

To: AESS BoG
Date: 15 February 2005
Subj: Exec VP Report
From: Jim V. Leonard

1. Special Project at UMR AECE: Task **Force**

The outline below is a list of job skills that young engineers may need to be competitive. These items were discussed in a meeting of the Task Force on October 16, 2004 here in Rolla. The next step is to either have alums review these items in a survey to see how important they are in their success or to use a focus group, such as the EE/CpE members of the CDC or the Board of Trustees.

Skill Areas Which May Need Attention in UMR ECE Graduates

I Technical Skills

- Digital
- Controls
- Electronics
- Electromagnetics
- Circuits and Systems
- Power/Machinery

II Mathematics and Basic Science

- Calculus and ODE
- Physics
- Chemistry

III Computing

- Operating Systems
- Programming Languages
- Software (Matlab, PSpice, etc.)

IV Engineering Science

- Statics
- Dynamics
- Strength of Materials
- Thermodynamics
- Heat Transfer
- Fluid Dynamics

V Management Skills

- Engineering Economics
- Marketing
- Finance

VI Communications Skills

- Writing
- Public Speaking

VII Leadership Skills

VIII Team Work

IX Office Politics

X Impact of Technology on the Environment and Society

Recommendation from one industry dept head that these topics be covered at some level as well (Dec 2004)

Scientific Method

Design of Experiments

Test Planning, Test Methods and Test Reporting

Systems Engineering

Network Centric Operations

Supplier Management

Project Management

Testability, Producibility, Reliability, Maintainability

Not all these deserve equal time, but they worthy of some level of awareness / knowledge for strong engineers.

Original intent was to send this questionnaire about to about three hundred recent UMR ECE graduates. In a meeting with Dr. Stanek on Feb 4, 2005, I suggested that we might possibly use the IEEE GOLD committee to assist us in sending this questionnaire to the GOLD members. This will require co-ordination with Dan Berg (our AESS GOLD Chair) and the IEEE GOLD Committee (John Meredith, Director R5 and Gerald Anleitner, IEEE GOLD Committee Chair).

2. Rejuvenation of UMR AESS Student Branch Chapter

I have been in touch with Dr. Jag Sarangapani at UMR, who is the IEEE Student branch Councilor. UMR is having a membership drive on 28 February and I plan to assist. We will try to sign up some students to AESS. Jag has identified a Professor that will be the AESS Student Chapter advisor. Jag has also decided to join AESS. I will get Dan Berg to help as he was the AESS Student Chapter chair at UMR before he graduated. Dr Balakrishnan (UMR Aerospace Engineering) tentatively has volunteered to be their advisor.

3. AESS GOLD COMMITTEE ESTABLISHED

We have established an AESS GOLD Committee with Dan Berg volunteering to be the first Chair. Dan is a GOLD Member of IEEE and a member of AESS. The AESS President has approved formation of this committee. An RAA has been established and approved. Dan is unable to attend this meeting due to business pressures of an F-15 program. He will attend the next meeting. See his separate report. We have informed the IEEE GOLD Committee of our activity. See the following message from Gerald Anleitner:

I read your message to Cathy Downer regarding the setup of an AESS Gold Committee. Being appointed the GOLD Committee Chair 2005, I want to congratulate you on this effort and would like to tell you that I feel very positive about this.

Sure it is a "first time", but as Cathy mentions, there are a lot of activities of the GOLD Committee where interfaces could be found and/or

synergies gained.

Thus I'd like to stay in contact with you and I'd be happy to get into further discussion about common objectives, activities and the like.

When the GOLD Committee 2005 is finalized and we get going, I will make sure that you are contacted by the people of respective GOLD Ad-Hoc Committees. In addition, feel free to send any ideas, issues etc. to me for now! I am sure we will find opportunities to cooperate!

4. IEEE Society Review committee Approves AESS 5 Year Society and Pubs Review

Thanks for the extremely hard work of those involved in preparing the paperwork and participating in this review cycle. Paul Gartz will have more to say on this.

5. Industry Relations

I believe I will be appointed by Cleon Anderson to Chair the 2005 IEEE Industry Relations Committee. As you all know, I have been very active within Boeing to improve IEEE relations with Boeing. We are very close to having a Boeing/IEEE MOU signed. Boeing has signed an MOA with IEEE to serve as one of the Beta sites for IEEE XELL. I will present an IEEE RAB Friend of IEEE award to Boeing at BTEC 8, Seattle, on 24 February. I have asked Russ LeFevre and Leah Jamieson to make a presentation to Boeing on the IEEE New technology efforts. And I have asked Rachel Berrington to make a presentation to Boeing on the update IEEE Xplore. If I can get these events held, they can serve as a model for working with other possible Industry partners for IEEE. Paul Gartz has worked to get the IEEE societies interested in Earth Observation together. Boeing makes both the GOES satellite and the Delta Booster for it. Paul believes that there is a perfect match here.