# IEEE Reliability Society Newsletter Submission
# from the Boston Chapter
## November 2008 / March 2009

Greetings! this is a combined November 2008 & March 2009 Boston chapter newsletter, where we will report on several meetings & chapter developments. We are now in the planning stages of our 09-10 meetings, through June 09.

**Gene Bridgers, Principal Reliability Engineer Mercury Computer. 32 Members & Guests in Attendance**

**- July 2008 TDC workshop, held at Mercury Computer Images courtesy of AdCom member Aaron D. (Raytheon)**

**July 08 Technology Development Workshop:** We completed the last 07-08 season meeting in July, with a Design for Reliability technology workshop at Mercury Computer *(Chelmsford, MA.)* hosted by AdCom member Gene Bridgers. Gene presented: "Automated MTBF-DfR Demonstration", where he showed participants a semi-automated real-time on-line tool developed and employed at Mercury. With the automated process in place, Mercury Computer's development organization is able to quickly assess the Reliability of a particular product design, improving product the development cycle. We had a total of 32 members & guests at this meeting.

**August IEEE Chapter Re-alignment:** The former IEEE area Section, **C**entral **N**ew **E**ngland **C**ouncil (Includes IEEE: Boston, New Hampshire, Providence, Maine and Worcester County) was dissolved per IEEE Section ExCom vote and Region 1 MGA approval in August. This was due in part to reallocate IEEE funds to the local sections. The CNEC consisted of 19 Society chapters (including the Boston Reliability chapter), which served IEEE society members in the 5 area sections. Smaller chapters benefited from this regional alignment by serving area society professionals within the 5 sections.

Following approval, all former CNEC society chapters were asked to determine which of the 5 sections would become the parent IEEE section to report into. Per IEEE by-laws, all society chapters must be part of a parent IEEE section or become a member of a parent IEEE Region. The Boston Reliability chapter along with (2) other society chapters were moved under Region 1, until the chapter AdCom could convene and determine our chapter's path forward.

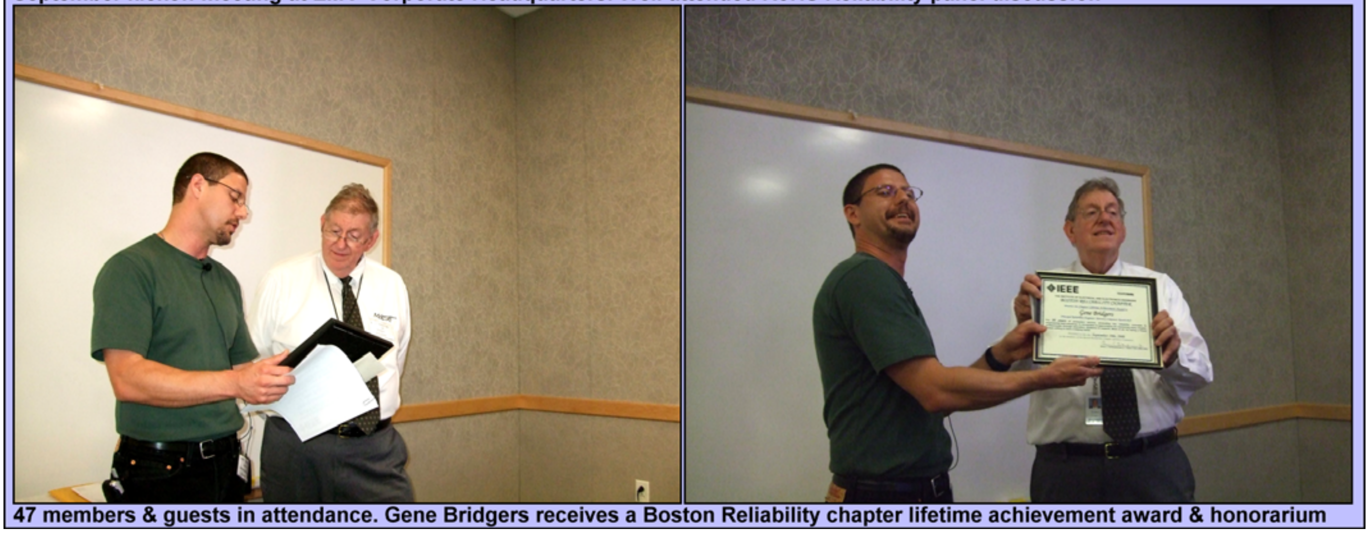
The chapter AdCom reviewed membership data during follow on meetings & determined that while **70%** of the chapter members reside or work in the IEEE Boston section area, **30%** work in the IEEE New Hampshire, Providence & Worcester county sections. In addition, guest monthly meeting participants which represent approximately 50% of our attendees were split evenly between Boston and the other former CNEC sections. Based on member and guest participant data analysis, the AdCom unanimously voted to become a Joint section chapter between Boston, New Hampshire, Providence & Worcester County (Worcester county declined our request).

In November per Region 1 MGA approval, the Boston Reliability chapter officially became a joint section chapter between Boston, New Hampshire & Providence. The AdCom believes this alignment will best serve the needs of it's regional members & participating guests which we encourage to participate in the chapter's activities.

We would like to thank Dr. Howard Michel (IEEE Region 1 Director), our Joint Section leaders IEEE Boston John Conrad (chair) & Bob Alongi (business mgr.), IEEE New Hampshire Jim Anderson (chair) & IEEE Providence David Casper (chair) for considering and approving our joint section chapter request. We are excited about the new alignment which will ensure the vitality of our local chapter for years to come!

## 08-09 meetings & Events: (Sept - Dec)

**September kickoff meeting at EMC Corporate Headquarters. Well attended RoHS Reliability panel discussion**



**47 members & guests in attendance. Gene Bridgers receives a Boston Reliability chapter lifetime achievement award & honorarium**

**- Sept. 2008 kickoff RoHS Reliability panel discussion, Images courtesy of AdCom member Aaron D. (Raytheon)**

We held our **September** kickoff meeting at EMC Corporation Headquarters located in Hopkinton. AdCom member Gene Bridgers hosted a RoHS Reliability Panel Discussion. Several area professionals that work with RoHS compliant interconnect & platings were on hand for this lively discussion. Panel members included: Paul Bodmer (Benchmark Electronics, FA Expert), Bob Landman (H&L Instruments, L.L.C.), an Active RoHS student & IEEE Reliability ALERT Initiative Co-Chair with Ramon De la Cruz (Teradyne Inc.), Darryl McKenney (Mercury Computer, RoHS COTs Design Lead) and Dr. Anthony Rafanelli (Raytheon, RoHS Team Member). Discussion topics included the long term reliability issues associated with the migration to lead-free interconnects and the impact and implications this has industry wide on systems that are exempt from the RoHS legislation (Defense electronics, aerospace, medical electronics).

This meeting was well attended, we had a total of 47 members & guests at this meeting.

Following the meeting, we had the great honor of presenting Chapter AdCom member Gene Bridgers with a Plaque & honorarium awarded by the Boston Reliability chapter for his twenty five years of volunteer service to the chapter. The Boston Reliability chapter lifetime achievement award presented reads in part: ***"For 25 years of exemplary service, promoting key reliability concepts & engineering best practices. In recognition & appreciation for mentoring many chapter professionals through education, guidance & support. Most of all, for being a friend always willing to lend a helping hand!"***. Gene moved back home to North Carolina in September but continues to work for Mercury Computer and participates in our AdCom planning meetings remotely. Gene, we are grateful and thank you for your continued support!

**October ASQ 57th Conference, Membership table (top left) ; Presenter Nihar Senapati (top right)**

**Presenter Ken Rispoli (botton left) ; Raytheon Authors & Presenters: Phil, Ken, Jim, Matt & Aaron Jr. (Pam Winters not shown)**

**- Boston chapter hosted a Reliability track, Images courtesy of Aaron D. (Raytheon) & Ramon De la Cruz (Teradyne)**

**In October**, we canceled our regular monthly meeting session to support the ASQ New England Quality Council's 57th Conference, held in Marlborough MA. The Boston Reliability chapter hosted the Special & Reliability Tracks for days 1 & 2 of the conference, as we did in 2006. The Special track included presentations on Medical device quality, while the Reliability track had an emphasis on Industry wide Reliability practices and lessons learned. The Boston Reliability chapter would like to extend our thanks to the following Reliability track Authors & presenters at this year's Conference:

**Presentation 24A: "Delivering a Compliant and Risk Focused DFR (Design for Reliability) Program for Medical Devices" ; Author- Nihar Senapati Sr. Reliability Engineer ; General Electric Healthcare** *(Chapter AdCom member)*

**Presentation 24B: "An Improved Approach to Fault Detection / Fault Isolation (FDFI) Verification" ; Author- Philip A. Bedard Sr. Principal Systems Engineer ; Raytheon Company- IDS**

**Presentation 24C**: **"Power Supply Reliability- COTS Integration, Lessons Learned"** ; **Authors- Kenneth P. Rispoli Sr. Principal Engineer** *(presenter)* ; **Aaron C. DerMarderosian, Jr. Sr. Electrical Eng. II *w/honors*** *(Track Session Chair)* ; **Raytheon Company- IDS**

**Presentation 24D**: **"The Impact of Spares on Availability"** ; **Authors- Mike Flanagan Reliability / Maintainability Engineer** *(presenter)* ; **James Perreira Engineering Fellow ; Pamela Winters Reliability / Maintainability Engineer ; Raytheon Company- IDS**

**Workshop Session 24E**: **"New European Legislation, Asian Pollution Levels – How Packaging Can Increase Electronic Reliability in the Face of These Challenges"** ; **Authors- Keith Donaldson** *(presenter)*, **President Engineered Materials Incorporated ; Joe Spitz, President Liberty Packaging Company**

The IEEE Boston Reliability chapter also hosted a membership table outside the track session conference room. Vice-Chair Ramon De la Cruz manned the table and answered conference attendee questions about the IEEE and Reliability society membership.

Nov. 2008 Presenter Andrew Olney (Analog Devices, left), Images Courtesy of AdCom member Aaron D. (Raytheon)

**- Nov. 2008 ESDA-NE / Boston RelSoc meeting, Images courtesy of AdCom member Aaron D. (Raytheon)**

**In November**, we held a joint meeting with the ESDA Northeast chapter & Dangelmayer Associates, where Andrew Olney (Director of Quality- Analog Devices; Chapter & ESDA member) presented: "Real-World Charged Board Event (CBE) ESD Failures" at 171 EMC Corp. Andrew provided an overview of the various ESD models used to characterize sources of potentially damaging ESD events that occur in the electronics industry. In particular, the Charged Board Model (CBM) was discussed at some length. Andrew provided several examples of ESD damage and how EOS & ESD physical damage can be easily misinterpreted in the FA Analysis process. We had a total 44 Members & guests in attendance at this meeting.

The IEEE-RS announced **2007 Annual Reliability Chapter awards** this year on November 6th. The overall score for each competing chapter is calculated based on the number chapter of meetings, number of participants, member participation in IEEE & non-IEEE based technical conferences (as author / presenters) & member technical contributions to the IEEE Reliability Society.

The Competition results are as follows:

| | | |
|---|---|---|
| **4th place:** | **$200.00**; | Shared- Baltimore, Cleveland, Denver Japan, Ottawa, Taipei/Tainan (Taiwan), Twin Cities, UK/R I |
| **3rd place:** | **$400.00**; | Italy - 69.0 points |
| **2nd place:** | **$600.00**; | Singapore - 71.0 points |
| **1st place:** | **$800.00**; | **Boston - 84.4 points** |

We want to thank all of our chapter members for your participation in this year's competition. The money received from the award will be used to host additional technical meetings & provide financial contributions to our joint member sections.

Dec. 2008 Annual past chairs & Dinner monthly meeting ; Presenter David Pinsky (top left)

Award presented by AdCom to Aaron DerMarderosian Jr. (bottom right), Pictured: Ramon, Aaron Jr., Don & Jeff

**- Dec. 2008 presentation EU-REACH overview, , Images courtesy of Ramon De la Cruz (Teradyne) & Aaron D. (Raytheon)**

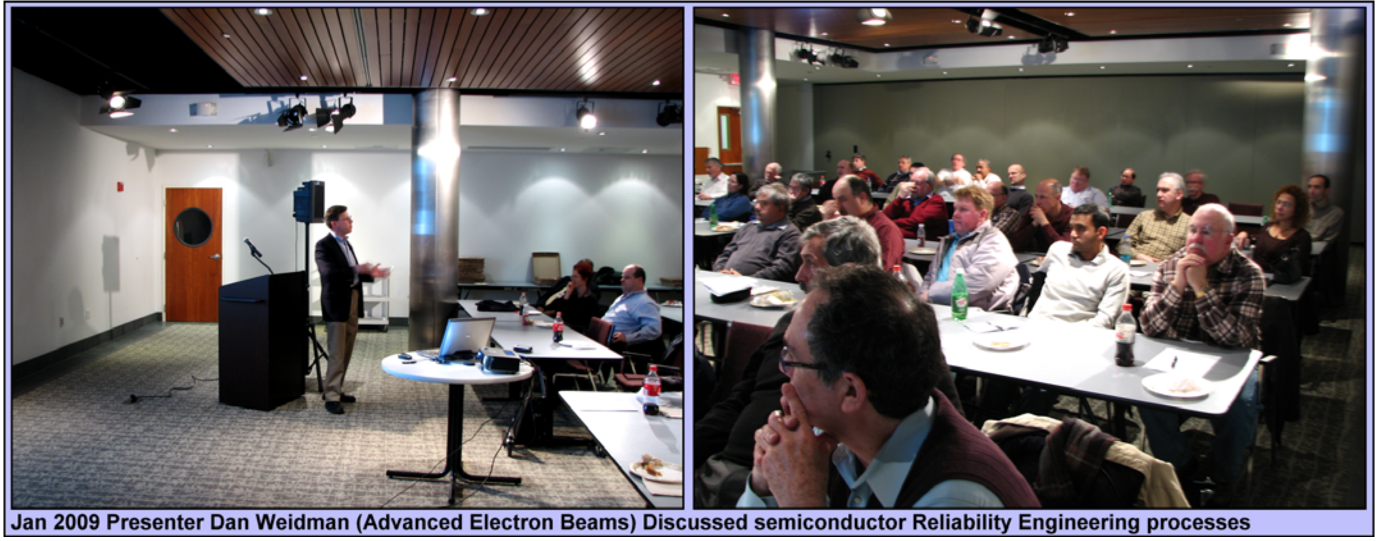
**In December** we held our annual chapter past chairs & dinner meeting. A chapter brief was presented highlighting chapter meetings & activities through 2008 and results of our annual Chapter officer elections. For the 2009 term our Vice Chair Ramon De la Cruz (Teradyne) was voted into the Chair position, Aaron DerMarderosian Jr. (Raytheon) will be vice-chair & past chair, Don Markuson (Sierra Atlantic) was re-elected to chapter Treasurer & Eddie Robins (EMC Corporation) was re-elected as Secretary. For our annual dinner meeting, we had several past chapter chairs in attendance. Amongst those recognized for their contributions were:

**Donald Dawes: Chair, 1971 - 1972**
**Don Markuson: Chair, 1990 - 1991 & 1995 - 1996**
**Jim Fahy: Chair, 1999 - 2000 & 2004**
**Jeff Clark: Chair, 2000 - 2003 & 2005**
**Aaron DerMarderosian Jr.: Chair, 2006 – 2008**

Prior to the start of the evening presentation, the AdCom presented Aaron DerMarderosian Jr. with an appreciation award (pictured above) for leadership, dedication & contributions to the chapter, as the chair for 2006 - 2008. Aaron was grateful & humbled to receive such a recognition from chapter colleagues!

Our featured guest speaker was David Pinsky, Raytheon Company Engineering Fellow presented "EU Commission- REACH Overview, implications on material Reliability & Availability" at RSA, the security division or EMC, in Bedford MA. Dave provided details around the recent implementation or European Union REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) legislation and it’s impact on availability & reliability of materials that are used in electronic systems. REACH effects an estimated 30,000 substances beyond those realized by the banning and reduction in use of 6 hazardous substances as defined by RoHS (Reduction of Hazardous Substances) legislation which came into effect in 2006. We had a total of 37 members & guests at this meeting.

## 08-09 meetings: (Jan - Feb)



Jan 2009 Presenter Dan Weidman (Advanced Electron Beams) Discussed semiconductor Reliability Engineering processes

**- Presentation on semiconductor Reliability engineering, Images courtesy of AdCom member Aaron D. (Raytheon)**

**In January**, we were back at RSA the Security division of EMC (Bedford MA.) where Dr. Daniel Weidman Principal Process engineer from Advanced Electron Beams presented "Practical Reliability Engineering for Semiconductor Equipment". Dan’s presentation discussed how to compile & analyze in process and field data to assess & improve product reliability. The examples used related to semiconductor equipment manufacturing but could easily be applied in several other industry sectors. We had a total of 41 members & guests at this meeting.

**In February**, Leslie Gabriele from Gabriele & Company presented "Revitalizing your Job Search, Mind over Market" at RSA, the security division of EMC. Leslie, a friend of the chapter and a past presenter at our chapter meetings is a lecturer, career councilor, coach and high-tech recruiter. Her presentation focused on seasoned technical professionals, who are familiar with career positioning and job hunting but need additional guidance on techniques utilized to take advantage of future job opportunities. A portion of the evening was dedicated to inter-personal networking as several attendees are looking for new job opportunities. With the current economic climate, this event was extremely well attended and received. We had a total of 51 members & guests at this meeting.

### Upcoming meetings:

**In March**, Michael Benedek Sr. Principal Engineer & Reliability team lead from Raytheon RF Components will present "Microwave Device Reliability Characterization-The Mechanics of Life Test Execution and Analysis", this meeting will be held on Tuesday March 10th at Teradyne’s N. Reading facility. Registration for this event is open on the Boston Reliability chapter website and will close Friday **March 06th**, 2009.

**In April**, we will hold our meeting at EMC Corporation Headquarters in Hopkinton. IEEE Fellow Dr. Shubu Mukherjee who is a Principal engineer at Intel Corporation will present “Super-Linear Increase in Soft Error Rate from Doubling the Cache Size: Bug or Phenomenon?”. Dr. Mukherjee will review detectable unrecoverable errors experienced in the expansion of processor L2 Cache. Registration for this event is open on the Boston Reliability chapter website and will close Monday **April 13th**, 2009.

**Our May** monthly meeting is currently in the planning stages. As we did last year, we are considering several possible topics for Technology Development workshops, over the summer. Please check our website periodically for updates on these upcoming events!

http://www.ieee.org/bostonrel

If you would like to present a reliability based topic at a future meeting, have meeting topic suggestions or ideas about how to improve our meetings, we want to hear from you! Please send an e-mail to any of the AdCom members or go to our website and Click on: Suggest a Monthly Meeting Topic.

To participate or provide input to chapter technology development activities, sign up to become a TDC committee participant using our website. Click on: Join Technology Development.

You can also be added to the chapter e-notice distribution via our website, click on: Join our E-Mail Distribution List or send a request to: dermarderosiana@ieee.org (Past chair, notices & registration).

Best Regards,
Ramon De la Cruz. - Chair, Boston Chapter
Aaron C. DerMarderosian Jr. - Past Chair, Boston Chapter