Genome Science Institute

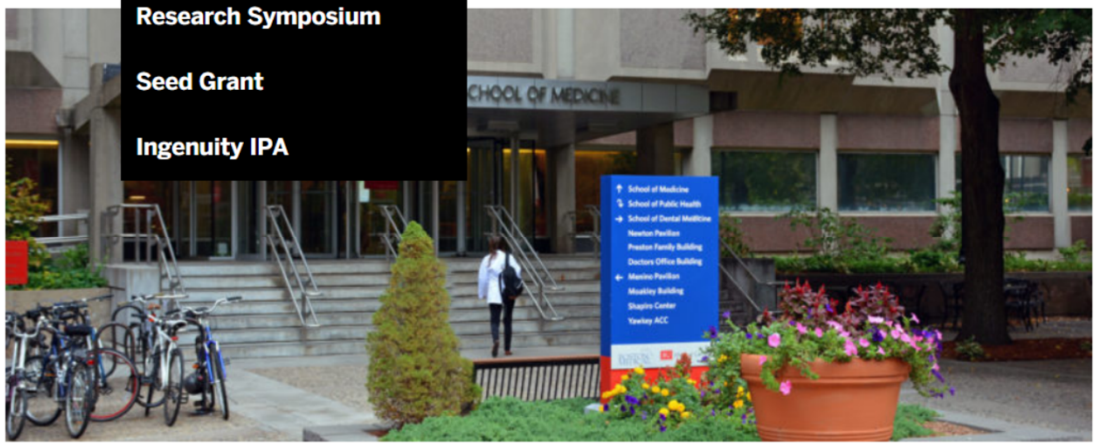
Boston University Medical Center

GSI Workshop Competition Info Session 20190220

BU Genome Science Institute

Membership | Initiatives | News | Seminars | Calendar

- GSI Workshops
- Research Symposium
- Seed Grant
- Ingenuity IPA



Established in 2008, the Boston University Genome Science Institute (GSI) seeks to expand our understanding of the role of genes in human health by fostering collaboration and serving as a resource for BU investigators engaged in genetics and genomics research and education.

The GSI spans both the Medical and the Charles River Campuses connecting a variety of investigators in departments and schools within the University. There are more than 120 GSI faculty members from the schools of Medicine, Public Health, Dental Medicine, and Arts and Sciences. The GSI unites these

Calendar →

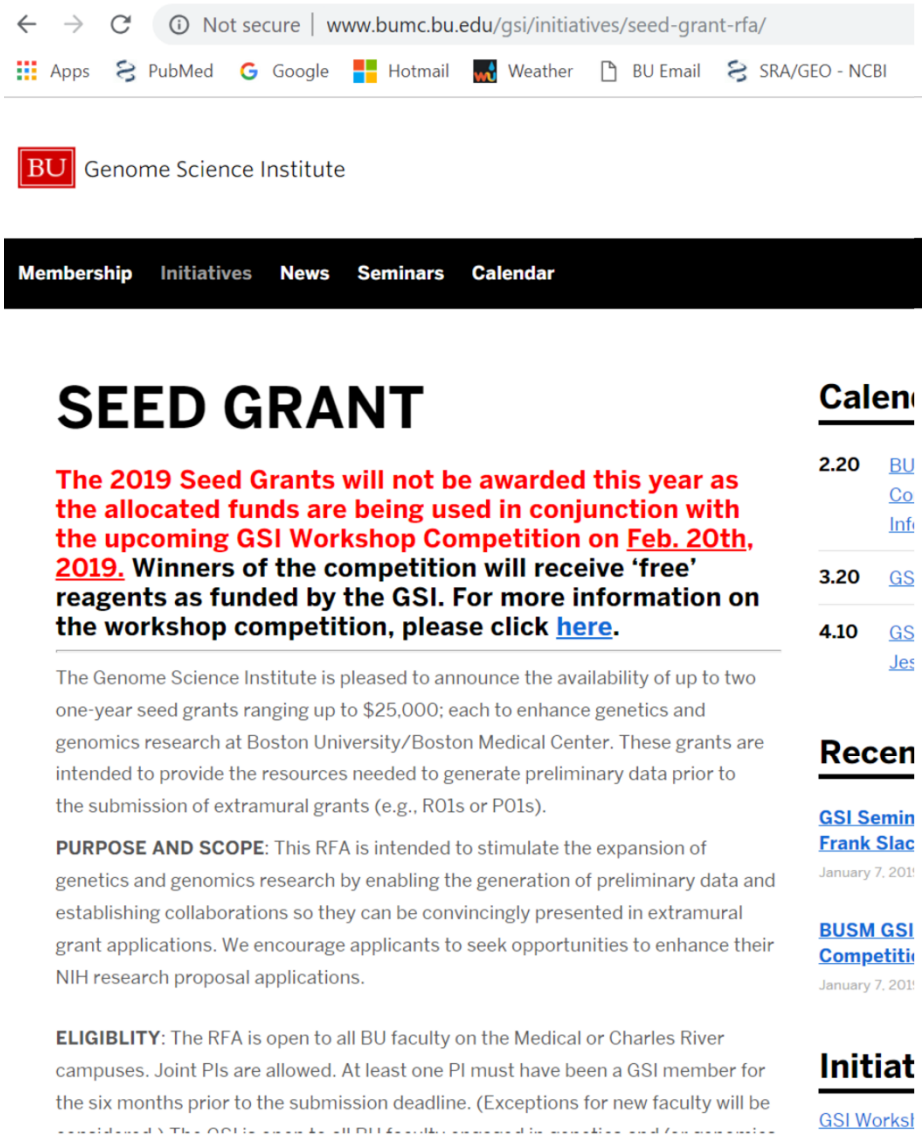
2.20	BUSM GSI 2019 Wo Competition Annou Session
3.20	GSI Seminar with Jo
4.10	GSI Seminar with Ri Jeselsohn, MD

Recent News

GSI Seminar Speaker, Jan
January 7, 2019

BUSM GSI 2019 Workshop Announcement
January 7, 2019

RATIONALE – A HYBRID INITIATIVE EXPERIMENT



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TIMELINE

EMAIL YOUR 2-PAGE APPLICATION TO GSI@BU.EDU BY MARCH 15, 2019

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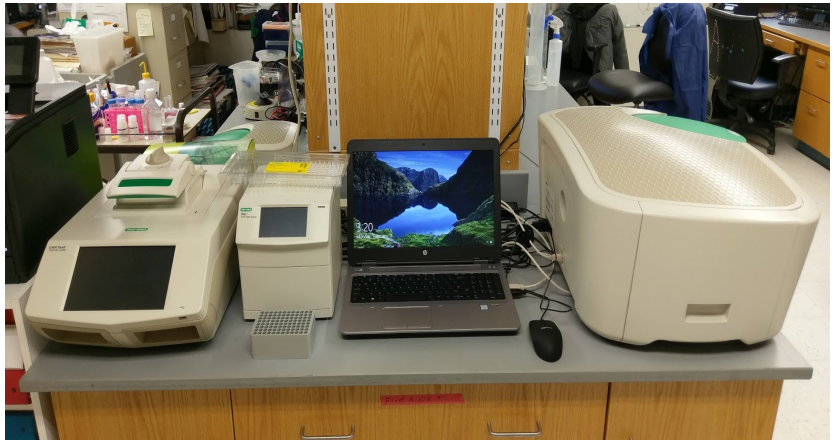
Present data findings at the GSI Annual Research Symposium in November, 2019

Why do we have a new Biorad QX200 ddPCR system?



Fred Gage lab publishes in Science March 2018 that L1 Transposon Copy Number Expansion in mouse brain can be measured by ddPCR (Biorad QX200 system).

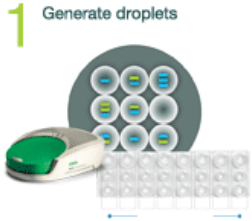
The Lau lab received an Admin Supplement in September 2018 to study Transposon Copy Number expansion in Alzheimer's Disease. Lau lab purchases the QX200 system located in K-building 206.

Lau joins the GSI as a Co-director in October, 2018. GSI provides funds for Workshop reagents to encourage BUMC labs to try it out.

Etiquette for using the Biorad QX200

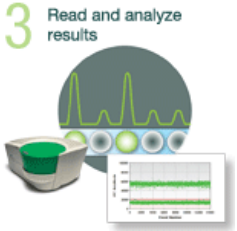
Contact GSI@BU.EDU for access to an Online Sign Up sheet to schedule your run (Google-Sheets Calendar).

Get trained on machine with Biorad specialists next. (i.e. with Tara & Aron via the Workshop)



Check in again with Lau lab members to go over practical procedure for doing a run.

Sign up ahead of time online. complete your runs in one day.



Do your data analysis in your lab, not on instrument machine.

Special Considerations for Single-Cell RNA-Seq PART1

The reagents are kindly provided by 10x Genomics and Illumina

Find a good rationale (can be exploratory) for learning something NEW about your system with Single-Cell RNA Seq.

Generate Prelim DATA for your Next R01 Grant Application.

This is a PILOT SC-RNASeq Experiment, limited to ~4 samples ideally, not too much room for more samples.

Pilot will capture 2000 cells per sample and includes the library preparation and one sequencing run providing ~50,000 reads per cell.

Capturing more cells (up to 10K cells) is possible but incurs additional investigator's expense.

Special Considerations for Single-Cell RNA-Seq PART2

The reagents are kindly provided by 10x Genomics and Illumina

Make sure your cell sample is readily sortable as a single-cell suspension. Tissue cultures or primary cells normally in suspension are ideal.

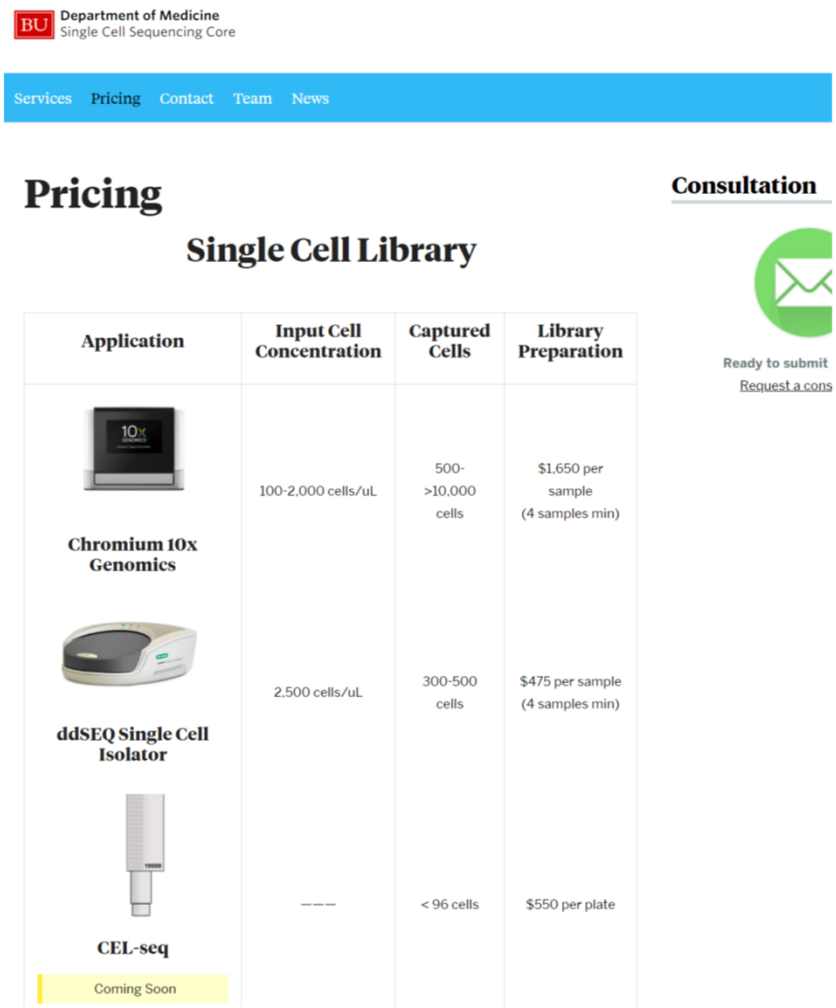
For tissue that needs dissociation, make sure this process is already optimized. Cells should be at 700 -1200 cells/ul and over 90% viable. The cells can not be fixed or frozen!

The majority of the costs will be subsidized, but the Awarded Labs will be responsible for a "buy-in" fee of $1000 to cover initial expenses not covered by the GSI.

We encourage all investigators to meet with the BU Single Cell Sequencing Core to discuss the technical details of the experiment!

BUMC Single Cell Sequencing Core (SCSC) and Microarray and Sequence Resource (MaSR)

http://www.bumc.bu.edu/singlecell/



BU Department of Medicine
Single Cell Sequencing Core

Services Pricing Contact Team News

Pricing

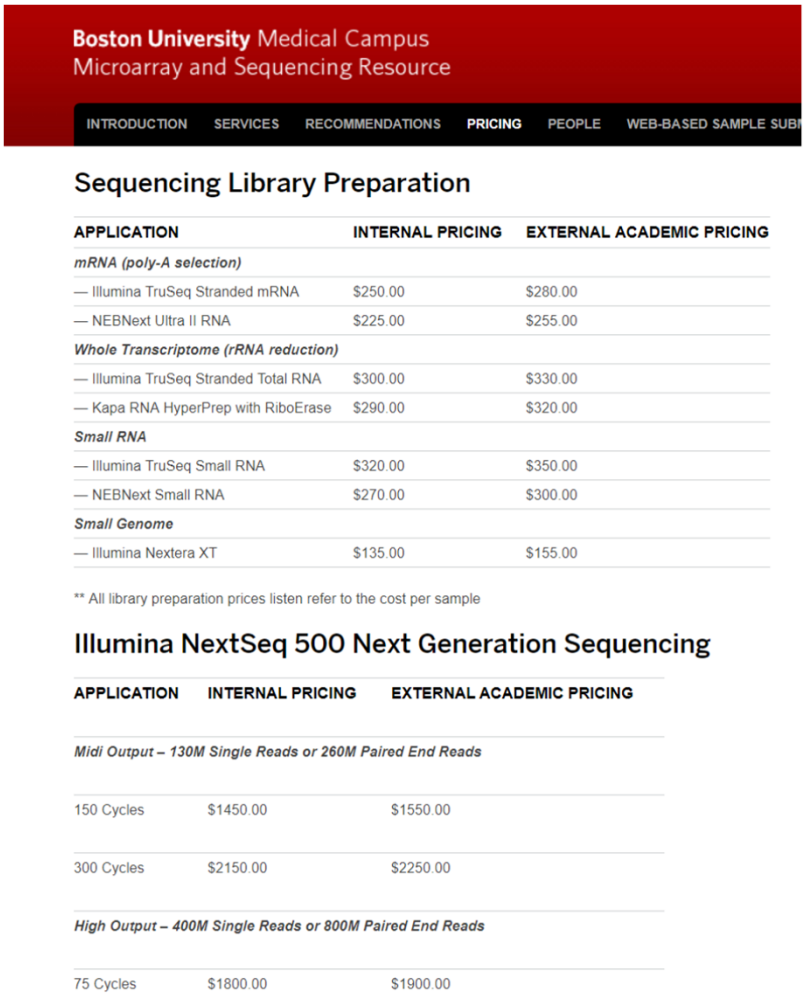
Single Cell Library

Application	Input Cell Concentration	Captured Cells	Library Preparation
Chromium 10x Genomics	100-2,000 cells/uL	500->10,000 cells	$1,650 per sample (4 samples min)
ddSEQ Single Cell Isolator	2,500 cells/uL	300-500 cells	$475 per sample (4 samples min)
CEL-seq Coming Soon	---	< 96 cells	$550 per plate

Consultation

Ready to submit
Request a cons

http://www.bumc.bu.edu/microarray/



Boston University Medical Campus
Microarray and Sequencing Resource

INTRODUCTION SERVICES RECOMMENDATIONS PRICING PEOPLE WEB-BASED SAMPLE SUBI

Sequencing Library Preparation

APPLICATION	INTERNAL PRICING	EXTERNAL ACADEMIC PRICING
mRNA (poly-A selection)		
— Illumina TruSeq Stranded mRNA	$250.00	$280.00
— NEBNext Ultra II RNA	$225.00	$255.00
Whole Transcriptome (rRNA reduction)		
— Illumina TruSeq Stranded Total RNA	$300.00	$330.00
— Kapa RNA HyperPrep with RiboErase	$290.00	$320.00
Small RNA		
— Illumina TruSeq Small RNA	$320.00	$350.00
— NEBNext Small RNA	$270.00	$300.00
Small Genome		
— Illumina Nextera XT	$135.00	$155.00

** All library preparation prices listen refer to the cost per sample

Illumina NextSeq 500 Next Generation Sequencing

APPLICATION	INTERNAL PRICING	EXTERNAL ACADEMIC PRICING
Midi Output – 130M Single Reads or 260M Paired End Reads		
150 Cycles	$1450.00	$1550.00
300 Cycles	$2150.00	$2250.00
High Output – 400M Single Reads or 800M Paired End Reads		
75 Cycles	$1800.00	$1900.00

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Proposal Judging Criteria

Who will be judging proposals:
A Committee assigned by the GSI

What we will be looking for in proposals:

Indicate choice of Digital PCR or Single-Cell-Seq,
and why you are not already doing these techniques on a regular basis.

Adhere to the 2-page maximum (including figures).

Good definition of the scientific question.
Does not have to be hypothesis-driven, can be exploratory.
Good sample system for obtaining single cells or clean nucleic acid.

Collaboration with another lab a Plus!
Proper definition of pilot project scope (don't overshoot).
Preference will be given to first time users of the technology.

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CONSIDER YOUR PILOT EXPERIMENT's SCOPE:

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THREE AWARDS for ddPCR:
Up to $2400 in reagents/lab

Allows for >200 assays,
No Lab Buy-In required.
(choose Evagreen vs Probe)

THREE AWARDS for Single-Cell RNA Seq:
Up to $10.3K in subsidies
BUT need $1000 cost for Lab buy in
(Full cost without subsidy is >$11K)

Enough to profile ~4 samples
(i.e. 2 Experiment and 2 Control)
~50K reads/sample of ~2000 cells

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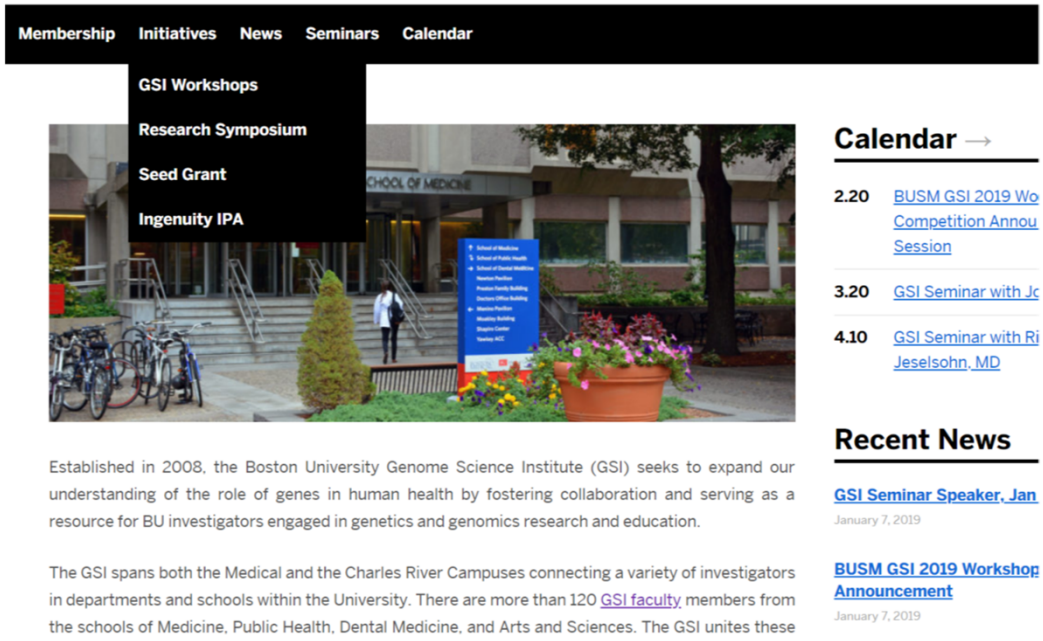

Any other questions?

Email gsi@bu.edu

The GSI greatly appreciates the generosity of Biorad Inc for the support on the ddPCR workshop, and 10X Genomics and Illumina for the Single-Cell RNA Seq workshop.