

Annual User Meeting

September 19, 2017

SIMONS ELECTRON MICROSCOPY CENTER 

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GENERAL USER MEETING

- ▶ Update on instrumentation, facility, access and policies.
- ▶ General discussion of user needs
- ▶ BBQ! 3pm

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ANUAL RE-CERTIFICATION

<https://www.surveymonkey.com/r/SEMC-user-certification>

USER ACCOUNT RENEWAL

On-line account renewal.

Users will confirm status, acknowledge basic rules and SOPs.

Start in August. Should have completed surveys by Sept 15

Will deactivate starting in October.

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SEMC OPERATIONS TEAM

Directors



Bridget



Clint

 @nysbc.org

Staff



Bill



Ed



Laura



Ashleigh



Kelsey



Daija



Michael
Fall 2017

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INSTRUMENTATION

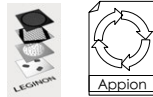
2017 data generation at SEMC

EMs available

- FEI Titan Krios#1 / #2 / #3
Falcon3 x3
K2 x3
- FEI Tecnai F20
DE20
TVIPS 4K CMOS
- FEI Tecnai Biotwin
TVIPS 4K CMOS
- JEOL 1230
Gatan US4000 CCD
- FEI Helios 650
Quorum cryostage

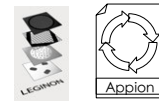
Cameras

- 7** direct detectors
on 4 TEMs
- 4** CMOS/CCDs
on 3 TEMs +
1 SEM

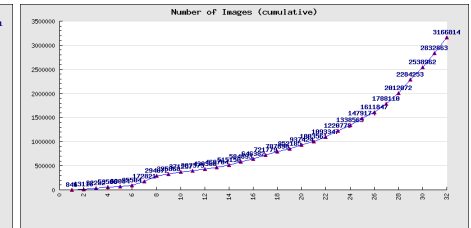
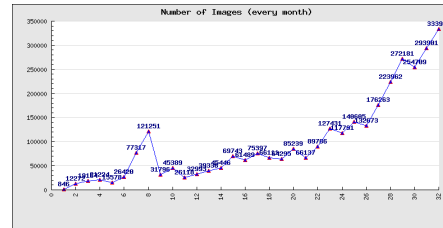


LEGION & APPION USE

2017 data generation at SEMC



Jan-Aug	Exposure Images	%
Krios & K2	1,088,148	55%
all other scopes & cameras	892,368	45%



INSTRUMENTATION

2017 data generation at SEMC

- FEI Titan Krios#1 / #2 / #3
Falcon3 x3
K2 x3

**Application
required**

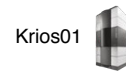
- FEI Helios 650
Quorum cryostage

Preallocated

- FEI Tecnai F20
DE20
TVIPS 4K CMOS
- FEI Tecnai Biotwin
TVIPS 4K CMOS
- JEOL 1230
Gatan US4000 CCD

**Request/
Open sign up**

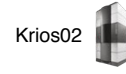
KRIOS USAGE : 2.5 INSTRUMENTS



Regular operations

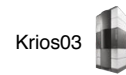
Airline schedule

- general user proposal required
- scheduled out to Dec 2017 in 5 week cycles
- 2 day session blocks (minimum recommended session 1 day)
- 1 rapid access session each cycle



Initial release

- general user proposal required
- Regular operations when phase plates arrive
- scheduled out to Dec 2017
- 2 rapid access sessions each cycle



Early beta

- Time split between NYSBC & Columbia
- Open beta application required

KRIOS USAGE : STANDARD SETTINGS



SINGLE PARTICLE SET UP

K2 Summit in counting mode:

Pixel size: $\sim 1 \text{ \AA}/\text{px}$
Dose: $8\text{e}/\text{px}/\text{s}$
Frame rate: 200-250 ms
Exposure time: 8-10 sec



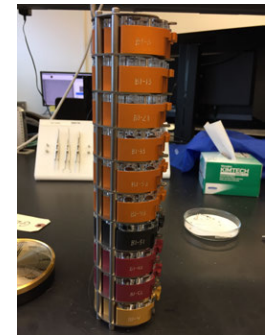
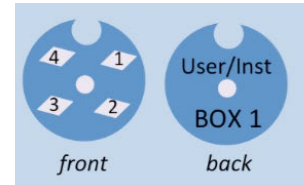
MotionCor2

CTFFIND4

KRIOS USAGE : GRID STORAGE

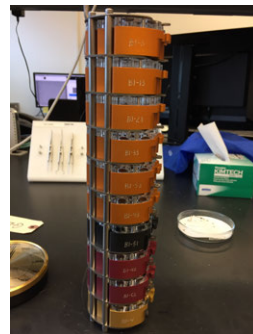


Krios



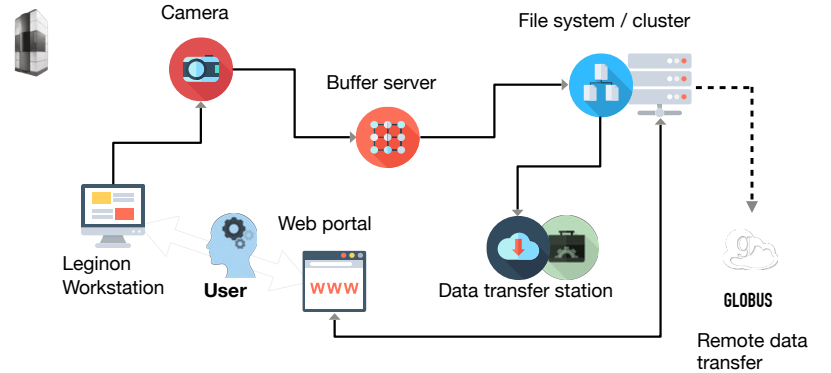
TEMPORARY : GRID STORAGE

Annual dewar defrost



DATA PIPELINE







On the fly data pipeline c. 2017



SEMC OPERATIONS

TRAINING AND EDUCATION


<http://semc.nysbc.org/training.html>

Type	Frequency	Title	Description
 feedback	yearly	General user meeting	State of the center
 knowledge	yearly	SEMC EM Course	Theory behind EM Graduate level course
 computation	quarterly	SEMC Appion workshop	Data processing workshops
 access	monthly	SEMC New User Orientation	Facility use and Safety Training <i>Leginon intro/use of screening microscopes</i>
 troubleshooting	weekly	User Project Discussion Meetings	<i>Appointments: Mon @ 11:30am, Thurs @ 1pm & @ 1:30pm</i>
 instrumentation	daily	Advanced Leginon use / 1-1 training appointments	Training for independent use of the microscopes and other SEMC resources

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SEMC OPERATIONS

NEW USER ORIENTATION

Type	Frequency	Title	Description
 access	monthly	SEMC New User Orientation	Facility use and Safety Training <i>Leginon intro/use of screening microscopes</i>

First Tuesday each month

Sept 5 completed

Oct 3 full

Nov 7 full

Dec 5

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SEMC OPERATIONS

SAFETY

http://semc.nysbc.org/Chemical_SOPs.html

STANDARD OPERATING PROCEDURES

General SOPs
Each instrument has an SOP

ACCOUNTS AND IDENTIFICATION


User accounts
NYSBC ID
24 hr access

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SEMC OPERATIONS

TRAINING AND EDUCATION

<http://semc.nysbc.org/training.html>

Type	Frequency	Title	Description
 knowledge	yearly	SEMC EM Course	Theory behind EM Graduate level course

Jan 2018

<https://www.surveymonkey.com/r/SEMCCourse17>

Type	Frequency	Title	Description
 computation	quarterly	SEMC Appion workshop	Data processing workshops

Appion Part 3: Tomography Oct 10

Appion Part 1: Basics & 2D SPA Nov 9

Appion Part 2: 3D SPA Dec 7

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QUESTIONS?

OPEN FORUM