RockIEEE Overlook
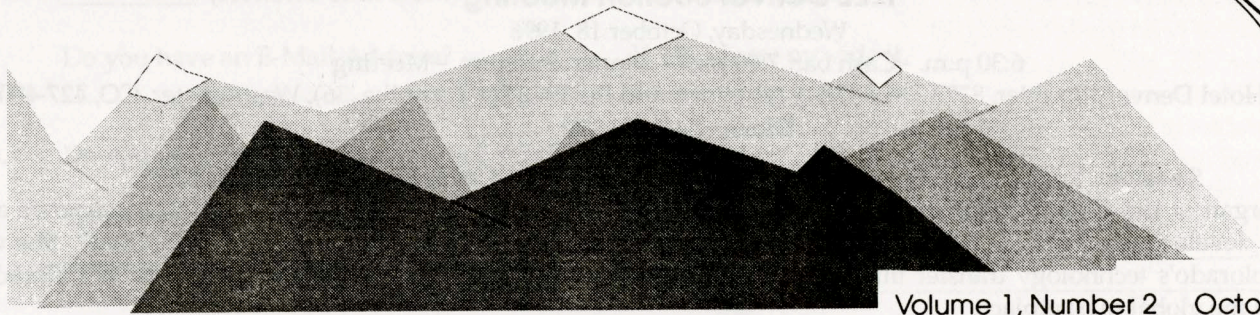
Sitting in the Chair
by Bob Struthers

You may be wondering what are some of the activities in which members of IEEE participate at the local level. The technical society chapters, listed on the back page, meet regularly. The meetings usually have a speaker or panel for members of the society. Last year (1994) eight of the chapters were considered "active", that is they held two or more meetings. Those chapters held a combined total of 44 meetings with an average of 21 members and guests attending. The Section also held four general membership meetings with speakers, awards, and election of officers. In addition to the above groups there are Student Chapters at most of the Universities in the Denver Section.

The Denver Section also organizes and/or publicizes events. The RockIEEE Overlook is mailed to each member of the Section for the purpose of publicity. If you have an upcoming event of interest to the membership, notify the Editor (or John Adams, Vice Chair of Member Services) to arrange an announcement. Arrangements for a home page via internet are underway, on which we hope to provide the same information, as well as information that may not make the Overlook for space or deadline reasons. The home page address will be announced in the Overlook when access is available.

Student activities are important functions of the Section. College and pre-college activities are sponsored. Last year the Section sponsored a college student paper contest. I had the pleasure of participating a one of the judges of the contest. Several good papers were presented and some of the winners attended the Region 5 contest in Houston. Judges and spectators are needed. Cliff Alston, Student branch activities chair, can give you more information. We will publicize the event, scheduled for February, next year. Pre-college activities include visits to schools, and the Science Fair. Visits

Ten Observations on Software Reliability
By Dr. Sam Keene

1. A software program which does not work is undoubtedly wrong, but a program that does work is not necessarily right. It may still be wrong because it is:
   - hard to understand, or
   - it is hard to maintain as the problem requirements change, or
   - because its structure differs from the structure of the problem, or
   - because we cannot make sure it does indeed work.

2. A system which executes perfectly on a uni-processor, may fail in strange and peculiar ways on a multi-processor, because designers could not simulate (mentally) multiple programs interacting simultaneously on dynamically changed shared data structures.

3. Delivering systems in increments can enhance end use's perception of the developing system and speed of delivery of systems of extraordinary quality. The sense of accomplishment that derives from a series of successful deliveries creates a breakthrough in confidence among programmers that is required for sustained productivity. *W. Barry Foss, "Early Wins are Key to System Success", Datamation, Vol. 36, No. 2, 1990, p79.*

4. The most far-reaching decisions are made first, when one has the least amount of information. (Complete Design Requirements before beginning the design increase the Reliability).

5. Zero maintenance. A software system or application is supported by zero maintenance when its users can change and enhance the behavior of their programs without having to

Meetings

IEEE Denver Section Meeting

Wednesday, October 18, 1996
6:30 p.m. - Cash bar 7:00 p.m. - Dinner 7:45 p.m. - Meeting
Ramada Hotel Denver/Boulder, 8773 Yates Drive (Sheridan and the Boulder Turnpike, 36), Westminster, CO, 427-4000
Dinner Cost: $16.00

Speaker: Sue Morgan, Deputy Director, Colorado Advanced Technology Institute (CATI)

Sue Morgan is the Deputy Director of the Colorado Advanced Technology Institute of Colorado's science and technology development agency. Her topic will be technology transfer: What is it and why is it important? She will describe Colorado's technology transfer infrastructure and relate how CATI and its programs contribute to Colorado's competing i the global marketplace.

Section officer elections will be held at the meeting. The slate of officers proposed by the Nominating is the following:
Chair-elect - Fred Jones **Sr. Vice Chair** - Ronald DeLyser **Vice Chair, Member Services** - John R. Adams
Vice Chair, Student Activities - Clifford Alston **Secretary** - W. Kevin Wright **Treasurer** - David Edwards

Call Marilyn Peterson at 329-1615 by Friday, October 13 for reservations. (Please notify Marilyn even if you will not be having dinner, in order that adequate seating may be reserved.)

Joint Vehicular Technology & Communications

October 12, 1995
6:30 p.m.
NIST, Room 1103, 325 Broadway, Boulder, CO 80303

Speaker
Joe Ilacqual, Indra's Net, Inc.
Do you ever wonder how your E-Mail packets are linked to the Internet? Who is my local gateway to World Wide Web? What takes place at an Internet Services provides? Take a behind-the-scenes look at Indra's Net, Inc.

For more information contact David Iliff (303) 757-1797 or Mark Schriver (303) 698-9668.

Joint Power Engineering & Industry Application

October 19, 1995
Social 5:30-6:30 Dinner 6:30
Brooklyn's Sports Bar
2644 W. Colfax Ave. (1 block south of McNichols Arena and Mile High)
Dinner Fee: $12.00 (Students free)

Speaker
Mr. Joe Leoni - Leoni Lift Controls
"Flux Vector Drives in the Ski Industry"

Please RSVP by October 16 to Barbara at Peterson Company (303) 388-6322 for dinner reservations.

Lasers and Electro-Optics

The Lasers and Electro-Optics Society of the Denver section of the IEEE is in the process of planning an exciting year. Meetings are scheduled for September 21, October 19, November 16, December 14, January 18, February 15, March 21, April 18, and May 16.

Meeting talks will include topics of interest in lasers, optics, and electro-optics and will be given by speakers from industry, government, and academia.

All meetings except December will be held at NIST labs, 325 Broadway, Boulder.

Call Kevin Keilbach at 673-1349 or e-mail at kevink@ohmeda.com for more information.

Centennial Subsection News

I need to pass the baton. In August of 1992 Dr. Jorge Aunon, Professor and Head of the EE Department at CSU initiated the first meeting of the IEEE Centennial Subsection that I attended. At that meeting I agreed to become the Vice-chairperson while Dr. Aunon agreed to chair the subsection.

In late 1993 the baton was passed to me. I have carried it for the last two years. During that time we had many exciting speakers and the attendance was high but only from Wyoming participants.

It is time to pass the baton back to someone in northern Colorado. I do not have the time to continue organizing and inviting guest speakers to our meetings because of my work load. I would appreciate it if someone, perhaps at CSU, would pick up the baton and continue to carry it proudly.

Please contact Dr. Richard Sandidge at (307) 766-6181.

Magnetics Society

October 24, 1995
5:30 - 6:30 p.m.
Storage Technology Corporation
Building S, Adirondack Conference Room (Conf. Room A), 2270 S. 88th St., Louisville, CO 80028

Speaker
Dr. William Doyle
1995 IEEE Magnetics Society Distinguished Lecturer, Director of the Center for Materials for Information Technology (MINT), The University of Alabama
"Magnetization Reversal at High Speed - An Old Problem in a New Context"

Please collect an access badge at the Visitor Center. Call Dr. Jim Cates at (303) 673-4126 to verify the date or for other questions.

The first annual E-Mail Survey for IEEE Denver Members

1. Do you have a computer/modem system capable of sending and receiving E-Mail? _____ (At home or at work) If Yes PC or Mac? _____

2. Do you have an E-Mail Address? _____ If Yes, please provide it. _____

3. Do you get or send documents via E-Mail? _____

4. What Work Processor Software do you have? List with your first preference at the top.

5. Do you like to use E-Mail? _____ Explain reasons for your answer.

6. Any comments or thoughts about E-Mail in general?

Instructions: E-Mail your responses to jadams@pfizer.com or Fax them to J. Adams at (303) 530-6313.

Comment: The results will be in the November or January RockIEEE Overlook, depending on how fast you all respond.

Budget Preparation

The Denver Section is preparing the budget for next year.

If your chapter, Subsection or Student Section has a project planned for next year that will need funds, contact the committee chair responsible for that activity to place your project on the agenda for consideration.

If you have not yet voted in the IEEE Presidential Election, please remember to do so!!!

PACE

by Paul Meisel

During the Labor Day weekend the annual PACE conference was held in Cedar Rapids, Iowa. Approximately 200 engineers met at this conference to chart the priority issues which will be addressed for the following year.

What is PACE? It is the Professional Activities Committee for Engineers. In 1972 when the membership voted to change the constitution of the IEEE to include professional activities as well as technical, the PACE unit of USAB (United States Activities Board) was formed.

During the years since the establishment of this committee, much effort has been expended on portable pensions and additional benefits for engineers. These also include insurance, credit cards, travel benefits, et al.

Locally the Denver Section PACE activities include the National Engineers Week activities, employment seminars, and financial planning seminars to name a few. Anything which would improve the professional being of the engineer falls into the activities of this committee.

Over the years the activities have changed to meet the needs of the members. It should be interesting to see the results of the Labor Day Weekend meeting to determine where the emphasis will be for 1996.

Editorial Help Wanted

Do you like to talk to other Engineers about New technology, meetings and other IEEE related topics? If yes then I would like to talk to you about a great job of being the RockIEEE Overlook Editor or as an assistant Editor. Please Call John Adams (Member Services) at (303) 530-6503, 8 am - 4 pm.

Denver Section leaders have hired Anita Wanberg to publish the newsletter for us, but we still need one to three good members to gather the information. This does not take a lot of time, but it must be done every month so that the inputs can get to Anita one month before we publish the newsletter. If you're even a little bit interested, please call!

From the Chair (continued from page 1)

to schools are made by professionals who discuss career options in our field. Videotapes and other materials are available as teaching aids to volunteers. The IEEE also provides a live Video broadcast to schools in February called the Faraday Lecture; a professional in each participating classroom is needed for discussion after the program. If you are able to help in one of these programs, contact Jeff Wilson, Pre-college activities chair. The Section sponsors a prize for the Science Fair, and arranges for professionals to act as judges. Jeff Wilson or Ed Pitchkolan can advise how to provide service for the Science Fair.

The Section also can use volunteers to man booths in Expos and Trade shows to provide membership and other information to prospective members. Conference registration and planning always requires volunteer help. Conference activities chair Jim Schroeder coordinates those activities. The Section recently acquired a copy of the 1995 IEEE U.S. Membership Salary and Fringe Benefits Survey. Contact David Richmond if you wish to use this publications.

Ten Observations (continued from page 1)

modify their source code. (e.g. an accountant modifying his tax pro-grams to take into account new law.

6. Build the service modules first. These are the real time executive communications and logging to name a few. Their importance is that they effect all other modules and enable their functionality.

7. Quality is in the perception of the customer as to how a product meets or exceeds his expectation. So quality is better when the product performs better. It is also better when the customer has the proper (realistic) expectation.

8. Don Combelic, the world's oldest C programmer, said, "a quality product is one that gives him pleasure (satisfaction) every time he uses it". Software quality has also been defined "CUPRIMD", which stands for Capability, Usability, Performance, Reliability, Installability, Maintainability, and Documentation. I would also add "Robustness" to account for the desired rationality in dealing with off-nominal inputs. One would prefer these to be signalled as errant and pause for user intervention, and not act on the errant input as valid.

9. Too loosely couple design systems. Example: a tape drive has an initializing software routine that checks out the drive motors to assure they are operating to specification. The sourcing folks found an alternate source which was found to have different operating characteristics than the first source. The software found many of these motors out of specification during their check out. Procurement was not coupled with the software test people.

10. The biggest expense and difficulty in software and systems is getting and maintaining a valid set of requirements and understanding of the problem domain. You fix one problem and that "fix" creates a problem for 10 other customers who had relied on the original solution structure.

Sam Keane - IEEE Fellow, Reliability Society. Sam can be reached at Storage Technology at (303) 673-5963. Sam is the Chairman of the Denver Reliability Chapter, and he would like to have your ideas on what topics are of interest to YOU for future meetings.

The Institute of Electrical and Electronics Engineers - Denver Section

Chair	Chair-elect	Sr. Vice Chair	Vice Chair Member Services	Vice Chair Student Activities	Secretary	Treasurer
Robert Struthers	David Richmond	Fred Jones	John R. Adams	Ron DeLyser	W. Kevin Wright	David Edwards
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Centennial Subsection - Richard Sandige (307) 766-6181
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Conference Activities - Jim Schroeder, (303) 449-4109, Fax: (303) 673-9936
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