April 14 - April 18
Put pictures on the GlueX wiki
Write bending procedure and add pictures to that and other procedures
Continue bending and painting
5 bundles left to bend
8 bundles left to paint

Wednesday, April 9
Bend
Paint

Wednesday, April 2
take apart bundle
get next bundle in bending unit
fuse
paint

Monday, March 31
Liana 1 - 5

fuse
paint
bend
put pictures on gluex wiki per Jones

Tuesday

Liana 1:00 - 3:30
Kenny 2:00 - 4:00

Kenny - paint
Liana - fuse when Kenny isn't painting
continue to put bundles together
work on styrofoam stuff if bored of that

Bend fibers
Get in touch with Aaron
Write back to Barry about the weekend, after I figure out what I'm doing

Monday
Liana 1:00 - 5:00
Kenny 2:00 - 4:00

Kenny - ~~sink and surrounding area needs cleaning again and well~~
~~paint~~
Liana - ~~get the bending unit ready to go with bundle 12~~
~~empty out tank if time~~

Me - get Suki a take home assignment
~~double check the bundle names document (organize fibers into bundles)~~
~~clean~~
~~organize papers / tools / everything~~
talk to Aaron
start heaters tonight
talk to Dawn about AC
~~talk to Kim~~

Friday

Come up with an “assignment” for Suki

Spreadsheets… organizing them, plotting temp vs. time stuff.

Organizing bundle names etc…

Get in touch with Aaron. Ask if I can give out his information.

Thursday 10:00 - 3:30

Kenny 9:15 - 2:15

~~- Bend bundle 11~~

~~- Continue painting bundle 3~~

- Finish polishing bundle 16
- Finish putting together the storage containers
- ~~Make sure bundle 12 orientation is good. Edit in “Copy of Suki’s Bundles” and copy and paste it into “Bundle Names”~~

Wednesday 9:00 - 5:00

Liana 9:00 - 1:00

Label and take apart bundle 10

Clean bundle 10

Clean tank

Set-up bundle 11 for bending.

Put bundle 11 in bending unit

Fill tank

Siphon piping in tank

Get bundle 11 in the water by the end of the day

Tuesday 9:00 - 3:00

- ~~Bend bundle 10~~
- ~~Clean bundle 7~~
- ~~Paint bundle that Kenny started yesterday~~

Saturday
clean bundle 7
polish bundle 16
get bundle 10 ready for bending

Thursday, March 13
~~- Continue painting bundle 6 from 11:00 - 3:00~~
start painting bundle 3 when finished
~~- Liana 9:00 - 10:30 finish fusing bundle 20~~
~~start fusing bundle 21~~
- ~~Bend bundle 7 from 10:30 - 11:00~~
- when cool, take apart and label
- Figure out orientation for bundle J-10 for bending
- should I mix the bundles? remember that bundle M is huge!
~~- Think about gluing (should we even modify the aluminum setup if we don't have enough collars to use it anyways?)~~
- Finish gluing the last of the Styrofoam Packaging
do we want to use something other than DP-420? It's super expensive and I'm sure we could find something that works just as well.

Things to Order/Buy:
- More DP-420
- New chimney clamps (stainless steel from cut2sizemetals.com)
    - Call them and ask about whether or not they can cut a thinner piece of stainless steel without warping it.
    - Would aluminum be a viable alternative? same metal...

- Thin wire brush (either handheld or dremel) to clean chimney slots
- One stainless steel threaded rod (to replace the galvanized one)
- Wire tube brush for cleaning out the pipes on the bending unit

Monday, March 10

Liana 1 - 5 - Paint from 1-2, from 2-4 polish bundle 16 and measure fibers, paint from 4-5

Kenny 2 - 4 - Paint from 2-4

Me - Finish any epoxying needed, wait 2 hours, put the setup in the tank and let cure at high temperature overnight.

Tomorrow, put bundle 7 in the water, possibly bend tomorrow if time allows (otherwise Wednesday).

Paint when not epoxying - thoroughly clean all of the paint guns.

Tuesday

Liana - 1:00 - 3:30 Help me bend, measure, polish, fuse when Kenny isn't painting

Kenny 2:00 - 4:00 Paint - Clean up when done

Paint fibers
Measure fibers
Bend bundle 7

Tuesday, March 4

~~- Get bundle 7 in the collar in the correct orientation so I can get ready to bend easier.~~
~~- Edit the Bundle Names spreadsheet to include position and orientation of fibers~~
- Measure remaining fibers at fuse joint (12 - 21) Liana measured 12 -
- Polish bundle 16
- Fuse bundles 16, 20, 21
- Continue painting
~~- Finish epoxying bending unit~~
———When the last of the epoxy has cured, put it in the tank and get it up to temp. to bleed anything out that I can...

Feb. 24 - Feb. 28
cut threaded rods to size
    possibly metal tubes too
Put bundle 6 in the straightening setup
clean out the tank
continue painting bundle 4
glue?
Clean bundle 5 before putting away
get styrofoam cut and glued for new bundles
fuse last bit?
polish 16...

To-Do for the week of February 14 - 20

* cut new ss threaded rods to size.
* continue painting bundle 3
* Saturday - take apart bundle D from bending unit
  - decide which orientation bundle E will be bent in
  - put bundle E in the bending unit and put in the water to bend on Monday or Tuesday morning.
*

Monday, February 10
Liana 1:00 - 5:00
Kenny 12:00 - 2:00

To-do:
- Clean bundles, label and put in storage
- Get next bundle ready to bend
- Paint as many fibers as I can
- Finish bending procedure
- Start and finish painting procedure
- We-write LabVIEW program
- Plot bending data
- Clean up
- Prepare for visit
  - explain/show every step of the process
  - have bundle 16 can end mill and polish for them
  - can fuse bits of bundle 20 for them

- show pictures and final product of bent bundle still in tank
- explain straightening setup, can't show as the unistrut

Thursday, February 6

Fibers Bent

When cool, take out, label, put away

Get bundle "C" ready for bending

Re-write LabVIEW program

turn on

hover at 120 +/- 3 F

when time, ramp up to 160F

stay @160F for no more than two hours

shut off heaters

pumps are always on while program is running

Monday, February 3, 2014

Liana 1:00 - 5:00 Fuse

Kenny 2:00 - 4:00 C++

Tuesday

Bend fibers (or get them in the water to bend on Wednesday or Thursday)

-- Purchase

- ~~Threaded rods~~

~~¼ '' stainless~~

~~- nuts and washers~~

- styrofoam

measure boxes first

1'' and 2'' thick

-- bundle 9?

-- put fibers in bundle

-- take labels off after recording position

Liana 1:15 - 3:15 Fuse
Kenny 2:00 - 4:00 Measure labeled fibers

Wednesday

Thursday
Liana 9:00 - 10:30 Fuse

Friday

This Week
Finish labeling fibers
Determine where they go
Buy things to bend fibers
Buy things to store fibers
Bend

Monday/This Week
~~Jon 12:30 - 3:30 Polish individual fibers from bundles 19, 20 and 21~~
~~Liana 1:00 - 5:00 Fuse~~
~~Kenny 2:00 - 4:00 Work on C++ and Root~~

Tuesday

Liana 9:00 - 10:30 Fuse
Kenny 2:00 - 4:00 Work on C++ and Root

Wednesday

Visit with engineering machine shop tomorrow morning first thing
    bring drawings
    ask about what qualifies someone to work in the shop
Jon 12:30 - 3:30 Work with Alex

Thursday

Liana 9:00 - 11:00 Fuse

- Fuse bundles (Skip 16 for now) 17 and 18 A.S.A.P
- Name fibers per drive spreadsheet - 570 fibers
~~3,4,5,6,7,8,9,10,11,12,13,14,15,~~16,~~17,18,19,20,21~~
    Measure all of them at the fuse site
~~3,4,5,6,7,8,9,~~10,11,12,13,14,15,16,17,18,19,20,21
    Make sure to orient measurements and tape (~3 inches from bottom)
    (so that we know which side is A and which is B)
    (Side A is the measurement of the fiber on the top and bottom when the tape is facing up. Side B is the measurement of the fiber on the top and bottom when the tape is facing either side.)
- Cut the two longer bundles about 4 mm shorter
    - Bundles 12 and 16
    - Re-polish them
- ~~Link travelers to Wiki~~
    ~~should I link fuse data too? - yes~~
        ~~temp. plots - yes~~
        plots of fuse stats.- yes
        names of fibers - yes
~~- Go through travelers and make sure there are no typos~~
- Measure boxes for styrofoam

- Buy styrofoam
- Cut styrofoam to size
- Get styrofoam ready for storage
- Get the 1st bundle ready for cosmic testing
- ~~Meet with Jim at some point to go over ordering metal / machined parts~~
~~- Get bundles 19, 20, and 21 ready to be end milled~~
- ~~Put boxes together~~
- ~~Cut boxes to right size~~
- ~~Test water quality before and after filter~~
    - ~~Put results and specifications on wiki~~
- ~~Budget stuff for tomorrow's meeting~~
~~summary of progress~~
- ~~Take out, clean, and put bundle 19 away~~
- Help Alex with light testing fibers
    ~~take a few last pictures~~
    ~~pick 3-4 fibers, secure them~~, and light test them
        repeat until the 2nd bundle is done
- ~~Fuse bundle 14~~
- ~~Add bundle 14 fuse data to old and new fuse plots~~
- ~~Fuse bundle 15~~
~~- Clean next door and move fridge~~
~~- Poll everyone's availability for meeting times~~
~~- Let Jones know as soon as possible~~
- ~~Straighten bundle 20~~
- ~~Plot temp vs. time of bundles 19, 20, and 21 straightening~~

<u>MANSFIELD SUPPLY SHOPPING LIST</u>

- Enough 1'' and 2'' styrofoam to pack the bundles
    - Figure out how much that is
- Stainless steel threaded rods
    washers and nuts for the rods (also stainless)

- More tape

Friday

~~Meet with Jim early~~
~~Apply for deferment for loans~~
~~Look for replacement relay for splicing unit~~
~~Take picture of dirty bundle~~
~~Light test the dark box (possibly have Suki do this)!!!~~
~~End-mill bundles 15, 16, 18~~
~~Polish bundles 15, 16, 18~~
~~Put the straightening setup together~~

~~Straighten bundle 19~~
~~Fuse bundle 14~~

WIKI STUFF
Link travelers
Maybe link fuse statistics
Link old procedures
~~Take pictures of clean/dirty fibers (oils, rust, calcium)~~

The fuse site width may be more correlated to fiber size than we think, because we sand the lip caused by fusing before we measure the fiber once fused. (Liana brought this up, good point)

ORGANIZATIONAL STUFF
Give each fiber a name
    Put on new spreadsheet (already made)
    The fiber will always have that name
Mix and match the fibers from different bundles but make sure to note what name goes in what final bundle. (Before bending)
    Make sure to optimize the bundle size by placing fibers smartly (Before bending)
    Make a spreadsheet with fiber names to denote where a specific fiber is in a bundle's matrix (Before bending, as the stickers may come off/should be taken off in the hot water)

Liana 9:00 - 1:00
Ben 9:00 - 5:00
Suki 12:00 - 5:00

Thursday

Get things at Mansfield Supply for Jim (mpt to barb on both sides)
Get bundles 15, 16, 18 end-milled.
Polish bundles 15, 16, and 18
Put the straightening setup back together and straighten bundle 19

Before I bend, I should determine if the fibers will stay in the bundle they are in based on fuse site thickness.

Liana 9:00 - 3:30
Kenny 9:30 - 3:30 C++ things
Ben 11:00 - 3:30
Jon 1:00 - 3:30

Wednesday
Darkening shroud tomorrow!!!

Liana 9:00 - 5:00
Jon 9:00 - 5:00

Tuesday, January 14
Jon 9:00 - 5:00
Keegan ?

~~Financial aid stuff~~

Jon - ~~Take pictures of everything! Put them into a labeled folder on drive. Put the pictures into sub folders so that everything is easily found.~~

~~Get the lg fibers ready to end mill. Don't straighten anything until they are end-milled and the collars are free after polishing...~~

~~Monday~~

Ben 9:00 - 5:00
Liana 9:00 - 5:00
Kenny 9:30 - 12:30 (C++ all day. Aaron has info on wiki, CODA)
Keegan 12:30 - 5:00

- Get Kenny a physics account or access to tunneling into physics computers
- ~~Take out bundle 16~~
  - ~~clean~~
  - ~~label and put away~~
  - plot temp vs. time and put data in appropriate places
    - I took too much data. Keep only important hours
- ~~Take apart unistrut. Wire brush clean all metal pieces… No rust~~
- Get lightguides put in clean collars and ready to end mill either today or tomorrow. Bundles 12, 14, 15, 16. (I will double check the length)
- ~~Talk to Brendan about drilling holes in new aluminum straightening / bending metal~~
  - ~~Liana - mark where the holes and slots go~~
- Measure SciFi (2 bundles) so that fusing can go easier...
- Polish (SciFi 16, 17, 18. re do some of them) (and LG that have been end-milled)
- Fuse bundle 12
- Finish putting procedures on wiki
- ~~Fix cardboard box issue~~
  - ~~Measure a standard door~~
  - ~~Figure out a way to get the boxes to work for us.~~
- ~~Take pictures of everything we can think of (production wise) and put~~

~~them on the wiki (with the procedures where appropriate). They should also go on my drive document.~~

Friday
Ben 9:00 - 3:00
Keegan 12:30 - 3:00
Possibly straighten bundle 16
Start fusing bundle 11
Look up water softeners
- Jim's email

Zinc
Think about cardboard box issue

To talk about at the meeting:
our progress
- done rough cutting and measuring fibers
- only 7 more bundles to straighten
- only 9 more bundles to end-mill (a ton were done this week!)
- 11 more bundles to fuse
- 19 more bundles to bend
- 20 more bundles to paint

- we are keeping data on fiber sizes before and after fusing.
- we are making sure to stay on top of temp. vs. time data for

straightening fibers

issues we've had

- bundle 10 was just fused, it had larger fibers on average and some of the fuse sites were very large. Other bundles did not have this issue because the fibers were smaller on average
- splicing unit was giving me trouble - Brendan fixed it
- 2 fusing mishaps
- 1 other broken fiber
- unistrut will not stay rust free, spray paint is horribly smelly. unistrut still smells two weeks later…
- calcium deposits in the water
- we should never clean fibers with alcohol

looking forward

- storage boxes should be assembled, and styrofoam should be purchased
- put a piece of material between the pulsar and the SiPM's

Mansfield Supply

- purchase styrofoam
- purchase threaded rods
- purchase duct tape
- find a good/cheap supply of zinc
- low flow water softener!
- or truck in water

Thursday, Jan 9th

Ben 11:00 - 3:30
Kenny 9:30 - 3:30
Jon 12:30 - 3:30
Liana 1:00 - 3:30
Keegan 1:00 - 3:30

- ~~Take out bundle 14 from being straightened~~
    ~~clean the fibers~~
    ~~put them in the appropriate area of the dark box~~
    ~~plot temp vs. time data~~
- Straighten bundle 15
- Start and finish fusing bundle 10
- ~~If I can get Brendan to end-mill the long bundle 11 (it's already been put in the collar) then I can start fusing bundle 11 tomorrow also. The non fuse side has already been polished, so all he has to do is cut them and we are good to start fusing the bundle.~~
- Polish SciFi bundles until they are done being polished
    two people can polish bundles of lg. One can use the 6x6 collar and the other can use the 5x6 collar
- If the wiki is working again, and allowing editing, update the procedures. I have them in my email. All we need to do is rewrite them in the format we need.
    ----- If not, write the code out as one would do on the wiki but put it in Google Drive, and I will copy and paste it into the wiki when it is up.
- Clean the water out of the tank again
- Clean 405

<u>Wednesday, Jan 8th</u>

Ben 9:30 - 2:30
Jon 9:00 - 5:00
Keegan 12:30 - 4:00

~~Take out bundle 13 from being straightened~~
~~Brendan will end-mill it~~
~~after milling, polish~~
~~clean the fibers and label the bundle~~
~~put them in the appropriate area of the dark box~~

~~put bundle 19 SciFi into the 6x6 collar for Brendan to end-mill right away~~

~~Clean out the tank~~

polish scifi bundles 10 - 18

If Brendan end-mills lg bundles 12 and ~~13~~ then they should be ~~polished~~ too

~~Straighten bundle 14~~

Finish putting rough cut procedure on wiki
and the rest of the procedures that are written

Start fusing bundle 9 - Liana already took initial SciFi measurements

<u>Tuesday, Jan. 7th</u>
Ben 9:00 - 5:00
Jon 9:30 - 5:00
Kenny 9:30 - 1:00
Liana 9:00 - 5:00

1. ~~Take out bundle 12~~
2. ~~Get lg bundles 9, 10, and 11 ready for end-milling~~
~~measure straightened fibers and record length after end milling~~
3. ~~Also give Brendan SciFi bundles to end-mill~~
4. ~~Clean bundle 12~~

5. ~~Plot bundles 11 and 12 temp data and put on drive and excel~~
~~6. Continue fusing bundle 7~~
7. ~~Polish lg bundles 9, 10, and 11~~
8. Polish any SciFi bundles that have been end-milled
9. ~~Liana - Finish fusing writeup~~
10. ~~Print out travelers and heating data for bundle 1 and~~
11. Straighten bundle 13
12. ~~Make travelers more easily read~~

~~After lunch:~~
~~Jon - Continue fusing until it's Liana's turn, then polish fibers~~
~~Liana - Get the next bundle straightened, then fuse~~
~~Ben - Get the next bundle straightened, then polish fibers~~

Thursday Jan. 2

Ben 9:00 - ?
Plot graphs of most recent straightening
Clean paint guns
polish last available bundle of scifi

-~~Take out and clean bundle 12~~
-~~Straighten bundle 13~~
-Clean/fix paint guns
-Writeups
Liana started fusing procedure
Ben started straightening procedure
I should write bending procedure

Still need painting, cleaning, measuring, gluing

Monday Dec. 30

Liana 10:00 - 4:00 Straighten bundle 12
Ben 9:00 - 3:00 Finish measuring bundle 21
Kenny 9:30 - 1:30 Measure bundle 22
-~~Measure bundles 22~~ and 23
-Print out travelers that haven't been printed yet
put them in the binder
-~~Clean out tank~~
-~~Clean 405~~
~~Sweep~~
~~Dust~~
~~Mop~~
~~Organize shelf above tank, manila cabinet, workbench, painting station~~
~~Get rid of big cardboard box (break it down and put it in blue containers in this building)~~
- ~~Clean the paint guns and get them ready for painting...~~
-Work on wiki
Straightening fibers - Procedures - can go under current work, along with below...
procedures for:
Measuring (Kenny)
Straightening (Ben)
Polishing (scifi and lg)
~~Fusing (Liana)~~
Painting
Bending
Organize it better
Add pictures as appropriate (after cleaning)

~~-Plot temp vs. time of last straightening (put on drive~~ and link to wiki)

Find bundle 1 data in gmail if I can

Once fibers are end-milled can:

Polish

Fuse

Once fibers are bent can:

Paint

Glue

Thursday

Liana 9:00 - 5:00

Kenny 9:30 - 5:00

Ben 11:00 - 5:00

Jon 1:00 - 5:00

Friday

Kenny 9:30 - 12:30

Friday - Off

Thursday - go in to get time cards and straighten a bundle

Wednesday - Christmas

Tuesday - Christmas Eve

Monday

~~Take out bundle 10 from straightening. Put in bundle 11.~~
~~Measure lg~~
Write procedures for straightening (take pictures), fusing, painting, cleaning, polishing, put on wiki. Edit wiki, if need be, to make it easier to read. Update lab journals. Put collar on bundle 12 so that when I come in on Thursday to get paychecks I can straighten easier.

~~3 people in on Monday. 2 people measure lg. One person can clean bundle 10 and straighten bundle 11~~

Liana 9:00 - 3:00
Jon 9:00 - 3:00
Kenny 9:30 - 2
Suki

Saturday

~~Suki 11:00 - 4:00~~
~~Take out bundle 9 from straightening, clean fibers. Put in bundle 10. Measure lightguides. Possibly practice fusing with extra fibers. Do a strength test, and a light "test" with a laser.~~

Friday

Liana 9:00 - 5:00 ~~straighten bundle 9. Will have to put the collars on and get it all set up. Measure bundle 12+~~

Ben 9:00 - 5:00 - ~~continue measuring lightguides bundle 13+~~

me - ~~pick up popsicle stick from Bioservices machine shop~~
- ~~buy gloves from Mansfield Supply~~
- buy ¼" threaded rods that won't rust from Mansfield Suppl

also buy non rusting washers and nuts for the rods

Thursday

Remind everyone to update their wiki journal

~~Re-paint unistrut. Can use it Friday~~

~~Continue fusing bundle 6~~

~~Measure lg bundle 11+~~

~~Polish Scifi bundle 8~~

~~Rough cut and measure Scifi bundle 13+~~

Look up Alodine for the popsicle sticks! - Chromate conversion coating

~~Keegan is putting the end collar on bundle 9 so that we can throw it in the straightening setup first thing tomorrow morning. Also put one on 10 so that it can go in on Saturday~~

~~(meeting stuff - wiki updates, bundle progress excel, projected progress (how many working days until the semester starts), unistrut rust issue, light transmission, bending? (can't paint until bent, but can't straighten while bending. can't glue while bending either), popsicle sticks, Alodine~~

Ben 11:00 - 3:30 - ~~measure lightguides~~

Jon 1:00 - 3:30 - ~~polish bundle of scifi~~

Kenny 9:30 - 3:30 - ~~cut and measure scifi - polish the bundles that are endmilled~~

Liana 9:00 - 3:30 - ~~Fuse bundles 7 and possibly 8~~

Keegan 12:30 - 3:30 ~~Help Liana fuse (do the fusing) - polish scifi~~

Wednesday:

~~Clean and fix the unistrut~~
~~Take out bundle 8 leaving the two end collars on~~
~~they should be endmilled and polished before the outer two collars come off~~
~~Put collars on bundle 7 so that Brendan can end mill them~~
~~polish as soon as we get them back from being end milled~~
~~Clean bundles 7 and 8 once done being end milled and polished~~
~~Continue fusing bundles 5~~ and 6
Straighten bundle 9
~~Make a plot for temp vs. time of bundle 8 straightening~~

Liana 9:00 - 5:00
~~Fuse - All day~~

Jon 9:00 - 5:00
~~Help me get collars on bundles 7 and 8 so they may be endmilled~~
~~Clean unistrut~~ (and paint it again) with Ben
Straighten bundle 9 with Ben when he comes in
Write up a process for fusing fibers
~~polish fiber bundles 7 and 8 - Copier paper only~~
~~lg~~ and scifi

Ben 11:00 - 3:00
~~Clean bundles 7 and 8~~
Straighten bundle 9
~~Plot new temp data. put it all on the google doc I have. use snipping tool to make a png. or jpg. of the picture~~
Clean the collars with wire brush
Keegan 12:30 - 5:00
Help Liana fuse by measuring initial and final thicknesses.

Liana will fuse and sand. Keegan will measure and clean the fibers

Ben's pictures from the wiki. Fix the rust issue!
<gallery>
file:FacingAligned-end.JPG|"'Figure 1'" This is the aligned end.
file:Unaligned-end.JPG|"'Figure 2'" At the unaligned end, the fibers stick out to different lengths.
file:BundlingTool.JPG|"'Figure 3'" Five fibers in a row will fit between the prongs of the bundling tool, and six rows can be stacked before they will reach the open end.
file:CollarHoldingFibers.JPG|"'Figure 4'" The fibers should pass through all the collars as a 5x6 matrix
file:SpringConnected-toCollar.JPG|"'Figure 5'" The springs are tied to the collars with wires.
file:Unaligned-end-spring-1.JPG|"'Figure 6'" At the unaligned end there are two springs.
file:Unaligned-end-spring-2.JPG|"'Figure 7'" At the unaligned end there are two springs.
</gallery>

Tuesday:

~~**Speak with Mark about threaded holes in popsicle stick**~~
~~**Speak with Dr. Jones about the anodized popsicle sticks**~~
~~**Video chat with James**~~
Put threaded tape on the new setup for painting

~~Put bundle 6 away (labeled)~~
~~Take bundle 7 out of the PVC~~
~~clean bundle 7~~
~~Straighten bundle 8~~
Fuse bundle 5 - Jon is currently working on this
~~Finish measuring bundle 10~~
and any subsequent bundles if there is time
Student worker hours today:
Jon 9:00 - 5:00
Fuse all day (can do bundle 5 and possibly 6)
Kenny 9:30 - 1:50 & 3:00 - 5:00
~~Put bundle 6 away~~
~~Take out bundle 7~~
~~Clean bundle 7~~
~~Straighten bundle 8~~
~~Ben can help~~
~~Plot temperature vs. time for heating bundles~~
~~Including the tank~~
Put them on drive (I need to share that file with him)

Ben 11:00 - 3:00
~~Help Kenny straighten bundle 8~~
~~Put procedures and pictures of straightening on the wiki~~
~~Measure lightguides Bundle 10 + any others~~

<u>This week:</u>

Bundle 4 is bent, painted, and awaiting testing, the last fibers painted, and

glued

Today / this week:
end mill and polish lg bundle 6
polish scifi bundle 6
straighten bundle 7
continue fusing bundle 5

Ben (11:00 - 3:00) -

<u>To-Do for the Week:</u>

Bend bundle 4 - Monday (Me, Alex, Dr. Jones)

Bundle 4 is currently being painted

Bundle 5 straightened.

Tomorrow (Friday) bundle 5 will be endmilled, polished, and fusing can begin

I've spoken with Poly-metal and the popsicle stick pieces will be here early next week from being hard anodized.

Friday: Straighten bundle 6 while fusing bundle 5
First, polish the end of bundle 5 so that I can take the collars and use them to straighten bundle 6

~~Keegan is polishing scifis from bundle 5~~

~~put bundles 2 and 3 in storage for now~~

To bend tomorrow:

~~clean the rust off of everything - Kenny - 1 hour~~

~~spray paint any rust prone areas - Me - 10 minutes~~

~~¼" threaded rods~~
~~bolts~~
~~make sure everything threads well~~

~~cut 1/2" rods to the right size - Me - 10 minutes~~

~~fuse 12 fibers~~ (including the 7 below) - 2 hours

~~figure out how to straighten just 7 fibers - put them in straightening unit with short fibers to fill in the gaps~~

~~polish them- 30 to 40 minutes~~
~~fuse 7 fibers~~

~~put everything together in bending unit - me - 1 to 2 hours~~
~~I will need an extra hand~~

~~clean out the tank - Kenny - 1 hour~~

~~fill the tank - 30 minutes~~
~~siphon water in lines to clear out air - 10 minutes~~

~~start the heaters and pumps~~
~~make sure it's running well - 30 minutes~~

To have a bundle ready for Monday:

Fuse the rest of bundle 4 ***Thursday and Friday***
To do this I need to:
Straighten bundle 5
Endmill bundle 5
Polish bundle 5
Take 6 fibers from this bundle and use it in bundle 4

Get bundle 4 in the bending setup ***Friday***

Bend the bundle ***Saturday***

Paint bundle 4 ***Sunday morning***

Glue bundle 4 ***Monday morning***

Keegan, Kenny, Jon
assemble cardboard box - Keegan
label fibers currently on bending unit - Keegan

mark on the threaded rod where I should cut - me
take apart bending setup - Keegan / me
Measure fibers - Kenny
fuse - Jon

Write up procedures so that I can follow them to a T. - I will do this tonight

Friday

Things to do before we can bend:

1. ~~put gasket on chimney plates~~
2. siphon out heater/pump #2
3. ~~machine the chimneys to be deeper~~
    a. ~~sandblast / file the chimneys~~
4. ~~take apart gluing setup~~
    a. install bundle 1 in the dark box
    b. clean paint off of bending plates
    c. Brendan fix the hole misalignment
5. put fibers in bending setup
    a. have Dr. Jones watch the process
    b. get fibers in water and up to temp
    c. bend them a.s.a.p.

Thursday

Order gloves for bending

Mill out the chimneys before we bend tomorrow

Stainless steel 4-40s have been ordered in 1/4'', 1/2'', and 3/4'', along with washers and nuts to go with them.
They're about $7/box - pay when I pick them up
A smaller box of stainless steel 8-32's have been ordered in 1.5''
I should pick up some washers and nuts to go with these 8-32s when the order comes in tomorrow around 3:00 P.M

Look up storage boxes for storing and shipping the bundles
want a box that's at lesst 30'' x 48'' x whatever I need

1'' thick styrofoam layers
2'' thick blocks between layers

adding up layers:
to get one bundle in a box, it would need to be 4'' tall
48x40x36 single wall 200# test corrugated (ships flat & is $13.30/box but need to buy 5 boxes plus motor freight
48x40x36 double wall 275# test (may ship folded on seams & would cost 22.01/box but need to buy 5 boxes plus motor freight

These are on sale and include a lid I like these a lot.

would be able to get 10 bundles in this box. It's a little too big on one of the dimensions but I think it'll be ok….

Wednesday

order dp-420 and applicators soon!!!

New plan for bundle storage. Ship them off of the chimneys. Include a diagram of where they go. Layer of styrofoam, a bundle on the popsicle stick, let the fibers lay on the styrofoam, attach them with wire or a zip tie to the styrofoam, put blocks on top of the first layer as spacers, put the second layer of styrofoam and continue the process until the box is full… Look for a box suitable for this

I will be straightening fibers as soon as Brendan is done endmilling them and Keegan is here to help/see how it's done

Liana ~~10:00 - 11:00~~ & 2:30 - 4:30 ~~Clean out the tank (mix a little ethanol with water) Help me organize the fiber bundle production documents (print out all of the old ones and organize them along with the hand-written ones) Organize paper autocad drawings (keep what we should and toss the rest)~~

Jon 1:30 - 3:30 Alex has work for him

Keegan Help me polish and straighten bundle 3 (no sandpaper, just copier paper)

Kenny If he's here at a good time he can help set up the bundle for straightening. Otherwise he can help me thoroughly clean the paint guns with propanol.

~~Think about new ways to store and ship the fibers. I got a quote from~~

~~Universal Foam and it's way too expensive, even after simplifying the drawings.~~

Tuesday

Jon: 2-4 - work on pulse generators
Keegan: cut lg
Kenny: cut scifi

look for stainless steel socket head cap 4-40's (¼. ½, ¾, 1'')
also need a box of 1'' 8-32's socket head cap. stainless steel would be good
Cardboard boxes

Monday

Make dark box inhabitable for fibers: Drill another hole, dremel out a channel for the popsicle stick to fit

Brendan will endmill bundles 3 & 4 on Wednesday

Today: Fuse, take apart gluing setup

Tuesday: get bundles 3 & 4 ready to be endmilled

Things to work on:

Finish fusing second bundle
Bend second bundle (what was the distance we agreed on?)

Endmill bundles 3 & 4

Polish bundles 3 & 4

Fuse bundles 3 &4…. etc.

Thursday

Get Boxes - U-hall or something like it. Just to store the bent fibers short term

Liana 9:00 -11:00 finished painting and continued fusing second bundle

Jon 2:00 - (3:30)5:00 Pulse generators

Keegan 12:30 or 1:00 - 3:30 Cut lg's, help with gluing

I'll be gluing fibers with Jim

Wednesday

~~Anyone can paint if I haven't finished them yet~~

Liana: 10:00-11:00 & 2:30 - 4:40 Fuse 2nd bundle

Jon: 1:30 - 3:30	Scifi #3 into collar, cut lg
Kenny: ?	Cut scifi
Keegan: 1:00 - 4:00	lg #3 in collars

Need third and fourth bundle worth of scifi and lg endmilled

I should:

order 4-40's of appropriate lengths: 1/4'' and either 3/8ths or 1/2''
stainless steel socket cap screws

Tuesday: more of monday stuff

Monday:

~~Write to Jim~~

~~clean the tank- Jon~~

pick up wet/dry vac from home depot (it's ready now)

get stainless steel 4-40s- Our best bet is to order them through Mansfield Supply. Home depot only sells them in packs of 2-8, mansfield will probably be able to sell us a box of what we want

sand blast the chimneys, file if need be- me and/or Brendan

~~send out popsicle sticks for hard anodize. got a quote $120.00 for 19 of them. Just asked for a quote for 20. Hopefully get it soon and can send out order asap~~

~~file 4 of the fuses and fuse last one~~

~~paint!- Jon, Kenny, Liana, me~~

glue on Thursday with Jim

Wednesday:

Fuse at least a few fibers from bundle 2

~~**Bend bundle 1 fibers**~~
~~**drill countersunk holes in chimney plates**~~
~~**cut pipes to correct angle (???)**~~
~~**cut threaded rods to correct length (???)**~~
~~**buy wingnuts for threaded rods (3/4" I think)**~~
~~**put it all together**~~
~~**bend**~~

Pick up light bulbs from Home Depot

Where we stand:

Rough Cut
- Bundle 4 lg completed rough cut
- needs to be entered into Drive
- Bundle 8 Scifi rough cut

End milled
- Bundle 1 & 2 Scifi and lg completed

Straightened
- Bungle 1 & 2 scifi completed

Bent
Bundle 1 being bent

Painted
xxxxxxx

Glued
xxxxxxx

Student worker things to be done:

- Get travelers up to date on Google Drive
- Cut more lg and scifi
- Help me get fibers into bending unit
-

Liana: 10:00 - 11:00 & 2:30 - 4:30 **Styrofoam drawings (also find and price eggshell styrofoam)**

Show Liana how to fuse

Kenny: 2:30 - 3:30 **Cut scifi's if Brendan isn't machining otherwise cut lg's**

Jon: 1:30 - 3:30 **Help me set up the bending unit with collars from 1:30 - 2:30**

Keegan: 12:30 - ?

Help me put fibers in the bending unit after 2:30 or so

@ 1:30 meet with Jones, Jim, and Brendan
@ 2:30 explain the bending setup to everyone

Monday

~~**Straighten second scifi bundle**~~

Fuse last fibers for first bundle

~~**Look for another UPS (universal power supply)**~~
~~**LabVIEW program to read UPS and turn off heaters appropriately**~~
~~**(when the netbooters power up their automatic state is off now)**~~

~~**Put together bending setup**~~

Preheat tank today (possibly) for bending tomorrow (over the weekend the tank dropped 41 degrees in 16 hours) (need bending chimney plates finished)

Fix the leak in the bottom of the pvc

Styrofoam / Boxes

Jon : 1:30 - 3:30
Liana 2:30 - 3:30

Friday (November 1st)

Before we order the rest of the chimneys we should make sure the preamp fits in the slot, and make sure all of the fibers fit in the slots!!!!!

Test the tank one more time… make sure all is well after the power outage.

Styrofoam/Boxes!!!

~~**Write to Keegan and tell him that thursdays are mandatory for inclusion in the group**~~

~~**Call Kevin Baker from Universal Foam**~~

~~**write to scott serre from polymetals and request a quote (already did once but he didn't respond)**~~

Assemble bending station once the piece comes in

Straighten bundle 2 lg

Monday:

~~**Work on getting machined pieces assembled**~~

~~**Polish scifi and lg bundle 1**~~

Tuesday:

Fuse first bundle

~~**polish second bundle of scifi**~~

~~**put in purchase order for Thorlabs**~~

Wednesday

Have Jon help me with measurements: fusing will go much faster

Liana: drawings for styrofoam. The boxes are 48 x 40 x 24. No cutouts, angles are ok. can put pieces together to get what we want. Drawings submitted to them in pdf with dimensions annotated.

Straighten second bundle of lg

polish second bundle of lg

continue fusing first bundle

Thursday

Test the tank to full temp… first thing in the morning...

once first bundle is fused bend them

Friday

paint first bundle

Monday

glue first bundle

Friday:

Styrofoam
Boxes
Straighten fibers with new setup
Measure fibers, 2 at a time
Fuse them
Measure again / record
Correct any fusing issues
Measure again / record

Put together any parts that come in

Thursday:
Liana: 9:00-11:00

Continue with jobs below

Kenny: 2:00-5:00

Cut lg's

Jon: 2:00-5:00

Polish fibers while in collars

Me

~~**Shop at Mansfield:**~~
~~**Pick up 4-40's**~~
~~**Order 1/4" 4-40's**~~
~~**Get 3 threaded rods 3/8" thick**~~

~~bolts and washers for them~~
~~Anything else?~~

Fuse fibers
Keep docs with the dimensions of the fuse sites
how are we keeping them?
measure again before painting?

Wednesday
Liana 10-11 & 2:30 - 4:30
Kenny 2:25 - 3:25
Jon 1:30 - 3:30

Liana:

1. **Determine dimensions of completed bundle.**
2. **Make/finish custom styrofoam drawings.**
3. **Submit for a quote on the styrofoam pieces.**
4. **Are packing peanuts a better option?**
5. **Find 20-25 new cardboard boxes that fit our needs from a reputable distributor. (amazon, home depot, lowes, etc., not a foreign company)**

Kenny:

1. **Cut LG's for an hour…**

Jon:

Polish fibers.

Today's list of things to do:

1. end mill fiber bundles
- **-need a sock made**
- **-put the fibers in the collars**

2. test heaters and pumps
- **-need to put bricks in the tank and strap down heaters**
  - **+cut wood to size**
- **-fix and leaks that may exist**
- **-move the netbooter or use extension cords (I don't think we can use extension cords per order of the fire marshal)**
- **-make new thermistor with long enough wires to reach the far heater**

3. submit jobs to First Cut
- **-need to make any corrections to the base plates (talk about this, there is more than one option here)**
- **-fill out online thread form for each of the pieces**
- **-meet with Dr. Jones from 2:00 - 2:30 to buy pieces**

4. submit chimney components for work at First Cut as soon as Jim gets me the drawings (he sent them last night but I don't have them. Waiting on new email from him)
- **-convert autocad files to .stp files**

Liana will be in today from 10-11 and 2:30-4:30
Kenny will be in today from 1:25-3:25

Need to submit time sheets to Dawn!

make a sock first thing tomorrow!!!!

Order packing boxes and styrofoam. See if Liana has finished the packing setup…..

Got our popsicle stick in, and will be sending it out to get hard anodized as soon as I hear back from Scott @ poly-metals

How many pieces of the bending and gluing station will we need? one of each right?

Liana is done with the dummy chimney. Does Jim approve? Can I send it to First Cut?

Working on getting components of stations isolated so that I can send them off to first cut. The drawings all need to be 3D (they don't look at 2D) and separate.

~~**Make a spreadsheet of the pieces that are out, the machine shops they're out at, their**~~

~~phone number, and the expected date of completion~~

Liana and I submitted the drawings for the bending block and the gluing block to First Cut today. I got an email back requesting that we send the drawings again as they can not read the ones we sent. The ones we sent were in .dwg format. They gave me a list of formats, and although .dwg was in there, we should send them again and also in another format.

~~Things to purchase from home depot~~

~~--2 - 2-3' long segments of braided washing machine hose. Found a 2 pack of 4' long hose. I don't think they make them in 3' segments~~

~~to go from the 1' braided hose to the heater (braided hose has a 1/2" fip end, heater has a 3/8" mip) so I need a connector that has 1/2" mip and 3/8" fip~~

~~I have everything to go from the pump to the 1' braided hose~~

~~to go from the washing machine hose to 1/2" sweat (at the pump)~~
~~1/2" male sweat to 3/4" male hose~~

~~to go from the heater to washing machine hose (the outlet of the heater is ½" fpt so I need a connection that is) 1/2" mpt to 3/4" male hose.~~

~~I need two "V" splitters with 2 ball valves in them~~

KENNY - cut the thin pvc today, and then continue with measuring and cutting lg. (explain the new way and why I want it done that way… show him the plot in 403)

~~Test the new setup for the heater/pump. Bubble issue fixed?~~

~~Thermistor issue fixed?~~

Continue cutting fibers, keeping measurements in order, for data

The specs have moved to 1.96 - 2.04

Dummy chimney needs updated slots w/different sizes. Jim will give this to Liana when he's done correcting the drawing.

~~The bending block that Liana has is good to be made into a 4 view~~

~~**Gluing block is good to go, just need 4 view of all different components excluding the popsicle stick.**~~

~~**Pieces of sandpaper in fuse???**~~

~~**Check cable calculations again.**~~
~~**Re-write the cable calculations page on the GlueX wiki**~~

Current Things I'm Working On:

Splicing Fibers!

Cutting LG for production

~~**Jim wanted me to ask you what to talk about at the collaboration meeting. So far he's got 3 slides (ferrules, schedule, and mechanical design challenges)**~~

Mounting thermistors on heaters

<u>Jim gave me a project list:</u>
1. order aluminum parts (can't until the backplate issue is fixed)
2. order dummy chimneys - asap (can't until Jim fixes his drawing checks Liana's conversion)
3. order screws/ washers/ nuts
4. order threaded rod for bending unit
5. order cable trays
6. order optical rail stuff from thor labs
7. order darkening cloth, etc.
8. once dummy chimneys return - decine on chimney/ support/ stanchion
9. machine lower enclosure (l.e.) back plate
10. machine upper enclosure (u.e.) bottom plate
11. machine angled aluminum for l.e. frame
12. machine cable tray end holders
13. machine light seal plates
14. machine dowels
15. machine dowel front support beam
16. machine u.e. optical rail end plates
17. update parallel railing drawing (larger gap for no. 8 threaded rod)
18. machine parallel rails
19. machine u.e. bundle rear support
20. weld l.e. frame
21. cut l.e. thin aluminum plates to size

est tank and pvc again (MONDAY)
If need be, move the heater/pump below water level (or alternatively, move the tank up)

Keep tabs on machining progress/send stuff off to polymetals when possible
First Cut will probably be machining our chimneys. Liana has completed 3D drawings in AutoCAD, Jim should look them over before I submit the file for a quote.

Paint the dark box and apply weather stripping

cut small pvc and line it with felt

Determine if we have final specs for bundles, and order styrofoam and shipping boxes for 20 bundles

Purchase items below A.S.A.P.

Liana:
Chimneys/dummy chimneys/stanchions lots (at least 38)
base plate
substrate 2

THINGS TO PURCHASE:
~~**auto siphon**~~
~~**light bulb for splicing unit**~~
~~**dremmel and quick connect wheels**~~
~~**braided hose**~~
aluminum stock
taps for machining for Alan

THINGS TO DO:
Take visor off of the splicing unit and find a better way to mount it. It's attached to the nut that you turn to change the piston pressure and every time it's moved it messes with the nut

Buy a female piece on the air hose for the splicing unit. Jim says it leaks
~~**Make 2 thermistors**~~ **and attach them to the heaters**
Come up with a code in LabVIEW to do what I need with the heaters
- **I need to turn the heaters off if there's an issue with temperature**
- **determine what temperature to turn them off at**

~~**Clean each collar with ethanol**~~
Machine shop stuff - Everything is going well with this

~~**The piping is still trapping air. It works well for 5-10 minutes and then the flow slowly stops FIXED!**~~
~~**Will start fusing as soon as possible, and will concentrate on getting repeatable results with only the machine doing the work, no human interaction**~~
~~**Need gloves from mansfield supply. I'm going to buy a lot**~~
Things to work on: September 9th and on:
~~Get gloves from Mansfield Supply~~
~~Time Cards~~
~~Scan and upload the cable calculations to the GlueX wiki. Write a short synopsis~~
~~Scanned and uploaded… Waiting to hear back on writeup from Alex or Jim~~
~~Take out the collars and soak them in toluene over the weekend~~
~~Work on the DAQ. Measure PC+5V and see if it stays steady at 5 Volts~~
~~Measured the voltage running through the DAQ. I should now make sure that the resistor that we're using is the correct resistance (or possibly put new resistors in in parallel, that add up to 10,000 ohms), and check the equation.~~
If I finish with the DAQ I should remake the thermistor

Once the thermistor is epoxied in its holder, we should test the tank and the pvc. We'll do one final test, then it's off to cutting and straightening the fibers. We need 5x6 collars from Alan before that can happen though.
I still need to paint over the spray paint in the dark box, and install the weather stripping
Check for light seal with camera
Measure remaining fiber lengths
make a spreadsheet so we know what we have left
We have 1000 meters of undisturbed lightguide still in their original packaging. Need to measure Scifi and lg spool in spool holder….
Jim wants me to figure out a way to short the splicing unit so that it stays down indefinitely for when he epoxies the ferrules into the collar. The machine is old and I really don't want to open up the possibility of breaking our one way to fuse fibers. We should just get the ferrules glued into the collars as soon as possible, and I can start fusing fibers.

I spoke with Alan regarding the 5x6 collars and he's planning on talking to Brendan about them. He has a program written, and he will be showing Brendan how to use it to make the last 4 of the collars.

Call Mansfield Supply to see if they have the fuses and screws that we ordered. I also need gloves! - The screws are currently in but not the fuses. I will call back after lunch to inquire about the fuses.

Make inspection doc worksheets that measure cross sectional dimensions

Foam order - Need drawings from Jim to decide how we want to store the bundles.
Once we have a plan, present it and order styrofoam.
Jim sent drawings to Liana and me. I will have her work on coming up with two options for packing our pieces. We should have one that's a 2-3 part method, and one method that's one whole piece of styrofoam. We'll present them at the meeting and see what the group thinks.

Order packing boxes once styrofoam plan is set in stone

Get ready for talk at JLab… Take pictures, make notes, etc...

I called polymetal a few times and the man I am to talk to has been out. I called Friday during the day, and Monday morning. I will try again today around 1:30 or 2 and see if I can get him.

He was at lunch at 1:30 when I tried him on Monday. Left him a voicemail and hope to hear back from him today...

Scott Serre
tel:413-781-4535

I spoke with Scott yesterday, and he had a few questions for me.

1. are they using 6061 aluminum alloy? If they're not, we HAVE to let them know!
2. he wanted to know if we wanted the threaded holes masked

After speaking with Jim this is the conclusion he's come up with:

I am to call polymetals and say we don't want a mask. I am to ask if they do their anodize in batches or one at a time, and if it would affect our price a lot if we asked for a first article piece.

If they say the price won't go up too much, I am to call the biotech machine shop and ask if the first non anodize article they were making for us could have the same treatment as the others (ie. now anodized so bigger tapped holes) and we would send that off to polymetal as an "experiment" to see how it goes. We can then adjust any procedure that we need to in the machine shop before sending them off for the treatment.

I should also ask the people in the biotech machine shop if they would be willing to speak with polymetals about the taps to make sure that everything works well together.

There is now a plan in place for machining the popsicle sticks. We are going to have Mark, in the bioservices machine shop, make a first article piece. We will then send it to polymetals and they will hard anodize it for free. Once we get it back we will ensure that it fits our specifications. After that time we can give the go ahead for Mark to manufacture the rest of the pieces, or change the drawings and have him make the pieces with our new specifications.

<u>For Tuesday, August 20</u>

~~**When Ben comes in have him help me measure the remaining lg fibers. We should use an extra spool and transfer from one to the other while counting feet. I think it'll work ok.**~~

Me - Work on the same things I should have finished Monday

Figure out the thermistor issue. I don't know why the DAQ is reading very wrong info. Hook it up to the PVC thermistor, find settings that work, and then hook it up to the tank one…

~~**measure how much lightguide we have left. Open the box, cut the tape, take out the fiber and transfer it from one roll to another while counting and making sure it doesn't hit the ground…**~~

~~**Write to Mark and see what's up with the quote.**~~

wrote to him Tuesday and haven't heard back. I called the shop this morning at ten and left a message. Hopefully I'll hear back from them today before the meeting.

For Monday, August 19, 2013

~~**Liana - Work on drawings, fix fiber spool issue, measure fiber thickness throughout the length keeping orientation in mind.**~~

~~**Ben - Measure fibers that were painted on Monday. Cut, measure, and paint new fibers.**~~

John - Finish diagram and start working on the active collimator

Me - Figure out fiber splicing unit. Measure fibers, fine tune the lamp, time, and pressure. Try to get the linear grippers to push the fibers in appropriately and repeatedly. I want this whole thing to be automated (and so does Dr. Jones) if it can be. If it can't be I need to determine a way to make sure the linear pressure and the 5 x resulting pressure from the liquid plastic to be less than the tangential pressure. If the tangential pressure is about 100 psi, then we have to have the linear pressure less than 20 psi, and we need to get strong fuses from that pressure.

~~**Place order with Dawn for machine shop.**~~
~~**Speak with Alan, if needed, about electronics cover**~~

First cut, protomold

For Thursday:

To present at the meeting:

The NetBooters are working well. It was a script termination character that was wrong. Ben found the answer! So now LabVIEW works well with the NetBooters... everything works...

… except for the thermocouple. It stopped working yesterday. I fiddled with the DAQ for a few hours thinking that it was the cause, but after connecting the pvc thermistor I realized that the tank thermistor was the problem. While taking it apart today it leaked water on me, so that's definitely the issue. I was going to make it today but didn't have time. I'll make it tomorrow and test everything next week

The heaters and pump are working well. The issue I was having was that there were bubbles, from filling the tank, that were collecting into a big bubble and blocking the water flow. I have written a procedure to follow and put it on the wiki. Getting all of the

bubbles out is a multi hour process, so we should only empty the tank if necessary because we risk damaging the heaters every time.

Fusing is going on. The reason fibers weren't initially fusing is because the lamp had paint missing on its mirror. It was probably fine with the thinner ferrules but with the thicker ones it was a factor. I changed the lamp and now it's working relatively well. I suggest that we purchase more lamps because we have no backups any more. Liana's been measuring all of the before and after fibers, and keeping a nice spreadsheet with stats for us. I'm having a difficult time fusing within specs.

The strengths of the fuses are less than with the last ferrules. This leads me to think that I don't have the focus just right. I will continue to try to get a stronger fuse, both with exposure time and focus.

Because we have a limited supply of lightguides I think we should initially cut lightguides longer (by ½ cm or so) that way if the fuse doesn't work we just snip a little off the end and try again.

I have been in contact with Mark at the biotech machine shop. I think we've got a great idea of what we're doing with the popsicle sticks. He's working on a quote for me now and he said he'd try to get one to me by the end of the day.

Alan has made a 6x6 collar, and 2 5x6 collars out of scrap just to see if they work. From what I can tell, they'll be working great. I just need to get him the materials he needs to start machining the final pieces.

Purchase Items from Dawn if she's available and willing to put them on the departmental credit card. If not, Jones will have to do it without the credit card and it'll take a long time. (She is on vacation until Monday)(Wrote to Dr. Jones and told him I'd prefer to wait until she gets back)

Ideas for the splicing unit
1. is heat is causing the plastic to glue to the glass?
2. does heat increase the sticking because of expansion?
3. would a smaller collimator work?
4. are the fibers just too big? (use lg and cold to test, but first remove the plastic slides)
5. are the fibers not straight enough?
6. evidence of misalignment?
7. same cold/hot???

There are a number of issues I'm having with the splicing unit:

1. **Jim fixed the slamming down of the top ferrule/collar piece**
2. **The linear pressure from the right is not strong enough to push the fibers in**
   together at the moment. If the transverse pressure is too low, the fibers kind of ooze out and the bulge is too big. If the transverse pressure is too high, I am unable to manually push the fibers in together to fuse. In neither of these situations is there enough linear pressure to push the fibers in together so that they fuse properly. I am using hand pressure, which isn't really the appropriate way to do it...

~~**Write a process for getting the water bubbles out of the tank system when it's filled from scratch**~~

Make a new thermistor, as the one we have got water in it somehow.

Look at stats for fibers and try to fuse more strongly with the current setup. Try longer exposures and move the lamp to see if I can better the focus.

Liana - please work on the eurocard plate drawing

Talk to Jones about getting another lamp for the splicing unit. I can find them on ebay for very cheap but it's ebay. I think the other websites were something like $30 for one.

LIANA - work on top popsicle stick drawing, 5x6 "fiber setter", and popsicle stick side pieces (Thursday) and anything that Jim's sent her. Determine priorities for drawings first.

Continue photographing ferrules
Then use TrackerPro to measure them as best as I can.

BEN - Work with me to come up with some good statistics regarding painting to present during the meeting

~~**Write back to Mark in the bioservices machine shop.**~~
~~**My recommendation to Jim is that we go with the .001" anodize, which will leave us with a part that has .0005" buildup on the surface. For threaded holes the buildup is 3x more**~~

~~(I'm not sure about non threaded holes, I'll have to ask Mark) For the threaded holes, at least, they'll have to be .0015" thicker (I also have to ask Mark if that's radius or diameter) But at this thickness we have the option of making the anodize black, which is what I think we should do.~~

~~Fix the water bubble issue in the tank. Try cold, very slow water. Let the pressure build (it'll take longer) and see if I can flush the air out without adding new tiny bubbles from the water. (this worked, as well as waiting a day)~~

~~Llana can help me with this - Put the water pump back in the system and see if it works now. I have found that the speed controls don't work (the motor runs at full speed no matter what the speed control is at)~~

~~Solidworks and cadkey~~

~~Email the bioservices machine shop today. Find out if they need anything else from us/if they can read the files we sent on our second try...~~

~~After speaking with Jim I think that we should have the hard anodizing be a final additional thickness of .0005 inches, which means that we'd ask for a .001" coat (maybe) I guess the threads accumulate 3x more anodize than the other parts of the piece because there's more surface area.~~
~~I need to know from Jim what the final additional thickness should be. I think that .0005" per surface is probably enough to get the end product we're looking for.~~

~~Fix the heater/pump issue as best as I can...~~

~~Heater Specs.:~~
~~Model # AHPF - 121~~
~~Watts/inch 115~~
~~Max CFM 115~~
~~Min CFM about 2.25~~
~~2.25 CFM = 16 GPM~~

~~What is your return policy?~~
~~You will be required to contact Customer Service (Tel: 800-622-2378 Staffed Hours: 8:00 am to 6:00 PM EST, Fax: 203-359-7811; E-mail:cservice@omega.com) to get a Return Authorization Number. A restocking fee may be applied to the return.~~
~~Customer P.O. JR061413~~
~~Omega NO. SO 30691635~~
~~Customer NO. 211293~~
~~Order Entry June 14, 2013 (and one on May 10, 2012)~~
~~AHPF-121 Air & Liq Circulating heater 120 volt~~

~~I spoke with the Cynthia in customer service (1800 622-2378 ex. 2276). She said that we could return it if it was is its original condition. (I hope the testing we did to it didn't affect the return value) I don't think we'll be able to return the first one we bought though...)~~

~~Water Pump Specs.:~~
~~Model # E1-BCSVNN1W-06~~

~~Via the pump flow curve, the max flow it can have, at 0 ft of head (or 0 PSI), is about 4.5 GPM~~

~~You may return most new, unused, and undamaged items within 30 days of the date the product was delivered.~~

Work with John to finish the water cooling loop diagram

Finish LabVIEW program: Add to case structures the code for turning on and off the second netbooter. Hook them both up to their respective serial ports, and make sure they both work

Once the netbooters are working properly, fill the tank with water, decide how many data points the computer should take (set that in the program) and run a test with both

heaters and pumps in the tank.

Spend my time splicing more fibers in the window where they were good. Spend some time looking over the excel spreadsheet that Liana made for the fuse test. See where I can make any improvements. I would very much like to have a good percentage of the fibers that I splice to be usable by one week from today.

Keep in my head that I'm going to need to buy more photo lamps for the splicing unit soon....

Put things I've done on the Wiki
- **worked with John on cooling stuff**
- **worked on fusing testing keep stats**
- **labview, netbooters, heater, and pump**

Clean!

Ben'll be painting fibers tomorrow
Liana'll be working on drawings or fiber testing with me
John'll be working on cooling loop and active collimator

<u>Today things!!!!</u>

Liana - Work on 4 view drawing of the popsicle stick. We need to get a drawing to the biotech machine shop asap. The man from the machine shop can not read the files as I sent them. He's using a converter because he doesn't have the same CAD programs we do. Either email him again or just get him the 4 view PDF. I'm not entirely sure which program he'd prefer but since, apparently, they are used to hand drawn sketches, I'm pretty sure a 4-view is better than they're used to. She should also email or talk to Jim and see if the final draft of the electronics piece is ready to give to Alan (he may already have it). If not, she should work to get that done next. When she's done with that she could possibly go talk to Alan about the 5x6 collars or work on

other drawings...

Ben - Keep working on LabVIEW and the NetBooter. Help me file fibers down to 2cm, square at the ends. I'll also take help straightening longer fibers if he's here for long enough

Me - Work with John until we are satisfied that Dr. Jones will be happy with the results.

Splice fibers, get statistics on:

1. Width of fibers before fusing
2. Length of SciFi before fusing
3. Width of fuse site
4. Take pictures of the fused fibers (length and width, probably under microscope)
5. Breaking strength of fuse
6. Length of SciFi after fusing

Fuse at least 10 - 15 fibers

5- work on splicing fibers if I have time

6- Pick up things from home depot!!!

7- NetBooter!!! (Maybe I can have Ben work on that for a little bit?)

~~1-Pictures of mentor-connect students on wiki~~

~~2-Request for service at Biotech machine shop~~
~~Sent application~~
~~have to send email with drawings (4view turbocad and 3d autocad)~~

~~3-Measure preamp board edges adjacent to the euro connector side~~
~~average, max, min (3+ boards with more than one person independently measuring)~~

~~4-Student hours for the last 2 weeks~~

Today

Ben can measure his fibers, photograph them, and then put his findings on the wiki. After he's done with that, he can spend some time thinking about the NetBooter problem. I don't want him

to waste his time on it but maybe he'll have a few ideas...

Meeting @ 11:30 - I will take notes on what people say

**Run a test on the pvc with the pump and heater. make sure that the thermistor works along with the heater and pump. Everything looks good!

**Talk to Brendan and Jim about the 5x6 collars. We need them ASAP. (Spoke with Brendan, he showed us how to fix the drawings. Liana will do that and then we'll submit them, through Brendan, to Allen)

**Work with Jim to get drawings into machine shops. (offer him help if he needs it)
I will go to the shop with Liana

**Splice fibers (find out if and when I can use the splicing unit/ the epoxy needs to be cured)
Determine how much the scifis shrink when being fused. Start with a 2 cm piece of scintillator.

**Make sure the fusing 2x4 is in position to put fibers on
Just have to bump the left side up just a tiny bit using the plexi, and then screw everything into position.

~~-Liana in from 9-3 (Drawings take precedence. Then help me with as much as possible.)~~
~~-Ben in from 1-3 (Measure painted fibers. Put on spreadsheet. Document and put on wiki)~~
~~-John in from 11-3 (finish the cooling loop write up and help me with things or work on the collimator)~~
~~-Aaron in from 10-3 (he's working on his own thing)~~
~~-Jon in from 1-3 (he'll be soldering for Alex)~~

~~Clean 402 (Ben and I)~~
netbooter stuff!!!!!!!
~~make a thing to put long bent fibers on so that we can measure them in their appropriate areas~~
~~Raise the splicing 2x4~~
~~Put tape around the areas, on the dark box, that we don't want to get paint. Hinges and screws.~~
~~paint the dark box; avoid the metal plate and any hinges (tonight)~~

In the very near future!!!!
work on splicing unit when the collars are done
drill holes in plexi for bending - towards the end of the week
We need 4-5 collars to complete the first bundle
can cut lightguides this week

Things need to be machined: Jim meeting with Liana tomorrow (Tuesday) to give her final drawings and priorities for the drawings to be completed. They should be finished and sent out to be machined as soon as possible
popsicle sticks machined-20
5 - 5x6 collars need to be machined

we have 1 6x6 collar made already

need to practice on the splicer before we determine how long the scifi need to be

need collars for the straightening and need to drill holes in the aluminum "L thing"

then they are bent in the tank (we need 1 bending popsicle stick, also need 2 different types of chimneys) 8 - of one type(straightening chimneys) (to be used over) and 2 - normal chimneys per bundle (40 total) (also need one special popsicle stick)

then they are dried (need to purchase a dehumidifier)

Then they're painted (we have paint and a decent method set in place)

Then they'll be glued (this is when we need the 1/20 popsicle stick) (2 metal plates machined total)

To do list for the week of July 15, 2013

- Get the net booters hooked up and working

~~- Get Jim to submit drawings to whichever machine shop we're using ASAP~~

- Make sure that the LabVIEW program will work for our needs

~~-Dremmel out the tank to make room for the cords~~

~~**LIANA** - Today, I was pulling out some fibers, from the fiber spool storage, and I noticed that there was some resistance. Rather than pull harder and risk damaging the fibers, I'll have you take the spool storage apart and make sure that the fibers are wound around the spool correctly, then put everything back together again.~~

~~Find links online and email them to me please (Please try to use trusted vendors such as Home Depot and Global Industrial etc. Please nothing from amazon or ebay if you can avoid it. If you're not sure if we should order from somewhere, please ask me)~~

~~- smocks for painting~~
~~- bead case for fibers we had tested~~
~~- small bags for fibers to go in the case~~
~~- plastic that we can hang for painting (like the black plastic covering the painting setup now)~~
~~- polishing Paper very fine grit (I'm not sure of the roughness I need to get, so if you could please find a decent source and send me the link I will be able to sit down with Jim and decide what to order)~~
~~- vacuum bags that fit in our vacuum.~~
~~- a new fan (like the one on the table next to you)~~
~~- superTuff white knit rags~~

ALSO

~~- Sit down with me to go over painting thickness and what it looks like. I would like to get all of the data in one spot on Hermes and then on the Wiki ASAP.~~

- We need to test the PVC with hot water. The thermocouple in the pvc has not been tested because up until this point the pvc hadn't been watertight. Now that it is, we should make sure everything works well.

~~- Update the drawings of the Fish tank to include the new heater and pump~~

~~**JON** While Jon waits to solder he is helping me get the LabVIEW program transferred over to the computer in 405.~~

~~I also asked him to take pictures of the ferrules underneath the microscope so that we can measure the length of the v-notch part of the ferrules.~~

~~- The pictures and measurements should go on the WIKI~~

~~- WIKI (it is very full at the moment. We should have a small paragraph outlining each section and then a link to follow for the rest of the information) Since we are in full production mode the page should have more to do with the actual construction than the preparations for construction.~~

~~Things to buy from Mansfield Supply Tomorrow~~

~~- 3/4" plywood~~
~~27 ¼" x 22"~~
~~19 ¼" x 12"~~
~~31" x 9"~~
~~Right triangle with sides a = 26" and b= 12"~~

~~- 2x4~~
~~30"~~
~~17 ¾"~~
~~17 ¾"~~
~~9"~~
~~31"~~
~~18"~~

~~2" screws~~
~~1 ½" screws~~
~~1" screws~~
~~(Jim doesn't like the black screws)~~

~~Tube of liquid nails~~
~~2 tubes of black caulk~~

~~- Write to Wilmad and see how far production is from getting us an answer on the ferrules~~

- Get Dr. Jones to order electronics if he hasn't already done so

~~- Design, purchase items for, and build the extension of the hot water piping system in 405. (Can I do this?) The NetBooters, pump and heater have been ordered and received.~~

~~- Find out how to properly clean the air guns. Apparently the cleaning we've been doing isn't good enough.~~

Shopping list (Mansfield or online)

~~Mansfield black matte paint (a quart should be enough, I think)~~

~~Online Polishing paper~~

Online	DP-420 epoxy applicators
Online	electronics components (I sent Jones an email already, not sure if he's ordered them yet)
Online	dehumidifier
Online	storage boxes
Online	molded styrofoam

To do list for other workers:

Anyone - Help me set up the NetBooters. I need to get the ports ip address, configure the new NetBooter to the port. Step one is finding out the old net booters personal information. ~~I think I need hyperterminal for that to work, which means I need to install it on the E drive in the computer in 405. I also think that I need to install a new serial port on the computer.~~

~~Jon K. - transfer two heaters labview program onto the computer in 405.~~

~~Help me with the above (netbooter and hyperterminal)~~

~~Liana - Working on converting the 3d autocad drawings from Jim into 2d drawings for machining. Painting fibers Put drawings on the wiki if you haven't already. Print out your finished drawings and put them on Jim's desk~~

John B. - ~~Working on the piping diagram and calculating water flow and pressure throughout the GPU/CPU cooling system. When he's done with that he can ask Dr. Jones what he should look for as far as amplifiers to buy for the active collimator.~~ (Should he start putting one together? Do we have an extra base plate, coffee cup, ashtray, etc.?)

~~Copy the program as I have it (in the new version) to the old version~~

Aaron - Learning C++ and working on getting the CODA data acquisition system up and running

~~Ben - Painting fibers Take pictures of the fibers you've painted along with their measurements on a spreadsheet. Record thickness of paint~~

~~Measure fibers that were painted on Friday. Put the data in a spreadsheet and take pictures to put alongside the paint thickness. Meet with me so I can look at the thickness and we can talk about where to go from here regarding whether or not the paint is too thin/thick splotchy or anything else.~~

~~- Get the PVC fixed (epoxy top on and install the union)(Jim did it)~~

~~The union leaks... putting DP-420 in "safe" areas to try and stop the leaking if possible. I don't think the leaking is coming from the union part (although that's possible), I think it's coming~~

~~from the connection of the union to the PVC.~~

~~- Figure out the storage/LabVIEW issue on the computer in 405. It needs to be reliable so that things don't burn out in the middle of the night while we're bending/straightening fibers.~~

~~- Because the newer version of LabVIEW will not run on a 32 bit processor we will have to make due with the older version on the computer in 405. Since this is the case, and I can't open a newer file on the old version I will just have to make a new program and piece it together with what I can on the old version.~~

~~Building a painting station out of cardboard~~