WELCOME

To

ecloud'10

and the

Cornell Laboratory for Accelerator BaSed Sciences and Education

CLASSE

CLASSE is an INFRASTRUCTURE

For

Doing science using accelerators,
and
Accelerator Science itself
and

Educating students in Accelerators and how to use them

Forefront Accelerator R&D 1934 - present

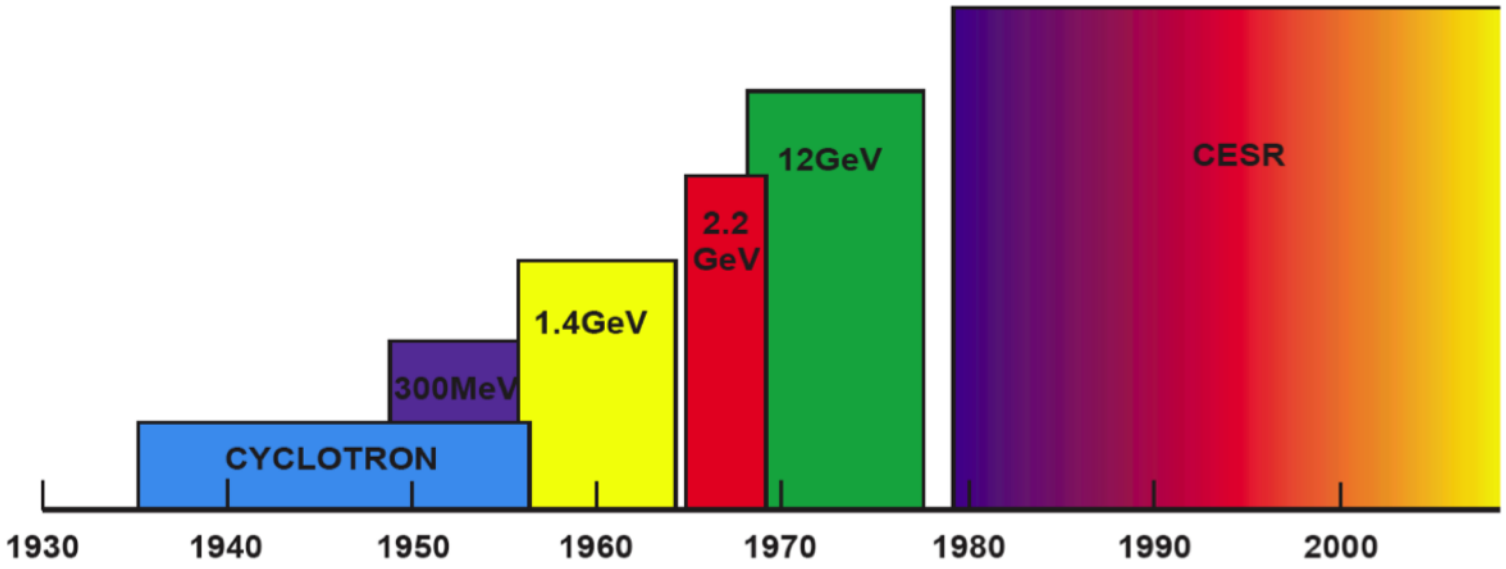


Figure from K. Berkelman,
"A personal History of CESR and CLEO"

Electron Synchrotrons

CLASSE currently supports

ACCELERATOR SCIENCE

ELEMENTARY PARTICLE PHYSICS

X-RAY SCIENCE

- X-ray Science

  - CHESS serves ~ 600 visitors per year in biology, medicine, physics, chemistry, geology, metallurgy, other engineering art conservators and archeologists …..

- Elementary Particle Physics

  - CMS collaboration experiment and LHC related theory
  - ILC detector development

- Accelerator Science
  - CTa
    - ILC DR R&D
      - ecloud
      - minimum emittance tuning (multiple use)
      - ions
      - instrumentation

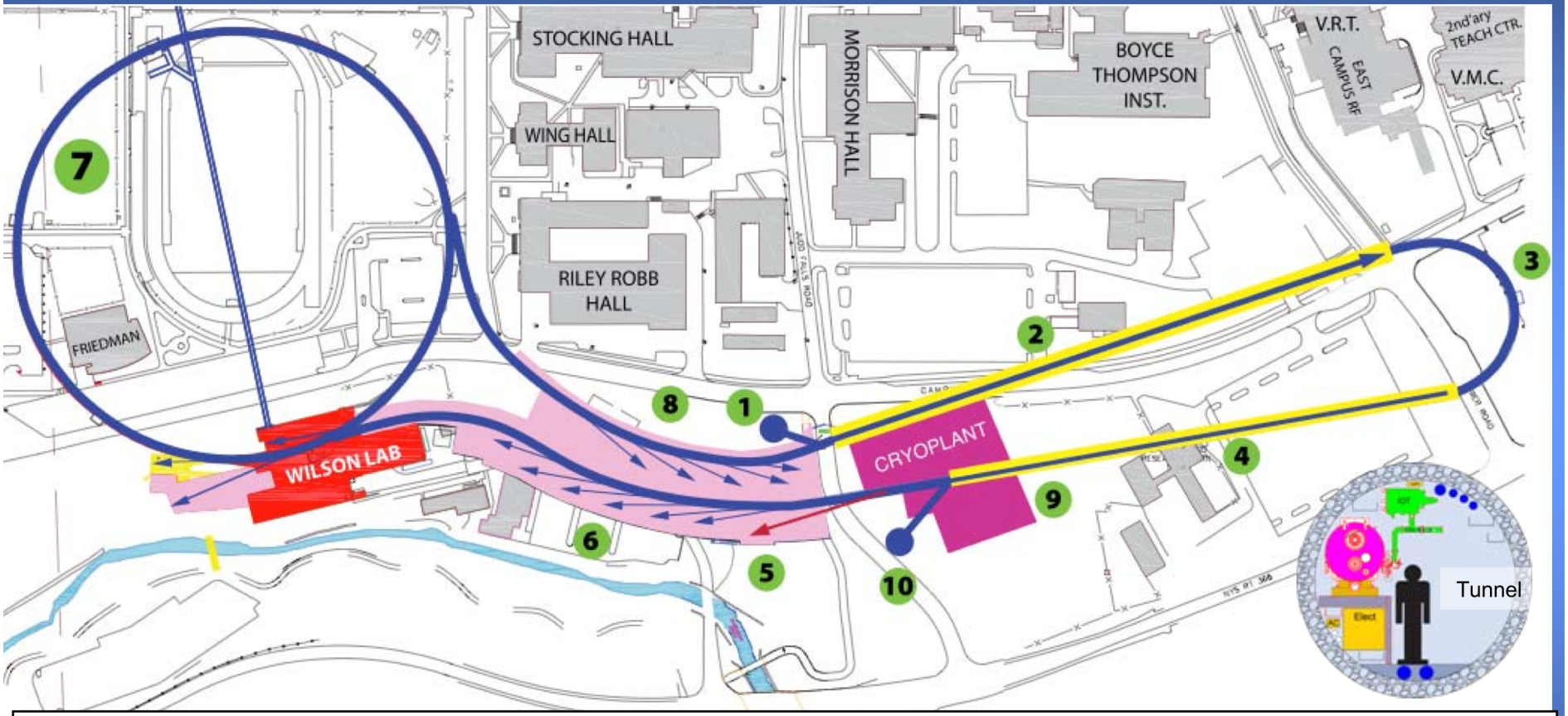
Superconducting RF

- ILC S0
- Project x
- Muon collider
- Basic materials
- Instrumentation
- **ERL (High Q, ultra high HOM damping…)**

Cornell Energy Recovery Linac

Add New Buildings, Cryoplant & Tunnel Extensions

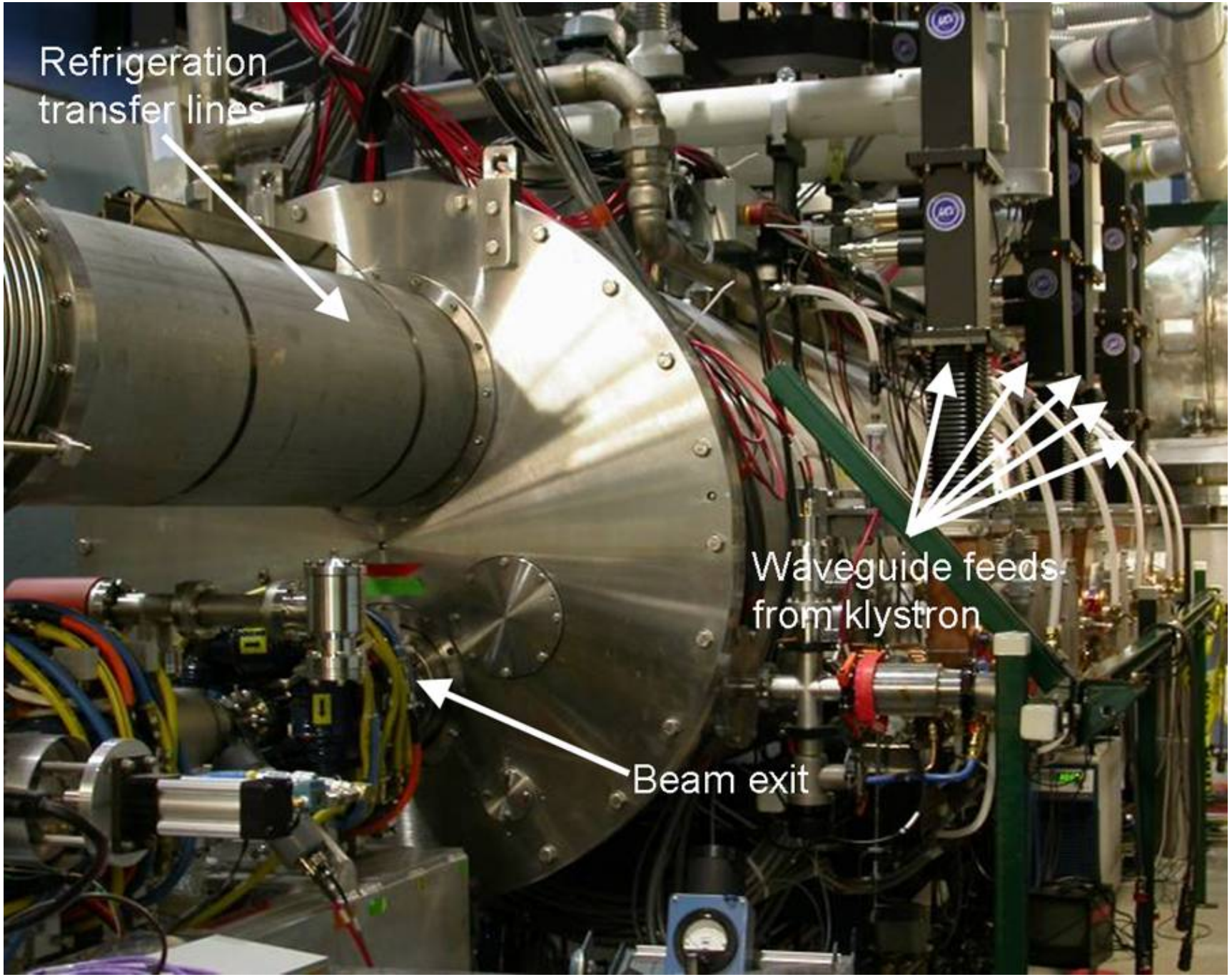
Total electron beam path length increased from 2,519 to 6,664 ft (0.768 to 2.031 km)



Key: 1=Photo-cathode Injector, 2=First-stage acceleration, 3=Turn-around arc, 4=Second-stage acceleration, 5=Accelerator test beamline, 6=South x-ray beamlines, 7=CESR turn-around arc, 8=North x-ray beamlines, 9=Cryoplant, 10=Electron beam stop

The Project Definition Design Report will be finished soon and submitted to NSF

R&D for this project has been ongoing for several years. An injector prototype has been constructed and is being exercised.


Refrigeration transfer lines
Waveguide feeds from klystron
Beam exit

THANK YOU

YOUR CLASSE COLLEAGUES WISH
YOU A FRUITFUL WORKSHOP