

Women in Engineering: Environmental Scan

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IEEE Strategic Research and Planning

IEEE Women in Engineering
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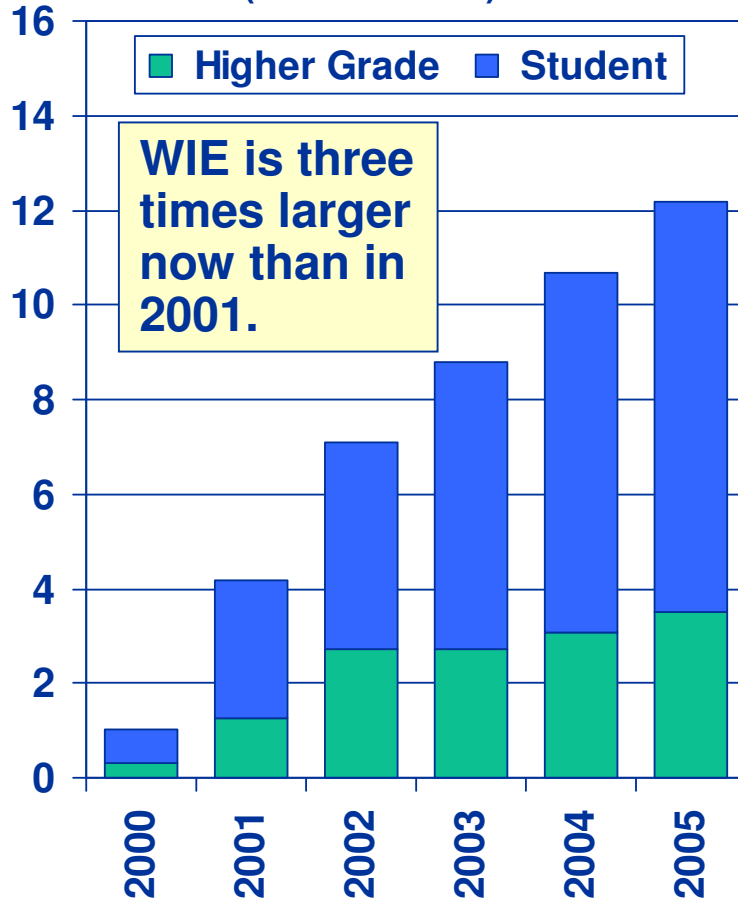
WIE Strategic Planning Activities

- **WIE is growing very fast and it is really coming from the grass roots. Currently, WIE has >12,000 members and >90 Affinity Groups worldwide.**
- **WIE needs to understand who its members are and their present and future needs and use this information to determine how meet their needs.**
- **Recommended steps for planning activities:**
 - **Environmental scan to organize WIE member statistics and learn what is happening in sister societies and other organizations**
 - **Evaluation and analysis of any existing in house research including the Market Segmentation Study and previous WIE survey**
 - **PULSE survey of IEEE members to measure awareness of WIE**
 - **Two Bulletin Board Focus Groups (WIE member segments)**
 - **WIE Summit with professional strategic planners and a report**
 - **A new membership survey**
 - **Other activities**

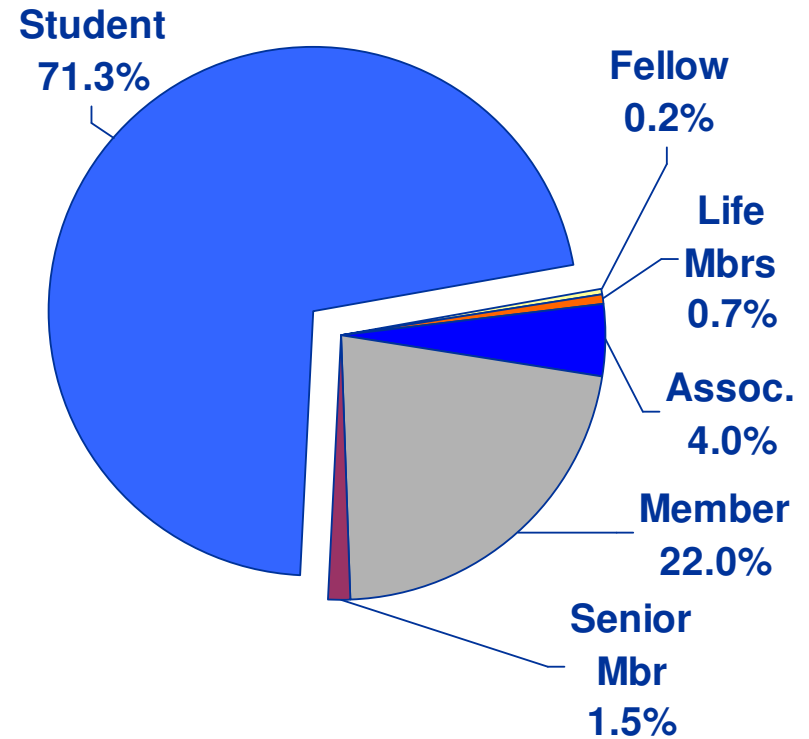
WIE Membership Data

WIE Membership

Trend in WIE Membership
(In thousands)



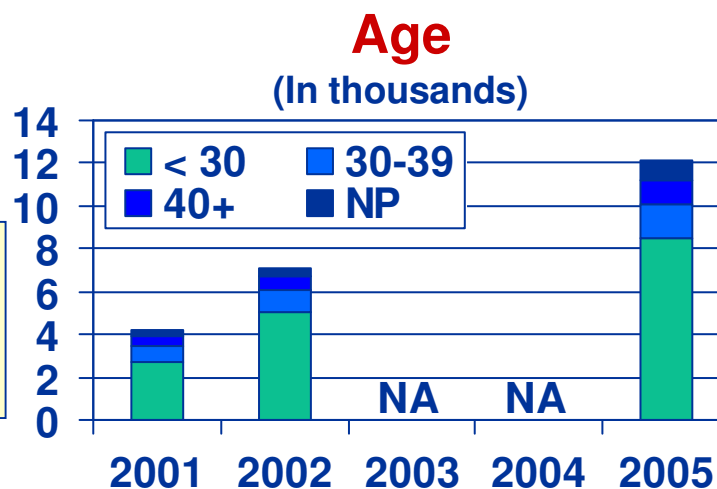
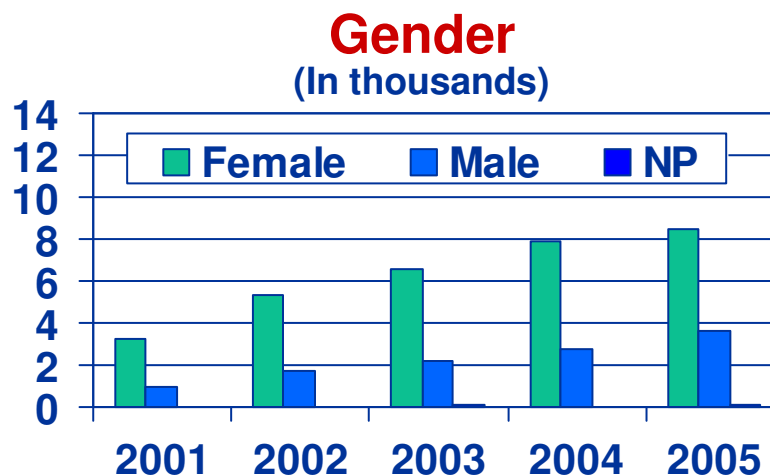
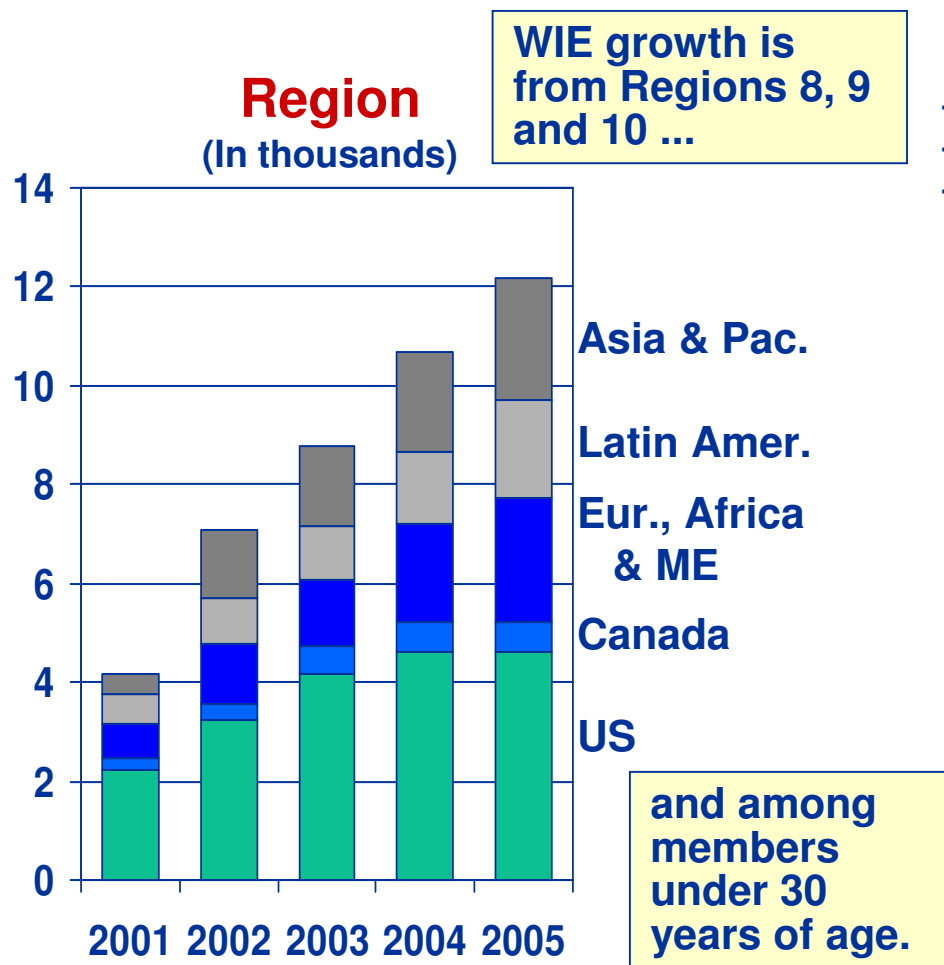
WIE Membership by Grade:
December 2005



2005 Total = 12,178

Source: WIE Counts Master Excel file

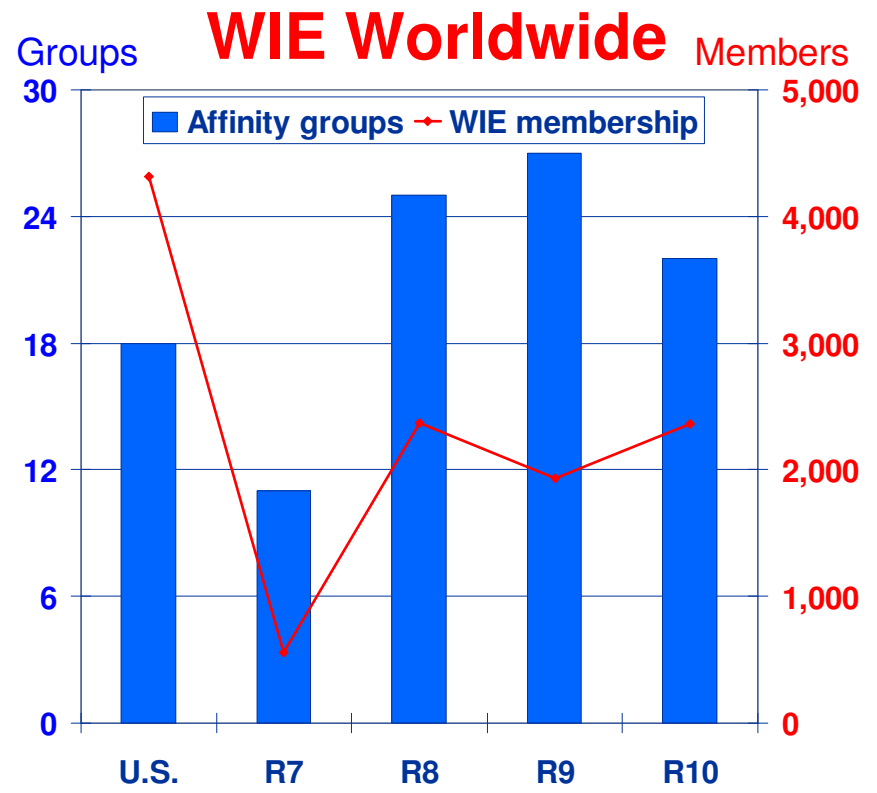
Trends in WIE Membership



Source: WIE Counts Master Excel file
NP = Not provided, NA = Not available

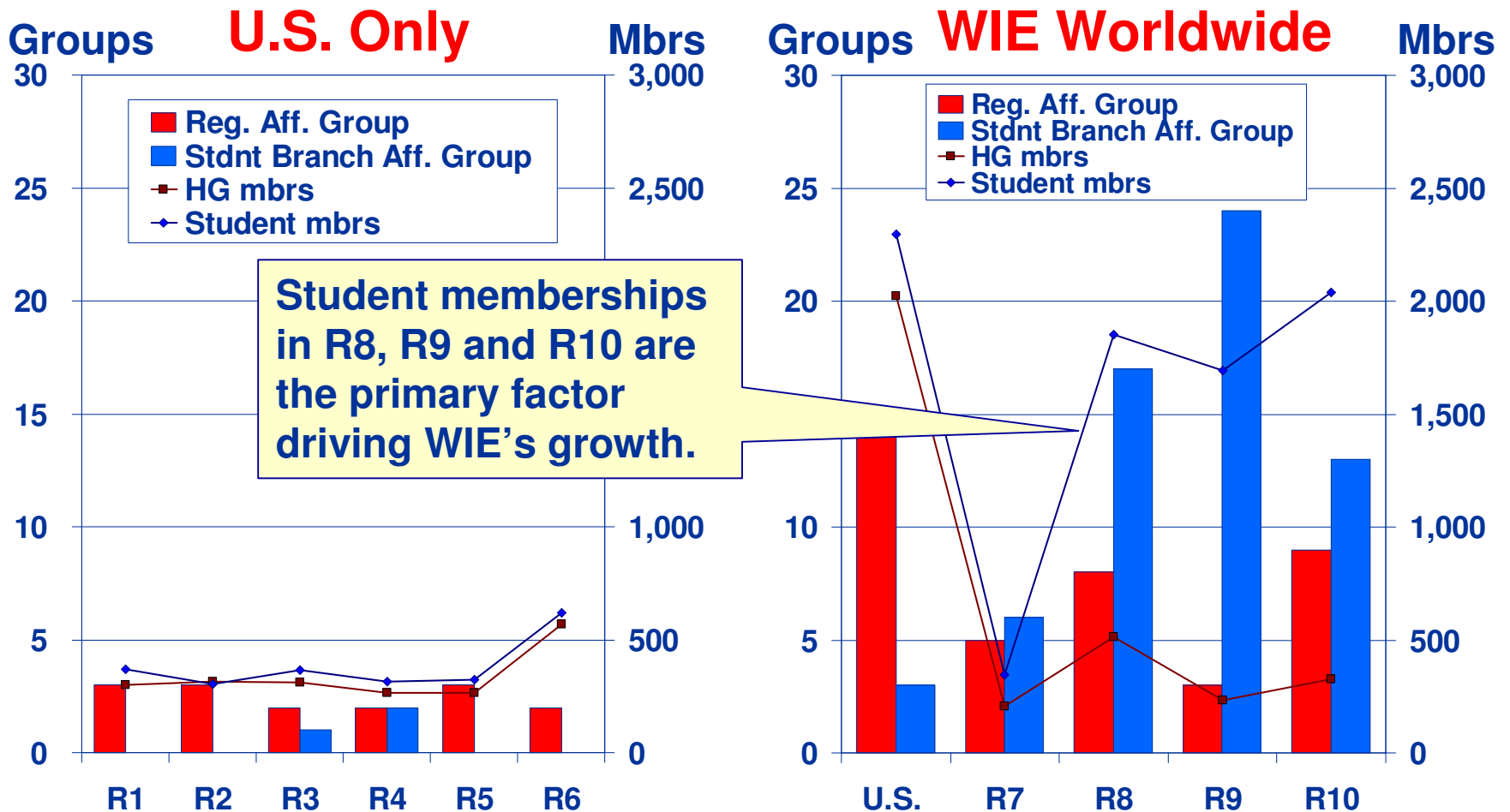
WIE Affinity Groups and Membership by Region: January 2006

WIE's growth results in a large concentration of members and WIE affinity groups in IEEE Regions 8, 9 and 10.



Source: IEEE Membership Database, 24 Jan 2006

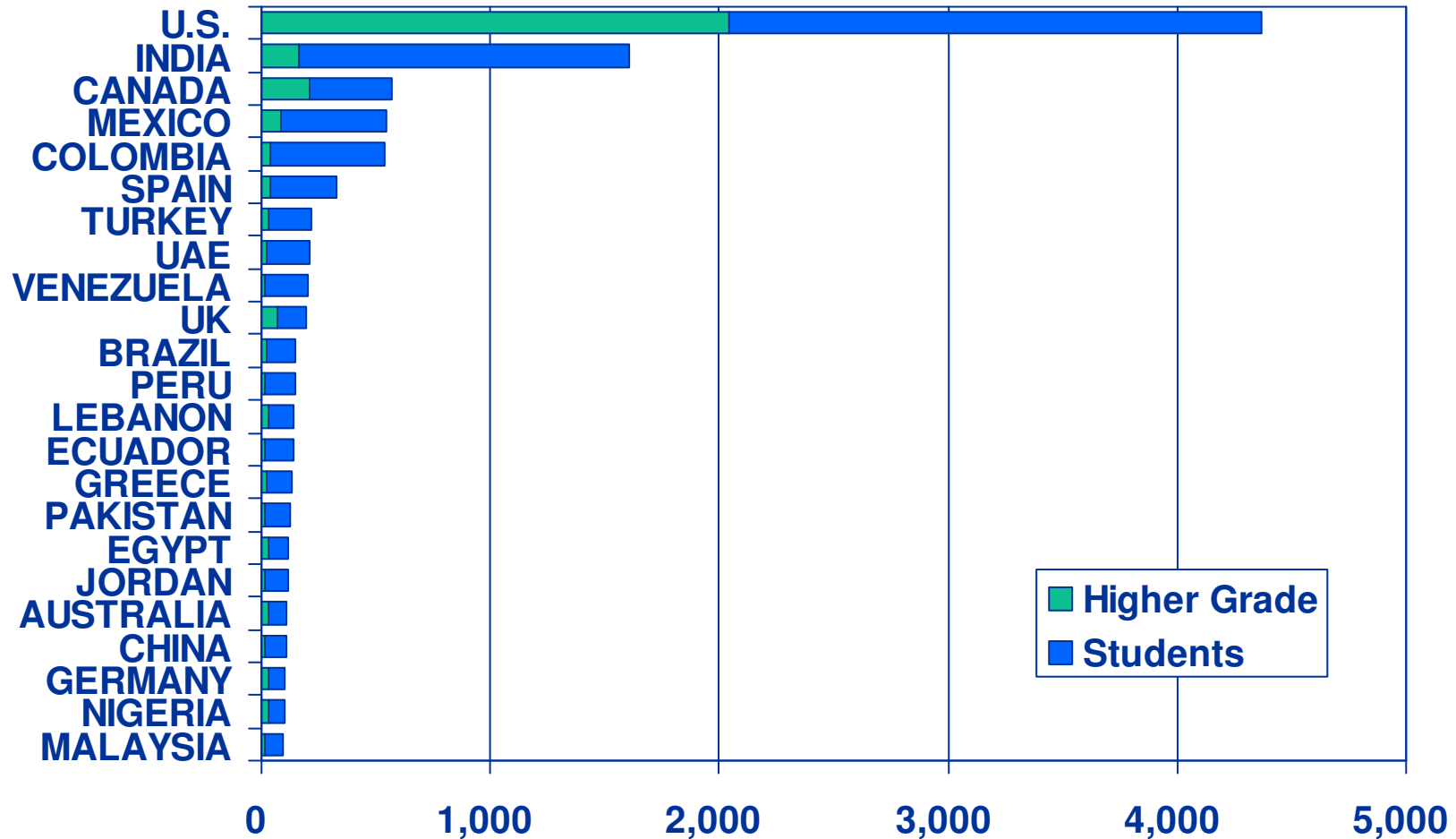
WIE Regular and Student Branch Affinity Groups and Membership by Region: Jan 2006



Source: IEEE Membership Database, 24 Jan 2006

WIE Membership: Jan 2006

Largest Memberships by Country and Grade



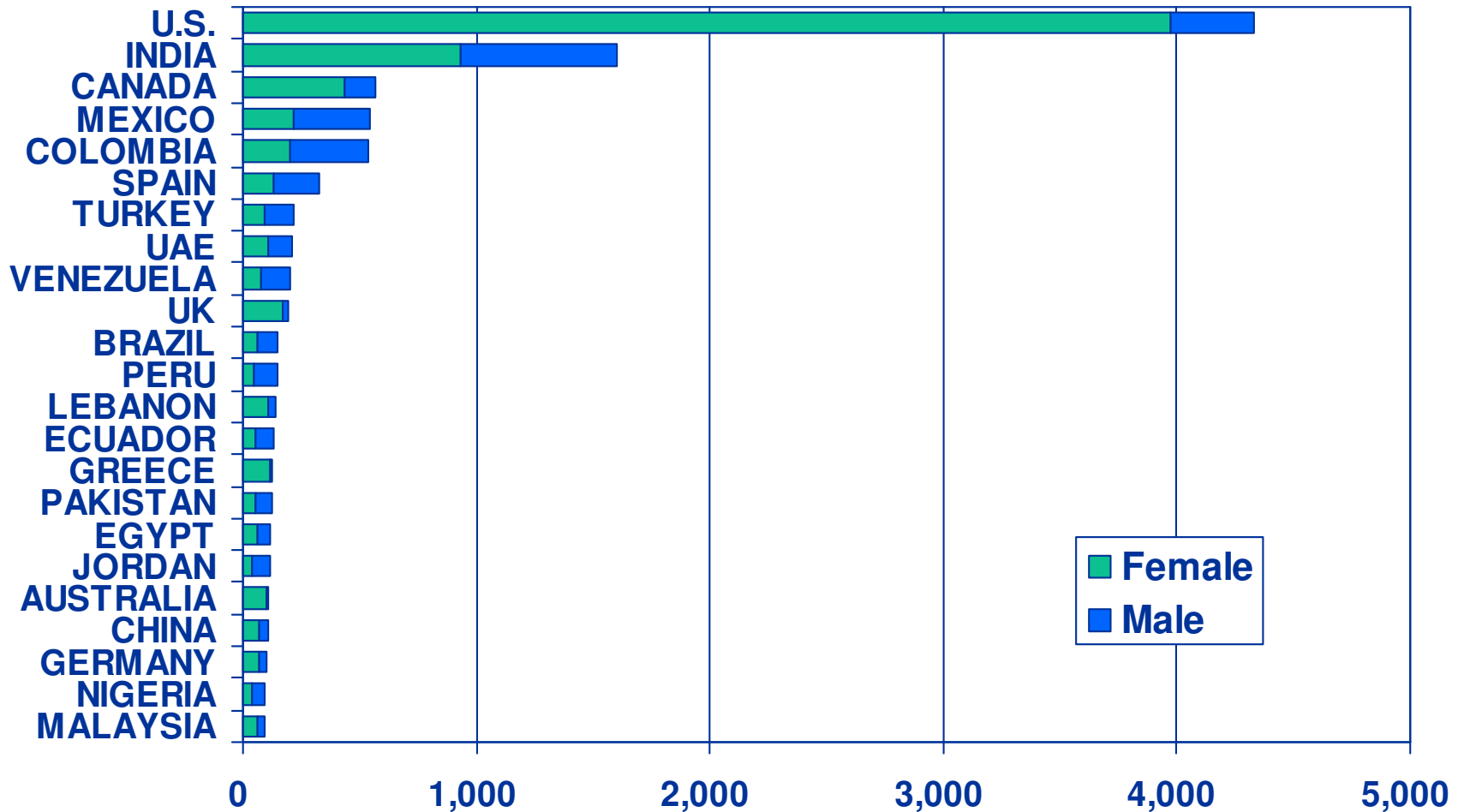
Source: IEEE Membership Database, 24 Jan 2006

IEEE CONFIDENTIAL — WIE Environmental Scan



WIE Membership: Jan 2006

Largest Memberships by Country and Gender



Source: IEEE Membership Database, 24 Jan 2006

IEEE CONFIDENTIAL — WIE Environmental Scan



Background Data on WIE Members by Higher Grade and Student Memberships

	Higher Grade	Student	WIE Membership
Age			
< 20 yrs	0.0%	10.6%	7.6%
20-24 yrs	26.6%	55.0%	46.9%
25-29 yrs	20.7%	22.2%	21.8%
30-34 yrs	14.2%	7.0%	9.1%
35+ yrs	38.5%	5.1%	14.7%
Mean	33.8	24.2	26.9
Median	30.0	22.0	24.0
Region			
US	61.2%	27.9%	37.4%
Canada	6.3%	4.2%	4.8%
Eur Africa ME	15.6%	22.5%	20.5%
Latin America	7.1%	20.6%	16.7%
Asia Pacific	9.9%	24.8%	20.5%
Gender			
Female	83.3%	64.5%	69.9%
Male	16.1%	34.7%	29.4%
Unknown	0.5%	0.8%	0.7%

WIE membership is typically younger (27 yrs) than IEEE's membership (43 yrs). While student members drive down the average age, WIE's higher grade members at 34 years are also typically younger than IEEE membership at 47 years.

Three out of every ten WIE members are male.

Source: IEEE Membership Database, 24 Jan 2006

Background Data on WIE Members by Higher Grade and Student Memberships

	Higher Grade	Student	WIE Membership
Years of IEEE Service			
1 yr	1.8%	18.1%	13.4%
2 yrs	21.6%	46.7%	39.5%
3 yrs	19.7%	17.8%	18.4%
4 yrs	12.8%	7.4%	8.9%
5-9 yrs	24.0%	9.5%	13.7%
10 yrs or more	20.2%	0.4%	6.1%
Mean	7.1	2.6	3.9
Median	4.0	2.0	2.0

On average, WIE members have belonged to IEEE for four years. Students average 2.6 years of IEEE membership, while WIE's higher grade members average 7.1 years.

Source: IEEE Membership Database, 24 Jan 2006

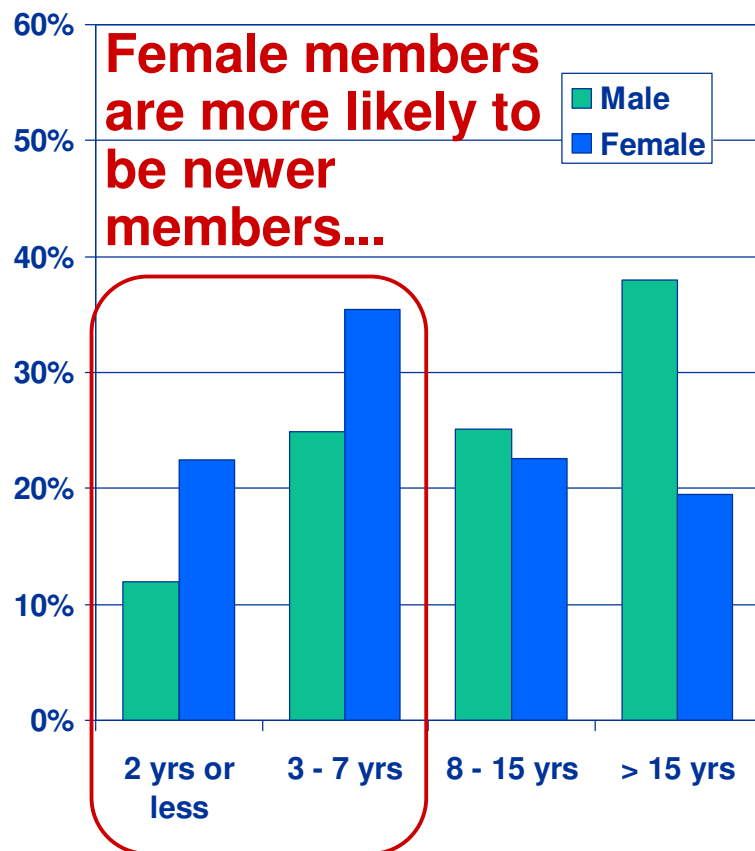
IEEE Higher Grade Membership

IEEE Membership Database

Years of IEEE Membership for HG Members

IEEE Higher Grade Members

(Percentage distributions)



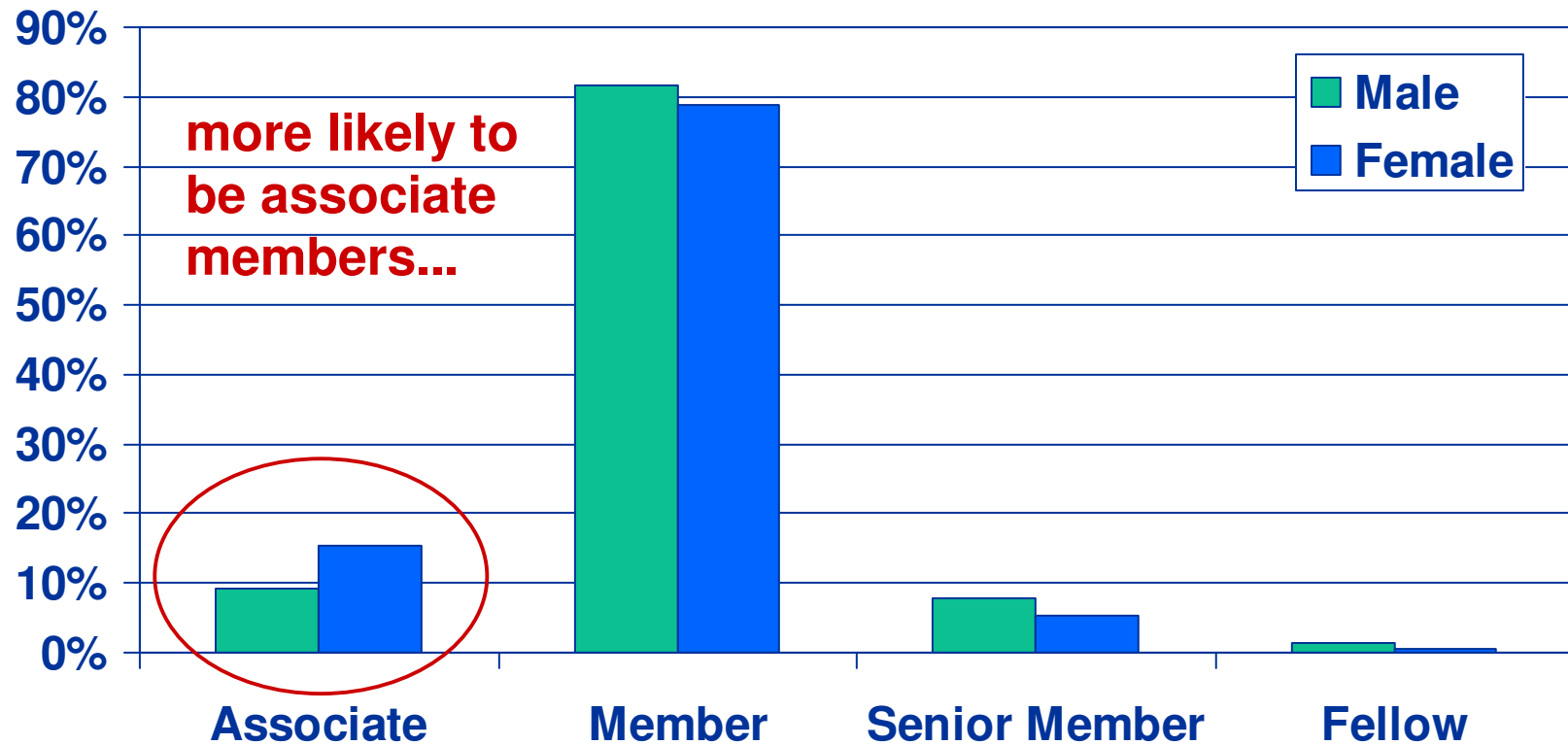
Average Years of IEEE Membership

	Mean	Median
All HG Members		
IEEE	13.3	11.0
WIE	7.1	4.0
Female		
IEEE	8.8	6.0
WIE	6.7	4.0
Male		
IEEE	13.7	11.0
WIE	9.5	4.0

Source: IEEE Member Database, Higher Grade Members not including Life Members, January 2006

IEEE Membership Grade

(Percentage distributions)

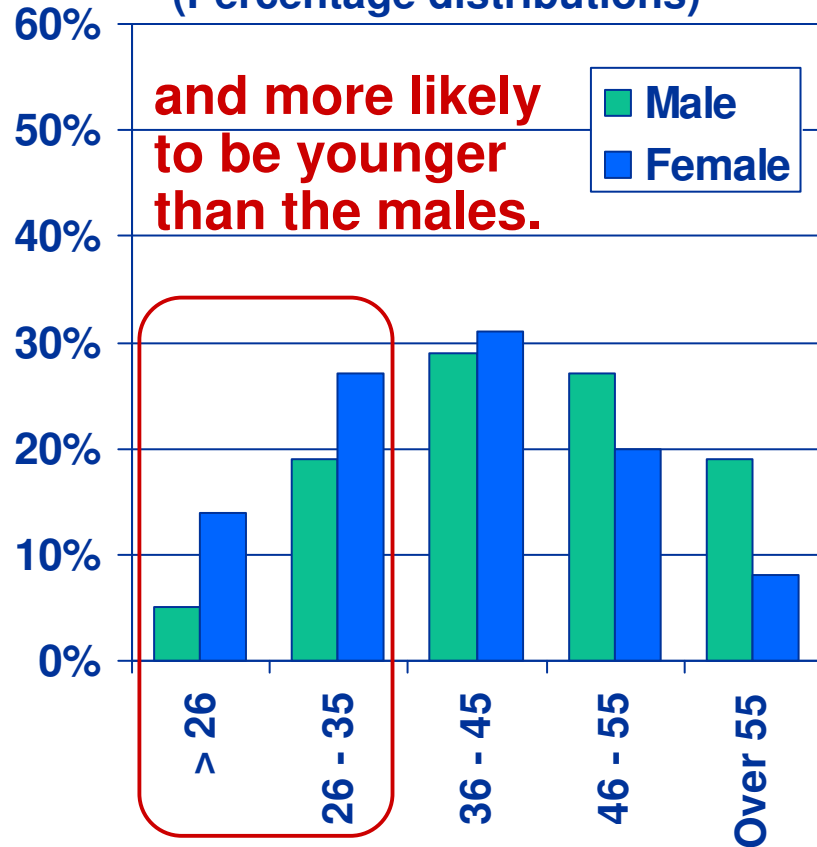


Source: IEEE Member Database, Higher Grade Members not including Life Members, January 2006

Age of Higher Grade Members

Age of IEEE HG Members

(Percentage distributions)



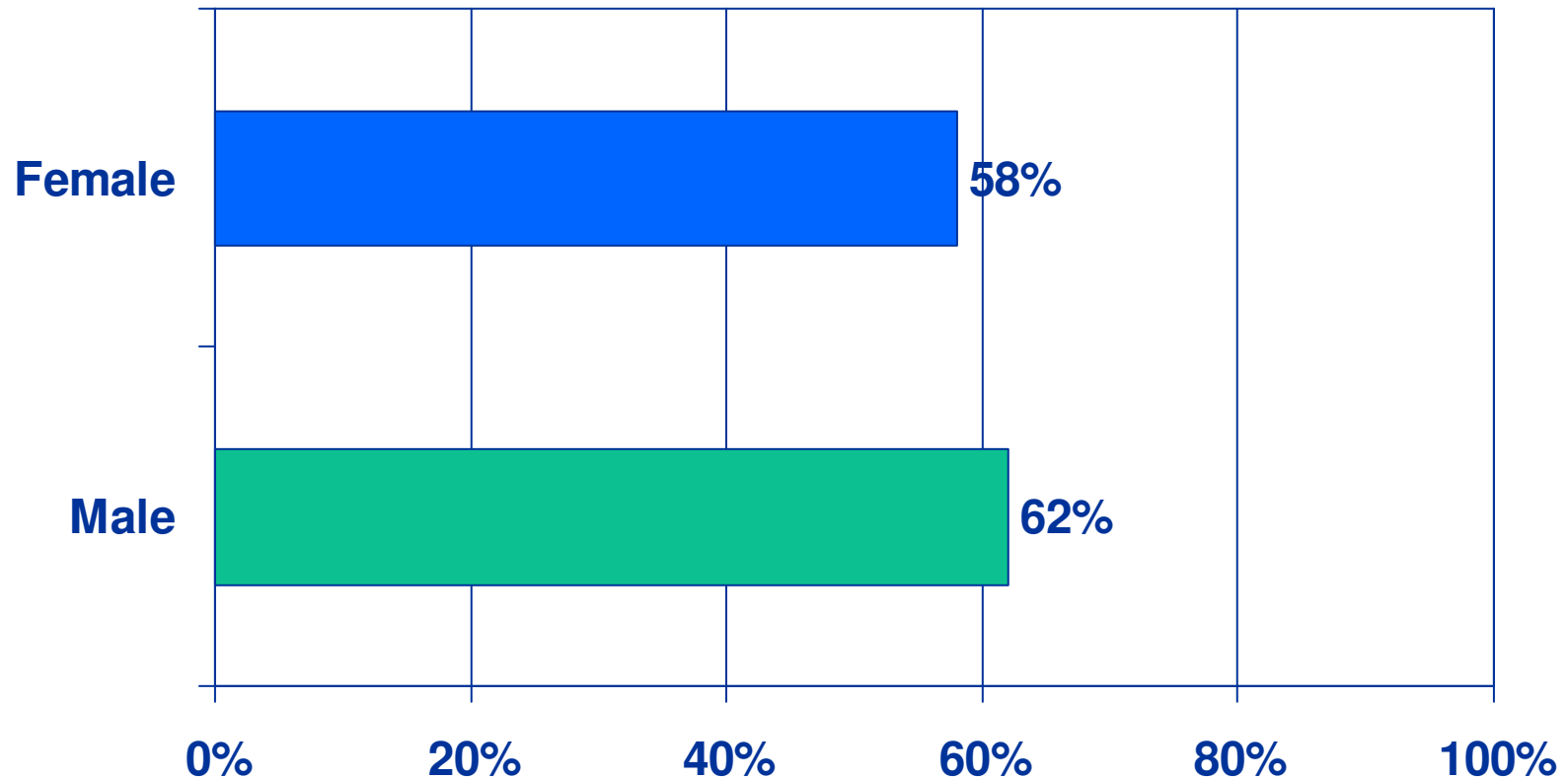
Average Age of HG Members

	Mean	Median
All HG Members		
IEEE	44.2	44.0
WIE	33.8	30.0
Female		
IEEE	38.8	38.0
WIE	33.8	31.0
Male		
IEEE	44.6	45.0
WIE	33.9	26.0

Source: IEEE Member Database, Higher Grade Members not including Life Members, January 2006

Percentage of Higher Grade Members Belonging to an IEEE Technical Societies

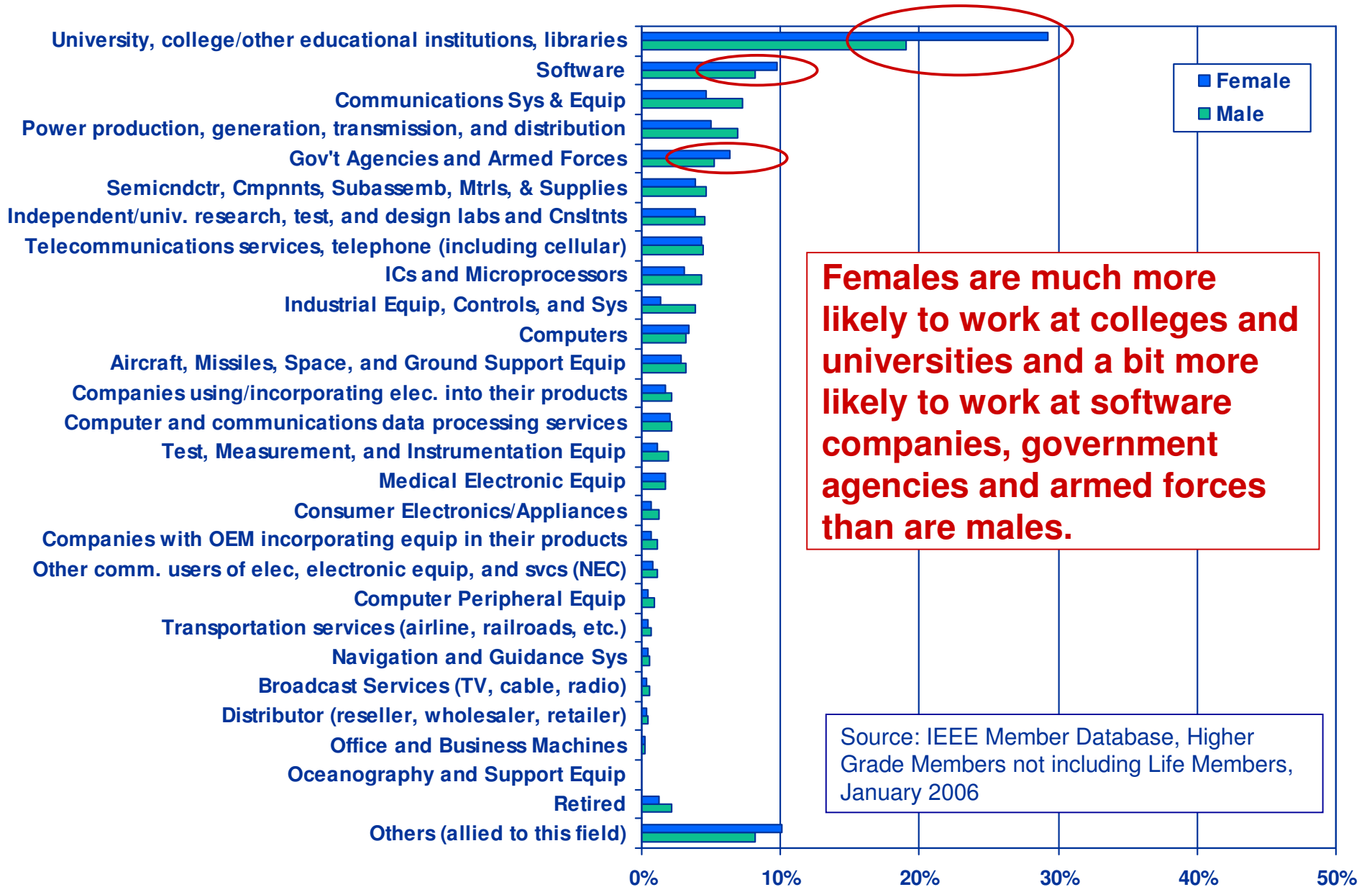
(Percentage of members)



Source: IEEE Member Database, Higher Grade Members not including Life Members, January 2006

Employer's Primary Line of Business at Member's Location

(Percentage distributions)

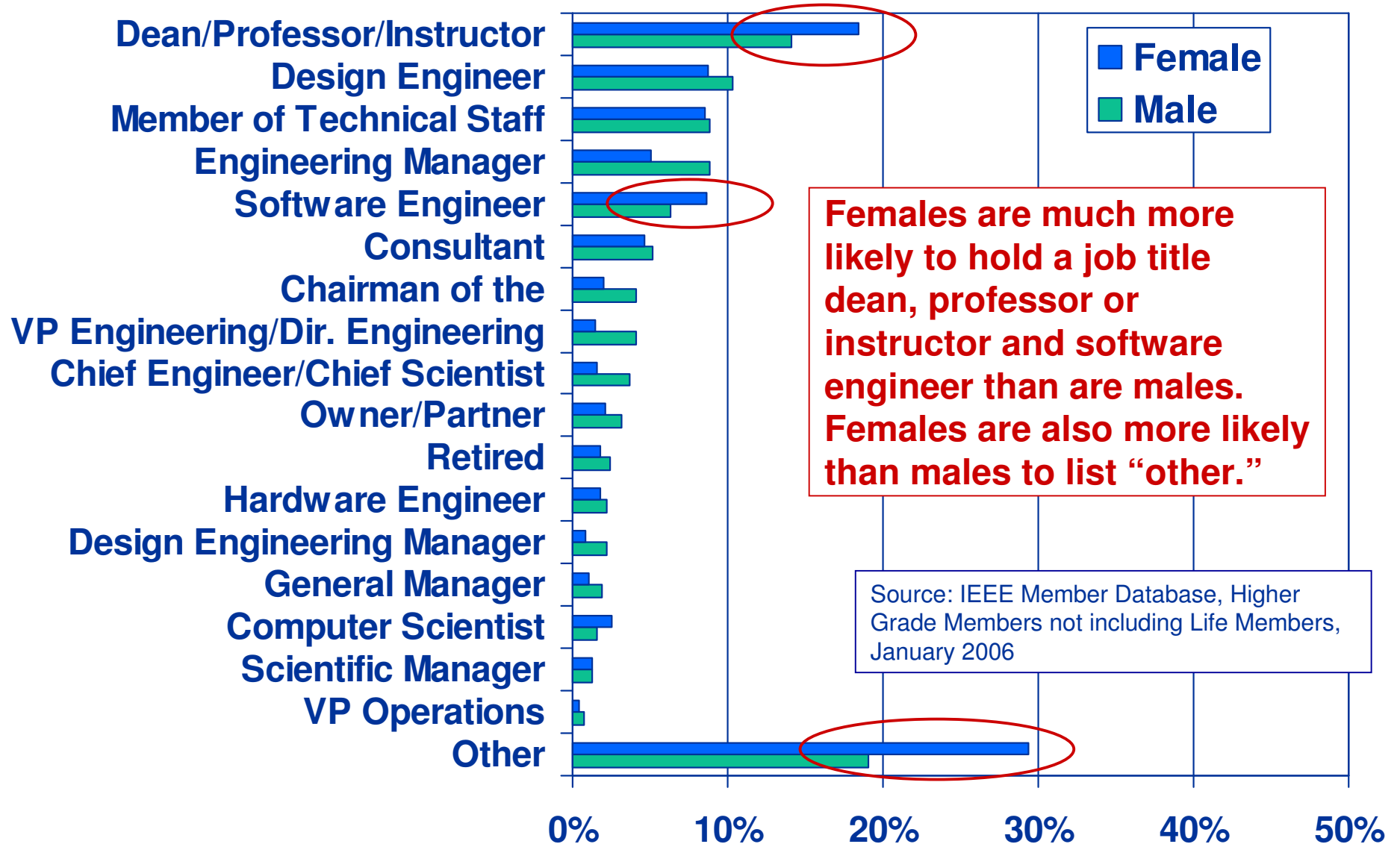


Females are much more likely to work at colleges and universities and a bit more likely to work at software companies, government agencies and armed forces than are males.

Source: IEEE Member Database, Higher Grade Members not including Life Members, January 2006

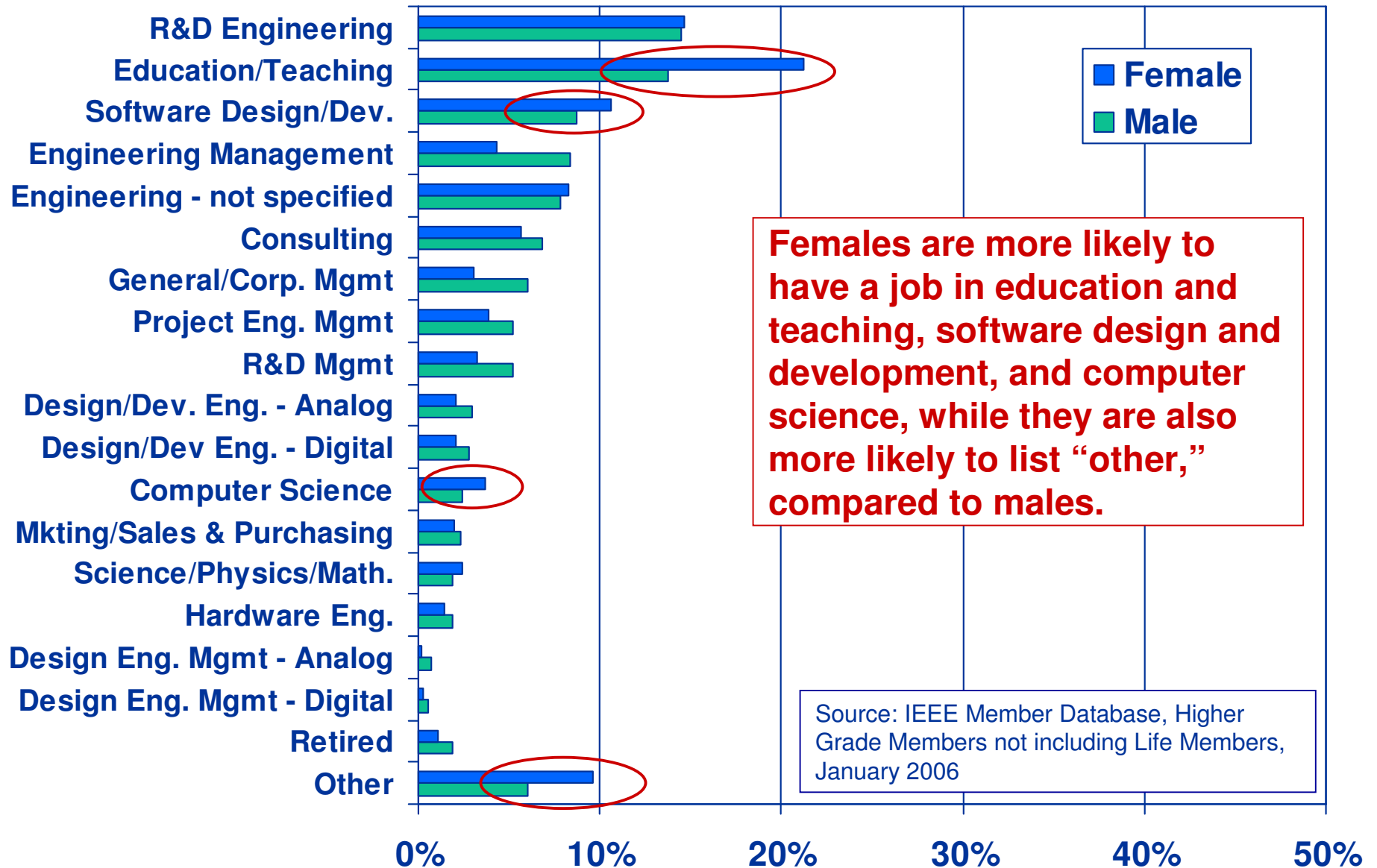
Job Title

(Percentage distributions)



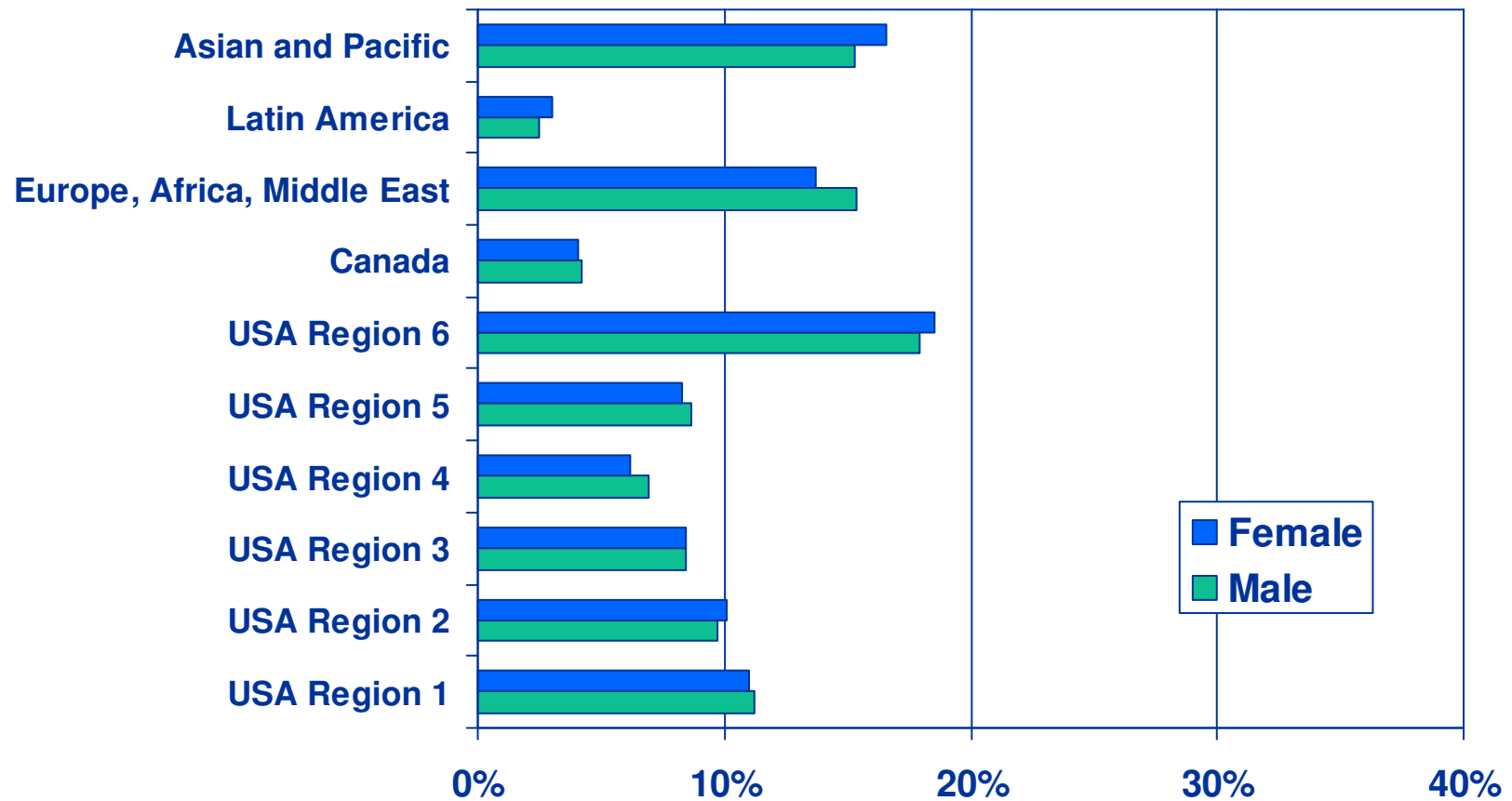
Principle Function of Job

(Percentage distributions)



IEEE HG Members by Region

(Percentage distributions)



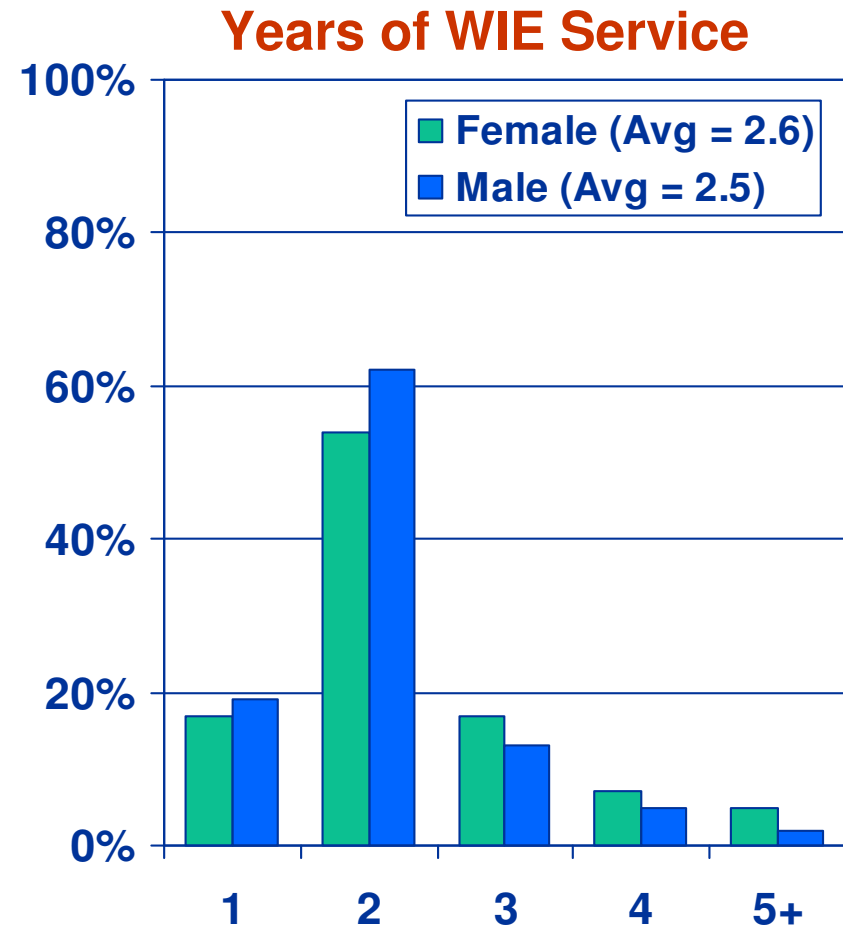
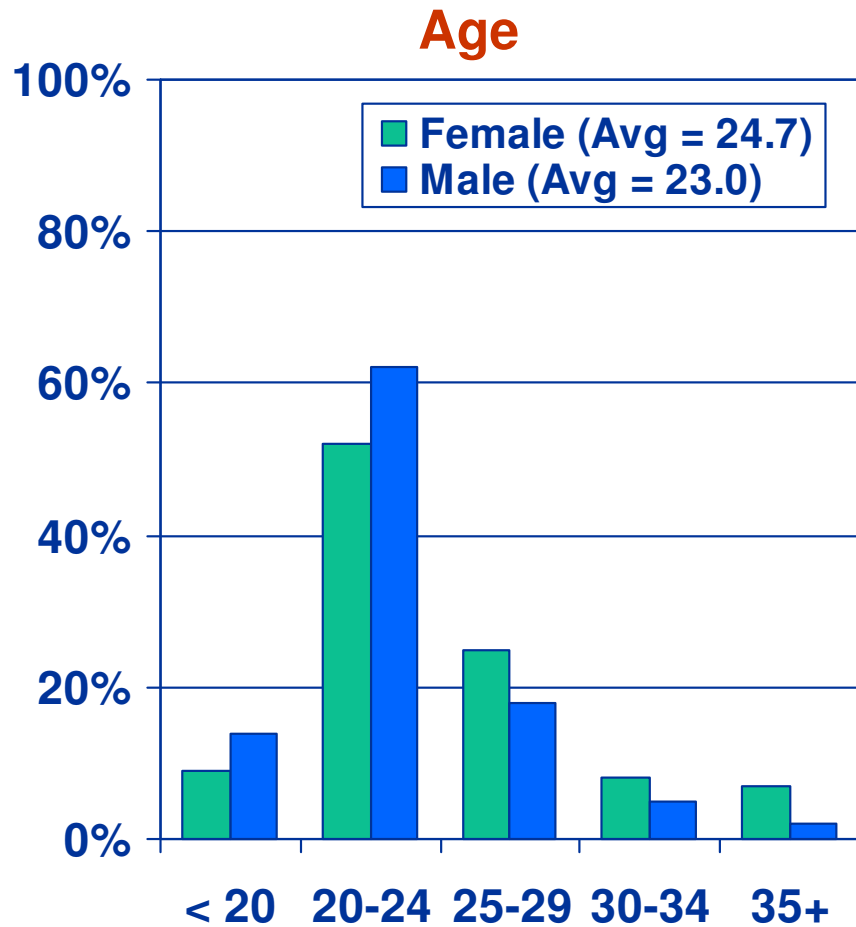
Source: IEEE Member Database, Higher Grade Members not including Life Members, January 2006

IEEE Student Membership in WIE

IEEE Membership Database

Characteristics of Student Members in WIE

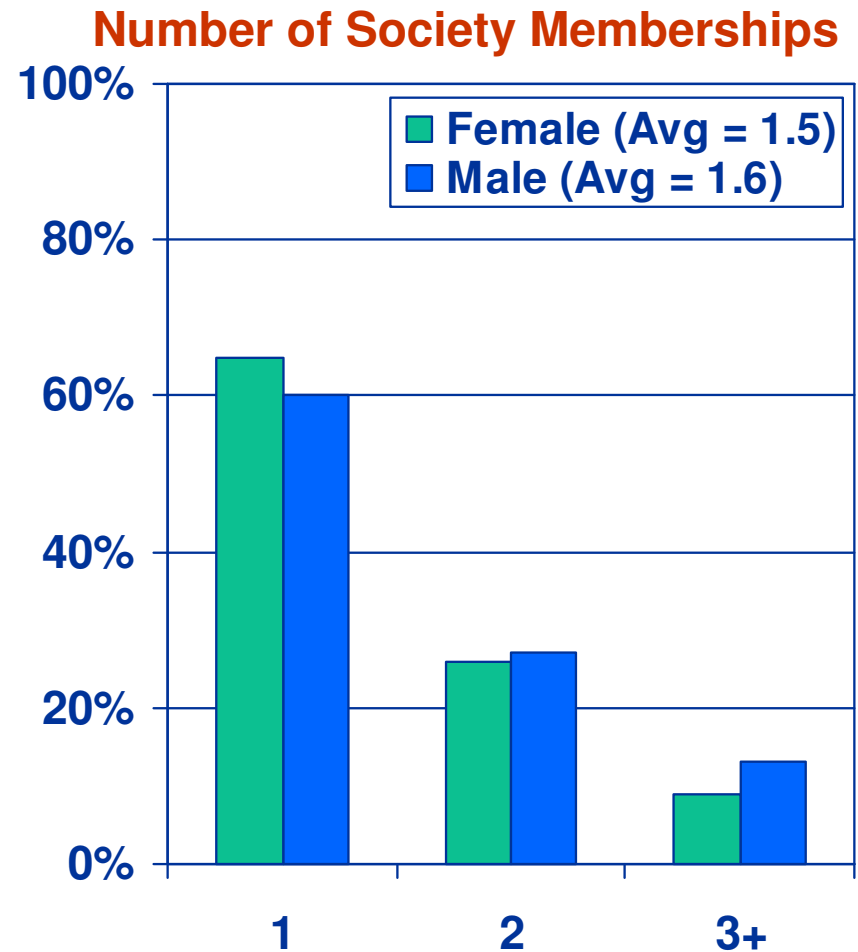
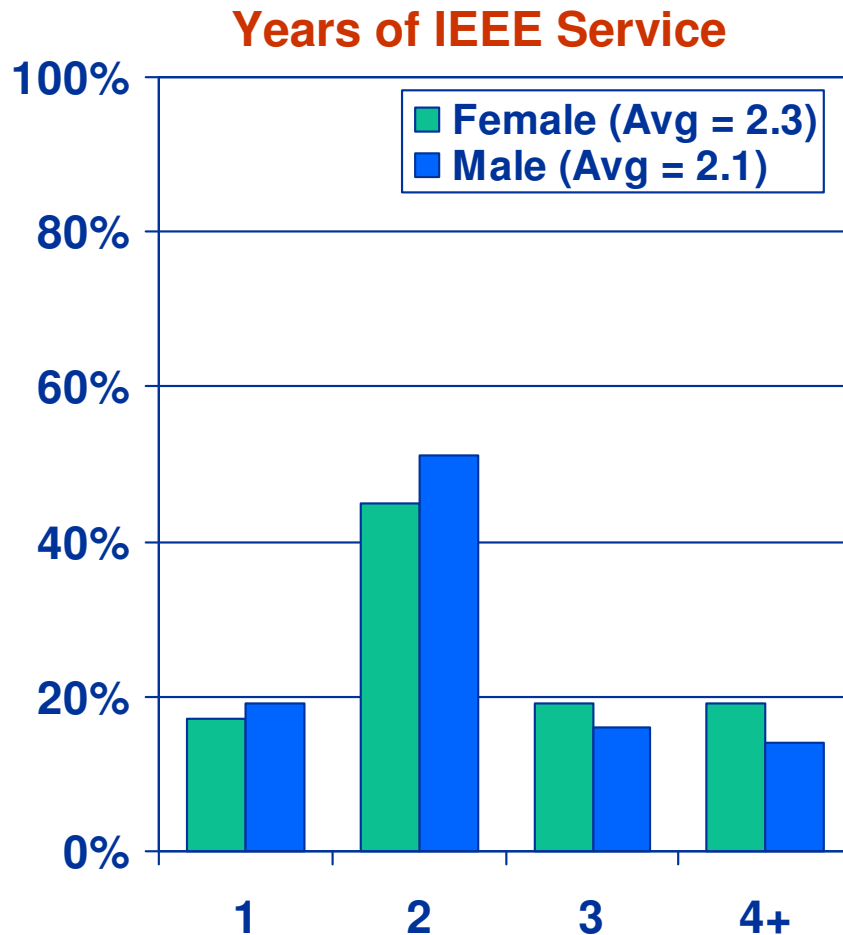
(Percentage distributions)



Source: IEEE Membership Database, 24 Jan 2006

Characteristics of Student Members in WIE

(Percentage distributions)



Source: IEEE Membership Database, 24 Jan 2006

Female GOLD Members

IEEE Membership Database

Summary of Jobs Held by Female GOLD Members

- **Lines of Business**
 - More than one out of every five female GOLD members works for a university, college, other educational institution or library followed by:
 - Power production, generation, transmissions, and distribution (9%), which looks like one entry point for many younger women engineers
 - Software (8%) and
 - Government agencies and armed forces (7%)
 - Unfortunately, 17% of the members under 25 did not supply information on their company's line of business
- **Job Function**
 - Most female GOLD members are in engineering — 17% report engineering not elsewhere classified, 16% R&D engineering, 11% software design and development and 11% in hardware, analog or digital engineering
- **Job Responsibility**
 - As with job function, most female GOLD members are in engineering
- **Job Title**
 - Almost one-third of female GOLD members reports working as other professional technical staff and 15% are design engineers. The data on jobs and where members work reveal little information about female GOLD member since many members are classified in “other” and information not supplied categories.

Line of Business Reported by Female GOLD Members by Age

(Percentage distributions)

Line of Business	Under 25	25 to 29	30 to 34	35 to 39	40 +	Total
University, college/other educ. inst., libraries	15.2%	17.7%	27.9%	23.1%	14.0%	21.1%
Power production, generation, trans., and dist.	12.4%	11.3%	6.8%	5.1%	7.5%	9.0%
Software	8.4%	7.8%	7.1%	7.7%	10.0%	7.8%
Gov't Agencies/ Armed Forces	8.0%	7.9%	4.6%	4.5%	11.5%	6.8%
Telecomm. srvs, telephone (including cellular)	3.6%	6.3%	6.0%	5.8%	3.5%	5.6%
Aircraft, Missiles, Space and Grnd. Supt. Equip.	5.2%	5.4%	3.1%	2.6%	6.0%	4.4%
Communications Sys. & Equip.	1.6%	4.6%	3.9%	7.7%	4.0%	4.2%
IC's and Microprocessors	2.8%	4.5%	4.1%	6.4%	2.5%	4.1%
Semi's, Cmpnts, Subassmbl, Mtrls & Supplies	1.2%	3.3%	5.1%	2.6%	1.5%	3.5%
Computers	0.8%	2.2%	3.7%	1.9%	3.5%	2.7%
Industrial Equip, Controls & Systems	3.6%	1.7%	2.4%	3.8%	1.5%	2.3%
Medical Electronic Equipment	2.0%	2.6%	1.7%	3.8%	2.5%	2.3%
Companies using &/or incorp. electronics	1.6%	2.2%	1.5%	2.6%	3.0%	2.0%
Others in the field (all groups >2% of total)	10.0%	10.3%	11.0%	14.7%	12.5%	11.0%
Others (allied to this field)	6.8%	6.5%	5.7%	7.1%	11.5%	6.8%
Not Supplied	16.8%	5.8%	5.5%	0.6%	5.0%	6.5%
Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Base (N)	250	780	785	156	200	2,171

Source: IEEE Membership Database, April 2006

Job Function Reported by Female GOLD Members by Age

(Percentage distributions)

Job Function	Under 25	25 to 29	30 to 34	35 to 39	40 +	Total
Engineering (not elsewhere classified)	23.6%	20.9%	13.0%	14.1%	15.0%	17.3%
Research & Development Engineering	5.2%	17.6%	19.9%	19.9%	7.0%	16.2%
Education /Teaching	9.2%	11.3%	19.1%	13.5%	9.0%	13.8%
Software Design/Development	10.8%	10.4%	10.2%	11.5%	14.5%	10.8%
Consulting	4.4%	5.8%	4.6%	6.4%	6.5%	5.3%
Project Engineering Management	2.8%	4.4%	3.3%	4.5%	7.0%	4.1%
Design/Development Engineering-Analog	4.4%	4.5%	4.1%	2.6%	0.5%	3.8%
Design/Development Engineering-Digital	5.2%	4.1%	4.2%	2.6%	0.5%	3.8%
Hardware Engineering	3.6%	3.5%	2.0%	3.8%	3.0%	2.9%
Computer Science	1.6%	1.5%	2.5%	2.6%	3.0%	2.1%
Other Management	1.2%	2.3%	4.5%	7.7%	10.5%	4.1%
Other	12.8%	10.1%	9.4%	9.0%	18.0%	10.8%
Not Supplied	15.2%	3.7%	3.2%	1.9%	5.5%	4.9%
Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Base (N)	250	780	785	156	200	2,171

Source: IEEE Membership Database, April 2006

Job Responsibility Reported by Female GOLD Members by Age

(Percentage distributions)

Job Responsibility	Under 25	25 to 29	30 to 34	35 to 39	40 +	Total
Engineering	32.4%	32.4%	26.8%	26.3%	17.0%	28.5%
Engineering Design	12.4%	20.5%	18.1%	16.0%	9.5%	17.4%
Software: Science/Management/Engineering	11.2%	12.3%	11.5%	11.5%	20.0%	12.5%
Education/Teaching	2.8%	8.7%	18.1%	16.0%	8.0%	11.9%
Consulting	4.4%	3.5%	3.9%	7.7%	7.5%	4.4%
Engineering or Scientific Management	0.8%	1.9%	3.7%	5.8%	5.0%	3.0%
Management other than Engineering	1.6%	2.3%	2.0%	5.1%	6.5%	2.7%
Other	18.4%	14.2%	12.5%	9.6%	20.5%	14.3%
Not Supplied	16.0%	4.1%	3.4%	1.9%	6.0%	5.3%
Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Base (N)	250	780	785	156	200	2,171

Source: IEEE Membership Database, April 2006

Job Title Reported by Female GOLD Members by Age

(Percentage distributions)

Job Title	Under 25	25 to 29	30 to 34	35 to 39	40 +	Total
Other Professional/Technical	36.4%	34.4%	27.8%	26.9%	36.5%	31.9%
Design Engineer	10.0%	19.6%	15.5%	11.5%	7.0%	15.3%
Software Engineer	10.8%	9.5%	8.8%	10.3%	9.5%	9.4%
Dean/Professor/Instructor	0.8%	6.0%	15.0%	14.7%	5.5%	9.3%
Member of Technical Staff	4.8%	7.1%	7.6%	11.5%	11.0%	7.7%
Hardware Engineer	4.8%	4.4%	4.1%	3.8%	2.5%	4.1%
Consultant	3.6%	2.7%	3.3%	4.5%	4.5%	3.3%
Engineering Manager	1.6%	1.5%	2.7%	2.6%	6.5%	2.5%
Other Management	1.2%	0.8%	3.1%	2.6%	7.5%	2.4%
Computer Scientist	0.4%	1.2%	2.8%	1.3%	0.5%	1.6%
Chief Engineer/Chief Scientist	0.0%	0.4%	1.0%	1.9%	0.0%	0.6%
Retired	0.0%	0.3%	0.3%	0.0%	1.5%	0.3%
Not Supplied	25.6%	12.3%	8.0%	8.3%	7.5%	11.6%
Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Base (N)	250	780	785	156	200	2,171

Source: IEEE Membership Database, April 2006

IEEE 2004 Segmentation Study Survey Data

Note: The Segmentation Study survey sent invitations to 11,500 IEEE members (excluding students and Life members). The survey garnered 3,665 responses, a 32% response rate.

The base (N) for the data on females from the IEEE segmentation study are between 225 and 228 respondents, depending on the topic. The base for the males is over 3,400. Consequently, the margin-of-error is a bit higher but still in an appropriate range for this scan.

Reasons for Joining IEEE by Gender

(Percentage of respondents)

Reasons to Join	Male	Female	Gap
Remain technically current	61.6%	53.3%	-8.3
Obtain IEEE publications	53.4%	48.9%	-4.5
To join IEEE Societies	43.5%	37.9%	-5.6
Enhance career opportunities	40.8%	39.2%	-1.6
Enhance stature within profession	34.2%	33.0%	-1.1
Network	30.5%	38.8%	8.3
Professor suggested it	29.0%	34.8%	5.8
Show support for profession	26.9%	28.6%	1.8
Continuing education	21.8%	16.3%	-5.5
Obtain reduced fees at conferences	17.2%	23.3%	6.1
Participate in local activities	17.0%	16.7%	-0.3
Discounts on prof and pers svcs	15.8%	11.0%	-4.8
Participate in standards dvlpmt	5.7%	5.3%	-0.4
IEEE email alias w/ virus protect	3.0%	2.2%	-0.8
Other, please specify	3.9%	5.7%	1.9

Remain technically current and obtaining publications are major reasons why WIE members join IEEE.

Network opportunities, reduced fee at conferences and the influence of a professor are more important reasons for females than for males.

Source: IEEE 2004 Member Segmentation Study

Reasons Members Maintain Their IEEE Membership

(Percentage of respondents)

Why Do You Maintain Membership	Male	Female	Gap
Remain technically current	66.3%	66.2%	0.0
Obtain IEEE publications	59.4%	57.9%	-1.5
To join IEEE Societies	39.3%	33.3%	-6.0
Show support for profession	32.2%	30.7%	-1.5
Enhance stature within profession	30.8%	31.6%	0.8
Network	29.8%	35.1%	5.2
Enhance career opportunities	29.5%	35.5%	6.1
Continuing education	29.2%	26.8%	-2.4
Discounts on prof & pers svcs	25.9%	25.4%	-0.5
Obtain reduced fees at conferences	20.1%	26.8%	6.7
Participate in local activities	18.5%	20.2%	1.6
IEEE email alias w/ virus protect	13.4%	10.5%	-2.9
Participate in standards dvlpmt	9.4%	11.0%	1.6
Other, please specify	4.3%	3.9%	-0.3

Remain technically current and obtaining publications are also major reasons why WIE members maintain their IEEE membership.

Networking, reduced fee at conferences and enhanced career opportunities are more important reasons to maintain membership for females than they for males.

Source: IEEE 2004 Member Segmentation Study

Areas of Technical Interest by Gender

(Percentage of respondents)

Areas of Interest	Male	Female	Gap
Communications & Info	49.0%	50.9%	1.9
Computer Engineering	43.3%	44.7%	1.4
Circuits & Devices	30.9%	19.0%	-11.9
Signal Processing	24.7%	25.2%	0.5
Power & Energy	23.6%	18.6%	-5.0
Control & Automation	21.2%	16.8%	-4.4
Instrumentation, Measurement & Testng	18.4%	11.9%	-6.5
Electromagnetics	14.3%	10.6%	-3.7
Optics & Optoelectronics	12.1%	7.5%	-4.6
Geosci., Ocean Tech & Remote Sensing	4.8%	5.8%	1.0
Nuclear & Plasma Sciences	3.4%	3.5%	0.2
Other, please specify	13.3%	12.8%	-0.4

Females are more likely to have a technical interest in communications, computer engineering and geosciences and less likely to an interest in circuits and devices than are males.

Source: IEEE 2004 Member Segmentation Study

Fields Where Members Hold Degrees by Gender

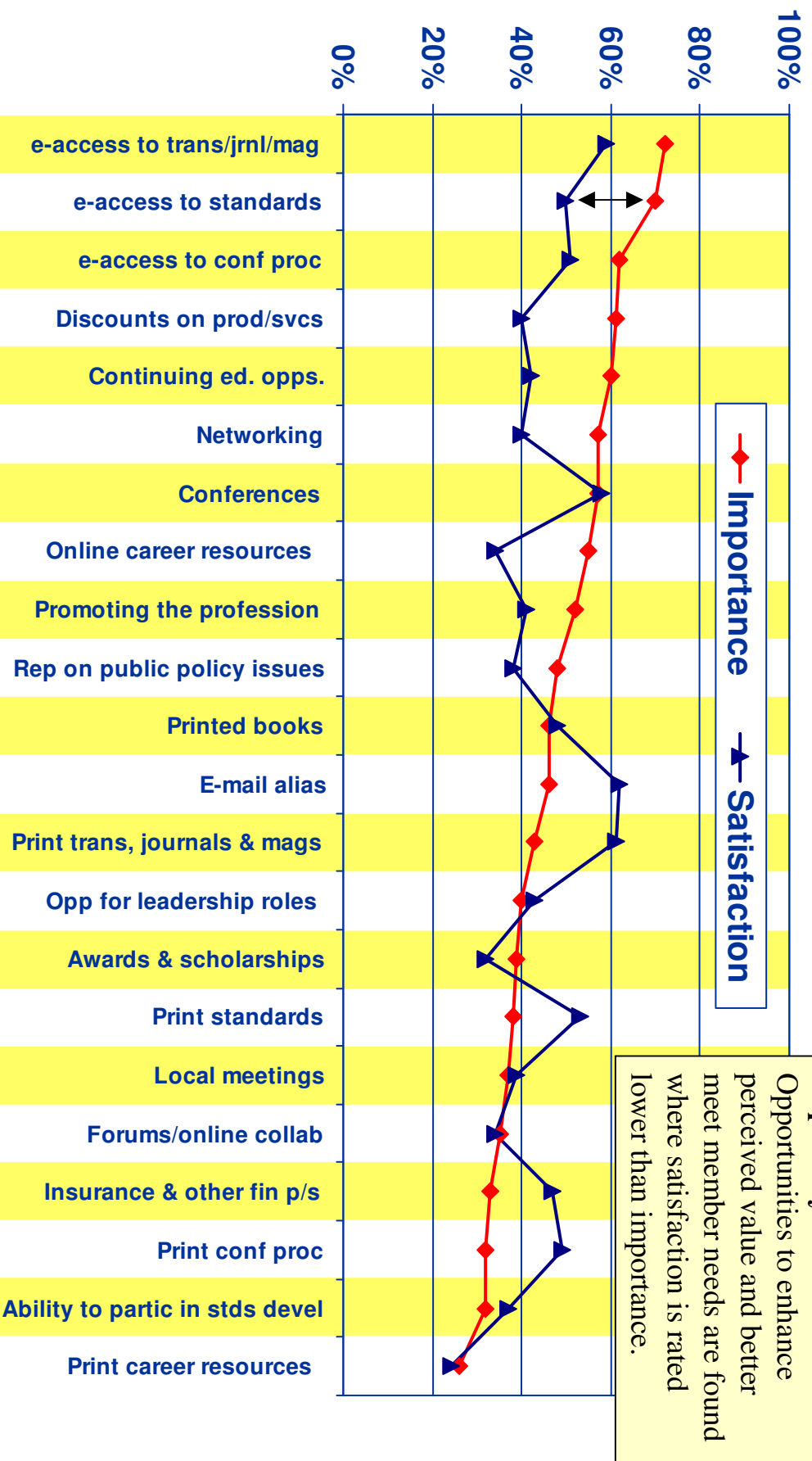
(Percentage of respondents)

Fields Where You Hold a Degree	Male	Female	Gap
Electrical/Electronics Eng	70.7%	57.2%	-13.5
Comp Sci/Eng	25.3%	36.9%	11.6
Physics	10.4%	10.4%	-0.1
Business or Finance	7.3%	5.4%	-1.9
Mathematics	6.6%	11.7%	5.2
Industrial Engineering	3.2%	3.2%	-0.1
Mechanical Engineering	3.1%	1.8%	-1.3
Materials Sci/Eng	1.3%	1.8%	0.5
Medicine	0.6%	0.9%	0.3
Other	9.1%	10.8%	1.7

Females are more likely to hold a degree in computer science, computer engineering and mathematics and less likely to hold a degree in electrical and electronics engineering than are males.

Source: IEEE 2004 Member Segmentation Study

2004 Importance vs Satisfaction for Women Members



Importance vs Satisfaction

	Importance		Satisfaction		Imp vs Sat Difference	
	Male	Female	Male	Female	Male	Female
Online access to trans, journals & mags	64%	72%	49%	59%	-15	-14
Online access to standards	61%	70%	36%	50%	-25	-19
Online access to conference proceedings	52%	62%	40%	51%	-12	-11
Continuing education ops	48%	60%	29%	42%	-19	-18
Rep on public policy issues	46%	48%	29%	38%	-17	-9
Discounts on products and svcs	46%	61%	31%	40%	-15	-21
Promoting profession to general public	46%	52%	30%	41%	-15	-11
Networking	44%	57%	27%	40%	-17	-17
Conferences	42%	57%	50%	58%	8	2
Online career resources	41%	55%	25%	34%	-16	-21
Printed books	40%	46%	41%	48%	0	2
Print trans, journals & mags	40%	43%	55%	61%	14	18
E-mail alias w/ virus protection	36%	46%	55%	62%	19	16
Print standards	34%	38%	39%	53%	5	15
Insurance & other financial prods/svcs	30%	33%	44%	47%	14	14
Opportunities for leadership roles	29%	40%	24%	43%	-5	3
Print conference proceedings	28%	32%	39%	49%	11	17
Ability to participate in Standards Devlpmt	27%	32%	32%	37%	4	5
Local Meetings	27%	37%	31%	39%	4	2
Online collaboration tools (Forums, etc.)	26%	35%	27%	34%	1	-1
Awards & Scholarships	24%	39%	25%	32%	1	-7
Print career resources	20%	26%	20%	24%	0	-2

Members see room for improvement here, but females would like better discounts on products, more on-line career resources and improvements in scholarship programs.

Females are more likely than males to rate each item important and satisfied.

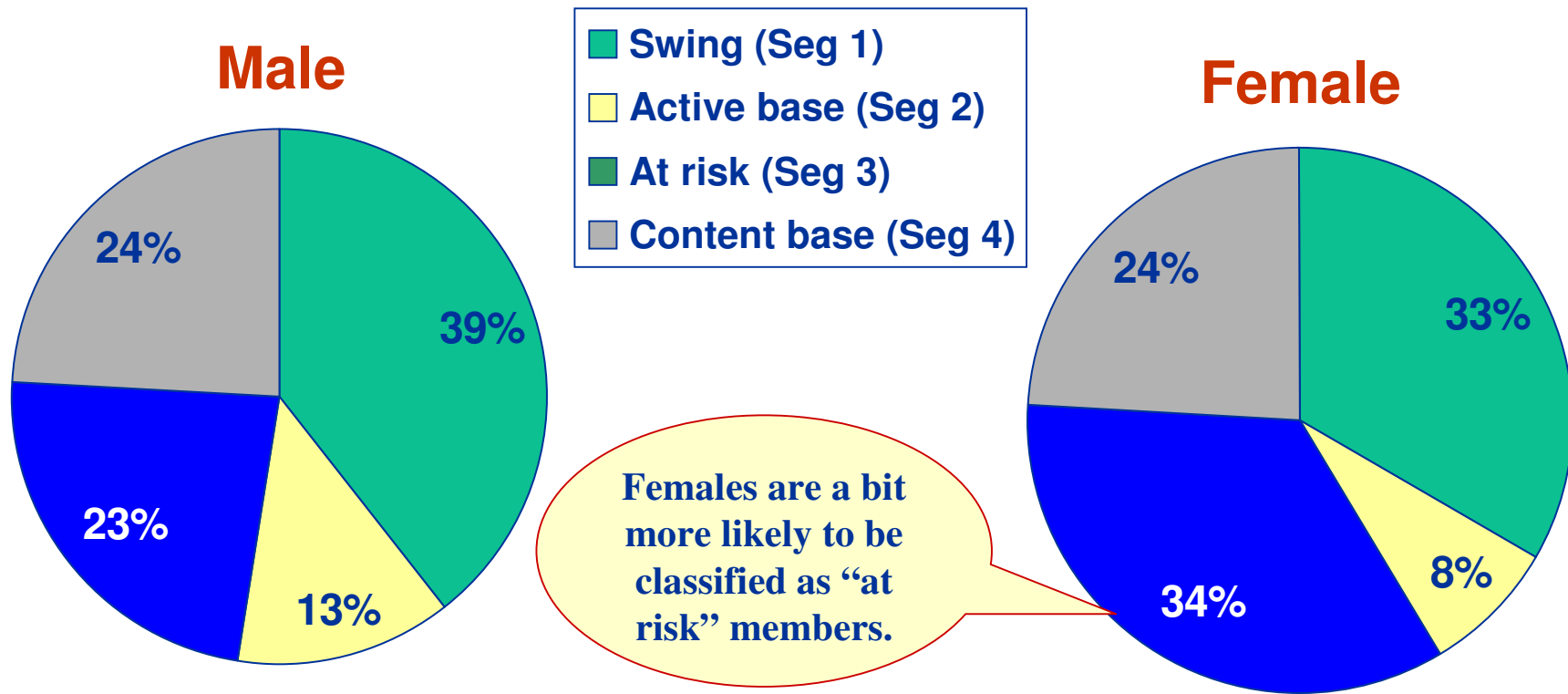
IEEE 2004 Member Segmentation Study

IEEE CONFIDENTIAL — WIE Environmental Scan



Summary Segments by Gender

(Percentage distributions)



Source: IEEE 2004 Member Segmentation Study

IEEE CONFIDENTIAL — WIE Environmental Scan

Usage of IEEE Products by Gender

(Percentage of respondents)

Usage of IEEE Products	Male	Female	Gap
I have an IEEE credit card	5.3%	5.7%	0.4
I have an IEEE e-mail alias	39.4%	32.8%	-6.6
I have made a financial contribution to IEEE	13.4%	10.1%	-3.3
I have purchased IEEE products	53.7%	43.2%	-10.4
I have used Xplore	39.8%	39.4%	-0.4
I participate in an IEEE insurance program	23.9%	15.0%	-8.9
I subscribe to IEEE MDL	13.0%	13.8%	0.8
I subscribe to What's New	35.7%	30.4%	-5.3

Females are less likely to have purchased an IEEE product or participated in an IEEE insurance program than are males.

Source: IEEE 2004 Member Segmentation Study

IEEE CONFIDENTIAL — WIE Environmental Scan



IEEE Activities by Gender

(Percentage of respondents)

Activity Level in Past 2 Years	Male	Female	Gap
Accessed articles through Xplore	42.0%	40.1%	-1.9
Accessed or purchased IEEE standard	35.9%	27.8%	-8.2
Attended IEEE conference	46.8%	48.9%	2.1
Attended local IEEE activity	39.6%	35.0%	-4.7
Participated in IEEE continuing educ. program	12.9%	10.6%	-2.3
Participated in IEEE standards activity	8.8%	7.9%	-0.8
Purchased IEEE book	45.0%	41.7%	-3.3
Reviewed or edited IEEE article	23.1%	29.2%	6.1
Served in leadership role in IEEE	7.6%	11.5%	3.8
Spoke at IEEE meeting or conference	23.9%	25.6%	1.7
Submitted article to IEEE publication	23.7%	29.2%	5.5
Subscribed to IEEE publication (not incl. free)	33.2%	36.9%	3.7
Used IEEE career svcs on Web	20.4%	25.3%	4.9
Volunteered at IEEE function	10.7%	13.3%	2.6

Females are less likely to have accessed or purchased an IEEE standard but more likely to review and edit an IEEE article than are males.

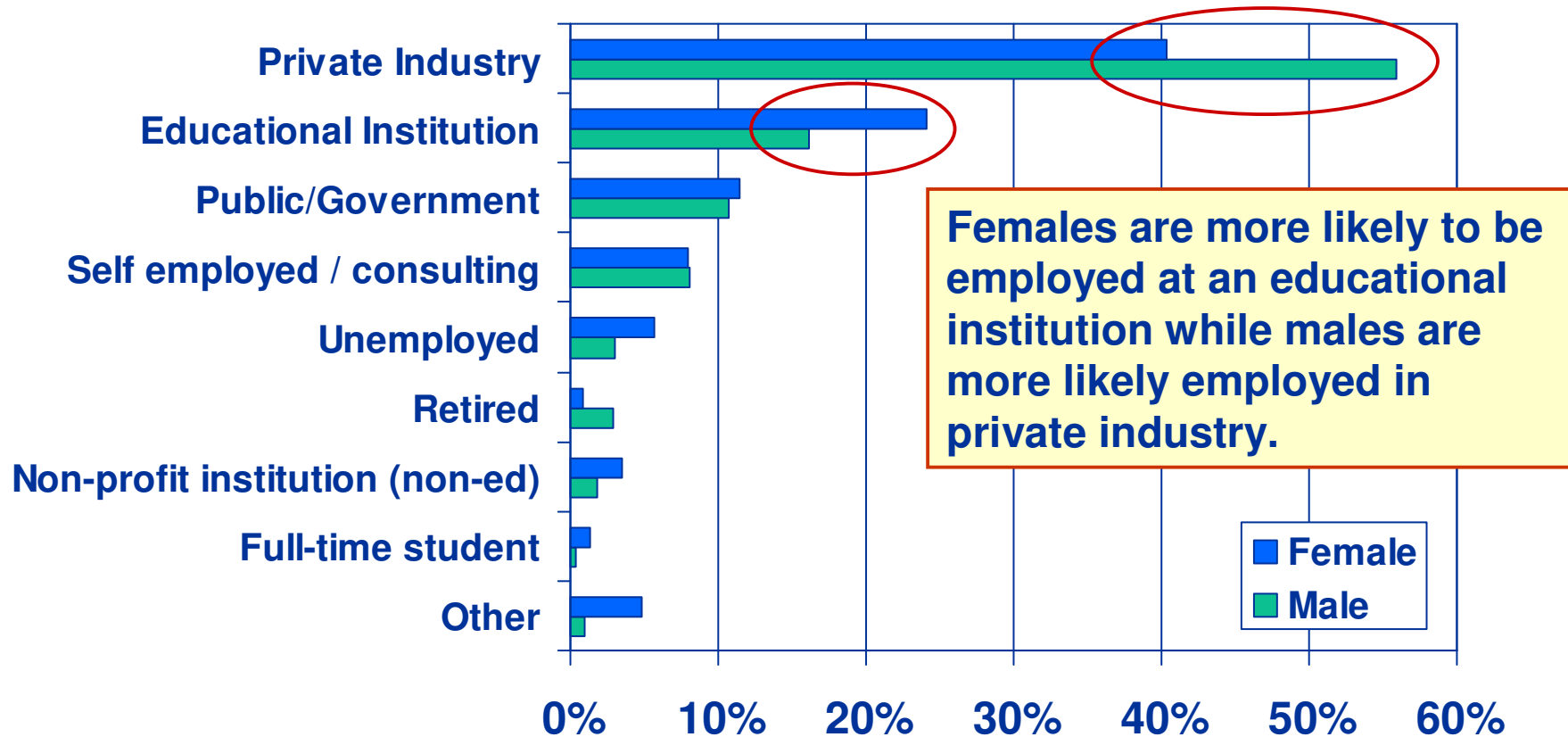
Source: IEEE 2004 Member Segmentation Study

IEEE CONFIDENTIAL — WIE Environmental Scan



Employment Status

(Percentage distributions)



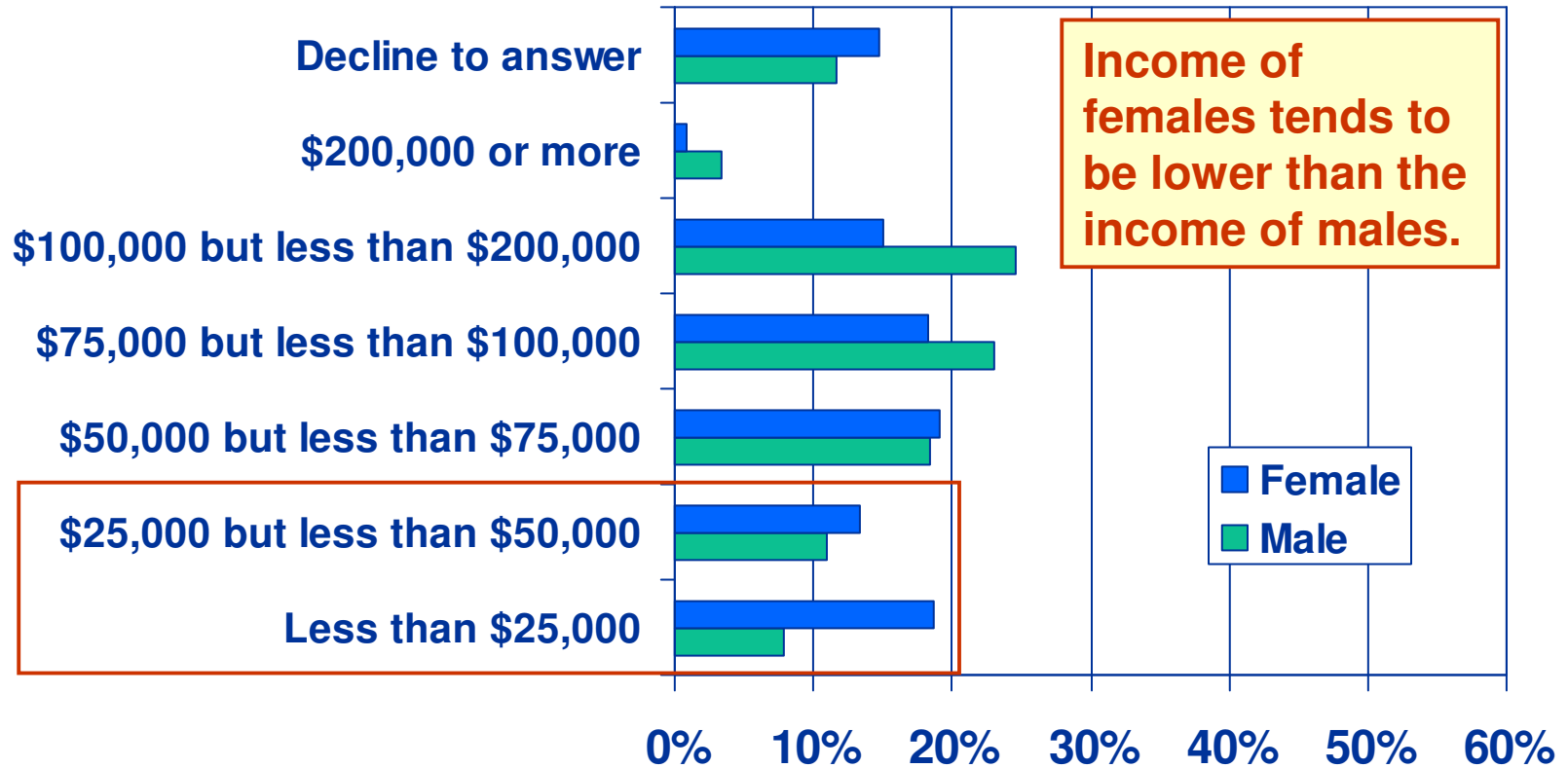
Source: IEEE 2004 Member Segmentation Study

IEEE CONFIDENTIAL — WIE Environmental Scan



Total Income

(Percentage distributions)



Source: IEEE 2004 Member Segmentation Study

IEEE CONFIDENTIAL — WIE Environmental Scan



IEEE WIE Member Survey, July 2002

- **Survey available to 5,000 members for eight months**
- **464 responses (9%)**
- **Survey Problems:**
 - **Methodological problems**
 - **Open-ended questions**
 - **Members joined and left WIE over the survey period**
 - **Technical difficulties**
 - **Respondent profile (students vs professionals difficult)**
- **Study says “the main findings are sound”**

Top 4 Reasons for Joining WIE

(Percentage of respondents)

Increase visibility of women in tech. fields	77%
Access to info. on this topic	66%
Support the WIE committee	60%
Network with other women	55%

- **Increase visibility of women in technical fields dovetails with WIE's mission. Respondents who work for large companies with more than 50 employees are more like than those in smaller companies to join WIE to increase the visibility of women in technical fields.**
- **Middle-aged members (31-40 yrs) are more likely to have joined WIE to network with other women than are members in other age groups, particularly those over age 50 and under age 31.**

Source: IEEE Women in Engineering Member Survey, Final report, July 2002



Top 5 Topics of Interest

(Percentage of respondents)

State-of-the-art technology	77%
International information	63%
Mtgs/conf. for networking	60%
Career resources	55%
Other topics	69%

- **Topics of interest varied significantly by certain demographic characteristics.**
- **Career resources is of more interest to:**
 - Respondents in Europe, the Middle East, and Africa than it is to those in the U.S. or Asia and the Pacific
 - Those with master's degrees or doctorates than respondents with only a bachelor's degrees
- **International information is of more interest to:**
 - Respondents under age 50 than older respondents
 - Full-time students than it is to higher grade members
 - Respondents employed in private industry compared to those working for educational institutions
 - Respondents employed by large organizations (>10,000 employees) than it is to employees in smaller companies

Source: IEEE Women in Engineering Member Survey, Final report, July 2002

Top 5 Things WIE Can Do For IEEE-Related Disciplines

(Percentage of respondents)

Support younger women's/girls' entry into engineering/ science	17%
Increase networking opportunities for women engineers	13%
Increase visibility of women in engineering/ science professions	8%
Other professional development support	7%
Promote prominent women engineers/provide role models	7%

- Respondents were asked to write in the top three things that WIE can do for the IEEE-related disciplines. More than half (61%) of respondents offered at least one suggestion. The most frequently mention items are listed above.
- Respondents who have achieved Doctorates are more likely to mention increasing the visibility of women in engineering as a top priority for WIE than are respondents who possess only lesser degrees.

Source: IEEE Women in Engineering Member Survey, Final report, July 2002

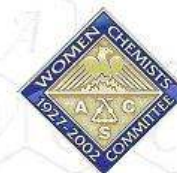
Other Professional Associations

American Chemical Society (ACS)

- ACS has two major initiatives: the Women Chemists Committee (WCC) and the PROGRESS Project.
- **WCC**
 - Its mission is to be leaders in attracting, developing and promoting women in the chemical sciences. To achieve this mission, the WCC provides products and services to women chemists and chemical engineers. This includes the following:
 - WCC/Eli Lilly & Company Travel Award, which provides funding for undergraduate, graduate, and postdoctoral women chemists to travel to scientific meetings in 2006 to present the results of their research.
 - Overcoming Challenges Award recognizes a woman undergraduate from a two-year or four-year institution for her efforts in overcoming hardship to achieve success in chemistry.
 - WCC Web site provides information about the ACS initiatives to increase participation of women in the chemical sciences, an on-line mentoring program, and links to all the WCC programs and products. (See next slide)
 - Technical programs at local, regional and national ACS meetings. Women have an opportunity to hear about ground-breaking research and technological advances by women scientists at ACS meetings that are held throughout the US.
- **ACS PROGRESS**
 - PROGRESS (Participation, Reflection, Openness, Grants, Resources, Education, Site Visits, Successes) is a pilot project. This ACS initiative offers lectureship grants to 'rising star' women chemists to speak at Carnegie Research Extensive Universities. Articles and data are available through this project to help women thrive in the chemical workplace.
 - Through programs and services such as these the ACS continues to attract women scientist to its meetings and to join as members of the world's largest scientific society.



Women Chemists Committee



The Women Chemists Committee serves the membership of the American Chemical Society. Our mission is to be leaders in attracting, developing and promoting women in the chemical sciences. There are three goals designed to fulfill the mission statement:

1. Attract women to a profession in the chemical sciences.
2. Provide leadership for career development opportunities for women in the chemical sciences.
3. Promote and recognize the professional accomplishments of women in the chemical sciences.

But...what does WCC "do"?

Attracting

[WCC Travel Awards](#) (.pdf 73kb)

[Overcoming Challenges Award - 2004 Recipient Announcement](#) (.pdf 162kb)

[Overcoming Challenges Award](#) (.pdf 150kb)

[Other Awards](#) (.pdf 275kb)

Advocacy

[ACS Award Nominations](#) (.pdf 73kb)

[PROGRESS: Speaker Funding Opportunities \(the "Be Visible" Program\)](#)

[AAAS Award Nominations](#)

[AAAS Graduate Scholars Program](#)

[ISC Award Announcement and Call for Nominations](#) (.pdf 22kb)

[Other Related Links](#)

Programming & Communications

[What WCC Does for You! - WCC Overview](#) (.pdf 260kb)

[WCC Newsletters](#)

[WCC Members](#) (.pdf 120kb)

[Photos](#)

[Washington, DC August 2005 Meeting](#) (.pdf 43kb)

[San Diego March 2005 Meeting](#) (.pdf 43kb)

Local & Regional

[List of Contacts for Local WCC Groups](#)

[How to Start a Local WCC](#)

[Regional Programming](#) (.pdf 18kb)

[Tips for Regional Programming](#) (.pdf 18kb)

[Hints on Winning a WCC ChemLuminary Award](#) (.pdf 27kb)

Developing

[PROGRESS: Business & Leadership](#)

[PROGRESS: "GROW Grants"](#)

[Successful Women Chemists Articles](#)

["On-line" Mentoring and Career Chat](#)

[Position Announcements](#)

[General Items of Interest](#)

[We want your help or advice](#)

News & Events

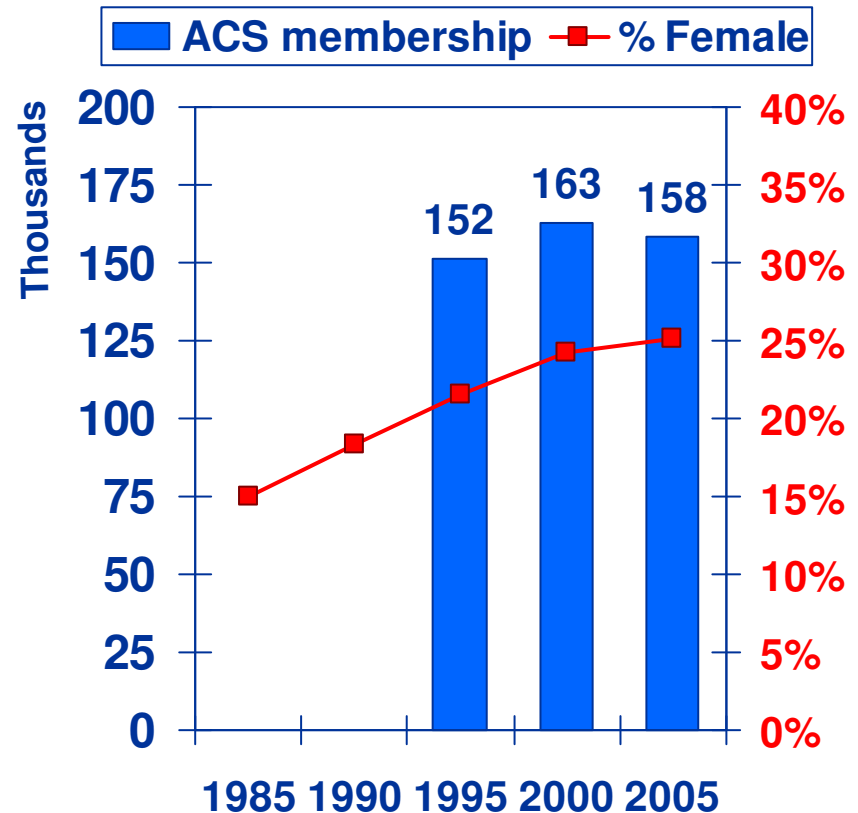
➤ The WCC is pleased to announce the forthcoming book, [Successful Women in Chemistry: Corporate America's Contribution to Science](#), (.pdf 567kb). This book will provide inspirational reading for anyone interested in achieving success in chemistry or any technical field. Insightful opening remarks by ACS Executive Director Madeleine Jacobs underscore the book's timeliness for today's readers. This book will be available for sale at key WCC events in Washington, D.C.

➤ [Project ENHANCE](#): Research funding provided by the National Science Foundation. Results from the Women's Survey are [now available](#). Thank you to all of

American Chemical Society (ACS)

- As more women earn chemistry degrees (at all levels) and enter the workforce in chemistry-related fields ACS female membership is expected to increase.
- The percentage of female members in ACS increased steadily from 15% in 1985 to 24% in 2000. This rate of increase slowed between 2000 and 2005 when 25% of ACS members are female. ACS data show, on average, female members are younger than male members.

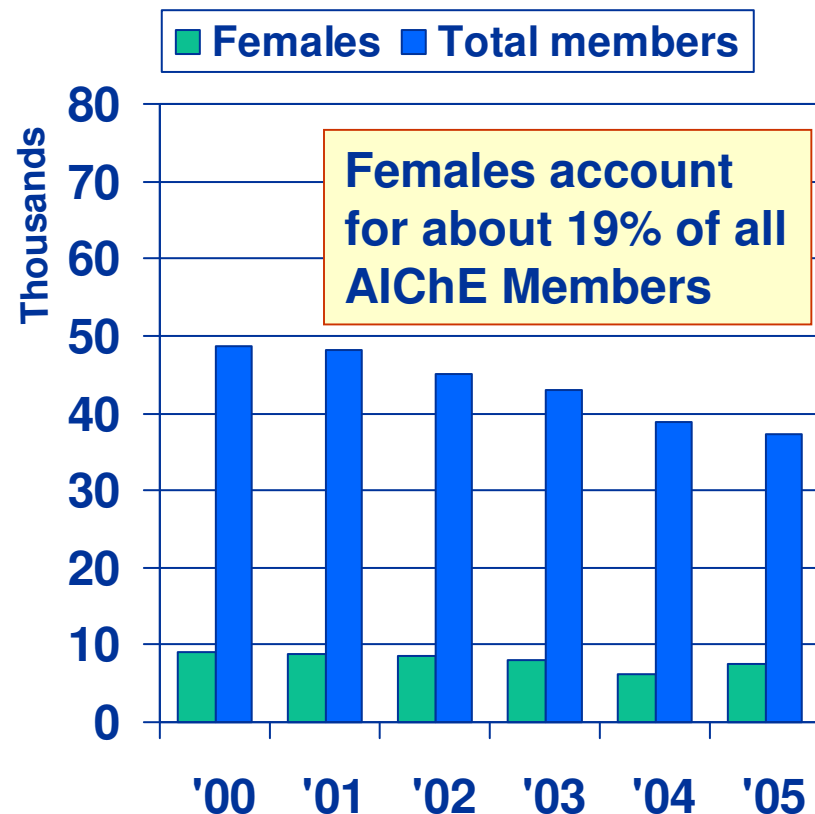
ACS Membership Trend



American Institute of Chemical Engineers (AIChE)

- **AIChE's Women's Initiatives Committee:**
 - will lead in promoting the entry, development, and full participation of women in the Institute and the profession.
- **Strategies**
 - Develop and/or distribute information on women in the profession
 - Mobilize AIChE to meet the needs of existing and potential female members of AIChE and the profession
 - Provide networking means for women in AIChE
 - Increase the visibility of women within AIChE and the profession

AIChE Membership



American Institute of Aeronautics and Astronautics (AIAA)

The AIAA does not currently have an interest group devoted to its female membership. AIAA's current professional membership is 30,000 and approximately 1,500 are women.

One reason for AIAA members have not formed a women's committee or special interest group may be because there is a society called Women in Aerospace (WIA). WIA and AIAA started collaborating on some activities.

American Mathematical Society (AMS)

The AMS does not have a particular interest group or section populated by women. At a glance AMS membership data show the percentage of women is increasing among all NEW members for selected years:

1985: 15.3%

1995: 16.9%

2005: 27.2%

These percentages are only for those who reported their gender and they represent only NEW members in a given year, not all AMS members.

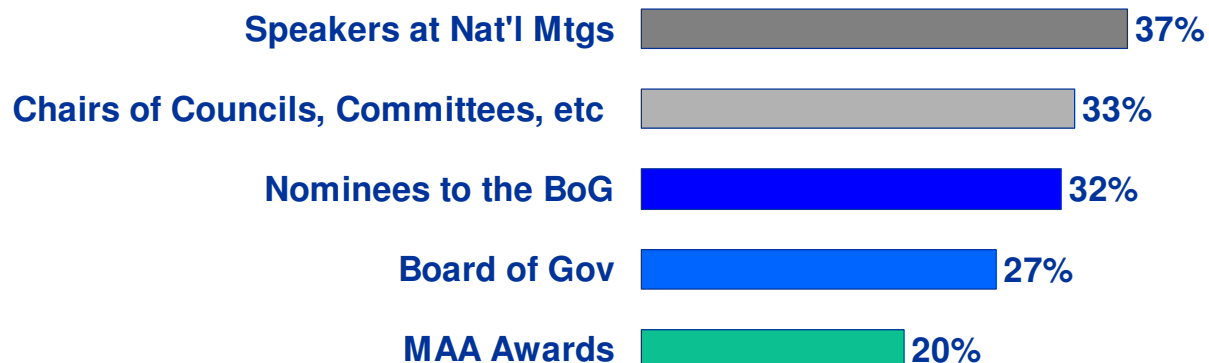
A number of mathematics and related scientific societies have formed the Joint Committee on Women (JTWOMEN). The committee membership includes AMS-ASA-AWM-IMS-MAA-NCTM-SIAM. The committee monitors data collected by some of the societies but does not actually conduct data collection on their own.

The Association for Women in Mathematics is an organization in mathematics specifically devoted to women. Its URL is <http://www.awm-math.org/>

Mathematical Association of America (MAA)

- The MAA's Committee on Women in Mathematics frequently partners with the Association for Women in Mathematics (AWM), but MAA does not have a SIG or other membership program for women in mathematics.
- MAA tracks the participation of women in the following aspects of the association.

Participation of Women in MAA (Percentage of total who are female)



Based on data from 2000-2005

Society for Industrial and Applied Mathematics (SIAM)

SIAM does not have a separate organization or interest group for women. SIAM does participate with the Association for Women in Math (AWM). For example, AWM has sessions at the SIAM Annual Meeting that are intended to develop young talent in applied mathematics and to educate young people on professional issues.

At the end of 2005, SIAM's membership was 10,756, up from 8,670 in 2002. Much of that growth has been among student members. SIAM's membership is currently 15% female, up from 11% in 2002. A look at SIAM's non-student versus student breakdown shows females make up 11% of non-student members (up from 10% in 2002) and 24% of student members (up from 20% in 2002).

One more indication of increased participation by women is from SIAM conference attendees. From 1996 to 1998, approximately 14% of were women and from 2003 to 2005 the percentage has increased by about one percentage point.

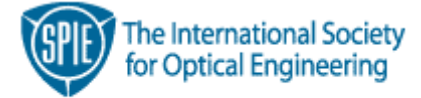
American Society of Agricultural & Biological Engineers (ASABE)

Statistics from the last few years show the percentage of female ASABE members is on the rise. For instance, in 2002, 9% of overall ASABE members were female compared to 11% in 2005. Student statistics have increased by only one percentage point since 2002, with 25% of students being female in 2005. ASABE's total membership is approximately 9,000 individuals.

ASABE does not have any sort of organized group for female members. They report they "have started to see some interest over the last few years through an informally organized Women in ASABE luncheon held at our annual meeting." ASABE staff report that "this group is really just getting off the ground and should grow."

ASABE recently changed its name after nearly 100 years. It was the American Society of Agricultural Engineers and now is the American Society of Agricultural & Biological Engineers.

SPIE Women in Optics (WiO)



- **SPIE WiO is small compared to WIE. In 2005, the community was around 185 women, which is an increase of about 75% from 2004. The new growth is due to an increase in SPIE student membership (19% of SPIE new students are women, compared to 10% of 'regular' members being women).**
- **WiO was formed to promote personal and professional growth for women through community building, networking opportunities and encouraging young women to choose optics as a career. Membership in WiO is open to all and is free for SPIE Student Members.**
- **For the last two years WiO has produced a calendar (www.spie.org/wio) which has been quite popular. It was created to encourage young women to explore career opportunities in optics, as well as support the role that women are currently playing. WiO also produces a quarterly newsletter, hold luncheons and presentations at conferences and provides WiO members with a directory of members.**
- **Recently interest was expressed in developing opportunities for mentorship (likely with students) and engaging in an outreach program (panel presentations where SPIE holds a meeting).**

ASME

ASME's membership was 4.8% female (4,809 female members) at year-end 2005—an increase over previous years. Since 1989, the percentage female had hovered around 4%.

ASME staff report they are “encouraged by the percentage of females by age.” In the 20-24 age cohort, 16% of ASME's members are female; 25-29, 12%; and, 30-34, 9%.

Engineering is not a traditional education choice for women. Of those women who do choose engineering, they choose mechanical engineering last. Computer, bio and computer engineering are the first choice of women.

ASME (cont'd)

What is ASME doing to attract women into engineering in general and to Mechanical Engineering and ASME specifically?

The Center for Leadership and Diversity sponsors a competitive grants program (Diversity Action Grant Program) to provide ASME student sections with grants ranging from \$500 to \$1,500 to host events which encourage women and under-represented minorities become members of the student sections or encourage young women and under-represented minorities to pursue engineering educations. The Center also hosts an annual diversity forum in conjunction with the IMECE.

Perhaps the most important single activity that the Center for Leadership and Diversity is undertaking to promote the involvement of females in ME and ASME is its effort to incorporate "diversity as strategy" into ASME's organizational model. If ASME is going to achieve its goal of being the premier engineering society in the world, it must incorporate strategic diversity into its business plan.

ASME (cont'd)

Another way in which ASME is seeking to increase the participation of women and under-represented minorities in engineering is through the annual awarding of the ASME Johnson & Johnson Consumer Companies, Inc. Medal. This is the first and only ASME society-level award which is presented in recognition of outstanding promotion of diversity within the engineering profession. It was awarded for the first time in November 2005.

ASME is incorporating diversity and inclusiveness training in VOLT Academy training materials, it is actively involved in E-Week and it collaborates with the Girl Scouts of America.

ASCE is involved in the Extraordinary Women Engineers project, which will produce a book about women engineers, as well as a video and materials for use by teachers to encourage girls to go into engineering.

Institute of Industrial Engineers (IIE)


- **IIE serves women in engineering and science as a member of The Extraordinary Women Engineers Coalition (EWEC), as is IEEE.**
- **IIE does not have groups such as IEEE's WIE, our groups are technically oriented and not gender specific.**

International Society for Pharmaceutical Engineering

At this time, ISPE doesn't have a special group serving women specifically.

Extraordinary Women Engineers Coalition (EWEC)

- The EWEC is a consortium of over 50 professional, academic, governmental and corporate organizations committed to increasing the number of women in the engineering profession.
- Extraordinary Women Engineers Project (EWEP) consists of a book on women engineers and an outreach campaign to high-school guidance counselors and educators that includes workshops, a television program, posters, and promotion and placement of the book. The book is published. More information at the website: www.engineeringwomen.org



Address <http://www.engineeringwomen.org/>

Extraordinary
WOMEN ENGINEERS

EXECUTIVE SUMMARY | PROJECT COALITION | MAKE A GIFT | NOTABLE WOMEN ENGINEERS | PROJECT REACTION | HOME | ASCE HOME

"I applaud the Extraordinary Women Engineers Project for inspiring young women to be engineers and for promoting diversity within the engineering profession."
Mrs. Laura Bush
Honorary Chair

What do high-school girls think about engineering?

Did you know that...

- Less than two percent of high school graduates will earn engineering degrees?
- Colleges and universities are having difficulty recruiting women engineering students?
- Today, just 20 percent of undergraduate engineering students are women?
- Even more astounding is the number of women engineers in the professional workforce - less than ten percent!

The Extraordinary Women Engineers Project is an unprecedented awareness and outreach program designed to encourage young women to choose engineering as a career and to develop a new generation of role models for those already in the field. Mrs. Laura Bush serves as honorary chair for the project's Advisory Committee.

What Do Girls Want?

What motivates the career decisions of teenage girls? To find out, the Extraordinary Women Engineers Project conducted research to examine why academically-prepared young women do not consider engineering a desirable profession. View researcher Kito Robinson presenting the findings.

Extraordinary Women Engineers video report

Changing Our World: True Stories of Women Engineers

During National Engineers Week, the Extraordinary Women Engineers Project Coalition (EWEP) will launch *Changing Our World: True Stories of Women Engineers*, a colorful, 256-page celebration of the contributions of women engineers to every aspect of modern life. - [Read more](#)

Society of Women Engineers

- **19,000 members in 2006**
 - **45% professional**
 - **55% students**
 - **Professional memberships have grown 35% over the past 3 years**
- **400 Sections: 100 professional, 300 student**
- **2004 financials: Revenue: \$4.6M, Expenses \$4.3M**
- **Dues**
 - **\$100 for professional membership**
 - **\$78 for joint membership with National Society of Black Engineers (NSBE) or the Society of Hispanic Professional Engineers (SHPE)**
 - **\$20 for students**
- **Membership includes SWE Magazine**
- **SWE national conference attracted 4,200 engineering professionals, students and corporate representatives in 2005**



Source: Betty Shanahan, SWE Executive Director & CEO, and Karen Horting, Director of Development.

Society of Women Engineers

K-12 and College Programs

- Girl Scout Science in Action Badge
- Career guidance web site for junior and senior high school students
- Elementary School
 - SILLY SLIME — Pre-K-2
 - Hotel Legos – Grades 3-4
- Middle School/ Junior High School
 - Mentor Program with a science curriculum
 - Essay Contest
- High School
 - Communication Pandemonium
 - Engineering: A Canny Career
- College
 - Prepare for Your Future - Career workshop
 - Peer mentoring program to reduce Freshman attrition in the college of engineering

Other Programs

- Scholarships — financial assistance to women admitted to accredited baccalaureate or graduate programs, in preparation for careers in engineering, engineering technology and computer science. Scholarships and fellowships range from \$1,000 to \$10,000 each. In 2005, SWE distributed over \$300,000 in national scholarships.
- Professional Development Programs — training targeted to entry, middle, senior and executive management
- Career Center — résumé database and job bank

Potential Partnering Opportunities for WIE and SWE

- **On-line courses and training**
- **Conferences**
- **Mentoring**
- **Local face-to-face seminars**
- **Local initiatives**

National Academy of Engineering

NAE Membership Totals (Feb 2006)

Active Member	1,973
Member Emeritus	242
Foreign Associate	185
Total	2,400

The Engineer Girl website is part of the NAE's Celebration of Women in Engineering project. This project tries to bring national (U.S. and Canada) attention to the opportunity that engineering represents to all people at any age, but particularly to women and girls.



American Physical Society (APS)

- **APS has a nine member (male and female) Committee on the Status of Women in Physics. CSWP is dedicated to the recruitment, encouragement, and retention of women in physics. Details about their programs can be found at <http://www.aps.org/educ/cswp/index.cfm>**
- **CSWP programs for Students**
 - **Female Friendly Physics Departments: survey of graduate programs in physics assessing the climate for women at various graduate schools**
 - **APS/IBM Research Internship Program for Undergraduate Women**
 - **“Physics in Your Future” — four-color booklet for middle and high school girls on a career in physics.**

American Physical Society (cont'd)

- **CSWP programs for Department Chairs**
 - Improving the Climate for Women in Physics Site Visits
 - Best Practices for Recruiting and Retaining Women in Physics compiled by the CSWP
 - The Roster of Women and Minorities in Physics lists the names and qualifications of over 4,000 women and minorities in physics.
- **CSWP programs for Women Faculty**
 - Professional Skills Development for Women Physicists — two one-day workshops for women faculty who wish to improve their leadership skills. A future workshop will be offered for women at national labs and research facilities in 2007.
 - M. Hildred Blewett Scholarship for Women in Physics — candidates are women who have had to give up doing research for a time due to family reasons and would now like to resume their careers.
- **CSWP programs for Everyone**
 - CSWP Events at APS Annual Meetings include invited sessions, networking breakfasts, and receptions
 - Colloquium Speakers List of Women in Physics
 - The Gazette, the official newsletter of the CSWP
 - Friends of CSWP List serve offers interested APS members an opportunity to hear more about the work of the CSWP
 - WIPHYS (Women in Physics) is a listserve for subscribers around the world who want to exchange advice, network, and discuss issues of interest to women in physics.

American Institute of Physics (AIP)

For statistical reports on women in physics, the American Institute of Physics has published the report *Women in Physics and Astronomy 2005* which can be found at <http://www.aip.org/statistics/trends/gendertrends.html>

The screenshot shows the American Institute of Physics (AIP) website. The header includes the AIP logo, the text "1931-2006 AMERICAN INSTITUTE OF PHYSICS 75 Years of Service", and navigation links for "home", "contact us", and "join a society". A search bar is present with a "SEARCH" button and a link to "advanced search". A "Text Size" control is also visible.

The main navigation menu includes "Publications", "Services", "Resources", and "About AIP". A left sidebar contains a list of links: "Government Relations", "Education", "History Center", "Statistical Research" (highlighted), "News & Media", "Corporate Associates", "Physics Today", "Events Calendar", "AIP Store", "XML", "RSS News Feeds", and a "current issue" link with a thumbnail for "PHYSICS TODAY".

The main content area is titled "Statistical Research" and features a sub-section "Women in Physics". The text reads: "These reports contain data on the education and employment of women in physics in the U.S. and data on working women physicists across the world." Below this, it says: "For a free hard copy of any of the reports listed below, go to the report order form." There is a section for "FAQ's about Women in Physics and Astronomy, 2005" with the text: "The *Women in Physics and Astronomy* report has generated a lot of questions. This short document provides answers to the most frequently asked questions." A link for "Frequently Asked Questions (HTML)" is provided. The main report is titled "Women in Physics and Astronomy, 2005" and is described as: "Data on current and historic trends in the representation of women in physics and astronomy, including comparative data on women in related fields. Discusses the academic 'pipeline' and the point at which women are leaving physics. Data on US minority women and on women in physics in other countries are also presented. Supported by the Alfred P. Sloan Foundation." At the bottom of the report section, there are links for "Highlights (HTML)", "Highlights" (with a red arrow icon), and "Full report" (with a red arrow icon).

Women's Engineering Society

- WES is based in the UK with 668 members in 2001, 5% living overseas and another 5% working abroad
- WES mission is to raise female participation in engineering through increased status of engineering as a career; reduced stereotyping in career choices; and improved employment policies.
- WES Core Activities:
 - Networking, mentoring; working with schools, promoting engineering and technology; working with employers on good practice; awards; multidisciplinary conference; journal; circles, student groups, involved in local events; lectures and events, celebrating role-model women engineers; participation in policy-making at various levels.

The screenshot shows the homepage of the Women's Engineering Society. At the top is a teal header with the logo (three interlocking hexagons) and the text "Women's Engineering Society" and "promoting the education, training and practice of engineering among women". Below the header is a navigation menu with sections: "ABOUT Us" (Who We Are, News, Events, Projects, Council Members, Awards and Grants, Contact Us), "MEMBERSHIP" (General Information, Member Directory, Join Now), "COMMUNITY" (Message Board, Local Circles, University Groups, Jobs and Careers, Annual Conference, Daphnet), and "MEDIA" (Annual Report, Why Engineering?, Let's Talk About Sex, Verena Holmes Lecture, Online Publications, Links). The main content area features a large green hexagonal graphic with the text "WES is the voice of the woman engineer". To the right of this graphic is a paragraph about BP recruiting for experienced Reservoir and Petroleum Engineers, Petrophysicists and Geoscientists. Below this is a link to "www.one-vision.co.uk". To the right of the main content is a "UPCOMING EVENTS" section for the "WES Council Working groups Meeting" on Saturday 29th April 2006, and a "GALLERY" section for the "ICWES13 Conference 2005 Photo Gallery". At the bottom of the page, there is a paragraph about the Defence Engineering & Science Group (DESG) offering graduate opportunities.

Sister Organization Membership Trends

	2000	2001	2002	2003	2004	2005
AAAS	148,863	146,742	139,077	136,400	128,000	NA
ACS	163,016	163,503	161,144	159,126	158,126	158,423
AIChE	48,624	48,237	45,002	43,023	38,800	37,295
AIP-APS	42,662	41,570	42,007	42,851	43,258	43,462
ASME	119,820	117,799	117,795	116,091	110,578	111,120
ASCE	125,690	123,535	130,041	133,000	133,500	135,000
IEEE	366,135	377,342	382,483	361,138	365,483	367,395

AIP-APS is American Institute of Physics—American Physical Society

Industry and Private Companies

Women in Technology International

<http://www.witi.com/>

- WITIBaInc is a woman owned business, offering women-specific solutions that are marketed to small businesses and corporations, as well as providing WITI Professional Association (WITI). WITI was founded 1989 as a worldwide network dedicated to helping women advance by providing access to, and support from, other professional women working in all sectors of technology.
- WITI products and services include: Networking, WITI Marketplace, Career Services/Search, National Conferences and Regional Events, Publications and Resources, Small Business Programs, Research, Bulletin Boards and more.
- WITI's Mission: to empower women worldwide to achieve unimagined possibilities and transformations through technology, leadership and economic prosperity.
- WITI's Goals
 1. Provide a platform of connections, resources and opportunities
 2. Transform corporate and media perceptions of women
 3. Create a pipeline of women to fill leadership positions in corporate America
 4. Demonstrate that advancing women directly contributes to the prosperity of all
 5. Influence top leaders in government, academia and industry to recognize the purchasing power of women
 6. Encourage girls and young women to choose business and technology careers
- WITI Networks: Professional, Corporate, Global Executive and Student

Women in Technology International

<http://www.witi.com/>

ABOUT WITI

Sponsors & Partners

WITI is fortunate to have the support and enthusiasm of many well-known corporations, including:

Sponsors



Partners



WITI Demographics	
(103,000 registered users, statistics as of July)	
Gender Breakdown:	
Female	94.2%
Male	5.8%
Educational Breakdown:	
Bachelors Degree	42.6%
Masters Degree	34.4%
Ph.D.	3.5%
Some College/AA	11.6%
Other	7.8%
Level of Responsibility Breakdown:	
Business Owner/Entrepreneur/Self-employed	14.2%
Executive	36.9%
Manager	26.9%
Staff	15.8%
Student	1.9%
Retired	0.1%
Other	4.2%
Salary Breakdown:	
Over 300K	1.6%
\$150K - \$300K	9.6%
\$110K - \$149K	23.8%
\$96K - \$110K	12.1%
\$71K - \$95K	21.2%
\$56K - \$70K	10.4%
\$41K - \$55K	10.2%
\$25K - \$40K	7.1%
Under \$25K	4.1%

WITI Demographics	
(103,000 registered users, statistics as of July 2005)	
Industry Breakdown:	
Information Technology	22.0%
Computers, Semiconductors, Software	17.8%
Consulting, Education/Training, Recruitment	13.5%
Other Industries Agriculture, Architecture/Engineering, Associations/Organizations/Non-Profits, Chemical, Construction, Miscellaneous, Real Estate, Services, Transportation, Utilities/Gas/Electric	9.1%
Banking/Finance, Financial, Insurance, Legal/Mediation	8.4%
Internet Services, Telecommunications	6.5%
Automotive, Consumer Goods, Electronics, Food, Manufacturing, Wholesale, Oil	4.9%
Advertising, Marketing, Public Relations	3.4%
Biomedical, Biotech/Pharmaceuticals, Healthcare	4.0%
Entertainment, Communications/Media, Publishing	3.9%
Federal Government/Military, Government, Public Administration, State & Local Government	2.0%
Academia, Research/Development	2.0%
Aerospace, Security	1.8%
Hospitality, Restaurant, Retail, Tourism	0.7%
Title Breakdown:	
Engineer, Hardware, IT, Programmer, Software Developer, Systems, Web Developer/Producer, Database Admin	27.2%
Business Development, Corporate Communications, International Business, Marketing, Public Relations, Sales	17.2%
Board of Directors/Advisory Board, Chairwoman/Chairman, CEO, CFO, CIO, COO, CTO, CSO, CMO, VP, President	18.1%
Consultant	9.1%
Other Environment, Professional Association/Grant Distribution, Manufacturing, Professor/Teacher, Student, Miscellaneous	6.0%
Product Development, Quality, Research	6.5%
Administration, Facilities, Operations, Contracts, Procurement, Public Affairs	4.5%
Human Resources, Training, Ethics	5.1%
Customer Service, Tech Support, Tech Writing	3.4%
Attorney, Mediator	1.0%
Accounting, Finance, Stocks	1.8%

The End