



# **University of Minnesota**

## **Title IX Compliance Report**



## **Department of Aerospace Engineering and Mechanics**

**Office of Diversity and Equal Opportunity  
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## I. INTRODUCTION

NASA conducted a compliance review of the University of Minnesota (UMN or the University) Department of Aerospace Engineering and Mechanics (AEM, 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.<sup>1</sup>

### A. Background

NASA Title IX regulations provide for periodic review of NASA grant recipients.<sup>2</sup> 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 on-site compliance reviews.<sup>3</sup> In addition, NASA's 2005 authorizing legislation requires the Agency to conduct at least two Title IX compliance reviews annually.<sup>4</sup> 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 on-site reviews of grant recipients.

### B. Objectives and Scope

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

#### *Objective 1*

Evaluation of UMN'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 UMN program under review; and
- Evaluate the AEM 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, policies/procedures, and student experiences relating to parental/marital status ("family friendly" policies), physical safety of the program environment, and, finally, recent faculty recruitment efforts.

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<sup>1</sup> Title IX of the Education Amendments, as amended (20 U.S.C. §§ 1681-1688); Nondiscrimination on the Basis of

<sup>2</sup> 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)).

<sup>3</sup> 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).

<sup>4</sup> 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.

## ***Objective 2***

Identification of promising practices of UMN and the AEM 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-on-site 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 in science, technology, engineering, and mathematics (STEM) fields 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; 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 UMN AEM Department on April 24-27, 2012. During its visit, the compliance team conducted one-on-one interviews with three female AEM faculty members and six male AEM faculty members, including the AEM Department Head, as well as the Dean of the College of Science and Engineering (CSE) and the CSE Associate Deans for Academic Affairs and Undergraduate Programs, respectively. The compliance team also conducted one-on-one interviews with eleven AEM graduate students (five females and six males), two post doctorates (one male and one female), and five undergraduates (three female and two male). In addition, the compliance team interviewed key members of the University’s administrative leadership, including the Vice President for Equity and Diversity, the UMN Title IX Coordinator, the Associate Director for Admissions, the Assistant Director for the Office for Student Conduct and Academic Integrity, and the CSE Student Services Director and staff.

## **II. COMPLIANCE REVIEW ANALYSIS**

The compliance review analysis provides an assessment of issues within the two focus areas of procedural compliance requirements and program administration. Regulatory requirements and findings of fact are set forth as part of the compliance assessment under each main topic. The associated recommendations are intended to strengthen existing compliance activities. Promising practices associated with each of the compliance areas are also reported.

## **A. Designation of 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.”<sup>5</sup> 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 his office. The role of Title IX Coordinator is officially held by the Director, Office of Equal Opportunity and Affirmative Action (EOAA) who reports directly to the Associate Vice President and Chief of Staff for the Office for Equity and Diversity. In turn, the Associate VP reports to the Vice President for Equity and Diversity, who reports to the President of the University.<sup>6</sup>

The EEOA Web site provides the Title IX Coordinator’s contact information.<sup>7</sup> In addition, the EOAA Office disseminated an email to the entire University community in September 2012 that contained contact information and general information about the scope and methods of reporting discrimination and harassment, as well as the process employed by the office.<sup>8</sup> The Title IX Coordinator reports that at UMN, each unit or college at the University has an EOAA liaison to the main EOAA office that is responsible for distributing information from EOAA and, in some cases, acting as the first recipient of discrimination and harassment complaints. A list of the EOAA liaisons is posted on EOAA’s Web site.<sup>9</sup>

There is a link to EOAA’s Web site indicating that it is the central focal point for raising discrimination or harassment complaints, including Title IX complaints. In addition, EEOA holds a fall conference for the EOAA liaisons and sends frequent correspondence and distributes e-newsletters. Notably, EOAA has discussed new federal guidance in a U.S. Department of Education Office for Civil Rights “Dear Colleague” letter on sexual harassment and sexual violence with EEOA liaisons, at the annual liaison conference and as part of our UMN’s sexual harassment training program.<sup>10</sup> In addition the EOAA staff conducted training on the Dear Colleague letter to the University police department. The EOAA Director has made several presentations on the topic, including one with a colleague from the Office of the General Counsel to the Executive Oversight Compliance Committee.

During on-site interviews, 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 compliance team found that those interviewed did not know who the Title IX Coordinator was by name. However, most were aware of the complaint program and were generally aware of the role of Title IX in athletics, if not academics. 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. This is a common response heard from students

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

<sup>6</sup> Katrice Robert assumed the role of Vice President for Equity and Diversity in June 2013. At the time of the site review Robert Jones was the Senior Vice President for Academic Administration, overseeing the Office for Equity and Diversity and reporting directly report to the President. Dr. Jones has since left the University and his position was eliminated so the VP for Equity and Diversity reports directly to the President.

<sup>7</sup> See <https://diversity.umn.edu/eoaa/definitiontitleix>

<sup>8</sup> See <http://ecommunication.umn.edu/read/archive?id=91143&e=boyd0009%40umn%2eedu&x=3ccc912b>

<sup>9</sup> See <https://diversity.umn.edu/eoaa/unitliaisons> for a list of the liaisons.

<sup>10</sup> See U.S. Department of Education, Office for Civil Rights, “Dear Colleague” letter (April 4, 2011), accessible at <http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201104.html> (hereafter cited as April 2011 DCL).

at large universities when asked if they know the name and contact information of the Title IX Coordinator or his/her office. Based on NASA's limited review, the EOAA is doing an excellent job with its liaisons, but may wish to consider additional steps when it comes to notifying the larger campus community of its existence and purpose (see "Recommendations" below).

*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.<sup>11</sup> These additional considerations appear in DOJ's document, "Questions and Answers Regarding Title IX Procedural Requirements" (Title IX Q&A).<sup>12</sup> 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 UMN's Title IX grievance process;
- The authority and access of the Title IX Coordinator to university senior leadership needed to effectively perform roles and responsibilities; and
- Appropriate training of faculty, staff, and students.

(i) Effective Oversight of the Grievance Process

The EOAA is responsible for complaints of harassment or discrimination brought by employees and students. This includes investigation of such claims of actions that would be prohibited by Title IX regulations, with the exception of student-to-student complaints of sexual harassment or discrimination. (For employees and students whose discrimination claims pertain to employment, they may elect to proceed, instead, through the Office for Conflict Resolution, which provides a hearing process rather than an investigative process. This is explained more fully below.) The Director, EOAA, in her role as Title IX Coordinator, reports that recently, to be in compliance with the OCR's April 2011 Dear Colleague letter on sexual violence, the EOAA has, among other efforts, started reviewing the sexual assault cases processed through the Office of Student Conduct and Academic Integrity (OSCAI), which has responsibility for student-on-student claims of discrimination and harassment.

Based on UMN's responsive information, including resumes of staff with Title IX coordination responsibilities, and interviews with the Title IX Coordinator and others with compliance responsibilities, NASA finds that the Director, EOAA, as the Title IX Coordinator, and her staff possess the appropriate knowledge base and expertise, as well as a proven ability to properly implement the UMN internal grievance procedures. (See Section II.B. for a detailed discussion of the University's internal discrimination complaints procedures.)

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<sup>11</sup> 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."

<sup>12</sup> This document is accessible at <http://www.usdoj.gov/crt/cor/coord/TitleIXQandA.htm>.

(ii) Authority and Access to Senior Leadership

With regard to the authority and access of the Title IX Coordinator to top leadership, the Director, EOAA/Title IX Coordinator, reports that complaints submitted to the President's Office that fall within EOAA's jurisdiction are forwarded directly to her attention. She does not, however, have a great deal of direct interaction with the President. The EOAA Director reports to the Associate Vice President and Chief of Staff for the Office for Equity and Diversity, who reports to the Vice President for the Office for Equity and Diversity. The VP for Equity and Diversity reports directly to the President. At the time of the site visit, the Acting Vice President for Equity and Diversity reported to the Senior Vice President for Academic Administration (SVPAA), who reported directly to the President and was a member of the President's cabinet.<sup>13</sup> The Director, EOAA, reports that she had more direct interaction with the SVPAA, to whom the Chancellors of the coordinator campuses (Duluth, Rochester, Morris and Crookston) reported. As her role is system-wide, the Director, EOAA, had occasion to work directly with the SVPAA on issues related to discrimination, harassment or nepotism at the coordinate campuses.

The Director of EOAA is also a part of the Leadership Team for the Office for Equity and Diversity. This team includes one Associate Vice President, two Assistant Vice Presidents; the Directors of Education, Evaluation and Communications; and six other University Units – the Multicultural Center for Academic Excellence (MCAE), the Women's Center, The Gay, Lesbian, Transgender, Ally Programs Office (GLBTA), the Office for Diversity in Graduate Education (ODGE), and Business and Community Economic Development and Disability Services.<sup>14</sup> The Leadership Team meets at least monthly, and more frequently during the strategic planning process.

It appears the Title IX coordination role is an integral part of the OED's leadership team, and both the Title IX Coordinator and the VP for Equity and Diversity have direct access to senior leadership, in the person of the Senior VP for Academic Administration. Accordingly, NASA finds that the Title IX Coordinator possesses the appropriate level of access to and interaction with the University's top leadership to facilitate effective Title IX coordination.

(iii) Training, Education, and Awareness Efforts

The compliance team also examined the training efforts that EEO/AA undertakes on a regular basis, since training is a critical part of the tasks and responsibilities of Title IX coordination efforts.<sup>15</sup> The EOAA Office provides a full array of training courses related specifically to its mission, including Sexual Harassment training. In addition, the Director of EOAA reports that she and her staff are part of a core group of trainers who deliver equity and diversity training under the direction of the Education Director for the OED on a regular basis. All of the training by EOAA and OED is highly interactive and often customized for individual departments, including scenarios and case studies that are specific to a particular unit or college. EOAA has an overview training, *Understanding and Valuing Equity and Diversity: Communications, Interactions, Policies and Procedures*, in which the Director, EOAA's role as Title IX Coordinator is explained. These programs are offered twice a year and any time for an individual department requesting it. Individual departments request briefings generally about the function of EOAA (see Recommendations below). There is also a New Employee Orientation that is delivered every month that includes a component about the EOAA office as well as two training courses for managers and supervisors about EOAA that are operated by the Office for Human Resources. In each of these programs,

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<sup>13</sup> The SVPAA position has since been eliminated.

<sup>14</sup> After the reorganization of the SVPAA's position two more departments merged with OED, the Office for Conflict Resolution and the Northstar Stem Alliance.

<sup>15</sup> See Title IX Q&A, "Designation of Title IX Coordinator – What factors should a recipient consider in designating a Title IX Coordinator?"

participants are notified of EEOA's Title IX obligations. Also, at least two times per year, EOAA and OED circulate a mass mailing about all of their training programs to the entire University community. This information is also available on EOAA's Web site.

However, in interviews with AEM faculty, staff and students, it appears that few could recall taking training on discrimination or harassment related issues. It is unclear whether certain individuals had some form of training or briefings and forgotten about it, or whether they have simply not been exposed to the information. In either case, while NASA understands that addressing matters of discrimination and harassment are by no means the primary concern for students during their academic careers, it is crucial for members of the academic community to have an appreciation for what conduct is acceptable and what is not, and what avenues are available to them if a concern should arise. Therefore, while NASA commends UMN on its extensive training efforts, a closer examination of the form and content of the training, for example, consideration of more interactive modules, may be useful (see "Recommendations" below).

**Update:** NASA notes that EEOA recently included a great deal of substantive information on Title IX in its Spring 2013 e-newsletter, including the partnerships between EEOA and the Office for Student Conduct and Academic Integrity on the University's discrimination and sexual harassment policies, and between EEOA and the UMN Police Department on campus safety. In addition, in its Fall EOAA University-wide email communication, issued on September 12, 2013, EEOA provided further Title IX information to the campus community, including background on the law and its intent, the various avenues available for filing a discrimination or harassment complaint, and specific contact information (name, phone and email) for the head of EEOA, who is also the UMN Title IX Coordinator.<sup>16</sup>

## **2. Recommendations**

**a. Broader Dissemination of Title IX Coordinator Contact Information.** The Title IX Coordinator's office should expand its efforts to ensure that contact information for the office and the Title IX Coordinator herself are broadly disseminated, for example, in training materials provided during student orientation. While contact information for the Title IX Coordinator is available on the EOAA Web site, UMN should ensure broad dissemination of this information through posting not only on the EOAA Web site but also on the academic department and other appropriate Web sites as well. There should also be dissemination of this information via periodic communications, e.g., annual email messages to students and faculty.

**b. AEM Training and Enhancements to Training Modules.** AEM should be encouraged to request individual training for faculty and staff, to include graduate teaching and research assistants. Also, to better ensure that training, education, and awareness efforts achieve their intended objectives, OED may wish to conduct a review of its various training modules, led by EOAA and the OED's Education component, to see if enhancements to any of them may be needed that may be appropriate for STEM fields, 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, Title IX should be precisely and thoroughly described, rather than described among "other laws." In addition, consideration should 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.

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<sup>16</sup> See <http://ecommunication.umn.edu/read/archive?id=109721&e=pegquist%40umn%2eedu&x=3e9a7f02>.

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.<sup>17</sup> 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.

### 3. Promising Practice

**EO Liaisons to Academic Units.** UMN's system of having EO liaisons embedded in the University's various academic units and colleges is an excellent means for helping to disseminate key information, policies and procedures, on a regular basis. They also serve as easily accessible resources for reporting allegations of discrimination or harassment. This helps to more effectively institutionalize EO efforts by better positioning those with EO roles and responsibilities to both serve as conduits for and recipients of critical information from the various organizations that comprise the institution as a whole.

## B. Adoption of 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.<sup>18</sup> 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.<sup>19</sup>

#### a. Grievance Procedures

NASA's compliance assessment seeks to ensure that UMN 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.<sup>20</sup> 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 and April 2011 "Dear Colleague" letter (DCL) on sexual violence, which provide additional considerations on the basic components of effective, i.e., prompt and equitable, grievance procedures in the discrimination and harassment context.<sup>21</sup> In its Revised Sexual Harassment Guidance

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<sup>17</sup> See NASA's publication, *Title IX and STEM: Promising Practices for Science, Technology, Engineering, and Mathematics*, July 2009, accessible at [http://odeo.hq.nasa.gov/documents/71900\\_HI-RES.8-4-09.pdf](http://odeo.hq.nasa.gov/documents/71900_HI-RES.8-4-09.pdf).

<sup>18</sup> Designation of responsible employee and adoption of grievance procedures, 14 C.F.R. § 1253.135(b).

<sup>19</sup> Dissemination of policy, 14 C.F.R. § 1253.140.

<sup>20</sup> 14 C.F.R. § 1253.135(b).

<sup>21</sup> 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

OCR identified a number of elements 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;
- 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.<sup>22</sup>

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.”<sup>23</sup>

OCR further states that “[m]any schools also provide an opportunity to appeal the findings or remedy, or both.”<sup>24</sup> OCR’s Revised Sexual Harassment Guidance does not specifically include appeal rights among the elements it recommends in evaluating whether a recipient’s procedures are prompt and equitable. However, in its April 2011 DCL, OCR specifically recommends appeal rights, stating that where appeals are part of procedures, they must be accorded equally between the parties.<sup>25</sup> The April 2011 DCL provides further guidance to federal grant recipients on their internal grievance processes under Title IX. For example, OCR states that a “preponderance of the evidence,” is the appropriate standard in cases of sexual harassment,<sup>26</sup>

A recent letter of findings (LOF) by DOJ and OCR regarding the University of Montana-Missoula’s sexual harassment and sexual assault policies and procedures 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.”<sup>27</sup> These considerations are discussed in more detail below.

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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 Grievance Procedures (accessible at <http://www.ed.gov/about/offices/list/ocr/docs/shguide.html>) (OCR Revised Sexual Harassment Guidance); U.S. Department of Education, Office for Civil Rights, “Dear Colleague” letter, April 4, 2011, accessible at <http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201104.pdf> (OCR April 2011 DCL).

<sup>22</sup> OCR Revised Sexual Harassment Guidance, § IX. Prompt and Equitable Grievance Procedures (citations omitted).

<sup>23</sup> Ibid.

<sup>24</sup> Ibid.

<sup>25</sup> OCR April 2011 DCL, p. 12.

<sup>26</sup> Ibid., p. 11, 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.

<sup>27</sup> U.S. Department of Justice, Civil Rights Division and U.S. Department of Education Office for Civil Rights, letter to President Royce Engstrom and Lucy France, Esq. re: DOJ Case No. DJ 169-44-9, OCR Case No. 10126001, May 9,

(i) Procedures as Written

UMN's Title IX grievance procedures are implemented through the EOAA office, the Office for Conflict Resolution and the Office for Student Conduct and Academic Integrity (OSCAI). Each of these offices has University policies which guide it. The jurisdictions of these offices have certain redundancies and certain unique focuses. The Office for Conflict Resolution provides a grievance procedure for University non-bargaining unit employees. Its jurisdiction is limited to employment-based conflicts, including discrimination. In contrast, the EOAA evaluates harassment and discrimination complaints in any University context. The OSCAI responsibilities include student-to-student complaints of discrimination and harassment.

The policies of the Board of Regents for UMN provide the framework for the University administration's implementation of and compliance with the intent of the Board. There are separate administrative policies and procedures that provide rules and guidelines for implementing many of the Board of Regents policies. There are three main University policies governing the Office for Conflict Resolution: 1) a Regent's Policy, 2) an Administrative Policy with related Appendices, and 3) an Administrative Procedure. One of the Appendices to the Administrative Policy is "Filing an Internal Discrimination Complaint" (FIDC).<sup>28</sup> This Appendix compares the hearing process in the Office for Conflict Resolution with the investigative process in EOAA so that an employee with a discrimination complaint can make an informed choice between them.

The EOAA has jurisdiction over three Board of Regents policies, *Equity, Diversity, Equal Opportunity and Affirmative Action* (the University's anti-discrimination policy), *Sexual Harassment and Nepotism* and two corresponding administrative policies that clarify the procedures for making complaints (*Sexual Assault, Stalking and Relationship Violence* and *Managing Nepotism and Personal Relationships*.) The EOAA provides an investigative process for all University students and employees. The functions of EOAA are reflected in a separate Discrimination Consultation Process (DCP) document found on the EOAA Web site.<sup>29</sup> EOAA is responsible for implementing the DCP and the separate policies on sexual harassment, and sexual assault and relationship violence. (See Section II.E(1)(d), Safety, for a discussion on UMN's Administrative Procedures for Sexual Assault, Stalking, Relationship Violence.)

As stated, most sex discrimination complaints in employment are handled by EOAA. However, when an employee submits a complaint that alleges both sex discrimination and another policy violation, such as a Civil Service Rule violation, proceeding through the CRP permits them to address both aspects of the complaint in one forum. The Office for Conflict Resolution recently moved into the Office for Equity and Diversity. The move was intended to enhance the coordination between EOAA and CRP. The Office of Student Conduct and Academic Integrity (OSCAI) implements the Code of Student Conduct (CSC) procedures,<sup>30</sup> which are utilized for complaints against students. The CRP and the CSC are consistent with NASA regulations and relevant ED OCR requirements in that they:

- Prohibit discrimination and harassment based on sex;
- Clearly define relevant terminologies; and

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2013, accessible at: <http://www.justice.gov/opa/documents/um-ltr-findings.pdf> (hereafter cited as "DOJ-OCR Joint LOF") and Resolution Agreement, accessible at <http://www.justice.gov/crt/about/edu/documents/montanaagree.pdf>.

<sup>28</sup> The Conflict Resolution Procedures are accessible at [http://www.policy.umn.edu/Policies/hr/Rules/CONFLICTRESOLUTION\\_PROC01.html](http://www.policy.umn.edu/Policies/hr/Rules/CONFLICTRESOLUTION_PROC01.html) while the Appendix for FIDC is accessible at [http://www.policy.umn.edu/Policies/hr/Rules/CONFLICTRESOLUTION\\_APPB.html](http://www.policy.umn.edu/Policies/hr/Rules/CONFLICTRESOLUTION_APPB.html)

<sup>29</sup> The DCP is accessible at <https://diversity.umn.edu/eoaa/discriminatioconsultationprocess>

<sup>30</sup> The CSC is at [http://www1.umn.edu/regents/policies/academic/Student\\_Conduct\\_Code.html](http://www1.umn.edu/regents/policies/academic/Student_Conduct_Code.html).

- Provide both the complainant and the respondent an opportunity to present relevant information, consistent with OCR's recommendation for ensuring adequate, reliable, and impartial investigation of complaints.

The CRP Appendix: Filing a Discrimination Complaint (FIDC) informs complainants of their rights to file a complaint directly with a federal funding agency of UMN, for example, the Department of Education. Consistent with OCR guidelines, the CRP clarifies the burden of proof to be utilized in the internal discrimination complaints process, and does not distinguish between a faculty member and a student. The CRP sets time frames for submitting a complaint (Booklet, p. 11), for appointing a respondent, (p.11), for holding a facilitated discussion (p. 14), for holding a pre-hearing conference (p.15), for providing the panel's decision (p.16) and for the final University decision (p.17).

Importantly, charged students under UMN's CSC are given the opportunity to appeal. The CRP provides for review (appeal) at the request of the petitioner of the final University decision either by outside binding arbitration or appeal to the Minnesota Court of Appeals (CRP Policy Booklet, p. 17). 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.<sup>31</sup> In addition, ED OCR makes clear that if the right to appeal is offered, both parties must be given the opportunity to appeal.<sup>32</sup> UMN's CSC and CRP are consistent with this guidance.

As mentioned, UMN has a Board of Regents policy on sexual harassment and an administrative policy on sexual assault. The sexual harassment policy is quite sufficient as a statement of UMN's policy position. A complainant could raise a complaint under either of these policies with the Office for Conflict Resolution or the EOAA Office. The OSCAI would review any student-to-student complaints under these policies. However, it is not clear from the current policy statement how this position is to be enforced. For example, what is the relationship between this policy and the University's internal discrimination complaints procedures through the Conflict Resolution Office and EEOA? Are these to be used by individuals wishing to raise allegations of sexual harassment? Is there another mechanism to be used for harassment? If so, what is it? These questions need to be addressed to meet the NASA Title IX regulatory requirement for a clearly stated complaints process for sexual harassment.

**Update:** In October 2013, EEOA informed NASA that it had developed a new proposed administrative procedure for reporting incidents of sexual harassment to go along with the Board of Regents policy statement on *Sexual Harassment*).<sup>33</sup> The administrative procedure will be separate from *Sexual, Assault, Stalking and Relationship Violence*, and will explain the alternatives and process for raising discrimination complaints consistent with the policy on *Equity, Diversity, Equal Opportunity and Affirmative Action*. The University believes that the new administrative policy and procedure will be helpful for those seeking out the process, both for raising complaints and clarifying the different alternatives. As of October 2013, EEOA was in the process of getting feedback from the relevant stakeholders, including UMN's Office for Conflict Resolution, the Office for Student Conduct and Academic Integrity, Human Resources and the

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<sup>31</sup> 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."

<sup>32</sup> Ibid.

<sup>33</sup> See Kimberly Hewitt, Director, EEOA, email to David Chambers, Senior Civil Rights Analyst, October 11, 2013 (hereafter cited as "Hewitt email").

Office of the General Counsel.<sup>34</sup> UMN intended to convene a meeting of representatives from each of these offices to review the procedures and expected to conclude the process by year's end, as recommended by NASA (see Recommendations for this section, below).

The new proposed administrative procedure addresses the concerns raised above about the relative responsibilities of the Office of Conflict Resolution and the EEOA in the process by clearly explaining the roles of each office. However, NASA recommends that UMN look closely at the definition of sexual harassment provided in the new proposed administrative procedure in light of the recent joint LOF by DOJ and OCR regarding the University of Montana-Missoula's sexual harassment and sexual assault policies and procedures. The definition in the new draft procedures is as follows:

“Unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or academic advancement in any University activity or program; (2) submission to or rejection of such conduct by an individual is used as the basis of employment or academic decisions affecting this individual in any University activity or program; or (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive work or academic environment in any University activity of program.”

The definition of sexual harassment utilized by the University of Montana in its sexual harassment policy was “harassment [that] is sufficiently severe or pervasive as to disrupt or undermine a person's ability to participate in or received the benefits, services, or opportunities of the University, including unreasonably interfering with a person's work or educational performance.”<sup>35</sup> DOJ and OCR pointed out that: “[w]hile this limited definition is consistent with a hostile educational environment created by sexual harassment, sexual harassment should be more broadly defined as ‘any unwelcome conduct of a sexual nature.’”<sup>36</sup> In other words, the definition of harassment used by the University of Montana in its policy and procedures *only* encompassed harassment that had *already* created a hostile environment that could establish liability for monetary damages under Title IX. DOJ and OCR further stated that: “[d]efining ‘sexual harassment’ as ‘a hostile environment’ leaves unclear *when* students should report unwelcome conduct of a sexual nature and risks having students wait to report to the University until such conduct becomes severe or pervasive or both. It is in the University's interest to encourage students to report sexual harassment early, before such conduct becomes severe or pervasive, so that it can take steps to prevent the harassment from creating a hostile environment.”<sup>37</sup> As stated, NASA recommends that UMN carefully review its new administrative procedures' definition of sexual harassment in light of these considerations (see Recommendation, below).

An additional concern is the confusion one may experience when navigating the two sets of procedures that are used by UMN to address complaints of discrimination or harassment brought by members of the University community. The EOAA menu on its home page under the heading “Conflict Resolution” links to the Office for Conflict Resolution. On the Conflict Resolution homepage, the conflict resolution policy and procedures are listed on the short menu on the left side of the homepage. There is a link from the EOAA's Discrimination Consultation Process to the Office of Conflict Resolution (OCR).

The Conflict Resolution Appendix: “Filing an Internal Discrimination Complaint” cannot be accessed from the procedures page. One can access the appendix from the Conflict Resolution Policy page, but not from the Procedures page, which is itself counter-intuitive, since the appendix flows from the CR procedures as much as the CR policy itself. Apparently this results from the University's policy software, which permits

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<sup>34</sup> Ibid.

<sup>35</sup> DOJ-OCR Joint LOF, p. 1.

<sup>36</sup> Id. at p. 9.

<sup>37</sup> Id. at pp. 9-10. (Emphasis added.)

appendices to be attached to administrative policy, but not to administrative procedures. All of this to say: UMN's discrimination and harassment procedures, whatever their substantive merits and shortcomings, suffer most from a distinct lack of easy accessibility. As the ED OCR guidance language excerpted above states: "[a] grievance procedure . . . cannot be prompt or equitable unless students know it exists, how it works, and how to file a complaint." The sheer difficulty in finding and understanding all the disparate parts and players – the consultation process, the conflict resolution policy, the conflict resolution process, the appendix on filing internal discrimination complaints, the EOAA, OED, OSCAI – requires an accessibility review of these key documents, to clarify and consolidate where possible. At a minimum, the EOAA DCP page should have links to the Conflict Resolution Procedures, their complaint filing appendix and the CSC, with a clear statement that these are the University's internal discrimination complaints procedures. Reciprocal links should be provided (see Recommendation, below).

**Update:** In October 2013, the EEOA informed NASA that the UMN Policy Office agreed to add a link from the Administrative Procedures to the Appendices where the information on EEOA's "Filing and Internal Discrimination Complaint" can be found.<sup>38</sup> This addresses one of the concerns raised above regarding the need for greater ease of accessibility to critical information on the University Title IX related procedures.

#### (ii) Procedures as Implemented

NASA did not find any concerns around implementation of the policy, aside from the obvious implications of the problems noted above, especially regarding accessibility and clarity. UMN reports no complaints of sex discrimination or sexual harassment filed by AEM with either EOAA or OSCAI during the five-year period of the review.

The Director, EOAA reports that, approximately every other year, her office provides data on complaint statistics, hiring and affirmative action goals to each academic unit. The Director and the Assistant Director of EOAA meet with a select group of Deans or Directors to discuss this information. In 2010 they met twice with the Dean of the College of Science and Engineering, during which time they also shared information about all of OED's training programs.

#### *b. Policy Dissemination*

Relevant ED OCR and DOJ guidance also informed NASA's assessment of UMN compliance with the regulatory provision requiring dissemination of Title IX policy.<sup>39</sup> This guidance clarifies the regulatory requirement. For example, OCR's guidance emphasizes the need for recipient institutions to have "well-publicized" grievance procedures.<sup>40</sup> 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."<sup>41</sup> 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

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<sup>38</sup> See Hewitt email.

<sup>39</sup> 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.

<sup>40</sup> See OCR Revised Sexual Harassment Guidance, Preamble, "Enduring Principles from the 1997 Guidance."

<sup>41</sup> *Ibid.*, § V(D), "The Role of Grievance Procedures."

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.<sup>42</sup>

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.”<sup>43</sup>

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.<sup>44</sup>

EEOA in partnership with the Office for Conflict Resolution disseminates information on Title IX policies and procedures. For example, EEOA recently published important Title IX related information in its Spring 2013 e-newsletter, disseminated widely to the campus community. Also, the Office for Conflict Resolution sends out reminder emails each year to employees. The office coordinates closely with the Student Conflict Resolution Center (SCRC) that refers students with employment issues to the Office for Conflict Resolution. SCRC is an ombudsman office that deals with student academic (not employment) issues. It has an aggressive outreach program to students. SCRC staff meets with hundreds of students each year. Conflict Resolution staff meet with SCRC staff every semester and work on joint projects nearly weekly. They also attend student orientation programs and student governing committees with SCRC staff to explain the services of both offices. With SCRC and others, the Conflict Resolution Office has developed a new Web site titled Working Better Together, <http://wbt.umn.edu/>. One major project for this Web site has been to provide tools to improve graduate student experiences at UMN. Many of the resource sheets on the Web site direct students and others to the Office for Conflict Resolution as well as to SCRC.

As stated above, in the assessment of UMN’s written internal discrimination complaints procedures, there is a need for a careful institutional review of those procedures to ensure that they are more easily accessible to the University community. NASA notes in this regard that both AEM students and faculty interviewed stated that they did not have specific knowledge of the processes for filing complaints. A majority indicated that they felt confident that they would know “where to look” online should the need arise. NASA’s reviews typically show a low level of knowledge about discrimination and harassment processes, which suggests that interviewees have not had occasion to avail themselves of the procedures. Nonetheless, UMN should address NASA’s compliance recommendations on its procedures.

## ***2. Recommendation***

**Compliance Regarding Internal Grievance Procedures.** UMN should immediately undertake an institution-wide review of its internal discrimination complaints procedures, to be conducted collaboratively between the University’s Offices of Equity and Diversity, Student Conduct and Academic Integrity, Institutional Compliance, General Counsel, Policy, and any other organizations deemed necessary for this effort. The review should address the compliance concerns raised in Section II.B(1)(a)(i), Procedures as

<sup>42</sup> Ibid., § IX. Prompt and Equitable Grievance Procedures (emphasis added).

<sup>43</sup> April 2011 Dear Colleague letter, § Prompt and Equitable Requirements, (A) Notice of the grievance procedures.

<sup>44</sup> Public dissemination of Title VI information, 28 C.F.R. § 42.405(c).

Written, above. This includes the substantive issues as well as the accessibility, clarity and ease of use issues identified regarding the Conflict Resolution Policy and Procedures, the Appendix on Filing Internal Discrimination Complaints, the Discrimination Consultation Process, the Student Code of Conduct, and the Sexual Harassment Policy.

In addition, UMN should determine whether it needs to make any substantive changes to its policy and/or procedures based on the University of Montana-Missoula letter of findings (issued May 9, 2013) on sexual harassment/sexual assault related policy and procedures issued jointly by U.S. Department of Justice and the U.S. Department of Education (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>).

NASA requests an update on UMN's progress regarding these compliance recommendations to be provided no later than 90 days (three months) from the date this report is issued.

## **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.<sup>45</sup> While UMN 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 on the basis of gender. They also provide an opportunity to evaluate trends over time and to develop mechanisms for proactively addressing emerging issues.

As part of its request for information in advance of NASA's on-site review, UMN was asked to provide documentation of recent Title IX self evaluations, diversity assessments, and campus climate surveys. UMN's response described the Department of Education's annual Integrated Post Secondary Data System (IPEDS); UMN's Affirmative Action Plan; the University's annual "Pulse Survey," which includes questions on discrimination, harassment, hostility in the workplace, work-life balance, and family leave issues as they relate to the tenure process; and the ABET accreditation process.

However, UMN's response to NASA's information request did not provide analysis or summary of the IPEDS data, the Affirmative Action Plan, or the Pulse Survey, nor did it describe how they were used by the University or the Department to evaluate Title IX compliance. Reports and recommendations were provided from the Student Advisory Board and the AEM Professional Advisory Board with regard to the ABET accreditation, and the University noted that "we have not seen any comments about gender equity in this process."<sup>46</sup> However, NASA does not view the ABET accreditation process to be an assessment of Title IX compliance. According to the ABET Web site, "accreditation is proof that a collegiate program has met certain standards necessary to produce graduates who are ready to enter their professions."<sup>47</sup> While accreditation certifies academic standards, it does not certify nondiscriminatory application of the standards.

NASA also looked for information available online and found results of UMN's Human Resources Pulse Survey broken out only by UMN campus location and faculty vs. instructors. Information on the survey Web site states, however, that results are also available for colleges and administrative units.<sup>48</sup>

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<sup>45</sup> Self-evaluation, 14 C.F.R. § 1253.110(c).

<sup>46</sup> UMN Title IX Compliance Review Report 2012, p. 57 (in response to NASA's advance information request).

<sup>47</sup> ABET, Why Accreditation Matters at: <http://www.abet.org/why-accreditation-matters/>.

<sup>48</sup> See 2012 Pulse Survey at: <http://www1.umn.edu/ohr/er/pulse/index.html>.

Through our search of UMN Web sites, NASA also found that a “multidisciplinary research cluster of the Institute for Diversity, Equity, and Advocacy (IDEA)... dedicated to advancing knowledge on preparing a competitive multicultural STEM (science, technology, engineering, mathematics) workforce” exists at the University.<sup>49</sup> The cluster is known as the STEM Competitiveness and Diversity Research Cluster. Its goal, as stated on the Web site, is “to contribute to the knowledge base on recruitment, retention, and persistence of underrepresented students in STEM in order to address the national need for a diverse STEM workforce.”<sup>50</sup> NASA did not find any indication, through interviews or the advance information provided by UMN, that the AEM Department or the CSE is taking advantage of this research cluster.

## **2. Recommendations**

### **Utilization of Available Assessment Resources:**

- a. The CSE and Department should collaborate with the STEM Competitiveness and Diversity Research Cluster to identify and implement strategies for increasing STEM diversity, including gender diversity.
- b. The CSE and Department should utilize results of the 2012 Pulse Survey (and subsequent years), disaggregated by gender, College, and Department (if available) to assess faculty employment issues and concerns.

## **D. Recruitment, Admissions, Enrollment, and Degrees Earned<sup>51</sup>**

### **1. Compliance Assessment**

The NASA Title IX regulations state that recipients may not discriminate on the basis of sex in admissions and recruitment.<sup>52</sup> Consistent with this requirement, NASA reviewed the AEM Department’s student recruitment, and admissions practices, as well as student departures and degrees earned. For graduate students, NASA also examined financial assistance awarded to students. The review was based on five academic years of data provided by the University.

While NASA found a number of concerns in these areas, which we address in detail below, we wish to note some of the positive practices we found as well. For example, CSE has implemented a wide variety of outreach strategies for primary and secondary students to increase the interest of girls in STEM, such as summer camps, Project Lead the Way, Cool Chemistry, and the Math CEP Program.

The Undergraduate Admissions Office identifies students with an interest in CSE early in the application process and stays in touch with them through thousands of phone calls and by sending them CSE materials and encouraging campus visits. The Freshman Admission’s Counselor focuses on increasing women in STEM and has a strong connection with CSE. The Admissions staff and the CSE recognize the importance to women of making a difference in the world and they include this in their talks with female applicants. Overall, the Admissions Office does an excellent job of evaluating and tracking its recruitment efforts and new admissions through evaluation forms for every event, student surveys, and talking with students.

Regarding factors that can help to make the learning environment more welcoming and inclusive, NASA notes that the SWE student chapter is strongly supported and heavily involved in outreach and recruitment

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<sup>49</sup> See STEM Competitiveness and Diversity Research Cluster at: <http://blog.lib.umn.edu/stemdrcl/stemdiversity/>.

<sup>50</sup> Ibid.

<sup>51</sup> All data in this section is from the UMN Title IX Compliance Review Report 2012, provided by the University in response to NASA’s information request.

<sup>52</sup> Admission, 14 C.F.R. §1225.300; Recruitment § 1253.310.

events for the CSE. Also, UMN has several housing options to encourage a supportive network for women in STEM, including a floor in the CSE house, the Women in Science and Engineering House, and a floor in the STEM House for underrepresented students. In addition, AEM makes a conscious effort to show men and women students and faculty on its Web site. It tries also to focus on accomplishments of faculty, both male and female on the site and in other communications materials, for example, the AEM newsletter.

*a. Undergraduate Admissions, Acceptances, and Degrees Earned*

Through the advance information request, as well as interviews, NASA heard about a wide variety of recruiting practices for the undergraduate CSE programs, including several initiatives that seek to increase gender diversity in the College. NASA was impressed with the breadth and depth of the recruitment efforts, the systematic follow up provided by the outreach coordinator and freshman admissions counselor, and the involvement of the Society of Women Engineers (SWE) student chapter in recruitment efforts. The recruitment strategies and efforts appear to be yielding an increasing participation of women in the CSE. According to the University, the overall percentage of females accepted into CSE over the past few years increased from 15 percent of the incoming CSE freshman class in 2004 to 25 percent of the incoming CSE freshman class in 2011(see Promising Practices, below).

Unfortunately, NASA did not find a similar increase in female participation in AEM. From academic year 2006-07 through academic year 2010-11, the undergraduate AEM program received 336 applications from students (primarily juniors) interested in an AEM major, including 26 female students (7.7 percent). Students were admitted if they met the GPA requirements and had taken the prerequisite coursework. Of the 26 females who applied, all were accepted into the Program, along with 308 of the 310 male applicants. The University explained that acceptance rates are very high because students know the likelihood that they will be accepted through conversations with their advisors, prior to applying.

NASA is concerned with the low percentage of females that apply to the undergraduate AEM program. The 7.7 percent rate of female applicants is well below the national average of female undergraduate aerospace engineering (AE) majors (15.9 percent) and mechanical engineering (ME) majors (12.0 percent).<sup>53</sup> This is especially troublesome because of UMN's concerted outreach efforts to interest middle and high school girls in engineering. NASA understands that UMN's outreach and recruitment strategies are for the CSE as a whole, and that it measures its success by CSE-wide applications and enrollments, not by numbers for specific departments. Nevertheless, given the increase in the overall percentage of females accepted into CSE over the past few years, NASA wonders why the number and percent of females accepted to AEM in the most recent year of the review period (3, or 5.4 percent) was lower than the number and percent in the first year of the review period (4, or 6.8 percent).

The 9.1 percent of AEM degrees earned by female students over the five year period reviewed by NASA is higher than their application or acceptance rates, but still well below national averages for AE and ME. The Department Chair acknowledged that female participation in the undergraduate program has been low since at least the late 1980s. He gave two possible explanations: the Dean does not care about specific majors, as long as students enroll in the CSE, and the Department does not do much in terms of recruiting females to apply. NASA recommends that the CSE and AEM explore the reasons for the low application rate of female students to AEM, to ensure that sex discrimination within the Department is not a factor (see Recommendations, below).

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<sup>53</sup> National Science Foundation, National Center for Science and Engineering Statistics (NCSES), Science and Engineering Indicators 2012, Arlington, VA, January 2012. Available at: <http://www.nsf.gov/statistics/indicators/>. National average of B.S. degrees earned in AE and ME 2006 through 2009 was used to compare with UMN data.

### *b. Graduate Admissions, Enrollments, and Degrees Earned*

During the same five-year period reviewed by NASA, females comprised 12.9 percent of applicants to the AEM master's program, 11.0 percent of those admitted, 11.3% of new enrollments, and 12.7 percent of degrees earned. As with the undergraduate program, NASA is concerned with these rates, as they are lower than national averages for women earning master's degrees in these majors (15.7 percent for AE and 14.9 percent for ME). AEM's numbers look somewhat better for the doctorate program, where women comprised 13.8 percent of the applicants, 12.8 percent of the acceptances, and 17.0 percent of new enrollments during the five year period reviewed by NASA. However, only 9.5 percent of those earning a doctorate in AEM over the past five years were female, compared to national female averages of 12.8 percent for AE doctorates and 13.5 percent for ME doctorates. No women earned a doctorate in AEM from the University in two of the five years reviewed.

### *c. Graduate Financial Assistance*

NASA reviewed five years of financial assistance provided to graduate students, including fellowships, research assistantships (RAs), and teaching assistantships (TAs). Female AEM students received none of the 22 payroll-based fellowships and 9.5 percent of the 19 privately donated fellowships. Combining the payroll-based and privately donated, women received only 4.9 percent of the fellowships in AEM, well below their overall enrollment rate (12.8 percent). They also received only 5.7 percent of the 525 RAs during the five year period, but 13.2 percent of the 197 TAs, which are generally considered less desirable than RAs, even when they pay the same. The University stated in its advance information response that “[f]inancial aid for the first year is usually a teaching assistantship” and “[i]t is expected that all students move to research appointments after their first year.”<sup>54</sup> NASA is concerned by the low rates of women receiving fellowships and RAs.

When interviewed by NASA, the Department Chair stated that women were offered fellowships to enroll in the program. However, when they did not accept the Department's offer, the fellowships were offered to other (male) applicants. He stated that the Department has nominated female students for the competitive fellowships, but they have not been very successful, even when he thought the women wrote good papers. In terms of female students receiving TAs versus RAs, the Chair stated that it wasn't due to gender discrimination. Rather, he noted that most of the funding is available in areas that don't tend to attract female students (e.g., computations and physical dynamics).

It is critical that women have opportunities to participate and succeed in all types of engineering. Therefore, NASA urges the CSE to drill down into the departmental level to ensure equal opportunity for both genders and that efforts are underway to provide supportive learning environments for male and female students in all departments. NASA urges the AEM Department to make more of an effort to increase the participation of women in AEM. Fortunately, the University already has many programs in place that the Department can better utilize. In this regard, NASA offers the following recommendations.

## **2. Recommendations**

- a. The CSE and AEM Department need to evaluate student admissions, enrollments, and graduation rates **at the departmental level**, in addition to the college level, because success in some areas of the CSE could be masking issues or discriminatory practices at the departmental level. The CSE and Department should utilize IPEDS, as well as National Science Foundation data, to derive appropriate comparators for departmental assessments. CSE and AEM should also conduct trend analyses to monitor progress or lack thereof in the areas of admissions, offers, departures, and graduations.

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<sup>54</sup> UMN Title IX Compliance Review Report 2012, pp. 29-30.

- b. CSE and the Department should thoroughly examine financial assistance sources and awards to ensure that gender differentials in types and amounts of assistance are not due to sex discrimination.
- c. The Department should more actively and visibly support the SWE student chapter to recruit female applicants at both the undergraduate and graduate levels and to provide networking opportunities for AEM students.
- d. The Department should more actively support the CSE Women's Program, e.g., the Distinguished Women Scientists and Engineers Speakers Program, and provide more visibility and support for its Graduate Student Coordinator, and the informal Lunch and Discussions that she coordinates.
- e. The Department should partner with the Office for Equity and Diversity to:
  - Support the Women's Center programs and activities.
  - Take advantage of resources offered through the Office for Diversity in Graduate Education, such as the Recruitment Toolkit for Faculty and Staff and the Diversity of Views and Experiences fellowships.
  - Help implement the University's Affirmative Action Plan, to eliminate barriers to female faculty and/or students in the department.
- f. The AEM department should utilize course evaluations and/or exit surveys of students to support retention related efforts, as well as to better determine and respond to students' issues and/or perceptions relating to gender in any aspect of the program. The Department may wish to consider adding specific questions on surveys and evaluations, for example, "Do you feel any program opportunities were limited or unavailable to you because of your gender?" "Do you feel the professor treated all students fairly, equitably, and with respect?"

## **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 activity operated by the recipient.<sup>55</sup> The Title IX regulations explicitly state that a recipient may not discriminate on the basis of gender with regard to career counseling or guidance.<sup>56</sup>

The NASA Title IX regulations include a detailed provision on matters pertaining to marital and parental status.<sup>57</sup> 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.<sup>58</sup> 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

<sup>55</sup> Education programs or activities, 14 C.F.R. § 400(a), (b)(7).

<sup>56</sup> Counseling and use of appraisal and counseling materials, 14 C.F.R. § 1253.425.

<sup>57</sup> Marital or parental status, 14 C.F.R. § 1253.445 and 1253.530.

<sup>58</sup> Admission, *Prohibitions relating to marital or parental status*, 14 C.F.R. § 1253.300(c)(3).

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.”<sup>59</sup>

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.<sup>60</sup>

On the basis of these provisions, the compliance team examined UMN and AEM program administration and its impacts, both positive and negative, on the overall academic environment of AEM, 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 AEM 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.

At the undergraduate level, the CSE has overhauled advising for students who have not yet declared a major (mostly freshman and sophomore students). According to the Associate Dean of CSE, they used to have an attitude that advising would take care of itself. Now they hire advisors who advise students on far more than coursework; for example, advisors now discuss studying abroad, career choices, financial issues, living independently, etc. CSE has made advising of its freshmen and sophomore students a priority. The Associate Dean sees the “personal touch” in advising as giving UMN a competitive edge over other schools.

Once students declare a major, they are assigned advisors within their major department. In AEM, advising is split between three faculty members. The main advisor noted that no women dropped out, so he thinks “the advising must have been okay.” NASA notes that the personal touch provided to undeclared majors in CSE apparently ends when students declare a major. Some declared undergraduates reported that they had been assigned an advisor but didn’t know who he/she was and that they did everything online; most reported that they talked to their advisors once or twice a year. The loss of the personal touch is also borne out by the Associate Dean’s observation that many students continue to seek advising from the CSE advisors after they have been assigned a departmental advisor.

At the graduate level, advisors are usually the professor for which a student works. Students and faculty members choose each other based on research interests and availability of funding. Graduate students believed they could change advisors if there was a problem, but none reported doing so (one student changed advisor because of research interests, but he had no problems with his advisor).

None of the students interviewed by NASA reported a problem with their advisor. However, the Department Head stated that he thought faculty advisors could benefit from training to increase cultural competence as the department has become more diverse in recent years, from both a gender and racial/ethnic perspective. In this regard, he mentioned that, over the years there have been isolated incidents of advisors who have expressed feeling uncomfortable in dealing with some advising issues. A handful of faculty have experienced difficulties in negotiating perceived differences in the way students of one gender,

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<sup>59</sup> Marital or parental status, 14 C.F.R. § 1253.445 (b)(5).

<sup>60</sup> Enforcement procedures, 14 C.F.R. § 605.

as opposed to the other, express issues and have said that this has resulted in uncomfortable situations involving students of the opposite gender. It appears there has been at least some gender component to this, in that when a faculty member has expressed such discomfort, it has been in the context of an opposite sex advising relationship. He noted that he believes it is important that STEM faculty feel comfortable in advising both male and female students, especially in fields that have been traditionally male-dominated, such as AEM, and that students should be able to choose the advisor that fits their needs. (See Recommendations, below.)

*b. Classroom Experiences and Research Participation*

NASA's examination of classroom experiences and research participation included a review of information provided by AEM 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. To this end, NASA's interviews with AEM faculty and students focused on the experiences of students in the classroom and lab.

Students interviewed reported that they did not notice differences in the way male and female students are treated by faculty members or graduate teaching assistants, either in the classroom or the lab setting. Students believed that professors were generally responsive and encouraging of participation regardless of the student's gender. Based on its review, NASA finds that the AEM Department affords equal opportunities to both male and female physics students to participate in research and classroom learning, in part through proactive efforts to make the program more appealing to a diverse student body (see, e.g., Section D.3, above).

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

Regarding UNM policies pertaining to parental and marital status, the University's *Administrative Policy on Paid Medical Leave and Disability Benefits for Faculty and Academic and Administrative Employees*, subsumes pregnancy within its definition of "Serious Health Condition."<sup>61</sup> Under the policy, this term refers to illness, injury, impairment, physical or mental condition that involves hospital care, chronic conditions, or pregnancy, among other examples listed. It is unclear whether the policy comports with the Title IX regulatory requirement to treat pregnancy and childbirth "in the same manner and under the same policies as any other temporary disability or physical condition."<sup>62</sup> In addition, since the policy applies to faculty and academic employees, presumably including graduate research and teaching assistants, it is unclear the extent to which UNM policy addresses the Title IX requirement for a student who does not otherwise qualify for leave under University policy, to provide 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."<sup>63</sup> (See Recommendations, below.)

The University reports that it provides for paid and unpaid leaves for eligible academic employees related to the birth or adoption of children, including faculty, post-docs, graduate teaching and research assistants. Rather than officially taking leave, students may also informally work with their adviser to develop a plan that will work for both their academic programs and their families. The University reports that there have been no formal requests for parental leave with CSE during the period of NASA's review.

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<sup>61</sup> This policy is accessible at <http://policy.umn.edu/Policies/hr/Leaves/MEDICALDISABILITY.html>.

<sup>62</sup> Admission, *Prohibitions relating to marital or parental status*, 14 C.F.R. § 1253.300(c)(3).

<sup>63</sup> Marital or parental status, 14 C.F.R. § 1253.445 (b)(5).

#### *d. Safety*

Regarding UMN policies and student experiences in this arena, UMN has a Department of Public Safety, comprised of three key areas: Central Security, Emergency Management, and the University of Minnesota Police Department. UMN also has established a number of policies indicating a strong commitment to ensuring the physical safety of students, faculty, and staff. These include, for example, specific policies on the possession and carrying of weapons (which is generally prohibited), drug free campus policy, and anti-sexual assault, stalking and relationship violence policy.

Under UMN's policy on access to University buildings, the Department of Central Security requires each campus to designate an Access Control Director and each department to have a Department Access/Key Coordinator to enforce the access policy. The AEM building, Akerman Hall, building is locked from 10:00pm-7:00am on weekdays and all day on weekends. Only students, staff, and faculty with special clearance are allowed entry into the building. Laboratories and offices are kept locked (either after building hours or all the time) and only individuals with keys or key cards are allowed access. Any student, staff, or faculty member who needs room access or access to the building after hours must fill out a department authorization form. Each form is carefully reviewed and the requester is not granted access without a legitimate research or educational purpose. All student and some staff requests require a faculty sponsor. In addition, the University provides a number of services to encourage and maintain safety (see Promising Practices, below).

Students interviewed reported feeling safe on campus, with sufficient lighting, building security, and other efforts mentioned. Based on its review of UMN policies and student experiences in the AEM department regarding safety, NASA finds that the University and the program are taking appropriate steps to ensure physical safety of the program environment, without indication of limitation on program participation based on gender.

### **2. Recommendations**

**a. Academic Advisor Training.** NASA recommends that AEM work with the UMN Title IX Coordinator's office and other appropriate organizations to ensure that all faculty advisors are appropriately trained on diversity and inclusion in the advising context. The training should be tailored to the needs of the AEM Department, that is, the exact needs of the Department in this area should be taken into account in developing the training. The training should encompass gender diversity, and help advisors to gain a better understanding of how diversity and inclusion principles, for example, cultural competencies, can play a role in creating a successful advising relationship.

**b. Parental Status/Pregnancy Related Policy Review.** UNM should carefully review its policies in this area to ensure that they comport with all relevant Title IX requirements and advise NASA on the findings of this review, including planned actions to address any inconsistencies with Title IX as soon as possible, but not later than 90 days from the date of issuance of this report.

### **3. Promising Practices**

**Campus Safety.** The following safety services and resources are available to all University of Minnesota students, faculty, and staff.

**Transportation and Security Escorts.** In addition to regularly running campus shuttles, Gopher Chauffer is a free transportation service offered from 10pm-2am on Fridays and Saturdays, providing a safe ride home to all locations on campus and many locations near campus. A 24-hour security escort service also is available to and from campus locations and adjacent neighborhoods. Security monitors are trained in First Aid, CPR, and Body Substance Isolation and are equipped with a First Aid Kit and a portable police radio.

Police Services. The UMN Police Department employs bicycle patrol, a canine unit, motorcycle patrol, and mounted patrol units and distributes crime alerts via e-mail to Twin Cities Campus students, faculty, and staff. In addition TXT-U, the campus emergency notification text messaging service, disseminates critical campus safety information.

Communications and Security Cameras. The campus maintains twenty Code Blue Phones with immediate connection to a 911 operator located around the University of Minnesota. One Code Blue Phone is located one block away from Akerman Hall, near the University Recreation Center. Two hundred yellow phones are located around the Twin Cities campus for emergency, medical, or safety-related calls. There are 2300 security cameras located across campus. These cameras are actively monitored by the University's 911-dispatch center.

The Step Up Campaign is designed to increase awareness about safety and evaluating potentially dangerous situations. This campaign has two primary focuses: preventing crime (including sexual assault) and preventing high risk drinking.

### **III. CONCLUSION**

NASA finds UMN to be in compliance with the Title IX procedural requirements regarding coordination, grievance procedures, policy dissemination, and self-evaluation efforts. NASA also finds that UMN is 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. However, NASA recommends that the University engage in a review of its Title IX policies and procedures, including those relating to discrimination complaints, sexual harassment, and parental status, to ensure conformity with relevant regulatory requirements and guidance. These and other recommendations in this report are designed to assist UMN and AEM in enhancing their efforts to ensure equal opportunities regardless of gender. Finally, NASA observed a number of promising practices of both the University and the AEM program, particularly around tracking of its undergraduate outreach and recruitment efforts and efforts to provide supportive networks for incoming students. NASA has noted these in its report and plans to incorporate them into a future publication on promising practices for ensuring equal opportunities in STEM programs.

## APPENDIX: SUMMARY LITERATURE REVIEW

In developing its Title IX on-site review program, NASA conducted a review of literature regarding gender and STEM programs, including Title IX policy and enforcement in the STEM context.<sup>64</sup> The review continues to be updated as new research and analysis on gender and STEM emerges. It also continues to assist NASA 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.<sup>65</sup> 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 and Advance*); the University of California Berkeley, Center on Health, Economic & Family Security report,

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<sup>64</sup> 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 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); 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).

<sup>65</sup> 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).

*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."<sup>66</sup> *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.<sup>67</sup> For example, the report identified the need to create and institutionalize a sustained commitment to diversity among university leaders and administrators.<sup>68</sup> 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.<sup>69</sup> 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.<sup>70</sup>

### ***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.<sup>71</sup>

### ***Family Friendly Policies***

The 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."<sup>72</sup> 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,

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<sup>66</sup> NRC Report, Summary, p.2.

<sup>67</sup> 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.

<sup>68</sup> Ibid., chap. 1, p.8.

<sup>69</sup> Ibid., chap. 2, p.47.

<sup>70</sup> Ibid.

<sup>71</sup> 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).

<sup>72</sup> 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).

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.<sup>73</sup>

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.<sup>74</sup> 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 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.<sup>75</sup> Tenured women are nearly three times more likely than men to be single without children.<sup>76</sup> 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.<sup>77</sup>

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.<sup>78</sup>

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:

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<sup>73</sup> Ibid., p. 6.

<sup>74</sup> 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.

<sup>75</sup> Ibid., p. 5

<sup>76</sup> Ibid., p. 7

<sup>77</sup> Ibid., p. 10

<sup>78</sup> Ibid., p. 8

- 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.<sup>79</sup>

### ***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.<sup>80</sup> 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.

### ***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.<sup>81</sup> 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

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<sup>79</sup> Ibid., pp. 12-13

<sup>80</sup> NRC Report., chap. 4, p. 78

<sup>81</sup> Ibid., chap. 2, p. 41.

climate where women and men of similar talent who want to be scientists or engineers have equal opportunity to do so.”<sup>82</sup>

## **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.<sup>83</sup>

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”<sup>84</sup> 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.”<sup>85</sup> 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.<sup>86</sup>

### ***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.<sup>87</sup> 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.”<sup>88</sup> 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.”<sup>89</sup>

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<sup>82</sup> AAUW Report, p. 13 (citations omitted).

<sup>83</sup> 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

<sup>84</sup> 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>.

<sup>85</sup> *Ibid.*, p. 7.

<sup>86</sup> 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>.

<sup>87</sup> APS Program Summary.

<sup>88</sup> *Ibid.*

<sup>89</sup> *Ibid.*

However, APS reports that the climate for women varies dramatically among the departments it has reviewed, with many positive climates reported.<sup>90</sup> 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.<sup>91</sup>

### **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
- 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.

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<sup>90</sup> Ibid.

<sup>91</sup> Ibid.