

Report on the JSA Initiatives Fund Program project

Workshop on Technology Transfer and Opportunities (TT2018)

11th - 12th January, 2018
Catholic University of America, Washington , DC, U.S.A.

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1 Introduction

This workshop aimed at evaluating opportunities for technology transfer and new synergies with universities, small businesses, and national laboratories, and to provide opportunities for participants to explore possible small business funding opportunities. The workshop brought together the academic and business communities interested in technologies such as radiation based imaging, materials, and radiation therapy, with the aim to consider and further develop the goals of contributing to the technology transfer programs at Thomas Jefferson National Accelerator Facility (Jefferson Lab) in Newport News, Virginia. The workshop also included discussions of new avenues with emphasis on those through partnership with universities that could contribute to the existing program at JLab.

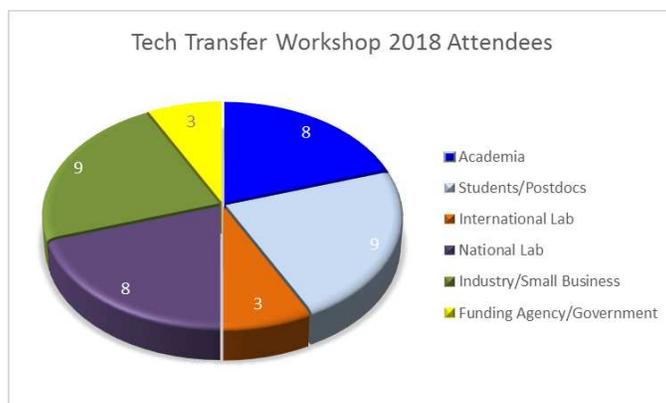
2 Workshop Organization

The workshop took place at The Catholic University of America on January 11-12, 2018 (<https://www.jlab.org/conferences/TT2018/>). The organizing committee consisted of:

- T. Horn (CUA)
- C. Keppel (Jefferson Lab)
- C. Munoz-Camacho (IPN-Orsay)
- I. Pegg (CUA)
- D. Weisenberger (CUA)

3 Workshop Summary

The workshop brought together a diverse mix of attendees from industry, national and international laboratories, academia, and funding agencies, e.g. the Department Of Energy (DOE) Office of Science and the National Cancer Institute, interested in applications of detector technologies in nuclear and medical physics, national security, and next-generation civil space systems. A considerable fraction of the participants were young scientists or students showing that this topic is interesting and has growing importance.



The main focus of the workshop was on strengthening technology transfer output of relevance to JLab with potential increase in synergies with universities, and to potentially prepare proposals to small business funding opportunities. The main topics included:

- Imaging Technologies and Detectors
- Software and Data Acquisitions
- Materials and Detectors
- Novel Applications

Within each topic the presentations highlighted success stories at various levels of development, and allowed for networking among the academic, laboratory, and industry communities.

The program consisted of 26 talks including much lively discussion. The talks presented a variety of technologies including materials like nanotubes in super-strong structure engineering, or aerogel and crystals for detectors and monitoring in homeland security and medical industry, software and electronics at the interface of DOE's Office of Science and NASA's space and satellite program.

Opportunities for new development, e.g. wireless dosimetry, and new partnerships emerged from the discussions. Good communication between business and science was found essential for successful technology transfer. The communication between universities, laboratories, and small businesses could also be beneficial to advance the technical readiness level of a concept increasing its chances of small business funding.

As guidance for the path forward for technology transfer, new synergies with universities, small businesses, and national laboratories, and making technologies suitable for small business funding, the following three questions were developed at the workshop:

- What are currently unmet opportunities in the marketplace for applications of nuclear physics?
- What is an appropriate role for the national laboratories/universities? Is there a need, for instance, to help move technologies further along in the Technical Readiness Level?
- Mechanisms for labs/industry to work together to create generic standards and platforms (for instance streaming readout)?

4 Budget

The workshop was supported by the JSA Initiatives Fund Program at the level of \$2,500, which was used for supporting eight young scientists and students (Registration fees: \$480, Lodging: \$783, Transportation: \$883, Meals: \$344): Salina Ali (CUA), Jesmin Nazeer (HU), Tanvi Patel (HU), Vladimir Berdnikov (CUA), Angel Christopher (HU), Letrell Harris (HU), Richard Trotta (CUA), Andres Vargas (CUA).

5 Impressions

Excerpts of impressions and suggestions for the path forward from workshop attendees are listed below. Recurring remarks are on the workshop providing a good forum for discussion, a diverse mix of attendees, and a high quality program. Overall, the workshop appears to have captured the excitement about prospects of technology transfer from those who know what can be done, i.e. the national labs or universities, and those who know what is needed, from the industry.

- I really enjoyed the meeting. It was a nice mix of academics, and industry. One notion that struck me during the meeting was that technology transfer from labs and universities may be more effective if more creative solutions could be found. Maybe labs could form joint ventures between themselves to design common instrumentation followed by cost effective manufacture by industry partners. It may be that such agreements offer a "sweet spot" where issues of IP and market size are lesser issues than in standard technology transfers. Just a suggestion to try and get the ball rolling on new ideas. Your meeting was very well organized and the setting and format were ideal for collegial discussions.
- In my mind, when I first heard about the idea of this workshop, this was obvious, something that would be worthwhile and I was even puzzled why nobody had the idea before. Of course, this is often with good ideas, they in retrospect seem obvious... The workshop went even much better than I could have envisioned, with a nice mix of overall topics, engaged speakers who really made an effort to present what they were asked to present and follow the spirit of

the workshop, and lively questions and answers. There was something in it for everyone - from students to experts. The model to bring together those who know what can be done, be it from university or laboratory, and those who know what is needed, from technology and application including facing the pitfalls of technology transfer, with discussions and thinking of what can be done, was very nice and refreshing.

- When I became aware of the workshop program end of November with presentations on proton therapy, radiation detection techniques including micropattern gas detectors and many more topics, I felt very attracted and signed up for the conference. There has been a number of great success stories told, some of which I have been familiar with a little bit, but I have never attended before a forum so focused and comprehensive. I particularly like to remark the very high quality of the program. The workshop was an excellent opportunity to exchange some new ideas and I believe that it has been very inspiring and productive for me personally. Thank you very much for making it happen!
- The workshop was excellent, and should be repeated! I think it did an excellent job of highlighting success stories at various levels of development, and allowing for networking between the three core communities of stakeholders. I think a next step will be to grow this to about 2 to 3 times this size and grow the tech transfer community (right now the attendees were all already part of these efforts, not considering to become part of active tech transfer efforts)
- I enjoyed hearing such and interesting and diverse lineup of presentations.
- As a post-doc just starting my career in Physics, it was important to see the experience of people about how the academic environment and companies can contribute to each other. This workshop opens for me the view of new horizons, with the potential of work and collaboration with private parties.

6 List of Participants of Technology Transfer (TT18) Workshop

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