



Protons, Protons Everywhere – But Where Do We Test in the U.S.?

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Acknowledgment:

This work was sponsored in part by the
NASA Office of Safety & Mission Assurance



Acronyms

Acronym	Definition
CARES	Provision CARES Proton Therapy Center
HUPTI	Hampton University Proton Therapy Institute
MGH	Mass General Francis H. Burr Proton Therapy
NAPT	National Association of Proton Therapy's (NAPT)
PIF & NIF	TRIUMF's proton- and neutron irradiation facilities (PIF & NIF)
TRIUMF	Tri-University Meson Facility



Abstract

This presentation will document the current state of high energy (>200 MeV) proton access in the U.S. for Single Event Effects (SEE) testing. This is continuation of efforts since the shutdown of the Indiana University Cyclotron Facility (IUCF).



What's New with Protons

- **Besides the on-going COVID-19 pandemic impact on both access and travel...**
- **NASA had an exhibit booth at the National Association of Proton Therapy's (NAPT) virtual conference**
 - **We generated nearly as much interest in enticing additional facilities from a one day meeting as in the past 5 years!**
 - **Note: began technical discussions on new proton flash cancer therapy treatment**
 - **Similar to high dose rate pulse**
- **Status charts follow on access**



Those Who Sell Time

<u>Selling time</u>	<u>Organization</u>	<u>Location</u>	<u>POC(s)</u>	<u>Email(s)</u>	<u>Current status</u>	<u>Through</u>	<u>Notes</u>
Yes	James M. Slater MD Proton Treatment & Research Center	Loma Linda, CA		beamusers@llu.edu	Open	Current	Dr. Wroe on furlough. New user interface email account has been setup. We are open for any beam time requests.
Yes	Northwestern Medicine Chicago Proton Center	Warrenville, IL	Steven Laub	steven.laub@nm.org	Open	Current	As of now, we are still open for business. We're continuing to screen everyone that comes on site limiting the number of people in a testing group to the minimum necessary. So far we've had a good experience with reopening the program and there's no sign of shutting back down, currently. Hopefully that doesn't change. In case it's relevant, we are more or less booked through October.
Yes	The MGH Francis H. Burr Proton Beam Therapy Center	Boston, MA	Ethan Cascio	ecascio@partners.org	Closed	TBD	Resumption of testing services here at MGH is still very much up in the air. It has been made clear to me that I will not be able to have outside researchers on campus until MGH opens up more fully, and I do not yet have a date for that step. So I really have no idea as of now when I can start re-scheduling cancelled users. However, any of you that have samples or other devices that can be sent to me, irradiated, and returned please contact me to discuss that possibility.
Yes	Tri-University Meson Facility (TRIUMF) Proton Irradiation Facility	Vancouver, CAN	Ewart Blackmore, Mike Trinczek	ewb@triumf.ca, trinczek@triumf.ca	Open	Current	PIF & NIF is up and running at TRIUMF and we've already tested the first devices of the year. Right now we are limited to hosting people from Canada, but expect to have International visitors later in the year
Yes	Tri-University Meson Facility (TRIUMF) Proton Irradiation Facility	Vancouver, CAN	Ewart Blackmore, Mike Trinczek	ewb@triumf.ca, trinczek@triumf.ca	Open	Current	PIF & NIF is up and running at TRIUMF and we've already tested the first devices of the year. Right now we are limited to hosting people from Canada, but expect to have International visitors later in the year
Yes	Provision CARES Proton Therapy Center	Knoxville, TN	Khai Lai	khai.lai@provisionproton.com	Closed	9/1/2020	One of the initiatives is to re-open our testing facility in September, and the other will be to sell more testing hours.



Domestic Protons – Those Who Sell Time (limited)

<u>Selling time</u>	<u>Organization</u>	<u>Location</u>	<u>POC(s)</u>	<u>Email(s)</u>	<u>Current status</u>	<u>Through</u>	<u>Notes</u>
Limited	Proton Therapy at University of Cincinnati Medical Center	Liberty Township, OH	Abram Gordon, Anthony Mascia	Abram.Gordon@cchmc.org, Anthony.Mascia@cchmc.org			Very busy facility for oncology research with very limited access for electronics.
Limited	Hampton University Proton Therapy Institute (HUPTI)	Hampton, VA	Vahagn Nazaryan	vahagn.nazaryan@hamptonu.edu	Closed	2021	Still planning on a dedicated research room.
Limited	Mayo Clinic Proton Beam facility - Rochester	Rochester, MN	Nicholas Remmes	Remmes.Nicholas@mayo.edu	Open - Limited		Restrictions (mask use, screening, etc.). Weekend only access is still available but limited
Limited	MD Anderson Proton Therapy Center	Houston, TX	TBD	-			
Limited	Mayo Clinic Proton Beam Facility - Phoenix	Phoenix, AZ	Daniel Robertson	Robertson.Daniel@mayo.edu	Open-limited	6/8/2020	Because Arizona is still in the midst of a COVID-19 spike, we don't have a good date yet for when we can resume space electronics testing. I am confident that we won't have any availability before August 1st, and it's quite possible that the date might be later. I plan to follow up with the administration at the end of July. Restrictions (mask use, screening, etc.)



Domestic Protons – New since NAPT!

<u>Selling time</u>	<u>Organization</u>	<u>Location</u>	<u>POC(s)</u>	<u>Email(s)</u>	<u>Current status</u>	<u>Through</u>	<u>Notes</u>
Newly Interested	Johns Hopkins Proton Therapy Center	Washington, DC	Heng Li	hengli@jhu.edu			Newly interested for some nights and weekends
Newly Interested	Proton International at UAB	Birmingham, AL	Lindsay Pruett	lindsaypruett@uabmc.edu			Newly interested - TBD days
Newly Interested	South Florida Proton Therapy Institute	Delray Beach, FL	Andrew Barbosa	abarbosa@sfpti.com			Newly interested - TBD days
Newly Interested	Emory Proton Therapy Center	Atlanta, GA	Katja Langen	katja.langen@emory.edu			Newly interested - likely some Saturdays with limited number of contracts
Newly Interested	California Protons Cancer Therapy Center	San Diego, CA	Andrew Chang	andrewlchangmd@gmail.com			Renewed interest (former SCRIPPS) - reviewing plans and test availability/times

- **Discussions also started with**
 - **University of Maryland**
 - **Inova Schar**
 - **Seattle Cancer Care Center Alliance (SCCA)**
 - **Texas Protons (Irving)**
 - **New York Protons**
 - **Procure (main in NJ)**
 - **University of Pennsylvania**
- **Note: Delray Beach and Birmingham are operated by Proton International**
 - **They are opening 3-4 additional sites in the next few years and interested there as well**