**MIP Core Standard Operating Procedures**

**Mission**: We exist to facilitate access to sequencers and other related instruments so that CSU researchers may have access to next-generation sequencing technology.

1. **Illumina Instrument Operations**
2. **Training**:
   1. Users must undergo a 3-step training before independently loading the sequencers. The Facilitator (Marylee Kapuscinski) will host monthly or twice-monthly group training sessions: Users learn how the instruments work, how to perform library QC and quantification, how to perform the denature & dilution protocol, and how to load and start a sequencing run.
   2. One-on-one training: The user will load the sequencer under the supervision of the Facilitator. This will serve as a credentialing exercise for the user to be approved to run the sequencers independently.
   3. Upon success of the credentialling run, users will be approved to load future runs by themselves without supervision by the Facilitator. This approval will not be transferrable to other users: all new users must be independently trained and approved, and individual users cannot train or approve other users.
3. **Scheduling**:
   1. To schedule a time to use the sequencers, please email Marylee Kapuscinski at [Marylee.Layton@colostate.edu](mailto:Marylee.Layton@colostate.edu). Please use the Outlook Calendar to find an available time. You must provide an account # and PI name to reserve a spot on the Calendar. This account # will be charged at the end of each month. If you reserve a timeslot, but for some reason do not load the sequencer, you must contact Marylee, otherwise, you will be billed.
4. **Maintenance**: Marylee will perform all post-run washes and monthly washes. You do not need to do this. If, for some reason, these washes have not been performed, please contact Marylee.
5. **Failed** **Runs**: In the case of a failed run, please contact Marylee. She will call Illumina and perform any troubleshooting recommended by Illumina. Once the instrument is cleared, you will be contacted with next steps.
6. **Equipment that will be accessible in the facility:**

The following instruments will be available open-access to trained and approved users:

* MiSeq Sequencer
* NextSeq Sequencer
* MinION sequencers and GPU basecalling computer
* ngsdata01 server for data storage and demultiplexing.
* Drobo backup of data on ngsdata01 server.
* 10X Chromium Single Cell sequencing instrument
* Tapestation 2200
* Tapestation 4200
* Sage Science Pippin Prep instrument
* Qubit 2.0
* Nanodrop
* 3 ABI 9700 thermocyclers
* PCR hood
* 3 sets of single channel pipets
* 1 set of multichannel pipets
* Large tabletop centrifuge
* -80˚C freezer
* -20˚C freezer
* 4˚C fridge
* 6 microfuges

1. **Consultations**

Consultations are available for projects related to library prep protocols, overall sequencing strategy, etc. This consultation will be limited in scope and will consist of directing users to the appropriate resources.

1. **Pricing Breakdown**:
2. Users are responsible for purchasing their own library quantification kit and sequencing kits.
   1. Kapa Library Quantification Kit: [insert link]
   2. Illumina Sequencing Kit Pricelist for CSU: pdf attached
3. Run Fees:

|  |  |  |  |
| --- | --- | --- | --- |
| **Run Type** | **Internal User** | **External Academic** | **External Non-Academic** |
| **MiSeq Nano** | $100 | $123 | $159 |
| **MiSeq** | $200 | $245 | $319 |
| **NextSeq** | $300 | $368 | $478 |
| **Oxford Nanopore** | $150 | $184 | $239 |