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DANGO (Doings and Goings On) - Vol. 22 | Issue 9

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DANGO (Doings and Goings On)

Picture of the Week Winner: "One of the 36 homes we helped build in Honduras." -Dr. Towell



Group Updates



FROM MATTHEW KIMBALL:

Hey DANGO,

This week has been me working on my writing and document making skills as well as moving things out of PHENIX. In order to get the high voltage things that we wanted out of the racks on the very top of

the PHENIX detectors we first had to remove them from their respective racks and the wires strung under the floor made that harder than it should have been. After that we had the task of getting them from the very top to ground level. Originally we were going to put them back in the racks and let the workers crane the racks out and we'd just get the pieces then. That changed though and yesterday we adventures with getting all of the various electronics down. Everything worked out though and I think they've already been cleared (? That might be something else).

Have a good one DANGO,
Matthew Kimball

FROM CECILY TOWELL:

Gesundheit Dango,

This week has just been non-stop excitement. We spent some time in the lab taking apart and putting together mRPCs. We were given a super fun glass mRPC to take apart that has lots of broken and burned pieces, so Haley and I have been cleaning that too but we have to wait for more glass before we can try to put it back together. We've also been running out to PHENIX about every day to take apart, clean, and box up pieces of PHENIX to send back to ACU and to UIUC. We have spent a good deal of time discussing CEU poster topics and then writing up the abstracts. My topic is the mylar mRPCs that we've been building, so it'll probably be the coolest poster of them all.

Gotta catch 'em all,
Cecily

FROM HALEY STIEN:

Dangooooo,

This week we started to discuss CEU abstracts and who was doing which topic. I still had basically no idea what was going to be my topic, but after thinking over all possible options with Dr. Towell and Mickey, I finally know what I'm doing! That was definitely a relief. Aside from abstract writing, we started going out to PHENIX to take apart, clean, and ship off

various parts. We also made some mRPC progress and have begun testing the Mylar mRPC in the cosmic ray stand. We also worked on meticulously cleaning the super thin pieces of glass from the glass mRPC.. Fun stuff. I can't believe there's less than two weeks left now!!

Yours truly,
Haley

FROM ARIC TATE:

Hello everyone,

This week we focused on retrieving what was ours (and UIUC's) from the remains of PHENIX. Results were mostly successful, as some of the HV had previously been sent to CERN. Besides the equipment located in the IR, we were also able to salvage a lot of gas flow pieces and parts. The racks were sitting in the parking lot in front of the RPC tent, our place of residence in years past, when we found them. Now we just have to wait for some activation checks and then decide how to deliver everything to its correct destination. Also, gas is again flowing through the mRPC chamber. Initial results after turning up the HV do not look promising. We need to do some tests on the anti-static mylar to determine if it is worth pursuing further.

FROM DR. TOWELL:

Hello Dango,

This week started with the reminder from Dr. D that we only had two

weeks to submit CEU abstracts. That was a clear indication that our summer work is coming to an end soon. So this week we've focused on what we've done, what we'd hoped to accomplish, and perhaps most concerning, what needs to be done before we depart BNL.

In addition to abstract planning, writing, reading, and editing, we've also started tying up loose ends here at BNL. We've finally started testing the mylar mRPC in the cosmic stand after waiting for new gas bottle so arrive. Initial results are looking very mixed. It is holding HV while drawing very little current which is great, but the signals coming out aren't very clean. The cosmic rate is very low, so we are continuing to collect data.

We've also started gathering the RPC electronics, gas distribution systems, and power supplies to return to ACU and UIUC. It turns out that between the assembly tent, IR, RHIC tunnel, and storage cabinet, we have stuff spread out all over BNL.

Lots more to do. Only two more weeks at BNL.

Grace and Peace,
Rusty



FROM VICENTE ROJAS:

Given the urgent need for a new water treatment plant (WTP) at Cisco, TX, this week we focused on getting the project off the ground. As I mentioned a few weeks ago, the Cisco WTP was flooded under 20-25 ft of water. Several engineers and I were assigned to design and size different components of the WTP. I was assigned to size clarifiers and an equalization (EQ) basin. The purpose of the clarifier tanks is to allow for the solids in the raw water coming from the Cisco Lake to settle out before they go into the filtration system. Followed by this, the water then enters the EQ basin, which acts as a buffer. This buffer, between the clarifiers and the filtration process, helps the filtration process get the right amount of water. If an EQ basin was not built, the filtration system will experience drastic changes in flow, which would shorten its lifetime.

On Tuesday, we celebrated David Todd's birthday. He is one of the engineers that founded eHT. In the middle of the party, Jordan assigned me another project. Between the other intern and I, we had to look over 600 pages of blueprints from the Hamby wastewater treatment plant in Abilene and make sure that the markups matched the actual drawings. I finished

looking at the last drawing on Friday. I did not want to start next week with a pile of drawings on my desk.

In my time off, I have been taking an online speech class and hanging out with the Korean and Japanese students who are at ACU for a summer camp.

-Vicente



FROM CALEB HICKS:

<Generic Greeting>,

This week I've done a lot of error troubleshooting and dealing with computer issues. I was working on compiling a root macro for a while, then started working on modifying the GMC program used for the Monte Carlo simulations at SeaQuest. Because the Dark Photon MC program isn't interfacing well with any tracking program, I edited the working MC program so I can edit the Z-vertex of the dimuons and see what a dark photon decay would look like in the detector (especially how changing the vertex affects the probability that we will detect it). I spent a few days trying to figure out why it was giving me far fewer events than I asked for (5-10%), but then found out that it's working as intended. So I spent Friday running a lot of simulations to get the events I need but mostly I spent Friday

trying to fix everything and eventually, after about 7 hours of the combined work of all the experts, it seems to have fixed itself or something; honestly I have no idea. Good week, though I'm concerned because I'm on shift Saturday and Sunday and won't have experts if the same problems re-emerge.

<Generic Send-off>,

Caleb Hicks

FROM ZHAOJIA XI:

Nong hao Dango,

This week I was mainly improving my code. We use hodoscope efficiency data to calculate trigger efficiency. Tuesday we went to an undergraduate lecture which talked a lot about dark matter. On Thursday we attended another undergraduate lecture. That was the best LIGO speech I have ever been to. The speaker helped me understand gravitational waves a lot better. I left Batavia Friday afternoon, now I am staying at downtown Chicago with my mother's best friend.

Time flies,

Zhaojia(Tiffany) Xi

FROM JOSHUA MARTINEZ:

Wassup DANGO,

This week I made a lot of progress on the light tight box extension, and hopefully I can finish it today. It ended up with me having to build a lot more things

that I initially thought I was going to which stressed me out slightly but handled it pretty well. Something fun to mention, Wednesday I got to crawl under the floor of the E906 building and pull out a lot of, from what I understand, valuable cables. I think some PhD told me it was work about \$3,000-\$5,000 worth of cables. Maybe Dr. Isenhower will submit a picture of if for the vote next week. I can say I am looking forward to this tour of NuMI Underground today at 1:00pm and hopefully, I can finish this box by then.

Until Next Time,
Joshua Daniel Martinez

FROM PAUL CARSTENS:

Greetings!

While measuring cosmic ray flux I noticed some disturbing fluctuations in my hodoscope readings. They had wild (~30%) disagreements on cosmic ray flux. After a bit of panic I learned that the method I had been using to determine their voltage settings wasn't conclusive so I redid the study with significantly more data points. While trying to set the threshold voltages for these new settings I found even more fluctuations. After another, larger bit of panic and some weeping and gnashing of teeth I've concluded that the test hodoscopes are very sensitive to physical agitation and that whenever I had touched the source to them for my tests the contact had thrown the measurements off. But now I've almost

got the settings that Josh needs for his project.

In other news, it turns out Monte-Carlo data is easier to use than real data. Shocker! I've been continuing my magnet transverse momentum kick study on real data and not having the MC truth as a load-stone has been making it very difficult to discern what the optimal settings are. At first I tried using mass, z-vertex, and momentum, but all those did was tell us what we'd expect the magnets to do. I then tried using reduced chi squared and the number of events and tracks, but those proved unhelpful. So now I'll be going back to mass, but this time I'll be using significantly more events to try to get a clean J/Psi peak to use. I suspect that it will help but still leave some ambiguity. If so I'll try discriminating it with number of events and or reduced chi squared.

Once more unto the breach,
Paul Carstens

FROM REUBEN BYRD:

Been catching 'em all.

FROM DR. MIKE DAUGHERITY:

Spent my week helping Reuben.

FROM DR. ISENHOWER:

The Isenhower Report:

Well I missed last week because things were going nuts at the end of the week. I'm eeking in this week as things are doing slightly crazy thing week as

well. My success is that I have now brought back to life 7 LeCroy 1445 High Voltage crate controllers. Not bad as FNAL hasn't been able to repair one since last summer. I plan on giving them 3 back for good will as I'm happy with 4 spares. I have not been successful in fixing the 1441 Low voltage supplies though. That's what was happening last Friday and Saturday. I thought I had on fixed as I found a bad +12V voltage regulator, replaced it, and then discovered that whatever the problem was, it blew out 12 V voltage regulators. Then this week while trying to probe for voltages on different places on the board I accidentally touch the can on a transistor that had it's outside metal can connected to it's collector, which was hooked up to -120V, and that did a number on the rest of the circuit. So now I don't know what the situation is with the LV supply. Very Frustrating!

This weekend I am visiting my two daughters in Brighton, MI. Anna and her Adam live there as he preaches at Brighton. My youngest daughter, Roberta, has traveled up with her boyfriend to visit her so we get to see both of them and see this boy who obviously is at a serious point of possibly being added to our family if she is bringing him to meet her sister for approval. :-)

If is crazy to think that next week will be my last with students. I leave on the 23rd for a vacation on the Canadian Rocky Mountaineer Railroad. It is what I am using my prize money from the APS

award I received last year to help pay for. I will be back for a few days in August (5th-8th) to finish up and then go see my grandson here in MI one more time before heading back to ACU to get ready for teaching Astronomy and EP I. Of course I will be reviewing student abstracts over the next week.

That's all from Dr. I.

In Other News..

With the deadline for abstracts approaching, it might be useful to check out some links to the Fall Division of Nuclear Physics Meeting and the CEU Home Page:

<http://dnp2016.triumf.ca/>

<http://www.uwlax.edu/CEU/>

Picture of the week candidates

Zhaojia: “Chitown Beach”



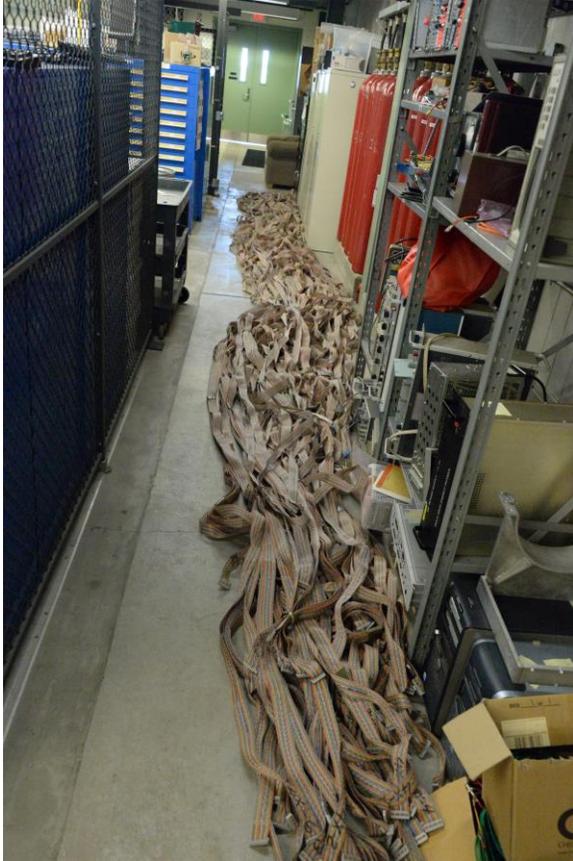
Dr. Towell: “BNL Red Team”



Dr. Isenhower: “Josh and Dr. D. crawling underneath the floor of the NM4 floor (SeaQuest counting house) on a quest for cables, which are shown in the final photo. This saved us \$5k and the time it would have taken to make the cables. Some of the pictures look cool because it looks like the subfloor goes off to infinity. The racks above them are filled with 8mm tapes

filled with data from old experiments. The vertical rods you see hold the floor up and are at their maximum rated specifications with those blue racks sitting on the floor! This same area is where we have gathered around 500 signal cables for other parts of our experiment. All of the cables were left by the previous experiment called KTeV.”





Coffee of the Week:

I would.... But my phone drowned in the ocean..

Matthew: "I forgot to take a picture while working on PHENIX"

