**FY23 – Charging your time**

* Joe (50% ACCMGT, 20% RSRSRC, 10% ARDSRC, 20% ARDPOS)
* Carlos (50% RSRSRC, 25% ARDSRC, 20% ARDPOS, 5% HVINS)
* Riad (50% RSRSRC, 15% ARDSRC, 5% AIFOA1, 30% LDRD)
* Shukui (70% RSRSRC, 25% ARDSRC, 5% RDBGAP)
* Marcy (40% RSRSRC, 10% AIPINJ, 25% ARDSRC, 25%, EIODCD)
* Max (50% RSRSRC, ARDSRC 10%, ARDPOS 20%, EIRACC 20%)
* Mamun (35% RSRSRC, 5% AIPINJ, 60% ARDSRC)
* Phil (50% RSRSRC, 15%, AIPINJ, 35% ARDSRC)
* Jessica (60% RSRSRC, 15% AIPINJ, 25% ARDSRC)
* Steve (75% RSRSRC, 25% ARDSRC)
* Gabriel (100% HVINS)
* Andriy (100% ARDPOS)

**CEBAF Jobs**

1. Dedicated laser jobs…
   1. Build 4-hall seed/preamp; work w/ Software, I&C; install next SAD (Shukui, Steve)
   2. Build KL laser, test at UITF w/ INJ; develop plan to install in Hall D path by 2025 (Shukui)
   3. Master laser system controls; build spares, upgrade hardware; w/ Shukui/I&C (Steve)
2. Start Moller upgrades…
   1. New Helicity Generator. Work w/ Ed to remove dependence on beam sync signal (Riad)
   2. Finalize the Helicity Decoder firmware. Deploy the boards to CEBAF (Riad)
   3. Work with I&C/Caryn to build, test, and install the RTP HV driver (Riad, Shukui, Steve)
   4. Work with I&C to upgrade Helicity Magnets; install/test new system (Riad, Max)
   5. Work with I&C/Caryn; build 4-IA HV system; short risetime, 4th cell (Shukui, Steve, Riad)
   6. Work with MOLLER to develop a polarization feedback scheme. (Riad, Joe, Carlos)
   7. Work with ACC/ENG at RSR to deliver MOLLER & avoid accelerator interferences (Riad)

**Finish Injector Upgrade**

1. Phase 1 Jobs…
   1. Install 200 kV Gun, first test at UITF, then at CEBAF during SAD, requires NEG tubes, alignment fixtures and laser alignments (Carlos, Marcy, Phil, Shukui)
   2. Resolve harp/viewer charging conflict, additional spool + top hat (Phil)
   3. Using beam measurements at CEBAF or UITF, develop accurate model of Wien filters/quads, work with Inj to develop strategy to use them (Max)
   4. Next SAD, after the upgrade calibrate 200 keV Wien spin rotators using Mott polarimeter. Quantify beam optics of Flip-Left vs Flip-Right (Max, Joe, Riad)
2. Phase 2 Jobs…
   1. Matt leads this effort, he’ll manage the schedule, assign jobs, we’ll support…
   2. mechanical assemblies, stands, supports, moving things (Phil, Jessica)
   3. beam line vacuum assembly, leak checking, NEG activations (Mamun, Marcy)

**R&D Projects**

1. COMTRA (Joe, Riad, Greg, Matt, Eric, Max) – Finalize off-line analysis method; compare models of test (Geant, Elegant) w/ data; develop plan for Oct 2023 install at BNL
2. KICKER (Max, Matt, Shukui, Joe) – Contribute to a successful Beam test at UITF to characterize the performance; contribute to technical report Jiquan will write
3. EIC vacuum (Marcy) – Finalize the interaction vacuum design with realistic calculations and simulations; compare design to an experimental study
4. UCSB/CBE (Marcy) develop reliable test chamber, work with UCSB to evaluate superlattice photocathodes; write a paper summarizing performance;
5. ODU/BNL/MOCVD (Matt, Sylvain, Adam, Greg, Joe, Marcy) – train Greg to operate the test stand, evaluate the MOCVD samples; implement improvements Mott
6. 500 kV FOA (Carlos, Gabriel) – Evaluate the SF6 socket performance as a function of SF6 pressure and voltage; draw down conclusions what this might imply to hold off 400-500 kV
7. Wien PENNING (Gabriel, Matt) – How does this one wrap up?
8. QUANTUM COMPUTING (Riad, Matt Grau) – Work with Matt to develop concepts for quantum entangled spin polarized electron beams; develop concept for computing
9. SPIN TRANSPARENT RINGS (Riad) – Work with Slava and Vasiliy to write a paper on application of spin transparent rings for EDM experiments
10. FIELD EMISSION (Riad, Kawser) – AI project to reduce FE in SRF cavities
11. MAGNETOMETER (Riad, Mamun, Matt) – Work with Brock and SRF colleagues to decide how to wrap up the project; one more beam run at GTS and cavity measurements at TED?
12. NANOPILLAR (Shukui, Mamun, Aziz) – Build reliable test chamber; characterize on-hand nanopillar arrays; seek collaboration to fabricate Aziz’s model for high-Pol SL nanopillar
13. OUTGASSING (Mamun, Matt, Aiman) – Perform outgassing rate measurements of steel with various surface coatings and bulk heat treatments; summarize results to LIGO colleagues;, propose to build a gun test chamber
14. e+ CDR – Contribute to conceptual design report
    1. (Joe, Matt) – Manage R&D groups, develop Conceptual Design Report and resource estimates, for e+ prototype at LERF
    2. (Carlos) Working with CIS/INJ colleagues to develop scope/effort to build a >5 mA polarized gun for e+ injector
    3. (Andriy, Max, Joe, Sami) – Working with colleagues, develop realistic simulations for unpol/pol e+ collection, Sami’s PhD comes out of this work; work with Silviu/others develop possible low (~10 kW) and high (~100 kW) target concepts