

## **MIND Links: Resources for Minority Students and Minority Faculty**

María M. Larrondo Petrie

College of Engineering, Florida Atlantic University, Boca Raton, Florida USA

**Abstract.** MIND is the acronym for the American Society for Engineering Education (ASEE) MINorities in Engineering Division. One of its latest initiatives is the *MIND Links* project to gather useful web links and information on resources that would allow minority students and minority faculty to find and take full advantage of the myriad of programs and information designed to promote their participation in the engineering and technology disciplines. This paper presents the initial results.

### **Introduction**

Minority students and minority faculty do not take full advantage of the myriad of programs designed to promote their participation in engineering and technology disciplines. Minorities may not be aware of these opportunities, nor of how and where to apply. Opportunities range from programs designed to promote student interest in these fields, to summer enrichment programs, scholarships, fellowships, research opportunities, awards, leadership programs, and career advancement programs. This survey organizes these opportunities and resources, specially targeting those of particular interest to engineering students and engineering faculty, and provides links to internet sites containing further details. An analysis is done of possible areas of need not covered adequately by existing resources.

### **Engineering Professional Societies and Engineering Education Related Sites**

Professional societies for engineers provide scholarships, fellowships, awards, conferences, competitions, publications, and resources for students, parents, educators and professional engineers. Table 1 shows a listing of engineering professional societies. The computer science and engineering technologies societies are included in this table because the computer science and engineering technology programs are often housed in the college of engineering. The table also includes architecture, because students may want to explore the differences between this discipline and construction or civil engineering. Table 2 lists the engineering related honor societies. Table 3 lists other engineering-related societies, including science, mathematics, medical, and education societies. Table 4 lists engineering, technology, science and educational

societies that specifically target underrepresented minorities, and the list in Table 5 targets women in these disciplines.

**Table 1. Engineering Professional Societies**

<b>Engineering Professional Organization</b>	<b>Web link</b>
AAAI American Association for Artificial Intelligence	<a href="http://www.aaai.org">http://www.aaai.org</a>
AAES American Association of Engineering Societies	<a href="http://www.aaes.org">http://www.aaes.org</a>
ABET Accreditation Board for Engineering and Technology	<a href="http://www.abet.org">http://www.abet.org</a>
ACEC American Consulting Engineers Council	<a href="http://www.acec.org/">http://www.acec.org/</a>
ACM Association for Computing Machinery	<a href="http://www.acm.org/">http://www.acm.org/</a>
ACTE Association for Career and Technical Education	<a href="http://www.acteonline.org/">http://www.acteonline.org/</a>
AEE Association of Energy Engineers	<a href="http://www.aeecenter.org/">http://www.aeecenter.org/</a>
AEG Association of Engineering Geologists	<a href="http://www.umn.edu/~aeg/">http://www.umn.edu/~aeg/</a>
AIA American Institute of Architects	<a href="http://www.aiaonline.com/">http://www.aiaonline.com/</a>
AICHE American Institute of Chemical Engineers	<a href="http://www.icheme.org/">http://www.icheme.org/</a>
AIH American Institute of Hydrology	<a href="http://www.aihydro.org/">http://www.aihydro.org/</a>
AIMBE American Institute of Medical and Biological Engineers	<a href="http://www.aimbe.org">http://www.aimbe.org</a>
AIME American Institute of Mining, Metallurgical and Petroleum Engineers	<a href="http://www.aimeny.org/">http://www.aimeny.org/</a> <a href="http://www.idis.com/aime/">http://www.idis.com/aime/</a>
ANS American Nuclear Society	<a href="http://www.ans.org">http://www.ans.org</a>
ASA American Society of Agronomy	<a href="http://www.agronomy.org">http://www.agronomy.org</a>
ASAE American Society of Agricultural Engineers	<a href="http://www.asae.org">http://www.asae.org</a>
ASCE American Society of Civil Engineers	<a href="http://www.asce.org">http://www.asce.org</a>
ASEE American Society of Engineering Education	<a href="http://www.asee.org">http://www.asee.org</a>
ASHRAE American Society of Heating, Refrigeration and Air Conditioning Engineers	<a href="http://www.ashrae.org/">http://www.ashrae.org/</a>
ASM International (The Materials Information Society)	<a href="http://www.asm-intl.org/">http://www.asm-intl.org/</a>
ASME American Society of Mechanical Engineers	<a href="http://www.asme.org/">http://www.asme.org/</a>
ASNE American Society of Naval Engineers, Inc.	<a href="http://www.navalengineers.org/">http://www.navalengineers.org/</a>
ASNT American Society for Nondestructive Testing, Inc.	<a href="http://www.asnt.org/">http://www.asnt.org/</a>
ASTC Association of Science Technology Centers	<a href="http://www.astc.org">http://www.astc.org</a>
AWAA American Water Works Association	<a href="http://www.awwa.org/">http://www.awwa.org/</a>
ECUK British Engineering Council	<a href="http://www.engc.org.uk/">http://www.engc.org.uk/</a>
ENSMP European Federation of National Engineering Societies	<a href="http://www.cri.ensmp.fr/feani/">http://www.cri.ensmp.fr/feani/</a>
ESA Ecological Society of America	<a href="http://www.esa.org/">http://www.esa.org/</a>
FMB Federation of Master Builders	<a href="http://www.fmb.org.uk">http://www.fmb.org.uk</a>
FMS Federation of Materials Societies	<a href="http://www.fms.org">http://www.fms.org</a>
HKIE Hong Kong Institute of Engineers	<a href="http://www.hkie.org.hk/">http://www.hkie.org.hk/</a>
HFES Human Factors and Ergonomics Society	<a href="http://www.hfes.org">http://www.hfes.org</a>
ICE The Institution of Civil Engineers	<a href="http://www.ice.org.uk/">http://www.ice.org.uk/</a>
ICHEM The Institution of Chemical Engineers	<a href="http://www.icheme.org.uk/">http://www.icheme.org.uk/</a>
IEE The Institution of Electrical Engineers	<a href="http://www.iee.org/">http://www.iee.org/</a>
IEEE Institute of Electrical and Electronic Engineers	<a href="http://www.ieee.org/">http://www.ieee.org/</a>
IEST Institute of Environmental Sciences and Technology	<a href="http://www.iest.org/">http://www.iest.org/</a>
IFCE International Federation of Consulting Engineers	<a href="http://www.fidic.org/">http://www.fidic.org/</a>
IIE Institute of Industrial Engineers	<a href="http://www.iienet.org/">http://www.iienet.org/</a>
IMEchE The Institution of Mechanical Engineers	<a href="http://www.imeche.org.uk/">http://www.imeche.org.uk/</a>
INFORMS Institute for Operations Research and Management Sciences	<a href="http://www.informs.org">http://www.informs.org</a>
ITEA International Technology Education Association	<a href="http://www.iteawww.org/A.html">http://www.iteawww.org/A.html</a>
IWITTS Institute for Women in Trades, Technology & Science	<a href="http://www.iwitts.com/">http://www.iwitts.com/</a>
JETS Junior Engineering Technical Society	<a href="http://www.jets.org">http://www.jets.org</a>
Marine Technology Society	<a href="http://www.mtsociety.org/">http://www.mtsociety.org/</a>

NAE National Academy of Engineering	<a href="http://www.nae.edu">http://www.nae.edu</a>
NA National Academies (of Sciences, Engineering and Medicine)	<a href="http://www.nas.edu">http://www.nas.edu</a>
NASA National Aeronautics and Space Administration	<a href="http://www.jpl.nasa.gov/education/educators/">http://www.jpl.nasa.gov/education/educators/</a>
NGWA National Ground Water Association (Association of Ground Water Scientists and Engineers)	<a href="http://www.ngwa.org/">http://www.ngwa.org/</a>
NICE National Institute of Ceramic Engineers	<a href="http://www.ceramics.org">http://www.ceramics.org</a>
NSF National Science Foundation	<a href="http://www.nsf.gov/">http://www.nsf.gov/</a>
NSPE National Society of Professional Engineers	<a href="http://www.nspe.org">http://www.nspe.org</a>
SAE Society of Automotive Engineers	<a href="http://www.sae.org/">http://www.sae.org/</a>
SFPE Society of Fire Protection Engineers	<a href="http://www.sfpe.org">http://www.sfpe.org</a>
SIM Society for Industrial Microbiology	<a href="http://www.simhq.org/">http://www.simhq.org/</a>
SNAME Society of Naval Architects and Marine Engineers	<a href="http://www.sname.org/">http://www.sname.org/</a>
SPIE International Society of Optical Engineers	<a href="http://www.spie.org">http://www.spie.org</a>

**Table 2. Engineering Honor Societies**

<b>Engineering Honor Society</b>	<b>Web link</b>
Alpha Sigma Mu Metallurgy and Materials Engineering Honor Society	<a href="http://www.alphasigmamu.org">http://www.alphasigmamu.org</a>
Chi Epsilon National Civil Engineering Honor Society	<a href="http://www.chi-epsilon.org/">http://www.chi-epsilon.org/</a>
HKN Eta Kappa Nu Honor Society for Electrical & Computer Engineers	<a href="http://www.etakappanu.org/">http://www.etakappanu.org/</a>
Omega Chi Epsilon National Chemical Engineering Honor Society	<a href="http://www.omegachiepsilon.org/">http://www.omegachiepsilon.org/</a>
Pi Tau Sigma International Mechanical Engineering Honor Society	<a href="http://www.pitaisigma.net/">http://www.pitaisigma.net/</a>
Sigma Chi Honor Society for Scientific and Engineering Research	<a href="http://www.sigmaxi.org/">http://www.sigmaxi.org/</a>
Tau Alpha Pi National Honor Society for Engineering Technology	<a href="http://www.taualphapi.org/">http://www.taualphapi.org/</a>
TBP Tau Beta Pi National Engineering Honor Society	<a href="http://www.tau.org">http://www.tau.org</a>
The Order of the Engineer (Order of the Ring)	<a href="http://www.order-of-the-engineer.org/">http://www.order-of-the-engineer.org/</a>
UPE Upsilon Pi Epsilon Honor Society for Computing & Information Disciplines	<a href="http://www.acm.org/upe/">http://www.acm.org/upe/</a>

**Table 3. Other Engineering, Science or Technology Related Societies**

<b>Engineering Professional Organization</b>	<b>Web link</b>
AAA American Anthropological Association	<a href="http://www.ameranthassn.org/index.htm">http://www.ameranthassn.org/index.htm</a>
AAAI American Association for Artificial Intelligence	<a href="http://www.aaai.org">http://www.aaai.org</a>
AAAS American Association for the Advancement of Science	<a href="http://www.aaas.org/">http://www.aaas.org/</a>
AACC American Association of Community Colleges	<a href="http://www.aacc.nche.edu/">http://www.aacc.nche.edu/</a>
AACC American Association of Clinical Chemistry	<a href="http://www.aacc.org/">http://www.aacc.org/</a>
AACN American Association of Colleges of Nursing	<a href="http://www.aacn.nche.edu/">http://www.aacn.nche.edu/</a>
AACOM American Association of Colleges of Osteopathic Medicine	<a href="http://www.aacom.org/">http://www.aacom.org/</a>
AACP American Association of Colleges of Pharmacy	<a href="http://www.aacp.org/">http://www.aacp.org/</a>
AACU Association of American Colleges and Universities	<a href="http://www.aacu-edu.org/">http://www.aacu-edu.org/</a>
AADS American Association of Dental Schools	<a href="http://www.aads.jhu.edu/">http://www.aads.jhu.edu/</a>
AAFS American Academy of Forensic Sciences	<a href="http://www.aafs.org">http://www.aafs.org</a>
AAG Association of American Geographers	<a href="http://www.aag.org/">http://www.aag.org/</a>
AAHE American Association for Higher Education	<a href="http://www.aahe.org/">http://www.aahe.org/</a>
AAI American Association of Immunologists	<a href="http://www.aai.org/">http://www.aai.org/</a>
AAMC Association of American Medical Colleges	<a href="http://www.aamc.org/">http://www.aamc.org/</a>
AAPG American Association of Petroleum Geologists	<a href="http://www.aapg.org/">http://www.aapg.org/</a>
AAPM American Association of Physicists in Medicine	<a href="http://www.aapm.org">http://www.aapm.org</a>
AAPS American Association of Pharmaceutical Scientists	<a href="http://www.aaps.org">http://www.aaps.org</a>
AAPT American Association of Physics Teachers	<a href="http://www.aapt.org/">http://www.aapt.org/</a>
AAS American Astronomical Society	<a href="http://www.aas.org/">http://www.aas.org/</a>
AASCU American Association of State Colleges and Universities	<a href="http://www.aascu.org/">http://www.aascu.org/</a>
AAU Association of American Universities	<a href="http://www.tulane.edu/~aau/">http://www.tulane.edu/~aau/</a>

AAUP American Association of University Professors	<a href="http://www.aaup.org/">http://www.aaup.org/</a>
ACA American Crystallographic Association	<a href="http://nexus.hwi.buffalo.edu/aca/">http://nexus.hwi.buffalo.edu/aca/</a>
ACE American Council on Education	<a href="http://www.acenet.edu">http://www.acenet.edu</a>
ACS American Chemical Society	<a href="http://www.acs.org/">http://www.acs.org/</a>
ACPE American Council on Pharmaceutical Education	<a href="http://www.acpe-accredit.org/">http://www.acpe-accredit.org/</a>
American College of Toxicology	<a href="http://www.actox.org/">http://www.actox.org/</a>
American Dental Association	<a href="http://www.ada.org/">http://www.ada.org/</a>
AEA American Economics Association	<a href="http://www.vanderbilt.edu/aea/">http://www.vanderbilt.edu/aea/</a>
AERA American Educational Research Association	<a href="http://www.aera.net/">http://www.aera.net/</a>
AGI American Geological Institute	<a href="http://www.agiweb.org/">http://www.agiweb.org/</a>
AGU American Geophysical Union	<a href="http://www.agu.org/">http://www.agu.org/</a>
AIA American Institute of Architects	<a href="http://www.aiaonline.com/">http://www.aiaonline.com/</a>
AIBS American Institute of Biological Sciences	<a href="http://www.aibs.org/">http://www.aibs.org/</a>
AIChE American Institute of Chemical Engineers	<a href="http://www.aiche.org/">http://www.aiche.org/</a>
AIC American Institute of Chemists	<a href="http://www.theaic.org/">http://www.theaic.org/</a>
AIH American Institute of Hydrology	<a href="http://www.aihydro.org/">http://www.aihydro.org/</a>
AIMBE American Institute of Medical and Biological Engineers	<a href="http://www.aimbe.org">http://www.aimbe.org</a>
AIP American Institute of Physics	<a href="http://www.aip.org">http://www.aip.org</a>
AIR American Institutes for Research	<a href="http://www.air.org/">http://www.air.org/</a>
AMA American Medical Association	<a href="http://www.ama-assn.org/">http://www.ama-assn.org/</a>
AMS American Mathematical Society	<a href="http://www.ams.org/">http://www.ams.org/</a>
AMS American Meteorological Society	<a href="http://www.ametsoc.org/ams/">http://www.ametsoc.org/ams/</a>
ANA American Nurses Association	<a href="http://www.nursingworld.org/">http://www.nursingworld.org/</a>
ANS American Nuclear Society	<a href="http://www.ans.org">http://www.ans.org</a>
AOA American Optometric Association	<a href="http://www.aoanet.org/">http://www.aoanet.org/</a>
AOA American Osteopathic Association	<a href="http://www.osteopathic.org/">http://www.osteopathic.org/</a>
AOCS American Oil Chemists' Society	<a href="http://www.aocs.org/">http://www.aocs.org/</a>
APA American Psychological Association	<a href="http://www.apa.org/">http://www.apa.org/</a>
APHA American Public Health Association	<a href="http://www.apha.org/">http://www.apha.org/</a>
APMA American Podiatric Medical Association	<a href="http://www.apma.org/">http://www.apma.org/</a>
APS American Physical Society	<a href="http://www.aps.org/">http://www.aps.org/</a>
APS American Physiological Society	<a href="http://www.faseb.org/aps/">http://www.faseb.org/aps/</a>
APS American Phytopathological Society	<a href="http://www.scisoc.org/">http://www.scisoc.org/</a>
ASA American Statistical Association	<a href="http://www.amstat.org/">http://www.amstat.org/</a>
ASA American Sociological Association	<a href="http://www.asanet.org/">http://www.asanet.org/</a>
ASA American Society of Agronomy	<a href="http://www.agronomy.org">http://www.agronomy.org</a>
ASBMB American Society for Biochemistry and Molecular Biology	<a href="http://www.faseb.org/asbmb/">http://www.faseb.org/asbmb/</a>
ASCB American Society of Cell Biology	<a href="http://www.ascb.org/">http://www.ascb.org/</a>
ASHS American Society for Horticultural Sciences	<a href="http://www.ashs.org/">http://www.ashs.org/</a>
ASM American Society for Microbiology	<a href="http://www.asm.org/">http://www.asm.org/</a> <a href="http://www.asmmusa.org/">http://www.asmmusa.org/</a>
ASM International (The Materials Information Society)	<a href="http://www.asm-intl.org/">http://www.asm-intl.org/</a>
ASNT American Society for Nondestructive Testing, Inc.	<a href="http://www.asnt.org/">http://www.asnt.org/</a>
ASPB American Society of Plant Biologists	<a href="http://www.aspb.org/">http://www.aspb.org/</a>
ASPP American Society of Plant Physiologists	<a href="http://www.aspp.org/">http://www.aspp.org/</a>
ASTC Association of Science Technology Centers	<a href="http://www.astc.org">http://www.astc.org</a>
AVMA American Veterinary Medical Association	<a href="http://www.avma.org/">http://www.avma.org/</a>
AWAA American Water Works Association	<a href="http://www.awwa.org/">http://www.awwa.org/</a>
Biophysical Society	<a href="http://www.biophysics.org/">http://www.biophysics.org/</a>
ESA Ecological Society of America	<a href="http://www.esa.org/">http://www.esa.org/</a>
FASEB Federation of American Societies for Experimental Biology	<a href="http://www.faseb.org/">http://www.faseb.org/</a>
FMB Federation of Master Builders	<a href="http://www.fmb.org.uk">http://www.fmb.org.uk</a>
FMS Federation of Materials Societies	<a href="http://www.fms.org">http://www.fms.org</a>
Geochemical Society	<a href="http://www.geochemsoc.org/">http://www.geochemsoc.org/</a>

Geological Society of America	<a href="http://www.geosociety.org/">http://www.geosociety.org/</a>
HFES Human Factors and Ergonomics Society	<a href="http://www.hfes.org">http://www.hfes.org</a>
IEST Institute of Environmental Sciences and Technology	<a href="http://www.iest.org/">http://www.iest.org/</a>
INFORMS Institute for Operations Research and Management Sciences	<a href="http://www.informs.org">http://www.informs.org</a>
ITEA International Technology Education Association	<a href="http://www.iteawww.org/A.html">http://www.iteawww.org/A.html</a>
MAA Mathematics Association of America	<a href="http://www.maa.org">http://www.maa.org</a>
NA National Academies (of Sciences, Engineering and Medicine)	<a href="http://www.nas.edu">http://www.nas.edu</a>
NCTM National Council of Teachers of Mathematics	<a href="http://my.nctm.org/eresources/">http://my.nctm.org/eresources/</a>
NIH National Institute of Health	<a href="http://www.nih.gov/">http://www.nih.gov/</a>
NSF National Science Foundation	<a href="http://www.nsf.gov/">http://www.nsf.gov/</a>
NSTA National Science Teacher Association	<a href="http://www.nsta.org/">http://www.nsta.org/</a>
OSA Optical Society of America	<a href="http://www.osa.org/">http://www.osa.org/</a>
The Protein Society (Biology, Medicine & Technology)	<a href="http://www.osa.org/">http://www.osa.org/</a>
SFN Society for Neuroscience	<a href="http://www.sfn.org/">http://www.sfn.org/</a>
SIM Society for Industrial Microbiology	<a href="http://www.simhq.org/">http://www.simhq.org/</a>
Society of Toxicology	<a href="http://www.toxicology.org/">http://www.toxicology.org/</a>

**Table 4. Sites targeting Minorities in Engineering, Science, Technology or Mathematics**

<b>Minority Professional Organizations</b>	<b>Web link</b>
AABE American Association for Blacks in Energy	<a href="http://www.aabe.org/">http://www.aabe.org/</a>
AIMD American Institute for Managing Diversity, Inc.	<a href="http://www.awm-math.org/">http://www.awm-math.org/</a>
AISES American Indian Science and Engineering Society	<a href="http://www.aises.org">http://www.aises.org</a>
AMSE Association of Muslim Scientists and Engineers	<a href="http://www.amse.net/">http://www.amse.net/</a>
ASEE MIND (Minority in Engineering Division)	<a href="http://www.webster.edu/spacecoast/Ali_Shaykhian/MIND/">http://www.webster.edu/spacecoast/Ali_Shaykhian/MIND/</a>
ASPIRA Association for Puerto Ricans in Science and Engineering	<a href="http://www.nas.edu/cwse/ASPIRA.html">http://www.nas.edu/cwse/ASPIRA.html</a> <a href="http://www.aspira.org/">http://www.aspira.org/</a>
GEM National Consortium for Graduate Degrees for Minorities in Engineering and Science	<a href="http://www.nacme.org/">http://www.nacme.org/</a>
HENAAC Hispanic Engineer National Achievement Awards Conference	<a href="http://www.henaac.org/">http://www.henaac.org/</a>
HESTEC Hispanic Engineering Science & Technology Week	<a href="http://www.hestec.org/">http://www.hestec.org/</a>
La Familia Network: the Hispanic family embracing technology	<a href="http://lafamilianet.net/">http://lafamilianet.net/</a>
LACCEI Latin American and Caribbean Consortium of Engineering Institutions	<a href="http://www.laccei.org">http://www.laccei.org</a>
NACME National Action Council for Minorities in Engineering	<a href="http://www.nacme.org">http://www.nacme.org</a>
NCOURAGES National Coalition of Underrepresented Racial and Ethnic Advocacy Groups in Engineering and Science	<a href="http://www.ncourages.org">http://www.ncourages.org</a>
NSBE National Society of Black Engineers	<a href="http://www.nsbe.org/">http://www.nsbe.org/</a>
SACNAS Society for Advancement of Chicanos and Native Americans in Science	<a href="http://www.sacnas.org/">http://www.sacnas.org/</a>
SECME formerly Southeastern Consortium for Minorities in Engineering	<a href="http://www.secme.org/">http://www.secme.org/</a>
SHPE Society of Hispanic Professional Engineers	<a href="http://www.shpe.org">http://www.shpe.org</a>

**Table 5. Engineering, Technology, Science and Mathematics Societies for Women**

<b>Professional Organizations for Women</b>	<b>Web link</b>
AAUW American Association of University Women	<a href="http://www.aauw.org/">http://www.aauw.org/</a>
AAWD American Association of Women Dentists	<a href="http://www.aawd.org/">http://www.aawd.org/</a>
AAWR American Association for Women Radiologists	<a href="http://www.aawr.org/">http://www.aawr.org/</a>
ABIWT The Anita Borg Institute for Women and Technology	<a href="http://www.iwt.org/">http://www.iwt.org/</a> <a href="http://www.anitaborg.org/">http://www.anitaborg.org/</a>
AMWA American Medical Women's Association	<a href="http://www.amwa-doc.org/">http://www.amwa-doc.org/</a>
ASEE Women in Engineering Division	<a href="http://www.csupomona.edu/%7Esparisay/ASEE/WIED/">http://www.csupomona.edu/%7Esparisay/ASEE/WIED/</a>
ASWA American Society of Women Accountants	<a href="http://www.aswa.org/">http://www.aswa.org/</a>
AWC Association for Women in Computing	<a href="http://www.awc-hq.org/">http://www.awc-hq.org/</a>
AWG Association for Women Geoscientists	<a href="http://www.awg.org/">http://www.awg.org/</a>
AWID Association for Women Industrial Designers	<a href="http://www.core77.com/awid/">http://www.core77.com/awid/</a>
AWIS Association for Women in Science	<a href="http://www.awis.org/">http://www.awis.org/</a>
AWiSE Association of Women in Science and Engineering	<a href="http://www.awise.org/">http://www.awise.org/</a>
AWM Association for Women in Mathematics	<a href="http://www.awm-math.org/">http://www.awm-math.org/</a>
AWP Association for Women in Psychology	<a href="http://www.iup.edu/counsl/awpac/">http://www.iup.edu/counsl/awpac/</a>
AWMI Association of Women in the Metal Industries	<a href="http://www.awmi.com/">http://www.awmi.com/</a>
AWSS Association of Women Soil Scientists	<a href="http://awss.homestead.com/">http://awss.homestead.com/</a>
CWSE Committee on Women in Science and Engineering	<a href="http://www7.nationalacademies.org/cwse/">http://www7.nationalacademies.org/cwse/</a>
FWE Forum for Women Entrepreneurs	<a href="http://www.fwe.org/">http://www.fwe.org/</a>
IWITTS Institute for Women in Trades, Technology & Science	<a href="http://www.iwitts.com/">http://www.iwitts.com/</a>
SCWIST Society for Canadian Women in Science and Technology	<a href="http://www.harbour.sfu.ca/scwist/">http://www.harbour.sfu.ca/scwist/</a>
SWE Society of Women Engineers	<a href="http://www.swe.org/">http://www.swe.org/</a>
SWEP Society of Women Environmental Professionals	<a href="http://www.swepweb.com/">http://www.swepweb.com/</a>
Systems On Line (community for women in computing)	<a href="http://www.systems.org/">http://www.systems.org/</a>
WAM Women and Mathematics Network	<a href="http://www.mystery.com/WAM/network/Index.html">http://www.mystery.com/WAM/network/Index.html</a>
Women in Bio	<a href="http://www.womeninbio.org/">http://www.womeninbio.org/</a>
WEPAN Women in Engineering Programs and Advocates Network	<a href="http://www.wepan.org">http://www.wepan.org</a>
Women's Engineering Society (in UK)	<a href="http://www.wes.org.uk">http://www.wes.org.uk</a>
WIEC (IEEE Women in Engineering Committee)	<a href="http://www.ieee.org/portal/pages/committee/women/">http://www.ieee.org/portal/pages/committee/women/</a>
WiSE Women into Science and Engineering	<a href="http://www.lib.iastate.edu/spcl/wise/wise.html">http://www.lib.iastate.edu/spcl/wise/wise.html</a>
WITI Women in Technology International	<a href="http://www.witi.com">http://www.witi.com</a>

### Resources for K-12 Student, Parents and Educators

A critical factor in determining whether a student will be successful in engineering is their exposure to Mathematics. Teachers and counselors profile students into college bound and not college bound during their K-12 years, and have been criticized for not motivating or counseling minority and female students to take rigorous math courses. A poster is available through NACME showing a minority child's hand clenched in the "power" sign of a clenched fist. On the digits are written the letters M, A, T, H and states Math is Power, Demand It.

The ASEE has good publications<sup>1</sup> and activities for K-12 level motivating engineering and technology careers<sup>2</sup>. A report, *Engineering in the K-12 Classroom: An Analysis of Current*

*Practices & Guidelines for the Future*, based on the proceedings from the 2004 Leadership Workshop on K-12 Engineering Outreach is available<sup>3</sup>. The ASEE Engineering K-12 Center offers portals for students and educators. The MAA has many resource materials for motivating Mathematics at the K-12 level<sup>4</sup>. Cornell University sponsors an award winning website<sup>5</sup> with links to educators and students in grades 9-12. ITEA is a professional association for technology education teachers who teach a problem-based learning approach utilizing math, science and technology principles, their web site includes teacher resources, and they publish the *Journal of Technology Education*<sup>6</sup>. NASA provides many activities for K-12 education<sup>7</sup>. The AAAS provides a ScienceNetLink<sup>8</sup> web site that provides lessons, tools, resources, benchmarks. MCI Foundation supports the MarcoPolo<sup>9</sup> website that focuses on K-12 education and technology and provides teacher resources, professional development and a network. SECME, formerly known as the Southeastern Consortium for Minorities in Engineering, offers profession development for teachers, principals and superintendents and provides many programs for K-12 students, including Early College/High School (ECHS), Empowering Parents Program (EP2), ICEMS, JumpStartAtlanta, TeamGirls, and Mathletics.

Teachers often look for profiles of minority or women professionals who have chosen one of the STEM (Science, Technology, Engineering and Mathematics) for their career. A great source of posters, pictures, stories and sometimes direct communications with mentors of color, are the professional societies that focus on underrepresented groups, e.g. NACME, NSBE, SACNAS, SHPE, SWE. Student chapters of NSBE, SHPE and SWE exist in most universities with Colleges of Engineering and can be a source of young guest speakers for K-12 classes. La Familia Network<sup>10</sup> provides many resources at their sites for minority role models and other useful links. AT&T's Virtual Academy<sup>11</sup> offers online courses for integrating technology into curriculum. There are numerous sites with links to fun engineering projects<sup>12</sup>.

The *4000 Years of Women in Science* project provides links biographies, references and photographs of women in science history, including astronomy, mathematics, physics, biology, chemistry, and the social sciences (see <http://www.astr.ua.edu/4000WS/4000WS.html>).

*Contributions of 20<sup>th</sup> Century Women in Physics* is a centenary project of the American Physics Society, can be found at <http://www.physics.ucla.edu/~cwp>

Engineers Week held the third week of February each year produces a web site<sup>13</sup> with many resources and activities appropriate for K-12 and undergraduate students. Celebrating this week with activities and coordinating with local universities will heighten student awareness and motivation for engineering and how creativity is expressed in engineering<sup>14</sup>. As part of African American History Month and Hispanic History Month, some organizations are creating events to inspire minority families into motivating children into STEM disciplines, such as National Hispanic Engineering, Science and Technology Week (HESTEC)<sup>15</sup>.

Many societies hold competitions for the different grade levels. The Engineering Education Student Center publishes a list of competitions<sup>16</sup>. Sally Ride Science<sup>TM</sup> was founded by former NASA astronaut Sally Ride, America's first woman in space, to support girls interested in or who might become interested in science, math, and technology. They support the Sally Ride Science Club<sup>17</sup> for upper-elementary and middle school girls across the country, providing the club newsletter *The Investigator*, and online networking. The Sally Ride Circle<sup>18</sup> networks scientists, engineers, educators, parents, professional women, and science outreach experts to

connect them to the Sally Ride programs and events. The Sally Ride Circle serves as a resource to others in the Circle, and get an email newsletter with relevant information.

One of their activities, the Sally Ride TOYchallenge<sup>19</sup>, cosponsored by Hasbro Toys, Picker Engineering Program at Smith College, and Sigma Xi Scientific Research Society. This Competition supports Sally Ride Science Club Teams to nationally compete in designing toys in teams made of at least 50% girls at the 5<sup>th</sup>-8<sup>th</sup> grade levels.

Sally Ride Science also is publishing an Explore series especially for 9-12 year old readers, the first *What Do You Want To Be? Explore Space Sciences* includes 12 biographies of contemporary women scientist describing what she does, how she got there, and why she enjoys it. The next two books will focus on Earth Science and Health Sciences. The Sally Ride Science Festivals<sup>20</sup> held in different locations, bring together more than 1,000 middle school girls, parents and teachers.

Education Unlimited<sup>21</sup> offers a variety of summer programs for students in grades 4-12. Their A+ Summer Programs<sup>22</sup> held at Stanford University builds proficiency in logic, critical thinking and writing skills, dividing students into two sessions: a 12 day camp for 11<sup>th</sup> and 12<sup>th</sup> graders<sup>23</sup>, and a 9 day camp for 9<sup>th</sup> and 10<sup>th</sup> graders<sup>24</sup>, which focus on critical thinking skills in academic activities: college level writing, research skills, logical thinking/argumentation, study skills, time management, course/major selection, note taking, critical reading, and presentations.

Educational Unlimited<sup>21</sup> and Sally Ride Science Camps<sup>25</sup> sponsor a camp for girls for girls entering 6<sup>th</sup> to 9<sup>th</sup> grades, are overnight 10-day camps held on college campuses designed to interest girls in science, technology and engineering using the Sally Ride Science Curriculum. Entering 11<sup>th</sup> and 12<sup>th</sup> graders can earn college credit and be introduced to the university experience through a variety of special programs. Educational Unlimited<sup>21</sup> and Berkeley offer a Summer Focus at University of California - Berkeley 6-week summer academic enrichment program.

### Resources for Selecting Engineering Programs

The National Action Council for Minorities in Engineering (NACME)<sup>26</sup> offers an easy to use guide to scholarships, engineering majors. This user-friendly site allows students to narrow down their choices of institutions by choosing geographical region, number of undergraduate students, selectivity of the engineering school, top ranked by U.S. News and World Report, NACME rating (1 to 5 stars), and minimum retention rate.

There are a number of historically minority-serving institutions, such as Historically Black Engineering Colleges (HBEC) that offer many scholarships shown in Table 6

**Table 6. Historically Black Engineering Colleges in the U.S.**

College	Location	Web Site
Alabama A& M University	Normal, AL	<a href="http://www.aamu.edu/">http://www.aamu.edu/</a>
Hampton University	Hampton, VA	<a href="http://www.hamptonu.edu/">http://www.hamptonu.edu/</a>
Howard University	Washington, DC	<a href="http://www.howard.edu/">http://www.howard.edu/</a>
Morgan State University	Baltimore, MD	<a href="http://www.morgan.edu/">http://www.morgan.edu/</a>
North Carolina Agricultural and	Greensboro, NC	<a href="http://www.morgan.edu/">http://www.morgan.edu/</a>

Technical State University		
Prairie View A & M University	Prairie View, TX	<a href="http://pvamu.edu/">http://pvamu.edu/</a>
Southern University	Baton Rouge, LA	<a href="http://www.subr.edu/">http://www.subr.edu/</a>
Tennessee State University	Nashville, TN	<a href="http://www.tnstate.edu/">http://www.tnstate.edu/</a>
Tuskegee University	Tuskegee, AL	<a href="http://www.tuskegee.edu/">http://www.tuskegee.edu/</a>

The complete list of Historically Hispanic Institutions can be found in the Hispanic Association of Colleges and Universities (HACU) at <http://www.hacu.net> .

### **Pre-Professional Publications**

There are several publications that are aimed at steering minorities into successful engineering careers, such as *Hispanic Engineer*<sup>27</sup>, *Tecnica*<sup>28</sup>, *Black Engineer*<sup>29</sup>, *NSBE*<sup>30</sup>, *SHPE*<sup>31</sup>. Some have pre-college versions, such as *NSBE Bridge*<sup>32</sup>. And some are targeting the professional minority engineers, e.g. *Career Engineer*<sup>33</sup>.

ASEE publishes *Engineering Go For It!*<sup>1</sup> Targeting the k-12 students.

### **Resources for Finding Funding, Scholarship and Fellowship**

The U.S. Department of Education provides the Free Application for Federal Student Aid website<sup>34</sup> for students to apply for a variety of student financial aid programs, including Pell grants, Campus-based programs, Supplemental Education Opportunity grants, Work Study, Stafford, PLUS and Perkins loans.

Undergraduate and Graduate Scholarships in Naval Engineering can be found at <http://scholarships.fatomei.com/scholar2.html>

Undergraduate and Graduate Scholarship for women in Computer Science include the \$10,000 Google 2005 Anita Borg Scholarships that can be found at <http://www.google.com/anitaborg/>

For African Americans doctoral students, the ASEE offers the Helen T. Carr Engineering Fellowships for African-Americans, funded primarily by GE Fund and NASA for \$10,000.

### **Research Opportunities for Students and Faculty**

National Science Foundation<sup>35</sup> sponsors Engineering Research Centers, engineering-focused interdisciplinary centers in US universities that operate in close partnership with industry. For a complete list of current centers see reference<sup>36</sup>. A Best Practices Manual<sup>37</sup> is available online organized by management roles and functional areas, for anyone who would like to become involved or create new center.

### **Resources for Graduate Students**

The National Science Foundation provides a number of programs for scholarships, fellowships and research experiences. The National Consortium for Graduate Degrees for Minorities in

Engineering and Science (GEM) provides fellowships for minorities entering graduate programs either at the masters or doctoral levels, 1 year and 5 years of support respectively, that pays tuition, a stipend and provides a paid summer internships<sup>38</sup>.

#### Master Fellowships:

NSF's Division of Graduate Education (DGE) provides annually about 1,000 Graduate Research Fellowships<sup>39</sup> Including Women in Engineering and Computer and Information Science Program funding \$40,500 annually: \$30,000 stipend and \$10,500 cost of education allowance per award. The grants provide 3 years of support leading to a masters or doctoral degree for students in the earliest stages of their graduate study. Students may apply during the senior year of college, prior to or during the first year of graduate school, and at the beginning of the second year of graduate school. Applicants must have completed no more than a year of full-time graduate study or the equivalent in part-time study. Applicants must be US citizens or nations (native resident of a US commonwealth or territory, e.g., American Samoa, Guam, Puerto Rico, U.S. Virgin Islands, Northern Mariana Islands). Application deadlines for 2004 for Engineering were in December.

#### Doctoral Fellowships:

The U.S. Department of Defense (DoD) funds the National Defense Science and Engineering Graduate Fellowships<sup>40</sup>, which are portable and allow recipients to pursue graduate studies at a U.S. institution. This program has awarded 2,000 fellowship since its inception 16 years ago, and plans to fund about 180 3-year grants in April 2005 to students with demonstrated abilities in science and engineering, who will pursue a doctoral degree in or closely related to an area of DoD interest within one of the following disciplines: Aeronautical and Astronautical Engineering, Biosciences, Chemical Engineering, Chemistry, Civil Engineering, Cognitive, Neural, and Behavioral Sciences, Computer and Computational Sciences, Electrical Engineering, Geosciences, Materials Science and Engineering, Mathematics, Mechanical Engineering, Naval Architecture and Ocean Engineering, Oceanography, or Physics. Application deadline in 2005 is January 7, notifications are made late March.

NSF's Division of Graduate Education (DGE) provides annually about 1,000 Graduate Research Fellowships<sup>39</sup> Including Women in Engineering and Computer and Information Science Program funding \$40,500 annually: \$30,000 stipend and \$10,500 Cost of Education allowance per award. The grants provide 3 years of support leading to a master's or doctoral degree for students in the earliest stages of their graduate study. Students may apply during the senior year of college, prior to or during the first year of graduate school, and at the beginning of the second year of graduate school. Applicants must have completed no more than a year of full-time graduate study or the equivalent in part-time study. Applicants must be US citizens or nations (native resident of a US commonwealth or territory, e.g., American Samoa, Guam, Puerto Rico, U.S. Virgin Islands, Northern Mariana Islands). Application deadlines for 2004 for Engineering were in December.

NSF DGE provides Graduating Teaching Fellows in K-12 Education<sup>41</sup> allows institutions to provide funding for graduate fellowships that require the student to serve as resources for teachers in science and mathematics instruction. Funding for initial projects is given for up to

three years with potential to apply for follow-on project of up to five years. Follow the referenced link to find the institutions that can provide this opportunity.

NSF DGE also runs the Integrative Graduate Education and Research Training (IGERT)<sup>42</sup> grants. Universities receiving an IGERT grant have unique funding opportunities for their doctoral students with sizable stipends.

ASEE – Helen T. Carr Fellowships for African-Americans<sup>43</sup>: up to \$10,000 per year to students who are pursuing a doctoral degree. Upon doctoral degree completion, fellow is committed to return to one of the HBEC institutions.

### **Resources for PostDoctoral Fellowships:**

Naval Research Laboratories (NRL) sponsors about 40 NRL PostDoctoral Fellowships<sup>44</sup> per year, administered by the ASEE, to research at the following Naval R&D centers and laboratories:

- **Naval Research Laboratory**  
Washington, DC - [www.nrl.navy.mil](http://www.nrl.navy.mil)  
Stennis Space Center, MS - [www.nrlssc.navy.mil](http://www.nrlssc.navy.mil)  
Monterey, CA - [www.nrlmry.navy.mil](http://www.nrlmry.navy.mil)  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nrl-0000.cfm>
- **Naval Air Warfare Center/Weapons Division**  
China Lake, CA  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nawc-ca.cfm>  
Home page: [www.nawcwpns.navy.mil](http://www.nawcwpns.navy.mil)
- **Naval Air Warfare Center/Naval Training Systems Center**  
Orlando, FL  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nawc-fl.cfm>  
Home page: [www.ntsc.navy.mil](http://www.ntsc.navy.mil)
- **Naval Air Warfare Center/Aircraft Division**  
Patuxent River, MD  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nawc-md.cfm>  
Home page: [www.nawcad.navy.mil](http://www.nawcad.navy.mil)
- **Naval Facilities Engineering Service Center**  
Port Hueneme, CA  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nfesc.cfm>  
Home page: [www.nfesc.navy.mil](http://www.nfesc.navy.mil)
- **Naval Surface Warfare Center/Carderock Division**  
Bethesda, MD  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nswc-md.cfm>  
Home page: [www.dt.navy.mil/div/homepage.html](http://www.dt.navy.mil/div/homepage.html)

- **Naval Surface Warfare Center/Dahlgren Division**  
Dahlgren, VA  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nswc-va.cfm>  
Home page: [www.nswc.navy.mil](http://www.nswc.navy.mil)
- **Naval Surface Warfare Center/Dahlgren Division**  
Panama City, FL  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nswc-va.cfm>  
Home page: [www.nswc.navy.mil](http://www.nswc.navy.mil)
- **Naval Surface Warfare Center/Indian Head Division**  
Indian Head, MD  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/nswc-indian.cfm>  
Home page: [www.ih.navy.mil](http://www.ih.navy.mil)
- **Space and Naval Warfare Systems Center**  
San Diego, CA  
Lab Description: <http://www.asee.org/resources/fellowships/nrl/snwsc.cfm>  
Home page: [www.spawar.navy.mil/sandiego](http://www.spawar.navy.mil/sandiego)

North Atlantic Treaty Organization (NATO) offers Advanced Study Institutes (ASI)<sup>45</sup>, and NSF offers travel awards of \$1,000 each to attend. NSF-NATO Postdoctoral Fellowships for Scientists from NATO Partner Countries<sup>46</sup> funds scientists and engineers from NATO partner countries, who are within five years of their doctoral degree and are nominated by a scientific or engineering advisor at a US institution. Deadline has been in the beginning of December. For other NATO Fellowships see Reference<sup>47</sup>.

### **Resources for Transitioning to Faculty or Administrative Positions**

There are several web sites that specialize in advertising academic or administrative positions<sup>48, 49, 50</sup>. The best source for finding Assistant Professor positions is the premier publication targeted to the particular engineering specialty, for example ACM for Computer Science. There are several sources for profiling universities<sup>51, 52, 53</sup>. The Oklahoma State University salary survey provides low, median and high salaries for professors at different ranks organized by discipline<sup>54</sup>. The Chronicle of Higher Education<sup>55</sup> provides median salary data by institutional type (doctoral, master's, baccalaureate, or 2 year)<sup>56</sup>.

### **Resources for Higher Education Faculty**

For advancement and recognition in their profession, faculty must document excellence in at least one their areas of assigned responsibility: teaching, service and research. There are many awards offered by the engineering professional organizations for recognition at different career stages, such as the ASEE Section and Division awards for teaching, service and best paper.

For faculty development: A non-profit organization established in 1944, the International Engineering Consortium<sup>57</sup> publishes a free monthly newsletter and provides extensive, free, on-line educational programs in high-tech areas.

U. S. Air Force Summer Faculty Fellowship Program<sup>58</sup>, administered by the ASEE, offers 8-12 week research residencies at participating Air Force Research Facilities for full-time science and engineering faculty at U.S. colleges and universities. It provides mentoring under Air Force researchers to faculty who are citizens or legal permanent residents of the U.S. Research is conducted at an Air Force Research Laboratory, the U.S. Air Force Academy, or the Air Force Institute of Technology. Participants receive a weekly stipend depending on their academic rank (in 2005 it varies from \$1,250/week for Assistant Professors to \$1,650/week for Professor). Additionally the participant receives a temporary moving allowance and a \$50/day expense allowance for those with more than a 50 mile commuting distance. Application deadline in 2005 is: January 7 and notification is made by March.

NASA also sponsors a NASA Faculty Fellowship Program (NSFF)<sup>59</sup> administered jointly by ASEE and the Universities Space Research Association(USRA). It is a 10 week summer research residency at participating NASA research centers. It combines two successful former and long running NASA programs, the NASA/ASEE Summer Faculty Fellowship Program and the NASA/USRA Joint Venture (JOVE) program. The stipend is \$1,200/week, and provides relocation allowance of \$1,500, plus travel expenses of up to \$1,000. Application deadline in 2005 is: February 1, and notification is mid-March.

### **Resources for Finding Grant Opportunities in Engineering, Technology and Education**

Grants.Org and SchoolGrants.Org list opportunities for funding engineering and technology education.

BellSouth edu.pwr3 is a 2 year \$10 million program of the BellSouth Foundation<sup>60</sup> to help school leaders, teachers and students fully harness the power of technology for learning.

NSF DGE provides Graduating Teaching Fellows in K-12 Education<sup>41</sup> allows institutions to provide funding for graduate fellowships that require the student to serve as resources for teachers in science and mathematics instruction. Funding for initial projects is for up to three years with potential to apply for follow-on project of up to five years. A Letter of Intent is required. In 2004 the deadline was May 05 with full proposal due June 02.

NSF DGE also runs the Integrative Graduate Education and Research Training (IGERT)<sup>42</sup> grants. Universities receiving an IGERT grant have unique funding opportunities for their doctoral students with sizable stipends. Faculty and Administrators you want to apply for funding for their universities be advised that the deadlines for 2005 are: February 4 preliminary proposal, August 25 formal proposal.

Grants.Gov provides an electronic venue for searching for grant opportunities in over 900 Federal grant programs offered by 26 Federal grant-making Agencies

## Resources targeting Minorities and Women

The GE Faculty for the Future program (see <http://www.facultyforthefuture.org>) is a ten year, \$20 million initiative of the GE Foundation and WEPAN to increase the number of women and under-represented minorities faculty in engineering, related sciences and business. It has assisted nearly 200 students, who have earned PhD degrees and accepted faculty positions with over 900 students in the pipeline. The website links a diverse pool of women and under-represented minority candidates from engineering, science, and business with faculty and research positions at universities across the country.

## Research on Underrepresented Minorities in Science and Engineering

The National Science Foundation (NSF) provides a demographics figures and tables on women, minorities and persons with disabilities in Science and Engineering at <http://www.nsf.gov/sbe/srs/wmpd/list.htm>. The National Academy of the Sciences Committee on Women in Science and Engineering publishes statistics at <http://www.nsf.gov/sbe/srs/wmpd/list.htm>. A faculty study on gender equity and climate at Research 1 institutions is at [http://www7.nationalacademies.org/cwse/gender\\_faculty\\_links.html](http://www7.nationalacademies.org/cwse/gender_faculty_links.html).

The *Journal of Women and Minorities in Science and Engineering* is published by Begell House, Inc., 145 Madison Ave., NY, NY 10016-7892. Phone: 212 725-1999; Fax: 212 213-8368. See <http://www.begellhouse.com>. This journal publishes original, peer-reviewed papers on innovative ideas and programs, scientific studies, and formulation of concepts related to education, recruitment, and retention of underrepresented groups in science and engineering.

## Networks for Women

The National Academy of Sciences Committee on Women in Science and Engineering keeps a directory of organizations encouraging women in science and engineering. Organized by discipline: <http://www8.nationalacademies.org/cwse/ViewbyDiscipline.asp>; and organized by title: <http://www8.nationalacademies.org/cwse/Viewbytitle.asp>.

- **Association for Women in Computing** – promotes the advancement of women in the computing professions. <http://www.awc-hq.org>
- **Sisters in Science** is an NSF-funded program seeking to increase elementary school girls' interest and achievement in science and mathematics, to create a more positive learning climate for minority school girls and their families, and to increase parents' understanding of their influence in promoting girls' interest and achievement in science and mathematics. (see <http://www.temple.edu/SIS/> )
- **System Online** – Includes more than 2550 members from 38 countries, maintained by the Anita Borg Institute. It is largest all-female online community of women in computer science and was the original online community specifically designed for women in computing. (see <http://www.iwt.org/systems.html> and <http://www.systems.org/> )

- **WEPAN – Women in Engineering Programs and Advocates Network** – WEPAN's homepage is at <http://www.engr.washington.edu/~wepan/>. It sponsors the project: *MentorNet*, the National Electronic Industrial Mentoring Network for Women in Engineering and Science, available at <http://www.mentornet.net/>.
- **WISE Campaign – Women Into Science and Engineering** has initiatives and publications to give girls and women information about opportunities and careers in Science, Engineering and Technology. Their web site is located at <http://www.awise.org/>. Their address is WISE, 22 Old Queen Street, London UK SW1H 9HP. Telephone: 020 7227 8421. Fax: 020 7227 8401. Email: <mailto:wisecampaign@semta.org.uk>
- **WISNET: Women in Science and Engineering Network** – The focus of this group is issues relevant to the education and employment of women in the sciences, mathematics, and engineering. To subscribe, send a message to [listserv@UICVM.CC.UIC.EDU](mailto:listserv@UICVM.CC.UIC.EDU), no subject, with the message "subscribe wisenet first\_name last\_name".
- **WITI: International Network of Women in Technology** – An organization committed to supporting professional development, personal growth and self-improvement for women in science and technology. WITI maintains a substantial Web site called *The WITI Campus* at <http://www.witi.com> and also offers a free electronic newsletter called *The Strategist Online* available at <http://www.witi.com/Center/Offices/WitineWS/Strategist/>. Internet: [witi-request@aero.org](mailto:witi-request@aero.org), [gillam@aero.org](mailto:gillam@aero.org)
- **Women in Engineering Program Advocates Network (WEPAN)** – Founded to provide greater access for women to careers in engineering. Assists colleges and universities to establish innovative programs or expand existing programs. WEPAN includes representatives from industry, government and academia. For more information write: *WEPAN member services, c/o Purdue University, 1284 CIVL Building, Room G293, West Lafayette, IN 479071284. Phone: (317) 494-5387. Fax: (317) 496-1349. Email: [wiep@ecn.purdue.edu](mailto:wiep@ecn.purdue.edu)*
- **Women in Mathematics Information Server** – is an activity of the Mathematical Association of America Committee for the Participation of Women. Useful links can be found at <http://www.mystery.com/WAM/network/Index.html>. for events such as Women Count Conference, Mathematics Awareness Week, Expanding Your Horizons in Science and Mathematics, Math Options, Sonia Kovalevsky Days and other events sponsored by MAA and other organizations, as well as other useful resources.
- **WOMUNSCI - Women Undergraduates in Science** – WOMen UNDERgraduates in SCience is a mailing list for discussing increasing participation of undergraduate women in science. Membership is open to college science educators and administrators (of both genders) and women undergraduates interested in science. To subscribe to WOMUNSCI, send mail to [majordomo@cs.umass.edu](mailto:majordomo@cs.umass.edu) with *subscribe womunsci your-email-address-here (your-name-here)* in the body of the message, the subject line is ignored.

## Resources for Engineering Deans and Chairs

The American Society of Engineering Education publishes annually *Profiles of Engineering and Engineering Technology Colleges*<sup>61</sup>, which provides data on enrollment, degrees awarded, faculty and research expenditures at the undergraduate and graduate levels. The AAES publishes the *Engineering & Technology Degrees* every year, with data of the number of engineering students awarded degrees in the US in engineering and engineering technology. The Harris Poll conducts a survey for the AAES, *American Perspectives on Engineers and Engineering*, which also provides trend data.

## Conclusions

There are many links for resources for engineering education but there is not one site where the student, parent, educator, administrator, counselor, or professional engineer can go to find them, especially those targeting minorities. Lack of information translates to loss opportunities. This paper is the beginning of the research to form such a site to be placed in the ASEE MIND (Minorities in Engineering Division) website. Emails to the author at [petrie@fau.edu](mailto:petrie@fau.edu) with information on additional links or information are greatly appreciated.

## References

- <sup>1</sup> *Engineering Go For It!* American Society for Engineering Education, <http://www.engineering-goforit.com/>
- <sup>2</sup> ASEE Engineering K-12 Center, <http://www.engineeringk12.org/>
- <sup>3</sup> *Engineering in the K-12 Classroom: An Analysis of Current Practices & Guidelines for the Future*, [http://www.engineeringk12.org/Engineering\\_in\\_the\\_K-12\\_Classroom.pdf](http://www.engineeringk12.org/Engineering_in_the_K-12_Classroom.pdf)
- <sup>4</sup> Calculus for kids. Mathematics Association of America, [http://www.maa.org/pubs/calc\\_articles.html](http://www.maa.org/pubs/calc_articles.html)
- <sup>5</sup> The Cornell University Math and Science Gateway, <http://www.tc.cornell.edu/Edu/MathSciGateway/>
- <sup>6</sup> *Journal of Technology Education*, <http://scholar.lib.vt.edu/ejournals/JTE/>
- <sup>7</sup> NASA Education Gateway, <http://www.jpl.nasa.gov/education/educators/>
- <sup>8</sup> ScienceNetLinks, American Association for the Advancement of Science, <http://www.sciencenetlinks.com/>
- <sup>9</sup> MarcoPolo Internet Content for the Classroom, <http://www.marcopolo-education.org/>
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## Biographic Information

MARIA M. LARRONDO PETRIE: Dr. Petrie is Associate Dean of Engineering and Professor of Computer Engineering at Florida Atlantic University. She serves on the ASEE Minority Division Board, is Vice President of Research of the Latin American and Caribbean Consortium of Engineering Institutions, was on the ACM SIGGRAPH Education Board and was President of Upsilon Pi Epsilon Honor Society for the Computing Sciences.