

RockIEEE Overlook



Volume 2, Number 6 March 1997

Sitting in the Chair

by Fred Jones

The Denver Section recently held its annual Chapter Officers Training Session at the Doubletree Hotel on the Denver/Boulder Turnpike. the Chapter Officers Training Session is a communication tool the Denver Section developed many years ago to help improve communications between the Denver Section and the Society Chapters. The training session brings together Denver Section Officers and Committee Chairs with Society Chapter Officers. Many of us communicate on a weekly (sometimes daily) basis, but this is the one opportunity we have each year to interface on a personal level and connect faces with names. We always ask the attendees to critique our efforts on a Feedback Sheet at the end of the session. This helps us to grade ourselves and determine the success of our efforts. It also helps us to better understand what the important issues are to the Society Chapters.

After reviewing the responses on the Feedback Sheet this year, my perception is that a great deal of confusion exists among the membership as to just how IEEE works and what the benefits of membership really are. Those of us who have been active in the IEEE organization for many years sometimes take for granted the natural confusion of the newer members. I would be the first to admit that the IEEE is a huge organization and even after my years of involvement, there are still aspects of the organization

that I don't know or understand completely.

The IEEE is a dynamic institution and much like your own employers, it is in a constant state of renewal. The IEEE is continually trying to make itself of more value to the membership and that is not always a smooth transition. The IEEE recognizes that it must compete for your membership dollar against ever increasing numbers of organizations and opportunities in the world. In an effort to clarify the IEEE as an organization and help you, the membership, answer the questions you may

have, I intend to use this article for the next few months to explain the organization and the benefit of belonging.

In next months article, I will try to simplify the structure of the IEEE organization and describe where you fit into the picture. I hope you will bear with me, I'm sure we will all learn something and your feedback (positive or negative) is always welcome. You can contact me at any of the numbers shown on the back page or call me at home at (303) 757-7492. or fax me at home at (303) 757-0293.

From the PACE Chair

by John C. Tsucalas, IEEE Senior Member

Independence is meaningless in a vacuum. When I retired, my first thought was "Wow, I am really independent now. I can work on anything I want ... or I could work not at all. Everything is my choice." These statements are undeniably true, except the characterization "independent". It didn't take long to realize that I was a professional alone, and that this independence was a deception. At this point that the realization dawned that by working in organizations, I automatically had a significant support system: a forum to exchange ideas, a constant stream of reasonably current information (sometimes misinformation), libraries, equipment, and the whole support infrastructure. Often it was more than I would ever want. But it was there.

Independence is most manifest when the room is crowded and with much dialog! You don't have to leave your company or organization to be alone, only isolation is sufficient. If you objectively make use of the interactive opportunities afforded you, you can assert your independent approach, without losing the support system. The interactivity I am describing has the properties of range and intensity. Think of range as the size of your field of interactivity; it can be with one other person, groups of various sizes, and organizational entity (company), or a whole community of entities (local, national, international). I visualize the intensity of interactivity as the degree or comprehensiveness with which you use it.

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Lasers and Electro-Optics

Thursday, March 20, 1997
7:00 p.m. Refreshments
7:30 p.m. program

NIST, Room
325 Broadway, Boulder, Colorado

Speaker

Dr. Tingye Lee
New Focus

"Evolution & Revolution in Lightwave Communications"

Call Andy Aust at 497-3942 for additional information.

Upcoming LEOS Meetings to be held at NIST in Boulder.

April 17, 1997

Dr. Kevin Lear, IEEE/LEOS
Distinguished Lecturer
"High-Efficiency Vertical Cavity Surface Emitting Lasers"

May 15, 1997

Dr. Gary Bjorklund, OSA Speaker
Title to be determined.

Joint Antenna & Propagation/Microwave Theory & Technology, Geoscience & Remote Sensing

Thursday, March 20, 1997
4:00 - 5:00 p.m.
NIST, Room 4020
325 Broadway, Boulder, Colorado

Speaker

Prof. Pavel Kabos
Colorado State University
Department of Electrical Engineering

"Microwave Magnetic Envelope Solutions in Magnetic Thin Films"

Call Richard Geyer, 497-5852 for additional information.

Meetings

Reliability Society

Thursday, March 20, 1997
6:00 p.m. Pizza & Soda

Ohmeda Medical Systems
1315 W. Century Dr.
Louisville, CO

Speaker

Mr. Bob Jaquess
Senior Reliability Engineer

"Issues in Reliability Prediction"

Mr. Jaquess will lead a roundtable discussion.

Call Kirk Gray at (303) 666-7692 for additional information. Kirk Gray is the new chairman of the Denver Reliability Society. Sam Keene has temporarily relocated to California.

Joint Power Engineering /Industry Applications

Thursday, March 20, 1997

"Overvoltage Protection"

Call Barbara Linton, 388-6322 for make reservations for meetings.

Upcoming Events

April 17, 1997: Seminar - "Industrial Grounding"

May 15, 1997: Tony Jefferson - "Adaptive Var Compensation"

Newsletter Deadlines and Advertising Information

Deadlines for the RockIEEE Overlook are as follows.

Newsletter	Deadline
April 1997	February 28, 1997
May 1997	March 28, 1997
June 1997	No Issue
July 1997	No Issue
August 1997	No Issue
September 1997	July 25, 1997
October 1997	August 29, 1997
November 1997	September 26, 1997
December 1997	No Issue
January 1998	November 28, 1997
February 1998	December 26, 1997

Send ads to Anita Wanberg, P.O. Box 4056, Englewood, CO 80155-4056 or call (303) 220-8042. Make checks payable to IEEE Denver Section.

Artwork should be submitted in camera-ready form (PMT). Please accompany all artwork with a check and a letter stating the number of times and dates the ad should be run. Ads should fit **within** the dimensions listed below.

Description	Dimensions	Single Rate	Multiple
Business Card	2.5" w x 1.5" h	\$ 25.00/mo.	\$ 20.00/mo.
1/8 page	3.5" w x 2" h	60.00/mo.	50.00/mo.
1/4 page	3.5" w x 4.5" h	150.00/mo.	130.00/mo.
1/2 page	7.5" w x 4.5" h	250.00/mo.	225.00/mo.
Full page	7.5" w x 9.5" h	400.00/mo.	360.00/mo.
Inserts	8-1/2" w x 11" h	250.00/pg.	200.00/pg.

From the Editor

by Pete Koloditch

To provide greater service and more information to our section members and to eventually reduce newsletter printing and mailing costs, the transition to an electronic web site version of the newsletter and a supplementary email notification system has to be pursued aggressively. However, the latest information we received on a disk from IEEE indicates that only 30 percent of the members in this section responded to IEEE with an email address! The 30 percent response is in line with the email address responses in other section databases. However, the 1996 IEEE Member Survey showed that 77% of the members have at least Internet email, 54% have full access and 14% have partial access through an on-line service, such as AOL or Compuserve. I believe these percentages are probably higher and growing rapidly, judging from all the press given lately to Internet access problems. What is going on here? Obviously, not all members are giving IEEE their email addresses.

The electronic web site version of

the newsletter that I envision will contain much more information for members to peruse than the printed version. Email messages will be sent to all those with listed email addresses to alert readers to new/updated information on the web. For those with email addresses, but without web access, we may decide to attach a text only version of the newsletter to the email (graphics may be difficult to download and read). Everything will be dated. The online version will have short articles and headings that are easy to follow and will have links to additional information. During the transition, the printed and mailed version of the newsletter will contain articles that will refer to the web for additional information. To take advantage of the future benefits of this system, I urge members to get their email addresses in.

In the meantime, for those who have access, a scanned copy of the *RockIEEE Overlook* and other information, courtesy of the University of Denver engineering students and their professors, can be found on the web by searching

IEEE.USA and working down through the IEEE Home Page, Local Activities (Home Pages), Region 5 Sections in Region 5, Denver Section. Or, you can go straight to the Denver Section site via <http://www.engr.du.edu/ieee/densec.html>.

New Fellows

The IEEE announced in late January the names of members elected to the grade of Fellow in 1996 (effective 1997). Our geographical region 5 had 15 elected, our Denver Section had two elected to the grade. The grade of Fellow recognizes unusual distinction in IEEE related professions and is conferred only by invitation of the Board of Directors upon a person possessing extraordinary qualifications and experience in IEEE designated fields, who has made important individual contributions to one or more of these fields.

The members elected from the Denver Section are the following

Professor Wade Cathey

University of Colorado - Boulder
For contributions to optics in computing, adaptive optics, and imaging systems.

John Paul Nelson

NEI Electric Power Engineering, Inc.,
Denver for contributions to the protection of electrical equipment and to personnel safety in the petroleum and chemical industry.

Congratulations to these new Fellows.

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Dr. Robert Beale
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Mr. Carl Wick
Rx for Maintaining an Successful Engineering Career

En Garde !!

MEETING COST: \$30.00 DINNER COST: \$25.00 (Optional)

RESERVATIONS MUST BE MADE IN ADVANCE - 4 APR 1997

Denver Section: Call John C. Tsucas (303) 798-5769
Pike's Peak Section: Call Gina Dougherty (719) 573-3449

**This Conference is a Joint Offering of both
the Denver and the Pike's Peak Sections**

IEEE Professional Development Seminars April 11-12

In conjunction with the Region 5 meeting in Denver, April 11-13, 1997, the Denver Section of IEEE is offering Professional Development Seminars. These seminars are designed to help engineers update their technical skills and learn about new technologies, and

attain needed classroom credits for certification and company training expectations. Each session is one-half day long. Advanced registration is encouraged, to assure your space. On-site registration begins at 8 AM each day, and must be complete 1/2 hour before the session starts.

PROGRAM AGENDA

Friday morning, April 11, 9 AM to 12 Noon

Concurrent Engineering

Friday afternoon, April 11, 2 PM to 5 PM

Accelerated Life Testing

Saturday morning, April 12, 9 AM to 12 Noon

Neuro-Fuzzy Systems

Saturday afternoon, April 12, 2 PM to 5 PM

Overview of Power System Harmonics

FRIDAY MORNING

CLASS 1. Concurrent Engineering, Presented by Francis M. Long. An overview of tools and procedures that work together to reduce time to market and improve quality. Tools include those from TQM (old standards and some new ones), Quality Function Deployment (QFD), Design of Experiments (DOE - at three levels: simple pencil and paper requiring minimal statistics knowledge, more complex Taguchi techniques, and classical Response Surface Methodology requiring mathematical modeling), and Process Control (PC). When coordinated, these

result in robust designs and shortened time to market with improved quality.

Francis M. Long, PhD, retired from the EE Department at U. of Wyoming, and is currently an Adjunct Professor at DU. He is involved in IEEE Denver Section and is the 1997 chairman of ISHM/IMAPS, Rocky Mountain Region. This presentation represents his interest in broadening the role engineers play in the product life cycle, from inception to sales to disposal and all steps in between. He has conducted classes at UW, and several workshop and seminar sessions on this subject.

FRIDAY AFTERNOON

CLASS 2. Accelerated Life Testing, Presented by Kirk Gray. All electronic manufacturers are looking for faster ways of developing robust systems. Developing electronics testing based on the capabilities inherent in today's solid-state electronics, not relative to end-use environment, has shown dramatic improvements in field reliability. This paradigm shift is sometimes referred to as Highly Accelerated Life Testing (HALT), and Highly Accelerated Stress Screening (HASS). Mr Gray will present the fundamentals of HALT and HASS, the what, why and how, the equipment, fixturing, and general guidelines of this "new school" of electronics reliability testing.

Kirk Gray began his career in electronics at

the semiconductor fabrication level in the late seventies. He has over 19 years in the electronics manufacturing industry. As an engineering manager at StorageTek, with guidance from Dr Gregg K. Hobbs, he led the introduction of HALT and Stress Screening into manufacturing production testing technology. He has presented seminars on HALT and HASS processes at numerous electronics manufacturers through the US. Currently, he is a Reliability consultant at Ohmeda Medical Systems in Louisville. He earned a BSEE from the University of Texas at Austin in 1982. He is currently Chairman of the Denver Chapter of IEEE Reliability Society, and a Member of the IEEE CPMT Accelerated Stress Testing (TC7) Steering Committee.

SATURDAY MORNING

CLASS 3. Neuro-Fuzzy Systems and Applications, Presented by Bogdan Wilamowski. An introductory tutorial for neural networks will be given. Various architectures and learning algorithms will be discussed. Several new algorithms will be compared.

The concept of a fuzzy system will be described and illustrated with examples. Software and hardware implementations of neuro-fuzzy systems will be presented. Results of several applications will be given. (CONTINUED ON REVERSE)

(CLASS 3 CONT.) Bogdan Wilamowski is currently Professor of Electrical Engineering at the University of Wyoming. He is the author of three books, more than 180 refereed publications, and 27 patents. He

SATURDAY AFTERNOON

CLASS 4 Overview of Power System Harmonics, Presented by Jim Phipps and Bob Struthers. Power system harmonics have become a concern for suppliers and industrial users of electricity. This seminar will review the sources, effects, measurement, analysis, and mitigation of harmonics. Applicable standards and limits for harmonic voltage and current at busses will be discussed.

James K Phipps, PE, received his BSEE and MSEE from CU. He has been involved in many power system studies, troubleshooting investigations, and design engineering projects in relation to harmonics. He has worked primarily in the heavy industrial, utility

has been involved in neural research since his PhD in 1970. In the last five years he has published more than 50 papers on this subject and has taught several courses on both neural networks and fuzzy systems.

and commercial power system areas. Currently, he is a consultant with Peak Power Engineering Inc, Golden, Colorado and serves part time as an honorary instructor at Colorado School of Mines and CU-Denver. He is a member of IEEE, Tau Beta Pi, Eta Kappa Nu, and golden Key National Honor Society. He is a PE in Colorado, California, Kansas, Montana, and Wyoming.

Robert Struthers, PE, holds a BSEE from CSU. He has 25 years experience in quality assurance, electrical system design, start-up, and electrical system studies. His experience includes work in the nuclear power, fossil fuel power, petroleum and petrochemical, and mining industries. He is active in the IEEE Denver Section, and is a PE in Colorado, Indiana, and New York.

REGISTRATION FORM

Region 5 and Denver Section: IEEE Professional Development Seminars
April 11 & 12, HYATT REGENCY DENVER DOWNTOWN
1750 Welton Street, Denver Colorado

Advanced registration is encouraged to assure your space in class. On site-registration begins at 8:00 AM each day, and should be completed 1/2 hour before your session starts. Seminars begin at 9:00 AM and 2:00 PM

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IEEE Member? ☐ Yes ☐ No Membership # _____

Program: Check those you plan to attend (please see seminar descriptions printed on back)

Friday Morning:	Concurrent Engineering	<input type="checkbox"/>
Friday Afternoon:	Accelerated Life Testing	<input type="checkbox"/>
Saturday Morning:	Neuro-Fuzzy Systems	<input type="checkbox"/>
Saturday Afternoon:	Overview of Power Harmonics	<input type="checkbox"/>

Fees:	Per half-day seminar	
IEEE Member	\$75 x No of seminars	= \$ _____
Non-member	\$95 x No of seminars	= \$ _____
Retired or Student Member	\$15 x No of seminars	= \$ _____
Unemployed Member	No charge	

Method of Payment: ☐ Company Check ☐ Personal Check
Make checks payable to Denver Section, IEEE
Inquiries regarding the seminars may be made to Francis M. Long, at 303-753-4677

Send this form with payment to: Francis M. Long, 1888 S. Jackson St, # 701, Denver, CO 80210

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- D ☐ Electro-Mechanical Components
- E ☐ Electronic Packaging
- F ☐ Fabrication Services
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Denver Section Awards

by Bob Struthers, Denver Section Awards Chairman

The Denver Section presents awards at its May meeting to recognize outstanding achievements of persons and organizations working in or near the Denver Section. The awards committee requests input from all Denver Section members, and nominations for award candidates are welcome from individuals, Chapters, or Professional Societies. Four awards are presented based on the following criteria:

The **John Peebles Professional Award** is presented in the name of John Peebles to an individual who has demonstrated outstanding service and exceptional leadership and influence in the engineering profession. This award is made based on nominations solicited from the Denver section and other profession-

al societies in the Denver Section geographic area. The recipient of this award receives an engraved walnut and bronze plaque. This award is not necessarily presented each year.

The **Section Service** award is presented annually to a Denver section member who has provided exceptional service to the Denver Section over an extended number of years (usually in excess of 10 years). The recipient of this award receives a check in the amount of \$100 and an engraved walnut and bronze plaque.

The **Outstanding Chapter** and **Outstanding Student Branch** awards are presented annually to the Society Chapter and Student Branch which have demonstrated exceptional outreach to their members, including

number and quality and timeliness of meeting reports. Each of these annual winners receives a check in the amount of \$100 and an engraved plaque.

If you would like to nominate a candidate for any of these awards, contact the Awards Committee Chair, Bob Struthers, at the phone or email address on the back of the Overlook.

PACE

continued from page 1

What is the extent of your network? Do you have one? Do you use it? In today's world, if you are alive you probably do, and the only variable is how much you are networking or isolating yourself. Interestingly, the same questions can apply to organizations. An example of this is an organization working in a highly proprietary or secure environment. The tendency is to keep information, ideas, and paradigms closely held. When this is done long enough, such organizations can reach a point where no contact occurs outside the organization. People become unknowns, work is done without community review, and the value of all activity is judged in a microcosm that lacks realistic standards of quality and utility. Advocacy becomes parochial, and support from the external community, nonexistent. Of course, in an open environment the tendency is opposite, it leads to true

technological, operational, and product excellence. The major risk in openness is that without continuous improvement an organization can quickly falter under the pressure of competition.

In my personal situation, perceived isolation of retirement caused me to seek the support system of the IEEE. I could not ignore its wealth of information, its extensive forum of ideas, the numerous opportunities for networking with a diverse array of experts, and the electrical engineers and other closely allied professionals who don't take advantage of the resources that the IEEE provides are missing a very important professional tool. It is a great range extension, especially for those who feel constrained by their work environments. The benefit derived is in direct proportion to his or her intensity of interactive participation. So if

you are a member, I urge you to try becoming more active in local IEEE functions; if you are not a member, I urge you to join and take advantage of these benefits. You are the beneficiary.

If you have concerns, or comments please feel free to contact me at (303) 798-5769 or email: j.c.tsucalas@ieee.org.

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 1-800-678-IEEE (4333). We can not change this information in the Denver Area.**

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