

The Society for Machinery Failure Prevention Technology Fall 2019 Newsletter



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Letter from the Chairman

2019 has been an active year for the Society of Machinery Failure Prevention Technology (MFPT). Our annual conference, held in May, was a great conference. Our Executive Director has change from Amy Wynn at PDMS to the Vibration Institute, Michael Long. Thank you, Amy, and PDMS for your term of service to MFPT. All said, the Society continues its work in each of its focus areas and is sending out the call for papers and presentations for our 2020 annual conference to be held August 4th in conjunction with the Vibration Institute annual training conference.

As MFPT's incoming chairman I look forward to advancing the Society's mission of providing an interchange of technical information for the benefit of owners and operators of mechanical machinery. Our mission yields benefits of increased production time thru the interchange of system design methodology, of machine failure prevention technologies including predictive maintenance, of data management and intelligence, of sensor and failure analysis, and the human elements of machinery operation and maintenance. Our partnership with the Vibration Institute (VI) offers a broad meeting ground for those who have component and system failure problems and those who are engaged in failure prevention. MFPT will provide additional technical content and scope to the Institute's annual meeting. The Society for MFPT is looking forward to building on its collaboration with the VI on meetings, training and technical specification developments.

Please let us know of your challenges and questions

Best Regards

Chairman Preston Johnson

MFPT 2019 Recap

For those who missed it, MFPT 2019 was a great meeting. Some of the highlights included: a short course on *Vibration Problem Solutions for Turbomachinery and Centrifugal Pumps* (**Bill Marscher** and **Maki Onari**); more than 70 technical presentations; a day-long technology session on Oil Condition Monitoring technology followed by a lively panel discussion

on Oil Analysis state-of-the art and development of an OCM standard; a very good networking / vendor reception event and; a collegial Focus Group meeting after dinner on Wednesday night. Special invited presentations including *US Navy CBM Efforts and Predictive Analytics* by **CDR Jesse Black, USN**, *Design for Reliability and Risk Estimation and Acceptance* by **David Breslin**, and 90-minute tutorials on *Signal Processing Basics* by **Suri Ganeriwala** and *Modal Analysis* by **Mark Richardson**. The MFPT thanks its 2019 partners **Greg Gammon** of the **Texas A&M Turbomachinery Laboratory**, **Peter Gaydon** of the **Hydraulic Institute** and **Bob Sayer** and **Michael Long** of the **Vibration Institute** for their support and for providing a wealth of additional technical content for the meeting. MFPT extends its thanks to **Larry Burrill**, President of **McKean Defense** for his outstanding keynote talk on *Reimagining the Model for Reliability and Readiness Data Analytics*. This was the first time that MFPT met in the Philadelphia area and I personally think it was a great location for our meeting. Thanks to **Amy Wynn** who did a great job of selecting the location and venue and to **Susan Berkelbach** for keeping everything running smoothly. Finally, thanks to all of you who attended MFPT 2019 and to the many people too numerous to mention here who worked to organize and chair the technical sessions. YOU made MFPT 2019 a big success!

Our 2019 Conference papers and presentations are available for download. Please let us know if you need the link

MFPT 2019 Awards

Congratulations to **James Hoffs Hofmeister**, our newest MFPT Fellow, and to **Bill Marscher** the Jack Fraey Award winner.

MFPT Board Members

Congratulations to **Preston Johnson** on his promotion to MFPT Board Chairman. Preston succeeds **Chris Nemarich** as Chairman. Congratulations to **Suri Ganeriwala** who was elected MFPT Vice Chairman. Suri has dedicatedly served the MFPT for many years as Signal Analysis Focus Group chair, presenter, exhibitor and technical paper recruiter and MFPT spokesperson at related events. Both Preston and Suri began their 3-year term of office on the MFPT Board on July 1.

Please welcome **Mantosh Bhattacharya** in his new role as the **Failure Analysis Focus Group Chair** and **Ed Spence** as the newly elected **Sensors Focus Group Chairman**.

We welcome New Members-at-Large, **Demetrios Tzelepis** (formerly the Failure Analysis Focus Group Chair), **John Reintjes**, **John Tucker** and **Kyle Beckett**.

MFPT Board of Directors for 2019 -2020.

Preston Johnson – MFPT Society Chairman

Michael Long – MFPT Executive Director (New Directory since July 1)

Suri Ganeriwala – Vice Chairman

Marc Pepi – Secretary

Chris Nemarich - Immediate Past Chairman

Bob Sayer - President, Vibration Institute

Mike Lipsett - Academic Chairman

Adam Jablonski- MFPT International Liaison

Nga Man (Jennifa) Li - Student Development / Mentorship Chair

Vacant - Publicity / Newsletter Chair

Vacant - Awards Chair

Focus Groups

Preston Johnson – Data Management and Intelligence FG Chair

Hoffs Hofmeister - Diagnostics/Prognostics Chair

Mantosh Bhattacharya - Failure Analysis Chair

Mark Derriso - Human Systems Chair

John Lucero - Systems Chair

Ed Spence - Sensors Chair

I am pleased to join the MFPT board and help facilitate the discussion of sensors for Manufacturing Failure Prevention. This is an exciting time to be in the business - new sensor technologies and the means to connect them, data driven approaches to data analysis and other developments under the IoT umbrella are proliferating, enabling and expanding our quest for reducing unplanned downtime of the machines. I look forward to working with everyone to promote our awareness of new sensor technologies and particularly your experience in applying them.

I'm looking forward to MFPT 2020 in association with our new partners at the Vibration Institute!

– Ed Spence

Member-At-Large

Kyle Beckett

John Reintjes

John Tucker

Tony Barlow

Demetrios Tzelepis

Hiro Endo

Bill Marscher

Member Emeritus

Paul Howard

Ron Eshleman

Chris Pomfret

Dave Corelli

A Note from the Immediate Past Chairman

The past four years have been filled with a lot of changes. My term started under the Executive leadership of **Chris Pomfret** in 2015. Chris had just announced his retirement the year prior to me taking the position of Chairman. I had the job of helping **John Lucero** find a new Executive Director as my first assignment. I was very fortunate that **Bill Pryor** of PdMS Solutions, who was on the Board of Directors at the Vibration Institute, suggested to **Amy Wynn** that she should consider taking on the job. Amy called me and I knew after a very long phone conversation she would be perfect for the job. I wasn't wrong. Amy and I learned the job of running MFPT together but thanks to Amy's leadership, and the help from her administrative officer Susan, there was never any doubt in my mind that MFPT was in good hands. Amy brought her own perspective and style to MFPT. Amy encouraged the MFPT to try new social events (like the Aquarium Tour in Virginia Beach), new meeting locations (Philadelphia) and new technical societies as meeting partners. Amy helped build new relations with the ASNT, the Hydraulic Institute and the Texas A&M Turbomachinery Laboratory. She strengthened our relationships with COMADEM and BINDT. Of course, because of her, our relationship with the Vibration Institute grew even closer. It is through these relations and collaboration that MFPT was able to provide a richer technical content at our annual meetings. Amy has been a true asset to MFPT and I will miss working with her and Susan. I wish them both much good fortune in their future endeavors and I hope to see them at future VI and MFPT meetings.

I want to say **THANK YOU** to everyone who helped me keep the MFPT going strong in its support of the failure prevention community. I know that the MFPT is in really good hands with Preston and Suri and Michael as our new Executive Director. I am sure MFPT will enjoy much success.

It has been fun for four years and I'll miss the job. I'll continue to be involved with MFPT and will continue promoting condition monitoring and failure prevention. I have really enjoyed working with the MFPT Board, organizing and chairing the annual meetings and getting a chance to meet so many of you. I hope I see you all at future MFPT meetings.

Chris Nemerich

2020 Annual Meeting Call for Papers

The Society for Machinery Failure and Prevention Technology (MFPT) is proud to announce its call for papers and presentations for our 2020 annual conference, co-located with the Vibration Institute's annual meeting in Savannah Georgia, August 4th-7th, 2020. As a division of the Vibration Institute, MFPT works to educate conference attendees in techniques that play a role in the holistic approach to machinery failure prevention.

Papers and Presentations fall into one of seven categories:

- Data Management and Artificial Intelligence
 - Organization and management of machinery information
 - Contextualizing data and information about machinery
 - Use of machine learning and predictive analytics against machinery data
 - Standards
 - Case studies
- Diagnostics and Prognostics
 - Identification of defects (diagnostics) and predictions of the need for corrective action (prognostics).
 - Mechanical, Electrical, and Structural Diagnostics and Prognostics
 - Prognostic techniques and methods
 - Standards
 - Case studies
- Human Performance Monitoring
 - Wearable sensor technologies
 - Fitness and performance monitoring techniques
 - Analytical techniques for analysis of human performance data
 - Human training and skills
 - People and Processes in a reliable organization
 - Standards
 - Case studies
- Failure Analysis
 - Failure analysis techniques
 - Root Cause Analysis
 - Material analysis (metallurgy, tribology, microscopy, heat treatment, materials processing, etc.)
 - Standards
 - Case Studies
- Sensors Technology
 - Wireless sensor technology
 - Mapping of sensor technology to equipment failure modes
 - Energy harvesting
 - Sensor communications
 - Environmental constraints (hazardous classifications, shock and vibration, high temperature, etc.)
 - Vibration, Temperature, Ultrasonic, Motor Current, Oil, Strain, Corrosion, Video, etc.
 - Standards
 - Case Studies

- Sensor Signal Analysis
 - Sensory input signal analysis and interpretation
 - Analytical tools, methods, and methodologies for Signal Analysis
 - Mapping of signal analysis results to failure modes of machinery
 - Embedded signal analysis (at the sensor)
 - Standards
 - Case Studies
- Lubrication Sensing and Analysis
 - Lubrication (best) practices
 - Lubrication degradation (contamination, viscosity, humidity, additive loss, etc.)
 - Wear particle analysis
 - Sensor advancements
 - Standards
 - Case Studies
- Systems Engineering
 - System Design for machinery purpose
 - Reliability Centered Maintenance Planning
 - Systems Engineering relationship to machinery failure prevention technology
 - Standards
 - Case Studies

We welcome both written papers and technical presentations. Please submit your abstract in word or pdf format with topic category to both Michael Long, at mlong@vi-institute.org and Carolyn Porter, at vioffice@vi-institute.org.

We look forward to your participation in our 2020 conference.