

# RockIEEE Overlook

Newsletter of



**The Institute of  
Electrical and Electronics Engineers  
Denver Section**

**September 1992**

## Chairman's Corner

**by Paul Meisel**

The Fall IEEE meeting schedules are being established and the meetings are going to be technically strong.

### SEMINAR

With this issue, we are announcing the Denver Section Employment Assistance Seminar which will be held on Saturday, October 17. This seminar is especially important to the unemployed, the under-employed, and those contemplating changes. One thing which we learned while organizing this conference is that there is no stigma attached to being unemployed.

Many members are technically sound, but when contracts are completed and other contracts are not available to take their place, unemployment results. We hope to provide to our members the knowledge to evaluate their ability, likes and dislikes in jobs, and how they can best market their skills. This is a long day session with lunch provided for a minimal cost. The Denver Section officers felt such a strong commitment to this seminar that it is being subsidized.

### MEMBERSHIP

The IEEE has, for the first time in recent history, experienced its first decline in U.S. membership. The Denver Section has established a modest goal of adding twenty new members by December 31. Please ask your co-worker and/or your friend to join IEEE to benefit from the technical programs and the various professional plans offered. Remember that the higher the membership, the more diverse the educational possibilities become. If you are already a member, but not a senior member, we also want you to apply for an upgrade. This is the highest level of membership available without an election by your peers. We have forms available. Ask anyone in a section leadership position.

### ELECTION

There will be an election for Denver Section officers on October 14. If you have a desire to be an officer, please contact Gary Petersen, Nominations Committee Chairman. Your name will be added to the slate of potential officers for election at the October 14 meeting. The location for that meeting will be listed in the next issue of the *RockIEEE Overlook*.



# Society Chapter Meetings and Information

## Joint Meeting IEEE Lasers and Electro-Optics Society, and the Rocky Mountain Optical Society of America

Thursday, September 10, 1992

7:30 p.m.

National Institute of Standards and Technology  
325 Broadway, Room 1107  
Boulder, Colorado

### Speaker

David Christensen  
National Institute of Standards and Technology  
Boulder, Colorado

### "Vertical-Cavity Semiconductor Structures"

Mr. Christensen will first review the subject, discussing the basic features of vertical-cavity structures and their applications in engineering and physics. These applications range from optical interconnects to controlled spontaneous emission.

He will then discuss the use of optical, electron beam, and x-ray metrologies to determine the structural and materials aspects of epitaxial vertical-cavity structures.

Finally, Mr. Christensen will present the results on the most recent type of vertical-cavity laser, the distributed feedback structure with distributed quantum well gain sheets.

## Joint MTT/AP/GRS Microwave Theory and Techniques, Antennas and Propagation, Geoscience and Remote Sensing

Thursday, September 10, 1992

4:00 p.m.

National Institute of Standards and Technology  
325 Broadway, Room 1105  
Boulder, Colorado

### Speaker

Dr. Dag R. Hjelme  
University of Colorado, Boulder

### "Analysis of Coplanar Waveguide Microwave Circuits Using an Optical Sampling Technique"

An efficient analysis of Coplanar Waveguide (CPW) circuits verifiable by optical sampling will be presented. The theoretical formulation is based on a quasi-static potential distribution, which can be measured with optical techniques in the case when the circuit is on an electrooptic substrate, such as GaAs. The dynamics are brought into the analysis through the Riccati equation, the parameters of which are expressed in terms of static quantities. This technique should be advantageous for characterizing parasitics, since they are due to local field perturbations, and the optical sampling can give us a picture of the local fields in a small region of a microwave GaAs circuit. Both theoretical and experimental results will be presented.

Contact Zoya B. Popovic, (303) 429-0374, if you have any questions.

## Joint PES/IAS Power Engineering/Industry Applications

Thursday, September 17, 1992

### Tour of New Denver Airport

Meet at Thomas Park at the southeast corner of East 26th Avenue and Quebec. No Dinner is planned in conjunction with this tour.

4:00 - 6:00 p.m.

Buses will be provided from Thomas Park to the new airport. The tour will last about two hours. Due to safety concerns, we will remain on the bus most of the time. This tour will be popular, so please make your reservations early.

Please contact Barbara at Peterson Company, 388-6322, by Monday, September 14, 1992.

## WINNING THE EMPLOYMENT GAME

### Career Goal Setting and Job Hunt Strategies Workshop

Provided by the IEEE Denver/Pikes Peak Section  
and Professional Engineers of Colorado

This workshop will help you to take increasing responsibility and control of your career. Facilitated by a well established career management expert, the knowledge and skills you gain from this workshop will enable you to "navigate" your career, rather than allowing it to drift. You will find out about the five elements of your career self and how to increase work satisfaction through a step-by-step career development process. Whether you are seeking to improve your career within your present organization, or desire to seek a position in the open market, the techniques you will learn are applicable short term and long term, including retirement planning. In addition, you will have a unique opportunity to ask questions and take advantage of the many years of experience our facilitator has gained in the career assessment and job search field. Pick his brain and get tips on "guerilla tactics" that will help you identify and land the job you want in a highly competitive market, whether you are conducting an internal or external job hunt. Discover the many ways to determine and develop your career path.

This workshop is open to all professionals, members or non-members, employed or unemployed. The tools and techniques presented in this workshop are applicable whether you are looking for a job due to external forces (mergers, takeovers, downsizing, restructuring, places going out of business...) or internal forces (tired of your present job, want to do something new and challenging...). They are designed to be valuable now during a job search, and longer term as you work to achieve your ultimate career goals.

### OBJECTIVES:

1. Assess yourself through a thorough examination of your background and natural talents.
2. Define and prioritize the basic elements of your career self including your work values, interests, personality strengths, skills and job objectives.
3. Integrate the top priorities of your career self into a written, focused career goal statement, that includes a job objective, qualifications statement and preferred work environment.
4. Learn how to research, identify and evaluate job opportunities that satisfy the criteria described in your career goal.
5. Select the career development options that best enable you to achieve your goal.
6. Learn how to develop and execute marketing strategies that get you the job you want, including demand analysis, phone calling, tailored resume, cover letter, follow up, interviewing, as well as job and salary negotiation.

**SCHEDULE:** Saturday, October 17, 1992  
8:00 a.m. - 4:00 p.m.

**LOCATION:** Denver Univ. Boettcher Auditorium, 2050 E. Iliff Ave.  
Box Lunch & Refreshments Provided

**FACILITATOR:** Paul Unks, M. Ed., is a senior career development consultant at Hutchens Resnik with over fifteen years of experience specializing in individual career counseling, and organizational consulting and training. He teaches at the University of Colorado and Denver University. His areas of expertise include career management, managing stress and wellness, and communications. He has helped thousands of clients and conducted innumerable seminars across the country. Whether Paul is working with individuals of large groups, his objective is the same: to help others achieve greater satisfaction and success in their work and personal lives. Paul served as director of the Center for Career Development in St. Louis, Missouri for five years prior to moving to California in 1980 when he began his consulting practice. He has studied and worked with Sam Kirk, who along with Richard N. Bolles, spear headed the National Career Development Project and helped write the popular book *What Color Is Your Parachute?* Paul has a Masters Degree in Counseling Psychology from the University of Missouri and is a recipient of the top training and development award in the nation, given by the President of the United States.

**REGISTRATION:** \$20 IEEE Member, \$50 PEC member, \*\$80 Non-members, \$10 Students,  
Pre-registration is required. Deadline: October 7, 1992 \*\$10 may be applied towards new membership  
Workbook provided. Attendance limited to 100. at time of Registration

For additional information, contact Darrell Sabatka (303) 329-1547 or Jim Higerd (303) 679-4291

The Denver Section appreciates the support of the Professional Engineers of Colorado, the Pikes Peak Section, and IEEE US Activities in providing this workshop.

REGISTRATION	
NAME _____	PHONE _____
ADDRESS: _____	Return to: Marilyn Peterson Public Service Co. of Colorado 5525 E. 38th Ave. Denver, CO 80207
AMOUNT ENCLOSED:	Make checks payable to: "IEEE" Denver Section
_____ \$20 IEEE Member	Member No. _____
_____ \$50 PEC Member	and Affiliation or School _____
_____ \$80 Non Member	
_____ \$10 Student	Please pre-register to guarantee your space. Deadline: October 7, 1992.
	Denver Section provides this seminar at cost, a service to the professional community.



# Region 5 Conference

by Doyle Ellerbruch

The Denver Section was well represented by its Student Branches at the Region 5 Conference in San Antonio in April.

The First Place winner of the West Area Student Paper Contest, Brian T. Hemmelman from the South Dakota School of Mines and Technology, presented his paper "The Dynamics of Fault Tolerant Computing" at the Region 5 Competition.

The Second Place winner of the West Area contest, Cadet Mary Jo Drozdowski from the U.S. Air Force Academy, presented her paper, "Variation of Linear Predictive Coding Techniques for Recognition of Normal, Loud, and Lombard Speech" and was declared the winner of the Region 5 Contest. Her first step toward that accomplishment was the Denver Section Paper Contest held earlier in April. Nine papers were presented at the Region 5 competition.

Student Design Contest Teams from the University of Wyoming, the University of Colorado-Boulder, Colorado State University, Denver University, and the South Dakota School of Mines and Technology won First Place awards and Metropolitan State College of Denver won a runner-up award. The Design Teams from these schools were among 23 teams that participated in that contest.

The Denver Section extends its congratulations to each of those students that participated in the paper and design contests at the Region 5 Conference.

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Full Page	\$ 400.00/mo.	\$ 360.00/mo.
Insert 8-1/2 x 11	\$ 200.00/mo.	

Business card ads must be actual business cards. All other ads should be provided in camera-ready format or additional set-up charges may apply. Inserts must be provided (quantity approx. 4225) and delivered to the printer.

### Deadlines for 1992-1993

#### October 1992 Newsletter - August 17, 1992

November 1992 Newsletter - October 2, 1992  
January 1993 Newsletter - December 1, 1992  
February 1993 Newsletter - January 1, 1993

March 1993 Newsletter - February 1, 1993  
April 1993 Newsletter - March 1, 1993  
May 1993 Newsletter - April 2, 1993

Please make checks payable to Denver Section IEEE. Send business card or ad copy and check to: **Anita Wanberg, AMW, P.O. Box 4056, Englewood CO 80155-4056, (303) 220-8042.**

# Private Practitioners Task Force

The IEEE Institute May-June issue included the following questionnaire for self-employed engineers who are interested in participating in the activities of the task force. One of the objectives of the task force is to establish a local "IEEE Consultants Network". If you are interested in this activity, please complete the questionnaire and return it to the address shown. Once these are collected you will be contacted for further action.

## Private Practitioners Task Force Survey

(Responses from nonmembers of the IEEE are welcome)

Name \_\_\_\_\_ IEEE # \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

Income derived from consulting:

More than 20% ☐ 40% ☐ 60% ☐ 80% ☐ 99% ☐

Years earning that percentage: \_\_\_\_\_ years

Total number of years consulting: \_\_\_\_\_ years

Will you help organize a network in your area? Y ☐ N ☐

May we give your name to other consultants so they can contact you? Y ☐ N ☐

Should the PPTF publish a periodical? Y ☐ N ☐

Would you contribute material? Y ☐ N ☐

Would you like the PPTF to organize a referral service? Y ☐ N ☐

Do you presently belong to any consultants' organization? Y ☐ N ☐

If yes, give the name of the organization \_\_\_\_\_

Consulting skills (optional):

Comments and suggestions:

Mail completed questionnaire to: PPTF/Department I  
IEEE-USA  
1828 L St., N.W., Suite 1202  
Washington, D.C. 20036-5104

# Employment Guides Available

Comprehensive Technology Employment Guides Available to Engineers, Graduates and Scientists

Washington, July 17 -- For recent technology graduates and for engineers and scientists hit by defense industry cutbacks, help in finding employment is now available through a single source.

Two volumes of an Employment guide for Engineers and Scientists, updated for the '90s, are being offered by IEEE-USA, the United States Activities' arm of The IEEE. The Guide is available in two editions: one designed for those with employment experience: the other, for students and recent graduates.

The student edition, just published this month, contains basic information on conducting a job search. Special features include a list of the 50 most-asked questions during a job interview.

Both publications contain information on salaries, along with solid advice on how to conduct a job search. They also provide assistance on how to:

- \* cope with job loss;
- \* write resumes;
- \* prepare for interviews;
- \* work with employment services;
- \* interact with colleagues and friends;
- \* evaluate compensation packages; and
- \* assess legal rights in the employment process.

Both versions include a Directory of Employers of Engineers, a comprehensive state-by-state sourcebook that lists hundreds of companies, including telephone numbers and contact persons.

The Guides are sold through the IEEE Service Center: \$14.95 to members; and \$19.95 to non-members, plus tax and shipping. To order, call 1-800-678-4333 and request Catalog No. UH0186-7, for the experienced engineer edition; or UH0188-3, for the student edition.

A copy of either Guide will be provided at no charge to non-student IEEE members who are unemployed. Written requests, including membership number, should be sent to William R. Anderson, IEEE-USA, 1828 L Street, N.W., Suite 1202, Washington, DC 20036.



## Call for Photos

### Visions of Technology: Powers of Energy Photography Contest

Practicing engineers and engineering students of all disciplines can tap their photographic talents to capture on film engineers' achievements as they develop and conserve our nation's energy resources. The powers of energy, including solar, wind, water, electrical, and human energy, are all germane to the theme. The only restriction is your imagination! Winners will be announced during National Engineers Week, February 14-20, 1993. Cash prizes of \$500, \$250 and \$100 will be awarded.

### For More Information:

Photo Contest  
c/o IEEE-USA Office  
1828 L Street N.W.  
Washington, D.C. 20036-5104  
(202) 785-0017

## University of Denver New Technology Management Program

Denver -- This fall, University College at the University of Denver will offer a new graduate program designed to benefit technology intensive organizations.

Traditionally, technical experts - scientists and engineers - receive little or no formal preparation for management. Similarly, those educated in management are offered little more than a course sequence in applied technology. University College's Management of Technology (MOT) degree will teach skills to manage the development, implementation and diffusion of technology in industrial and governmental organizations.

The degree requires 51 quarter-hours for completion and students will take courses in four core areas: Contemporary Context of Technology Management; Strategic and Business Issues in Technology Management; Management Dynamics in Technology Environments; and the Current Status of Technology as a Strategic Resource.

For more information, call Janalee Chmel at University College, 871-3818

## Seminar National Electrical Safety Code September 10, 1992 in Denver

Changes in the 1993 National Electrical Safety Code will be the subject of a seminar to be held in Denver on September 10. The meeting will be held at Loews Giorgio Hotel (call 800-345-9172 for hotel reservations). This meeting will begin at 8:30 a.m. and conclude at 4:30 p.m.

After successful completion of the course, you'll be able to:

- \* Calculate clearances for power supply and communication lines under various conditions.
- \* Apply the components of clearance allowance
- \* Know the requirements for protective arrangement in electrical supply stations.
- \* Properly locate communication circuits within supply space and supply circuits
- \* Understand the four exceptions of the basic rule on vertical clearance between line conductors
- \* Plan for the proper identification of direct buried cables
- \* Realize the importance of special safety rules for supply employees working on energized conductors or parts
- \* Handle fiber optic cable and know how to treat optic supply as a neutral conductor
- \* Use the Code more effectively and efficiently
- \* Take the correct steps to protect employees and the public.

The cost of the seminar is \$225 for non-members and IEEE members pay \$195. The IEEE registration fee includes complimentary continental breakfast, refreshments, and lunch. When three or more people from an organization attend, you'll receive a 10% team discount.

Make reservations by FAX: (908) 562-1571 or Phone (908) 562-3805. Have your membership number available at the time of registration.

## IEEE Sponsored Upcoming Symposia and Workshops

October 30, 1992

### WARC-92: Impact on Microwave and Millimeter Wave Developments Denver, Colorado

The WARC-92 held Feb. 3 to March 3 has extensively revised the international framework of frequency allocation, technical provisions and coordination procedures, affecting spectrum usage and radiocommunication developments well into the next century. One immediate consequence is the unprecedented number and variety of FCC applications filed for experimental licenses and Pioneer's Preferences. Intended to focus on the effect of this regulatory framework on directions in technology developments and applications, this specialized workshop will provide a forum for discussion both with a panel of invited speakers and of submitted contributions.

Contact: Zoya B. Popovic, (303) 429-0374

September 30 - October 2, 1992

### International Workshop on Hardware-Software Codesign Estes Park, Colorado

This workshop is a forum for emerging ideas for the design of complex systems built from both hardware and software. Systems which require the joint design of hardware and software range from hand held consumer products to battlefield systems. The workshop offers an opportunity for researchers to exchange ideas on this rapidly evolving topic.

Contact: Rich Karcich, (303) 673-6223

October 7-9, 1992

### Symposium on Software Reliability Engineering Research Triangle Park, North Carolina

Software Reliability Engineering is the quantitative study of the operational behavior of software-based systems with respect to user requirements. ISSRE-92 will present papers, tutorials, and panels in the areas of basic research, experiences of technology transfers and analysis of empirical research.

## Schedule of Conferences and Meetings

Sept. 15-17, 1992	Boulder	Optical Fiber Meas. Symposium	Douglas Franzen	(303) 497-3346
Sept. 23-24, 1992	Denver	LANfair	Mark Cramer	(303) 771-2000
Sept. 30 - Oct. 2, 1992	Estes Park	Hardware Software Codesign	Rick Karcich	(303) 673-6223
October 21-24, 1992	Denver	Telelearning Conference '92	PBS/ALS	(800) 228-4630
October 30, 1992	Denver	WARC'92 Workshop	Zoya Popovic	(303) 492-0374
			David Wait	(303) 497-3610
			John Tary	(303) 452-6111
Sept./Oct., 1994	Denver	IAS Annual Meeting	Paul Meisel	(303) 761-6960
September 10-14, 1995	Denver	Petroleum & Chemical (PCIC)	John Nelson	(303) 431-7895
July 27-August 2, 1996	Denver	PES Summer Meeting	Fred Jones	(303) 431-7895
1997	Denver	PES Joint Power Generation	Gary Petersen	(303) 329-1506
May, 1997	Denver	MTT	Hussain Haddad	(303) 460-2114
			John Dunn	(303) 449-1055
			Claude Weil	(303) 497-5305
August 17-19, 1999	Denver	EMC	Mark Lapchak	(303) 773-4626

## Proposed Conferences and Meetings

International Conference on Harmonics in Power Systems (ICHPS) 1996  
ESMO 1996  
Sections Congress 1996  
ITC 2000  
ICC 1995-2000



# The Institute of Electrical and Electronics Engineers - Denver Section

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Student Fund - **Daniel Greco**, Greco Development Company, 363-7291  
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## The Month at a Glance

### **August 17**

RockIEEE Overlook Deadline

### **September 10**

LEO/Optical Society Meeting  
MTT/AP/GRS Meeting

### **September 15-17**

Optical Fiber Meas. Symposium

### **September 17**

PES/IAS Meeting

### **September 23-24**

LANfair

### **September 30-October 2**

Hardware Software Codesign

RockIEEE Overlook  
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