



INDEPENDENT WOMEN'S FORUM

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

PLENTY OF NONSENSE

HOW THE *LAND OF PLENTY* REPORT DENIES FEMALE SCIENTIFIC ACHIEVEMENT

Special Report by Patricia Hausman, Ph.D.

The Commission on the Advancement of Women and Minorities in Science, Engineering and Technology final report advances an ideological treatment rather than a legitimate assessment of women's progress.

- Congress created the Commission on the Advancement of Women and Minorities in Science, Engineering and Technology (CAWMSET) in 1998 in a response to a barrage of feminist reports with dubious data on the lack of female opportunities in the sciences.
- CAWMSET's report demeans women by portraying them as helpless victims rather than as accomplished individuals who have made great strides in many scientific fields.
- The CAWMSET report ignores the wide success of women in the life sciences, and fails to recognize the large numbers of women in professional fields such as medicine, pharmacy, veterinary, optometry, and podiatry.

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PREFACE

In 1998, the 105th Congress passed H.R. 3007 to create the Commission for the Advancement of Women and Minorities in Science, Engineering and Technology (CAWMSET). This two-year Commission is also known as the “Morella Commission” in recognition of its feminist sponsor, Rep. Connie Morella (MD).

The Commission was charged by legislation with the following:

- To focus attention on the importance of eliminating artificial barriers to the recruitment, retention, and advancement of women and minorities in the fields of science, engineering, and technology, and in all employment sectors of the United States.
- To promote workforce diversity.
- To sensitize employers to the need to recruit and retain women and minority scientists, engineers and computer specialists.
- To encourage the replication of successful recruitment and retention programs by universities, corporations, and Federal agencies having difficulties in employing women or minorities in the fields of science, engineering and technology.

The Mission of the CAWMSET is to recommend a specific set of actions that will:

- Advance the full and equitable participation of all Americans in SET [science, engineering and technology] education;
- Increase the number of qualified American scientists, engineers, and technicians by expanding the human resources pool of women, members of racial and ethnic minority groups, and persons with disabilities;
- Thereby enhance the Nation’s economic capacity and technological growth in this area of global competitiveness.

The Independent Women’s Forum hoped that the CAWMSET report would accurately identify the progress women have made, recognizing the validity of females making choices that differ from men, and maintain the distinction between equal opportunity for women vs. identical outcomes. Instead, CAWMSET paints a picture of females as victims of widespread discrimination based on their lower representation in science, engineering and technology fields. As a result, the final report of the Commission, *Land of Plenty: Diversity as America's Competitive Edge in Science, Engineering, and Technology*, is an exercise in political ideology, not a scientific blueprint for action.

This special report highlights the *Land of Plenty’s* inaccuracies and omissions, concluding that its recommendations are actually contrary to the interests of women.

INTRODUCTION

Land of Plenty: Diversity as America's Competitive Edge in Science, Engineering, and Technology is a new report from the Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology (CAWMSET). The Commission was established in 1998 by an act of Congress. With delivery of its report to President Clinton, all members of Congress, and the governor of every state, the Commission has fulfilled its responsibilities under the law [1].

What it has *not* done is objective work.

Instead, the Commission has spent \$800,000 in public funds to produce a report that is little more than advocacy camouflaged as science. *Land of Plenty* is an exercise in using handpicked facts and illogical argument to support preconceived conclusions. From start to finish, it exemplifies how a scientific report should *not* be written.

This critique looks at three of its most serious flaws:

- a highly misleading portrayal of female scientific achievement and opportunity,
- a caricature of girls and women as passive victims who allow others to deter them from pursuing their best interests,
- the exclusion of well-established scientific findings inconsistent with the Commission's demand that males and females be equally represented in every scientific field.

This response is limited to *Land of Plenty's* comments about women.

CLAIMS WITHOUT CONTEXT

The defining characteristic of *Land of Plenty* is its selective presentation of facts. Also troubling is its tendency to offer assertions without evidence, make claims that defy reason, or present arguments out of context.

A classic example is the Commission's finding that women are "chronically under-represented" in science, engineering, and technology (hereafter abbreviated as SET). It reports that the SET workforce is only 19% female, a figure somewhat lower than the 23% reported by the National Science Foundation (NSF). The discrepancy is due to the Commission adopting a narrower definition of SET than the NSF standard [2, 3].

Arguably, the Commission should have made clear its use of this narrower standard. Nonetheless, its more limited focus is not necessarily unreasonable—provided that findings are presented in perspective.

But the Commission fails on this point. It does not mention that workforce data have limited value as a measure of female progress and opportunity, and may even be misleading. This is, in part, because females are more likely than males to leave the work force voluntarily. Among the college-educated, 94% of males, but only 83% of females are in the workforce [4].

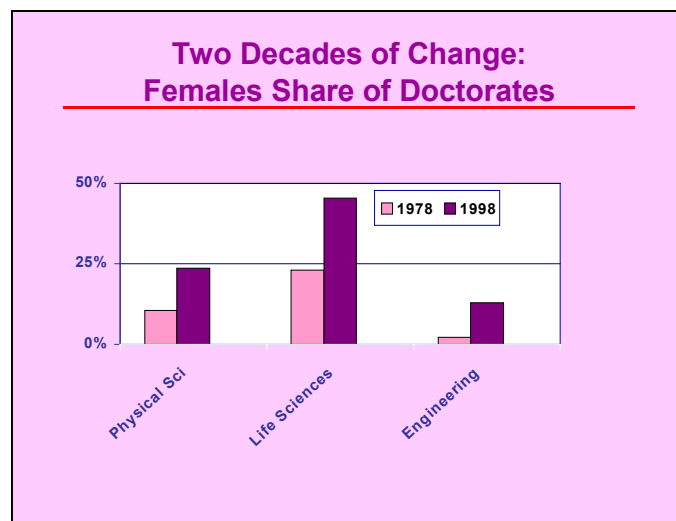
More importantly, workforce data often provide a poor measure of the number of females now preparing to enter various fields. Consider, for instance, that about 29% of those working as attorneys in the U.S are female. This may suggest that women lack equal access to legal careers; however, enrollment figures show that females are now a majority of new law students. Nonetheless, a long "lag time" will be necessary before workplace statistics fully reflect this shift. The large disparity between the percentage of females training for the field and those working in it dramatizes how misleading workforce data can be.

Though not acknowledged by the Commission, the same principle applies in SET fields. Many in the SET workforce trained 30 or even 40 years ago, when males studying for these fields outnumbered females by much larger margins than today. Workplace data still bear the effects of older trends, particularly in the upper echelons of SET fields. Were females to "catch up" with males among those training for SET careers, the workforce could not fully realize the change for decades.

Far more disturbing is the Commission's willingness to deny the impressive gains that women have made in the sciences. Perhaps the most dramatic example is its assertion that "the relatively small percentage" of [women] who earn doctoral degrees in science and engineering "has not changed" since the early 1980s [5].

This is an extraordinary claim. As Figure 1 reveals, the share of doctorates in SET fields earned by females has increased markedly during the last two decades. In the life sciences, the numbers have almost doubled, bringing women close to parity with men.

Figure 1 - Females Share of Doctorate Degrees



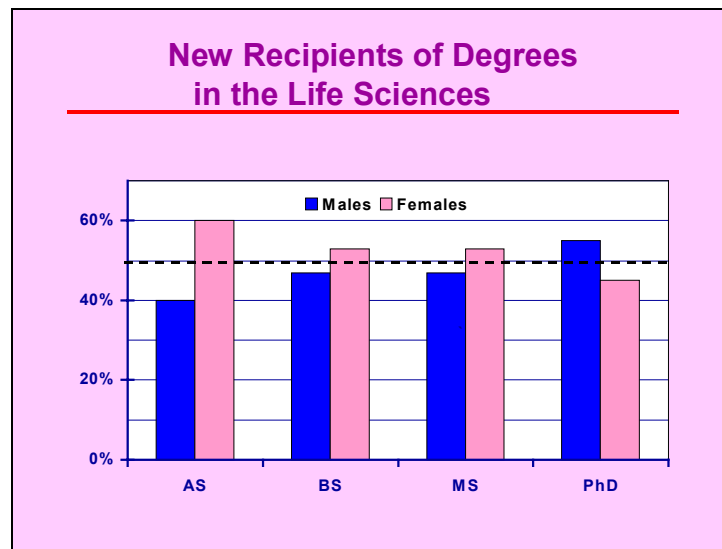
AN IMPRESSIVE RECORD

The Commission also paints an unfairly negative picture of female achievement by selectively highlighting those fields where their participation remains unusually low. Specifically, it takes pains to point out that in 1996-97, females received only 18% of bachelor's degrees in physics and engineering and 27% of those in computer science.

The Commission does not disclose that females earned almost half (49%) of associate degrees in computer and information sciences [6]. Worse, it ignores SET fields where females well represented—and in some cases, *over-represented*—among recipients of new degrees.

The life sciences are a case in point, as Figure 2 illustrates. Contrary to suggestions that they are under-represented, *females now earn the majority of associate's, bachelor's and master's degrees in these fields.* They also earn two of every three bachelor's degrees granted in pharmacy, a five-year program not included in these figures.

Figure 2 - New Recipients of Degrees in Life Sciences

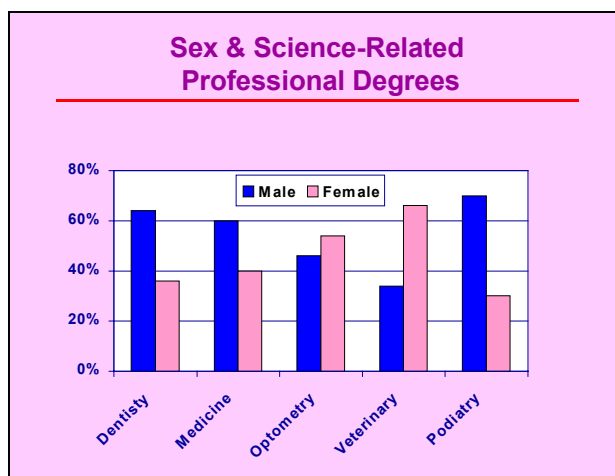


At the doctoral level, the difference between the sexes is small, and getting smaller. Women now earn 45% of degrees in the life sciences awarded to U.S. citizens and permanent residents, and may soon break even with males among degree recipients in these fields. However, because so few people earn doctorates, a 50/50 split between the sexes will not increase the number of female degree recipients very much.

THE PROFESSIONAL CHOICE

Recipients of doctoral degrees in fields such as biology are not alone in achieving a high level of competence in the life sciences. Each year, about 10,000 women earn degrees in life science professions requiring four or more years of study beyond the bachelor's degree: medicine, dentistry, optometry, veterinary medicine, and podiatry.

Figure 3 - Science-Related Professional Degrees



Where do these women show up in the Commission's count of females who have earned science degrees? They don't. Their degrees are not included in the Commission's count of degrees earned in SET fields. The National Science Foundation also excludes them from its figures, a practice it describes as intended solely to distinguish academic degrees from those leading to professional licensure.

This distinction poses no problem as long as science-related professional degrees do not fall off the radar screen entirely. But the Commission allows them to do so. As a result, it once again permits some of women's most impressive gains to go unrecognized.

So great are these gains that *women now earn the majority of degrees in veterinary medicine and optometry*. In fact, colleges of veterinary medicine now graduate two females for every male.

Although not a majority, females also constitute a considerable proportion (40%) of new graduates in medicine and osteopathy. Graduates of either are eligible for licensure as physicians. In dentistry and podiatry, the share of new degrees earned by females is approximately one in three—again, a substantial change from only a few decades ago.

MORE SIZABLE NUMBERS

The life sciences and related professions are not the only SET fields where females have made dramatic strides in higher education. One would never guess from the Commission's report that females have also made impressive gains in math.

About two-thirds of math degrees conferred each year are at the bachelor's level. *Women are earning almost half of them (46%).* They are also earning a considerable share of master's degrees (41%). Only at the doctoral level does the gap between males and females remain sizable. After adjusting for degrees awarded to non-residents, the female share of math doctorates is 30%.

Despite the Commission's obfuscation, the record is clear: while women remain relatively rare in majors such as physics, engineering, and computer science, they are doing very well in other SET fields of study.

THE BLAME GAME

The Commission portrays the situation of females in SET as an artificial one created by a variety of wrongdoers, among them parents, teachers, and the media. According to its report:

- "Pre-K-12 education . . . has failed to adequately prepare students, *especially women* . . . in science, mathematics and technology" [emphasis added].
- "The [K-12] educational system perpetuates inequality, as . . . women . . . have unequal access to educational resources."
- "Media and real-life images of women in scientific and technical careers are still rare (as are female role models and mentors in general) sending an unspoken message to girls that a SET career is not for them."
- "Active discouragement and the dearth of out-of-school SET experiences and role models contribute to girls' lack of interest in SET careers."
- "Girls' rejection of mathematics and science interests may be partially driven by teachers, parents, and peers when they subtly, and not so subtly, steer girls away from the kind of informal technical past-times (working on cars, fixing bicycles, changing hardware on the computer) and science activities (science fairs, science clubs) that too often are still thought of as the province of boys".

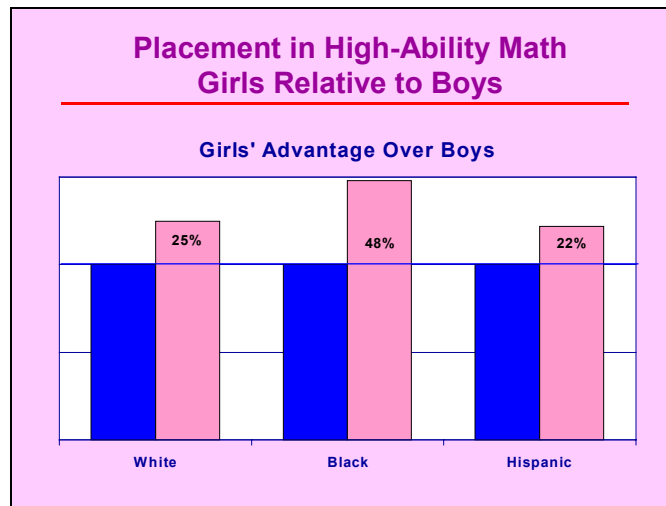
This is hardly a flattering picture. It portrays girls as passive, dutiful followers, who, lacking minds of their own or the ability to make wise choices about their education and activities, allow others to "steer" them in directions that limit their ability to pursue scientific careers.

Strangely, the report itself provides evidence that this caricature is false. Soon after alleging that females are among those especially ill-served by K-12 math and science teaching, the Commission acknowledges that "girls are now taking the upper level mathematics and science courses required to enter SET college majors at the same rate as boys." It also notes that girls do as well as boys in these courses.

Yet, its pattern of ignoring critical facts continues. For example:

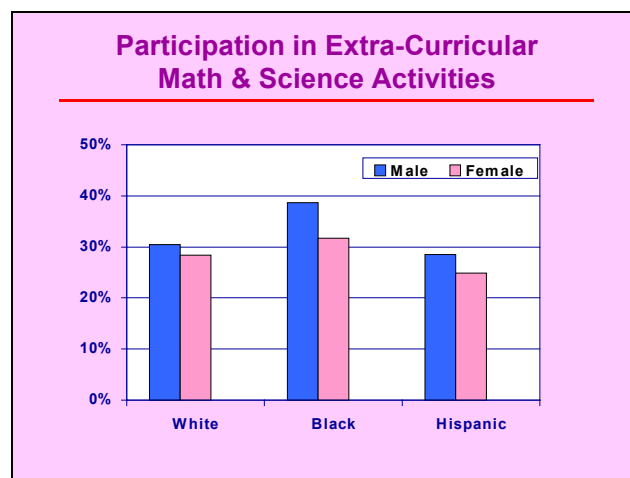
- The Commission notes that far more boys take computer science in high school, but neglects to mention that females are more likely to take algebra II, geometry, trigonometry, biology, chemistry, and advanced placement or honors biology [4].
- Schools may actually provide *more* access to high-ability math classes to girls than boys. Figure 4 presents the results of findings from a nationally representative group of eighth graders. After taking factors such as aptitude and achievement into account, girls were more likely than boys to be assigned to high-ability math classes [7]. In a glaring example of its willingness to handpick facts, the Commission ignores this finding, despite citing the paper containing the results elsewhere in its report.

Figure 4 - High Ability Math Comparison



- Girls report substantial rates of participation in math and science-related extracurricular activities such as science fairs. As shown in Figure 5, eighth-grade girls in the national survey mentioned above reported rates of participation not far from those of boys [8].

Figure 5 - Participation in Extracurricular Math & Science Activities



- During the last decade, girls have been active participants in the Intel Science Talent Search (previously called the Westinghouse Science Talent Search). In 1991, females accounted for 45% entrants in this prestigious competition [9]. Of those named as semi-finalists in 2000, almost half (49%) were female [10].

Such facts are greatly at odds with the Commission's claims that girls are denied equal access to educational resources and that they are among those who leave high school especially ill-prepared for SET careers. These findings are also difficult to reconcile with the Commission's claims that females have absorbed a message that an "SET career is not for them" or that influential others "subtly, and not so subtly, steer girls away" from math and science-related activities. If such efforts are being made, girls are obviously exercising good judgment and rejecting them.

MENTORS, MODELS, AND BARRIERS

In addition to childhood influences such as teachers and parents, the Commission faults the college environment for presenting "barriers" to female success in SET majors. Among these alleged obstacles are "poor quality of SET teaching, an inflexible curriculum...an inability to obtain adequate academic guidance or advice, and low faculty expectations."

Here again, the Commission conveys an image of females as fragile creatures unable to cope with challenges, real or imagined. But this notion that women cannot manage to obtain "adequate academic guidance" or tolerate poor quality teaching (which no doubt can be found in any subject area) is not simply condescending, but another example of the Commission making a claim contradicted by its own findings.

According to its report, *"those [women] who do settle on SET are more likely than men to have graduated within five years."* The Commission bases this statement on statistics for students who began a bachelor's program in SET in 1987. Of these, 76% of females, but only 70% of males had graduated five years later. Similarly, the Department of Education has just reported findings for students who entered any type of post-secondary SET program in the 1989-90 academic year. Nearly half (about 49%) of the women had completed their programs five years later, compared to just over 40% of men [11].

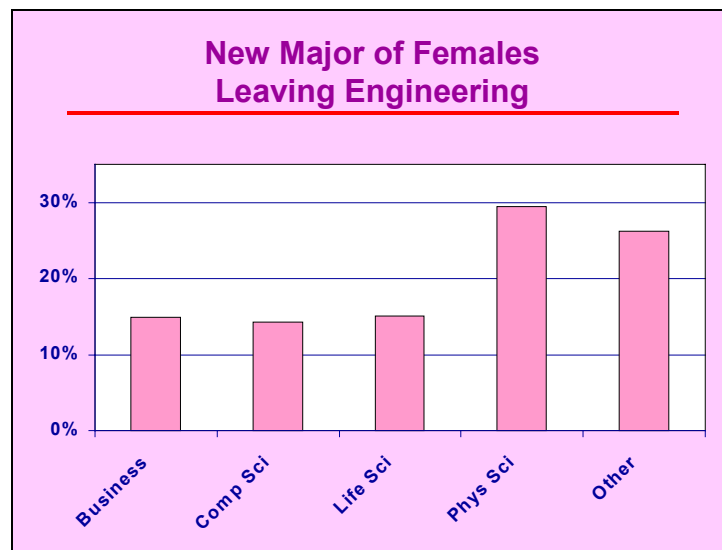
The most likely explanation for these findings is that the women were a smaller, more elite group than the men. But regardless of the reason, the success of these females seriously challenges the Commission's claims that "active discouragement" and "barriers" stand in the way of women who want to pursue SET degrees.

The Commission's belief in barriers to female success also fails to account for women's large share of degrees in the life sciences. For alleged barriers to explain the low presence of females in other scientific fields, physics professors would have to be capable of maintaining an obstacle-laden environment that biology professors cannot. The Commission cites no evidence that this is so.

The notion of barriers makes even less sense when applied to college math departments, where women now earn almost as many bachelor's degrees as males. To blame the smaller number of females receiving doctorates on alleged barriers requires one to believe that these obstacles lie dormant during the undergraduate years, only to come alive at the doctoral level. The reality that the same faculty are often responsible for both undergraduate and doctoral programs makes such an argument just plain silly.

Even in engineering, a major that women are more likely to leave than men, the notion of barriers runs into trouble. As shown in Figure 6, about 60% of women who transfer from engineering to another major settle instead in the computer, life, or physical sciences [12]. It seems unlikely that they would choose one of these fields if experience had taught them that the sciences are fraught with barriers to their success.

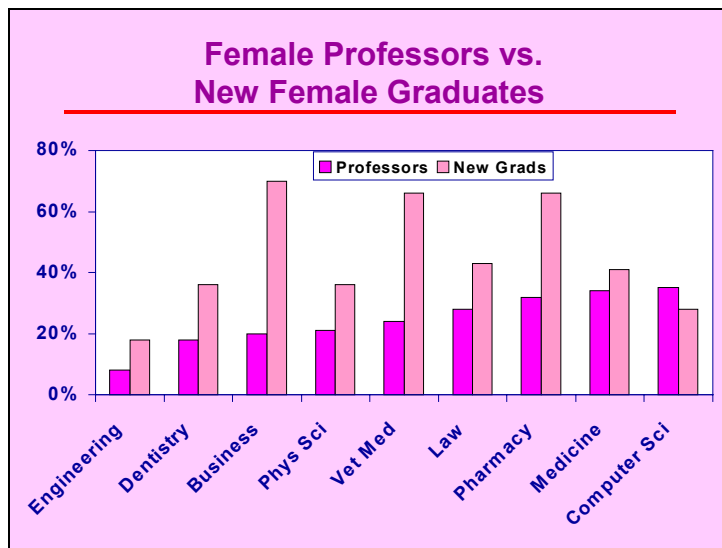
Figure 6 - Females Leaving Engineering



The Commission also emphasizes the need for female mentors in science. This notion—that same-sex mentors are somehow pivotal to female success—is a familiar one. But the Commission does not explore whether females with same-sex mentors truly fare better than those with mentors of the opposite sex. In fact, it neglects to mention noteworthy findings to the contrary [13].

In the same vein, the Commission strongly criticizes universities for having too few female professors to provide young women with appropriate role models. But in doing so, it assumes—without evidence—that the number of females who choose particular fields is related to the sex of professors. The Figure 7 considers whether such a relationship might exist. The darker bars represent the percentage of female professors in 10 fields, and appear from lowest to highest [14]. The bars adjacent to each of these show the number of female graduates in the field for 1996.

Figure 7 - Female Professors vs. New Female Graduates



Several findings here stand out. First, computer science has the largest concentration of female professors, yet a relatively low percentage of female graduates. Moreover, according to the Commission, females' share of computer science degrees fell ten percentage points between 1984 and 1997. In other words, female enrollments declined steadily during a period when universities were going out of their way to recruit female professors.

In addition, females have become the majority of graduates in several fields where professors are overwhelmingly male, such as pharmacy, veterinary medicine, and business. Overall, however, no discernible pattern is evident between the sex of professors and new graduates in these ten fields.

The Commission does not limit its discussion to alleged barriers to females in science education. It also claims that external barriers plague the working lives of female scientists. Yet, it continues to avoid the obvious question: if SET fields are truly ringed with barriers to women, how have females managed to become such a substantial percentage of those working as life scientists, but not as engineers?

THE REAL STORY

Though the Commission provides no logical explanation for why women gravitate to some, but not all, SET fields, this situation is no mystery to psychologists who specialize in the study of career choice. Their field—variously called vocational, counseling, or applied psychology—has long understood why females tend to enjoy some sciences far more than others. Despite their obvious relevance, the Commission ignores these findings.

Decades of research in vocational psychology confirm what most of us sense instinctively: that we are most likely to persist in a career that reflects what we enjoy, value, and do well. Viewed in this context, the Commission's demand for equal representation of males and females across SET fields is reasonable if the sexes do not differ in the requisite interests, values, and abilities.

Of course, both psychology and everyday experience provides compelling evidence that males and females differ on all three. This is not to say that certain characteristics are the exclusive province of one sex. It means only that the average female has more of certain traits than the average male, and vice-versa.

The phrase "people vs. things" is sometimes used to express sex differences in interests in the simplest possible terms. Broadly speaking, females are more likely to prefer the former and males, the latter. But though this notion has merit, it is also oversimplified. As used here, the concept of "things" refers not to all inanimate objects, but primarily to mechanical or construction-related objects.

The "people vs. things" distinction can actually be observed as early as the fourth month of life. By then, most female infants preferentially attend to facial expressions, while their male counterparts are more prone to favor blinking-lights, geometric patterns, and three-dimensional objects [15]. At the age of two, girls are more likely than boys to talk about people, and boys more likely to talk about objects such as cars and trains [16]. By adolescence, the largest sex difference on a widely used test of career interests is found on the "realistic" theme. Males typically score considerably higher than females for these interests, which predict a preference for working with tools and mechanical devices or in outdoor settings such as forests and farms [17].

Given these differences, the preference of females for science-related professions that permit interaction with people over fields such as engineering or physics makes sense. *Every scientific and engineering field where females are under-represented by a sizable margin lacks appeal to those more strongly interested in people than things.*

Of course, we have more specific preferences than a simple orientation toward people or mechanical objects. How these differ between the sexes, particularly among males and females with similar academic gifts is instructive, especially among those with the mathematical ability important for success in SET fields.

For several decades, researchers have been studying the interests, values, and career choices of students in who ranked in the top 1% of mathematical ability [18,19,20]. Some characteristic patterns by sex have emerged.

Among mathematically gifted boys, interests in mechanical and technical areas are typically strong. So is a pattern of values that puts theoretical pursuits first, reflecting a preference for making observations and systematizing knowledge [21]. Social values, which stress altruism and service to others, are generally less important to these males. This pattern—strong on theoretical rather than social values—is characteristic of people who thrive in fields such as the physical sciences and engineering.

By contrast, mathematically talented females typically express strong interests in themes such as literature, the arts, social service, and the life sciences. Social values are often primary, although theoretical pursuits are more important to them than to females with more average aptitude. Many (though certainly not all) mathematically talented girls are relatively uninterested in fields such as physics and engineering. Despite their ability to master the subject matter, their interests and strong social values make it unlikely that these fields will provide them with long-term career satisfaction.

Occupational choices made by mathematically talented youth who participated in summer enrichment programs reflect these differences in interests and values. The females have proved as (or more) likely as the males to become physicians, lawyers, or executives. But they were much less likely to choose careers in math, computer science, or engineering [20]. This was not for lack of confidence, awareness of their abilities, or encouragement to pursue math-intensive fields [19]. Most likely, they simply made the choices that they felt best for their own lives.

ABILITY DOES COUNT

The large number of females now earning degrees in certain scientific majors makes clear that many women have the ability to succeed in these fields. The Commission, however, wants equal numbers of males and females across all SET disciplines. Therefore, it must ask whether the abilities needed for *every* SET field are distributed equally among the sexes.

The Commission does not face the question squarely. It notes, almost in passing, that "the ability and basic academic background needed to continue in SET careers exists for many girls" and that "there are now only small differences between girls' and boys' science and mathematics scores on the National Assessment of Educational Progress tests (NAEP)."

This comment, however, refers to the average score earned by each sex. When discussing SET fields, focusing on average scores tends to confuse the issue. Those who excel in highly technical fields are far more likely to come from the ranks of the academically talented than from those of average ability. As a result, the sex differences that matter the most are those at the upper end of the ability range—particularly when talking about the highest echelons of SET fields.

The NAEP tests cited by the Commission are probably not the best measure of ability to succeed in college-level SET courses. Regardless, the pattern of scores on the NAEP shows that males outnumber females among the best performers in math and science. Still, only 10% percent of high school males show strong proficiency on the NAEP math, compared to 7% of females [22]. On the science section, the figures are 13% for males and 7% for females. The Commission makes no mention of these differences, despite their importance.

Other standardized tests show similar results. On the military entrance examination, males outnumber females in the top 10% of mathematical reasoning ability by about 2 to 1,

and in general science, by about 3 to 1 [23]. A similar pattern—approximately two males for every female—is found among those who score 700 or more on the SAT-math.

Many would prefer that these differences did not exist. But attempting to ignore these realities does not change them, or their implications for certain SET fields. These differences cannot be expected to have no impact—especially in math-intensive areas such as physics, engineering, and mathematics itself.

Of course, the most dramatic effects would logically occur at the doctoral level. If one assumes, for instance, that a score on the SAT-math of at least 700 is needed to earn a doctoral degree in math, women would be expected to receive no more than 34% of these degrees. In fact, the share of these degrees currently earned by females who are citizens or permanent residents (30%) closely mirrors this prediction.

Nonetheless, sex differences in math ability probably contribute less to the under-representation of females in certain SET fields than a set of aptitudes that the Commission overlooks completely. These are the spatial and mechanical aptitudes in which those who become engineers and physical scientists typically excel [24].

A type of spatial ability called 3-D mental rotation has been the focus of much research. As the name implies, it is the capacity to visualize objects rotated in three-dimensional space. While most differences in ability between the sexes are small to modest, this one is a noteworthy exception. The disparity between the sexes is large—about six of seven young adult males perform better than the average female on tests of this skill [25]. In the related area of mechanical aptitude, males outnumber females by a factor of eight or more among those who score in the top 10% [23].

These ability differences, coupled with the preference of many females for careers that focus on people (or other living things), no doubt go a long way to explain why males are seven times more likely than females to earn doctoral degrees in fields such as physics and engineering.

WHERE DO SEX DIFFERENCES COME FROM?

To some, it is an article of faith that sex differences in interests and abilities are entirely learned. But this view has some noticeable shortcomings. It does not explain why some girls become tomboys, in defiance of parental and social pressures, or why the interests of males and females remained remarkably consistent between the 1930s and the 1980s, despite dramatic changes in the social environment [26].

Socialization theories are also at odds with the finding that male dominance in fields such as engineering is more intense in highly egalitarian societies than in those with more sharply defined sex roles [27]. Nor do such explanations provide a plausible account as to why the direction of sex differences in abilities is similar throughout the world. For this to be exclusively due to socialization would require a coincidence of enormous proportions. But perhaps the most obvious failing of this approach is its claim that male superiority in mathematical reasoning results from females learning that "girls can't do math." If this were

so, females would not have better computational skills than males throughout life, an advantage found cross-culturally [28].

While some remain steadfast in their determination to attribute all sex differences to socialization, evidence that sex hormones underlie these differences continues to mount [25, 28, 29]. The influence of sex hormones apparently begins in the womb, when the male fetus produces testosterone that exerts a "masculinizing" effect on his brain anatomy. Differences in prenatal hormone environments create conditions favorable to the development of sex-typical behaviors and abilities [28,29]. Some of these sex differences do not emerge, or reach their full magnitude, until the onset of puberty. These, too, reflect actions of sex hormones, which influence not just the structure, but also the function of the brain.

Admittedly, some bristle at this explanation. But it is the only one that simultaneously accounts for the early emergence of sex differences, their universality, and the stunning failure of efforts to make these differences disappear. Evidence that administering sex hormones causes changes in behavior, personality, and ability further strengthens the case that these differences do, in fact, have a biological basis [29].

Acknowledging the influence of sex hormones does not deny that experience also shapes individual development. That boys are more apt to take apart and reassemble mechanical devices no doubt contributes to their greater facility for mechanical tasks in adult life. But one has to ask why males gravitate towards these activities in the first place. It seems unlikely that sex differences in experience are purely happenstance. Rather, they result, at least in part, from constitutional differences that influence our choice of experiences throughout life.

CONCLUSION: WILL WOMEN BENEFIT FROM THE COMMISSION'S RECOMMENDATIONS?

Needless to say, the Commission makes no mention of biology's role in the development of sex differences. It seems less interested in understanding why the sexes behave differently in the workplace than with creating programs that seek to make their outcomes the same.

Toward this goal, the Commission recommends an array of incentives designed to eliminate sex imbalances in SET fields. In higher education, it calls for "parity [by sex] with respect . . . to enrollment, academic performance, and graduation rates." And in the labor force it wants parity "at different workplace and management levels and equity in retention, pay, and promotion rates." According to the Commission, such parity is a "national imperative" necessary to avoid labor shortages in SET fields.

Unfortunately, its argument betrays logic. If too few people are available to fill particular jobs, seeking out *all* with the interest and ability to perform them is obviously the true imperative. The Commission, however, wants the special incentives it recommends

restricted by sex, as well as what sound like quotas and set-asides. Naturally, it also calls for the appointment of a permanent body to implement and monitor compliance with its program.

This sounds less like a plan for alleviating a labor shortage than a recipe for assuring perpetual employment for feminist busybodies. Their goal appears to be nothing less than the right to micromanage university admissions and curricula, as well as the hiring and promotions decisions of all employers.

Special preferences for women undoubtedly benefit those who truly want careers in fields such as computer science and physics. But for those who would otherwise avoid these fields, these preferences raise serious questions. Will lucrative incentives to enter fields that are not sufficiently compatible with their interests and values ultimately lead to high rates of career dissatisfaction and attrition for such women? Will displacing males from fields where men are over-represented hurt females by increasing competition for entry into occupations that many women prefer? Is it really a good idea to use strong-arm tactics to create equality of outcome in fields where it does not emerge naturally in response to market forces?

In the final analysis, it serves to remember that science and technology make enormous contributions to the well being of women. The strength of America's science and technology sectors derives from many factors, not the least of which is the merit principle. The Commission's willingness to replace this principle with a bizarre scheme to achieve equal outcomes by sex is the real threat to the health of the scientific enterprise, and ultimately, to the best interests of men and women alike.

Patricia Hausman, Ph.D., is a behavioral scientist and nutritionist with broad interests in developmental psychology and the health sciences. Her business, Lakeside Consulting, conducts research and policy analysis for clients in both the public and private sectors.

Much of her work focuses the nature and origins of human sex differences, as well as their implications for public policy. Dr. Hausman is the author of seven books, of which more than four million copies are in print.

She holds a bachelor's degree in biology, a master's degree in nutrition, and a doctorate in human development.

She is a member of the national advisory board of the Independent Women's Forum.

ENDNOTES:

1. The Commission's report can be accessed at www.nsf.gov/od/cawmset/.
2. NSF includes psychology and social sciences (such as anthropology, archaeology, economics, and linguistics) in its definition of science and funds a great deal of research in these fields. When queried by the author, a CAWMSET staff member indicated that these fields had been excluded from the Commission's definition. Use of NSF's definition would have greatly weakened the Commission's argument because females earn a majority of psychology degrees at every academic level and are well-represented in the social sciences.
3. National Science Board. *Science and Engineering Indicators 2000*. Arlington VA, National Science Foundation, 2000 (NSB 00-1).
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Through our educational programs and publications, we encourage people to make decisions based on facts, common sense and consideration of what is best for society as a whole, not just "women" or any special interest group. Among the subjects we address are –

- women and work (tax reform, regulatory reform, retirement security, balancing job and family)
- women in education (feminism on campus, Title IX regulation, single-sex schools, gender equity)
- equal opportunity (affirmative action, women in the military, sexual harassment) and
- science and health (junk science and women's health).

We communicate our ideas to decision makers and the public through many means. We publish books such as *Women's Figures: An Illustrated Guide to the Economic Progress of Women in America* and our magazine *The Women's Quarterly*. We also assist college women through our new campus webzine, www.SheThinks.org. Visit our website, www.IWF.org, where many of our publications, including our newsletter *Ex Femina*, are available electronically.

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