

# SOCIETY OF WOMEN ENGINEERS NEWS RELEASE

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FOR IMMEDIATE RELEASE  
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July 1994

## BARBARA COVALUS FAUST ELECTED TO 1994 SWE COLLEGE OF FELLOWS

Barbara Covalus Faust has been elected to the 1994 SWE College of Fellows. The Fellow grade of membership is an honor conferred on Society members in recognition of their outstanding service to the advancement of public awareness of engineering as a profession for women, and who have been recognized for their contributions to the fields of engineering and/or engineering management.

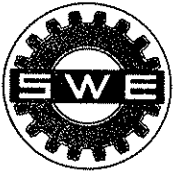
Faust is an excellent model of a woman engineer at her best. She was the first woman to receive a B.S. in Engineering Science from the Pennsylvania State University and the first woman to complete the Space Technology Engineering Program at General Electric (GE). Faust has been recognized for her performance at GE AstroSpace and she is respected for her contributions to the defense community. During her 28 years at GE, she developed a reputation for excellence in interdisciplinary engineering assignments and for encouraging other engineers and technicians to stretch their technical imaginations in developing creative design solutions. Currently, she is a Program Manager for Technology Assessment Programs with Martin Marietta AstroSpace in Valley Forge, PA.

Faust is a member of Sigma Pi Sigma, Pi Mu Epsilon and the American Institute of Aeronautics and Astronautics. She holds an M.S. in Engineering Mechanics from the University of Pennsylvania. Faust has been honored by her alma mater by

appointments to serve on the Industrial and Professional Advisory Council to the Penn State College of Engineering and is currently on the Board of Directors of the Penn State Engineering Society.

The Society of Women Engineers (SWE) is a non-profit educational service organization of women and men dedicated to expanding the image of the engineering profession as a positive force in the quality of life. SWE has an international membership of more than 16,000 women and men with sections in 78 areas of the United States and Puerto Rico.

Society of Women Engineers  
National Records  
Walter P. Reuther Library  
Wayne State University



# SOCIETY OF WOMEN ENGINEERS

March 17, 1994

Barbara Covolus Faust  
330 S. Fourth Street  
Perkasie, PA 18944

Dear Barbara,

It is with great pleasure to announce your election to the Society of Women Engineers College of Fellows, 1994, having been nominated by your peers and your contributions and accomplishments judged by the Fellows of the Fellows Selection Committee. Congratulations. Fellow grade membership is conferred on members of SWE in recognition for their service to the advancement of public awareness of engineering as a profession and recognized contributions to the fields of engineering and/or engineering management. Again, let me extend my congratulations.

You as a newly elected Fellow will be honored at the Annual Membership Breakfast of the National Convention, Saturday, June 25, 1994, 7:30 am - 10:30 am in Pittsburgh and your presence is requested. Later in the day please join us for a Fellow Social 4:30 pm - 6:00 pm preceding the Achievement Award Reception and Banquet. The social will provide an opportunity to get to know your Fellow fellows and meet the Achievement Award Recipient.

Please let me know of your convention plans as soon as possible. Special tables will be reserved in front, so I will need a count on who will attend. I am also enclosing for your record the biography that will be used in the program information.

Congratulations, once again, and I hope to see you in Pittsburgh.

Regards,

G. Jean Hoppert, P.E.  
SWE Fellow Selection Coordinator

343 North Elmwood Lane  
Palatine, IL 60067-7711

W 312 745 2234  
H 708 925 0013

## **Barbara Covolus Faust**

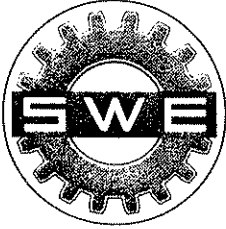
By her exemplary technical activities as well as her inspired and inspiring dedication to the goals of SWE, Barbara Faust is an excellent example of a woman engineer at her best. Ms. Faust was the first woman to receive a BS in Engineering Science from the Pennsylvania State University and the first woman to complete the Space Technology Engineering Program at GE.

Ms. Faust has been recognized for her performance at GE AstroSpace and is respected for her contributions to the defense community. During her 28 years at GE, she has developed a reputation for excellence in interdisciplinary engineering assessments and for encouraging other engineers and technicians to stretch their technical imaginations in developing creative design solutions.

An active member of SWE for more than 28 years, she has served many terms as a Philadelphia Section Officer and she continues to participate in career guidance activities, particularly for elementary and high school students. She has also served on the national level as New Section Coordinator for SWE. Ms. Faust is currently a Program Manager for Technology Assessment Programs with Martin Marietta AstroSpace in Valley Forge, PA. She is a member of Sigma Pi Sigma and Pi Mu Epsilon and she holds an MS in Engineering Mechanics from the University of Pennsylvania. Ms. Faust has been honored by her alma mater by appointments to serve on the Industrial and Professional Advisory Council to the Penn State College of Engineering and is currently on the Board of Directors of the Penn State Engineering Society, bringing to campus her valuable expertise both as an engineer and a manager.

Life Member

Nominated by Philadelphia Section



# SOCIETY OF WOMEN ENGINEERS

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## Philadelphia Section

% The Engineers Club of Philadelphia

470 Public Ledger Building, Sixth and Chestnut Streets, Philadelphia PA 19106

December 14, 1993

To: SWE Fellow Selection Committee

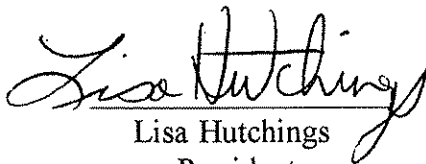
Enclosed for your consideration is a Fellow nomination package for **Barbara Covolus Faust**. Reference letters are included from:

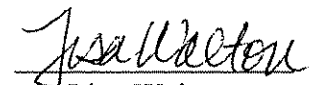
- a, Dorothy M. Hoffman, SWE Fellow
- b. Yvonne C. Brill, SWE Fellow
- c. Ms. Bernadette L. Maguire
- d. Mr. Eugene C. Raters

Also included are the candidate's photo and biography .

If there are any questions regarding this package, please do not hesitate to call.

Yours truly,

  
Lisa Hutchings  
President

  
Lisa Walton  
Council of Sections  
Representative

## I. SOCIETY OF WOMEN ENGINEERS LEADERSHIP/SERVICE

There are few members who have demonstrated more dedication to implementing SWE's objectives than Barbara Faust. The combination of her own enthusiasm and excellent example has made her efforts outstandingly successful. She has distinguished herself as a pioneer for women in engineering and serves as an inspiration to women seeking careers in engineering. She has worked tirelessly to encourage other women to pursue and succeed in technical work. She has been consistently active in career guidance at the elementary and high school levels convincing young women of both the sense of high purpose and sense of responsibility inherent in pursuing a career in engineering. In so doing she has also raised the public awareness of the activities of SWE.

As a SWE member, Barbara has been an unflaggingly active member at the section, region and national society level. Barbara joined SWE as a student member in 1963. She became a member of the Philadelphia Section in 1964 and since that time has been one of the section's cornerstones. The Section would be lost without her, as can be seen from the listing of her section service record. Barbara's section activities have included serving as Secretary and/or Vice President several times (1965-70) and President (1972-75). Other section positions she has held/holds are:

1971-81	Newsletter Editor
1982-90	Chair, Resources and Speakers Bureau
1987-92	Girl Scout Day Program Committee
1988-present	Certificate of Merit Program Committee
1989-92	Chair, Awards Committee
1993-94	Section Treasurer

The most remarkable thing about Barbara in all of her Philadelphia section activities is that even after decades of volunteer effort, she tackles each new assignment for the section with all the zeal of a "just beginner".

Barbara is a SWE Life Member and a regular attendee at SWE national and regional conventions. At the national level, Barbara was the Philadelphia CSR Representative from 1976 to 1979 in addition to serving many times as a CSR alternate at convention. She has consistently encouraged the participation of her company in Convention Exhibits and Job Fairs, and in underwriting "take a student to dinner" events at the national conventions. Barbara also encouraged GE to participate in Job Fairs at Student Regional Meetings, where Barbara over the years has enthusiastically explained careers in aerospace to hundreds of engineering students. She was a member of the Local Arrangements Committee for the 1980 national convention in Cherry Hill, NJ. She was also a Steering Committee member for the highly successful Regional Conference, "Transition from Engineering to Management", hosted jointly by the Twin Tiers, Lehigh Valley and Philadelphia Sections in the Poconos in October 1980. In 1983-87 she served on the national Membership Committee as New Section Coordinator. Barbara fulfilled the job of new section coordinator with her characteristic enthusiasm and thoroughness, keeping careful track of the status of the sections-in-formation, helping them overcome obstacles as they arose to truly expedite section chartering. At the regional level, she put a great deal of personal effort into getting the fledgling Lehigh Valley Section started. Barbara was a member of the 1987 AdHoc Committee to study regional boundaries prior to SWE regionalization. In 1993, she served on the national scholarship review and selection committee for Freshman Scholarships, a task which requires screening and evaluating thousands of applicants for the relatively small number of scholarships available. Earlier she served on the review and selection committee for Junior and Senior Scholarships. Her enthusiasm for working with students led her to assist in organization of a new student section at Lehigh University and serve as their SWE counselor from 1975-77. She has since served as SWE counselor for the Student Section at Drexel University, playing a key role in getting the Drexel University student section reactivated.

## 2. PUBLIC AWARENESS SERVICE

It is difficult to separate Barbara's public awareness service from her contributions to SWE as they go hand in hand. Some specific examples of public awareness service are:

Within her company she has raised the awareness of management and the engineering work force of the activities of the Society of Women Engineers (SWE), and is herself a constant example of the contributions of women to the engineering community. She has served as a role model to many coworkers. She edited and was responsible for encouraging GE to publish the book "Women's Technical Contributions" which profiled the contributions and lives of women engineers and scientists. This book received wide distribution at the 1980 SWE convention in Cherry Hill, NJ. It is a very useful tool to create public awareness of women's significant contributions. She encouraged GE participation at regional conferences and national conventions.

Within the engineering community, Barbara served for many years as the SWE delegate to the Engineering Technical Societies Council (ETSCO) of the Delaware Valley thereby giving women engineers a voice in an important regional male dominated technical organization. From the combined, but separate, tenures on this Engineering Council of Barbara Faust and Dorothy Hoffman, women engineers and SWE have gained notable recognition.

Within the community at large Barbara has been involved in many programs which greatly increased public awareness of opportunities in engineering careers for women. She has acted many times as a Science Fair Judge for elementary and middle schools in Philadelphia and Montgomery County. She was an enthusiastic and faithful participant for more than ten years in the Delaware Valley annual Engineers' Week programs for high school teachers and guidance counselors. She also actively participated in all of ETSCO's Career Day programs for junior and high school students. She was the ETSCO Speaker's Bureau Chair, arranging for engineers to speak at community functions about careers in engineering and other related topics. From 1987 to 1992 she participated in the Girl Scout Day program which gives local Girl Scouts an insight into engineering as a career for women. She is presently Chair of the SWE Philadelphia Certificate of Merit program which honors junior and senior high school women who achieve three years of excellence in math and science. These certificates are typically presented to the recipient at the High Schools Award Program and Barbara has gone to many commencement award programs to present certificates personally.

Within the university community, Barbara has been an outstanding contributor to her alma mater, Penn State University. She has regularly attended student regional conferences when hosted by the Penn State Student Section, being involved as a speaker, company exhibitor or job fair participant (sometimes all three at the same conference). She served on the Penn State University Industrial and Professional Advisory Council from 1984 to 1986. She also served on its Women in Engineering Advisory Board programs from 1988 to 1990. She is presently a member of the influential Penn State University Engineering Society Board of Directors (1986-present). In each of these areas Barbara has served as a valuable resource, bringing to campus her valuable experience as an engineer and as a manager.

There is no question that Barbara is, in every endeavor that she undertakes, an excellent ambassador for women engineers.

### **3. RECOGNIZED CONTRIBUTIONS TO THE FIELDS OF ENGINEERING AND ENGINEERING MANAGEMENT**

Upon graduation from Penn State in 1964 Barbara joined GE (General Electric) as a member of the Space Technology Engineering Program (STEP), a highly selective program open only to top Engineering graduates, and at that time, an all male program. The start of Barbara's career at GE is symbolic of her whole career. Today, Barbara is nationally recognized as one of the most innovative engineers in her field and she is still a pathfinder for women in an almost exclusively male environment.

After completion of the two-year STEP program at GE, Barbara specialized in nuclear hardening and vulnerability assessment, an area requiring strong analytical skills and solid knowledge of structural and material response phenomenology. She grew from support engineer to lead engineer, contributing substantially to the development of U.S. Strategic Ballistic Systems. In 1970, Barbara transferred to the GE TEMPO Data Analysis and Information Center at Santa Barbara. Here, she further developed her system analysis skills, working with some of the country's premier technical talent on a broad range of problems and systems. In 1972, she joined the GE Space Sciences Laboratory, again involved with complex problems associated with hypersonic vehicles performing precise missions in highly stressful environments. Barbara was now functioning as a senior staff member, with full project responsibility and supervision of junior personnel. She was no longer working as a technical specialist but rather as a broad thinker for a wide range of system issues. By the late 1970's, Barbara had moved into another scientific environment, this time into a highly classified arena where her independent thinking, strong analytical skills and creativity would contribute significantly to the defense of the country. In the small, but critical, community in which she functions, Barbara is recognized as a national leader. This recognition comes from her peers, not only within GE, but from the specialized technical community, both private contractors and government scientists. Even more importantly, this recognition comes from her "customers", the users of her results. Since 1985, Barbara has been not only the technical leader, but also the business leader for specialized defense contracts in this area.

While the details of Barbara's contributions cannot be discussed, the methodology can be. Working with limited data bases, Barbara and her team must postulate a potential set of events and conditions that could have produced the data and then, develop a total system description that is consistent with the postulation. Further, this scenario must be coupled with the results of other study teams to form a total picture which is self consistent and which can lead to further technical innovations and system solutions. This is when peer review surfaces. Unlike other engineers, the results of Barbara's work are not found in the open literature. However, the free interchange of results in the specialized technical community easily reveals the strength of the analyses and the credibility of the synthesized system description. Because of the limited data, Barbara must exercise prudent creativity based on sound engineering practices and her own extensive background in these areas as she develops her solutions. Even more demanding is her need to draw on the specialized expertise of others. She is a superb team leader and has the ability to draw excellent results from both experienced engineers as well as the less experienced ones. It is in this role, working with young engineers, that Barbara has an interesting impact. Often it is the first time that the newer engineers have worked with a woman as leader. Her professionalism and in-depth technical ability are self evident; her organization skills result in clear task definitions and scheduling, and her openness to the ideas of others gives them the self confidence to stretch their technical imaginations.



#### 4. EDUCATION/WORK

##### Education

B.S. Engineering Science, Penn State University, University Park, PA, 1964

M.S. Engineering Mechanics, University of PA, Philadelphia, PA, 1967

Certificate, Scanning Electron Microscopy, Lehigh University, PA, 1976.

##### Work History

###### Accomplishment Summary:

- as an invited participant, made significant contributions to national level working group activities
- delivered good, quality technical products to the customers
- provided excellent multidisciplinary data analysis and interpretative skills to study tasks
- history of getting technical support and cooperation from personnel outside the direct administrative organization
- instrumental in bringing in additional contract funding and follow-on contracts
  
- 4/93 - present: **Martin-Marietta Astrospace, King of Prussia, PA.** Employer name change due to company buy-out. Program Manager, Technology Assessment. As a Program Manager, Barbara is assigned the responsibility and delegated the authority for managing the resources allocated to meet program requirements and goals. Her responsibilities include interpretation of contract requirements, creation of plans to accomplish those requirements, establishment of schedules, allocation of tasks and ensuring compliance with all contractual requirements and company policies.
  
- 12/89-4/93: **GE/Reentry Systems Division;** Program Manager, Reentry Technology Assessment. Duties: four contract efforts transferred from Military and Data Systems Operation; three of the four have follow-on efforts out to five years; the fourth contract is still active.
  
- 7/85-11/89: **GE/Military and Data Systems Operation;** Manager, Intelligence Analysis Programs. Program manager for four government contract efforts; foreign RV performance and design evaluations; proposal management and direction.
  
- 3/81-7/85: **GE/Military & Data Systems Operation;** Systems Engineer. Intelligence data analysis; IRAD Project Manager; nuclear fallout hardened mobile shelters.
  
- 7/80-3/81: **GE/Advanced Energy Programs;** Engineer, Materials. Material characterization and failure analysis.

## Work History, continued

- 7/72-7/80: **GE/Space Sciences Laboratory**; Engineer, Applied Physics. Material characterization; foreign RV system analyses.
- 1/71-6/72: Leave of absence.
- 3/70-12/70: **GE/TEMPO**; Professional Staff Member. Nuclear weapons effects and structural response analyses
- 1/69-3/70: **GE/Reentry Systems Division**; Engineer, Damage Assessment. RV survivability.
- 6/66-12/68: **GE/Reentry Systems Division**; Engineer, Environmental Physics. Nuclear shielding, hardening, and survivability; non-nuclear vulnerability.
- 6/64-6/66: **GE/Missiles & Space Division**: STEP Engineer. Vulnerability and hardening (US); optical discriminants; optical data analysis; vulnerability and hardening (foreign systems).

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## 5. PUBLICATIONS/HONORS

•**Patents:** None.

•**Honors and Awards:**

- Society of Women Engineers - Philadelphia Section Hall of Fame, 1991
- GE PRIDE Award - Military & Data Systems Operation/MAT, 1989
- Penn State University Engineering Society Board of Directors (1986-present)
- Penn State University Industrial Advisory Council (1984-86)
- Selected for GE STEP Program, 1964
- Pi Mu Epsilon, Math Honor Society (1963)
- Sigma Pi Sigma, Physics Honor Society (1963)

•**Publications:**

- Publications are in the classified literature; author/co-author of 36 Working Group Papers to US Government ; more than 20 additional publications.

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## 6. CIVIC/ PROFESSIONAL SERVICE

- American Institute of Aeronautics and Astronautics (AIAA), member
- Microbeam Analysis Society, member
- member, Penn State University Women in Engineering Advisory Board, 1988-90
- member, Board of Directors, Penn State University Engineering Society, 1986 - present
- member, Penn State University Industrial and Professional Advisory Council to the College of Engineering, 1984-86
- SWE delegate to Engineering Societies Technical Council (ETSCO) of the Delaware Valley
- participant for ten years in Delaware Valley Engineers Week programs for high school teachers and guidance counselors
- participant for ten years in ETSCO Career Guidance Day programs for junior and high school students
- Speaker's Bureau Chairperson for ETSCO. Arranged for engineers to give talks to civic and professional groups
- Science Fair Judge, Philadelphia and Montgomery County elementary and high schools

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