



Todd Satogata

Previous two weeks (Jan 17 – Jan 28)

- EIC Meetings (management, RF, crab, cooling, impedance, team, R&D, beam-beam)
- EIC BNL Meetings (Ferdinand and L2s, Design/R&D leadership)
- EIC Cost/schedule planning, kickoff meetings (Jan 25, 27)
- MGMT Meetings (Leadership/Dept Heads, CASA coffee)
- MGMT PEMP FY22 Q1 EIC update for division office
- ADMIN APS Education/outreach committee notes, meeting follow-up; training
- ODU Prep JUAS lecture (Fri Jan 21); give lecture (Mon Jan 24)
- HOLIDAY (Mon Jan 17)
- PERS Doctor appt (AM Jan 19)

Next two weeks (Jan 31 – Feb 11)

- EIC Meetings (management, RF, crab cooling, impedance team, R&D, beam-beam)
- EIC BNL Meetings (Ferdinand and L2s, Design/R&D leadership)
- EIC Strong Hadron Cooling review (Feb 2-3)
- EIC TDR planning, editorial board kickoff (Feb 4)
- EIC Risk workshop (Feb 8)
- MGMT Meetings (Leadership/Dept Heads, CASA coffee)
- MGMT JSA Monthly update for division office
- MGMT Planning (David Dean meet/greet, etc)
- ADMIN APS DPB virtual community meeting (Feb 10)
- ADMIN APS DPB EOD monthly (Feb 11)

Alex Bogacz

Previous two weeks (Jan 17 – Jan 28)

- USPAS course preparation
- Post-doc interviews
- B-Team, Ops meetings
- FFA@CEBAF collaborative work
- Preparing Grad. Student Annual Review
- Meetings on PERLE lattice with GSI and IJCLAB post-docs

Next two weeks (Jan 31 – Feb 11)

- USPAS course teaching
- Ops meetings
- FFA@CEBAF collaborative work
- Preparing Grad. Student annual review
- Meeting with Peter Williams on PERLE filling pattern

Ryan Bodenstein

Previous two weeks (Jan 17 – Jan 28)

- Operations meetings
- B-Team meetings
- FFA@CEBAF collab work
- Positron/FFA liaison work
- Student Guidance



FEBURARY 3, 2022 REPORT | JAN 17 – FEB 11
DIRECTOR: TODD SATOGATA

- LDRD work
 - Interviewing 2 candidates
 - “Recruited” an operator to work with us
- Program Deputy

Next two weeks (Jan 31 – Feb 11)

- Operations meetings
- B-Team meetings
- FFA@CEBAF collab work
 - Looking to converting elegant to BMAD
- Positron/FFA liaison work
 - Will be working on magnet reversal for positrons
- Student Guidance
- LDRD work
 - Hiring meeting for candidate
 - A bit of coding work/training
- Program Deputy extension to end of run

Rui Li

Previous two weeks (Jan 17 – Jan 28)

- My mathematica TCBI calculation shows that with the sign change for the transverse wake, our previous used simplified model (one-bunch-in-each-ring and exponential transverse wake) is not enough to describe the TCBI growth.
- The simplified model needs at least 5 or 10 bunches in each ring, as a newer simplified version of 1260 bunches in the eSR. This newer version requires some change in my coding. I reviewed all my approaches and data processing, and am planning to make this change.
- This change is something I always wish I get some time to do. Because if the nonlinear beam-beam causes any coupling between different coupled-bunch modes, the previous over-simplified one-bunch-in-each-ring model cannot capture it. Now with this new change, this part of physics should be better captured.
- Discussions about collective effects in Andrew Hutton’s ghost collider
 - Slava suggested Andrew send his presentations to me and let me look at the collective instabilities
 - I went through Andrew’s slides and had multiple email discussions with Andrew about challenges and implications from collective-effects point of view.
 - This is an on-going process since I’m slow at digesting and appreciating the design concepts and the challenges therein...

Next two weeks (Jan 31 – Feb 11)

- New TCBI algorithm using phasor update
 - Found new parameter solutions for the TCBI with multibunches using Mathematica
 - Developed new algorithm for TCBI and implemented the algorithm in the code
 - Found good agreement between the new numerical results for the multibunch TCBI behavior and the theoretical prediction, including a negative coherent tune shift!
- Develop new data processing to check behavior for different coupled bunch mode before looking at the interplay of the new TCBI behavior with the beam-beam interaction



FEBURARY 3, 2022 REPORT | JAN 17 – FEB 11
DIRECTOR: TODD SATOGATA

Edy Nissen

Previous two weeks (Jan 17 – Jan 28)

- Attended required ops/bteam meetings
- Hall D beam line working group meeting
- Finished ECA budget and narrative
- Submitted ECA on time on the 20th
- Optics on call 1/25 - 2/1

Next two weeks (Jan 31 – Feb 11)

- Attended required ops/bteam meetings
- Hall D beam line working group meetings
- Started working on the Ghost Collider project
- Will finish response to reviewers for DODGE NIM paper

Chris Tennant

Previous two weeks (Jan 17 – Jan 28)

- RADSMa: Explore data gathered from dedicated beam studies, prepare for testing with trained model
- AIFOA1: Onboarding new ODU graduate student, cleaning C100 scope mode data and understanding how to do normalization properly.
- LD2202: Resolving issue with vacuum PV units in the injector, meetings with UVA
- Employee/supervisor meeting for evaluations and expectations
- Participate in ASCR Visualization workshop
- Continue work on AI White Paper
- Bereavement/vacation leave

Next two weeks (Jan 31 – Feb 11)

- Graph LDRD: Revisit how to construct injector beamline graphs for richer structure
- AI FOA: Working with graduate student to build training data for binary classifier
- R&D FOA Proposal (expected): Writing narrative and project management plan, talking with SMEs across the lab, identifying appropriate diagnostic/sensors
- JLab training
- AI White Paper

Lasitha Vidyaratne

Previous two weeks (Jan 17 – Jan 28)

- Vacation

Next two weeks (Jan 31 – Feb 11)

- Vacation
- JLab training
- SRF cavity fault classification: work on issues found in retraining the ML Classifier models with new data
 - Retrain fault classification model without “Multi Cav Turn Off”
- AIFOA1 fault prediction: Explore/familiarize with scope mode data gathered from C100 cavities
 - Work with PhD student (Monibor) on analyzing the current model performance and refining the autoencoder model
- Malachi SUF_SNS anomaly detection: Work on implementing a branched autoencoder model for use with multiple HVCM modules



- Malachi SUF_SNS anomaly detection: implement data cleaning and preprocessing for new data from different HVCM modules

Accelerator R & D - Yuhong Zhang

Yuhong Zhang

Previous two weeks (Jan 17 – Jan 28)

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Next two weeks (Jan 31 – Feb 11)

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Kirsten Deitrick

Previous two weeks (Jan 17 – Jan 28)

- USPAS (Colliders for High Energy and Nuclear Physics) starts Jan 24th
- Strong Hadron Cooling Technical Design Review dry run
- Continue lower energy configuration for ERL (linac optics, stretcher/compressor)
- Meetings: CASA Coffee, JLab EIC, EIC Weekly, EIC Coffee, Strong Hadron Cooling, EIC Cooler Lattice, FFA@CEBAF

Next two weeks (Jan 31 – Feb 11)

- USPAS (Colliders for High Energy finishes, Collider IR starts)
- Strong Hadron Cooling Technical Design Review
- Continue lower energy configuration for ERL with new injector beam
- Resume lattice conversion for microbunching
- Meetings: CASA Coffee, JLab EIC, EIC Weekly, EIC Coffee, Strong Hadron Cooling, EIC Cooler Lattice, FFA@CEBAF

Bhawin Dhital

Previous two weeks (Jan 17 – Jan 28)

- Was working on the summary PRAB paper on dual energy storage ring cooler design.
- Ring optics optimization

Next two weeks (Jan 31 – Feb 11)

- Will continue and complete writing a summary paper and a thesis on a dual energy storage ring
- Will be working with the new lattice, calculation of the parameters and beam dynamics study
- Further lattice optimization of the ring

Amy Sy

Previous two weeks (Jan 17 – Jan 28)

- Return from leave
- Catching up on laser particulate counter progress since October

Next two weeks (Jan 31 – Feb 11)

- Laser particulate counter: Meetings with internal JLab colleagues and with the vendor to discuss progress since October. While the subcontract is approaching a completion point, there are



questions on whether the technical progress is sufficient to declare project completion. Working with CASA colleagues and Detector group colleagues to prepare specifications for discussion with vendor. The vendor will visit on Monday 2/7, possibly Tuesday 2/8 for testing of all 48 channels.

- Starting to attend positron meetings and discuss contributions to the positron effort for FY22. Will meet with Y. Zhang and F. Lin to discuss future work on spin rotator design and simulation.

Computational Physics - Yves Roblin

Yves Roblin

Previous two weeks (Jan 17 – Jan 28)

- TRC committee meetings + reading/evaluations
- Preparing talk for Hall A winter meeting
- Hall A optics development for Phase 1 deployment of Moeller optics
- BTeam coordination
- CEBAF model work, optimization/evaluation of extraction locks
- CEBAF model, audit of optics, renaming of elements, coordination with CED people

Next two weeks (Jan 31 – Feb 11)

- Preparing for Hall A winter meeting
- BTEAM coordination
- Hall A moller phase 1 beamline installation coordination
- Operation support, pass change, Hall A beamline rematch
- Writing Exercise chapter for Spin physics book after Springer review
- Energy reach/FY2022-2023 run period planning
- Positron source meetings + discussion on possible tests in CEBAF
- Audit of optics, Moller phase 1 optics optimization
- Circular raster simulations update with new optics

Randi Gamage

Previous two weeks (Jan 17 – Jan 28)

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Next two weeks (Jan 31 – Feb 11)

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River Huang

Previous two weeks (Jan 17 – Jan 28)

- EIC Beam-Beam project: adjusting the parameters of the crab cavities and studying the emittance growth rate

Next two weeks (Jan 31 – Feb 11)

- EIC Beam-Beam project: discussing the simulation results with our colleagues, and continuing adjusting the parameters of the crab cavities and studying the emittance growth rate.



Isurumali Neththikumara

Previous two weeks (Jan 17 – Jan 28)

- Prepared for a practical session, with sirepo Elegant, for USPAS Accelerator Physics class.
- Worked as TA for the same class

Next two weeks (Jan 31 – Feb 11)

- Continue working as a TA for USPAS Accelerator Physics class – Winter 2022

Dennis Turner

Previous two weeks (Jan 17 – Jan 28)

- AI
 - Continued harvesting and labeling C25/C50 archived data
 - Continued AI model development
 - Select a student to assist
- Discussed and signed performance evaluation
- Talked with Pam about sitting on the interview panel for a new LLAPPS developer
- Tweaked to elegant2ced, ced2elegant, cs2sdds, qsUtility, mostly regarding counterwound solenoids
- LCLS-II
 - Completed cybersecurity training
 - Started process to get a UNIX account at SLAC
- UITF
 - Contribute to upcoming paper
 - Modify deck and UED to account for new Wien filter and Wien quads
- Data mine transport line matching vs. Lambertson configurations to find any useful trends
- Complete Electrical Worker training
- Attend 0800, BTeam, UITF, AI FOA meetings

Next two weeks (Jan 31 – Feb 11)

- Completed Laser Safety training
- rayTrace
 - Fixed several bugs in the analyzer
 - Investigating bug in fitting for angle
 - Submitted ATLis for taking data with beam to ILD for PPB and match verification
- AI
 - Continue data labeling and model development
 - First DAQ chassis installed at 1L13; explore EPICS interface, etc
- Explore ExtOrb lock corrector selections
- Attend Accelerator Seminars, Software & Computing Round Table
- Attend 0745, 0800, BTeam, AI FOA, UITF meetings



He Zhang

Previous two weeks (Jan 17 – Jan 28)

- pyJSPEC: Finished coding for friction force, cooling rate, and cooling simulation. Need testing.
- Continued RF data processing

Next two weeks (Jan 31 – Feb 11)

- Finish testing pyJSPEC
- Start coding the space charge effect in cooling
- Write my part for snowmass white paper
- Write a note on how JSPEC carries out IBS rate calculation
- Continue RF data processing
- Continue writing the FMM paper
- Continue the python JSPEC development
- Continue study BLoND and longitudinal dynamics

Diagnostic Development - Kevin Jordan

Kevin Jordan

Previous two weeks (Jan 17 – Jan 28)

-

Next two weeks (Jan 31 – Feb 11)

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Joe Gubeli

Previous two weeks (Dec 20 - Dec 31)

- ARDDOT - Completed (modeled, 3D printed and assembled) an initial dosimeter rack design for RADCON. Waiting on feedback for the next iteration. Worked some on a combo viewer/harp design and then switch over to a SLM design for 1C12. Worked with OmniSensing Photonics on the particle detector. Working with Chris T. on specifying a zoom camera assembly for his remote detector robot proposal. Working with Kevin J. on a modified filter wheel that should withstand higher levels of radiation. Completed the annual property validation.

Next two weeks (Jan 3 – Jan 14)

- ARDDOT – Continue working on all the above except property validation. Will need to perform maintenance on the 3D printer as it is starting to “print” voids due to a worn print head.

Michael Tiefenback

Previous two weeks (Dec 20 - Dec 31)

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Next two weeks (Jan 3 – Jan 14)

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CASA Fellows

LERF - Steve Benson

Previous two weeks (Jan 17 – Jan 28)

- Reviewed and updated requirements documents for SHC ERL
- Completed review for SBIR proposals and submitted reviews
- Prepared presentation for SHC review and dry ran it
- Prepared request for funds transfer for harmonic kicker cavity
- Prepared and submitted quarterly report for Electron Cooling FOA contracts

- Conducted second SPC meeting for ERL 2022
- Started property validation

Next two weeks (Jan 31 – Feb 11)

- Attend SHC review
- Give presentation at the SHC review on the ERL design
- Review FEL Legacy and Export Control Review document
- Go over SHC ERL schedule and update if possible
- Rewrite and submit the LOSP for User Lab 4
- Finish up harmonic RF tech. note

Andrew Hutton

Previous two weeks (Dec 20 - Dec 31)

- ERL Panel: The ERL Roadmap has now been put on arXiv; it will be announced on Friday January 21 at 1 pm CET (9:00 am EST). We are now on a push to have the long ERL write up complete in the next few weeks and I will be spending most of my time over the next few weeks writing up the remaining sections (writing several section introductions, finishing the incomplete sustainability section and coming up with the overall conclusions). Max B. Is a great help in this.
- I continue to cogitate over the Ghost Collider and have made a couple of breakthroughs. Slava and Rui Li have been in contact with me and this has been really helpful in focusing my thoughts. I convinced myself that the decelerated bean has effectively the same current as the accelerated beam leading to excellent energy recovery. I am getting close to being able to identify the major possible instabilities, but am not yet able to come up with a logical path that would enable me to optimize the luminosity.
- Loida and Lila: Loida is making progress on the integration of Lila's and Loida's programs. Adam Stavola is chasing a permanent repository. Loida has submitted an Abstract to IPAC'2022 and has requested student travel support. She has already been invited to interview for the graduate program at Temple, and I have been preparing her for the interview. Lila also has received her first PhD offer from the University of Tennessee Nuclear Engineering and has interviews set up for UCLA, WashU and UW-Madison. They are both preparing to launch!

Next two weeks (Jan 31 – Feb 11)

- ERL Panel: everything fell apart on February 4. I had completed several of my remaining tasks for the long ERL write-up (I now only have to finish the sustainability Chapter) with Max



FEBURARY 3, 2022 REPORT | JAN 17 – FEB 11
DIRECTOR: TODD SATOGATA

Klein

leading the effort and Max

Brucker editing. On Feb 4, I heard from Max K. that he had been transported to hospital, and later that he has been ordered to rest and not to do any work for a

month. So, I am now filling in for him. The next step is to develop an Accelerator R&D Roadmap Implementation strategy, and the first meeting of the European Lab Directors Group (the LDG) was held on February 1 to discuss how to organize this. I replaced Max K. at the LDG Meeting, and I will be acting as the ERL Panel Chair during the difficult negotiations to obtain funding for the ERL plans. We had already decided to propose a Steering Committee to ensure that the ERL investments are coordinated and to provide oversight. The steering committee members proposed by Max would be: Max as the Panel Chair, Achille Stocchi to represent PERLE, Jens Knobloch to represent bERLinPro, and me to represent the technology developments. The steering committee chair would be a senior European scientist (we are thinking of Jorgen de Hondt, but he has not yet been approached). Clearly, my role in the ERL Roadmap Panel, far from decreasing, looks like it will continue, particularly with the Steering Committee which will be going on for several years.

- VNECA: I arranged a meeting between Stuart and the proponents of the Virginia Nuclear Innovation Hub (April Wade (Energy), Alireza Haghighat (VT), Supathorn Phongikaroon (VCU), Mark Horstmeyer (Liberty) and Sean Agnew (UVA)) to discuss Jefferson Lab involvement in the Hub and in particular to discuss how Jefferson Lab could be integrated into the HUB. Of specific interest to me was the ADMIRE proposal (ADMIRE = Accelerator Driven Micro Reactor). Stuart was noncommittal during the meeting, but afterwards asked David Dean to follow up. I spent 30 minutes explaining the background to David, but have not heard anything further.
- Loida is making progress with the program. She has been invited to speak at a DOE Nuclear Data quarterly call - a big deal!
- ALCC: I attended a meeting where the bad news from Japan continues (methinks Leonard Skynyrd: "Ooooh that smell, Can't you smell that smell, Ooooh that smell, The smell of death surrounds you"), so the ALCC is now preparing a White Paper for Snowmass to underline the interest of HEP in any Higgs Collider, preferably one based in the US.
- DOE Review of LEAF: I will be spending three days next week on a DOE review of the Argonne Isotope Program. My responsibility is to ascertain the reliability status of LEAF and the proposed measures to improve it - sounds like LERF all over again!
- Sustainability conferences: Next week, I will also be participating in the Consultancy Meeting on Organizing the 1st International Conference on Accelerators for Research and Sustainable Development for the IAEA. I am also invited to talk at the Sixth Workshop on Energy for Sustainable Science at Research Infrastructures hosted by the ESRF in Grenoble, which has been rescheduled to 29-30 September 2022 due to the ongoing sanitary crisis.