



## The IEEE Reliability Society Joint Section Chapter: Boston - New Hampshire - Providence February 2023

<https://r1.ieee.org/boston-rl/>

### Welcome to the Boston Chapter Newsletter:

The joint chapter hosted two presentations this quarter. David Silkworth presented "OpenReliability Software Tools on R December 14<sup>th</sup>", and Dr. Nathan Blattau presented BGA Reliability and Manufacturing Challenges on February 8<sup>th</sup>. See Meeting Highlights below.

We miss the in-person networking and are grateful subject matter experts continue to participate in on-line webinars to discuss applications and solutions. We are investigating options for in-person and/or hybrid meetings.

If you are interested in hosting and/or presenting at a monthly meeting, being added to the meeting notifications, or attending an AdCom meeting, send an e-mail to Jay Yakura, Vice Chair [james.yakura@ieee.org](mailto:james.yakura@ieee.org) or Mike Bannan, Chair [michael.bannan@ieee.org](mailto:michael.bannan@ieee.org). We are always working to fill the calendar with fresh reliability presentations months in advance.

You may find links to scheduled meetings on <https://events.vtools.ieee.org>; search for region 1, section Boston, CH01021. Our chapter site is <https://r1.ieee.org/boston-rl/>, and archived presentations may be found at <http://www.ieee.org/bostonrel>.

We would be pleased to add new members to the Advisory Committee and welcome discussion questions.

**AdCom meetings:** April 18, and May 30, 2023 - target dates.

**Future Presentations:** April 12, May 10, and June 14, 2023 - target dates.

## Meeting Highlights:

### December 14, 2022: “OpenReliability Software Tools on R”

David Silkworth, retired engineer and Reliability Professional  
23 participants

David Silkwood encourages using the analytical techniques available in open-source R for a deeper understanding of the basis for reliability analysis beyond that provided from the “shrink-wrapped” software packages. As promised, the presentation was a fast-paced perusal of published tutorial documents and pages, and the modules presented made quick work of transforming raw data into report-quality results including Weibull plots with confidence bounds, fault tree charts, and histograms.

The following links include the topics covered during the presentation and are provided so the student may expand their toolkit:

- [Introducing WeibullR A package on R Life data analysis in the graphical tradition of Waloddi Weibull](#)
- [WeibullR An R Package for Weibull Analysis for Reliability Engineers](#)
- [Accelerated Life Testing Application Development for Data Analysis](#)
- [Faulttree-users-tutorial](#)
- [Using Stochastic RAM Analysis to Establish an Optimal Operating Policy](#)

[R Meeting Recording Link](#) Passcode: B@67hD=C

David is available to provide individual guidance at [djsilk@openreliability.org](mailto:djsilk@openreliability.org).

### February 8, 2023: BGA Reliability and Manufacturing Challenges

Dr. Nathan Blatta, Distinguished Engineer at Ansys  
50 participants

The reliability and manufacturability of BGA devices is becoming more dependent on the PCB structure, layout, and chassis design. With ever increasing part densities the chassis design (PCB mounting), board layout, and underfills can cause additional stresses on the BGA device beyond the thermal expansion mismatch.

Nathan’s presentation covered some of the thermal-mechanical issues, manufacturing defects, and modeling techniques that can be used to help determine the reliability of BGA devices. The variety of lead-free solder materials with a wide range of inelasticity make modeling essential for board and component reliability.

The presentation may be found at the following link:

[https://us02web.zoom.us/rec/share/XWRDIHvaN60yLsFmR8Gn7Lj7fMXptDYmZtFDGGDosHLwnTZkLkqTrMC10-FtysZf.v18\\_4m5AvlYOSGj-](https://us02web.zoom.us/rec/share/XWRDIHvaN60yLsFmR8Gn7Lj7fMXptDYmZtFDGGDosHLwnTZkLkqTrMC10-FtysZf.v18_4m5AvlYOSGj-)

Passcode: 3Ed.KM%E

## Upcoming Activities

**AdCom meetings:** April 18, and May 30, 2023 - target dates.

**Future Presentations:** April 12, May 10, and June 14, 2023 - target dates.

### Advisory Committee (AdCom) Members 2023

Chair: Mike Bannan – BAE Systems - [michael.bannan@ieee.org](mailto:michael.bannan@ieee.org)

Vice Chair: Jay Yakura – Retired [james.yakura@ieee.org](mailto:james.yakura@ieee.org)

Secretary: Don Markuson - Silicon Labs [d.markuson@ieee.org](mailto:d.markuson@ieee.org)

Treasurer: Don Markuson - Silicon Labs [d.markuson@ieee.org](mailto:d.markuson@ieee.org)

Website: James A. Yakura – Student - [james.a.yakura@ieee.org](mailto:james.a.yakura@ieee.org)

Newsletter: Mary Jones – Analogic Corporation [maryajones@ieee.org](mailto:maryajones@ieee.org)

Publicity: Vacant

Members at Large:

Dan Weidman - MIT Lincoln Laboratory [danweidman@ieee.org](mailto:danweidman@ieee.org)

Gene Bridgers - Results MA [gbridgers@resultsma.com](mailto:gbridgers@resultsma.com)

Giora Kuller - Retired [g.k.kuller@ieee.org](mailto:g.k.kuller@ieee.org)

Charles Recchia - [charles.recchia@ieee.org](mailto:charles.recchia@ieee.org)

## Chapter Seeks Volunteers

The IEEE mission is Advancing Technology of Humanity.

The IEEE Reliability Society mission is Promoting recognition of the reliability profession, developing, and disseminating reliability best practices, and being a resource for collaboration among reliability professions.



As a volunteer organization, our success is directly related to having people like you involved in the planning and execution of our meetings and communication processes.

Please consider joining us.

Email us to attend one of our Advisory Committee meetings to see how the team works together. Your contributions may be as much or as little as you would like. We have a good team of volunteers that help us keep things going, so if you would like to join us, there is ample opportunity to choose how you would like to contribute.

You may find URL links to all the meetings on <https://events.vtools.ieee.org>, - search for region 1, section Boston, CH01021. For updates on upcoming events see the IEEE Spectrum or contact Jay Yakura [james.yakura@ieee.org](mailto:james.yakura@ieee.org) or Mike Bannan [michael.bannan@ieee.org](mailto:michael.bannan@ieee.org) to be added to our notification list.

## **Consider Reliability Society Membership**

Society Membership includes:

- Society Newsletter (electronic),
- IEEE Transactions on Reliability (online),
- IEEE Reliability Society Conference Digital Library (online), and
- IEEE Reliability Society Resource Center (online).

Readers can contact chapter newsletter editor Mary Jones ([maryajones@ieee.org](mailto:maryajones@ieee.org)) with any comments, suggestions or if interested in contributing to our next issue.

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