original provision had no sunset clause, we continue to seek to meet the 2005 requirement.

- Evaluate the Physics program’s provision of equal opportunity regardless of gender in the following areas of program administration: student recruitment, outreach, admissions, enrollment, retention, academic advising, research participation, classroom and lab experiences, institutional and program policies/procedures, student experiences relating to parental/marital status (“family friendly” policies and practices), physical safety of the program environment, and, finally, recent faculty recruitment efforts.

Objective 2

Identification of promising practices of WUSTL and the Physics program designed to promote gender equity, specifically to:

- Describe efforts consistent with the recommendations and focus of the July 2004 GAO report; and to
- Determine the extent to which promising practices are actually helping to create greater gender equity and diversity in the program, for both students and faculty.

C. Methodology

1. Pre-onsite Review Activities

NASA developed a Title IX compliance review plan (CRP) to identify relevant regulatory requirements, potential issues and specific inquiries needed to conduct a thorough compliance assessment of its grantees. The CRP was developed in consultation with the U.S. Department of Justice (DOJ), Civil Rights Division, and the U.S. Department of Education (ED) Office for Civil Rights (OCR), the lead agencies on Title IX investigations. In addition, NASA developed a Title IX literature review to better understand concerns regarding gender and STEM as well as strategies to address such concerns, including Title IX compliance efforts in the STEM context. (See Appendix: Summary Literature Review).

The CRP identified two focal points for compliance assessment: 1) Title IX procedural compliance requirements, for example Title IX coordination efforts; and 2) program administration, that is, policies, procedures, and practices affecting the academic environment (see “Objectives,” above). The CRP also identified the methods by which needed information would be gathered from recipients, including: information requests for statistical data and relevant policies and procedures, and an on-site visit to interview university officials, program faculty, and students.

2. On-site Compliance Review Activities

The NASA compliance team conducted an on-site review of the WUSTL Physics Department on November 15-17, 2011. During its visit, the compliance team conducted one-on-one interviews with three female Physics faculty members and five male Physics faculty members, including the Physics Department Head. In addition, the compliance team conducted one-on-one interviews with 15 Physics graduate students (six females and nine males), three female post doctorates, and seven undergraduates (three female and four male). The compliance team also interviewed the WUSTL Vice Chancellor for Human Resources, who is the University’s Title IX Coordinator, and the Director for Judicial Programs, who handles misconduct allegations (including harassment) brought against students.

II. COMPLIANCE REVIEW ANALYSIS

The compliance review analysis provides an assessment of issues within the two focus areas of procedural compliance requirements and methods of program administration. Regulatory requirements and findings of fact are set forth as part of the compliance assessment. The recommendations are intended to strengthen existing compliance activities. Promising practices associated with each of the compliance areas are also reported. It should be noted at the outset that, where WUSTL has taken steps to address or partially address NASA's compliance recommendations since the review was conducted, we have noted this information as "Updates." We applaud WUSTL for these efforts.

A. Responsible Official for Title IX Coordination and Enforcement

1. *Compliance Assessment*

The NASA Title IX regulations state that a recipient must designate an official responsible for Title IX coordination and enforcement, i.e., a "Title IX Coordinator."⁵ The recipient must notify all students and employees of the Title IX Coordinator's name, office address, and telephone number.

a. Title IX Coordinator and Contact Information Dissemination

NASA's compliance assessment focused first on the Title IX regulatory requirement to disseminate contact information for the Title IX coordinator and her office. The role of Title IX coordinator is held by the Vice Chancellor for Human Resources (VCHR). The VCHR reports that, in addition to the information provided on the University's Web site, WUSTL uses a number of methods to communicate information about her office and Title IX policies and resources (see Promising Practice, below). NASA commends WUSTL for these efforts to disseminate information about the University's Title IX coordinator, and Title IX policies and resources. However, during onsite interviews, when the compliance team sought to determine the extent to which students, faculty and staff were aware of the Title IX Coordinator, her office and the purpose of her office, the team found that those interviewed did not know who the Title IX coordinator was by name. Students interviewed stated that while they did not know the name of the office to go to if they had a concern, they felt confident they could find it online.

b. Effective Title IX Coordination: Oversight of the Grievance Process, Authority/Access to Senior Leadership, and Training Efforts

While the NASA Title IX regulations do not provide further specificity regarding the role and effective functioning of the Title IX Coordinator's role, the U.S. Department of Justice (DOJ), which has oversight responsibility for all Federal Title IX compliance and enforcement activities, has provided additional considerations for Federal agencies evaluating recipient compliance with the Title IX Coordinator regulatory provision.⁶ These additional considerations appear in DOJ's document, "Questions and Answers Regarding Title IX Procedural Requirements" (Title IX Q&A).⁷ For purposes of this review, NASA focused on the following areas, in addition to the regulatory requirement for contact information dissemination, identified in DOJ's Title IX Q&A: effective functioning, including skills and competencies, regarding the administration and implementation of WUSTL's Title IX grievance process; the authority and access of the Title IX Coordinator to university senior leadership

⁵ Designation of responsible employee and adoption of grievance procedures, 14 C.F.R. § 1253.135(a).

⁶ See Executive Order 12250, 3 C.F.R., 1980 Comp. 298. Section 1-203 of the Executive Order states that "[t]he Attorney General shall develop standards and procedures for taking enforcement actions and for conducting investigations and compliance reviews."

⁷ This document is accessible at <http://www.usdoj.gov/crt/cor/coord/TitleIXQandA.htm>.

needed to effectively perform roles and responsibilities; and appropriate training of faculty, staff, and students.

(i) Effective Oversight of the Grievance Process

Based on WUSTL's responsive information, including resumes of those staff from both offices with Title IX coordination responsibilities, and interviews with these staff, NASA finds that the Vice Chancellor for HR possesses the appropriate knowledge base and expertise to properly implement the WUSTL internal grievance procedures. (See Section II.B. for a detailed discussion of the University's internal discrimination complaints procedures.)

(ii) Authority and Access to Senior Leadership

With regard to the authority and access of the Title IX coordinator, the VCHR reports that she interacts with the University's Chancellor and senior leadership on a routine basis, during semi-monthly meetings of the Chancellor's senior leaders. Meeting topics range broadly and include discussions and recommendations related to benefits, compensation, work-life programs, work environment issues, and compliance with Federal/state regulations. She also has regular and ongoing communications with the University's Judicial Administrator, WUSTL's Police Department, Student Health Services' Assistant Director for Sexual Assault and Community Health Services, the Vice Chancellor for Students, Dean of Students, Dean of Campus Life and other University administrators. NASA finds, based on this information, that the VCHR possesses the appropriate level of access and the necessary frequency of interaction with the University's leadership and key partner offices to facilitate effective Title IX coordination.

(iii) Training, Education, and Awareness Efforts

The compliance team also examined the training efforts that the VCHR undertakes on a regular basis, since training is a critical part of the tasks and responsibilities of Title IX coordination efforts. The VCHR reports that most of the training programs directed at students (and faculty and staff) focus on increasing awareness of sexual harassment and sexual violence, University policies against such conduct, and the resources available to those involved in any incidents of sexual harassment and sexual violence, including where to report such incidents. The Physics Department receives and is able to access information on all training provided by the HR office. In addition, the HR office met with the Arts and Sciences Department Chairs and Senior Administrators in Spring 2011 to discuss the University's Sexual Harassment Policy, and the Physics Department Chair was in attendance.

The VCHR reports further that equal opportunity, diversity, and sexual and other forms of discriminatory harassment are all topics presented and discussed in New Employee Orientation, which is offered to all staff, faculty and post docs. Teaching Assistants are also required to attend TA Orientation offered by the Teaching Center, which includes a panel discussion during which their responsibilities and issues relating to sexual harassment are discussed. Through its Learning & Development staff, the HR office also provides periodic training aimed at employees in management and supervisory roles, and some of the programs offered address Title IX policy and procedures. Discrimination and sexual harassment training are presented and discussed in HR Policy Overview training offered at least twice a year, in the spring and fall. Most recently, the Learning and Development staff provided a 3.5 hour training session titled "How to Manage Discrimination & Harassment Situations." (See also Sec. II.E.1.d., "Safety," below.)

2. Promising Practice

Title IX Coordinator's Dissemination of Title IX Policies and Resources. WUSTL's Title IX Coordinator reports a number of means for widely disseminating information on Title IX related matters to the campus community, particularly relating to matters of sexual harassment and sexual assault. These means include, but are not limited to, annual electronic publication of key policies, such as resource contact information, in the University's newsletter, the *Record*; a University-wide email distributed annually in the fall to all faculty, staff and students containing our Safety and Security Brochure, which includes significant discussion of sexual harassment and sexual assault as well as identification of the various Sexual Harassment Coordinators. In addition, the Safety and Security Brochure is revised annually and its next iteration will include an updated list of Title IX Sexual Harassment Coordinators and Advisors. Letters from the Chancellor and Provost are sent annually to employees reinforcing the University's commitment to equal opportunity.

B. Grievance Procedures and Policy Dissemination

1. Compliance Assessment

The NASA Title IX regulations require that recipient educational institutions adopt and publish grievance procedures providing for prompt and equitable resolution of student and employee complaints alleging any action that would be prohibited by Title IX.⁸ The regulations do not specify a structure or format for the grievance procedures. NASA's Title IX regulations also require grant recipients to take specific and continuing steps to notify students, employees, applicants for admission and employment, and unions or professional organizations having collective bargaining or professional agreements with the recipient, that it does not discriminate based on gender in the educational programs or activities that it operates, and that it is required by Title IX not to discriminate in such a manner.⁹

a. Grievance Procedures

NASA's compliance assessment seeks to ensure that WUSTL has developed and is implementing procedures that afford a grievant "prompt and equitable" resolution of student and employee complaints alleging any action that would be prohibited by the Title IX regulations.¹⁰ As the regulations do not provide any further specificity regarding the procedures, NASA looked to the DOJ Title IX Q&A and OCR's Revised Sexual Harassment Guidance, which provide additional considerations on the basic components of effective, i.e., prompt and equitable, grievance procedures in the discrimination and harassment context.¹¹ In its Revised Sexual Harassment Guidance OCR identified a number of elements

⁸ Designation of responsible employee and adoption of grievance procedures, 14 C.F.R. § 1253.135(b).

⁹ Dissemination of policy, 14 C.F.R. § 1253.140.

¹⁰ 14 C.F.R. § 1253.135(b).

¹¹ For example, the Title IX Q&A states that recipient grievance procedures are a mechanism used to determine whether a particular act, policy, or practice of a recipient complies with Title IX regulations. See, Title IX Q&A, "Grievance Procedures." The Title IX Q&A states that for those recipients who do not have Title IX grievance procedures or for those recipients who want to refine existing procedures, the Department of Education's guidance document, "Title IX Grievance Procedures: An Introductory Manual," (Education Manual) provides some of the basic components for such procedures. This document is accessible through the U.S. Department of Education at <http://eric.ed.gov/>. The grievance procedures should also provide the steps necessary to correct the policy or practice that does not comply with Title IX regulations. See, Education Manual. Additionally, recipients should inform the grievant of the right to file a discrimination complaint with an appropriate federal agency, either simultaneously with the filing of an internal grievance or after the unsatisfactory resolution of a grievance. See also, U.S. Department of Education, Office for Civil Rights, "Revised Sexual Harassment Guidance: Harassment of Students by School Employees, Other Students, or Third Parties," (Jan. 19, 2001), § IX. Prompt and Equitable

in evaluating whether a school's grievance procedures are prompt and equitable, including whether the procedures provide for:

- Notice to students, parents of elementary and secondary students, and employees of the procedure, including where complaints may be filed;
- More than one employee designated to handle complaints, to ensure an effective means of raising concerns;
- Application of the procedure to complaints alleging harassment carried out by employees, other students, or third parties;
- Adequate, reliable, and impartial investigation of complaints, including the opportunity to present witnesses and other evidence;
- Designated and reasonably prompt timeframes for the major stages of the complaint process;
- Notice to the parties of the outcome of the complaint; and
- An assurance that the school will take steps to prevent recurrence of any harassment and to correct its discriminatory effects on the complainant and others, if appropriate.¹²

Importantly OCR states that “[a] grievance procedure . . . cannot be prompt or equitable unless students know it exists, how it works, and how to file a complaint. Thus, the procedures should be written in language appropriate to the age of the school's students, easily understood, and widely disseminated”¹³ OCR further states that “[m]any schools also provide an opportunity to appeal the findings or remedy, or both.”¹⁴ However, OCR does not specifically include appeal rights among the elements it recommends in evaluating whether a recipient’s procedures are prompt and equitable.

Recent guidance provided by DOJ and OCR on sexual harassment/sexual assault related policy and procedures in a joint DOJ-OCR letter of findings and resolution agreement with the University of Montana also provides important considerations for grant recipients in shaping Title IX procedures consistent with the regulatory requirement for such procedures to be “prompt and equitable.”¹⁵

(i) Procedures as Written

WUSTL’s internal discrimination complaints procedures are set forth in the University’s Policy on Discriminatory Harassment¹⁶ and a supplement to this policy, “Grievance Policy & Procedures for Allegations by Undergraduate Students Against Faculty.”¹⁷ WUSTL also has a separate “Policy on Sexual Harassment.”¹⁸ WUSTL’s Policy on Discriminatory Harassment and its Grievance Policy and Procedures as written are consistent with relevant NASA, DOJ and ED OCR guidance in some important aspects, specifically in that they provide:

- An informal and formal complaints process;
- Specific timeframes for completion of some key process elements, such as hearings; and

Grievance Procedures (accessible at <http://www.ed.gov/about/offices/list/ocr/docs/shguide.html>.) (OCR Revised Sexual Harassment Guidance).

¹² OCR Revised Sexual Harassment Guidance, § IX. Prompt and Equitable Grievance Procedures (citations omitted).

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Letter of findings accessible at: <http://www.justice.gov/opa/documents/um-ltr-findings.pdf> and resolution agreement accessible at <http://www.justice.gov/crt/about/edu/documents/montanaagree.pdf>.

¹⁶ <http://hr.wustl.edu/policies/Pages/DiscriminatoryHarassment.aspx>

¹⁷ Accessible at <http://www.wustl.edu/policies/grievance1.html>

¹⁸ Accessible at <http://hr.wustl.edu/policies/Pages/SexualHarassment.aspx>

- Multiple avenues for reporting, e.g., the Ombudsperson for the School, Student Counseling Services, the WUSTL Discrimination and Title IX Grievance Committee, which is chaired by the VCHR, whose contact information is provided in the procedures

However, in other important respects, the Discriminatory Harassment Policy and the Grievance Policy and Procedures are not consistent with relevant compliance requirements and guidance for Federal grant recipients. For example, they do not provide specific and reasonable timeframes for the key process element of complaint investigation.

The Discriminatory Harassment Policy and the Grievance Policy and Procedures also do not clarify the burden of proof to be utilized in hearings. However, in its April 2011 “Dear Colleague” letter providing guidance to federal grant recipients on their internal grievance processes under Title IX, ED OCR states that a “preponderance of the evidence,” is the appropriate standard in cases of sexual harassment,¹⁹ WUSTL reports that this is the standard used and made explicit in its University Student Judicial Code, which sets forth procedures applied when a non-staff member student is alleged to have engaged in sexual harassment. It is also the standard used but *not* made explicit in the current version of the Discriminatory Harassment Policy and the Grievance Policy and Procedures (see Recommendations below).

The Discriminatory Harassment Policy and the Grievance Policy and Procedures do not include provision for appeal rights for all parties. WUSTL reports that the Discriminatory Harassment Policy incorporates by reference to the University’s Discrimination and Sexual Harassment Hearing Procedures appeal by faculty members. While NASA’s Title IX regulations do not specifically require that recipients provide appeal rights, we believe that the presence or absence of appeal rights is an appropriate consideration in determining whether a given recipient is providing for a “prompt and equitable” discrimination complaints process, as called for under the regulations. ED OCR guidance recommends that grant recipients provide for an appeal process.²⁰ In addition, ED OCR makes clear that if the right to appeal is offered, both parties must be given the opportunity to appeal.²¹ WUSTL notes that charged students under its Student Judicial Code are given the opportunity to appeal, and while the University has, as a matter of practice, been giving both parties the right to appeal in recent cases under its other procedures, these need to be updated to reflect the practice.²²

UPDATE: WUSTL reported to NASA in April 2013 that these procedures will be updated to make this explicit in writing.²³ In May 2013, WUSTL reported that it had taken the following steps to address the

¹⁹ See U.S. Department of Education, Office for Civil Rights, “Dear Colleague” letter (April 4, 2011), stating: “[I]n order for a school’s grievance procedures to be consistent with Title IX standards, the school must use a preponderance of the evidence standard (*i.e.*, it is more likely than not that sexual harassment or violence occurred). The “clear and convincing” standard (*i.e.*, it is highly probable or reasonably certain that the sexual harassment or violence occurred), currently used by some schools, is a higher standard of proof. Grievance procedures that use this higher standard are inconsistent with the standard of proof established for violations of the civil rights laws, and are thus not equitable under Title IX. Therefore, preponderance of the evidence is the appropriate standard for investigating allegations of sexual harassment or violence.” April 2011 Dear Colleague letter, § Prompt and Equitable Requirements, (B) Adequate, Reliable, and Impartial Investigation of Complaints.

²⁰ April 2011 Dear Colleague letter, § Prompt and Equitable Requirements, (B) Adequate, Reliable, and Impartial Investigation of Complaints, stating: “[i]f a school provides for appeal of the findings or remedy, it must do so for both parties. Schools must maintain documentation of all proceedings, which may include written findings of facts, transcripts, or audio recordings.”

²¹ *Ibid.*

²² See December 10th letter, p. 2.

²³ See Ann B. Prenatt, Vice Chancellor for Human Resources and Title IX Coordinator, letter to David Chambers, Senior Civil Rights Analyst, re: Response to NASA Draft Report, December 10, 2012 (hereafter cited as December

concerns cited above, stating: “ Most recently, the University implemented the University Sexual Assault Investigation Board, which was created to investigate complaints of sexual assault filed against WUSTL students. [The procedures] notably address the concern raised by NASA regarding investigation timeframes, burden of proof, and rights of appeal.”²⁴

In addition, while the Policy on Sexual Harassment informs individuals of their right to file their complaint directly with a federal funding agency of WUSTL, for example, the Department of Education or NASA, the Discriminatory Harassment Policy and Grievance Policy and Procedures do not. With the exception of providing the information on filing directly with a Federal agency, the Sexual Harassment Policy suffers from the same problems as the others.

UPDATE: WUSTL informed NASA in May 2013 that the Discriminatory Harassment Policy had been updated to address the concern.²⁵

Further, there is a lack of clarity in the three separate procedural documents that diminishes their overall effectiveness. For example, the name of the Discriminatory Harassment Policy does not signal that discrimination, other than in the form of discriminatory harassment, is covered. The text of the Policy does provide this clarity to some extent, stating under the heading “Discrimination,” that: “The University does not discriminate in access to, or treatment or employment in, its programs and activities on the basis of race, color, age, religion, sex, sexual orientation, gender identity or expression, national origin, veteran status, disability or genetic information.” Nonetheless, the name of the policy remains misleading and under inclusive regarding its scope.²⁶ In addition, the Discriminatory Harassment Policy states that “Hearing procedures are set out in the Washington University Discrimination and Sexual Harassment Hearing Procedures” yet, a Google search for such a document leads one back to the Discriminatory Harassment Policy.

However, WUSTL informs NASA that it has formed a task force to look into revisions to its procedures, in light of the April 2011 ED OCR guidance. The task force’s charge includes examining and making recommendations regarding the University’s policies and procedures relating to sexual harassment and sexual violence (see Promising Practices below). WUSTL reports that in November 2011 it revised its Policy on Sexual Harassment (which includes information on internal discrimination complaints procedures) to broaden the definition of sexual harassment to include sexual violence, based on ED OCR’s April 2011 guidance.²⁷

Based on our review, NASA finds that WUSTL’s Discriminatory Harassment Policy and Grievance Policy and Procedures are not entirely consistent with Title IX regulatory requirements regarding internal discrimination procedures. NASA therefore recommends WUSTL issue its revised policy procedures as soon as possible (see Recommendations below).

10th letter), p. 3. Ms. Prenatt informed NASA that the University intends to update its policy and procedures to allow for appeal by all parties to the proceedings.

²⁴ Ann B. Prenatt, Vice Chancellor for Human Resources and Title IX Coordinator, letter to Sharon Wagner, Assistant Director, Program Planning and Evaluation Division, re: Response to NASA’s Second Draft Report, May 3, 2013 (hereafter cited as May 3rd letter).

²⁵ Ibid.

²⁶ Ibid., stating that: “The Discriminatory Harassment Policy will be revised to address NASA’s concerns regarding its name and scope. The University will continue its work in clarifying the procedures and making them readily accessible.”

²⁷ December 10th letter; May 3rd letter.

(ii) Procedures as Implemented

Under the Grievance Policy and Procedures, students wishing to raise a complaint of sex discrimination (including sexual harassment) are provided with multiple avenues for doing so, e.g., Ombudsperson, Harassment Response Coordinators, the VCHR's office which includes trained Advisors on the process, consistent with ED OCR guidance.²⁸ The VCHR reports that individuals chosen to serve as Harassment Response Coordinators are those who, in the University's estimation, have reputations within various constituencies (students, staff and faculty) as approachable and trustworthy members of the WUSTL community. In addition, various employees in the Human Resources Department (who are not as well known in the community at large) were selected for this role on the basis of their specific experience and expertise. The Coordinators and advisors are trained at the time of their appointment and whenever there is a change in policy or procedure.

Similarly, the Policy on Sexual Harassment makes clear that certain University employees with supervisory responsibilities have an obligation to report allegations of sexual harassment that come to their attention.²⁹ This is entirely consistent with Title IX and OCR guidance issues under Title IX. WUSTL reports that, in addition, some employees serve as campus security officers and, in that capacity, have obligations to report certain criminal activities brought to their attention under the Clery Act.³⁰ However, a recent article in WUSTL's student newspaper, *Student Life*, seems to indicate there is some confusion among students as to who does or does not have reporting responsibilities under the policy among student employees.³¹ The article states that: "When pressed about who specifically would be considered a mandatory reporter, [the VCHR] recognized there remain many gray areas that the Department of Human Resources is working to clarify."

WUSTL reports that, as the VCHR suggested in the newspaper article, the University is stepping up its efforts to train student employees required to report, including Resident Advisors, Teaching Assistants and Peer Mentor.³² While not all student employees have an obligation to report sexual harassment under the Sexual Harassment Policy because they do not have supervisory authority, the University recognizes that students are concerned about when their employment triggers a reporting obligation and is taking steps to train them.³³ NASA recommends that WUSTL continue these efforts and report on them through its Title IX Task Force (see Recommendations below).

WUSTL reported no sex discrimination (including sexual harassment) complaints filed in the Physics Department during the five-year period of NASA's review (Academic Years 2006-07 – 2010-11) under either the University's Grievance Policy and Procedures or its Policy on Sexual Harassment. This included both reported incidents and formal complaints filed internally or externally.

b. Policy Dissemination

Relevant ED OCR and DOJ guidance also informed NASA's assessment of WUSTL compliance with the regulatory provision requiring dissemination of Title IX policy.³⁴ This guidance clarifies the

²⁸ See ED OCR Revised Sexual Harassment Guidance (stating "[A] school may want to designate more than one employee to be responsible for handling complaints in order to ensure that students have an effective means of reporting harassment.")

²⁹ May 3rd letter.

³⁰ *Ibid.*

³¹ Alana Hauser, "Title IX: Mandatory reporting and mismanagement," *Student Life*, Oct. 4, 2012.

³² December 10th letter, pp. 4-5.

³³ *Ibid.*

³⁴ See, e.g., U.S. Department of Justice Civil Rights Division, *Title IX Legal Manual* (Jan. 11, 2001), § V.E., p. 111 (accessible at <http://www.usdoj.gov/crt/cor/coord/ixlegal.htm>); OCR Revised Sexual Harassment Guidance.

regulatory requirement. For example, OCR’s guidance emphasizes the need for recipient institutions to have “well-publicized” grievance procedures.³⁵ In addition, OCR states, “without a disseminated [sexual harassment] policy and procedure, a student does not know either of the school’s policy against and obligation to address this form of discrimination, or how to report harassment so that it can be remedied.”³⁶ Importantly, OCR stated in its Revised Sexual Harassment Guidance (2001):

Distributing the procedures to administrators, or including them in the school’s administrative or policy manual, *may not by itself be an effective way of providing notice, as these publications are usually not widely circulated to and understood by all members of the school community.* Many schools ensure adequate notice to students by having copies of the procedures available at various locations throughout the school or campus; publishing the procedures as a separate document; including a summary of the procedures in major publications issued by the school, such as handbooks and catalogs for students, parents of elementary and secondary students, faculty, and staff; and identifying individuals who can explain how the procedures work.³⁷

More recently, in its April 2011 Dear Colleague letter on Title IX and sexual violence, OCR has advised grant recipients that their “grievance procedures be prominently posted on school Web sites; sent electronically to all members of the school community; available at various locations throughout the school or campus; and summarized in or attached to major publications issued by the school, such as handbooks, codes of conduct, and catalogs for students, parents of elementary and secondary students, faculty, and staff.”³⁸

DOJ regulations also make Federal funding agencies and recipient institutions responsible for disseminating information materials, e.g., handbooks, manuals, pamphlets, to ensure program beneficiaries are aware of their rights pursuant to EO law.³⁹

As stated above in the assessment of Title IX coordinator contact information dissemination, information regarding the University policies under Title IX is disseminated thoroughly through means of electronic and print media.⁴⁰ The Discriminatory Harassment Policy is published in several places, including the University’s *Bearings* Web site, the *Record* (WUSTL’s online newsletter), and the Faculty Information booklet. It may also be found at <http://www.wustl.edu/policies/sexharas.html> or obtained from the main campus or Medical School Human Resources offices.

2. Recommendations

a. Internal Discrimination Complaints Procedures. WUSTL, through its Title IX Task Force, should immediately update its internal discrimination complaints procedures, that is, its Discriminatory Harassment Policy and its Grievance Policy and Procedures (and with the exception of filing directly with the Department of Education, the Sexual Harassment Policy as well), to ensure they:

³⁵ See OCR Revised Sexual Harassment Guidance, Preamble, “Enduring Principles from the 1997 Guidance.”

³⁶ *Ibid.*, § V(D), “The Role of Grievance Procedures.”

³⁷ *Ibid.*, § IX. Prompt and Equitable Grievance Procedures (emphasis added).

³⁸ April 2011 Dear Colleague letter, § Prompt and Equitable Requirements, (A) Notice of the grievance procedures. In May 2013, WUSTL informed NASA that: “The University will be reviewing and revising its internal discrimination complaints procedures to ensure compliance with Title IX. In addition, the University will make available NASA’s Title VI/Title IX Brochure to those academic departments receiving financial assistance from NASA.” See May 3rd letter.

³⁹ Public dissemination of Title VI information, 28 C.F.R. § 42.405(c).

⁴⁰ See Section I.A.1.a, above.

- Provide for appeal rights.
- Describe clearly and with specific and reasonable timeframes the investigative process for formal complaints.
- Set forth the burden of proof to be utilized in complaints hearings, consistent with guidance provided in ED OCR's April 2011 Dear Colleague letter.
- Inform individuals of their right to file their complaint directly with a federal funding agency of WUSTL, for example, the Department of Education or NASA.
- Change the name of the Discriminatory Harassment Policy to reflect that it covers both discrimination and discriminatory harassment.
- Continue efforts to clarify roles and responsibilities in sexual harassment/sexual assault policies and in communications, education and awareness efforts on these policies to ensure that student employees, such as Resident Advisors and Teaching Assistants, understand and can fulfill their obligations under the University's policies.

Update: See information reported on pp. 9-10 regarding WUSTL's actions to address this recommendation.

b. Dissemination of NASA's Title VI/Title IX Brochure. WUSTL, through the VCHR's office, may wish to fully disseminate among academic departments receiving NASA financial assistance, a NASA brochure on nondiscrimination and equal opportunity for beneficiaries of NASA assisted programs, both electronically and in print. These steps are consistent with guidance interpreting the NASA Title IX regulatory requirements for policy dissemination. The brochure is located online at <http://odeo.hq.nasa.gov/documents/nondiscrimination.pdf> and hard copies are available through the NASA Office of Diversity and Equal Opportunity.

3. Promising Practice

Title IX Task Force. The WUSTL Title IX Task Force is making progress in reviewing policies and procedures related to sexual harassment and discrimination. WUSTL's Policy on Sexual Harassment was amended in the wake of the April 2011 Dear Colleague Letter issued by ED OCR, in part to revise the University's definition of sexual harassment to include sexual violence. WUSTL has been aggressive in its communication of the updated policy, using electronic communications broadly and presenting to management groups, including Faculty with administrative responsibilities, and Faculty Senate Council and Faculty Senate. This is an on-going effort, in addition to the normal communications of key policies to those who join the University and through various supervisory/management training programs. The Task Force also has focused a good deal various on efforts related to educating the University community about sexual harassment and assault and ensuring that the University has a safe and respectful environment for students, faculty, staff and visitors. WUSTL gathered information by target audience, and has now formed sub-committees, specific to target audiences, with the charge of:

- Determining if the current efforts should continue, be modified, eliminated and replaced (it is critical that we not just add more programs/communications);
- Reviewing/evaluating the current education/training and outreach; and
- Making recommendations to the greater Title IX Task Force

In general, the committees are to consider, among other things, the types of communication, how formal and/or structured the communications are, timing of the communications and programs, etc. While the method or approach may vary by audience, it is WUSTL's objective that the programs be uniform in message and clear about the University's policy, expectations, definitions and responsibilities and resources.

C. Self-Evaluation

1. Compliance Assessment

The NASA Title IX regulations required recipient institutions to conduct a Title IX Self-Evaluation regarding admissions and treatment of students by September 29, 2001, and to keep the Self-Evaluation on file for three years.⁴¹ While WUSTL is not obligated to conduct a further Title IX Self-Evaluation, such evaluations are very helpful to ensure, for example, that selection criteria and academic practices do not adversely impact students. They also provide an opportunity to evaluate trends over time and to develop mechanisms for proactively addressing emerging issues.

The Department's response to the NASA information data request under the instant review constitutes a viable Title IX self-evaluation regarding two key components: admissions and treatment of students.⁴² Specifically, the Department analyzed the student female participation rates over a five year period and compared them to national averages; examined the degree that it adhered to policy dissemination and training requirements; and reviewed climate and educational experiences of females vs. males. The University did not provide any other documentation of Title IX self-evaluation, stating that it is "not currently operating under a formal self-evaluation... as the University is in compliance with its Title IX obligations." However, NASA was informed in the University's response to our information request, that "the Chancellor recently appointed a University Title IX Task Force to assess the University's policies and procedures under Title IX and to make appropriate recommendations for change. A survey assessing sexual assault and violence among our students is scheduled to be conducted in the Spring 2012 in conjunction with American University and Emory University."

2. Recommendations

a. **Periodic Examination of Student Data by Gender.** The Physics Department should conduct periodic examination of student data, such as that provided to NASA, and climate surveys to regularly assess Title IX compliance. The Department should use self-evaluations, including trend analysis, to inform training needs and other proactive efforts to ensure equal opportunity on the basis of gender.

b. **Visible Leadership on Gender Equity at the Departmental Level.** The Department should review recommendations made by the Chancellor's University Title IX Task Force, as well as the Sexual Assault and Violence survey, and ensure that they are implemented, as appropriate within the Department.

D. Recruitment, Admissions, Enrollment, and Degrees Earned

1. Compliance Assessment

The NASA Title IX regulations state that recipients may not discriminate on the basis of sex in admissions and recruitment.⁴³ Consistent with this requirement, NASA reviewed the Physics Department's student recruitment, and admissions practices, as well as student departures, degrees earned, and financial assistance. For graduate students, NASA also examined success on the qualifying exams. The review was based on several years of data (as specified in each subsection) provided by the University.

a. Graduate Admissions, Enrollments, and Departures

⁴¹ Self-evaluation, 14 C.F.R. § 1253.110(c).

⁴² 14 C.F.R. § 1253.110(c).

⁴³ Admission, 14 C.F.R. §1225.300; Recruitment § 1253.310.

Graduate students at WUSTL are normally accepted for work towards a doctorate degree, but are occasionally accepted to work towards a master's degree. The Department Chair explained that all students qualify for a master's degree after they complete a certain number of classes. In the past, students who did not pass the qualifying exam after two tries were granted a terminal master's degree. However, since the qualifying exam was changed to an oral exam, students are not failing, and therefore none are earning terminal master's degrees.

NASA examined five years of graduate data for the review, beginning with academic year 2006-07. During the five year period, 178 of the 711 applicants were female (25 percent) and 47 of the 173 offers were made to female applicants (27 percent). Of the 178 female applicants, 26 percent received offers, compared to 24 percent of the 533 male applicants. However, of those who received offers, 48 percent of the males enrolled, compared to a yield of 38 percent of females who received offers. NASA notes with concern that the new enrollment of female students declined steadily over the five year period. In academic year 2010-11, despite numbers of female applicants and admits similar to other years, only one new female student enrolled in the program; only two new female students enrolled the previous year. The result for the five year period was 18 new female students and 60 new male students, comprising 23 percent and 77 percent of the new graduate enrollments respectively.

The Department Chair was aware of the decrease in new female student enrollments in recent years, but did not know why it happened. He said they had not changed anything. NASA heard during faculty interviews that women who received offers chose to go elsewhere because they received better fellowship offers or because they wanted to stay closer to home. When the Department follows up with female declinations, reasons based on gender have not been heard. However, faculty admitted during interviews that the low number of women on the faculty (one in tenure track) could deter female students from accepting offers. The Department is tracking the admissions data and will stay on top of it to see if the low female matriculation trend continues.

NASA also examined departures from the graduate program, including both changes of major and students who left the school. NASA found that only six students left the program during the five year period, out of over 849 total enrollments. Although the total number of departures was too small to draw definitive conclusions, NASA notes that 50 percent of the departures were female students, which was well above their overall enrollment rate in the graduate program during the five year period (28 percent).

b. Graduate Financial Assistance, Exams, and Degrees Earned

NASA compared the financial assistance provided to male and female students in terms of fellowships, research assistantships (RAs) and teaching assistantships (TAs). During the five year period, women received 23 percent of the fellowships, 33 percent of the RAs, and 25 percent of the TAs, for a total of 29 percent of all three types of assistance combined. NASA finds the rate of assistance received by women to be consistent with their 28 percent enrollment rate for the five year period.

In terms of success on the qualifying exam, NASA found that all 46 students who took the exam between 2006-07 and 2009-10 (35 men and 11 women) passed on the first try. Likewise, all students taking the dissertation exam passed on their first try and earned their doctorates.

During the five year period reviewed by NASA, 63 students were awarded doctorate degrees, including 15 females (24 percent) and 48 males (76 percent). Nationally, only 18 percent of doctorate degrees in

physics were earned by women for the same time period.⁴⁴ Another 39 students were awarded master's degrees, including 13 females (33 percent) and 26 males (67 percent). The national comparator for women earning master's degrees in physics for that time period was 23 percent.⁴⁵

c. Undergraduate Admissions, Enrollments, and Departures

As with the graduate program, NASA examined five years of admissions and enrollment data for the undergraduate physics program. Unlike the graduate program, undergraduate students apply generally to the University, not to the Physics Department. However, applicants are able to voluntarily specify an area of interest on their applications; the following numbers for applicants and admissions are for those who designated physics as an area of interest.

For five academic years beginning in 2006-07, 3,195 students identified physics as an area of interest on their applications to the University, including 985 females (31 percent) and 2,210 males (69 percent). Of the 985 female applicants, 27 percent were admitted, compared to 31 percent of the 2,210 male applicants. However, of those who were admitted, 24 percent of the females eventually matriculated into the undergraduate physics program, very close to the 25 percent of the males who were admitted. In terms of total majors for the five year period, female students comprised 22 percent of all undergraduate physics majors. NASA notes that the percent of female matriculations and majors in the program generally increased during the five year period, except for a drop off in both areas for the most recent year (2010-11). Female matriculations dropped from 25 percent to 20 percent and majors similarly dropped from 25 percent to 19 percent from the year before.

NASA also examined departures from the undergraduate physics program, including changes of major and students who left the University. During the five year period, six percent of female majors left the program compared to five percent of the male majors. The actual numbers were small – five out of 81 female and 15 out of 291 male majors departed the program. NASA notes that two of the five women who departed earned minors in Physics.

d. Undergraduate Financial Assistance, Research Participation, and Degrees Earned

The University provided five years of financial assistance for undergraduate physics students. The assistance included multiple sources: WUSTL honorary based scholarships, WUSTL need-based scholarships, Federal and State grants and scholarships, student loans, work-study, and other outside awards. During the five years reviewed, 220 undergraduate students received financial assistance, including 45 females (20 percent) and 180 males (80 percent). The 20 percent of female students receiving assistance was slightly below their 22 percent enrollment in the undergraduate program.

Of greater concern to NASA, however, is the differential in the amount of assistance provided to male and female majors. For the five year period, female students received only 16 percent of the financial assistance, despite comprising 20 percent of those receiving assistance. The average assistance provided to female students was \$4,006 per year, compared to \$5,333 provided to male students. Because the assistance numbers included loans, it may be that male students graduate owing more money than female students. However, the gender differential warrants further analysis by the University to (1) identify

⁴⁴ National Science Board. 2012. *Science and Engineering Indicators 2012*. Arlington VA: National Science Foundation (NSB 12-01); Appendix Table 2-27, 2012. Average of doctorate degrees earned by females for years 2006-2009 (most recent available) was used as comparator.

⁴⁵ Ibid. Appendix Table 2-25. Average of master's degrees earned by females for years 2006-2009 (most recent available) was used as comparator.

which funding source(s) are lower for females than males (are there funding sources controlled by the university?), and (2) ensure that gender discrimination is not a factor in the lower assistance provided to females.

From academic year 2003-04 through 2007-08,⁴⁶ 44 students earned bachelor's degrees in Physics, including 12 female (27 percent) and 32 male (73 percent) students. The percent of degrees earned by female students was higher than their enrollment in the program for years 2006-07 through 2010-11 (22 percent) – the ultimate indicator of success by female students in the program. NASA notes also that the rate for females at WUSTL compares favorably to the national average of 20 percent female.⁴⁷

2. Recommendations

a. **Low Percent of Female Matriculations.** The Department should continue to monitor applicant and enrollment data by gender to assess whether the recent trend of fewer female matriculations continues. New female enrollments over the past five years (23 percent) is lower than the total enrollment of females in the program for the five year period (28 percent) because of the very low number of female matriculations in the two most recent academic years. If that trend continues, WUSTL's percentage of females earning doctorates will very soon not be above or even at the national average for women in physics.

b. **Undergraduate Financial Assistance.** The Department should take a closer look at the different types of financial assistance provided to undergraduate students to identify the reason(s) for the lower assistance provided to females. The Department must ensure that sex discrimination does not impact the amount of assistance provided to female students.

3. Promising Practices

a. **Undergraduate Recruitment Efforts.** The Department collaborates with the University's Office of Admissions to send several thousand personal mailings each year to all prospective students who have indicated any interest in physics as a potential major. The mailing includes an eight-page brochure that highlights personal experiences of recent students; half of the highlighted students are women. In addition, all female students are flagged for continued communication and personal introduction to the Department upon acceptance to the University.

b. **Department Web site.** The Physics Web site includes female students in its graphics. The main graduate page includes a statement of the Department's commitment to diversity and "encourage[s] the application of women and under-represented minorities to our graduate and undergraduate programs, as well as for faculty and staff openings."

E. Program Administration and Academic Environment

1. Compliance Assessment

The NASA Title IX regulations provide that a recipient shall not, on the basis of sex, exclude from participation in, deny the benefits of, or otherwise limit any person in any advantage or opportunity pertaining to academic, extracurricular, research, occupational training, or other education program or

⁴⁶ These are the years for which the University provided data for undergraduate degrees earned.

⁴⁷ National Science Board, 2012, Appendix table 2-18.

activity operated by the recipient.⁴⁸ The Title IX regulations explicitly state that a recipient may not discriminate on the basis of gender with regard to career counseling or guidance.⁴⁹

The NASA Title IX regulations include a detailed provision on matters pertaining to marital and parental status.⁵⁰ Generally, under the regulations, a recipient may not apply any rule concerning a student's actual or potential parental, family, or marital status that treats students differently on the basis of sex. Regarding pregnancy and related conditions, the regulations state that a recipient may not discriminate against any student on the basis of the student's pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery, unless the student requests voluntarily to participate in a separate portion of the program or activity of the recipient.

The regulations require that pregnancy and childbirth be treated in the same manner and under the same policies as any other temporary disability or physical condition.⁵¹ Further, Title IX requires that in the case of a recipient that does not maintain a leave policy for its students, or in the case of a student who does not otherwise qualify for leave under such a policy, “a recipient shall treat pregnancy, childbirth, false pregnancy, termination of pregnancy, and recovery from the termination of pregnancy as a justification for a leave of absence for as long a period of time as is deemed medically necessary by the student's physician, at the conclusion of which the student shall be reinstated to the status that she held when the leave began.”⁵²

In addition, the Title IX regulations incorporate, by reference, the NASA Title VI regulatory provision prohibiting a recipient from utilizing methods of administration which have the effect of defeating or substantially impairing accomplishment of the objectives of the program for an individual based on sex.⁵³

On the basis of these provisions, the compliance team examined WUSTL and Physics program administration and its impacts, both positive and negative, on the overall academic environment of Physics, including academic advising, career counseling, research participation, classroom experiences, parental or marital status (“family friendly”) policies and physical safety of the program environment.

a. Academic Advising and Career Counseling

NASA examined the Physics advising program, including policies and procedures, as well as student experiences and observations, to determine whether there was evidence of students being treated differently or otherwise limited, on the basis of gender. NASA specifically considered whether there were allegations of gender-related inappropriate conduct by faculty or graduate students in the advising setting. The review showed no evidence of any such conduct. (See also Sec. II.E.1.e., “Overall Environment,” below.)

b. Classroom Experiences and Research Participation

NASA’s examination of classroom experience and research participation included a review of information provided by Physics on academic requirements and research opportunities within the program. NASA’s review sought to determine whether, and if so the extent to which, students were treated differently or otherwise limited, on the basis of gender, with regard to research participation and classroom experiences.

⁴⁸ Education programs or activities, 14 C.F.R. § 400(a), (b)(7).

⁴⁹ Counseling and use of appraisal and counseling materials, 14 C.F.R. § 1253.425.

⁵⁰ Marital or parental status, 14 C.F.R. § 1253.445 and 1253.530.

⁵¹ Admission, *Prohibitions relating to marital or parental status*, 14 C.F.R. § 1253.300(c)(3).

⁵² Marital or parental status, 14 C.F.R. § 1253.445 (b)(5).

⁵³ Enforcement procedures, 14 C.F.R. § 605.

According to data provided by the University, 50 undergraduate students participated in Physics-sponsored research during the five year period under review. Student researchers included 14 females (28 percent) and 36 males (72 percent). NASA did not find a problem with female participation in research, since the participation rate by female students was above their enrollment rate of 22 percent.

NASA's interviews with Physics faculty and students focused on the experiences of students in the classroom and lab. Both faculty and students interviewed reported no observable differences in this context. All students interviewed, both male and female, described classroom and research experiences in which they had not observed or experienced any concerns relating to gender occurring in the Physics program. There were no reported instances of inappropriate gender related conduct in the Physics Department either. All interactions between male and female faculty, TAs and undergrads were reported to be respectful, appropriate, and without indications of gender bias.

It is also noteworthy that Physics faculty members and post-doctoral lecturers stated that they consciously seek to imbue their courses with the "real-world," or societal impacts of physics work. One teacher stated that he's noticed his students' interest is better held when he shows them the everyday applications of the learning topics. Intentional focus on societally relevant applications in STEM work is important, because it can help to broaden the appeal of STEM disciplines to reach more broadly diverse student bodies (see Promising Practices below).

NASA also heard from a faculty member that the introductory undergraduate class curriculum was recently changed to be more interactive and more applied. For example, a section on radioactivity was related to the earthquake in Japan. The Department is also trying interdisciplinary courses, such as an energy class, which ties physics to the real world. This faculty member believes the introductory class is definitely more interesting than in the past and will attract more physics majors and more diversity.

c. Parental/Marital Status ("Family Friendly" Policies)

Regarding WUSTL policies pertaining to parental and marital status, the University has a parental leave policy for employees, including faculty and staff, that is consistent with relevant Title IX regulatory provisions requiring that pregnancy and childbirth be treated in the same manner and under the same policies as any other temporary disability or physical condition.⁵⁴ WUSTL also has a Policy on Parental Leave for Tenured and Tenure-Track Faculty that allows full-time tenured and tenure-track faculty members to take up to one semester of leave upon becoming a parent without having this count toward their probationary period.⁵⁵ Such tenure track "clock-stopping" policies are not required under Title IX but are considered promising practices for creating more inclusive work environments in academia.⁵⁶ NASA commends WUSTL for its tenure track stopping policy.

WUSTL reports that, based on NASA's review, the University has clarified its non-FMLA policy in the event of pregnancy or pregnancy related complications by updating the non-FMLA leave section of the Supervisor Policy and Procedure manual, as well as the Employee Handbook. Further, WUSTL reports that the Graduate School of Arts and Sciences, which oversees the Physics graduate programs has a "New Child Leave Policy." This is important because, while this group is receiving the most limited

⁵⁴ The WUSTL Leave of Absence policies are accessible at <http://hr.wustl.edu/policies/Pages/default.aspx> and at <http://hr.wustl.edu/policies/Pages/FMLA.aspx>.

⁵⁵ Accessible at <http://wustl.edu/policies/danforth-parental-leave.html>

⁵⁶ See e.g., Marc Goulden, Ph.D., Karie Frasch, Ph.D., and Mary Ann Mason, J.D., Ph.D., The University of California, Berkeley Center on Health, Economic, & Family Security and The Center for American Progress, *Staying Competitive: Patching America's Leaky Pipeline in the Sciences* (November 2009).

benefits nationwide, they are arguably the most important in affecting the future of U.S. science.⁵⁷ In addition, all WUSTL students with temporary disabilities, including pregnancy, that request a medical leave may seek a medical leave of absence through the University's Student Health Services.

Based on NASA's review, it appears that the Physics program has appropriately accommodated the need for parental leave for graduate students when it has arisen, and these matters are handled on a case-by-case basis between the advisor and the student. NASA's review showed no evidence that WUSTL and the Physics program are not operating in accordance with Title IX requirements in this regard. Nonetheless, statements by graduate students who said they are not clear on what the policies provide for or whether the policies extend to students, suggests that the program and the larger institution need to do more to ensure that faculty, post-docs, and students, both graduate and undergraduate are fully aware of the University's policies in this area (see "Recommendations," below).

d. Safety

Regarding WUSTL policies and student experiences in the Physics department regarding safety, NASA finds that the university and the program are taking appropriate steps to ensure physical safety of the program environment. For example, the university informed NASA through the VCHR, that a number of efforts have been undertaken in light of the ED OCR April 2011 Dear Colleague Letter to increase education and awareness around sexual harassment and sexual violence (see Promising Practices, below). Students interviewed reported feeling safe on campus, with sufficient lighting, building security, and other efforts mentioned. These included, for example, frequent email crime alerts, and campus nighttime escort for transport.

e. Overall Academic Environment

As to the overall academic environment, NASA looked carefully to ensure that students were not limited in their program participation based on gender. In this regard, several students interviewed identified a faculty member from whom they had been warned to stay away, in one case before the student had even enrolled. This faculty member had posted several writings on a WUSTL Web site. A few of these writings posit notions antithetical to equal opportunity and diversity, for example, advancing the stereotype that women are naturally less adept at math and science. Given the context, that is, a Title IX compliance review, these writings must give some pause, particularly as they are authored by a teaching faculty member in the very department in which the review is being conducted, and are accessible from his faculty Web page. One writing of concern states:

"How can we explain the contrast between the physical sciences, mathematics and engineering, in which the proportion of women hasn't risen despite ample encouragement, and law and medicine, in which it has? . . . [C]ertainly the hypotheses that fewer women (than men) are interested in science, or have the talent to succeed at it, must be considered."⁵⁸

Another example: in a piece called "Nature Can't be Fooled," the faculty member writes: "When we observe that, on average, boys are better at mathematics than girls we refuse to accept that nature made them that way (just as nature made boys taller, on average). Instead we pretend this is the result of prejudice and custom, and spend a great deal of effort trying to coax girls into fields in which most of them don't have enough interest or talent to succeed."⁵⁹

⁵⁷ Ibid.

⁵⁸ Dr. Jonathan I. Katz, "The Summers Affair," accessible at <http://wuphys.wustl.edu/~katz/summers.html>.

⁵⁹ Dr. Jonathan I. Katz, "Nature Can't be Fooled," accessible at <http://wuphys.wustl.edu/~katz/naturefooled.html>

The University informed NASA that these personal writings do not reflect WUSTL's values and views on women and science.⁶⁰ In fact, in response to the writings, the University placed a disclaimer on the Physics Department's Web site a few years ago stating: "The personal views expressed by members of the Physics Department on their web pages do not necessarily reflect the view of the Department or of Washington University." The disclaimer is prominently placed on the main Web page of the Physics Department, just under the "Welcome." The presence of these writings on the WUSTL Web site is consistent with the University's policy statement on personal web pages, which allows for members of the University community to freely express their opinions in writings as long as the writings are not in violation of local, state, or federal law. NASA commends WUSTL on the firm commitment to academic freedom reflected in this policy.

Nonetheless, given that the stereotypes expressed in these pieces are the very ones Title IX was enacted to help combat, NASA felt it incumbent upon us to look deeper into the issue presented. Having spoken to the students who had been "warned away" from this professor, and having viewed his writings, NASA determined, in consultation with the DOJ and ED OCR, that a deeper inquiry was necessary. In conducting this inquiry NASA sought to determine whether the views being expressed by this professor were having a negative impact on the program environment; more specifically: were this professor's views limiting any student's participation in the program based on gender? For example, had any student dropped a class taught by the professor because of his views being aired in the classroom setting? To this end, NASA requested from WUSTL and received supplemental information to conduct further inquiry. This included specific information on courses taught by this professor, with comparative data on other sections taught by other faculty members of these courses. NASA also received information on grades for these sections for the past three years, disaggregated by gender.

The additional data reviewed, including grades in this faculty member's course broken down by gender, showed no cause for concern. NASA requested and was provided the names of 15 female students who had taken this professor's courses (none of which are required courses). We reached out to these students, making no mention of the specific professor or the course, only that we were interested to speak with them as part of our Title IX review. While only a handful of the 15 were responsive, none of these, when asked directly about whether any professor had shown gender bias in the classroom or during advising, answered in the affirmative. Moreover, NASA's review showed no evidence that any student was being treated differently or limited in his or her program participation based on gender, or that the program's methods of administration are differently impacting students based on gender. There were no instances of inappropriate gender related conduct in the Physics Department. All interactions between male and female faculty, teaching assistants (TAs) and undergrads were reported to be respectful, appropriate, and without evidence of gender bias, subtle or otherwise.

While NASA's review of the WUSTL Physics Department did not uncover different treatment or limitations on program participations for program students based on gender, one need only look to the relevant research literature and recent media reporting to see that inequities based on gender do indeed continue to exist in the higher education setting, and particularly in STEM fields.⁶¹ In this regard, we note that NASA recently conducted a series of focus groups with university leadership, STEM program administrators, faculty, and other stakeholders from across the country. The focus groups were designed to help us better provide civil rights technical assistance and outreach to all of our grant recipient institutions, for example, helping us to learn more about the challenges confronting our grantees in efforts to create greater diversity and more inclusive program environments in STEM. The focus groups

⁶⁰ See December 10th letter, pp. 6-7.

⁶¹ See e.g., Robin Coger, "Why STEM Fields Still Don't Draw More Women," *Chronicle of Higher Education*, Oct. 29, 2012; Shankar Vedantam, "How Stereotypes Can Drive Women To Quit Science," aired on National Public Radio (NPR), July 12, 2012. See also NASA's Title IX Summary Literature Review (App. A, p. X, below).

yielded some common themes. One of these, agreed to be a difficult problem among academic leadership, STEM faculty, and EO compliance officials among the focus group participants, was the need for culture change in some STEM program environments. More specifically, participants asked NASA how the Agency could help to address the problem of some STEM faculty who remain hostile to equal opportunity and diversity related efforts. It appears, based on NASA's Title IX review, that the WUSTL Physics Department, like other STEM departments, continues to wrestle with this exact issue.

NASA also heard during its on-site interviews about other concerns touching on program culture and environment. It appears there is a palpable resistance to change in the Department, evident, for example, in the weekly Physics colloquia. Apparently, it is rare for a colloquia presenter to be female and topics such as gender and STEM are not addressed, even though this is intended to be a gathering of the Physics program community and coverage of such topics might benefit the community. We offer suggestions for addressing these issues that other STEM, and particularly Physics departments, have undertaken and that WUSTL may wish to consider (see Recommendation below).

2. Recommendations

a. **Better Ensuring an Inclusive Environment: Department-wide Assessment.** The Physics Department should consult available resources on assessment tools to help enhance the overall inclusiveness of the program's academic environment. For example, the American Physical Society Climate for Women in Physics Site Visit Program provides a wide range of invaluable information to assist Physics Departments in their gender equity efforts. APS's Site Visit Program has reviewed 55 Physics Departments nationwide since 1990.¹ The [program Web site](#) offers a great deal of helpful information for Physics Departments in assessing their program policies and practices, and modifying as appropriate. These include APS's "Best Practices for Recruiting and Retaining Women in Physics,"¹ and its self-assessment tool "Assessing Graduate Programs: Is Your Graduate Department in Physics Female Friendly?"

b. **Better Ensuring an Inclusive Environment: Education and Awareness.** To better ensure that training, education, and awareness efforts achieve their intended objectives, VCHR may wish to collaborate with offices having compliance responsibilities in a review of their various training modules to see if enhancements to any of them may be needed, and to ensure training provided by the two offices is consistent. Regarding form, consideration may be given to methods that tend to engage the learner, such as interactive exercises. Regarding content, consideration may be given to course designs with illustrative examples of discrimination and harassment that will resonate with the intended audience. In this regard, course curricula may be most effective when shaped by student participation in the design, for example, student focus groups that may offer insights into "real world" experiences. It is also important to clearly distinguish in the name of the training that sexual harassment and unconscious bias are different, just as harassment and intentional differential treatment are not the same thing.

Other universities reviewed by NASA have found it helpful to imbue training with the subtleties that are more likely to be familiar to today's student body. See, e.g., NASA's [Title IX Promising Practices for STEM](#). For instance, the examples might focus more on unintended actions that may still have a detrimental effect, such as responding more favorably to members of one gender in the class-room setting, or providing more encouragement to members of one gender in the advising setting. In the harassment context, the illustrative examples should also be designed to reflect the range of inappropriate remarks and behavior, rather than a focus only on the most egregious examples.

Another means of raising awareness on the issue might include a focus on the topics of women in STEM, or diversity in STEM, in forums in which the whole Physics community has an opportunity to present, such as the weekly colloquia.

c. **Parental Leave Policies and Resources**. It is not clear whether adequate steps are being taken to appropriately disseminate policy in this area, including the extent of coverage for students and student employees. The VCHR should work with Physics and other academic departments to clarify the available benefits for students employees, and also to develop similar information on pregnancy and child care for students, letting them know about available resources, especially where such resources differ from those available to employees.

3. Promising Practices

a. **Intentional Focus on Societal Impacts in Course Curricula**. Several Physics Department professors and lecturers spoke about their efforts to imbue course work with societally relevant applications of the work. One Physics teacher spoke about conscious efforts in this regard, for example, teaching or conducting lab work on the physics of how a bicycle operates, or teaching optics by focusing on how a telescope works. This is an important aspect of STEM teaching, particularly in the more theoretical fields, and particularly in freshman and sophomore environment, because it can help to retain a more broadly diverse, including gender diverse, student body.

b. **Commitment to Policy, Education and Awareness on Sexual Harassment and Sexual Violence**. In addition to its Policy on Sexual Harassment, WUSTL has a separate policy statement, Sexual Assault and Acquaintance Rape. This policy reaffirms the University's commitment to a campus environment free from sexual misconduct of any kind. It also provides a wealth of information and available resources, such as "Campus Safety and Medical Assistance," "Counseling," and "Advice, Support and Education." In addition, WUSTL updated its Policy on Sexual Harassment following the April 2011 Dear Colleague Letter to expand its definition of "sexual harassment" to include "sexual violence."

In light of this update, WUSTL aggressively communicated the Policy across the University, while reinforcing its commitment to providing a safe environment, its responsibilities to stop and prevent recurrence of sexual harassment, and, to the extent harassment is found to have occurred, to remedy the effects of harassment on the victim and the University community. The HR office reached out to key administrators at the University regarding the Policy, including but not limited to, ongoing presentations to Deans and Department Chairs in the various Schools at the University. In addition, presentations on WUSTL's Policy on Sexual Harassment and Title IX were given over the past two years to the Title IX Task Force, all staff members of Campus Life and the Office of Student Involvement and Leadership (which includes Greek Life), all Directors within "Student Services" Departments on campus, Residential College Directors, Residential Advisors and Greek Life House Managers, its Campus Assessment, Response and Evaluation (CARE) Team, and the University Sexual Assault Response Team.

There also is a significant amount of education and awareness training directed at WUSTL students, primarily carried out through the University's Student Health Services' Assistant Director for Sexual Assault and Community Health Services, the First Year Center (which organizes Orientation for new students), the Judicial Administrator, Residential Life and Campus Life, and student organizations dedicated to increasing awareness of sexual violence and sexual assault in the campus community. During Orientation, all new undergraduate students are required to attend a program called *The Date*, which is an interactive theatrical presentation that examines the issues of sexual assault and alcohol on college campuses. Small group discussions follow the presentation and are led by peer educators trained by Student Health Services.

The University's policies against sexual and discriminatory harassment are also discussed during orientation sessions required by several of the individual Schools as well as the Office for International Students and Scholars. Aside from Orientation events, other training programs have been offered to students through the Athletics Department, fraternities and sororities, women and gender studies classes, Student Health Services, Residential Life and Campus Life. In April 2011, the University adopted and held its first training session for a national bystander intervention program titled "Green Dot," which is designed to promote use of peer influence to prevent sexual violence, intimate partner violence and stalking violence on college campuses. Since that time, more than 100 students have been trained in bystander intervention.

III. CONCLUSION

NASA finds WUSTL to be in compliance with the Title IX procedural requirements regarding Title IX coordination, policy dissemination, and self-evaluation efforts. However, as to its internal grievance policy and procedures, WUSTL should immediately make revisions to its Discriminatory Harassment Policy and Grievance Policy and Procedures to bring them into compliance with relevant requirements, and take steps to better publicize its policies on parental leave, as recommended in this report.

NASA also finds that, while WUSTL and the Physics Department are in compliance with requirements to provide for methods of administration that do not differently impact or otherwise limit program participation of beneficiaries based on gender, some challenges remain. This is the case specifically with regard to creating and maintaining a welcoming and inclusive program environment for all students, regardless of gender. The recommendations in this report are designed to assist WUSTL and the Physics program in this and other matters relating to their Title IX efforts.

Finally, despite the challenges that remain, NASA observed a number of promising practices of both the University and the Physics program, particularly around policy, education and awareness efforts regarding sexual harassment and sexual assault prevention. NASA has noted these in the report and plans to incorporate them into future civil rights technical assistance for grantees as promising practices for ensuring equal opportunities in STEM programs.

APPENDIX: SUMMARY LITERATURE REVIEW

In developing its Title IX onsite review program, NASA conducted a review of literature regarding gender and STEM programs, including Title IX policy and enforcement in the STEM context.⁶² The review continues to be updated as new research and analysis on gender and STEM emerges. It also continues to assist NASA, and we hope, our recipients, to better understand concerns regarding gender and STEM and how Title IX compliance efforts can assist to address such concerns.

Reports and Studies on STEM: Key Findings and Recommendations

In general, the studies and reports NASA reviewed in the literature describe a broad range of gender-related issues in STEM. For example, the 2004 report of the U.S. General Accountability Office (GAO) (referred to above) described participation rates by gender, observing continued low participation for women in certain STEM programs, such as physics and some engineering disciplines. The GAO report also noted the greater drop-off of women as compared to men at every stage, from high school to doctoral programs. The report highlighted the need for steps to help address this, such as strong outreach efforts to increase the interest of younger students in the sciences.⁶³ In addition, the report recommended that agencies with science missions, such as NASA and the U.S. Department of Energy, conduct Title IX compliance reviews to ensure that grant recipient programs are providing equal opportunity regardless of gender.

NASA also relied on a number of scholarly reports and publications. Prominent among these were the National Academy of Sciences, National Research Council report, *To Recruit and Advance: Women Students and Faculty in Science and Engineering* (2006) (hereafter cited as NRC Report or *To Recruit*

⁶² See generally The National Academies, National Research Council, *Gender Differences at Critical Transitions in the Careers of Science, Engineering, and Mathematics Faculty* (2011); Marc Goulden, Ph.D., Karie Fransch, Ph.D., and Mary Ann Mason, J.D., Ph.D., The University of California, Berkeley Berkeley Center on Health, Economic, & Family Security and The Center for American Progress, *Staying Competitive: Patching America's Leaky Pipeline in the Sciences* (November 2009); The National Academies, National Research Council, *To Recruit and Advance: Women Students and Faculty in Science and Engineering* (2006); National Academy of Sciences, National Academy of Engineering and Institute of Medicine, *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering* (2006); American Institute of Physics Statistical Research Center, *Women Physicists Speak Again*, April 2006 (accessible at: <http://www.aip.org/statistics/trends/reports/iupap05.pdf>); Ellen Sekreta, *Sexual Harassment, Misconduct, and the Atmosphere of the Laboratory: The Legal and Professional Challenges Faced by Women Physical Science Researchers at Educational Institutions*, 13 Duke J. Gender L. & Pol'y 115 (Spring 2006); Catherine Pieronek, *Title IX and Gender Equity in Science, Technology, Engineering and Mathematics Education: No Longer an Overlooked Application of the Law*, 31 J.C. & U.L 295 (2005); Government Accountability Office, *Gender Issues: Women's Participation in the Sciences Has Increased, but Agencies Need to Do More to Ensure Compliance with Title IX* (July 2004); American Institute of Physics Statistical Research Center, *Women in Physics Speak: The 2001 International Survey of Women in Physics*, 2001 (accessible at: <http://www.aip.org/statistics/trends/reports/iupap.pdf>); Corinne A. Moss-Racusin, John F. Dovidio, Victoria L. Brescoll, Mark J. Graham and Jo Handelsman, "Science faculty's subtle gender biases favor male students," *Proceedings of the National Academy of Sciences* (2012), accessible at <http://www.pnas.org/content/early/2012/09/14/1211286109.full.pdf> Jean M. Curtain, Geneva Blake, and Christine Cassagnau, American Institute of Physics, "The Climate for Women Graduate Students in Physics," *Journal of Women and Minorities in Science and Engineering*, vol. 3, pp. 95-117 (1997); Mildred S. Dresselhaus, Judy R. Franz, Bunny S. Clark, "Improving the Climate for Women in Physics: A Program of Site Visits Funded by the National Science Foundation" (American Physical Society and the American Association of Physics Teachers: 1995) (ME Program Summary, accessible at <http://www.ME.org/programs/women/sitevisits/summary.cfm>) (ME Program Summary).

⁶³ U.S. Government Accountability Office (GAO) report, *Gender Issues: Women's Participation in the Sciences Has Increased, but Agencies Need to Do More to Ensure Compliance with Title IX* (July 2004).

and Advance); the University of California Berkeley, Center on Health, Economic & Family Security report, *Staying Competitive Patching America's Leaky Pipeline in the Sciences* (2009) (hereafter cited as UC Berkeley Report); the American Association of University Women's report, *Why So Few? Women in Science Technology, Engineering, and Mathematics* (2010); and "Science faculty's subtle gender biases favor male students," in *Proceedings of the National Academy of Sciences* (hereinafter cited as the PNAS Report) (2012).

The Need for a Sustained Commitment to Diversity among University Leaders and Administrators

The NRC Report, *To Recruit and Advance*, was based on a comprehensive literature review and site visits to four universities "recognized for successfully advancing and retaining women students, faculty or leaders."⁶⁴ *To Recruit and Advance* was a valuable tool to better understand women's experiences in science, technology, engineering, and mathematics (STEM) studies and helped to guide NASA's assessment under the instant review of promising practices regarding recruitment and advancement of women students in STEM programs.⁶⁵ For example, the report identified the need to create and institutionalize a sustained commitment to diversity among university leaders and administrators.⁶⁶ This commitment should be demonstrated by dedicating resources to that effort, e.g., Women in Engineering programs, and through ensuring visibility for women students and faculty in communications materials and the Department's Web site, which can help to show that the program is welcoming and inclusive of women.⁶⁷ Another key strategy is to extend outreach to students at the K-12 and undergraduate levels in the form of summer science and engineering camps, lecture series, career days, and mentoring programs.⁶⁸

Emphasizing the Societal Impacts of STEM Work

The NRC Report indicated that specific retention tools such as curricular modifications and "family friendly" policies might also be of assistance in increasing the numbers of women in STEM programs. For example, courses designed to emphasize the societal benefits or "real-world" applications of engineering have broadened the appeal of engineering studies, helping to create more diverse engineering student populations.⁶⁹ The AAUW report, *Why So Few*, supports the notion that emphasis on the societal impacts of science and engineering work, something that has often been lacking in the undergraduate curricula in the STEM disciplines:

[W]ell-documented gender differences exist in the value that women and men place on doing work that contributes to society, with women more likely than men to prefer work with a clear social purpose . . . [M]ost people do not view STEM occupations as directly benefiting society or individuals. . . As a result, STEM careers often do not appeal to women (or men) who value making a social contribution. Certain STEM

⁶⁴ NRC Report, Summary, p.2.

⁶⁵ NRC stated that it "sought to move beyond yet another catalogue of challenges facing the advancement of women academic in STEM to provide a document describing actions actually taken by universities to improve the situation for women." Ibid., Preface, p. vii.

⁶⁶ Ibid., chap. 1, p.8.

⁶⁷ Ibid., chap. 2, p.47.

⁶⁸ Ibid.

⁶⁹ Ibid., chap. 3, pp. 53 (citing Busch-Vishniac, I., and J. Jarosz, *Can diversity in the undergraduate engineering population be enhanced through curricular change?* *Journal of Women and Minorities in Science and Engineering* 10:255–281, 258 (2004)), 55, 60 (citing Farrell, E. F., "Engineering a warmer welcome for female students," *Chronicle of Higher Education*, February 22, 2002).

subdisciplines with a clearer social purpose, such as biomedical engineering and environmental engineering, have succeeded in attracting higher percentages of women than have other subdisciplines like mechanical or electrical engineering.”⁷⁰ (Citations omitted)

A key takeaway from this research for undergraduate STEM programs is the need to consider pedagogical enhancements to emphasize the societal or “real world” impacts of STEM work in meaningful ways. This is especially needed in freshman survey courses, in which many students are sampling a field to see if it might be the right major for them. A curriculum alive with examples of STEM work that is changing the world might very well help to increase the overall student diversity in the program.

Family Friendly Policies

A 2009 report of the University of California at Berkeley, *Staying Competitive: Patching America’s Leaky Pipeline in the Sciences* (UC Berkeley Report) notes that to be in compliance with Title IX, recipients must: 1) treat pregnancy as a temporary disability for purposes of calculating job-related benefits, including any employer-provided leave, and 2) provide unpaid, job-protected leave for “a reasonable period of time” if the institution does not maintain a leave policy for employees.”⁷¹ The UC Berkeley report also notes that, to help address family and care giving issues, institutions should have in place family responsive policies, benefits, and resources, including time-based policies and benefits such as stopping the clock (i.e., tenure-clock extension), various child care supports such as on- and off-campus centers, monetary supplements such as tuition remissions, and other resources such as lactation rooms.⁷²

Overall, the UC Berkeley Report, a major study on experiences of women scientists, found that unfriendly family policies—not lack of interest or commitment—are what turn many women away from academic science. Moreover, the report recommended universities adopt family supportive policies for all classes of researchers, not just faculty members, noting that graduate-student researchers and postdoctoral scholars receive the most limited benefits and yet are arguably the most important people affecting the future of U.S. science. In fact, the report found that this is the biggest leak in the pipeline: the point at which women who have received their Ph.D.s or are working as postdoctoral scholars are making the critical decision of whether to continue their careers in academic research. According to the report, too many of them are deciding not to, often because of their interest in starting a family.

Research conducted by the Alfred P. Sloan Foundation found that family formation—most importantly marriage and childbirth—accounts for the largest leaks in the pipeline between Ph.D. receipt and the acquisition of tenure for women in the sciences.⁷³ According to the Sloane Foundation research, women in the sciences who are married with children are 35 percent less likely to enter a tenure track position

⁷⁰ American Association of University Women, *Why So Few? Women in Science Technology, Engineering, and Mathematics* (2010), pp. 22-23 (citing Eccles [Parsons] et al., 1983; Eccles, 1994, 2006; Jozefowicz et al., 1993; Konrad et al., 2000; Margolis et al., 2002; Lubinski & Benbow, 2006; Eccles, 2006; National Academy of Engineering, 2008; Diekman et al., 2009; Eccles, 1994; Sax, 1994; Gibbons, 2009).

⁷¹ Marc Goulden, Ph.D., Karie Frasch, Ph.D., and Mary Ann Mason, J.D., Ph.D., The University of California, Berkeley Berkeley Center on Health, Economic, & Family Security and The Center for American Progress, *Staying Competitive: Patching America’s Leaky Pipeline in the Sciences* (November 2009), p. 5 (citations omitted).

⁷² *Ibid.*, p. 6.

⁷³ Alfred P Sloan Foundation, “[Keeping Women in the Science Pipeline](#),” Drs. Mary Ann Mason, Marc Goulden, Karie Frasch, University of California, Berkeley, presented at the Workforce Flexibility Conference, Georgetown Law School, Washington, DC, Nov. 29-30, 2010.

after receiving a Ph.D. than married men with children and 27 percent less likely than their male counterparts to achieve tenure upon entering a tenure-track job.⁷⁴ Tenured women are nearly three times more likely than men to be single without children.⁷⁵ In addition, the Sloane Foundation found that tenure-track faculty women who were married with young children were 21 percent less likely than tenure-track men who are married with young children, 26 percent less likely than tenure-track women who were married without young children, and 19 percent less likely than single women without children to have their work partially or fully supported by federal grants or contracts on a year-to-year basis.⁷⁶

Young scientists early in the pipeline are the least likely to receive benefits. Only a fraction of research universities offer a baseline family-responsive maternity leave policy of at least six weeks of guaranteed paid leave following childbirth to graduate students, postdoctoral scholars, and academic researchers, with only 13 percent of universities making this baseline policy available to graduate students (43 percent of them offer only ad hoc paid leave, or no paid leave at all). Many universities do provide some maternity and parental leave, but the limitations associated with these policies significantly affect contingent classes of researchers such as graduate students, postdoctoral scholars, and academic researchers. These limitations include requirements that limit the number of individuals who qualify for the policy, limitations on the length of the policy or the percentage of salary paid, and limitations focused on the accrual of sick and/or vacation leave.⁷⁷

As stated, to be in basic compliance with Title IX, universities must 1) treat pregnancy as a temporary disability for purposes of calculating job-related benefits, including any employer-provided leave, and 2) provide unpaid, job-protected leave for “a reasonable period of time” if the institution does not maintain a leave policy for employees. The Sloane Foundation paper recommends that Universities, in partnership with Federal agencies:

- Promote clear, well-communicated, baseline family responsive policies for all classes of researchers.
- Provide federal agency or university supplements to offset family event productivity loss.
- Collaboratively move toward a full package of family friendly policies that take into account the career-family life course.
- Remove time-based criteria for fellowships and productivity assessments that do not acknowledge family events and their impact on career timing.
- Collect and analyze the necessary data to make sure existing and future policy initiatives are effective in meeting researchers’ needs and comply with Title IX.⁷⁸

Education and Awareness Opportunities for STEM Faculty and Students

Another important tool for STEM departments is training to raise awareness among faculty and students on gender issues such as sexual harassment prevention.⁷⁹ NASA’s Title IX compliance review program has shown a number of instances where STEM departments may benefit from targeted training to address issues relating to inappropriate gender-related conduct occurring in program settings, such as study groups, labs, and field trips.

⁷⁴ Ibid., p. 5

⁷⁵ Ibid., p. 7

⁷⁶ Ibid., p. 10

⁷⁷ Ibid., p. 8

⁷⁸ Ibid., pp. 12-13

⁷⁹ NRC Report., chap. 4, p. 78

Possible Presence of Implicit Bias

The PNAS report documented a randomized double-blind study conducted to test for the presence of gender bias on the part of science faculty that could contribute to the gender disparity in STEM fields. In this study science faculty from research universities rated the application materials of a student, who was randomly assigned either a male or female name, for a laboratory manager position. The study found that faculty rated the male applicant as significantly more competent and employable than the *identically-qualified* female applicant. These faculty members also selected a higher starting salary and offered more career mentoring to the male applicant.

What is especially noteworthy is that the gender of the faculty participants did not affect responses, such that female and male faculty study participants were equally likely to exhibit bias against the female student. This study also found that preexisting subtle bias against women on the part of participating faculty was associated with less support for the female student, but was unrelated to reactions to the male student.

“Unanticipated” Issues

The NRC report also described issues that “may not be anticipated” influencing the working environment of the laboratory.⁸⁰ For example, personal safety issues may be different for women working alone at night in a lab. One faculty member interviewed by NRC commented that whereas general safety issues had been “background noise,” as he put it, the issue of personal safety became a much higher priority when women students joined the lab.

Title IX Compliance Reviews

Title IX compliance reviews are also recommended in the literature as a means of addressing environmental issues that may negatively impact women in STEM. For example, the AAUW report *Why So Few?* states “Title IX reviews can help identify institutional policies and practices that negatively, and in some cases inadvertently, affect personal choices in gender-specific ways. Simply put, Title IX can help create a climate where women and men of similar talent who want to be scientists or engineers have equal opportunity to do so.”⁸¹

Gender Issues in Physics Programs: Surveys and Site Visits

American Institute of Physics (AIP) Survey Results

To be aware of experiences of women in the physics context, NASA reviewed data collected by the American Institute of Physics (AIP). This data showed some of the concerns of women physics students about their program experiences. For example, a 1993 AIP “climate” survey of physics programs showed that only 27 percent of women graduate student respondents in the U.S. believe that their department encourages self-confidence.⁸²

⁸⁰ Ibid., chap. 2, p. 41.

⁸¹ AAUW Report, p. 13 (citations omitted).

⁸² See Jean M. Curtain, Geneva Blake, and Christine Cassagnau, American Institute of Physics, “The Climate for Women Graduate Students in Physics,” *Journal of Women and Minorities in Science and Engineering*, vol. 3, pp. 95-117 (1997); see also ME Program Summary

In its 2001 survey report *Women Physicists Speak*, AIP observed that: “[w]omen . . . face barriers in the form of strongly held beliefs that [they] are incapable of doing good science”⁸³ and that “[c]onfidence in one’s ability can be especially important for female students when they confront the negative effects of sexism, which can cause women to question their ability or their right to pursue advanced degrees.”⁸⁴ And, in its 2006 report, *Women Physicists Speak Again*, the AIP continues to identify climate as one of the top reasons women physicists give for being discouraged about physics.⁸⁵

American Physical Society Site Visit Program

In its literature review, NASA also relied on the summary report of the American Physical Society (APS) Committee on the Status of Women Site Visit Program. The report, “Improving the Climate for Women in Physics,” provides valuable information gathered by APS about women’s experiences in physics programs, based on site visits to over 40 university physics departments across the country since 1990.⁸⁶ For each site visit, APS reviews quantitative and qualitative information to assess the climate for women at the host facility.

The findings generated from APS’s site visit program provide valuable context for gender equity issues in physics programs. According to APS, problems commonly experienced by women in the physics departments reviewed include instances of inappropriate behavior and attitudes such as pictures and computer printouts with inappropriate images of women in teaching assistants’ communal offices; thesis advisors who call their female students “honey” or the equivalent and “a prevalent assumption that all rewards obtained by women are “only because you are a woman.”⁸⁷ APS found that the long term effects of these experiences “takes much of the enjoyment out of the graduate experience of many female physics students and helps to explain why only the very committed and the very tough remain in physics.”⁸⁸

However, APS reports that the climate for women varies dramatically among the departments it has reviewed, with many positive climates reported.⁸⁹ Based on its Site Visit Program, APS finds that important ingredients for a positive climate can include: at least several active, mainstream female faculty; a group of female students who interact regularly with each other; a supportive department chair who listens and responds to concerns of students; and efforts to create a safer physical environment.⁹⁰

Overall Recommendations

What the research literature tells us is that there are some proactive steps that STEM programs can take that are consistent with the purpose and intent of Title IX. A small sampling of these steps, representative of the larger themes in the literature on women and STEM, include:

- Engaging in targeted outreach and recruitment
- Establishing mentoring programs

⁸³ American Institute of Physics Statistical Research Center, *Women in Physics Speak: The 2001 International Survey of Women in Physics*, 2001, p. 19. Accessible at: <http://www.aip.org/statistics/trends/reports/iupap.pdf>.

⁸⁴ *Ibid.*, p. 7.

⁸⁵ American Institute of Physics Statistical Research Center, *Women Physicists Speak Again*, April 2006, pp. 10-12. Accessible at: <http://www.aip.org/statistics/trends/reports/iupap05.pdf>.

⁸⁶ APS Program Summary.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*

- Sustaining strong partnerships with campus professional organizations, such as the Society of Women Engineers
- Adopting policies that enable faculty, students and employees to combine work, family and other personal responsibilities
- Providing ongoing education and awareness opportunities for faculty and students that is both tailored to the STEM environment and addresses issues such as implicit gender bias and inappropriate gender-related conduct that may not rise to the level of discriminatory harassment but is still unacceptable
- Conducting on-going self-evaluation efforts consistent with Title IX regulations, that is, a focus on admission and treatment of students, and employment.

Overall, NASA has found that Title IX compliance efforts of educational institutions can help to address such concerns regarding gender and STEM. For example, effective Title IX coordination can establish collaborative partnerships between the Title IX Coordinator's office and academic departments, ensuring, among other things, appropriate training for faculty and students to raise awareness on gender issues, e.g., harassment and gender bias. Effective Title IX coordination may also ensure that individuals fully understand the process for addressing discrimination concerns, and how to avail themselves of it.

In addition, periodic self-evaluation can greatly assist efforts to identify concerns regarding admission and treatment of students, and help programs to address problem areas in a host of specific areas, from stronger outreach and recruitment efforts, to greater transparency in program policies and practices, to program participants' perceptions of the program environment. NASA has found that the process of a Title IX review itself provides schools with an excellent opportunity to step back and assess their programs in these respects.