

# Working Group 1

Topics in Mid-IR Laser Research

**70** YEARS OF  
**DISCOVERY**

A CENTURY OF SERVICE



# ***Thrust 1: Topics in mid-IR laser research***

*Focus primarily on laser R&D and experiments driving “laser-only” research. Consideration should be given to the suitability of currently available facilities for these types of experiments and identify the facility developments required to address the most pressing research needs. Where possible, explicitly comment on: the path for mid-IR laser development required to support future particle accelerator needs; and, the availability and future development of suitable materials needed for high-power mid-IR (9-11  $\mu\text{m}$ ) lasers.*

# Active ATF Experiments

- Interaction Physics of Pico-second far-IR Terawatt Laser with Materials

PI: A. Ting, NRL (2015)

- Self-Channeling of CO<sub>2</sub> Laser in Air

PI: S. Tochitsky, UCLA (2015)

# What are we Looking for?

- Preferred upgrade path from the point of view of laser development
- Current lasers as development test facilities
- Identify challenges and potential pitfalls
- Explore non-gaseous media
- How can present facilities complement/drive upcoming technologies.
- Collaboration from the community