

# ESD ASSOCIATION REGIONAL TUTORIALS

## March 6-7, 2018

### March 8th 2018- Optional Program Manager Exam

3M Innovation Center – 6801 River Place Blvd., Austin, TX 78726, USA

Lunch and refreshments provided

### March 6-7, 2018

## Essentials for ESD Programs Factory: Technologies • Controls • Procedures

### 8:00 a.m. - 5:00 p.m.

Instructors: Ginger Hansel, Dangelmyer Associates LLC

Dave Swenson, Affinity Static Control Consulting LLC



This Seminar offers a broad exposure to the essentials of ESD control systems and programs. It offers a two-day comprehensive set of factory technologies and procedures designed for managers, technicians, and specialists desiring ESD control program training and information. The key concepts and information from the courses listed have been selected for this two-day seminar. Demonstrations and videos are included in this seminar. Examples of electrostatics and ESD calculations are included where appropriate throughout the seminar.

- ESD Basics for the Program Manager
- Ionization and Answers for the Program Manager
- Packaging Principles for the Program Manager
- System Level ESD/EMI: Testing to IEC and Other Standards
- Cleanroom Considerations for the Program Manager
- How To's of In-Plant ESD Survey and Evaluation Measurements
- Device Technology and Failure Analysis Overview
- Electrostatic Calculations for the Program Manager and the ESD Engineer
- ESD Standards Overview for the Program Manager

This two-day seminar consists of concentrated versions of the ten ESDA tutorials which comprise the ESDA Program Manager (PrM) Certification Program. This course can serve as a refresher class to those taking the PrM Certification exam. More information on certification is available

<https://www.esda.org/certification/esda-professional-program-manager/>

#### DAY 1 June 29th

##### PART I (8:00 AM-Noon)

This section reviews the fundamentals of electrostatics, charge flow, electric field and voltage. The concept of capacitance and the fundamental relationship,  $Q = CV$ , is introduced and explored with demonstrations and videos. The practical application of these concepts to the measurement of resistance, fields and voltages, and the relevant standards are reviewed and demonstrated.

#### DAY 2 June 30th

##### PART III (8:00 AM-Noon)

Key ESD technical areas are reviewed such as air ionization, ESD-safe packaging, cleanroom principles and electrostatic attraction. Standards relevant to these areas are described.

##### PART II (1:00 PM-5:00)

The principles from Part I are then applied to grounding principles and standards, measurement of charge, standard models for ESD (i.e., human-body model and charged device model), and static induction with demonstrations and videos. Very simple and basic ESD protection circuit concepts and relevant failure analysis techniques are introduced and reviewed.

##### PART IV (1:00 PM-5:00)

The final section includes charge generation test methods, additional ESDA standards, system-level ESD standards and testing, practical auditing techniques and strategies, and ESD event detection. The tutorial concludes with a review of ESD Protected-Areas (EPAs), ESD Program Management and the application of ANSI/ESD S20.20.

*Setting the Global Standards for Static Control!*

EOS/ESD Association Inc. • 7900 Turin Rd., Bld. 3, Rome, NY 13440, USA

Phone +1.315.339.6937 • [info@esda.org](mailto:info@esda.org) • [www.esda.org](http://www.esda.org)



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## About the Instructors:



Ginger Hansel joined Motorola's Semiconductor Products Sector in 1981 as a Test Process/Equipment Engineer to analyze and improve manufacturing operations. She founded and led the manufacturing ESD control team that trained, audited, qualified materials, and established innovative solutions throughout the semiconductor sector. Under her leadership, the team reduced a 40% failure rate in one test operation to almost zero through the targeted introduction of specific ESD control materials and ESD Awareness training. Ginger brought ESD awareness to her other roles as Engineering Section Leader, Technical Training Manager, QA Engineer, Business Metrics Engineer, Data and Document Control Manager, Program Manager and Technical Product Marketing Manager. Ginger retired from Motorola/Freescale in 2004 and became Director of Marketing and Program Management with the ESD consulting group, Dangelmayer Associates.

She has published numerous magazine articles and technical papers on effective ESD control programs and awareness training; examples include "The Production Operator: Weak Link or Warrior in the ESD Battle" and "Cost Effective Failure Analysis Method for Detecting Failure Site Associated with Extremely Small Leakage". She has taught seminars, workshops and webinars around the country and abroad. For over 35 years, Ginger has held leadership positions in the EOS/ESD Association such as President, Board of Directors, Chair of the Education Business Unit and has served on the Steering, Technical Program, Standards, and other committees. She is currently the Senior Vice President of the Association and Chair of the Services Business Unit Group.

Ginger initiated the NARTE ESD Certification in 1992 and is a certified ESD Control Engineer. She is currently on the Board of Directors for the Texas ESD Association. Ms. Hansel received a BS in Natural Sciences (Psychology) and a BS in Electrical Engineering Technology, both from the University of Houston. She received her MBA (Executive Option II program) from the University of Texas.



David E. Swenson retired in 2003 after 35 years of service from 3M. While at 3M he had responsibility for new packaging material development and application, training of 3M personnel worldwide and providing application assistance to users of static control products globally with particular emphasis on Asia Pacific and Japan. Dave and his wife Geri established a new company, Affinity Static Control Consulting, LLC in 2003.

Dave has been a member of the ESD Association since 1984 and has served in many capacities including 1997 Symposium General Chair and president of the Association in 1998 and 1999 and again in 2008 and 2009. He was re-elected to the Board of Directors for a 5th term from 2014 to 2016 and is currently appointed to the Board to assist with technical inquiries. Dave was presented with the highest award of the ESD Association, the "Outstanding Contributions Award" in 2002, the Standards Committee "Joel P. Weidendorf Memorial Award" in 2004 and the Association "Edward G. Weggeland" Memorial Award in 2014. He is a member of the Standards Committee serving several Working Groups and the ANSI/ESD S20.20 Standard Task Team. Dave also serves as Treasurer and Information Liaison of the Texas Chapter of the ESD Association; he is a member of the Electrostatic Society of America, IMAPS, the UK Institute of Physics and is a US Expert to IEC TC101, Electrostatics. In addition, he is the convener of Joint Working Group 13 between TC101 and TC40 (Capacitors and Resistors).

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**Register Online at [www.esda.org/events/calendar/](http://www.esda.org/events/calendar/)**

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

Street: \_\_\_\_\_ City: \_\_\_\_\_

State/Province: \_\_\_\_\_ Country \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Address is (please circle the one that applies) Home or Company

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

### Course Selection

- Essentials for ESD Programs- Factory: Technologies, Controls, Procedures** \$1510 / non-Members \$1610
- Professional Program manager Certification Exam (Optional March 8, 2018)** \$60

NOTE: You must initiate an official file in your name at EOS/ESD Association, Inc. headquarters, and complete all pre-requisite courses to be eligible to take the exam.

Cancellation & refund requests will be honored only if received in writing no later than February 12, 2018, and are subject to a \$50 fee. Any other approved dispositions will also be assessed a \$50 fee.

### Payment Information

**Register online at <http://www.cvent.com/d/0tqctf>**

Other forms of payment Contact:

**EOS/ESD Association, Inc.**

info@esda.org

Phone: +1 (315) 339-6937

**Accommodations:** Homewood Suites by Hilton®  
10925 Stonelake Blvd, Austin, Texas, 78759  
Tel: 1-512-349-9966 Fax: 1-512-349-9995

Staybridge Suites  
10201 Stonelake Blvd. Austin, TX 78759  
Tel: 1-512-349-0888 Fax: 1-512-349-0809

For more information on accommodations visit: [centxesdassoc.homestead.com/3MInnovationDirections.html](http://centxesdassoc.homestead.com/3MInnovationDirections.html).

Sponsored by the Texas Chapter ESD Association <http://www.centxesdassoc.homestead.com>

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