

# **2021 All Engineers Retreat**

## **Report of Contributions**

Contribution ID: 19

Type: **not specified**

## **Address to Engineering Community**

*Monday, 22 February 2021 09:10 (20 minutes)*

### **Summary**

**Presenter:** LOCKYER, Nigel (Fermilab)

**Session Classification:** Annual Plenary

Contribution ID: 21

Type: **not specified**

# Quantum Computing at Fermilab

*Monday, 22 February 2021 09:30 (45 minutes)*

## Summary

**Presenter:** GRASSELLINO, Anna (Fermilab)

**Session Classification:** Annual Plenary

Contribution ID: 22

Type: **not specified**

## **Fermilab D&I Efforts**

*Tuesday, 23 February 2021 10:50 (20 minutes)*

### **Summary**

**Presenter:** CHARLES, Sandra (Fermilab)

**Session Classification:** Annual Plenary

Contribution ID: 23

Type: **not specified**

## **Fermilab Affiliated Organizations and Societies**

*Tuesday, 23 February 2021 10:00 (20 minutes)*

### **Summary**

**Presenter:** JEFFERS, Mark (FNAL)

**Session Classification:** Annual Plenary

Contribution ID: 24

Type: **not specified**

## IERC Project

*Tuesday, 23 February 2021 10:20 (20 minutes)*

### Summary

**Presenters:** RUBIK, Brian (Fermilab); BELLANTONI, Leo (FNAL)

**Session Classification:** Annual Plenary

Contribution ID: 25

Type: **not specified**

## Fermilab Concerns Reporting System

*Tuesday, 23 February 2021 11:10 (20 minutes)*

### Summary

**Presenter:** RANDICH, Deanne (FNAL)

**Session Classification:** Annual Plenary

Contribution ID: 26

Type: **not specified**

## Report from Breakout Room

*Tuesday, 23 February 2021 11:40 (20 minutes)*

### Summary

**Presenter:** CZARAPATA, Paul (FNAL)

**Session Classification:** Annual Plenary



Contribution ID: 28

Type: **not specified**

# Manipulating the quantum state of microwave photons in multimode cavities

*Monday, 22 February 2021 11:00 (1 hour)*

## Summary

**Presenter:** Prof. SCHUSTER, David (University of Chicago)

**Session Classification:** Keynote: Manipulating the quantum state of microwave photons in multimode cavities

Contribution ID: 31

Type: **not specified**

## FPGA Development at Fermilab

*Monday, 22 February 2021 14:00 (1 hour)*

The purpose of this session is to provide a forum to raise awareness, introduce, and communicate about Field-Programmable Gate Array (FPGA) and, in general, real-time control and processing activities in which Fermilab engineers are participating. Example activities to be discussed might include small- and large-scale trigger, timing distribution and synchronization, event building, event processing, artificial intelligence, machine learning, feedback control loops, visualization, internet-of-things, and detector readout. Please join us as we share ideas as to how to get started with FPGAs, improve our workflows, and target future opportunities.

### Summary

**Presenter:** RIVERA, Ryan (FNAL)

**Session Classification:** FPGA Development at Fermilab

Contribution ID: 32

Type: **not specified**

## **R&D Engineering Projects at Fermilab**

*Monday, 22 February 2021 14:00 (1 hour)*

A room to talk about R&D engineering projects at Fermilab, find synergies and talk about funding opportunities.

### **Summary**

**Presenters:** BOFFO, Cristian; Dr TSCHIRHART, Robert (Fermilab); Dr ZORZETTI, Silvia (Fermilab)

**Session Classification:** R&D Engineering Projects at Fermilab

Contribution ID: 33

Type: **not specified**

## **SPARC and the pathway to high-field fusion**

*Tuesday, 23 February 2021 09:00 (1 hour)*

### **Summary**

**Presenter:** Dr SORBOM, Brandon (Commonwealth Fusion Systems)

**Session Classification:** Keynote: SPARC and the pathway to high-field fusion

Contribution ID: 39

Type: **not specified**

# PLC Based Process Control Systems for Cryogenic Systems

*Wednesday, 24 February 2021 09:00 (20 minutes)*

## Summary

**Presenter:** NICHOLS, Trevor (Fermilab)

**Session Classification:** Engineering Talks

Contribution ID: 43

Type: **not specified**

## Report from Breakout Room

*Tuesday, 23 February 2021 11:30 (10 minutes)*

### Summary

**Presenters:** RIVERA, Ryan (FNAL); Dr ZORZETTI, Silvia (Fermilab)

**Session Classification:** Annual Plenary

Contribution ID: 44

Type: **not specified**

## Detector R&D

*Wednesday, 24 February 2021 09:20 (20 minutes)*

### Summary

**Presenter:** MERKEL, Petra (Fermi National Accelerator Laboratory)

**Session Classification:** Engineering Talks

Contribution ID: 45

Type: **not specified**

# Opportunities for the Fermilab Engineering Community

*Monday, 22 February 2021 13:00 (1 hour)*

A place to exchange ideas for the Engineering Community

## Summary

**Presenters:** DRAKE, Gary; CZARAPATA, Paul (FNAL)

**Session Classification:** Opportunities for the Fermilab Engineering Community



Contribution ID: 46

Type: **not specified**

## ASIC Design and Development

*Wednesday, 24 February 2021 09:40 (20 minutes)*

### Summary

**Presenter:** RUBINOV, Paul (Fermilab)

**Session Classification:** Engineering Talks

Contribution ID: 47

Type: **not specified**

# **Journey of the First Fermilab-designed PIP-II Cryomodule**

*Wednesday, 24 February 2021 10:30 (20 minutes)*

## **Summary**

**Presenter:** PASSARELLI, Donato (Fermilab)

**Session Classification:** Engineering Talks

Contribution ID: 50

Type: **not specified**

## Quantum Readout and Controls

*Wednesday, 24 February 2021 08:40 (20 minutes)*

### Summary

**Presenter:** CANCELO, Gustavo (fermilab)

**Session Classification:** Engineering Talks

Contribution ID: 51

Type: **not specified**

## **LDRD**

*Monday, 22 February 2021 10:15 (25 minutes)*

### **Summary**

**Presenter:** Dr TSCHIRHART, Robert (Fermilab)

**Session Classification:** Annual Plenary

Contribution ID: 54

Type: **not specified**

## **Mu2e Cryogenic System**

*Wednesday, 24 February 2021 10:50 (20 minutes)*

### **Summary**

**Presenter:** WHITE, Michael (Fermilab)

**Session Classification:** Engineering Talks

Contribution ID: 55

Type: **not specified**

## **Inventor Recognition Ceremony**

*Thursday, 25 February 2021 14:00 (1 hour)*

**Session Classification:** Inventor Recognition Ceremony

Contribution ID: 56

Type: **not specified**

## ACORN

*Wednesday, 24 February 2021 11:10 (20 minutes)*

### Summary

**Presenter:** GOTTSCHALK, Erik (Fermilab)

**Session Classification:** Engineering Talks

Contribution ID: 58

Type: **not specified**

## Introduction

*Wednesday, 24 February 2021 08:30 (10 minutes)*

### Summary

**Presenter:** Dr ZORZETTI, Silvia (Fermilab)

**Session Classification:** Engineering Talks



Contribution ID: 59

Type: **not specified**

## **Cryogenic Free Superconducting Cavities**

*Wednesday, 24 February 2021 11:30 (20 minutes)*

### **Summary**

**Presenter:** DHULEY, Ram (Fermilab)

**Session Classification:** Engineering Talks

Contribution ID: **61**

Type: **not specified**

## **Microelectronics for next generation HEP instrumentation**

*Wednesday, 24 February 2021 11:50 (20 minutes)*

### **Summary**

**Presenter:** Dr FAHIM, Farah (FERMILAB)

**Session Classification:** Engineering Talks

Contribution ID: 62

Type: **not specified**

## **LBNF Far Site Cryogenics Interesting Facts**

*Wednesday, 24 February 2021 10:10 (20 minutes)*

### **Summary**

**Presenter:** Dr DOUBNIK, Roza (mechanical engineer)

**Session Classification:** Engineering Talks

Contribution ID: **63**

Type: **not specified**

## Welcome

*Monday, 22 February 2021 09:00 (10 minutes)*

### Summary

**Presenters:** MOSSEY, Christopher (FNAL); CZARAPATA, Paul (FNAL); Dr ZORZETTI, Silvia (Fermilab)

**Session Classification:** Annual Plenary

Contribution ID: **64**

Type: **not specified**

## Virtual Tour of Icarus

*Friday, 26 February 2021 10:00 (1 hour)*

### Summary

**Presenters:** FAVA, Angela (Fermilab); Dr DOUBNIK, Roza (mechanical engineer); NICHOLS, Trevor (Fermilab)

**Session Classification:** Virtual Tour of Icarus

Contribution ID: 65

Type: **not specified**

## Virtual Tour of Quantum Computing Lab

*Friday, 26 February 2021 14:00 (1 hour)*

### Summary

**Presenters:** Dr FROLOV, Daniil (Fermilab); Dr ZORZETTI, Silvia (Fermilab)

**Session Classification:** Virtual Tour of Quantum Computing Lab

Contribution ID: **66**

Type: **not specified**

## **PIP2IT RF Virtual Tour**

*Friday, 26 February 2021 13:00 (1 hour)*

### **Summary**

**Presenter:** GRZELAK, Victor

**Session Classification:** PIP2IT RF Virtual Tour