

**Nova Southeastern University  
Genomics Core Facility  
2018 Illumina RNA-Seq Pilot Grant Program**

**Overview**

The Nova Southeastern University Genomics Core Facility (GCF) is soliciting applications for pilot projects utilizing the Illumina NextSeq next-generation sequencing (NGS) platform for RNA-Seq applications. The primary goal of this pilot grant program is to offer a unique opportunity for gene expression research projects at NSU at reduced cost to the researcher as a way to catalyze further NGS research studies.

The proposed research must have relevance to basic, translational, and/or clinical science. This opportunity is made available through a generous donation of sample preparation kits and sequencing consumables from Illumina, Inc. The NSU Genomics Core Facility will provide the labor requested for the sample preparation and sequencing free of charge, only recovering supply and equipment costs incurred to complete the project. This pilot grant will offset the cost of reagents to the researcher only.

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*RNA sequencing (RNA-Seq) is revolutionizing the study of the transcriptome. A highly sensitive and accurate tool for measuring expression across the transcriptome, it is providing visibility to previously undetected changes occurring in disease states, in response to therapeutics, under different environmental conditions and across a broad range of other study designs. RNA-Seq allows researchers to detect both known and novel features in a single assay, enabling the detection of transcript isoforms, gene fusions, single nucleotide variants, allele-specific gene expression and other features without the limitation of prior knowledge.*

*The **TruSeq Stranded mRNA** library preparation kit provides the clearest and most complete view of the transcriptome with a streamlined, cost-efficient, and scalable solution for mRNA analysis. Get precise measurement of mRNA strand orientation for detection of antisense transcription, enhanced transcript annotation, and increased alignment efficiency. High coverage uniformity enhances the discovery of features such as alternative transcripts, gene fusions, and allele-specific expression. For more information, please visit the [Illumina website](#).*

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**Eligibility**

- Applications open to NSU faculty and graduate students with PI support
- **Only one entry per applicant will be accepted.**
- Applicants who are new NGS customers to the NSU Genomics Core Facility will have preference, but any new project to the core is eligible.
- Applicants must be able to leverage the TruSeq Stranded mRNA kit (*library capture of both coding RNA, as well as multiple forms of non-coding RNA that are poly-adenylated*).

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**Submission Terms and Conditions**

The deadline for applications is **Wednesday, October 31st 2018**. The completed proposal will be submitted using an online application form accessible on the [Genomics Core Facility's website](#).

Applications will first be reviewed:

- 1) For relevance to the impact of basic, translation and clinical research
- 2) For the potential of publication and application of research grants, and
- 3) For the appropriate and effective use of the RNA-Seq library prep kit and NextSeq platform

**Over \$4,000 in sequencing reagent awards will be granted to two individuals. The Genomics Core Facility will perform the labor required to complete both projects free of charge.** Two awardees will be announced on or around **Wednesday, November 14th 2018**.

Sample submission should occur by **Friday, November 30th 2018**. Minimum sample submission size is 8 and maximum is 24.

**This is a reagent and labor award only** aimed at familiarizing researchers with the Illumina RNA-Seq sequencing technology. Investigators are responsible for the costs of additional supplies and equipment associated with sample processing, preparation, and sequencing. Bioinformatics data analysis is available at internal hourly rates. Please inquire with [Emily Blake](#) in advance of submitting your application for an estimate of additional project costs.

**Budget and Financial Policies**

No budget is required in the proposal. Other reagents and equipment necessary to complete the project are **not** included in the award. **Applicants will be required to cover core facility supply and equipment usage charges.** *Estimated costs for a 24 sample project to include:*

Service	Description	Quantity	Internal NSU Rate	Award Value	Total Cost
TapeStation RNA	Total RNA quality control analysis	24	\$14.15	\$152.64	\$339.60
Quant-iT BR RNA	Total RNA quantification for input	2	\$322.81	\$492.96	\$645.62
Illumina TruSeq Stranded mRNA Library Preparation	Sequencing library generation	24	\$136.58	\$2,637.64	\$3,277.92
TapeStation HS D1000	Sequencing library validation	24	\$11.93	\$76.32	\$286.32
KAPA Library Quantification	qPCR library quantification	24	\$32.95	\$190.80	\$790.80
Qubit dsDNA HS	Dilutions for sequencing	4	\$7.62	\$19.12	\$30.48
Illumina 75 Cycles 400M	1x75bp single read sequencing 24 samples/run ~10-15 million reads/sample	1	\$2,077.81	\$1,618.34	\$2,077.81
				Subtotal	\$7,448.55
				Award Total	-\$5,187.82
				<b>Total</b>	<b>\$2,260.73</b>

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**Application Requirements**

Applications are to be submitted using the online form found on the [Genomics Core Facility's website](#). The length of the Research Abstract is limited 500 words or less. The organization of the proposal should be as follows:

- Research Proposal Abstract to include:
  - A brief description of the overall research project
  - Justification for use of the resource requested
  - Discussion of the impact of the proposed work on future funding prospects
  - A list of all project collaborators (*including a statement of financial support from the PI for graduate student applicants*)

**Review Process, Criteria, and Special Emphasis Areas**

The Genomics Core Facility team will first review the proposal for its impact on the development of the NSU Genomics Core and the scientific merits of the proposal. Upon successful review and approval of the application, Illumina reagents and consumables will be made available to the researcher when services are rendered at the NSU Genomics Core. No reagents will be distributed to individual awardees.

**Funding Expectations**

This is a reagent grant made available from Illumina, Inc. Labor fees will be awarded from the NSU Genomics Core Facility.

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**NOVA SOUTHEASTERN UNIVERSITY  
GENOMICS CORE FACILITY (GCF)**

Our goal is to provide NSU investigators, as well as external investigators, access to sophisticated methodologies in genomics including, but not limited to, Illumina next-generation sequencing and multiplexed digital profiling of single target molecules using NanoString's nCounter technology. We ensure high quality data using highly stringent quality control (QC) metrics.

The critical objectives of the NSU GCF are:

- To provide investigators with access to high quality, state of the art, sophisticated technology and methodologies for the analysis of research specimens
- To provide education into the theories and practices of current and emerging genomics technologies
- To provide excellent comprehensive customer service