

# 2023 Time and Frequency July 10-12, 2023 Agenda

## Monday, July 10, 2023

- 8:00 - 9:00 Registration and check-in; 9:00 – 9:10 Introductions by Craig Nelson / David Howe
- 9:10 - 9:40 (CH1) Timekeeping and Time Distribution, Elizabeth Donley
- 9:40 - 10:10 (CH2) Oscillator Time and Frequency Definitions – I, David Howe
- 10:10 - 10:30 **Break**
- 10:30 - 11:00 (CH2) Microwave Atomic Time and Frequency Definitions – II, David Howe
- 11:00 - 12:00 (CH3) Introduction to Time Domain Measurement Standards, Jeff Sherman
- 12:00 - 1:30 **Lunch**
- 1:30 - 3:00 (CH4) Time-Domain Analysis, Jeff Sherman
- 3:00 - 3:20 **Break**
- 3:20 - 4:20 (CH5) Time-Domain and Frequency-Domain Characterizations, David Howe
- 4:20 - 5:20 (CH6) Introduction to Position, Navigation, and Timing, GNSS, UTC Traceability, TBD (Goddard Space Flight Center)

## Tuesday, July 11, 2023

- 8:30 - 8:45 Craig Nelson / David Howe: Announcements
- 8:45 – 9:45 (CH7) Techniques of State-of-the-Art PM and AM Noise Measurements, Craig Nelson
- 9:45 – 10:15 (CH8) Direct Digital Measurement of Precision Oscillators, Craig Nelson
- 10:15 - 10:35 **Break**
- 10:35 - 11:15 (CH9) Vibration-Induced Phase Noise: Oscillators and Non-Oscillatory Components, Archita Hati
- 11:15 - 12:00 (CH10) 2-Way TT & Sr clock, Roger Brown
- 12:00 - 1:15 **Lunch**
- 1:15 - 2:20 (CH11) Demonstration of Basic Measurements of Time and Frequency, Andrew Novick
- 2:20 - 2:45 **Break**
- 2:45 - 4:00 (CH12) Phase Noise Measurement Demonstration, Archita Hati
- 4:00 - 5:00 Hands-on Test and Noise Measurements, Archita Hati
- 5:00 - 7:30 Sponsored Open House

## Wednesday, July 12, 2023

- 8:00 - 8:30 Questions and Answers
- 8:30 - 9:00 (CH13) Optical Atomic Frequency Standards, Andrew Ludlow
- 9:00 - 9:50 (CH14) Cs Fountains at NIST, Vladislav Gerginov
- 9:50 - 10:30 (CH15) Performance of Small Size, Weight and Power (SWaP) Atomic Clocks (Tactical Atomic Clocks) TBD
- 10:30 - 10:40 **Break**

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- 10:40 - 11:20 (CH16) Precise and Accurate Network Timing, Jeff Sherman  
11:20 - 11:50 (CH17) Progress in Optical Frequency Combs, Franklyn Quinlan  
11:50 – 12:00 Conclusion and Discussion
- 2:00 - 4:00 NIST Lab visits: Time Scale (Jeff Sherman), Josephson Junction Voltage Standard (Charles Burroughs), Electric Field Strength Measurements Using Rydberg States (Chris Holloway)