

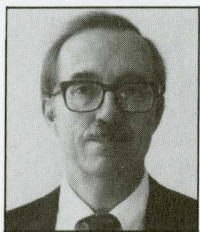
IEEE

IMPACT

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1991 PACE Workshop Explores Employment and Education Issues



by **Robert T. Nash**, Editor
Professional Activities Council
for Engineers

One theme—concern for the well-being of members—dominated the 1991 PACE Workshop held over Labor Day weekend in Philadelphia, Pennsylvania. A number of sessions focused on employment and education issues, which I will highlight in this report. An overview of the Workshop is given in this issue by the PACE Council Chairman, Robert P. Noberini.

Three factors currently influence the demand for engineers, especially electrical engineers. Reductions in defense expenditures and in the number of managerial levels in large manufacturing firms, as well as the current recession, have created a buyer's market for engineers.

In a plenary session on employment issues, David McLaren, Chairman of IEEE-USA's Employment Assistance Committee, described the agreements that enabled The Lendman Group to conduct Job Fairs and Job Search Seminars for IEEE Sections and Councils throughout the United States. Mr. Lendman reported that 30 of these events were held in 15 cities between October 1990 and July 1991. During July, more than 250 IEEE members attended the Seminar in San Jose, California, while 2,000 members came to the Job Fair. The schedule for these employment assistance activities appears in each issue of *Impact*.

Richard Ellis of the Engineering Manpower Commission discussed other factors that influence the demand for engineers, such as reductions in limits on immigration, a greater tendency to contract out engineering work, and a continuing increase in multinational operations. In a brief discussion of the "shortage vs. surplus" issue, IEEE-USA Manpower Committee member Robert Rivers pointed out that labor shortages are accompanied by rising real wages, a condition that certainly does not exist currently.

Finally, employment session organizers drew upon experience gained in California, where mobility is a way of life. Claudia Lindquist, founder and owner of

TechniQuest, an engineering search firm in Santa Clara, California, provided participants with techniques essential to conducting a job search.

The second major topic covered during the Workshop was education and IEEE-USA's efforts to improve it. Michael Andrews, Chairman of the Precollege Education Committee, reported on the creation of the National Coalition of Engineering Societies for Precollege Mathematics and Science Education and its program called "Engineers for Education." Involving 45 engineering societies, the Coalition's goal is to enlist 100,000 engineers to work with elementary and secondary school students as volunteers.

To help achieve this objective, Workshop leaders asked Section PACE Chairmen to take three actions. First, at least one member in each IEEE Section should be designated to work on the program. Second, the designated members should determine how many precollege educational activities are already being conducted locally, such as MATHCOUNTS, or TEAMS competitions and science fairs, and the extent to which they are supported by various engineering societies. Finally, our designated members must work with other engineering societies, by using any existing intersociety structures or by creating them, in order to make "Engineers for Education succeed."

Professional awareness on the part of engineering students was also spotlighted. Through Student Professional Awareness Conferences (S-PACs) IEEE-USA's Student Professional Awareness Committee provides guidance on career development in the latter stages of an engineering student's education. Committee Chairman Cecelia Jankowski called upon PACE Chairmen to assist the Committee by encouraging IEEE Student Branches in their areas to hold SPACs and by identifying

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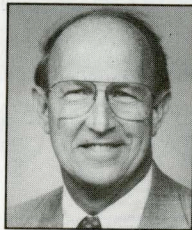
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UNITED STATES ACTIVITIES



IMPACT

On Engineering Employment Supply and Demand

Employment is a basic professional need, and an adequate supply of capable and talented engineers is a basic national resource. While these two concerns are not diametrically opposed, they do press in somewhat different directions. Maximum employment opportunities exist in times of short supply, but employers, universities, and such agencies as the National Science Foundation may argue that the pool of available engineers can never be too large.

Predictions of future employment demand influence the future supply because many high school students and their counselors respond to those forecasts. The response time is, of necessity, rather long—about four to five years. Forecasters who attempt such long-term predictions are about as accurate as economists.

Against this background, AAES held an Engineering Manpower Conference recently to explore engineering manpower forecasting. USAB was well represented at the meeting, and Frank Lord and Gerry Gordon will report on the views and findings of the conference in *Impact* next month.

—Pete Rodrique
Editor in Chief

Job Fairs Update

IEEE Job Fairs and Job Search Seminars will be held at these locations during November and December 1991.

DATE	LOCATION	EVENT
November 2	Boston Section	Job Search Seminar
November 2	Nat'l. Capital Area Council	Job Search Seminar
November 4-5	New York Section	Job Fair
November 4-5	Nat'l. Capital Area Council	Job Fair
November 5-6	Boston Section	Job Fair
November 16	Bay Area Council	Job Search Seminar
November 18-19	Bay Area Council	Job Fair
December 9-10	North Jersey Section	Job Fair
December 9-10	Chicago Section	Job Fair
December 9-10	Houston Section	Job Fair

Job fairs are open to all engineers. To locate the fair nearest you, contact the IEEE Career Fairs Coordinator at (800) 562-2820; in Virginia, call (800) 533-1827. ♦



Washington Scene

Further information about IEEE-USA, engineering career and technology policy issues, and copies of testimony, IEEE-USA Position Statements, and complimentary publications are available from the IEEE-USA Office. Write or phone IEEE-USA, 1828 L Street, N.W., Suite 1202, Washington, DC 20036-5104; (202) 785-0017. ♦

Pensions Committee Alerts U.S. Members

IEEE-USA's Pensions Committee recently sent Legislative Alerts urging IEEE's U.S. members to write their Representatives and Senators in support of H.R. 2390, the **Pension Coverage and Portability Improvement Act**, sponsored by Congressman Sam Gibbons (D-Florida). The 45,000 members who received the Alerts are constituents of members of the Senate Finance Committee and the House Ways and Means Committee. The Act will expand pension coverage, improve the portability of benefits when workers change jobs, and increase individual savings for retirement. These provisions are based on IEEE-USA's policy recommendations. IEEE-USA also supports H.R. 1406 and S. 612, bills that would restore universal eligibility for making tax-favored IRA contributions.

Local IEEE leaders have distributed the Alert in their Sections and encouraged member support, according to correspondence received at the IEEE-USA Office. PACE leaders and Section, Society, and Chapter leaders should ask their Colleagues to support this important pension legislation. All IEEE members are urged to write their Senators and Congressmen in support of H.R. 2390, H.R. 1406 and S. 612. Address letters to the House of Representatives, Washington, D.C. 20515, and to the U.S. Senate, Washington, D.C. 20510. Send copies to Vin O'Neill, IEEE-USA, 1828 L Street, N.W., Suite 1202, Washington, D.C. 20036.

Pensions Committee Member Meets With Senator, Testifies at Senate Hearings

IEEE-USA Pensions Committee Member Mona K. Draper met with Senator John B. Breaux (D-Louisiana) to explain the views of IEEE-USA and the Engineers and Scientists Joint Committee on Pensions (ESJCP) on pending Individual Retirement Account (IRA) legislation. Senator Breaux is a member of the Senate Finance Committee, which considers pension legislation.

Both IEEE-USA and ESJCP are strong supporters of legislation sponsored by Senators Lloyd Bentsen (D-Texas) and William V. Roth, Jr. (R-Delaware) that would help increase personal savings by expanding eligibility to make tax-favored contributions to IRAs. The **Bentsen-Roth Super IRA Proposal**, S. 612 and H.R. 1406, would permit all taxpayers to contribute up to \$2,000 a year to a conventional tax-deductible IRA or to a new type of IRA, in which interest earnings on contributions held for at least five years would be tax-exempt upon withdrawal. The proposal would also permit penalty-free withdrawals for first-time home purchases, for educational expenses, or for financially devastating health care costs.

In testimony given before the Senate Finance Committee, Draper said that this legislation is urgently

needed, "not only to boost personal savings for retirement, but also to expand the pool of domestic savings that can be used for productive investment in the national economy." She added that increased savings resulting from the proposal should also help to lower interest rates, stimulate investment, create new jobs, expand the tax base, and improve living standards, as well as guarantee a more secure retirement for thousands of American workers and their families. Copies of the testimony are available from the IEEE-USA Office in Washington, D.C.

USAB Chairman Urges Congressional Action

USAB Chairman Michael J. Whitelaw recently sent letters to the Senate on behalf of several IEEE-USA committees. The letters expressed IEEE-USA's views on nuclear energy, microwave measurements, telecommunications anti-crime legislation, and high-performance computing.

Whitelaw's letter to Senator J. Bennett Johnston (D-Louisiana), Chairman of the Energy and Natural Resources Committee, is written on behalf of IEEE-USA's Energy Policy Committee. Expressing support for nuclear provisions in S. 1220, the **National Energy Security Act of 1991**, the letter said IEEE-USA believes that nuclear reactor licensing reform is necessary for advancing nuclear power development.

Urging restoration of \$1.945 million in the FY 1992 appropriation for a National Institute of Standards and Technology (NIST) microwave measurements initiative, Whitelaw wrote to Congressman Jamie L. Whitten (D-Mississippi), Chairman of the House Appropriations Committee. Letters were also delivered to Congressional Members slated to serve on a House-Senate conference committee on H.R. 2608, the **Department of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Bill, 1992**.

Commending the Judiciary Committee Chairman, Senator Joseph R. Biden, Jr. (D-Delaware), on his recent actions concerning S. 1241, the **Cooperation of Telecommunications Providers of Law Enforcement Act**, Whitelaw urged resistance to other floor amendments that would allow Federal law enforcement officials access to computer security codes. Whitelaw expressed IEEE-USA's alarm that legislation of this nature would be a direct threat to national security and harm the international competitiveness of U.S. firms.

In his letter to Senator Barbara Mikulski (D-Maryland), Appropriations Committee Member, Whitelaw expressed IEEE-USA's strong support for the High-Performance Computing and Communications (HPCC) initiative. He said HPCC will support U.S. economic development by linking academic and industrial researchers and students with one another and with databases and specialized computer systems needed to access their work.

—G. C. Stelluto, G. Aukland

The newsletter for IEEE-USA's Professional Activities Committees for Engineers

IMPACT is designed to enhance communication among leaders of the Professional Activities Committees for Engineers (PACE) throughout the United States and among the leaderships of PACE, the United States Activities Board, and IEEE. As a medium for both opinions and news, the editorial objectives of IMPACT are to inform its readers in a timely and objective manner of newsworthy activities relative to IEEE's professional purposes; to comment on institutional professional matters, such as the actions of IEEE committees and boards; to serve as a forum for debate on professional matters of concern to PACE through publishing submitted articles, invited editorials, and letters to the editor; to provide news of USAB personalities, appointments, and awards; and to encourage member interest in professional activities.

Send contributed articles and letters to the editor to Dr. G. P. Rodrique, 1090 Kingston Drive, NE, Atlanta, GA 30342. Address for other mail: IEEE IMPACT, 1828 L St., N.W., Suite 1202, Washington, DC 20036-5104. NOTE: Material for publication must be in hand at least 30 days prior to the first day of publication months listed below.

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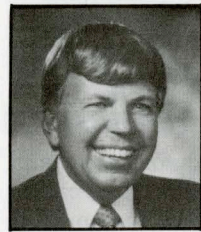
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Meet IEEE-USA's Council Chairmen



Arvid G. Larson

With this issue, *Impact* continues its interviews of IEEE-USA's Council Chairmen. Through this series, we hope to acquaint readers with IEEE-USA's goals, priorities, structure, and operations. Like the previous articles, this one includes the same organization chart with the featured Council highlighted. In this issue, Arvid G. Larson, IEEE-USA's Technology Policy Council (TPC) Chairman, is interviewed by TPC Editor Andrew Malcolm.

Arvid G. Larson is Research Professor at George Mason University in Fairfax, Virginia. A registered professional engineer in Virginia and California, he received a Ph.D. in electrical engineering with a minor in computer science from Stanford University. He is an IEEE Fellow and a member of IEEE's Computer Society, Aerospace and Electronics Systems Society, and Society on the Social Implications of Technology.

Currently in his first term as Chairman of IEEE-USA's Technology Policy Council, Larson also serves as Vice Chairman of the United States Activities Board. Since joining IEEE in 1956, he has contributed in many capacities, including chairing IEEE's Northern Virginia Section, founding and chairing IEEE-USA's Defense R&D Policy Committee, and chairing the Technology Policy Conference Committee. He is also Vice Chairman of the Public Affairs Council of the American Association of Engineering Societies.

Q: What is the purpose of IEEE-USA's Technology Policy Council?

A: The members of the Committees within the Technology Policy Council interpret and influence U.S. technology policy. We apply the technical expertise of IEEE members to public policy issues involving the electrotechnology interests of members. TPC is different from IEEE-USA's four other Councils in that the majority of our members are representatives of the 35 Societies of IEEE's Technical Activities Board. Our committees are populated by technical professionals fully conversant in the specific technologies that the committees represent.

Q: What do TPC activities involve?

A: Our activities include providing objective technical advice to legislative and executive policymakers concerning proposed laws and regulations involving electrotechnology, in addition to national science and technology budget priorities. The Council also supplies interpretations of new technologies and promotes national technology policies that enhance U.S. competitiveness.

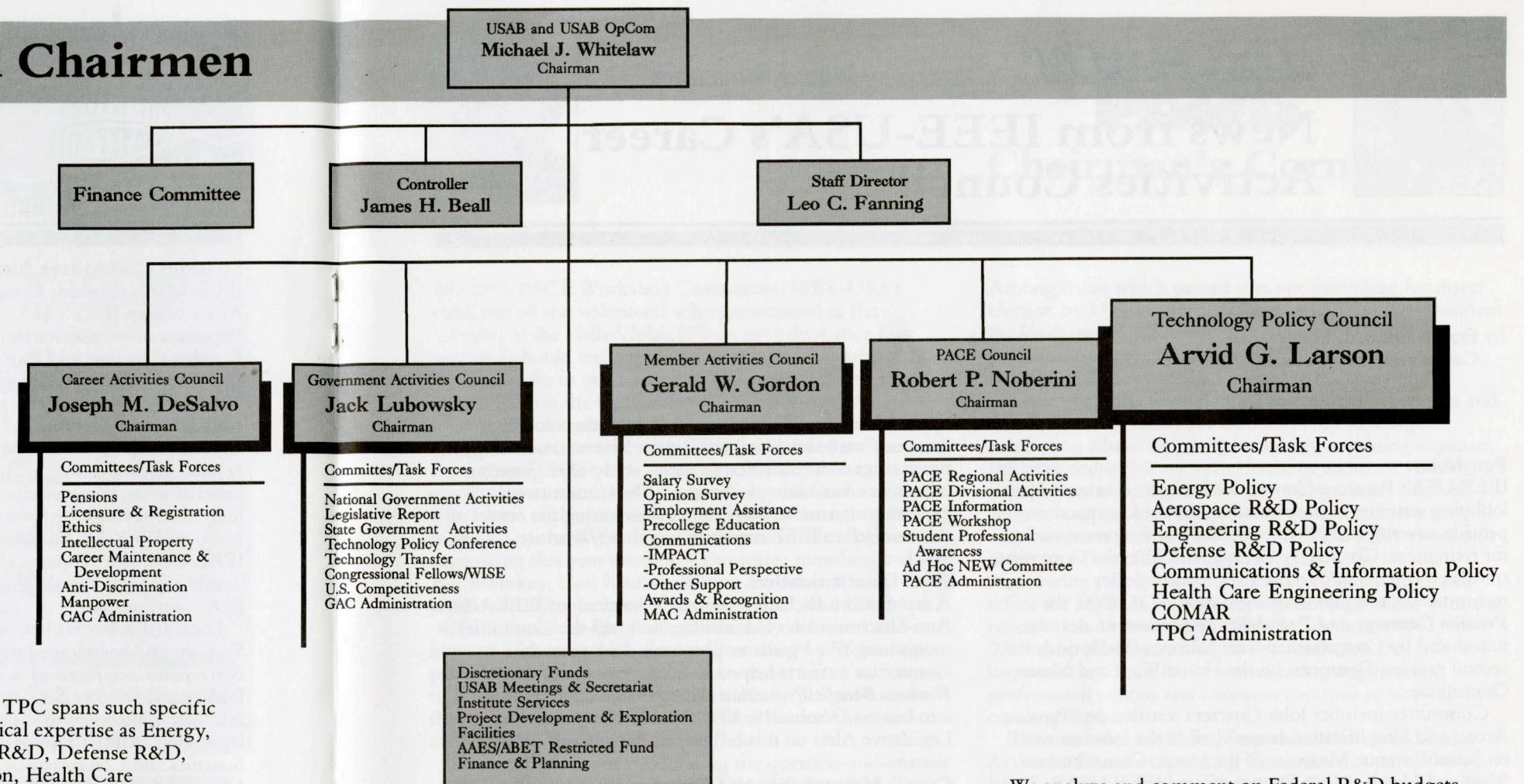
Organized into committees, TPC spans such specific areas of IEEE electrotechnological expertise as Energy, Aerospace R&D, Engineering R&D, Defense R&D, Communications & Information, Health Care Engineering, and Man & Radiation—our seven policy committees. Within our committees are 33 subcommittees and various *ad hoc* working groups. Approximately 250 volunteers serve on these committees, with expertise that covers virtually all technology policy issues.

TPC's major thrust this year is to enhance U.S. technological competitiveness, with each committee assigned specific tasks to accomplish. The Council seeks to bolster the U.S. technology base through improving R&D policy and technology transfer activities to ensure that technology developed in R&D laboratories is available to U.S. industry. TPC is also active in supporting and promoting government and industry consortia that enhance U.S. competitiveness.

Q: How does TPC go about achieving results?

A: Position statements are developed by the committees on specific technology policy issues in research needs or in support of various electrical engineering interests. Statements are approved through four levels of TPC and IEEE-USA volunteer management and then used to develop Congressional testimony. TPC committee members give approximately 25 testimonies a year to House and Senate Committees, in addition to various executive branch agencies.

TPC also sponsors symposia, workshops, and conferences, some three or four events per year, with some conducted as sessions within IEEE technical society conferences and others as independent workshops or symposia. Technical policy meetings with other industry



and professional groups, such as the Advanced Television Committee and the American Association of Engineering Societies, is another activity TPC committees engage in.

Q: What major issues are TPC committees currently concerned with?

A: TPC encourages U.S. Government programs that strengthen and support such engineering R&D activities as the new Advanced Technology Programs within the newly created Technology Administration of the U.S. Department of Commerce. Also, we encourage U.S. Government policy recommendations that foster adoption of open systems modular architecture and all digital transmission/representation formats for high-resolution imagery systems, such as those necessary to achieve future U.S. high-definition television services competitive in world markets. In addition, we promote DoD procurement policies serving dual-use applications in both defense and commercial systems.

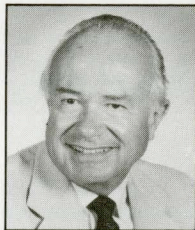
We provide expert technical advice and support to appropriate R&D policies that promote improved understanding of the many, often unfounded allegations of the adverse health effects of human exposure to electric and magnetic fields across the EMF spectrum. We provide expert analysis of U.S. energy policy, space policy, technology policy, and other high-level Government policy plans and programs.

We analyze and comment on Federal R&D budgets, including a balanced NASA program to enhance U.S. competitiveness in aerospace and aeronautics. While we supported a diminished version of Space Station *Freedom*, we also supported increased funding for aerospace and aeronautics R&D, the national aerospace plane, telecommunications satellites, earth-sensing satellites, and NASA science and technology programs in universities and small businesses.

Q: If members have specific questions about particular issues, how should they go about getting answers or communicating their interests and concerns to TPC?

A: Members who wish to learn more about a specific issue should call the IEEE-USA Office in Washington, D.C. Deborah Rudolph, Manager of the Technology Policy Council, or Chris Brantley, Administrator of Professional Programs, will provide members with information about TPC's recent work. Additional information can be obtained by contacting any of the Committee Chairmen or me. Names and numbers are published in IEEE-USA's Directory or can be obtained from the IEEE-USA office.

We encourage members to become active in our committees through their technical societies. They can be appointed as representatives or members-at-large to our committees or subcommittees. Attend our committee meetings, interact with our committee members, and take time out to read some of TPC's publications to find out more about us. ♦

**IMPACT**

News from IEEE-USA's Career Activities Council

by **Frank E. Lord**, Editor
Career Activities Council

Pensions

IEEE-USA's Pensions Committee is engaged in concerted lobbying activities in support of legislation to expand pension coverage, improve portability, and increase savings for retirement. Chaired by George McClure, the Committee translated IEEE-USA's retirement income policy recommendations into draft legislation. H.R. 2390, the **Pension Coverage and Portability Improvement Act** was introduced by Congressman Sam Gibbons (D-Florida), the second ranking Democrat on the House Ways and Means Committee.

Committee member John Guarrera testified on "Pension Access and Simplification Issues" before the Subcommittee on Select Revenue Measures of the House Committee on Ways and Means. Mona Draper offered IEEE-USA's support for pending Individual Retirement Account legislation (S.612) in testimony before the Senate Finance Committee. The Pensions Committee is also developing PC-based retirement planning software to offer IEEE members in the future.

Intellectual Property

This Committee has been looking out for member interests by submitting amendments to Congress for the **Software Rental Act of 1990**. Committee representatives also testified before the House Subcommittee on Technology and Competitiveness and the Senate Commerce, Science and Transportation Committee on behalf of the **Technology Transfer Improvements Act of 1991**, H.R. 191 and S. 1581. They also met with key legislators and their staffs to express IEEE-USA's views on other legislative items. Chairman David Ostfeld and committee member Lawrence Knapp each received a 1991 Professional Achievement Award from IEEE's United States Activities Board.

Manpower

Chairman Paul Kostek reports that the Manpower Committee has submitted comments on proposed U.S. Department of Labor regulations governing foreign labor certification requirements under the **Immigration Act of 1990**. The Committee also expanded its contacts and working arrangements with foreign labor certifying officials at regional offices of the U.S. Department of Labor. This effort is to assist in enforcement of laws to protect job

opportunities, wages, and working conditions for U.S. citizens. Committee member Robert Rivers has developed much original information from his study of engineering manpower forecasting techniques. The Committee is exploring alternative ways of communicating the results of this research to IEEE members in a timely manner.

Anti-Discrimination

A report from Richard Plummer, Chairman of IEEE-USA's Anti-Discrimination Committee, indicates the Committee is monitoring five legislative proposals. Last year, the Committee's efforts helped to ensure passage of the **Older Workers Benefit Protection Act of 1990**, which was signed into law on October 18, 1990. Member response to a Legislative Alert on this bill helped the process.

Career Maintenance and Development

A great deal of work on the part of the Career Maintenance and Development Committee culminated in the Seventh Biennial IEEE-USA Careers Conference held October 10 and 11 in Denver, Colorado. The theme was "Change and Competitiveness and Careers." Chairman Adeeb Hamzey also reports that a revised edition of the brochure *Professional Practices for Engineers, Scientists and Their Employers* has been printed. Hundreds of copies have already been distributed, and complimentary copies are being offered to colleges and graduating seniors.

Ethics

Over the past year the Ethics Committee, chaired by Bill Middleton, had a proposed simplified IEEE Code of Ethics approved, which was subsequently released in January. The Committee interacted with other professional organizations to strengthen cooperation on ethics activities.

Licensure and Registration

This Committee has been actively participating in Professional Engineering Examination question-writing meetings at the National Council of Examiners in Engineering and Surveying (NCEES) in Clemson, SC. In addition, Chairman Richard Schwarz and Vice Chairman Bill Middleton held a workshop on Ethics and Licensure and Registration at the recent PACE Workshop. In October, Chairman Schwarz presented a paper entitled "Licensure: A Way to Upgrade Your Career" at IEEE-USA's Careers Conference. ♦



Professional Activities Council for Engineers

PACE

Chairman's Corner

The 1991 PACE Workshop Committee, IEEE-USA's staff, and all the volunteers who participated in the activities at the Philadelphia Hilton over the Labor Day weekend should feel a great sense of accomplishment. My special thanks to our hosts, the Philadelphia Section, represented on the Committee by Dave Weigand.

The Workshop program, organized around the theme "Engineering Careers in the 1990s," addressed the primary concerns of IEEE's U.S. members. Plenary sessions on employment, survivability, education, and financial issues were some of the program's highlights. I commend the members of the Workshop Committee for their efforts in organizing this year's topics. Committee members include Bill Whipkey, Carl Kintzel, Wayne Amacher, Cecelia Jankowski, Dan Jackson, Charles Lessard, and Bob Nash.

IEEE President-Elect Merrill Buckley delivered the keynote address, which was well-received by Workshop participants. His speech focused on many issues of concern to IEEE members, and I was particularly pleased to note the synergism between Merrill's remarks and the issues addressed by the Workshop program.

I especially enjoyed moderating the question-and-answer session with the candidates for 1992 IEEE President-Elect. My thanks to them for participating.

This year's Workshop was structured to allow more opportunities for networking among PACE leaders within Regions and Divisions. The final half-day of the Workshop was devoted to acting on resolutions that surfaced during networking sessions. Participants voted on a total of 19 resolutions, of which 15 were approved.

Among those which passed was one providing for direct election by U.S. voting members of IEEE's Vice President for Professional Activities. In education, Workshop participants recommended that IEEE-USA generate a position statement on accomplishing the transition of engineering skills from defense to commercial sectors and that IEEE-USA lobby for incentives to encourage continuing education, such as making retraining expenses fully tax deductible by individuals. In addition, IEEE-USA should pursue a program for alternative certification of engineers as teachers in elementary and secondary schools.

Participants further resolved that IEEE-USA create and promote a Federally directed campaign to stress the engineering employment crisis in the United States and refute the myth of an engineering shortage. Also, with the cancellation of several issues of *The Institute* in 1991, the Workshop participants urged in a resolution that this important medium for communicating engineering professional actions and concerns continue to be published on a regular basis.

The resolutions will be presented to the United States Activities Board's Operating Committee as part of my PACE Council Chairman's Report. The full Board will have an opportunity to act on them at its November meeting. Actions taken on the resolutions will be reported to members. My thanks to all those volunteers who worked so hard to bring the resolutions to a vote by the Workshop's participants.

—Robert P. Noberini, P.E.

A Minute for PACE

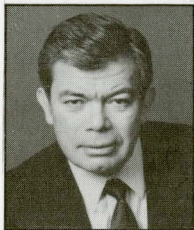
by **Carl K. Kintzel**, Chairman
PACE Information Committee

This issue of *Impact* continues "A Minute for PACE," a column presenting brief announcements and news bulletins that local PACE leaders can read at the beginning of monthly Section or Chapter meetings. Our purpose is to give higher visibility on the local level to current concerns of IEEE United States Activities and its PACE network. Here is this issue's PACE Minute:

IEEE-USA has been working with Congress for months toward passage of pension legislation more favorable to IEEE members. H.R. 2390, the Pension Coverage and Portability Improvement Act, sponsored

by Congressman Sam Gibbons (D-Florida), comes close to matching our goals. The Act will expand pension coverage, improve the portability of benefits when workers change jobs, and increase individual savings for retirement. These provisions are based on IEEE-USA's policy recommendations.

Participants in this year's PACE workshop unanimously approved a resolution urging all U.S. members to contact their U.S. Representatives and Senators by phone or letter requesting support for this legislation. Members should address their letters to the U.S. House of Representatives, Washington, D.C. 20515, and to the U.S. Senate, Washington, D.C. 20510. Send copies to the IEEE-USA Office, 1828 L Street, N.W., Washington, D.C. 20036. ♦



IEEE United States Activities Board

USAB

Chairman's Message

Careers In the Next Century

What must I do to have a successful and rewarding career? This question is asked frequently of engineering managers. The manner of posing the question varies, and so do the answers, but the theme is the same. Up-and-coming engineers often want advice on how to become better engineers and how to deal with intangible issues affecting their future careers.

Although experienced engineers don't have a sure means of achieving success in today's competitive world—much less in the work environment of the next century—they can offer some general advice to help optimize that junction where preparation meets opportunity:

- Be technically competent (know thy stuff)!
- Identify a mentor (grab a Godfather)!
- Be a team player (be cooperative)!
- Try to do the best you can every time (excel)!
- Be willing to help (be selfless)!
- Speak up on issues (contribute constructively)!
- Become active in your professional society (develop professionally)!

If U.S. industry is to compete effectively in the world marketplace, technical organizations need to identify and develop their best people. Given the rapid change in most engineering fields, the best people today are not simply those who perform well in a particular job, but those who have the underlying technical and non-technical skills in jobs yet to be defined.

Engineers just entering the profession must acquire the necessary basic skills to be identified both as competent and as having potential for further development. The more competent individuals will displace those who may have more immediate relevant experience, and they will have a better chance of retaining their jobs into the 21st century.

Developing and maintaining technical engineering competency is much the same as becoming and remaining physically fit. Both are lifelong tasks requiring perseverance, discipline, and constant attention.

—Michael J. Whitelaw, P.E.

Ask Us
About...

... U.S. competitiveness. IEEE United States Activities recently published ***How the United States Can Compete in the World Marketplace***, a practical guide developed by the Committee on U.S. Competitiveness.

The 24-page booklet outlines several steps that the United States can take to regain its competitive edge, such as creating more funds for private capital investment; modifying Federal antitrust policies to conform with the current global market situation; investing in long-term manufacturing processes; employing managers with a good understanding of the technology and economics of their businesses; incorporating engineering courses in product development, manufacturing technology, and systems engineering into school curricula; and instituting pre-competitive R&D geared toward supporting a product line rather than specific products. The booklet is available free of charge from the IEEE-USA Office in Washington, D.C. ♦

PACE—continued

additional speakers for the national speakers list. Marlin Ristenbatt, a member of IEEE-USA's Career Maintenance and Development Committee, reported on recent changes in IEEE-USA's widely used brochure, *Professional Practices for Engineers, Scientists, and Their Employers*. More than 70,000 copies of this statement have been distributed since its publication in 1984, with many copies going to engineering schools.

Finally, IEEE's broad range of continuing education opportunities were reviewed by Vern Johnson, Chairman of EAB's Continuing Education Committee and Region 6's Educational Activities Committee. Paul Kostek, Chairman of IEEE-USA's Manpower Committee, helped clarify why entry-level engineering faculty members are less likely to be U.S. citizens today than they were a generation, or even a decade, ago. He explained that the length of time required to qualify for such a position is less attractive financially to U.S. citizens than to foreign nationals studying at the graduate level in U.S. universities.

Engineers, industrial leaders, and economists agree that improving education is essential to increasing U.S. competitiveness. IEEE-USA can exert significant influence on education, and the PACE Workshop program focused participants' attention on this fact. ♦