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INDEPENDENT WOMEN'S FORUM

P.O. Box 3058  
Arlington, Virginia 22203-0058  
Tel: 703.558.4991  
Fax: 703.558.4994  
Email: info@iwf.org

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# MIT TARNISHES ITS REPUTATION WITH GENDER JUNK SCIENCE

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## Special Report by Judith S. Kleinfeld

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The Massachusetts Institute of Technology failed to uphold scientific standards in its highly publicized study confessing to gender discrimination against female faculty.

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- The MIT Study on the Status of Women Faculty falls below the most elementary standards for scientific evidence, fails to prove gender discrimination on the MIT campus and amounts to little more than a political manifesto.
  - Media coverage of the MIT study has embraced the findings of the women who wrote the report, and has spawned copycat political projects at other prestigious universities.
  - Reliable scientific studies show striking differences in the interests and career preferences of mathematically gifted young men and women. Difference in career choice, not gender discrimination, is the most reasonable explanation for the greater number of male faculty in the School of Science at MIT.

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December 1999

# MIT TARNISHES ITS REPUTATION WITH GENDER JUNK SCIENCE

**Judith S. Kleinfeld**  
**Professor of Psychology**  
**University of Alaska, Fairbanks**  
**Telephone: 907-474-5266**  
**Fax: 907-457-1978**  
**E-mail: [ffjsk@uaf.edu](mailto:ffjsk@uaf.edu)**

December 14, 1999

Judith Kleinfeld, professor of psychology at the University of Alaska Fairbanks, has published widely on gender issues. Her report, "The Myth That Schools Shortchange Girls," changed the national debate on gender and education. That research, published in *The Public Interest* and *Gender Issues*, was the subject of articles in *The New York Times*, *The Wall Street Journal*, *U.S. News and World Report*, *The Chronicle of Higher Education*, *Psychology Today* and other publications.

Judith Kleinfeld received her bachelor's degree from Wellesley College and her doctorate from Harvard. She was awarded the Emil Usibelli Prize for Distinguished Research and an award for a significant contribution to gender equity by the American Association of Colleges for Teacher Education.

Presented by:



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## Executive Summary

In March, 1999, the Massachusetts Institute of Technology published a stunning study which confessed to unintentional but institutionalized gender discrimination against female faculty. The “MIT Study on the Status of Women Faculty” was conducted by the chief complainant of discrimination, Nancy Hopkins, professor of biology.

According to a feature story in the December 3, 1999 *Chronicle of Higher Education*, “Nancy Hopkins has done for sex discrimination what Anita Hill did for sexual harassment.” Other universities plan to duplicate the MIT study, says the *Chronicle*, and MIT professor Nancy Hopkins has become the poster child for gender equity.

Why did MIT confess to gender discrimination? According to the Dean of the School of Science, Robert J. Birgeneau, the study of gender discrimination was “data-driven and that’s a very MIT thing.”

But is this study “data driven”—that is, based on an analysis of empirical evidence? The MIT study on gender discrimination, a careful reading shows, falls below basic standards for scientific evidence in the social sciences. Particularly suspect is the fact that MIT will not release the data. A source close to the committee that produced this report says that the committee found no gender discrimination at all. MIT’s excuse for not releasing the data of this study is that information such as the sex differences in the allocation of laboratory space is “confidential.”

### ***The MIT Study Falls Below Elementary Standards for Scientific Evidence***

1. ***The senior women at MIT were judge and jury of their own complaints.*** The chair of the MIT committee evaluating the charge of gender discrimination was Nancy Hopkins herself, the chief complainant. Two-thirds of the committee members were other senior women in the School of Science, interested parties who would personally profit from a finding of gender discrimination, and in fact did profit, gaining increased salaries, increased research budgets, more laboratory space and other perks.
2. ***The MIT report presents no objective evidence whatsoever to***

***support claims of gender discrimination in laboratory space, salary, research funds, and other resources.***

3. ***MIT is keeping the facts secret, claiming that “confidentiality” is required on such matters as sex differences in square feet of laboratory space.*** Science depends on the disclosure of data on which claims are based.
4. ***The “universal problem” of gender discrimination trumpeted in the MIT Study boils down to the subjective perceptions of senior women (not the junior women) in only three of the six departments at MIT’s School of Science.*** Even these perceptions—evidence of nothing but personal feelings—were not counted and measured according to accepted scientific standards in the social sciences
5. ***The claims by the senior women in the School of Science that, as “pioneers” in science, they are “exceptional” and “above the average MIT faculty” are unproved .*** An independent study by Professor James Guyot of Baruch College reveals that about the same percentage of senior MIT women (32%) and senior MIT men (34%) have been elected to membership in prestigious scientific academies. But in the MIT Biology Department, where the discrimination uproar started, the difference in scientific stature in favor of the senior men is quite large.

### ***Source Admits: No Gender Discrimination was Actually Found by the Committee***

A confidential source at MIT, willing to reveal what happened on the committee only under the protection of anonymity, says that the Committee on the Status of Women actually found no gender differences:

“Heroic efforts were made to get statistics but a lot of this information was hard to gather, like who had what space. There was insufficient data from any of these sources to determine anything in particular.

“Nobody can make judgments anyway with such small numbers of people doing such totally different things.”

## ***Why Are So Few Women in the Physical Sciences, Mathematics, and Engineering at MIT and elsewhere?***

The only evidence which the MIT Committee on the Status of Women provides as proof of gender discrimination is the remarkably low number of women on the Science faculty.

1. ***In 1994, a mere eight percent of the faculty were women, and by 1999, after what the Committee terms “the striking success of the collaboration between the women faculty and Dean Birgeneau,” the percentage was up to only ten percent.*** A prestigious institution like MIT has its pick of faculty and such a small increase was the best MIT could do after five years of effort. The explanation for the sex disparity is the shortage of women in these scientific fields overall, not gender discrimination on the part of MIT.

Women are now close to fifty percent of those receiving degrees in law and medicine in the biological sciences. Why are women not surging into fields like the physical sciences and mathematics in equal numbers?

2. ***Studies of mathematically gifted young women in special programs like the Johns Hopkins Study of Mathematically Precocious Youth reveal striking sex differences in values and interests.*** Most of these young women preferred careers in law, medicine, and biology where they can work with people and living things rather than with inanimate objects. Many talented young women believe that today's cultural pressures are pushing them into the physical sciences when they want to make other career choices.
3. ***The greater number of male faculty in the School of Science at MIT is due in part to the greater tendency of males to show up at the extremes—both at the top of the heap and the bottom of the barrel—on many characteristics.*** A mathematics professor at MIT, for example, is about as close to the high extreme in mathematical ability as anybody can get. Conversely, far more males than females appear at the lowest academic levels and far more males have learning disabilities.

The pursuit of sex equity in the sciences has turned into an evangelical mission that threatens to undermine science itself. The MIT study with its secret data, shrill rhetoric, and shoddy analysis tarnishes the reputation of a great and distinguished university.

Gender discrimination may or may not exist at MIT or at other universities. But

this study proves nothing and does not illustrate the kind of science for which MIT is justly famed. It is junk science.

# MIT Tarnishes Its Reputation with Gender Junk Science

*A Special Report by Judith S. Kleinfeld*

My father, an MIT scholarship boy, took great pride in his Class of '33 ring. The "Brass Rat," as the ring is affectionately called, was never off his finger. The beaver, nature's engineer, stands in the center and MIT's Great Dome, patterned on the Pantheon, juts out from the sides. His ring is mine now, resized to fit my finger.

My father was fond of a maxim, which he learned at MIT and which he impressed on me: "The truth will out and the truth is best."

In this spirit, because the "the truth is best," because we make wiser decisions when we attend to realities, I examine "A Study on the Status of Women Faculty in Science at MIT," published in March, 1999.<sup>1</sup> This study, confessing to unintentional gender discrimination against female professors, was endorsed by MIT. Indeed, a message from MIT's President Charles M. Vest introduces the study: "I commend this study of Women Faculty in Science to all of my faculty colleagues. Please read it, contemplate its messages and information, and act upon it personally and collectively."

The story of gender discrimination by one of America's most distinguished universities was featured in newspapers across the country. The conclusions, accepted without critical comment, received front-page coverage in *The New York Times*. MIT professor Nancy Hopkins, whose complaints instigated the study and who, despite being the complainant, chaired the investigatory committee evaluating her own complaints, was invited to the White House where President and Mrs. Clinton praised her courage and expressed their hopes that MIT would serve as a model for universities across the nation in its confession of gender discrimination and its attention to improvement in the treatment of women faculty.<sup>2</sup> Their hopes are being fulfilled: "The California Institute of Technology,

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<sup>1</sup> This study was published by the Massachusetts Institute of Technology in a Special Edition of *The MIT Faculty Newsletter*, Vol. XI, no.4 ( March 1999). The study is available at this web address: <http://web.mit.edu/fnl/women/women.html>.

<sup>2</sup> Nancy Hopkins, "MIT and Gender Bias: Following Up on Victory," *The Chronicle of Higher Education* (June 11, 1999): B4-5. The article may be found at this web address: <http://www.chronicle.com/weekly/v45/i40/40b00401.htm>.

For examples of the applause the report received, see the letters to the editor in the *Chronicle of Higher Education* on this issue. All eight published letters congratulated MIT for admitting to a problem "endemic" to higher education: "What to Do About Gender Bias at Colleges and

Case Western Reserve University, Harvard Medical School, the University of Arizona, and the University of California at Los Angeles (are) among those that plan to study gender equity,” says the *Chronicle of Higher Education*, reporting on the “new movement” that the MIT study spawned.<sup>3</sup>

“It was data-driven and that’s a very MIT thing,” bragged Robert J. Birgeneau, Dean of the School of Science at MIT, to *The New York Times*.<sup>4</sup> Contrary to his assertion, this study is not “data-driven”—based on empirical evidence with alternative explanations examined. The “study” is a political tract.

**1. The MIT study on gender discrimination falls below basic standards for scientific evidence in the social sciences.**

**2. A confidential source at MIT, quite close to the committee that examined the complaints and produced the study, says that the committee found no gender discrimination.** Where scientists disagree, the scientific community debates the evidence. But MIT will not release the data, making the absurd claim that such data as sex differences in laboratory space is “confidential.”

**3. The single piece of hard evidence that the study offers as proof of gender discrimination is the greater number of males on the faculty of MIT’s School of Science.** But a gender imbalance does not equal gender discrimination. Why a gender imbalance continues in such fields as mathematics and the physical sciences, while such fields as law or biology are reaching gender parity, is an interesting scientific question. Evidence for the answer is discussed below. The discrimination explanation is among the least plausible.

MIT has produced a political manifesto masquerading as science, an ideological tract draped in the robes of MIT’s international prestige. The MIT Study on the Status of Women Faculty in Science is junk science which tarnishes MIT’s international reputation:

### **A Study on the Status of Women Faculty in Science at MIT: What the Report Really Shows**

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Universities,” *The Chronicle of Higher Education* (July 9, 1999): B3, B11. The letters may be found at this web address: <http://chronicle.com/weekly/v45/i44/44b00301.htm>.

<sup>3</sup> Robin Wilson, “An MIT Professor’s Suspicion of Bias Leads to a New Movement for Academic Women,” *The Chronicle of Higher Education* (December 3, 1999): A-16.

<sup>4</sup> Carey Goldberg, “M.I.T. Admits Discrimination Against Female Professors,” *New York Times* (March 23, 1999): A-1.

“In the summer of 1994, three tenured women faculty in the School of Science began to discuss the quality of their professional lives at MIT,” begins the study. “In the course of their careers these women had come to realize that gender had probably caused their professional lives to differ significantly from those of their male colleagues...It was soon clear to the women that their experiences formed a pattern (p.3).”

The incident that sparked these discussions was a demand for additional laboratory space by Professor Nancy Hopkins in the Biology Department.<sup>5</sup> Space wars are the stuff of daily life at thriving universities, regardless of the gender of the combatants. As professors acquire research contracts, they often require more space. More senior professors typically have staked out more space. Professors can be quite ferocious in their demands for space and they can be furious when they lose these battles. When Professor Hopkins lost her bid for more laboratory space, she sought out other tenured women to see if they were similarly aggrieved.

### **Perceptions of Discrimination among MIT’s Female Faculty Were Far From Universal**

“The problems were universal regardless of School or academic discipline,” states the study (p. 4). Was this conclusion “data driven,” as the Dean claimed? To the extent the data is disclosed, the study shows the opposite. We learn in the “First Report of the Committee on Women Faculty in the School of Science--1996” (an earlier document appended to the 1999 study), that the problems were not “universal” at all. To the contrary, “considerable variation in departments was found” (p.11). Buried in an appendix to the report are these telling points:

- junior women faculty felt that men and women on the faculty were treated equally in terms of resources, salary, and other material benefits. Most felt supported by their departments in their scientific endeavors;
- five of the six departments in the School of Science had tenured women faculty (the exception is Mathematics). In two of these departments, the senior women reported no personal discrimination or other gender equity problems;

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<sup>5</sup> D.W. Miller and Robin Wilson, “MIT Acknowledges Bias Against Female Faculty Members,” *The Chronicle of Higher Education* (April 2, 1999): A-18. This article is available at this web address: <http://chronicle.com/weekly/v45/i30/30a01801.htm>.

- senior women alone in the remaining three departments perceived marginalization or gender equity problems (no objective data is presented in support of these claims).

Thus the “universal problem” of gender discrimination at MIT comes down to the subjective perceptions of a small and unrepresentative group---the senior women in just three of the six departments at MIT’s School of Science.

Moreover, even this study of subjective perceptions was not carried out according to established scientific practice. A study of perceptions adhering to accepted scientific methods would include, at least in an appendix, the wording of the questions that were asked and a table showing the numbers of women expressing particular attitudes. Unstructured conversations, such as the Committee appears to have conducted with the female faculty in the School of Science, could also be evaluated by appropriate scientific procedures. To evaluate unstructured conversations, a codebook of alternative responses is created. Coders are trained to reach an acceptable level of agreement (typically 80 percent) in evaluating the responses and placing them into defined categories. (One category might be “person perceived discrimination against female professors.” Another category might be “person perceived marginalization but no blatant discrimination.”) The MIT report provides no indication that such elementary scientific steps were followed. Nor were male faculty members polled to see if similar proportions felt unfairly treated.

No matter. The study treats the feelings of small numbers of senior women as evidence of gender discrimination. The study deals with the difficulty that most junior women did not perceive gender discrimination by asserting that many of the senior women also felt supported as younger faculty. MIT’s president Charles Vest in his introductory remarks tells us that he “sat bolt upright in my chair when a senior woman, who has felt unfairly treated for some time, said ‘I also felt very positive when I was young.’”

But this is a breach of logic---the assumption that junior women will change in their views because the senior women say they did. In scientific terms, this is a confusion between the conclusions that can be drawn from cross-sectional and longitudinal analysis. The junior women and senior women at MIT come from two different generations. To say that MIT’s junior women are going to be like MIT’s senior women is like saying that today’s young women are going to age just like their mothers did.

Perceptions of discrimination are evidence of nothing but subjective feelings. To be “data driven...a very MIT thing,” a study needs facts bearing on these feelings. The slights and feelings of marginalization some of the senior women at MIT experienced might be due to any number of factors---

departmental factions, personality conflicts, mistaken impressions. Indeed, the fact that so few of the untenured women faculty perceived problems is in itself suspect and a telling sign of the weakness of perceptions as a source of evidence. Anxieties about tenure and the approval of male colleagues could have prevented the junior women from speaking out. The point is that feelings are at best untrustworthy indications of facts. The study does not even provide the most minimal facts---the numbers of tenured and untenured women who expressed particular sentiments. Such data would be necessary in a student paper, let alone a study by a great scientific institution.

### **The MIT Committee Evaluating Gender Discrimination Was Composed Mostly of Interested Parties—the Women Perceiving Gender Discrimination**

The Committee itself was curious in its composition.<sup>6</sup> ***The Chair and two-thirds of the committee members were senior women, interested parties, who would personally profit from a finding of gender discrimination and they did profit---they were given raises and other resources.*** The chair was Professor Nancy Hopkins herself, the very professor whose claims of unfairness had led to the study (she got a pay raise of 20 percent, triple the laboratory space, research funds, and numerous other benefits). We learn that the committee was “composed of a single tenured woman from each of the six departments in Science (except Mathematics since there were and still are no tenured women faculty in math) plus three senior male faculty.” These were the same women who sent the proposal to the Dean to create the committee. Their beliefs were firmly in place at the outset. Their initial proposal to create the committee states their later conclusion, “We believe that unequal treatment of women who come to MIT makes it more difficult for them to succeed.” (p. 5). In short, the senior women at MIT’s School of Science were judge and jury of their own complaint.

Political influences destroyed any pretense of objectivity. “A particularly important aspect of how the Committee operated was that no substantive letter, memo, or report was written, and no important action taken without seeking the participation and advice of all the tenured women faculty in Science.” (p. 6). Male faculty members were not afforded the same courtesy of consultation.

The Study on the Status of Women Faculty in Science MIT boils down to a political process, not a scientific inquiry. But MIT denied this was politics, not

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<sup>6</sup> MIT actually appointed two committees. The major findings of gender discrimination come from the First Committee (1995--1997). The Second Committee (1997--1999) was chaired by Mary C. Potter from MIT’s Department of Brain and Cognitive Science and women comprised 6 of the 9 members. A new MIT committee, chaired by Professor Lotte Bailyn, has been appointed to study gender discrimination at MIT as a whole.

science. "Give us convincing data, and we go with it," said President Charles Vest to Professor Nancy Hopkins, explaining why he was so quick to accept the report.<sup>7</sup> "It's the scientific mindset."

The MIT mindset on display is political, not scientific. Politics has its rewards:

Today, six years after she first complained of unequal treatment, and eight months after M.I.T. released a stunning report acknowledging discrimination against female scientists, Ms. Hopkins's career has taken off.

Her 5,000-square-foot lab buzzes with activity, as two dozen graduate students tend to the 150,000 zebrafish that she uses in her DNA research. She has been given an endowed chair, and financial support for her work has reached \$2.5-million a year--- much of the money given to the institute by Amgen, a leading biotechnology company.<sup>8</sup>

In the fall of 1999, Professor Hopkins was made a member of the prestigious National Academy of Sciences, according to this front-page story in the *Chronicle of Higher Education*.

The career of Robert J. Birgeneau, dean of the School of Science who championed the study, also progressed nicely. "Hero" is the label under his photograph in the November 12, 1999 issue of *Science* describing events at MIT. Less than a year after the study was released, the University of Toronto announced his appointment as the university's 14th president. One of his credentials, according to the University of Toronto's press release, was that he had "led a pioneering study on the status of women faculty in science at MIT."<sup>9</sup>

Dean Birgeneau describes the meeting in his conference room, where the senior women related their accounts of condescension from male faculty and their frustrations over resources, as "akin to a religious experience."<sup>10</sup> But Dean Birgeneau, at least in his role as Dean of the School of Science at MIT, should have been having not a "religious experience" but a scientific one. The study of

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<sup>7</sup> The quotation from President Vest comes from Nancy Hopkins, "MIT and Gender Bias."

<sup>8</sup> Wilson, "An MIT Professor's Suspicion," p. A-16.

<sup>9</sup> Susan Bloch-Nevitte, "Robert J. Birgeneau named U of T's 14th President," University of Toronto News and Events (December 5, 1999). <http://www.newsandevents.utoronto>.

<sup>10</sup> Andrew Lawler, "Tenured Women Battle to Make It Less Lonely at the Top," *Science* 286 (November 12, 1999):1273.

attribution processes and of attribution errors is a well-established area of research. The senior women at MIT attributed perceived slights and perceptions of inequity to gender discrimination. Most university faculty, male or female, could easily come up with similar accounts of slights, lack of recognition for their accomplishments, and unfair treatment. The scientific question is whether gender discrimination is the empirical basis for the feelings of the senior women at MIT.

### **Lack of Hard Data on Gender Discrimination**

While there are dark references to gender differences in salary, space, and other resources, no actual data are presented in support of any of these claims. Not only is quantitative data missing. Scientific procedures for qualitative case analysis do not appear to have been followed---the standard procedure for dealing with small numbers of cases.

When I requested data on gender differences in space, hardly a confidential matter, no MIT official would provide the information. The *Chronicle of Higher Education* reports that Professor Hopkins “took a tape measure to individual offices, examined floor plans, and determined that, on average, men in the biology department were given 3,000 square feet of space, while women were given 2,000 square feet.”<sup>11</sup> But these appear to be informal measurements by an interested party to a dispute.

Differences in space allocation, as previously discussed, often come about through differences in seniority. The tenured women in MIT’s Biology Department are less senior than the tenured men---on the average about five years younger in “scientific age”---years since they received their Ph.D.<sup>12</sup> This difference in scientific age is understandable, given the lack of scientific opportunities afforded to an earlier generation of women and their later entry into the sciences. It is also a possible explanation for differences in space and other resources.

The only hard data the study actually offers is the decreasing numbers of women from the undergraduate to the faculty level in each department of the School of Science (p. 13). We learn that the numbers of male and female undergraduates are about equal in the Department of Biology in 1994---indeed women (147) have a slight advantage over men (142). More women than men are also undergraduates in the departments of Brain and Cognitive Science and

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<sup>11</sup> Miller and Wilson, “MIT Acknowledges Bias.”

<sup>12</sup> James F. Guyot, *Frontier Women at MIT: Attempting a Replication*, Baruch School of Public Affairs, Fall, 1999.

in Chemistry. Only the departments of physics and mathematics show substantial gender disparity among undergraduates.

True, only eight percent of the faculty in the School of Science at MIT in 1994 were women. But several explanations other than institutional gender discrimination could account for these numbers. One explanation is sex differences in career choices. Another explanation is that many gifted female scientists are at an earlier stage in their scientific careers. The young women now pouring into such fields as biology require time to make the discoveries and achieve the stature that will put them on the faculty of a distinguished institution such as MIT.

A sea change occurred in the gender composition of the professoriate, beginning in the early 1970s. Due to the women's movement and to the ending of graduate student deferments for young men at the height of the Vietnam War, women became welcome in graduate schools. But the bulk of the professoriate at MIT and other institutions are males who gained their positions before the 1970s and, due to tenure, are still in place. Saying there is discrimination against MIT female professors today, based on the percentage of males educated and hired 30 to 50 years ago, is like saying it's a cold day in June based on the temperature last December.

No evidence, no matter.

### **Uncritical Media Acceptance of the MIT Report**

"MIT Admits Discrimination Against Female Professors" shouted the headline of the *New York Times* story (March 23, 1999). "In an extraordinary admission, top officials at the Massachusetts Institute of Technology, the most prestigious science and engineering university in the country, have issued a report acknowledging that female professors here suffer from pervasive, if unintentional discrimination."

The *New York Times* went on to editorialize on March 28, 1999:

Hard evidence of this phenomenon [gender bias] is found in a new report on women on the science faculty of the Massachusetts Institute of Technology, which boasts one of the most prestigious faculties in the world...M.I.T. is certainly not alone in this problem. But it has confronted this reality boldly and is taking steps to correct the inequities and improve hiring practices. Beyond that, the study has significant social value because it documents with unusual

clarity how pervasive and destructive discrimination can be even when there is no blatant harassment or intimidation.<sup>13</sup>

The media blitz that ensued brought virtually universal applause for Hopkins and for MIT. In an article in the *Chronicle of Higher Education*, Professor Hopkins declared outright victory.<sup>14</sup> She had good reason. "A number of senior women who had been underpaid received salary increases; several women who had not received discretionary funds from the administration for years got money for research; some women got more space; and some got funds for renovations of their labs or offices," Hopkins tells us.

Only a few cautious, let alone dissenting, voices were heard. "Cleansed of telling detail, the report offers only vague observations and conclusions," pointed out veteran *Science* reporter Constance Holden.<sup>15</sup> Male faculty at MIT have remained publicly silent on the issue, noted *USA Today*.<sup>16</sup>

Even a professor of humanities, a nonscientist like Camille Paglia, found it easy to identify the elementary scientific errors in the MIT report:

Where is the comparative data to demonstrate that the professional accomplishments of the aggrieved MIT women were in fact equal or superior to those of their male colleagues who enjoyed preferential treatment? The fact that 40 percent of the tenured female science faculty are members of the National Academy of Sciences or the American Academy of Arts and Sciences is immaterial if we know nothing about the credentials of their male peers.<sup>17</sup>

In fact, whether the complaining women had credentials equal or superior to that of the men is open to doubt. Despite their claims to be "exceptional" because they are "pioneers" who have broken through "enormous barriers," the MIT senior women are far from exceptional by MIT standards. In an independent study examining this claim, "Frontier Women at MIT: Attempting a Replication," Baruch School of Public Affairs Professor James F. Guyot found *about the same proportion* of senior females (32%) compared to senior males (34%) who are

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<sup>13</sup> "Gender Bias on the Campus," *New York Times* (March 28, 1999): Section 4, p. 16.

<sup>14</sup> Nancy Hopkins, "MIT and Gender Bias", p.B4.

<sup>15</sup> Constance Holden, "MIT Issues Mea Culpa on Sex Bias," *Science* 283, no. 5410 (March 26, 1999): 1992a.

<sup>16</sup> Mary Beth Marklein, "Suffering MIT Sisterhood Finds Support in Data," *USA Today* (July 27, 1999):6D.

<sup>17</sup> Camille Paglia, "Biased Science," *Salon* (April 7,1999). The web address is: <http://www.salon.com>.

members of the National Academy of Sciences or the American Academy of Arts and Sciences. However, in the Biology Department, where professor Nancy Hopkins complained of “marginalization,” the difference in scientific stature in favor of males is far larger---only 38 percent of the senior MIT female faculty had been elected to these organizations compared to 55 percent of the senior males. MIT senior women in biology hardly appear at all in the especially prestigious National Academy of Sciences (13 %) while almost half of the senior men in the Biology Department (45%) were elected to membership. (Note: Guyot’s analysis was done from published lists of members available prior to the furor following the MIT report.)

Diana Furchtgott-Roth noted that the MIT study was so weak that it would not be accepted as evidence of gender discrimination in a court of law:

To evaluate discrimination at MIT, one would expect to see details of brilliant female professors being turned down for tenure on the basis of their sex, complete with salary documentation, publications records, estimates of quality of research, information on teaching ability and administrative skills. Rigorous analysis of such data is commonplace in court cases. But none of this information appears.<sup>18</sup>

Because MIT has not released the underlying data that it claims supports the report, there can not be any verification or falsification of its scientific claims.

The Statistical Assessment Service (STATS), a watchdog organization that exposes junk science in the media, was highly skeptical.<sup>19</sup> The MIT Report claims to have investigated systematically differences in salary and other resources, said STATS, but fails to present any data to support conclusions of inequality, let alone gender discrimination. According to STATS, the few reporters who asked to see the data were “rebuffed” and the data was even kept secret from the MIT faculty.

### **Secret Data**

That MIT is keeping scientific data secret is a serious allegation in the scientific world. To check this charge, I sent e-mail to a few faculty members on the Committee with a courteous request to see the data. I explained I was writing a piece on the study and did not want to report the charges of the

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<sup>18</sup> D. Furchtgott-Roth, “MIT Flunks Statistics 101,” *Investor’s Business Daily* (May 4, 1999), p.A-22.

<sup>19</sup> “Scientific Inquiry or Blind Faith? Journalists take M.I.T.’s word for it” *STATS Spotlight* (May, 1999). The web address is: <http://www.stats.org/spotlight/mit.htm>

Statistical Assessment Service if these were not true. I also made repeated telephone inquiries to MIT officials and to Dean Robert J. Birgeneau. No one returned my inquiries (except to refer me to somebody else) with the exception of Professor Nancy Hopkins herself, who replied with promptness and courtesy but with no information. Confidentiality, even in releasing lab space data, she said in her e-mail communication, was important because “it is the women whom we must protect to be ethical and fair.” Since more than a quarter of the senior women in MIT’s School of Science were listed by name as committee members and the others could easily be identified from lists of MIT faculty by department, asserting a need for “confidentiality” as grounds for not releasing data is peculiar and in itself grounds for suspicion.

Why would it be necessary to keep secret such facts as square feet of lab space allocated to women and square feet allocated to men? There is no legitimate reason for secrecy. Science depends on disclosure of the data on which claims are based.

Gender discrimination may or may not exist at MIT or at other universities. But what we have in this report is not science. It is junk science.

### **Confidential Source at MIT: No Gender Discrimination Was Actually Found**

A confidential source at MIT, willing to reveal what actually happened if not identified by name, provides a very different view of what the Committee investigating the status of female professors at MIT actually found.

“The committee was set up in response to a feeling by some women faculty that they weren’t terribly happy, “ this source said. “It was true that they weren’t happy. It was true and being true it was a problem. Every organization would like its senior people to be happy.

“The mandate of the committee was to explore, to try to find the reasons, to see how it could be corrected. I developed serious respect for them. They [the women faculty at MIT] were serious scientists, not the product of any relaxation [of standards].

“Heroic efforts were made to get statistics but a lot of this information was hard to gather, like who had what space. There was insufficient data from any of these sources to determine anything in particular. Nobody can make judgments anyway with such small number of people doing such totally different things.”

No gender discrimination was actually found, according to this source. But to increase the senior women's satisfaction ("to throw them a bone"), they were given additional benefits, such as salary increases. This effort backfired: The senior women interpreted their raises as evidence of discrimination. Why would they be getting raises if they had not been discriminated against in the past? Now they wanted back pay.

"What about all the money they didn't get before? It never occurred to people that raising their salaries would raise their resentment."

Why did MIT come out with a report confessing to gender discrimination if the institution had no firm evidence supporting this contention? My source had a speculation--- to prevent embarrassment to the Biology Department.

Due to an earlier controversy involving the removal of a male faculty member, factions had developed in the Biology Department. The department head was not speaking to some faculty---an embarrassing situation. The Biology Department was still recovering from a high-profile controversy over one of its members. Nobel laureate David Baltimore had been accused of publishing and later defending a paper containing data allegedly forged by a colleague, Dr. Imanishi-Kari---a case under intense investigation and spotlighted by the media for over ten years. The National Institute of Health finally cleared Dr. Baltimore and Dr. Imanishi-Kari of accusations of scientific misconduct. The Biology Department did not need another problem.

"What I suspect is that the Dean traded off no mention in the report of administrative problems in the Biology Department for an admission of general wrongdoing on the part of the institution," said this source.

For those familiar with academic politics, this account of events and motives comes as no surprise. Since Dean Birgeneau did not return repeated telephone calls, I cannot include his response to this alternate account of the Committee's work. Interpretations can differ, and it seems likely that the different participants on the Committee have their own interpretations of highly ambiguous data not subjected to rigorous analysis.

Did MIT find gender discrimination? We have only the undocumented claims of a Committee that alleges it did. We have no hard data on gender differences in space, prizes, departmental awards, or salaries, analyzed with attention to alternative explanations such as differences in the seniority of male and female faculty. We do not even have soft data on perceptions of discrimination---which would seem to show from what can be pieced together from the published report that a majority of the women in the School of Science at MIT do not feel either discriminated against or marginalized.

## Why Don't More Women Go Into Mathematics, Engineering, and the Physical Sciences?

The one feeble reed on which the Committee on the Status of Women hangs its collective hat is the remarkably low numbers of women on the Science faculty. In 1994, a mere 8 percent were women, and by 1999, after what the Committee terms "the striking success of the collaboration between the women faculty and Dean Birgeneau," the number was up only two percentage points, to 10 percent. Since a university as prestigious as MIT has the pick of available candidates, the conclusion is obvious--- women in these fields are in short supply.

Are these low numbers evidence of past gender discrimination on the part of MIT and other scientific institutions, which, after all, have the same problem of low female numbers? Or is the problem that most ambitious women choose other fields which better fit their tastes and their talents?

Since the women's movement in the early 1970s, women have surged into the workforce and into prestigious careers. Most women earning advanced degrees, however, prefer the professions and sciences dealing with people and living things---not the physical sciences.<sup>20</sup>

\* The top choice of women seeking advanced degrees is law school. In 1999, the American Bar Association reports, 47 percent of first-year law students were women.<sup>21</sup> The number of women entering and graduating from law school has climbed steadily since the early 1960s and that number is enormous---over 20,000 women entered law school in 1998.

\* The number of women entering medicine has also risen steadily. Over 40 percent of medical degrees went to women in 1996.<sup>22</sup> In veterinary medicine, women have far surpassed men---more than

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<sup>20</sup> See Judith Kleinfeld, "Student Performance: Males versus Females", *The Public Interest* 134 (1999): 3--20. More detailed statistical tables may be found in Judith Kleinfeld, *The Myth That Schools Shortchange Girls* (Washington, DC: Women's Freedom Network, 1998).

<sup>21</sup> *First Year Enrollment in ABA Approved Law Schools 1947-1998*. These statistics, collected by the American Bar Association, may be found at this web address: <http://www.abanet.org>.

<sup>22</sup> The relevant statistics may be found in *The Chronicle of Higher Education 1999--2000 Almanac Issue*, (August 27, 1999): 32.

two-thirds of the degrees in veterinary medicine in 1996 went to women.

\* In biology and other sciences dealing with people and other living things, the gender gap is also closing. In 1997, women received almost 45 percent of the doctorates in the biological sciences.<sup>23</sup>

The situation is different in physics, chemistry, mathematics, computer science, and engineering---the fields which deal with inanimate objects rather than people and living things. Although the number of women in these fields has risen in the past thirty years, the percentages are spectacularly low when compared to the professions and the life sciences. In 1997 women earned only 14 percent of the doctorates in physics, 16 percent in engineering, 19 percent in computer sciences, 28 percent in mathematics, and 30 percent in chemistry.<sup>24</sup> Some of these numbers actually represent a slight drop compared with previous years.

Previous cultural stereotypes tended to stigmatize women who became engineers or physical scientists, but cultural pressures and incentives have for a generation supported the entry of women into these fields. From National Science Foundation programs to Hollywood movies starring female scientists, young women are being urged to enter the sciences and mathematics. But a lot aren't buying. Many are resisting these cultural pressures, even those young women with exceptional abilities in mathematics and science.

### **Even Though They Are Aware of their Abilities and the Opportunities, Mathematically Talented Young Women Choose Mathematical and Scientific Fields Far Less Frequently than Young Men Do**

National talent searches, started over a quarter of a century ago by the Study of Mathematically Precocious Youth at Johns Hopkins University, have identified thousands of young people gifted in mathematics and science.<sup>25</sup>

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<sup>23</sup> *Science and Engineering Doctorate Awards: 1997--Early Release Tables*, Division of Science Resources Studies, National Science Foundation. This information may be found at: <http://www.nsf.gov/sbe/srs/srs99406/start.htm>. In calculating these proportions, it is important to examine only U.S. citizens and permanent residents. Otherwise, the disproportionate number of males who are international students studying and receiving advanced degrees in the United States distort this information. The proportions of doctorates in the sciences and engineering discussed in this paper refer to U.S. citizens and permanent residents.

<sup>24</sup> Ibid.

<sup>25</sup> D. Lubinski and C. Benbow, "Gender Differences in Abilities and Preferences among the Gifted: Implications for the Math-science Pipeline," *Current Directions in Psychological Science* 1 (1992): 61-66.

Many are young women and their attitudes provide considerable insight as to the reasons why more young women do not enter careers in mathematics, engineering, and the physical sciences.

Over 1 million seventh graders (and some eighth graders) who scored in the top 2 or 3 percent on standardized tests have participated in the Johns Hopkins talent searches. These students take the Scholastic Aptitude Test (SAT) not as high school seniors, but rather as junior high school students, well before they have practiced solving problems like those on the mathematics section of the SAT (SAT-M). Top-scoring students are invited to participate in summer programs on university campuses that provide acceleration and enrichment in mathematics, science, and other fields. Now called the Johns Hopkins University Institute for the Academic Advancement of Youth, the program has expanded to several universities across the country and to such areas as writing and geopolitics.

The young women who get top scores on the SAT-M and participate in the summer programs at Johns Hopkins and other universities are hardly the victims of cultural stereotyping or of parents who have failed to recognize and develop their daughters' talents. Their families paid over \$2000 in 1999 to send their daughters to a summer program lasting only three weeks (quite a family investment) or had sufficient savvy to know about the program and take advantage of scholarships.

But few of these mathematically talented young women end up entering careers in mathematics and science. A follow-up study of one group of these students (conducted as part of "The Study of Mathematically Precocious Youth") showed startling differences in career choices:

Less than 1% of females in the top 1% of mathematical ability are pursuing doctorates in mathematics, engineering or physical sciences. Eight times as many similarly gifted males are doing so.<sup>26</sup>

These young women are well aware that they have the talent:

Mathematically talented females certainly appear to be aware of their ability to achieve in math and science areas. They self-report it and counselors and instructors also tell them about the full spectrum of their abilities and their educational and career possibilities.

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<sup>26</sup> Ibid., p. 64.

They simply choose to develop their abilities in other areas, unlike the males, who are also told about the breadth and depth of their abilities, but more typically choose math-science tracks.<sup>27</sup>

These mathematically gifted young women are getting advanced degrees. But most are choosing other fields: their first choice was medicine, followed by law, the humanities and biology.

Why? The most probable reason is that many of these mathematically gifted young women have intense interests in other fields. Gifted young people typically begin career exploration early and have clear interests and values that begin to crystallize early in their teens.<sup>28</sup> The young men and young women in the Study of Mathematically Precocious Youth showed striking differences in measures of interests and values, even though they were similar in intellectual gifts.<sup>29</sup> Specifically:

- \* The mathematically talented young men scored far higher on the “theoretical values” that are characteristic of physical scientists. They took great delight in abstract intellectual inquiry.

- \* The mathematically talented young women scored far higher on “social values.” They took great delight in working with people and they wanted to pursue altruistic and humanitarian goals in their careers.

That females typically have greater interest in “people” and males in “things” has been a staple in the research literature since the beginning of the century.<sup>30</sup> When more of the mathematically gifted young women in the Study of Mathematically Precocious Youth chose medicine, law, and biology, they were expressing strongly held values and serious interests. *These choices were their own.* That a girl has scientific talent does not make her clay in other people’s hands.

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<sup>27</sup> Ibid., p. 65.

<sup>28</sup> J.A. Achter, D.Lubinski, and C.P. Benbow, Multipotentiality Among the Intellectually Gifted: “It Was Never There and Already It’s Vanishing,” *Journal of Counseling Psychology* 43, no.1 (1996): 65-76.

<sup>29</sup> Lubinski and Benbow, “Gender Differences in Abilities.” For a more detailed analysis of sex differences in abilities and interests, see Achter, Lubinski, and Benbow, “Multipotentiality Among the Intellectually Gifted.”

<sup>30</sup>For a review of this literature, see C.A. Dwyer and L.M. Johnson, “Grades, Accomplishments and Correlates” in W. Willingham and N.S. Cole, *Gender and fair assessment* (Mahwah, NJ: Lawrence Erlbaum Associates), pp. 127-156.

These young women are hardly victims of social pressure **not** to go into the physical sciences. These young women are resisting social pressure to go into the physical sciences. They choose not to----in droves.

In "Perspectives from Feminist Philosophy," the prominent feminist philosopher Nel Noddings lays it on the line:

Many bright girls today report considerable pressure to enter mathematical/scientific fields instead of the fields traditionally associated with women, even though they are genuinely attracted to one of these fields. It is wrong to tell a young woman that she should not consider elementary teaching, for example because she's "too smart for that."<sup>31</sup>

When universities like MIT bemoan the lack of women faculty in the School of Science and attribute this situation to gender discrimination, they are ignoring women's own preferences and choices. The MIT faculty has more males, in large part, because there are fewer females in the relevant scientific talent pools. Yes, some mathematically talented females do choose such careers, but most make other choices. They are free to do so. Diversity of preferences enriches us all.

### **The Oddities At the Top of the Heap and the Bottom of the Barrel Are Mostly Male**

Males and females differ very little in most intellectual abilities.<sup>32</sup> But two differences that do exist are apt to affect the gender composition of the MIT faculty:

\* People at the extremes, whether the very top or the very bottom, are likely to be males. A professor of mathematics at MIT is about as extreme in mathematical ability as it is possible to get. Conversely, more males appear in the ranks of the learning disabled.

\* Males are more apt to possess high levels of certain narrow and specific spatial abilities important to success in engineering and some of the physical sciences.<sup>33</sup>

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<sup>31</sup> N. Noddings, "Perspectives from Feminist Philosophy," *Educational Researcher* 27, no. 5 (1998): 17-18, p. 18.

<sup>32</sup> N. Cole, *The ETS Gender Study: How Females and Males Perform in Educational Settings* (Princeton, N.J.: Educational Testing Service 1997), p. 10.

Few people are aware of a fascinating phenomenon that goes far in explaining both the sex imbalance of the faculty at MIT and another disturbing fact---why so many more males than females appear in the ranks of the most distinguished scientists, such as Albert Einstein or Richard Feynman or Stephen Hawking. This is the crucial point: ***Males are more variable than females—more males show up at the top of the heap and at the bottom of the barrel*** (See Figure 1).<sup>34</sup>

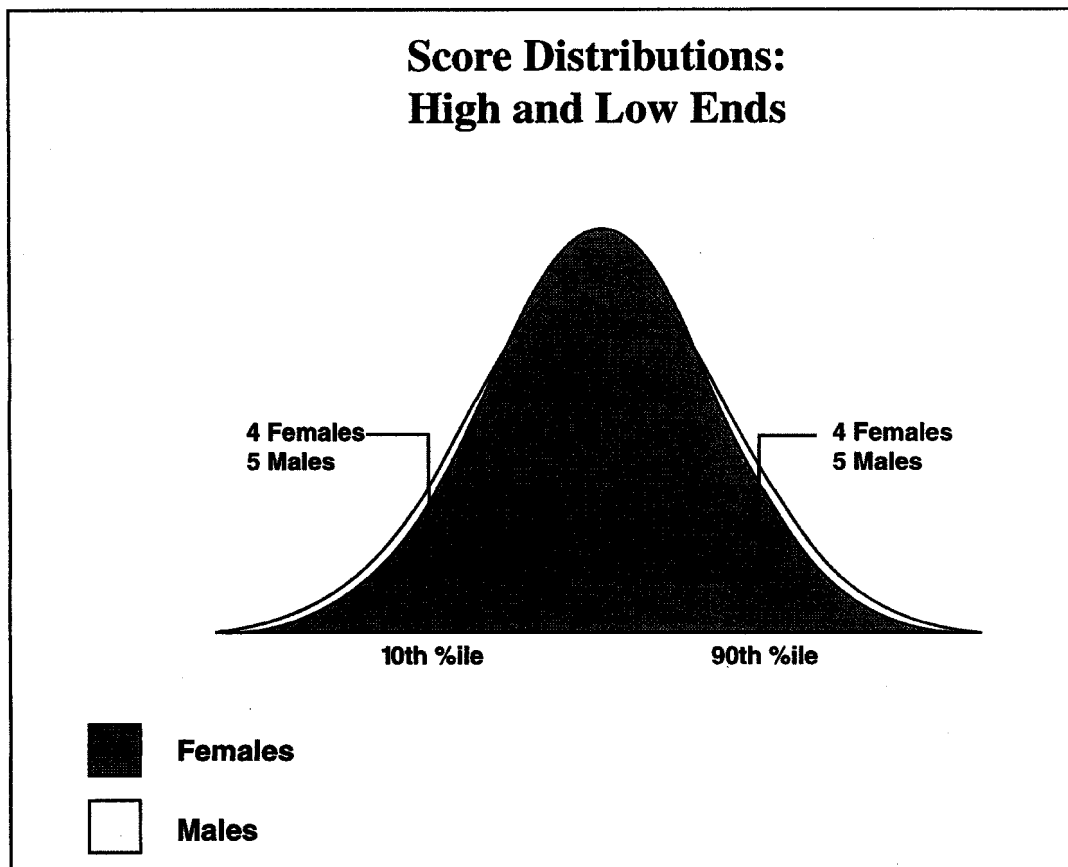
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<sup>33</sup> L.G. Humphreys, D. Lubinski, and G. Yao, "Utility of Predicting Group Membership and the Role of Spatial Visualization in Becoming an Engineer, Physical Scientist, or Artist," *Journal of Applied Psychology* 78, no.2 (1993): 250-261.

<sup>34</sup> The greater variability of males has been reported repeatedly in the scientific literature. See especially L.V. Hedges and A. Nowell, "Sex Differences in Mental Test Scores, Variability, and Numbers of High-scoring Individuals," *Science* 269 (1995): 41-45. See also Cole, *The ETS Gender Study* and Lubinski and Benbow, "Gender Differences in Abilities."

Figure 1

On Most Tests, Males and Females Score About the Same—But More Males Are At the Bottom of the Barrel and at the Top of the Heap.\*



\* Based on 74 tests given to nationally representative samples of 12th graders

Source: Nancy S. Cole. *The ETS Gender Study: How Females and Males Perform in Educational Settings*: Educational Testing Service, May 1997, p. 19. Reprinted by permission of Educational Testing Service, the copyright owner.

Charles Darwin pointed out the greater variability of males in *The Descent of Man*, first published in 1871. Not only are males more diverse than females, Darwin concluded, after a long study of domesticated animals. Among human beings, he says (citing other research of the period), males also have more “abnormalities.”<sup>35</sup> The variability thesis, historically controversial, is now generally accepted.

That more males are found in virtually every category of emotional, behavioral, or neurological impairment is undisputed. Males outnumber females by 2 to 1 in special education programs.<sup>36</sup> As Diane Halpern points out in her review of the literature on sex differences:

Males are overrepresented at the low-ability end of many distributions, including the following examples: mental retardation (some types), majority of attention deficit disorders, delayed speech, dyslexia (even allowing for possible referral bias), stuttering and learning disabilities and emotional disturbances.<sup>37</sup>

These afflictions show up even before birth, before cultural influences have had a chance to kick in. Male fetuses are almost twice as likely to be involved in toxemia of pregnancy, spontaneous abortion, and birth trauma.<sup>38</sup>

In short, a randomly selected individual who is mentally retarded, suffering from a birth defect, or who is mentally ill is most probably male. But women are more apt to look upward with envy than downward with relief. The same variability and the same vulnerability that makes males more susceptible to developmental disorders also makes them more apt to have other unusual traits--like extraordinary talent in mathematics or physics. Males are especially more variable than females on measures of quantitative and spatial ability, the very abilities important to achievement in mathematics and the physical sciences.<sup>39</sup>

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<sup>35</sup> Charles Darwin, *The Descent of Man and Selection in Relation to Sex*, 2nd Ed. (Akron, Ohio: The Werner Co, undated), p.227.

<sup>36</sup> *The Condition of Education* 1997 (NCES 97-338). (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 1997), Table 46-2.

<sup>37</sup> D.F. Halpern, “Sex Differences in Intelligence: Implications for Education,” *American Psychologist* 52, no.10 (1997): 1091-1102, p. 1102.

<sup>38</sup> R. Nass, “Sex Differences in Learning Abilities and Disabilities,” *Annals of Dyslexia* 43 (1993): 61-77, p. 62.

<sup>39</sup> See the review of the literature on male versus female variability in Hedges and Nowell, “Sex Differences.”

Exceptionally high intellectual ability is an oddity, just as is exceptionally low intellectual ability. Oddities, rarities, extremes of all kinds, are far more common among males. We do not call individuals with highly valued characteristics “oddities” but they are oddities all the same.

At the extremes, the difference in mathematical abilities in males and females can be startling. The talent searches which began with the Study of Mathematically Precocious Youth at Johns Hopkins in 1971 have included over a million students. The ratio of males to females who score at or above 700 on the SAT-M at age 13 is astonishing---13 males for every 1 female.<sup>40</sup> Cultural influences may well play a part in this extreme disparity. The gender gap among Asians in top mathematical talent is far less---4 males for every 1 female. Still, even in Asian families, noted for encouraging both male and female children to choose scientific careers, males are four times more likely to score at the extremes.

Given the tendency of males to occupy the extremes---both the bottom of the barrel and the top of the heap---it should surprise no one that the faculty of the MIT School of Science is mostly male. Of course, some women will appear at the top. Women are clearly among the top scientists in the world. But males would outnumber them by wide margins without any gender discrimination at all.

### **Testosterone, Estrogen, and Talents**

Males and females are far more alike than they are different in intellectual abilities, but there are certain, quite fascinating exceptions. Females typically excel in verbal skills. At the end of high school, for example, females as a group have a substantial advantage in writing ability.<sup>41</sup> Of the top ten writers in the typical high school class, 7 out of 10 are apt to be young women. That women are surging into law school is far from surprising. Law draws on the verbal talents and human interests common among women---the ability to write persuasive briefs, plead a case with eloquence, and deal with clients and cases in all their human complexities.

In engineering and the physical sciences, strong verbal and interpersonal skills do not confer such crucial advantages. Other types of skills, especially spatial abilities, are far more important, and here males have the advantage,

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<sup>40</sup> Lubinski and Benbow, “Gender Differences in Abilities.”

<sup>41</sup> Willingham and Cole, *Gender and Fair Assessment*.

particularly in the ability to conceptualize objects rotated in space (informally called “3-D Thinking”).<sup>42</sup>

As David Geary points out in his review of the research:

The advantage of boys and men in the ability to generate and rotate three-dimensional images is found at the earliest age in which the test can reliably be administered (early adolescence) and is found at every age thereafter...Between 20 and 35 years of age, about six out of every seven men outperform the average woman in this area.<sup>43</sup>

Those students, both males and females, who have trouble with “3-D Thinking” can learn how to think in this fashion. Still, pursuing a career in physics if you have difficulty imagining objects and forces rotated in space is apt to be as trying as attempting to become a musician if you are tone-deaf. One physicist explained the spatial nature of his work:

My own research work is very visual and geometrical. I study chaos, and am just beginning a problem involving fractals. It involves lots of three-dimensional and some four-dimensional geometry, so we are working at the limits of what humans can do.<sup>44</sup>

The greatest physicists of the twentieth century were noted for their highly visual styles of thinking. In his lecture before the Prussian Academy of Sciences on January 27, 1921, for example, Einstein gives this telling illustration:

Can we visualize a three-dimensional universe which is finite, yet unbounded?

The usual answer to this question is “No,” but that is not the right answer. The purpose of the following remarks is to show that the answer should be “Yes.” I want to show that without any extraordinary difficulty we can illustrate the theory of a finite universe by means of a mental picture ...<sup>45</sup>

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<sup>42</sup> Humphreys, Lubinski, and Yao, “Utility of Predicting Group Membership.”

<sup>43</sup> D. Geary, *Male, Female* (Washington, DC: American Psychological Association, 1998), p. 287.

<sup>44</sup> This physicist preferred to remain anonymous, due to fear of gender politics at elite universities.

<sup>45</sup> Albert Einstein, *Ideas and Opinions* (New York: Crown Publishers, 1954), pp. 240-241.

Why males have an advantage in certain spatial-visualization abilities, just as why women have an advantage in writing skills, is not well understood. But tantalizing clues suggest that sex hormones may be part of the explanation. Dramatic evidence comes from sex-change therapy. In her review of the scientific literature, Diane Halpern points out:

When female-to-male transsexuals were given high doses of testosterone in preparation for sex-change therapy, their visual spatial skills improved dramatically and their verbal fluency skills declined dramatically within three months. The results of these studies and others provide a strong causal link between levels of adult hormones and sex-typical patterns of cognitive performance.<sup>46</sup>

Patricia Hausman's research provides another tantalizing clue as to why high levels of the abilities important to success in the physical sciences and engineering may be less common in females.<sup>47</sup> In a nationally representative, longitudinal study, Hausman identified a group of women who possessed the unusually high mathematical and mechanical abilities that predict success in engineering and the physical sciences. To her surprise, these women also turned out to have an unusually high rate of miscarriages and stillbirths. They also matured more slowly and were taller, thinner and more physically active than women in the control group---a pattern of development more characteristic of males. The most likely explanation is a hormone pattern atypical for their sex—which in some cases could make it harder for them to reproduce.

These intriguing findings require investigation. The point is that there are many possible explanations for sex disparity at an institution like MIT. Gender discrimination is one of the least plausible.

### **Conclusion: Women's Right to Choose and to Respect for their Choices**

Ideologies which portray gender differences in any field as tantamount to gender discrimination are deeply troubling because they threaten freedom of choice and respect for worthy choices. Many gifted young women are resisting the cultural pressures of the 1990s to seek careers in mathematics and the physical sciences when these fields fit neither their interests, nor their greatest talents, nor their values. We should not be sending these young women the message that they are less worthy human beings, less valuable to our

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<sup>46</sup> Halpern, "Sex Differences in Intelligence."

<sup>47</sup> Patricia Hausman, *On the Rarity of Mathematically and Mechanically gifted Females*, Ph.D. thesis (The Fielding Institute, 1999).

civilization, lazy or low in status, if they choose to be teachers rather than mathematicians, journalists rather than physicists, lawyers rather than engineers.

Equalizing the numbers of women and men in mathematics and the physical sciences is turning into an evangelical mission that threatens to undermine science itself. The “Study on the Status of Women Faculty in Science at MIT” with its secret data, shrill rhetoric, and shoddy analysis tarnishes the reputation of a distinguished scientific institution. The silence by scientists who know better testifies to the spirit of McCarthyism that is invading scientific inquiry. We are grateful for the admissions of a confidential source who knows the details of the MIT committee’s deliberations and tells us that the committee actually found no clear evidence of gender discrimination.

When students graduate from MIT, they turn their rings around on their fingers so that the MIT mascot, the beaver, looks back. My father, looking back, would have been sad to see what is passing for science these days at MIT. But I know just what he would have said, “The truth will out and the truth is best.”