Experts from email correspondence between artist Laura Piasta and scientist Carla Barquest

Wed, Aug 9, 2017 at 3:16 PM

Hey Carla

I just wanted to check in with you to see if you will be sending a specific interaction for the project or if we should just roll organically with our dialogue? Just to get you on page with what I have been thinking about so far in respect to my thoughts and ideas for the project I am working on. While we were touring around for the second time at TRIUMF I was paying specific attention to the technology in place to observe the experiments taking place in the laboratories. One material that struck me was Tantalum and I had never heard of this element and was curious what special or unique qualities it possessed. I began to research tantalum and discovered that the name of this blue-grey lustrous transition metal comes from Tantalus, a villain from Greek Mythology. The chemical interns of tantalum makes it a valuable substance for laboratory equipment and other electronic equipment and surprisingly it is used in most of the equipment we use on a daily basis like computers and phones and like most of these rare metals used in electronic devices becomes really problematic in its mining and extraction in third world countries.

Tantalus was a Greek mythological figure, most famous for his eternal punishment in Tartarus. His punishment was to stand in a pool of water underneath a fruit tree with low branches with the fruit ever eluding his grasp and the water always receding before he could take a drink.

It makes me think of how tantalizing particle physics research is, to have all of the tools and equipment to observe the data and the experiments yet the more that is revealed the more there is to discover.

I also started to think more about technology and technological process: The latter being the rational process of creating means to order and transform matter, energy and information to realize certain valued ends.

Anyways I just thought I'd share with you some of my thinking about the project, I should have some things to show you in the next few weeks as the project develops and takes on a physical state.

Hope you are having an enjoyable summer despite the smoke!

Best, Laura

Fri, Sep 8, 2017 at 6:29 PM

Hi Laura,

…I am getting excited to see your thoughts form into a physical product, and I'm also looking forward to how our stream will compare with the others when viewing the project as a whole--I have really enjoyed all the artistic interaction I've received so far from being a part of LOoW …

As far as our interaction I think that as we are in the dialogical stream, I'm hoping we can just continue with our dialogue going back and forth (which already I have been absent with) so I'm not anticipating any other specific interaction, unless you had something in mind? I am really excited to hear about where you are with your project, and want to give feedback on how I interpret it as a physicist, so I hope that this is helpful with the interaction at least.

I'm so happy you looked into Tantalum! It is great to know some more background on it and it's especially interesting for how it was named after Tantalus from Greek mythology. Side note: we actually just had some discussions on research into target material because there is a need for heavy metal properties at the surface (for ion production), but light metal properties for the bulk of the material (for cooling). Although gold (heavy) and other metals bonded to aluminum (light) in various methods has been attempted, many times these bonds are breaking under the stress of the electron beam impinging on the target, so other solid targets are being explored, and Tantalum is one of the main candidates for these solid targets. Fun fact :) Also, I thought of you as the discussion continued, and had been meaning to look into Tantalum, so now I'm happy that I've finally done so, at your prompting! (Cheers!) It is interesting to think that in this target material exploration, the solution is still just beyond our grasp at the moment... so Tantalum seems to really fit in at the moment!

Also when it comes to tantalizing.... it really is true that physics research can be quite tantalizing--many times I feel like I just want it to be complete, or fully known or final (etc. etc.) but it's really a process, and I think that's probably part of the wonder of the world that we'll never fully understand everything. There's probably an analogy for artists, I would think? There's an end "result" of a painting or sculpture or media etc. but really there is always more the artist can produce (in their career, and perhaps even with each particular work of art?) I'm always interested in how an artist makes the call for when to stop, when to finish--is it a feeling, or is it something that you can know? I mean, the artist can know. I'm thinking of connecting physicists with their theories and experiments with artists and their art work and there seems to be something there--maybe it's that what we produce is constantly evolving as we work on it, until it's settled as complete when we are done. I will think on this as I find it quite "tantalizing" :)

It's also interesting what you were mentioning about technology and technological process. I want to try to comment on your definition of technological process, which you've called "the rational process of creating means to order and transform matter, energy and information to realize certain valued ends". I think this is quite broad, but appropriately so. What technology

means can vary so much with context, and a technological process is also quite difficult to pin down in that respect as well. But bringing to order something that was disordered I see as a main tenant of a technological process. But "order" and "disorder" can have very general meanings here (not just, all in line, and all mixed up). That's where the "valued ends" part of your definition comes into play--if we wanted to for instance create some chaotic spectrum, then that's still bringing to "order" from "disorder" I suppose!

I'm so glad that you've shared with me some of your thoughts, and I can't wait to hear more about your project as it takes shape. Let me know if you have anything else to share and I promise that I will be more prompt in responding this time!

Cheers,

Carla