

**NONLINEAR METHODS IN SHM WORKSHOP
LOS ALAMOS RESEARCH PARK**

Workshop Schedule:

Monday, July 24

Travel to Los Alamos

(Note Los Alamos is a 2 hr drive from Albuquerque Airport; check in at Best Western Hilltop House)

Tuesday, July 25

8:30 – 9:00 **Registration** at The Los Alamos Research Park (UCSD) Building, located at 4200 West Jemez Road, Los Alamos, New Mexico
Brief Working Chairs meeting

9:00 – 9:30 **Welcome**, Introduction of Participants, Review of Workshop Goals, Format and Agenda ([Chuck Farrar](#), [Mike Todd](#))

9:30 – 9:50 **Overview** of Structural Health Monitoring, Data Interrogation ([Chuck Farrar](#))

9:50 – 10:15 **Overview**, Nonlinear Methods in SHM ([Mike Todd](#))

10:15 – 10:30 **Break**

10:30 – 11:30 **Technical Presentations**, Four 15-minute applications talks ([invited participants](#))

11:30 – 12:00 **Full Group Discussion 1**, reactions to overviews, discussion, group assignments, participants' initial feedback ([Chuck Farrar](#))

12:00 – 1:30 **Lunch @ Research Park**

1:30 – 2:30 **Working Group Session 1**

2:30 – 3:00 **Working Group Session 1 Recaps** ([each working group chair](#))

3:00 – 3:15 **Break**

3:15 – 4:15 **Working Group Session 2**

4:15 – 4:45 **Working Group Session 2 Recaps** ([each working group chair](#))

4:45 – 5:15 **Announcements, updates, feedback etc. (as needed)** ([Chuck Farrar](#))

5:15 – 6:00 **Working group chair people meeting, others free (time scheduled as needed)**

6:00 **Dinner Los Alamos Research Park/ Tour of the Engineering Institute and Los Alamos Dynamic Summer School Projects and Labs**

Wednesday, July 26

9:00 – 10:00 **Working Group Session 3**

10:00 – 10:30 **Working Group Session 3 Recaps** ([each working group chair](#))

10:30 – 10:45 **Break**

10:45 – 11:45 **Working Group Session 4**

11:45 – 12:15 **Working Group Session 4 Recaps** ([each working group chair](#))

12:15 – 1:45 **Lunch @ Research Park**

1:45 – 3:00 **Full Group Discussion 2**, focused group topics, feedback, Q&A open forum ([Chuck Farrar](#))

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- 3:00 – 3:15** **Break**
- 3:15 – 4:30** Full Group Discussion 3 on “*Grand challenges and future research topics in nonlinear approaches to SHM*”
(Mike Todd)
- 4:30 – ~4:45** Final/closing comments, wrap-up, evaluation (Chuck Farrar)
- ~4:45 – 5:30** Working group chair people meeting, others free
- ~5:30** Informal dinner organization

Four working group sessions: (2 working group co-chairs from EI and 2 recorders)

1. **Group 1: Sources/Classification of Material/Component/System and Damage Nonlinearities in SHM**
2. **Group 2: Taxonomy and Usage of Nonlinear Approaches in SHM (Detection, Transition, Interrogation)**
3. **Group 3: Nonlinearity vs. Nonstationarity Issues**
4. **Group 4: Progress Barriers, Issues, and Outstanding SHM Requirements Demanding Nonlinear Methods**

Group 1	Group 2	Group 3	Group 4
Chuck Farrar Mike Todd Eric Flynn Kirsten McKay	Matt Bement Dan Hartman Catherine Whyte Manny Gonzales	Bill Hodgkiss Jon Nichols Tim Overly David Mascarenas	Gyuhae Park Phil Cornwell Matt Nothnagel Laura Jacobs
Doug Adams David Hochman Tom Paez Mark Seaver Andrei Zagrai Paul Johnson	Tom Baca Kumar Jata Lou Pecora Timothy Ulrich David Chelidze Mandy Rutherford	Jerry Lynch Amy Robertson Lawrie Virgin François Hemez Hoon Sohn Andy Thien	Daniel He Sami Masri Mark Rumsey Ed White Matt Kennel Dave Zimmerman