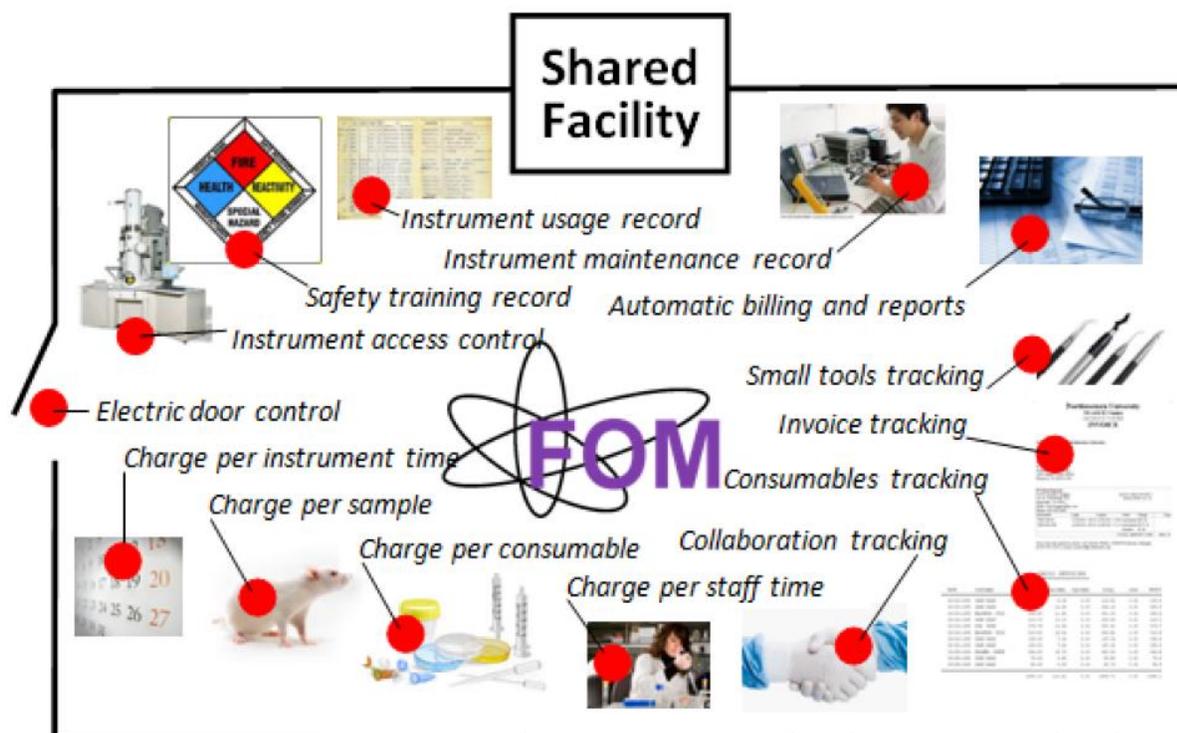




# FOM® User Manual



**Scheduling / Billing / Reporting / Compliance**

***“Manage Everything Online, Any Where, Any Time.”***

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FOM Networks, Inc. is the sole licensor of the FOM® system  
Visit <http://www.fomnetworks.com> for more details

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# 1 Introduction

The Facility Online Manager, FOM®, is a professional and customizable online application that provides a complete solution to shared facility management. It incorporates many features that are not seen in other scheduling systems. These unique features make FOM® a highly secure, versatile, reliable, and easy-to-use system for both the users and the facility administrators. FOM Networks works with every customer institution to customize the system. Common customization projects include institution-wide single sign on, special formatting of billing and reporting, or modification of graphical user interface. Any and all aspects of FOM® are customizable, from the color scheme to integration with any software you are currently using.

FOM® may be used to track the usage and payments per instrument time, per sample, per consumable, or per staff time. FOM® is ideal for:

- Small research groups (no billing involved, share among group members only)
- Core facilities (centralized management)
- Recharge centers (configurable billing and invoicing)
- Research service labs (work order and collaboration tracking)
- Central office for research (unified reports)

If you need more information about the Facility Online Manager system, please contact:

## *General questions about FOM® system:*

General FOM Networks, Inc. email

[info@fomnetworks.com](mailto:info@fomnetworks.com)

## *FOM® Technical Issues and System Troubleshooting:*

Shu-You Li, Ph.D.

[shuyou@fomnetworks.com](mailto:shuyou@fomnetworks.com)

## 2 User Roles

### 2.1 System Administrator

System Admin is the highest-level administrator in the system. System Admin login is usually generic and not tied to any personal username or email, so that the System Admin login can be easily transferred at any time. Usually there is only one System Admin for a FOM license holder. For Standard and lower license holders System Admin is the same as Facility Admin because these levels of FOM license allow only one Facility in the system. System Admin's tasks include (1) add new facilities into the system and assign Facility Administrators, and (2) configure system-wide settings.

### 2.2 Facility Administrator

Facility Admin oversees managing of individual facility. In a FOM system with Enterprise license, there may be many facilities hosted on one server. A Facility Admin cannot see other facility's billing and reporting information. Facility Admin's tasks include (1) configure facility-wide settings, (2) add of new instruments and assign Instrument Managers, (3) define fee structures of an instrument, (4) download billing and reporting files. There are other things that a Facility Admin can do, such as (5) set up facility holiday schedule, (6) set up user survey, (7) manage the list of departments, and (8) manage the list of supervisors. One facility may have multiple Facility Admins.

### 2.3 Instrument Manager

Instrument Manager is the person who manages instrument use, does service experiments for a user, performs user training and grants user's access to the instrument. Instrument Manager's tasks include (1) configure instrument access rules, (2) modify instrument fee structure, (3) reserve instrument for various purposes, (4) perform training for new users, (5) charge training fee or service/assistance fee, (6) verify user information, (7) grant user's access to the instrument at various levels, and (8) collaborate with users and charge service fee. Other things that an Instrument Manager can do include (9) adjust a user's usage records, and (10) email various groups of users using FOM email list. One instrument may have multiple Instrument Managers.

### 2.4 User

User is the person who may apply and use any of the resources hosted on the FOM system. After registration in FOM system, User has no access to any resource by default. The User's access must be granted by Instrument Manager. User's tasks in the FOM system include (1) register username in the system, (2) maintain a list of valid financial account numbers, (3) search and apply instrument access, (4) attend training and be granted access by Instrument Manager, (5) reserve instrument ahead of time, (6) logon instrument before usage, (7) logoff instrument after

usage, (8) modify or cancel a reservation, (9) request service and collaboration with Instrument Manager, and (10) download usage history report.

## 2.5 Supervisor and Supervisor Assistants

Supervisor Assistant is a great helper in maintaining the group members' information. Any regular user may be assigned as a supervisor assistant to any supervisor in the system. Once granted Supervisor Assistant role, the user will see Supervisor Home page after logging in FOM. Supervisor Assistant's tasks include (1) maintain user's financial account numbers, (2) download group member's usage reports, and (3) report misuse of financial account numbers to Facility Admin or Instrument Manager for corrections.

## 2.6 Business Manager and Auditor

Business Manager and Auditor can do billing and download facility statistic reports on behalf of Facility Admin without access to other Facility Admin level functions. Facility Admin can define which report the Business Manager can view and download.

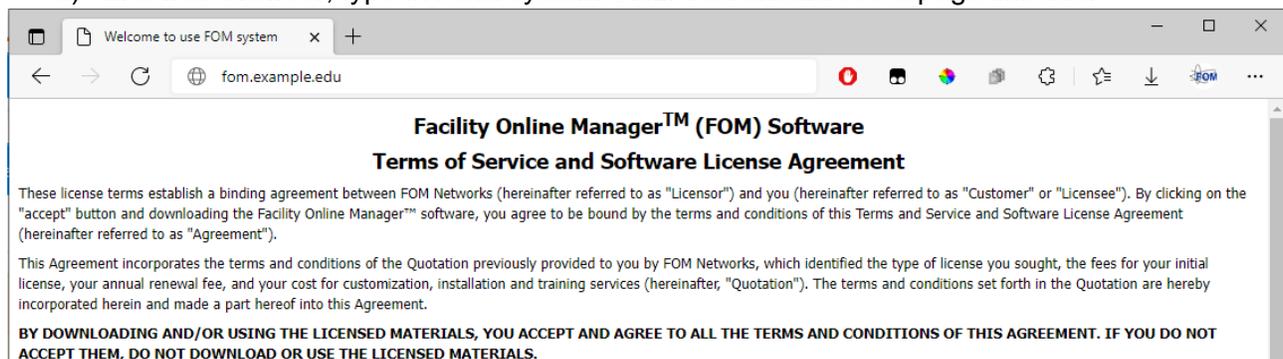
# 3 Installation and Setup of System Admin

FOM Networks staff will help you set up the FOM server. Once the server is up and running, you will be given a URL to access your FOM system. If your FOM system is hosted by FOM Networks, the URL is <https://www.instrumentschedule.com/>.



When you first time visit the FOM system, you will be prompted to initialize the installation and set up the System Admin user account. The System Admin username, password, and email must be generic so it may be transferred to another person when needed. *Do not use your personal username, password, and email as the System Admin user!*

a) In a web browser, type in FOM system URL. You should see a page like this.



b) Read the End User License Agreement, scroll down, and then fill in the required information. Your FOM License ID and the installation passcode should have been given to you by email.

BY DOWNLOADING AND/OR USING THE LICENSED MATERIALS, YOU ACCEPT AND AGREE TO ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT ACCEPT THEM, DO NOT DOWNLOAD OR USE THE LICENSED MATERIALS.

I HEREBY AGREE TO THE TERMS OF SERVICE AND SOFTWARE LICENSE AGREEMENT FOR FACILITY ONLINE MANAGER™ SOFTWARE AND LICENSED MATERIALS DESCRIBED HEREIN.

License Name:  This will be your abbreviated "brand name" and will show up on the front page your FOM system.

License ID:  The License ID and and installation passcode below should have been sent to you by email.

Passcode:

Server Time-zone:

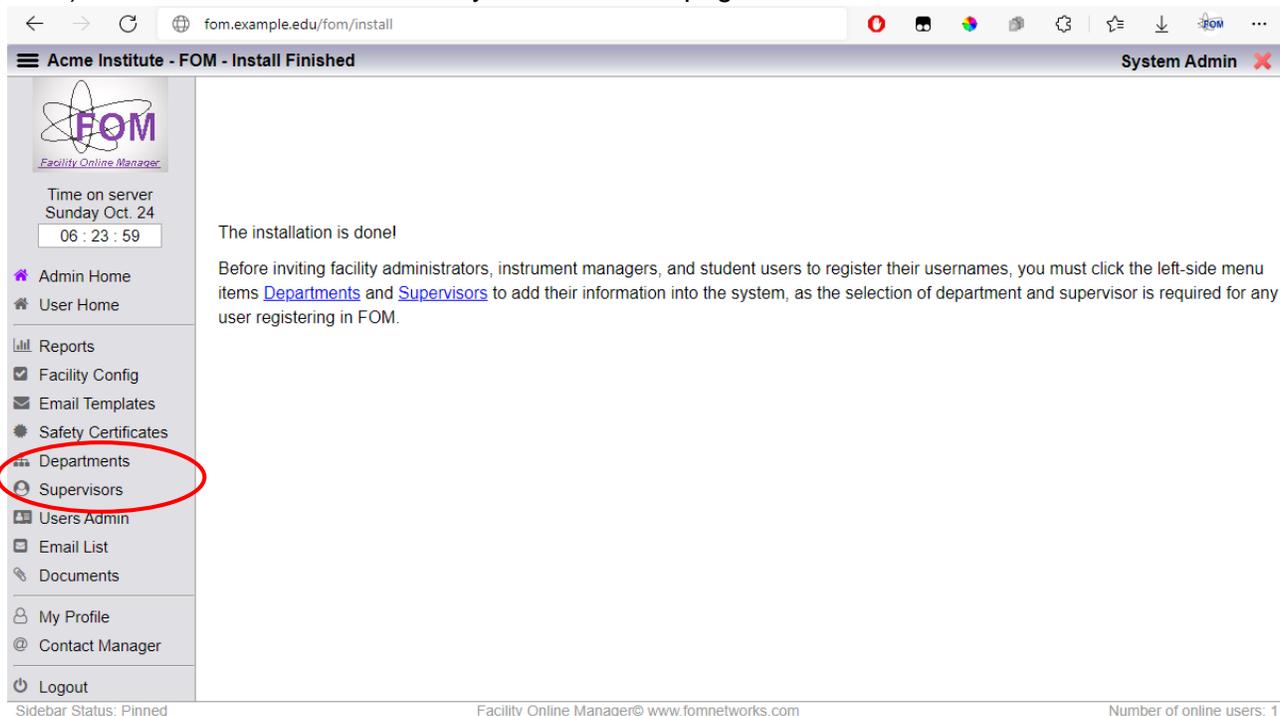
System Admin Username:  This is the special system administrator username of your FOM system, which is non-editable.

System Admin Email:  It is recommended to use a special service email address such as fom@example.edu instead of personal email, and you may set to forward all the emails to your personal address.

System Admin Password:

Re-enter Password:

c) Submit the installation form, you will see this page.



d) Now you need to add departments and supervisors into the FOM system. Please refer to sections 7.18 and 7.19 for more details.

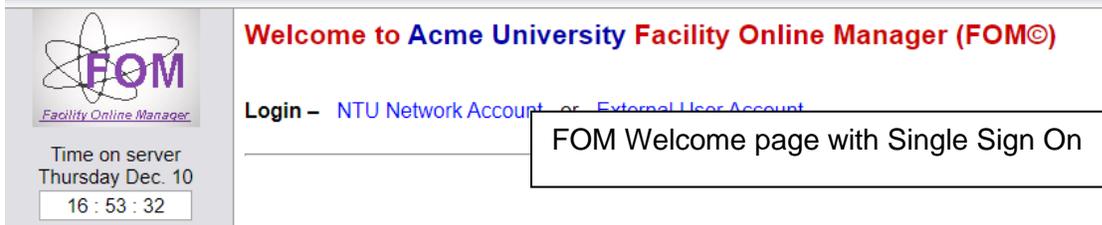
e) After adding at least one department and one supervisor, you can invite all your facility administrators and equipment managers (**including yourself!**) to register their own usernames in the system. Before setting up new instrument (or for enterprise licensees, new facility), you must have the corresponding facility administrators and instrument managers registered in the system.

# 4 User Registration

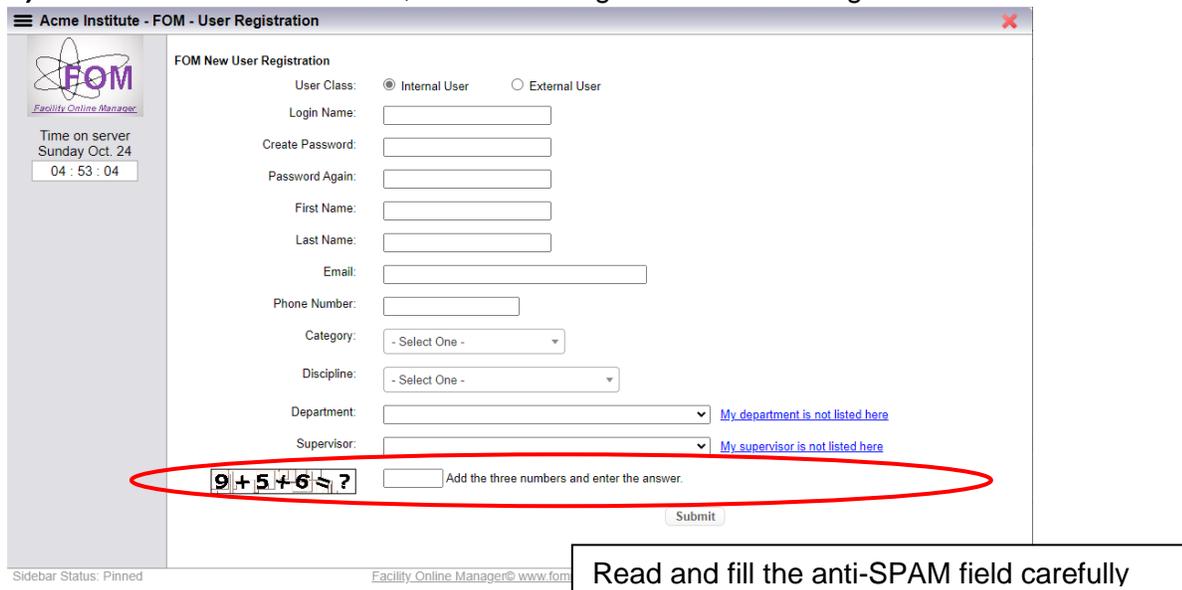
All users, no matter which user role a person holds in the FOM system, needs to register a login username to start. You will be given a URL to access your FOM system. If your FOM system is hosted by FOM Networks, the URL is <https://www.instrumentschedule.com/>. If you have your own server, please write down your FOM URL below before you distribute this manual to users.

FOM System URL: \_\_\_\_\_

- a) Visit FOM system welcome page. The login page may look like one of the following two screenshots, depends on whether your FOM has been configured with institutional single sign-on.



- b) Click "I am a new user", then fill the registration form to register new username.



# 5 Add Financial Account Number

a) After registration you will see this warning window. You must add one account number to continue, unless you will become a manager (Facility Admin, Instrument Manager, or Supervisor Assistant).

All non-manager users must have at least one valid financial Account Number before using FOM. Please [click here to add a new Account Number](#).

If you are a manager or supervisor/assistant, please close the window and inform your facility administrator to upgrade your user role.

b) This account number is typically your institution's internal financial account and may be validated with the rules set by the System Administrator. If you have questions regarding what to enter as the account number, please contact the facility manager.

Update Account Number

#	Research description name	Account Number	Is Active?	Set as default
---	---------------------------	----------------	------------	----------------

Add a new account  
Internal users must provide valid active financial account.

Research description name:  (You should type something like "Study of Bees" or XYZ facility Material Analysis)

Account Number:   
\*Internal users must provide valid Account Number.

Category:

Business Purposes/Description:

# 6 System Administrator Tasks

## 6.1 Maintain safety certificate list

Safety training and certificate tracking are critical and common to every laboratory, especially the shared facilities with students coming from various departments and with different background.

Safety certificates can be maintained by System Admin or Facility Admin. Certification may be provided by the institution, a third-party system, or a Safety Training resource defined in FOM (see section 7.14 and 7.15 for more information).

List of Safety Certificates

#	Cert Code	Description	Certification URL	Expiration Days	Reminder Days	
0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Add New"/>
1	BIOSAFE	Biological Safety Certification	<a href="https://www.research...">https://www.research...</a>	365	7	<input type="button" value="Update"/> <input type="button" value="Delete"/>
2	BBP	Bloodborne Pathogens for Clinical or Research Lab Workers	<a href="https://www.research...">https://www.research...</a>	365	7	<input type="button" value="Update"/> <input type="button" value="Delete"/>
3	X-RAY	X-Ray training	<a href="https://www.research...">https://www.research...</a>	365	7	<input type="button" value="Update"/> <input type="button" value="Delete"/>

## 6.2 Add new facility and assign facility administrators

Login with System Admin username and click on “Facility Config” link on the left-side navigation menu, and then click on the “Add a new facility” button.

The screenshot shows the 'Facility information' configuration page in the FOM system. The left navigation menu has 'Facility Config' highlighted with a red circle. The main form has 'Add a new facility' button circled in red. The form fields include:

- Facility name:
- Facility description (keep short, no line breaks):
- Facility website URL:
- Invoice template file name:
- User agreement URL:  (Note: This file is shown when user apply to use equipment)
- User verification:  (Note: 0: No verification needed. New user can request training on equipments right away; 1-98: Verification needed before use of facility. Verification expires in the number of years. Put 99 if it never expires.)
- Facility Administrators:
- Open to public user applications:  Open to every registered user  Private group use only
- Send email when user equipment level changes:  Always send  Never send  Prompt each time
- Facility status:  Active  Inactive

An 'Add This Facility' button is located at the bottom right of the form.

- Facility Name.** This field is limited to 50 characters.
- Facility Description.** This field is limited to 1000 characters.
- Invoice Template.** Invoice template file is used to generate invoices for external user. The invoice template file usually needs to be customized by FOM Networks, Inc.
- User Agreement URL.** This is a facility-wide user agreement that shows up when a user applies to use the very first equipment of the facility. For the system-wide user agreement that shows up when a user registers a new username in the entire FOM system, please see the System Config part described in the next section.
- User Verification.** User verification is set in number of years. When a user’s access needs to be re-verified, an email is automatically sent to the user.
- Facility Administrators.** Select one or more existing users as the Facility Administrators.
- Open or Private Facility.** A facility may be set to be open or private. The resources in a private facility are not visible to FOM users unless the users are granted access.
- Send email when user equipment level changes.** This facility-specific setting is for the convenience of managers when granting user’s access on each instrument.
- Facility Status.** A facility may be marked as Inactive temporarily for troubleshooting purposes. Marking a facility as inactive will not affect the status of the resources of the facility but just make them invisible until the facility is marked back to active.

## 6.3 System-wide settings

Login as System Admin, in the same page of Facility Config, scroll to lower part of the screen, you can see the part of System Configuration. This part is not visible to Facility Administrators.

The screenshot shows the 'System Configuration' section of the FOM interface. The left sidebar has 'Facility Config' highlighted. The main content area includes the following settings:

- Facility information:** A dropdown menu for 'Choose a facility ...' and a button for 'Add a new facility'.
- System Configuration:**
  - Institution name:** Text input field containing 'this university'.
  - Verify email upon new user registration:** Radio buttons for '0' (selected) and '1: Verify new user email'.
  - System-wide user policy:** Text input field with a note: 'This file is shown when user register new account'.
  - Deactivate user login:** Text input field containing '0' days of inactivity.
  - System Catch-All Email:** Text input field.
  - Show handy links:** Radio buttons for 'Yes' (selected) and 'No'.
  - Note to all users:** Text area for a note.

An 'Update' button is located at the bottom right of the configuration area.

- Institution Name.** Limited to 100 characters.
- Verify email upon new user registration.** It is highly recommended to turn this on to ensure every user enters valid email address when they register username in the system.
- System-wide User Policy.** Unlike the facility-level user agreement URL, this one is for every user who is registering new usernames in the FOM system. The facility-level user agreement will show up only when the user applies to the very first equipment of that facility.
- Deactivate user with X days of inactivity.** A username may be automatically deactivated if the user has not used any equipment in FOM for X days.
- System Catch-All Email.** This field sets the email address that will be used to send/receive all automatic emails such as requests to add new departments or new supervisors.
- Show handy links.** Handy links (showed at the right side of the screen) may be edited for user's convenience, or completely hidden with this setting. Free License holders cannot disable the handy links.
- Note to all users.** This is the text that is shown up in the FOM welcome page below the User Logon form. You may use standard HTML tags such as <p>, <br>, <b>, <u>, etc.

# 7 Facility Admin Tasks

## 7.1 Admin Home page

Admin Home page provides various information and links that a Facility Admin or Instrument Manager use at daily basis.

The screenshot shows the FOM Admin Home page with two resource cards: '3D Printer MJM' and 'Cleanroom'. Each card displays the equipment status (Available), a note to users, and a bar chart of equipment usage hours over the last 8 days. A left sidebar contains navigation options like Billing, Reports, and Facility Config. Red callout boxes point to specific UI elements: 'Click to see to-be-trained users' points to a user icon; 'Click to see usage records history' points to a calendar icon; 'Click to open resource configurations page' points to a gear icon; 'Click to go to the instrument calendar' points to a calendar icon on the card; 'Click to change instrument status' points to a status dropdown; 'Click to pin this resource to top of the page' points to a pin icon; and 'Click to edit note to users' points to an edit icon.

## 7.2 Facility configurations

Login as Facility Admin and click Facility Config on the left side menu.

See Section 6.2 for more information.

## 7.3 Special resources - Consumables

Login as Facility Admin, go to Resources Admin page. At the top of the page, there are three drop down lists where you can maintain Regular Resources, Special Resources, and Add New Resource.

The screenshot shows the Resources Admin page. The left sidebar has 'Resources Admin' highlighted in green. At the top, there are three dropdown menus: 'Resource Configuration' (set to 'Electron Microscopy Lab'), 'Regular Resource', and 'Special Resource'. A red circle highlights the 'Special Resource' dropdown menu, which is open and shows options: 'Service', 'Consumables', 'Accessories', 'Lending Items', 'Chemicals', and 'Other Assets'. Another red circle highlights the 'Resources Admin' menu item in the sidebar.

In the Special Resources drop-down, select Special Resources – Consumables to maintain the consumables of the facility. Consumables can be sold either standalone or as a part of instrument usage.

The screenshot shows the FOM interface. At the top, the 'Resource Configuration' section has a dropdown menu set to 'Consumables', which is circled in red. Below this are fields for 'Resource Type', 'Resource Name', and 'Revenue Account Number'. A 'Consumables' table lists items like 'Liquid Nitrogen', 'Stainless Steel Tweezer', and 'Au Deposition Thickness' with columns for Unit, Price, and Amount in stock. A 'More Information' window is open, showing detailed fields for a 'Stainless Steel Tweezer', including Vendor name, website, address, phone, and last order date.

- a) **Consumable Name.** Limited to 50 characters.
- b) **Unit.** Enter applicable unit of the consumable.
- c) **Price.** This is the sales price that will be charged to users when user purchases from the facility or checks out when logging off an instrument.
- d) **Amount in stock.** This number is automatically deducted with user purchases. When this number is running below zero, Instrument Managers will see the consumable name at the top of the Admin Home to remind the managers for refill.
- e) **QR Code.** Each consumable has a QR code and can be printed for users to check out consumables conveniently with their smart phones.
- f) **Notes.** This note is visible only to the managers.
- g) **Vendor Information.** These fields are used to keep the vendor information for easier re-ordering of the consumables.
- h) Consumables may be associated with a regular instrument so that users may purchase when logging off on the calendar. See Instrument configuration part in section 7.8.

## 7.4 Special Resources - Accessories

Accessories may be defined when an instrument has multiple operation modes, attachments, or specimen holders that are rechargeable when applied.

**Resource Configuration**  
 Electron Microscopy Lab | Regular Resource | **Accessories** | Add New Resource

**General Information**  
**Resource Type:** Accessories, attachments, or operation setups that can be associated with general instruments and can be charged per use or per hour  
**Resource Name:** Accessories  
**Revenue Account Number:** 0000 This is the financial account number to receive usage fees. [Save]

**Accessories** Search/Filter: [ ]

Accessory Name	Charge Rate	Charge Policy	
[ ]	[ ]	<input type="radio"/> per use <input checked="" type="radio"/> per hour	[+]
Cryo stage attachment	50	<input type="radio"/> per use <input checked="" type="radio"/> per hour	[✓] [x] [⋮]
Tomography holder	100	<input type="radio"/> per use <input checked="" type="radio"/> per hour	[✓] [x] [⋮]

- Accessory Name.** Limited to 50 characters.
- Accessory Charge Price.** You may charge an accessory per use or per hour. This is additional to the regular instrument usage charge.
- QR Code and More Info.** Same as consumables, managers may print QR code, notes, and Vendor information of any accessory.

## 7.5 Special Resource - Lending Items

Lending Items are small devices or tools that a user may borrow from the lab and keep for a relatively long time. Managers may define to charge the user per hour, per day, or per month.

**Resource Configuration**  
 Electron Microscopy Lab | Regular Resource | **Lending Items** | Add New Resource

**General Information**  
**Resource Type:** Lending items or small tools that a user may borrow and keep for extended time  
**Resource Name:** Lending Items  
**Revenue Account Number:** 0000 This is the financial account number to receive usage fees. [Save]

**Lending Items** Search/Filter: [ ]

Name	Charge Policy	Int. Price	Ext. Price	Appr. Before	Appr. After	
[ ]	[ ]	[ ]	[ ]	<input type="checkbox"/>	<input type="checkbox"/>	[+]
Portable GPS	Per day	6	12	<input type="checkbox"/>	<input type="checkbox"/>	[✓] [x] [⋮]
Oscilloscope	Per hour	1	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	[✓] [x] [⋮]

## 7.6 Special Resource - Chemicals

Chemicals tracking module allows managers to keep track of chemical inventory and for users to easily find the location and stock amount of any chemicals, their MSDS sheets, and other

information quickly. Managers may maintain the vendor information for each chemical item for easier reordering.

The screenshot shows the FOM interface with the 'Chemicals' resource selected. The 'General Information' section includes fields for Resource Type, Name, and Revenue Account Number. Below this is a table titled 'Chemicals in the facility' with columns for Location, Group Code, Chemical Name, Unit, and Amount. A 'More Information' dialog box is open for 'M-bond Glue', showing fields for CAS Number, Location, SubLocation, MSDS, SOP, Description, Comment/Note, Vendor name, Vendor website, Vendor address, Vendor phone, Catalog number, Last order price, Last order date, and Expire date.

**Resource Configuration**  
 Electron Microscopy Lab | Regular Resource | **Chemicals** | Add New Resource

**General Information**  
 Resource Type: Chemicals: Inventory management for easy locating, re-ordering, and MSDS lookups  
 Resource Name: Chemicals  
 Revenue Account Number: 0000 This is the financial account number to receive usage fees. [Save]

**Chemicals in the facility**  
 Search/Filter: Chemical name | Location

Location	Group Code	Chemical Name	Unit	Amount	
					+
Room 101, Cabinet #1	Base-01	Potassium Hydroxide	ml	2000	✓ ✕ ...
Room 101, Fridge, 2nd shelf	Glues	M-bond Glue	ml	10	✓ ✕ ...
Room 101, Left Hood	Acid-01	Perchloric Acid	ml	1000	✓ ✕ ...

**More Information**  
 Item Name M-bond Glue  
 CAS Number  
 Location Room 101, Fridge, 2nd she  
 SubLocation  
 MSDS  
 SOP  
 Description  
 Comment/Note  
 Vendor name  
 Vendor website  
 Vendor address  
 Vendor phone  
 Catalog number  
 Last order price 0  
 Last order date 04/04/2021  
 Expire date 01/01/1999  
 [Save] [Close]

## 7.7 Special Resource - Other Assets

Assets module allows tracking of all assets in the lab, their vendor information, tech support information.

The screenshot shows the FOM Resource Configuration page. The 'Resource Configuration' section at the top has three dropdown menus: 'Electron Microscopy Lab', 'Regular Resource', and 'Other Assets' (which is circled in red). To the right is a 'Add New Resource' button. Below this is the 'General Information' section with the following fields:
 

- Resource Type:** Other Assets: Inventory management for auditing and reporting
- Resource Name:** Other Assets
- Revenue Account Number:** 0000. A note below it says: 'This is the financial account number to receive usage fees.' A 'Save' button is to the right.

 Below the general information is the 'Assets in the facility' section with a search/filter box. It contains a table:
 

Name	Location	Serial Number	Comment/Note			
Optical Microscope	Room 1.2	54321	You may find lenses in Lending Items	✓	✗	...
Image Processing PC	Room 102	111222333		✓	✗	...

 A sidebar on the left contains navigation links: Admin Home, User Home, Equipment sc..., Billing, Reports, Facility Config, Safety Certificates, Holidays, User Survey, Departments, Supervisors, Resources Admin (highlighted), and Maintenance Records.

## 7.8 Special Resource - Service

Collaborate and Service templates may be added in the Resources Admin page by selecting Special Resource – Service. Usually you create the service request forms with Word or Excel format, and FOM Networks helps to convert the form to the required HTML format. An example of the service request form can be found in section 8.10.

After adding new Service, you need to define a set of Service Items and the default charge rates. Service Items may or may not be associated with an instrument.

The screenshot shows the FOM Resource Configuration page with 'Service' selected in the dropdown menu (circled in red). The 'General Information' section is updated:
 

- Resource Type:** Collaboration and service with an electronic service request form
- Resource Name:** Service
- Revenue Account Number:** 0000. A note below it says: 'This is the financial account number to receive usage fees.' A 'Save' button is to the right.

 Below this is the 'Add New Service' section with the following fields:
 

- Service Name:** TEM Service
- Template File Name:** TEM\_Service\_template.html
- Project Name prefix:** TEM\_
- Default Service Contacts:** Admin, Facility (facadmin@acme.edu). A 'Save' button is to the right.

 The sidebar on the left is the same as in the previous screenshot, with 'Resources Admin' highlighted.

Equipment sc... Add New Service

**TEM Service**

Service Name:

Template File Name:

Project Name prefix:

Default Service Contacts:

Is Active:

Save

Service Items						
Item Name	Related Resource	Name of Unit	Int. Rate	Ext. Rate	Default Qty	
<input type="text"/>	Service	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	+
Image Processing and Analysis	Service	Hrs	120	240	4	✓ ✕
TEM Beam Time	TEM J2100F	Hrs	100	200	2	✓ ✕
Sample Preparation	Service	Hrs	120	240	8	✓ ✕

## 7.9 Add new resource and assign resource managers

Login as Facility Admin, go to Resources Admi. Click on “Add New Resource” drop-down.

**Resource Configuration**

Electron Microscopy Lab

Equipment  
Lab Space or Cleanroom  
Safety Training or Seminar

There are three types of resources supported in FOM. Equipment is usually time-exclusive resource that a user may book time using a calendar. Lab Space or Cleanroom is a resource that may be booked and used by multiple users simultaneously. Safety Training or Seminar is a type of resource that users need to access only once. Safety Training may be associated with a Safety Certificate defined in Section 6.1.

The screenshot shows the FOM interface. At the top, there's a 'Resource Configuration' header with several dropdown menus: 'Electron Microscopy Lab', 'Regular Resource', 'Special Resource', and 'Equipment' (circled in red). Below this is a blue header for 'General Information'. The form includes the following fields:

- Resource Type:** General instrument with an online calendar
- Resource Name:** [Empty text box]
- In Facility:** Electron Microscopy Lab [Dropdown]
- Revenue Account Number:** 00000 [Text box] This is the financial account number to receive usage fees.
- Resource Managers:** Select one or more managers: [Dropdown]
- Primary Contact Email:** [Text box] This email is used to send automatic emails.
- Description:** [Large text area]
- Color Code:** #e2b9a6 [Text box] Random This color code set the background color of the instrument in Calendar page.

A 'Save' button is located at the bottom right of the form.

- a) **Resource Type.** In FOM, there are many different types of resources, such as Services that lab staff provides to users, consumables that users may check out when logging off instrument (or buy separately), accessories (or operation modes) that may be attached to an instrument, general instrument with scheduler, cleanroom or facility that is shared by multiple users, door lock controls, etc. Some special type of resources may not be available with your FOM installation. Please contact FOM Networks if you need FOM to host special type of resources.
- b) **Resource Name.** This is easy to understand- the name of the resource. FOM accepts Letter and Numbers only in the name and be brief. FOM supports up to 100 characters in this field.
- c) **Financial Account Number.** This is the revenue account of the resource. In FOM, each user may have multiple account numbers, from which the user can choose to pay for the usage fee. This Financial Account Number is where the money will go to.
- d) **Resource Managers.** Select one or more users as the managers of this resource. All the managers must have usernames and emails registered as normal users before they can be assigned as resource managers.
- e) **Description.** Users will see what you type here. Please explain what the resource can do in plain language so new users can easily understand. Up to 255 characters.
- f) **Color Code.** This field defines a HEX code for the background color in the page header area of this instrument calendar. You may define your own color-coding for your users to easily recognize which instrument calendar they are looking at.

## 7.10 Instrument parameters configuration

There are many parameters that an instrument manager can set for each individual resource. If you require any feature but cannot find it in FOM, please contact FOM Networks, Inc. and we will be able to add the feature for you.

## 7.10.1 Calendar Settings

**Calendar Settings**

Schedule Increment: 30 minutes

Day Time Start: 09:00

Day Time End: 17:00

Consider Weekends as Nights:

Default Available Days: Monday morning  |  |  |  |  |  |  |  |  |  | Sunday afternoon

Save

- Schedule Increment.** This field defines the minimum time slot in the resource calendar. Depends on the nature of the instrument, some you may define 2-hour increment, some you may define 15-minute increment. Please note that many other settings in this page are set with this increment as the counting unit. This number must be integer divisor of 24x60 minutes.
- Day Time Start and Day Time End.** These two fields define the start and the end of the official working hours. In FOM, a user, especially newly trained users, may be granted Daytime access only to the resource. Then this user can only book time between Day Time Start and Day time End, Monday to Friday. If you uncheck the box “Consider weekends as nights”, Saturday and Sunday is considered as normal weekdays.
- Default Available Days.** This line defines when the resource is available for users to book time. For example, if you have regular maintenance every Friday afternoon, you uncheck the corresponding checkbox.

## 7.10.2 Access Control

**Access Control**

EasyLogon Reader ID:  Leave blank if no EasyLogon used

Relay Communication Method: No Access Control

New User Rules

No Access Control  
FLOB-01  
NP Series  
FOMLock software client

Save

- Easy Logon Reader ID.** The EasyLogon reader is a hardware device providing the capability for users to swipe their institutional ID card to logon/logoff FOM resources, so that users need not use a computer or mobile device to logon/logoff. EasyLogon can also be used with Door Locks to control the entry/exit of a lab space, and it supports all kinds of institutional ID card system, including cards with magnetic stripes, barcodes, RFID chips, and QR codes.
- Relay Communication Methods.** FOM supports many different types of access control relays, either hardware-based or software-based. If you have a hardware box but do not see the corresponding method listed, please contact FOM Networks and we will be able to add it to your FOM system. Once you selected a proper method, more options will show up corresponding to that type of access control modules.

### 7.10.3 New User Rules

**New User Rules**

**User agreement file URL:**  This one is equipment specific. For facility-wide agreement, set in Facility Config page.

**Number of trainings needed:**  Input 0 if no training is needed, and users will be granted any time access as soon as they apply to use.

**Require Access To:**  Before applying this equipment, the user must already has access to these resources.

**Suspend user access:** if continuously no use for  days. Input 0 for no limit.

**Message to new users:**

Save

- a) **User Agreement URL.** This field allows you have a user agreement document to be displayed to every new user as soon as the user applies to get training. User must then click “I agree” to continue the application process.
- b) **Number of Trainings Needed.** For some complicated instrument, you may want to set multiple trainings before a user can be granted access. When lab staff send out email notice in the Email List page, the staff can select a specific group of users to send email to. The number of trainings that a user has attended is shown at the top of the Admin Home page, following the name of the trainee.
- c) **Require Access To.** An advanced and complicated instrument may require that the user must have access to another basic or easier instrument before this user can be trained on this instrument. The Require Access To can be chained up if there is a set of requirements needed for a user to apply access to this instrument.
- d) **Suspend user access.** This setting allow FOM to automatically suspend a user’s access to this resource if the user does not use the resource for the set days.
- e) **Message to new users.** The message you enter here will be presented to every user who applies to get training on this instrument. For example, you may want to tell the new users if you have regular training sessions at the beginning of each month.

### 7.10.4 Reservation Limits

 Express Logon,  Nights and weekends.' 4. 'Maximum Time per Day:' with a numeric input field containing '0' and a note: 'in unit of increment. Input 0 or large number for no limit.' A 'Save' button is located at the bottom right of the form."/>

**Reservation Limits**

**No Sooner Than:**  minutes in advance that a user may book time. This is for the equipment that requires preparation and cannot be used immediately with Express Logon.

**No Later Than:**  days in advance that a user may book time. This is for the busy resources that you don't want users to book many days in advance. Input 0 for no limit.

**Maximum Time per Session:**  in unit of increment. Input 0 or large number for no limit. Also apply to  Express Logon,  Nights and weekends.

**Maximum Time per Day:**  in unit of increment. Input 0 or large number for no limit.

Save

- a) **No Sooner Than.** This field defines the earliest time a user may reserve. For example, if you have an instrument that users cannot reserve and use it right away (Express Logon) but requires some time to prepare. If you define no sooner than 1440 minutes, users will not be able to reserve any time within 24 hours.
- b) **No Later Than.** For busy instruments you may not want your users to reserve time 6 months later and forget about the reservation. If you define no later than 21 days, the user will not be

able to reserve any time after 3 weeks. If you set this to non-zero, more settings will show up such as the maximum time within the set days and options when you want to open new reservation time to users.

- c) **Max Reservation Time within days set above.** This field defines how many increments a user may reserve within the no-later-than days. For example, you may define a user can reserve up to 48 increments within 21 days.
- d) **Open New Reservation Options.** This setting is related to the “No Later Than” setting. For example, if you define no later than 7 days and choose to open hour by hour, a user may reserve until the current hour of the 7<sup>th</sup> day. If you choose open day by day, a user may only reserve until midnight of the 7<sup>th</sup> day.
- e) **Maximum Time Per Session.** This field defines how many increments a user may reserve in a single session. For busy instrument you may not want your user to block several hours in a single session.
- f) **Maximum Time Per Day.** This is similar to the previous setting. This setting limits how many increments a user may reserve within one day, which may be multiple sessions.

### 7.10.5 Time-outs

**Time-outs**

**Early Cancellation:**  minutes before reserved start time. Any cancellation after this time is subject to late cancellation fee.  Email all users when late cancellation happens.

**No Cancellation Within:**  minutes before reserved start time.

**Auto Logon:**  When turned on, reserved sessions will be automatically logged on at reserved start time.

**Auto Logoff:**  minutes after reserved end time. Input large number for no auto-logoff.

**No-Show Timeout:**  minutes after reserved start time. Input 0 or large number for no detection of no-show.

**Forgot Logoff Timeout:**  minutes after reserved end time. Input large number for no detection of forgot-logoff.  Email user when forgot-logoff happens

- a) **Early Cancellation.** This field set the number of minutes so that a user can cancel their reservations without late cancellation fee.
- b) **No Cancellation Within.** This field defines a time of minutes so that a user cannot cancel or modify a reservation before the reserved start time.
- c) **Auto Logon.** This is for the convenience of users. If you set to 1, FOM will automatically logon the instrument at the reserve start time, so the user who reserved the time does not need to logon before using the instrument. However, for some instrument you may not want to turn this on to avoid instrument being logged on even the user doesn't show up.
- d) **Auto Logoff.** If this is set to a non-zero minutes, FOM will logoff for the user after the set minutes of the served end time. Please be cautious when turning this feature on. It might be dangerous to the instrument if the access control relay box is turned off automatically and the user is using the instrument.

- e) **No-Show Timeout.** This field defines a timeout minutes so that a user’s reservation is automatically removed from the instrument calendar if the user does not show up within the set minutes from the reserved start time. This setting enables other users to Express Logon in case a user does not show up at the reserved session.
- f) **Forget Logoff Timeout.** This field is usually set with a fairly large number, for example 480 (8 hours). The main difference between Forget Logoff and Auto Logoff is the calculation of usage fee. Auto Logoff is treated the same as user manually logoff. Forget logoff may have different fee calculation, based on the Forget logoff charge rate listed at the Fee Structure section. Forget logoff fee calculation is the same as auto logoff when the option of “charge full elapsed time” is selected in forget logoff charge. There are minor differences such as email and comments in Usage Records. Forget logoff usually triggers an email to the corresponding user, but auto logoff does not.

## 7.10.6 Miscellaneous

**Miscellaneous**

**Safety Requirements:** [Click here to edit safety requirements](#)

**Keep Maintenance Records:**  When turned on, managers can view and edit maintenance records of this tool.

**Email before session starts:**  minutes before reserved start time. This email conatins a meeting invitation for users to add to their personal calendar.

**Email after session ends:**  minutes after reserved end time. This is to remind user to logoff in case the user forgot to. No email is sent if user already logged off.

**Charge Policy:**  ▼

**Print QR Code:** [Click here to print QR](#) Use QR code for users to scan and logon instrument or enter room using a smart phone.

**Export User Permissions:** [click here to download](#)

**Import User Permissions:**  To avoid messing up user permissions, it is recommended to download first, then modify and upload.

- a) **Safety Requirements.** This link allows managers to define a set of Safety Certificates that users are required to fulfill before using this resource. The available Safety Certificates are defined by either System Admin or Facility Admin in Section 6.1.
- b) **Keep Maintenance Records.** If you set this on, all the maintenance activities such as instrument under repair, maintenance, down time, etc are tracked and be visible to the managers in the left-side navigation menu - Maintenance Records page.
- c) **Email before session starts.** This field sets X minutes before the reserved time to send reminder email to the user.
- d) **Email after session ends.** This fields sets X minutes to send email reminder to the user if the user still has not logoff the instrument after X minutes of the reserved end time.
- e) **Charge Policy.** By default, FOM supports three charge policies, charge per use, per actual time, or a combination of reserved or actual used time. The third policy is most widely used, which defines the usage fee being calculated by (the later of reserved or actual end time) – (the earlier of the reserved/actual start time). If you need more charge policies, please contact FOM Networks for a customization.

- f) **Print QR Code.** This link allows managers to print a QR code that is specific to this resource, so that any authorized user may use their smart phone to scan the QR code and quickly access the resource calendar, check the current users in a lab space, and logon/logoff.
- g) **Export User Permissions.** This link allows manager to export all the users of this resource and their permissions, such as not-enrolled, view-only, to-be-trained, daytime, anytime, and resource manager.
- h) **Import User Permissions.** This setting allows manager to upload and import user permissions following the same format of Excel downloaded with item (g) above.

## 7.10.7 Fee Structures

Fee Structures							
Screen Name	Min Charge	Day Rate	Night Rate	Training Rate	Service Rate	Cancellation Charge	Forgot Logoff Charge
<input type="text"/>	<input checked="" type="radio"/> Fixed <input type="radio"/> % Reserved	<input checked="" type="radio"/> Fixed <input type="radio"/> % Elapsed					
Admin_Use	0	50	40	0	0	<input checked="" type="radio"/> Fixed <input type="radio"/> % Reserved	<input checked="" type="radio"/> Fixed <input type="radio"/> % Elapsed
Internal	0	50	40	0	0	<input checked="" type="radio"/> Fixed <input type="radio"/> % Reserved	<input checked="" type="radio"/> Fixed <input type="radio"/> % Elapsed
External For-profit	0	0	0	0	0	<input checked="" type="radio"/> Fixed <input type="radio"/> % Reserved	<input checked="" type="radio"/> Fixed <input type="radio"/> % Elapsed
External Non-profit	0	0	0	0	0	<input checked="" type="radio"/> Fixed <input type="radio"/> % Reserved	<input checked="" type="radio"/> Fixed <input type="radio"/> % Elapsed

FOM supports unlimited number of fee structures. Internal, External For-Profit, External Non-Profit, and Admin\_Use are four default fee structures. You may add more discount structures for each individual resource as needed.

Fee Structure settings may also be updated by Instrument Manager of the resource.

- a) **Screen Name.** This field defines the name of the fee structure so that later you will choose the applicable fee structure by the name.
- b) **Minimum Charge.** This field defines the minimum charge for a session. If the calculated usage fee of a session is less than this amount, the user will be charged with this minimum charge value.
- c) **Day Rate.** The daytime is defined in upper part of the page, Calendar Settings section.
- d) **Night Rate.** In many facilities nighttime usage is encouraged with discounted rate. Nighttime is defined in the Calendar Settings section above.
- e) **Training Rate.** This training rate is used for the calculation of training fees when a manager logs off “For training” session, select trainees, and provide the service time.
- f) **Service Rate.** Similar to training rate, this service rate is used for the calculation of service fees when a manager logs off “For paid service research” session and select user for whom the service is done for, then provide the service time.
- g) **Cancelation Charge.** Cancellation charge may be applied if a session is cancelled within the Early Cancellation timeout defined in the Time-outs section above.
- h) **Forgot Logoff Charge.** Forgot logoff charge may be applied as a penalty in addition to the reserved time charge, if the charge policy is defined as the combined reserved time and the actual usage time, as defined in Time-outs section above.

## 7.10.8 Link accessories and consumables to an instrument

Accessories and consumables may be linked to an instrument, so that users will see these options when they reserve time or logoff a session on the instrument. The prices of the accessories and consumables are defined in Special Resources drop down in the same page.

**Accessories, Operation Modes, or Instrument Setup**

\* Cryo stage attachment Save

*To add more accessories to this equipment, select Accessories in the Special Resources dropdown list above and add accessories there first.*

---

**Consumables, Charge Per Sample, or Coating Thickness**

Consumable Name	Default Amount	
Select consumable		+
LN2	2	✓ ✕
Au Deposition Thickness	0	✓ ✕

## 7.10.9 Logoff reminder items

This part defines one or more reminder items to remind the user when they are logging off the instrument, such as to close gas valves, lock the doors, etc.

**Logoff Reminder Items**

	+
If you are the last user of the day, please remember to lock the door.	✓ ✕
Reset to normal TEM MAG mode after use.	✓ ✕

## 7.10.10 Documents and operation manuals of an instrument

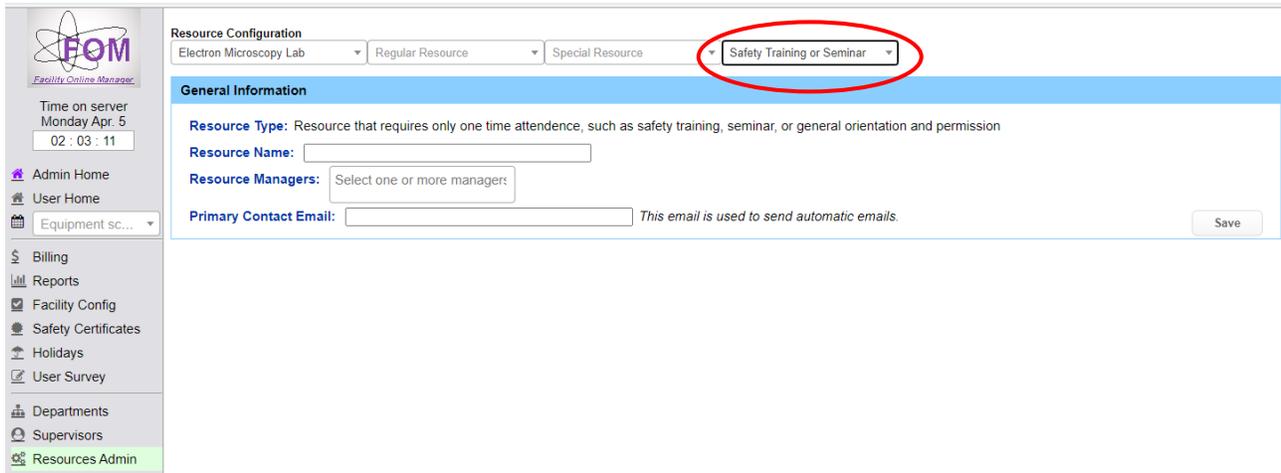
This part allows a manager to upload or link related documents such as operation manuals for users to download in the Documents (left navigation menu) page.

**Documents, Operation Manuals, or References**

Document Name	Document URL	
		+
Operation Manual	<a href="http://localhost:8080/fomv2/downloadFile?fn=FOM_User_Manual.pdf">http://localhost:8080/fomv2/downloadFile?fn=FOM_User_Manual.pdf</a>	✓ ✕

## 7.11 Add new Safety Training/Seminar

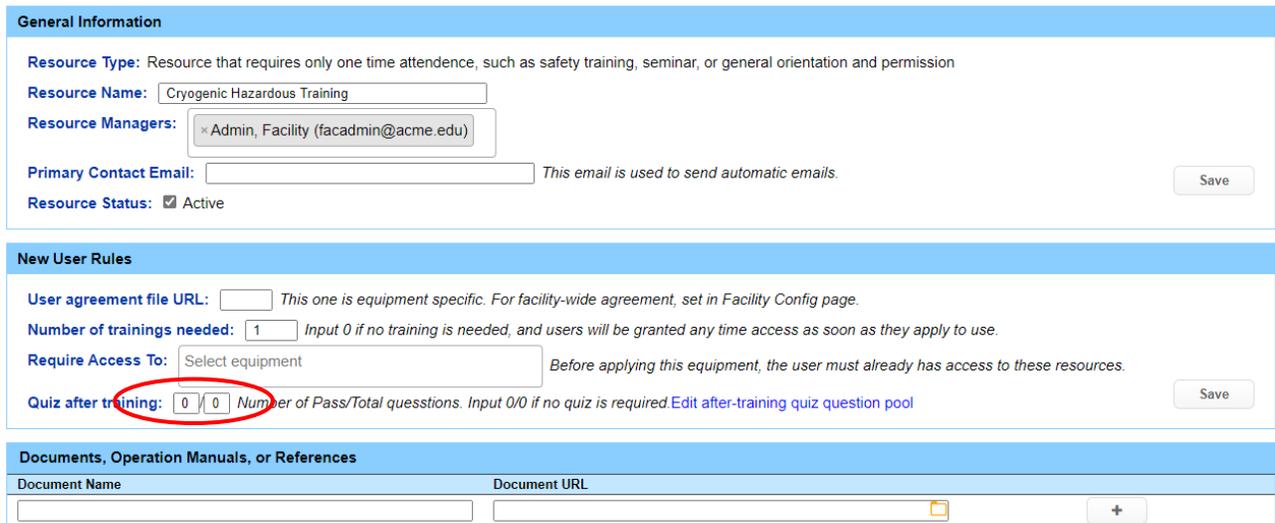
Addition of safety training or seminar is very similar to the addition of new equipment. Login as Facility Admin, go to Resources Admin page, click Add New Resource drop-down, and select “Safety Training or Seminar”.



The screenshot shows the FOM (Facility Online Manager) interface. On the left is a navigation menu with items like Admin Home, User Home, Equipment sc..., Billing, Reports, Facility Config, Safety Certificates, Holidays, User Survey, Departments, Supervisors, and Resources Admin. The main content area is titled 'Resource Configuration' and includes dropdown menus for 'Electron Microscopy Lab', 'Regular Resource', 'Special Resource', and 'Safety Training or Seminar' (the last one is circled in red). Below this is the 'General Information' section with fields for 'Resource Name', 'Resource Managers' (with a selection button), and 'Primary Contact Email'. A 'Save' button is visible at the bottom right of this section.

For this type of resource, users may only apply to take once. After granted access, the user will not be able to see calendar, book time or “use” this resource.

For this type of resources, New User Rules and Documents are the only two sections available besides the General Information section.



This screenshot shows the 'New User Rules' and 'Documents, Operation Manuals, or References' sections of the resource configuration page. The 'New User Rules' section includes fields for 'User agreement file URL', 'Number of trainings needed' (set to 1), 'Require Access To' (with a selection button), and 'Quiz after training' (set to 0/0, circled in red). The 'Documents, Operation Manuals, or References' section has a table with columns for 'Document Name' and 'Document URL', and a '+ ' button to add new documents.

Each safety training resource may be assigned with a post-training quiz, and you can define how many correct answers are required to pass the exam. If the safety training has been linked to a safety certificate, the certificate will be automatically granted once the exam is passed.

## 7.12 Add new Lab Space or Cleanroom

Lab Space is a special feature of FOM to allow allocation of resources inside a lab space and the limitation of maximum concurrent users working simultaneously in a room. This is especially useful during the current pandemic of COVID-19.

The screenshot displays the FOM interface for configuring a resource. The 'Resource Configuration' section at the top shows a dropdown menu with 'Lab Space or Cleanroom' selected and circled in red. Below this, the 'General Information' section includes fields for Resource Name, Revenue Account Number (00000), Resource Managers, Primary Contact Email, and Description. The 'Calendar Settings' section includes Schedule Increment (1 hour), Day Time Start (09:00), Day Time End (17:00), and Consider Weekends as Nights (checked). The 'Access Control' section includes EasyLogon Reader ID and Relay Communication Method (No Access Control). The 'New User Rules' section includes User agreement file URL, Number of trainings needed (1), Require Access To (Select equipment), Suspend user access (0 days), and Message to new users. The 'Reservation Limits' section includes Maximum concurrent users (5, circled in red), Allow overbooking (0), No Sooner Than (0 minutes), No Later Than (0 days), Maximum Time per Session (0), and Maximum Time per Day (0).

**Resource Configuration**  
Electron Microscopy Lab | Regular Resource | Special Resource | Deleted Resource | **Lab Space or Cleanroom**

**General Information**  
Resource Type: Lab space, dedicated lab area, or cleanroom that has entry control and capacity limits  
Resource Name:   
Revenue Account Number:  This is the financial account number to receive usage fees.  
Resource Managers:   
Primary Contact Email:  This email is used to send automatic emails.  
Description:   
Color Code:  Random This color code set the background color of the instrument in Calendar page.

**Calendar Settings**  
Schedule Increment:   
Day Time Start:   
Day Time End:   
Consider Weekends as Nights:

**Access Control**  
EasyLogon Reader ID:  Leave blank if no EasyLogon used  
Relay Communication Method:

**New User Rules**  
User agreement file URL:  This one is equipment specific. For facility-wide agreement, set in Facility Config page.  
Number of trainings needed:  Input 0 if no training is needed, and users will be granted any time access as soon as they apply to use.  
Require Access To:  Before applying this equipment, the user must already has access to these resources.  
Suspend user access: if continuously no use for  days. Input 0 for no limit.  
Message to new users:

**Reservation Limits**  
**Maximum concurrent users:**   
Allow overbooking:  Number of users allowed to book but may not enter the room if maximum concurrent users is exceeded.  
No Sooner Than:  minutes in advance that a user may book time. This is for the equipment that requires preparation and cannot be used immediately with Express Logon.  
No Later Than:  days in advance that a user may book time. This is for the busy resources that you don't want users to book many days in advance. Input 0 for no limit.  
Maximum Time per Session:  in unit of increment. Input 0 or large number for no limit. Also apply to  Express Logon,  Nights and weekends.  
Maximum Time per Day:  in unit of increment. Input 0 or large number for no limit.

The “Allow overbooking” setting allows a set number of users who can still book time beyond the maximum concurrent users setting. When overbooking is allowed, some users may not be able to logon when the maximum concurrent users is exceeded.

A Lab Space allows selection of resources in the space. Reservations on any of these resources are considered reservations of the lab space as well.

Resources in this room

Save

## 7.13 Billing and reporting

Login as Facility Admin, then click “Billing” link on the left side. Billing is separate for Internal users and External users. Internal users’ billing report is usually an Excel spreadsheet listing all usage of the month, which may be customized to meet your institution requirement. External users’ billing is usually an invoice for each individual user of the period of service. External invoice usually needs an invoice template customized by FOM Networks (see section 6.2 for Facility Configurations).



**Facility Online Manager**

Time on server  
Thursday Dec. 10  
02 : 29 : 18

- Admin Home
- User Home
- Equipment sc...
- Billing
- Reports

Choose internal or external, set the start, end date, and click submit to get billing spreadsheet of this facility

Electron Microscopy Lab

Note: The start date is included but the end date only includes the previous date of the requested date entered.

Download only unlocked records.  
 Lock usage records after download to avoid accidental modifications

Internal Users

Start: 01/11/2020

End: 01/12/2020

Submit

## 7.14 Safety training and certificates tracking

Safety training and certificate tracking are critical and common to every laboratory, especially the shared facilities with students coming from various departments and with different background.

Safety certificates may be maintained by System Admin or Facility Admin. See section 6.1.



**Facility Online Manager**

Time on server  
Monday Apr. 5  
04 : 44 : 11

- Admin Home
- User Home
- Equipment sc...
- Billing
- Reports
- Facility Config
- Safety Certificates
- Holidays

List of Safety Certificates

#	Cert Code	Description	Certification URL	Expiration Days	Reminder Days	
0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Add New
1	CHEMWAS	Chemical Waste Handling	javascript:applyEquip(35	365	30	Update Delete
2	XRAY	X-Ray Training	http://safety.acme.edu	365	30	Update Delete

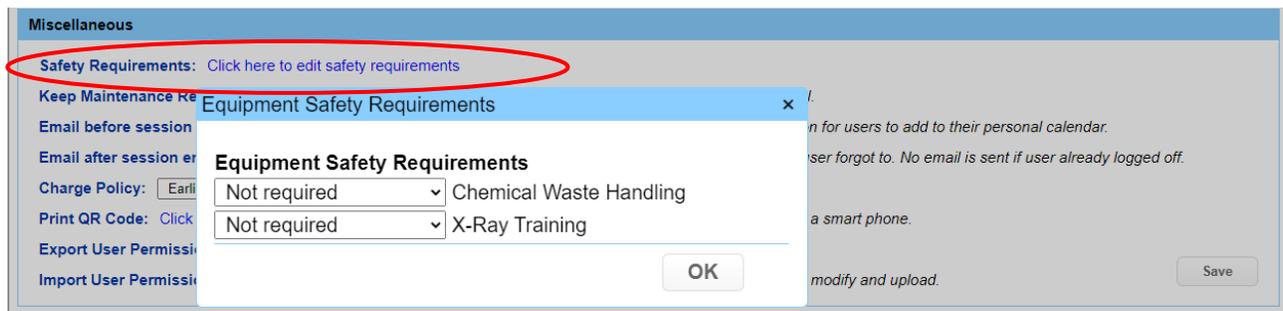
- a) **Cert Code.** Cert Code is a short identifier for the certificate. Limited to 50 characters.
- b) **Description.** This field defines more detailed description of the certificate. The note will be shown to users so that the users understands what the safety certificate covers. Limited to 255 characters.
- c) **Certificates URL.** This field provides the URL where the users may follow the link to acquire the certificates. You may click the link icon if you are to link the certificate with a FOM-hosted safety training. See section 7.12 for details.
- d) **Expiration Days.** The Expiration Days defines how many days a certificate holds valid once it is granted to a user. After these days the certificate will automatically expire and the user is required to re-take the safety training.
- e) **Reminder Days.** The Reminder Days is the number of days that FOM will automatically send out email reminders at the days before the certificate expires.

## 7.15 Safety requirements of an instrument

Once Certificate List is defined, Facility Admin and Instrument Managers may select all the required safety certificates for each individual instrument. This can be done by clicking the link in the Resources Admin, Miscellaneous section, “Click here to edit safety requirements”.

Once safety requirements are defined for an equipment, all the users on this equipment are subjected to the safety training certificates. These certificates are automatically tracked by FOM system. User cannot use related instrument if a safety certificate expires

Users’ certificate status is maintained in Users Admin page, see section 8.7 for details.



## 7.16 Define holidays

Login as Facility Admin, then click “Holidays” link of the left side. Holiday settings affect users with daytime only access. Any time users and managers are not limited by holidays. By default, FOM does not recognize any holiday. Holidays may be set differently for each individual facility.

**Facility Holidays**  
[Show past holidays](#)

**Upcoming holidays**  
 By default FOM does not recognize any holiday. To input new holidays, please use mm/dd/yyyy format.

Line#	Date	Morning / Afternoon
0	24/12/2020	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1	25/12/2020	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2	31/12/2020	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
3	01/01/2021	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
4	12/02/2021	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
5	02/04/2021	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
6	13/05/2021	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
7	26/05/2021	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
8	20/07/2021	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
9	09/08/2021	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
10	04/11/2021	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

## 7.17 Set up user survey

Login as Facility Admin, then click “User Survey” link on the left side. The survey form is created elsewhere. User survey can be set in FOM to target at specific user groups on selected instruments, or at facility level. With FOM user survey, only the selected users are offered with the survey link. Other users will not be bothered.

**User Survey**

Survey title:  Be attractive! e.g. only 3 questions, takes 1 minute etc...

Survey URL:  I recommend you use [Google Forms](#) to create the survey. The survey should take less than 2 minutes to finish.

Target User Group:  
 System Level (all users)   
 Facility Level (users in one or more facilities)   
 Equipment Level (users on one or more equipments)

## 7.18 Maintain departments

Login as Facility Admin, then click “Departments” link on the left side. The department list may be maintained by either Facility Administrators or Instrument Managers. Normal users cannot modify this information. Each user needs to select from the pre-defined list of departments when the registration form is filled. If a department is not listed at registration, the user can email one of the managers to add the department.

Department Information

0.		Add New
1.	Anthropology	Update Delete
2.	Biological Engineering	Update Delete
3.	Biology	Update Delete
4.	Chemistry	Update Delete
5.	Earth Sciences	Update Delete
6.	Electrical Engineering	Update Delete
7.	IT Services	Update Delete
8.	Materials Science and Engineering	Update Delete
9.	Physics	Update Delete
10.	Psychology	Update Delete

## 7.19 Maintain supervisors

Login as Facility Admin, then click “Supervisor” link on the left side. The supervisor list may be maintained by either Facility Administrators or Instrument Managers. Normal users cannot modify this information. Each user needs to select from the pre-defined list of supervisors when the registration form is filled. If a supervisor is not listed at registration, the user can email one of the managers to add the supervisor.

One or more Supervisor Assistants may be added to a supervisor. For more information about the Supervisor Assistant features see section 10.

Supervisor Information

Butler, Adam From ... Li

Search supervisor: Type to search ... Add new supervisor

Download this supervisor's usage report: Select facility 01/11/2020 - 01/12/2020 Submit

Title Prof

First Name Adam

Last Name Butler

Phone 224 225 9168

Email adam.butler@acme.edu

Office Room Number 101

Office Building Research Institute

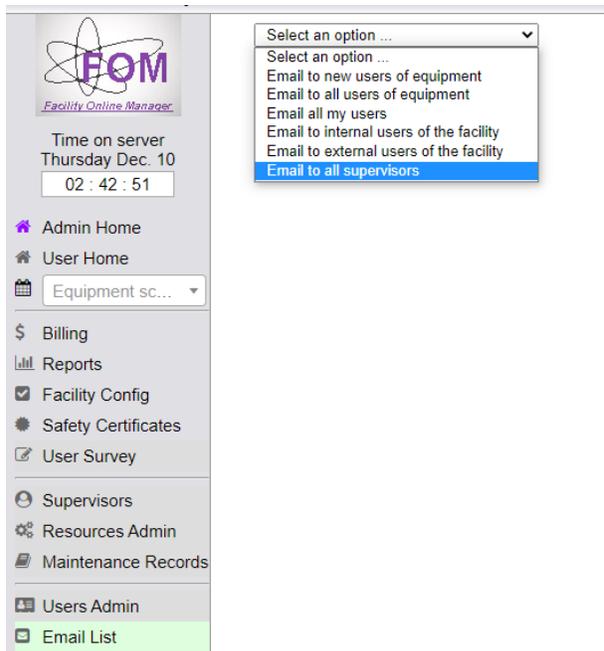
Supervisor Report  Yes [Link](#)  No

Assistants  Leave blank if not needed. Multiple emails allowed with commas, must be valid user emails in the system.

Update

## 7.20 Email List

Facility Admin or Instrument Manager may use FOM to send mass emails to difference group of users.



## 8 Instrument Manager Tasks

### 8.1 Configure instrument rules

Login as Instrument Manager and click on “Resources Admin” link on the left side, then select the instrument to be configured.

Note 1: Instrument Manager cannot add new instrument. If a new instrument needs to be added, the Facility Administrator login is required.

Note 2: Most of the parameters may be left as default unless you need that feature.

Note 3: Difference between Auto Logoff and Forget Logoff: The main difference is the calculation of usage fee. Auto Logoff is treated the same as user manually logoff. Forget logoff may have different fee calculation, based on the Forget logoff charge rate listed at the Fee Structure part of the Resources Admin page. Forget logoff fee calculation is the same as auto logoff when the option of “charge full elapsed time” is selected in forget logoff charge. There are minor differences such as email and comments in Usage Records. Forget logoff usually triggers an email to the corresponding user, but auto logoff does not.

Note 4: If a rule is required but not seen in this page, you may contact FOM Networks, Inc. for a customization to add the feature.

See section 7.10 for details.

### 8.2 Modify fee structure

In the same page of Resources Admin, scroll down to find the “Default Fee Structure” part.

Note 1: Internal, External, and Admin\_Use are three default fee structures. You may add more discount structures for each individual resource as needed.

Note 2: Fee Structure settings may also be updated by Facility Administrator of the facility.

Note 3: In addition to the daytime and nighttime rates, manager should also define the Training Rates and the Service Rates, which will be used for the calculation of training and service fees.

See section 7.10.7 for details.

## 8.3 Other resource configuration items

At the lower part of the Resources Admin page after selecting a resource, manager may configure more items related to the resource.

See Section 7.10 for more information.

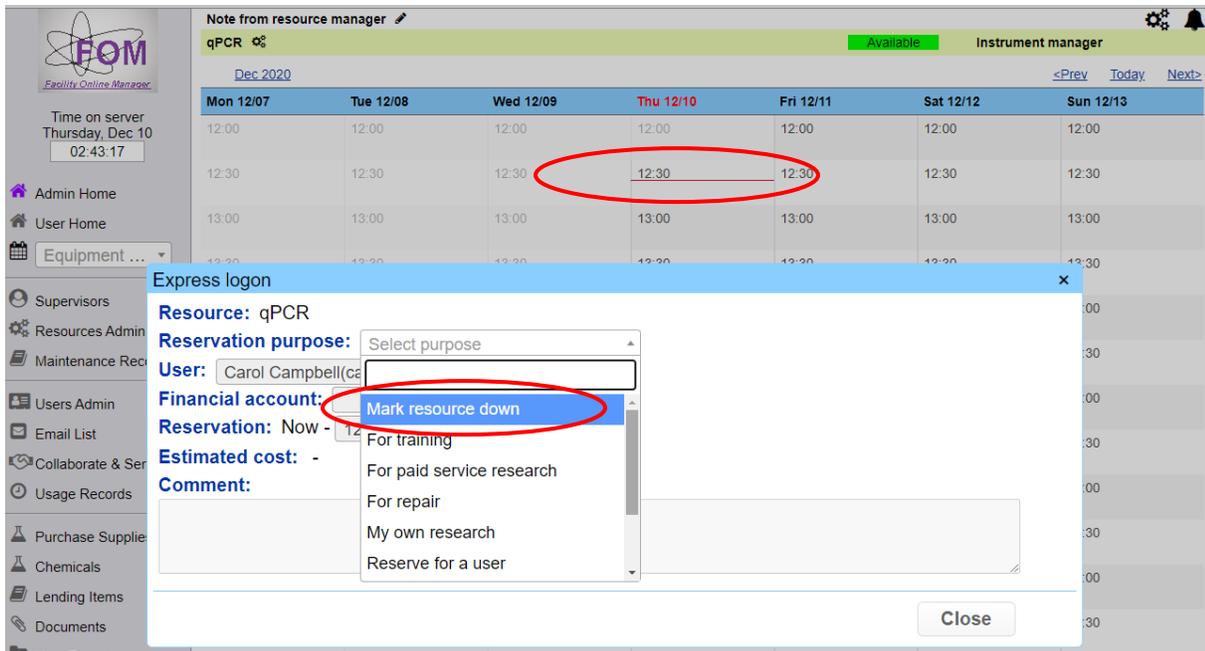
## 8.4 Change instrument status

Instrument Manager may change the instrument status at any time. In the Admin Home page, click the Equip Status to change. See section 7.1 for details.

The screenshot displays the 'Facility Admin' interface. At the top, the page title is 'Trial University - FOM - Admin Home' and the user is identified as 'Facility Admin'. The main content area shows two equipment cards: '3D Printer MJM' and 'Cleanroom'. The '3D Printer MJM' card has its 'Equip status' set to 'Available', which is circled in red. A modal dialog box titled 'Mark Equipment Down' is open over the '3D Printer MJM' card. The dialog contains the following fields and options:

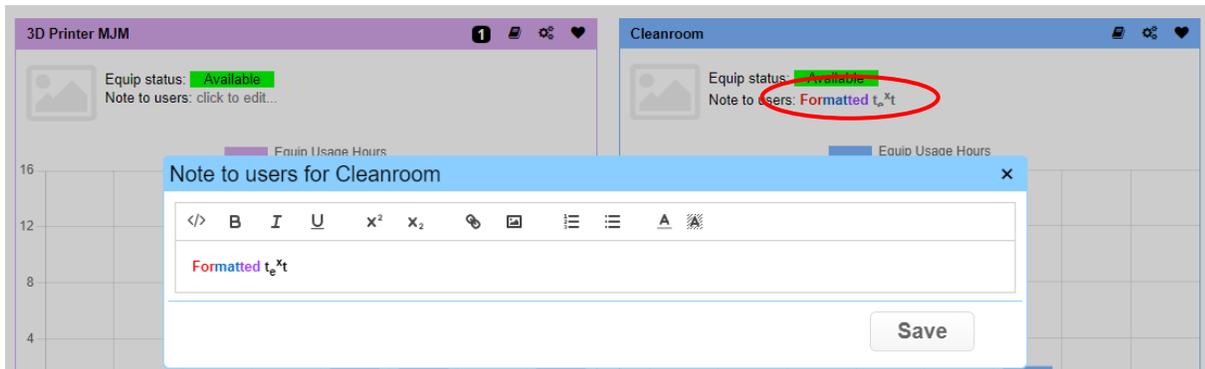
- Title: 3D Printer MJM - Mark equipment down
- Input tech notes (optional): [Text area]
- Estimated end time: 10/24 07:00
- Notification options:
  - No email to users
  - Email users today
  - Email users today and tomorrow
  - Email all users of the equipment
- Email subject: 3D Printer MJM is down
- [Text area for additional notes]
- Mark Down button

Or by clicking the current time slot in the instrument calendar page.



## 8.5 Note to users

A manager may add a quick note to the instrument users either in the Admin Home



or by clicking the Pencil Icon at the top of the Calendar page.



## 8.6 Book instrument for different purposes

In Admin Home, User Home, or the drop-down menu on left side. Click on the instrument name to see the calendar of this instrument. Click on an available time slot to reserve the time.

As an Instrument Manager, you may reserve the instrument for different purposes, including for repair, for maintenance, for training, for paid service research, for your own research, or reserve for another user.

Note 1: If you reserve for another user, that user must have already granted access to the instrument.

Note 2: Some purpose selections will trigger automatic comment text, so that every user can see the purpose on the calendar.

Note 3: Reservations may be synchronized with personal calendar (such as google calendar or outlook calendar). Such preferences are set in “My Profile” page.

The screenshot shows a 'New reservation' form for the resource 'Helios DualBeam FIB'. The 'Reservation purpose' dropdown menu is open, showing options: 'For training', 'For paid service research', 'For repair', 'My own research', 'Reserve for a user', and 'For maintenance'. The 'For training' option is selected and highlighted. A red circle is drawn around the dropdown menu. Other fields include 'User' (Facility Admin), 'Financial account', 'Reservation' (12/10 10:00), 'Estimated cost' (-), and 'Comment'. A 'Close' button is at the bottom right.

### 8.6.1 User training

When booking an instrument and selected “For training” purpose, then a pop-up window shows the attendee list. Manager may set the maximum number of attendees for the training session and select one or more attendees.

The screenshot shows the 'New reservation' form with 'Reservation purpose' set to 'For training'. The 'Maximum number of attendees' is set to 3. The 'Reservation' is for 12/11 10:30 - 12/11 11:00. The 'Attendees' section is visible with columns for 'User', 'Account', 'Fee structure', and 'Access level'. The 'User' dropdown is set to '- Select user -'. The 'Repeat' dropdown is set to 'None' until 12/11/2020. The 'Comment' field contains the text '//For training. Allow up to 3 attendees.'. 'Reserve' and 'Close' buttons are at the bottom right.

After a training session is booked by the manager, any user may sign up to attend the training if the maximum number of attendees allows.

Future reservation

**Resource:** Helios DualBeam FIB  
**User:** Facility Admin(facadmin)  
**User email:** facadmin@acme.edu  
**Department/Company:** IT Services  
**Reservation:** 12/10 10:00 - 12/10 10:30  
**Comment:**  
//For training. Allow up to 3 attendees. //Bella Baker  
[Sign up to attend this training session](#)

With one or more users signed up the training, the manager can click on the booked time and click to send email to all attendees.

Future reservation ×

**Resource:** Helios DualBeam FIB  
**Reservation purpose:** For training  
**Maximum number of attendees:** 3  
**Reservation:** 12/10 9:00 - 12/10 10:30

**Attendees:** [Email all attendees](#)

User	Account	Fee structure	Access level
Bella Baker	6-218-5246-Bees-Ants	Internal	Not enrolled
Carol Campbell	650-4735000-60012001	Internal	Day time user
- Select user -			

**Comment:**  
//For training. Allow up to 3 attendees.

[Cancel without charge](#) [Cancel with charge](#) [Close](#)

Record ID [43](#) at 2020-12-10 08:51:50

When logging off a training session, the manager may enter the Service Time and the training fee will be calculated based on the training rates defined in the Resources Admin page.

Resource is being used x

**Resource:** Helios DualBeam FIB

**Reservation purpose:** For training

**Reservation:** 2020-12-10 08:30:00 - 2020-12-10 10:30:00

**Actual usage:** 12/10 8:59 - 12/10 10:00

**Attendees:** [Email all attendees](#)

User	Account	Fee structure	Access level
Bella Baker	6-218-5246-Bees-Ants -	Internal	Not enrolled
Carol Campbell	650-4735000-60012001	Internal	Day time user
- Select user -			

**Service time:** 2 : 35

**Comment:**  
//For training. Allow up to 3 attendees. //Bella Baker

Record ID [43](#) at 2020-12-10 08:59:07

### 8.6.2 Book time for paid service research

When reserving a time on instrument, select “For paid service research” as the purpose. Similar to the “For training” sessions, the manager may select one or more users for whom the service is done for, and FOM will automatically charge the user for a service fee.

Note: Service fee may also be tracked in the Collaborate & Service module of FOM. The Collaborate & Service module provides more flexible tracking of all collaboration activities including customization of Service Request Form, document sharing, progress reports, and service charges.

New reservation x

**Resource:** Helios DualBeam FIB

**Reservation purpose:** For paid service research

**Reservation:** 12/11 9:00 - 12/11 9:30

**Attendees:** [Email all attendees](#)

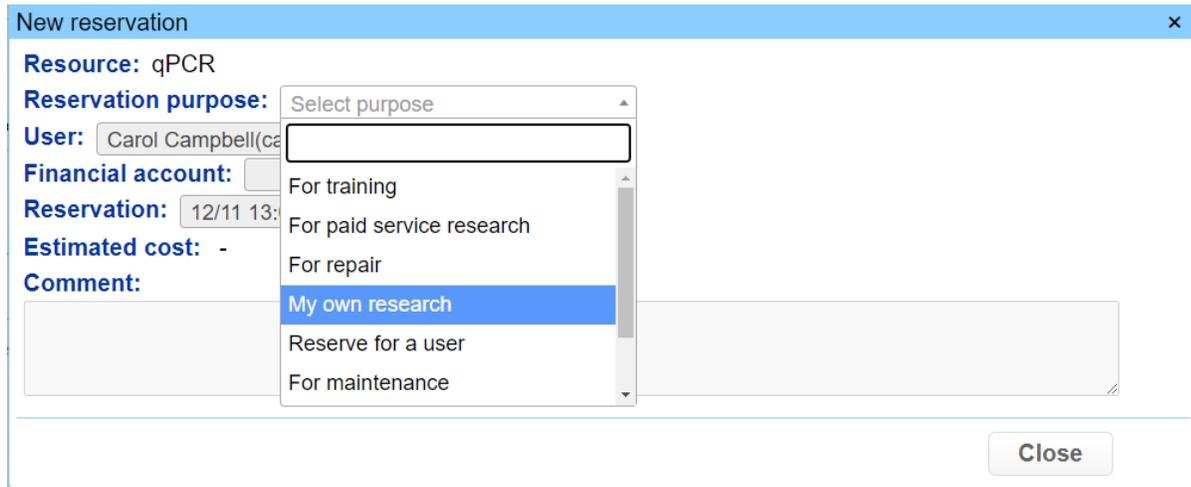
User	Account	Fee structure	Access level
Carol Campbell	650-4735000-60012001	Internal	Day time user
- Select user -			

**Repeat:** None until 12/11/2020

**Comment:**  
//For paid service research

### 8.6.3 Book time for manager's own research

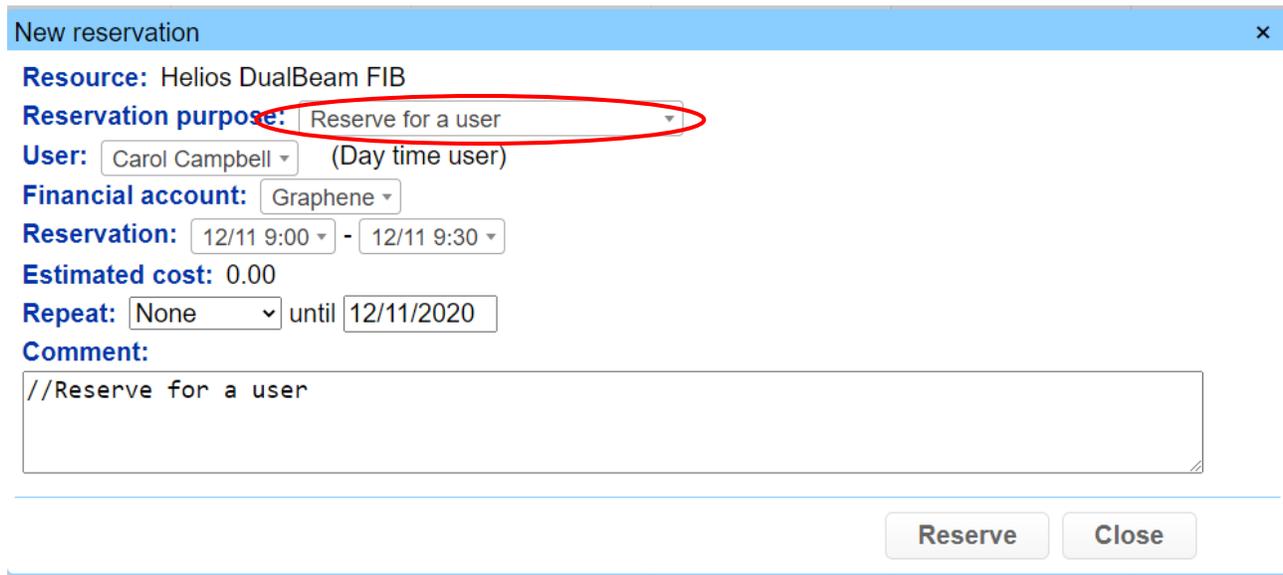
When the manager books time and select purpose "For my own research", the reservation is the same as a regular user booking. When booking time for administrative purposes, the manager is not required to select a financial account number and the default Admin\_Use account is automatically assigned. However, when booking time For my own research, a valid financial account number is required.



The screenshot shows a 'New reservation' dialog box. The 'Resource' is 'qPCR'. The 'Reservation purpose' dropdown menu is open, showing options: 'For training', 'For paid service research', 'For repair', 'My own research' (highlighted), 'Reserve for a user', and 'For maintenance'. The 'User' is 'Carol Campbell(ca)'. The 'Financial account' is empty. The 'Reservation' is '12/11 13:'. The 'Estimated cost' is '-'. The 'Comment' field is empty. A 'Close' button is at the bottom right.

### 8.6.4 Reserve for a user

A manager may also book time on behalf of a user. The result is the same as the user making reservation by themselves.



The screenshot shows a 'New reservation' dialog box. The 'Resource' is 'Helios DualBeam FIB'. The 'Reservation purpose' dropdown menu is open, showing 'Reserve for a user' (circled in red). The 'User' is 'Carol Campbell' with '(Day time user)' next to it. The 'Financial account' is 'Graphene'. The 'Reservation' is '12/11 9:00' - '12/11 9:30'. The 'Estimated cost' is '0.00'. The 'Repeat' is 'None' until '12/11/2020'. The 'Comment' field contains '//Reserve for a user'. 'Reserve' and 'Close' buttons are at the bottom right.

## 8.7 User Safety Certificate Status

Below the user's profile, Instrument Managers may update the Safety Certificate Status for this user. Managers may manually update the Date Certified and Expiration date if needed.

User Safety Certs						
Cert Code	Description	Notes	Date Certified	Expiration Date	Is Active	
BBP	Bloodborne Pathogens for Clinical or Research Lab Workers Certification	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
BIOSAFE	Biological Safety Certification	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
CHEMWAST	Hazardous Chemical Waste Management Certification	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
COMP GAS	Compressed Gas Cylinders Certification	<input type="text"/>	04/24/2016	03/28/2013	<input checked="" type="checkbox"/>	
CRYOCYL	Filling and Maintenance of Liquid Nitrogen Tanks Certification	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
HFLUOR	Hydrofluoric Acid and Fluoride Ion Hazards	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	

## 8.8 User's Account Number

In this part, a manager may update user's account number for the user. User may add account number by themselves.

Chartstring							
ID	Research description name	Chartstring	Account Status	Expense limit	Hour limit	Expiration date	
418	Electronics	650-4011400-60016371-01	Expired	18767/0	2360/0	<input type="text"/>	<input type="button" value="Update"/>
Add new	<input type="text"/>	<input type="text"/>	Active	0	0	04/24/2116	<input type="button" value="Add New"/>

## 8.9 Grant user access

New users who just applied to use an instrument are listed at the top of Admin Home page. Click on the user's name will lead to Users Admin page.

The screenshot shows two instrument panels: '3D Printer MJM' and 'Cleanroom'. Both show 'Equip status: Available'. A notification window titled 'List of new users' is overlaid on the 3D Printer MJM panel. The notification lists 'New users on 3D Printer MJM' and includes a link for 'Karen Rothberg: Applied on 01/31/2015'. Below the notification, there are two bar charts showing 'Equip Usage Hours' for the last 8 days. The 3D Printer MJM chart shows usage on 10/20, 10/21, and 10/23. The Cleanroom chart shows usage on 10/19, 10/21, 10/22, and 10/23.

In Users Admin page, scroll down to see the list of all the instrument that you manage. You may grant multiple instruments with the same fee structure and access level by checking the check boxes on the left side.

Note: Fee structures are defined in Resources Admin page.

Instrument	Fee Structure	Daytime Rate (Per hour or per use)	Nighttime Rate (Per hour or per use)	User Level	Remaining and total hours	# of trainings
<input type="checkbox"/> Door 1114	Select One	0	0	Not enrolled	0	0
<input type="checkbox"/> Door 1149	Internal	0.00	0.00	Any Time Access	0	0
<input type="checkbox"/> Door 1154	Select One	0	0	Not enrolled	0	0
<input type="checkbox"/> Poster Printer	Select One	0	0	Not enrolled	0	0
<input type="checkbox"/> SPF FIB	Internal	54.50	34.50	Not enrolled	0	0
<input type="checkbox"/> SPF IBT-right	Select One	0	0	View Only	0	0
<input type="checkbox"/> SPF MultiPrep	Select One	0	0	To Be Trained	0	0
<input type="checkbox"/> SPF NanoMill	Select One	0	0	Day Time Access	0	0
<input type="checkbox"/> SPF Nikon OM	Select One	0	0	Any Time Access	0	0
<input type="checkbox"/> SPF PICO 124	Select One	0	0	Instrument Manager	0	0
<input type="checkbox"/> SPF PICO 124	Select One	0	0	Not enrolled	0	0

## 8.10 Collaboration and service tracking

In order to use this feature, the system must be customized to present pre-defined Service Request Form. One example of the Service Request Form is shown below. Please contact FOM Networks if you plan to use this collaboration and service tracking feature of FOM.

In the Service Request form, there may be text fields, radio buttons, check boxes, etc to collect all the necessary informatin about the user who initiated the collaboration and the specimens submitted to the lab staff.

With a Service Request form, a lab staff may keep track of all the details of unlimited number of ongoing collaborations and services.

**THE OHIO STATE UNIVERSITY  
MASS SPECTROMETRY & PROTEOMICS FACILITY  
SERVICE REQUEST FORM**

To submit samples to out Facility, please do the following in this order:  
**FILL OUT** the online Service Request Form; click **SUBMIT**; click on **Collaborate & Service**;  
**OPEN** Service Request Form just created; **UPLOAD** additional informaton (if necessary); **PRINT** the Form.  
**OSU Faculty:** Bring the sample(s) and a printed copy of the Service Request Form (only) to our Facility between 8am-5pm, Monday-Friday. Bring your BUCK ID for access to our Facility.  
**Non-OSU Faculty/Gov't Agency/Industry:** Mail or bring sample(s) and a printed copy of the Service Request Form (only) to the address listed below between 8am-5pm, Monday-Friday.

Date Submitted: 06/22/2014

**CONTACT INFORMATION**

Student Name: Shuyou Li Email: syli@northwestern.edu Phone: 1-6723  
 Advisor Name: NUANCE Staff Email: nuance@northwestern.edu Phone: 7-2318  
 Dept: Center NUANCE Univ/Company: \_\_\_\_\_

**Small Molecule Sample Information (For small molecule service, upload a picture of your structure.)**

Sample Name: \_\_\_\_\_ Sample Quantity: \_\_\_\_\_ mg Concentration: \_\_\_\_\_

Soluable In (Check One or more):  Methanol  Acetonitrile  Water  THF  Chloroform

Analysis (Check One):  
 Accurate Mass  GC-MS Injection  GC-MS Method Dev.  Nominal Mass (>1000 amu)  Nominal Mass(<1000 amu)  
 LC-MS Injection (1-15 Samples)  LC-MS Injection (Tray up to 40 Samples)  LC-MS Injection (Autosampler up to 120 Samples)  LC-MS Method Dev.  Self-Op Use (1/2 Hr Minimum)  Staff Time (Process Data, Training, Sample Prep)

Formula: \_\_\_\_\_ MW: \_\_\_\_\_

Additional Sample Comments:

**The Ohio State University, Mass Spectrometry & Proteomics Facility**  
 460 W 12th Ave, 250 Biomedical Research Tower, Columbus, OH 43210  
 Phone: 614-292-4821 Fax: 614-292-5955 www.ccc.ohio-state.edu/MS

SAMPLE ID #: \_\_\_\_\_  
(Office User Only)

Once a customized Service Request Form is added into the FOM system, a user may initiate a collaboration request by submitting this form by clicking the “Collaborate & Service” link on the left side of FOM screen. All the ongoing collaboration projects are tracked in the same page.

**Request New Service**  
To submit service on behalf of a user  then

**My Projects**  
Show projects requested  last week,  last month, or between  start date and  end date and with status  Show All

Category	Assigned To	Project ID	Requested By	Request Date	Last Update	Status
LC-MS	TBA	MS_000001	Alan Anderson	05/14/2018	(05/14/2018 04:37) Initial request	Approval Pending
MALDI	Facility Admin	MS_000004	Alan Anderson	05/14/2018	(07/11/2019 04:35) Wonderful experimental results verifying our hypothesis!	Ongoing
TBA	TBA	MS_000005	Carol Campbell	12/10/2020	(12/10/2020 02:56) Initial request	Initial Request

For each collaboration, collaborators may share information and managers may apply service charges to the service requester. Collaborators can be dynamically added or removed at any time. Rather than charging a service fee on an instrument, staff time may also be included in the service charge. Collaborators may share experimental results and literature papers within this page.

MS\_000004 Project Details

Comment	Document	Comment By	Comment Date	Status
Initial request	<a href="#">Initial Request HTML</a>	Alan Anderson	05/14/2018 05:43	Initial Request <input type="button" value="x"/>
A recent paper published in Microscopy Today	<a href="#">Uploaded File</a>	Alan Anderson	07/11/2019 04:33	Initial Request <input type="button" value="x"/>
Wonderful experimental results verifying our hypothesis!	<a href="#">Uploaded File</a>	Facility Admin	07/11/2019 04:35	Initial Request <input type="button" value="x"/>

Current Collaborators:  Facility Admin  Alan Anderson

Add new user:

Charge service fee: Select user  Alan Anderson Account Number  610-4735000-60012002 Service  Select service item

Add Comment:

Attachment:

Send Email to all collaborators:

Update Project Status To:  Ongoing

## 8.11 Adjust usage records

Usage records may be adjusted in the “Usage Records” page after logging in as an Instrument Manager. Usage records may also be imported from other systems in this page.

The screenshot displays the FOM (Facility Online Manager) interface. At the top, the instrument '(Electron Microscopy Lab) TEM J2100F' is selected in a dropdown menu. Below this, there are filters for Supervisor, Company, Account #, and User, along with a date range from 03/30/2021 to 04/06/2021. The main area contains a table of usage records. The table has columns for User, Logon - Logoff, Account, User Fees, Comment, and Admin. The 'Usage' button in the table is highlighted with a red circle. The 'Usage Records' menu item in the left sidebar is also highlighted with a red circle.

User	Logon - Logoff	Account	User Fees	Comment	Admin
Facility Admin TEM J2100F Usage ID# 20	Reserved: 03/30/2021 00:00 - 03/31/2021 00:00 Actual: 03/30/2021 00:00 - 03/31/2021 00:00	0000	Service 0, Training 0 Usage 0, Consumable 0	Cancelled by facadmin at 2020-01-27 10:41:40 without charge	Finished
Facility Admin TEM J2100F Usage ID# 21	Reserved: 03/31/2021 00:00 - 04/01/2021 00:00 Actual: 03/31/2021 00:00 - 04/01/2021 00:00	0000	Service 0, Training 0 Usage 0, Cons 0	Cancelled by facadmin at 2020-01-27 10:41:40 without charge	Finished
Facility Admin TEM J2100F Usage ID# 22	Reserved: 04/01/2021 00:00 - 04/02/2021 00:00 Actual: 04/01/2021 00:00 - 04/02/2021 00:00	0000	Service 0, Training 0 Usage 0, Cons 0	Cancelled by facadmin at 2020-01-27 10:41:40 without charge	Finished
Facility Admin TEM J2100F Usage ID# 23	Reserved: 04/02/2021 09:00 - 04/02/2021 11:00 Actual: 04/02/2021 09:00 - 04/02/2021 11:00	0000	Service 0, Training 0 Usage 0, Cons 0	//For maintenance	No-Show
Bella Baker TEM J2100F Usage ID# 29	Reserved: 04/02/2021 11:00 - 04/02/2021 16:00 Actual: 04/02/2021 11:00 - 04/02/2021 16:00	6-218-5246-Bees-Ants	Service 0, Training 0 Usage 250, Cons 0		No-Show
Bella Baker TEM J2100F Usage ID# 52	Reserved: 04/02/2021 11:00 - 04/02/2021 14:00 Actual: 04/02/2021 11:00 - 04/02/2021 14:00	6-218-5246-Bees-Ants	Service 0, Training 0 Usage 150, Cons 0	//Reserved by admin for Baker, Bella	No-Show
Sam Scott TEM J2100F Usage ID# 13	Reserved: 04/03/2021 09:00 - 04/03/2021 12:00 Actual: 04/03/2021 09:00 - 04/03/2021 12:00	PO100529	Service 0, Training 0 Usage 120, Cons 0		No-Show
Sam Scott TEM J2100F Usage ID# 40	Reserved: 04/03/2021 09:00 - 04/03/2021 11:00 Actual: 04/03/2021 09:00 - 04/03/2021 11:00	PO100529	Service 0, Training 0 Usage 80, Cons 0	//Reserve for a user	No-Show
Facility Admin TEM J2100F Usage ID# 30	Reserved: 04/03/2021 09:00 - 04/03/2021 11:00 Actual: 04/03/2021 09:00 - 04/03/2021 11:00	0000	Service 0, Training 0 Usage 0, Cons 0	//For training	No-Show

Select an instrument to see the past or future records of the instrument. Any field in the page may be manually updated.

Tip: You may use the clock icon (🕒) to select time or use the copy icon (📄) to copy the actual start/end time to the record insertion line on top of the page.

Note 1: The lock icon in the right-most column can be used to prevent accidental change of a usage record. This lock is only for warning purposes and any manager may unlock and then change the usage record if they wish to do so.

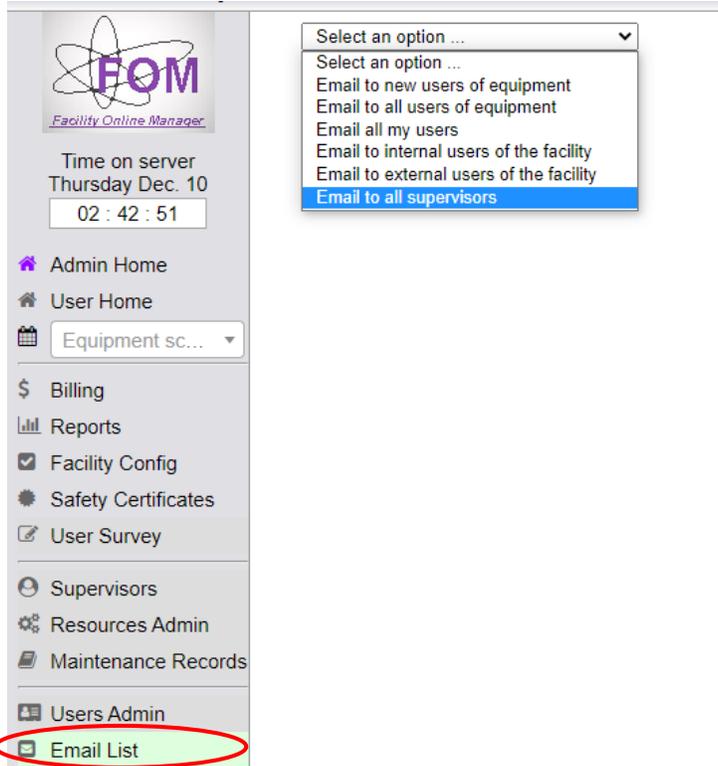
Note 2: The “Usage” button is used to re-calculate the usage fee based on the revised start/end time. You may also manually type in any charge amount. Once updated, the system won’t retract usage fees even when the fee structure is updated.

Note 3: If a resource has usage log on the instrument computers, for example NMR computers, FOM Networks may help to create script to automatically import the usage records from these log files.

Note 4: If a usage record is modified, it is highly recommended that the manager should enter comment text to explain what has been changed and why, so that other managers and auditors understand why the record has been changed.

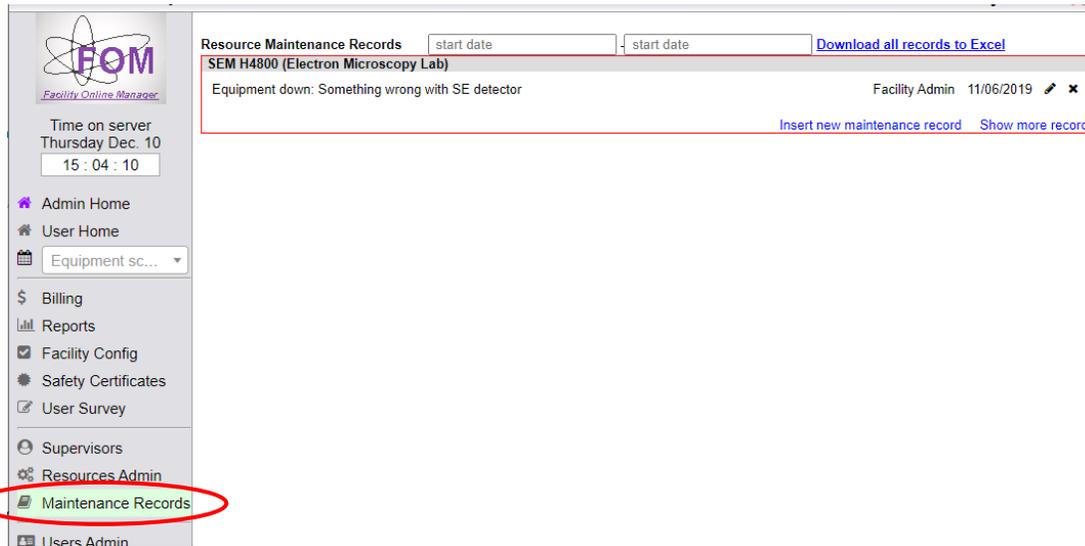
## 8.12 Email list

Login as Instrument Manager or Facility Admin, then click on “Email List” on the left side, and then select the group of users to send email message.



## 8.13 Instrument maintenance records

If an instrument maintenance tracking is turned on in the Resources Admin, you can see the maintenance history of the instrument by clicking the Maintenance Records link on the left menu.



## 8.14 Add another instrument manager

Instrument Managers may be added in either the “Resources Admin” page or the “Users Admin” page. In Resources Admin page, select user in the “Instrument managers” field, or in the Users Admin page, grant user access level with Instrument Manager level.

The screenshot displays the FOM interface. The left sidebar contains a menu with 'Resources Admin' highlighted. The main content area shows the 'Resource Configuration' page for 'TEM J2100F'. The 'Resource Managers' field is circled in red, showing 'Admin, Facility (facadmin@acme.edu)'. A callout box labeled 'In Resources Admin page' points to the 'Resources Admin' menu item. Another callout box labeled 'In Users Admin page' points to the 'Instrument Manager' option in a dropdown menu.

## 8.15 Modify user's reservations

As a manager, you can override user's reservations. Click on normal user's reserved time slot, you will see a pop-up window to modify or cancel user's reservation.

The screenshot shows a 'Future reservation' pop-up window. The window displays the following information: Resource: TEM J2100F, User: Bella Baker (Any time user), User email: bella.baker@acme.edu, Department/Company: Biology, Financial account: Bees and Ants, Reservation: 12/11 14:00 - 12/11 16:00. At the bottom, there are buttons for 'Cancel reserved time', 'Modify', and 'Close'. The record ID is 46, dated 2020-12-10 09:41:01.

# 9 User Tasks

## 9.1 Register username

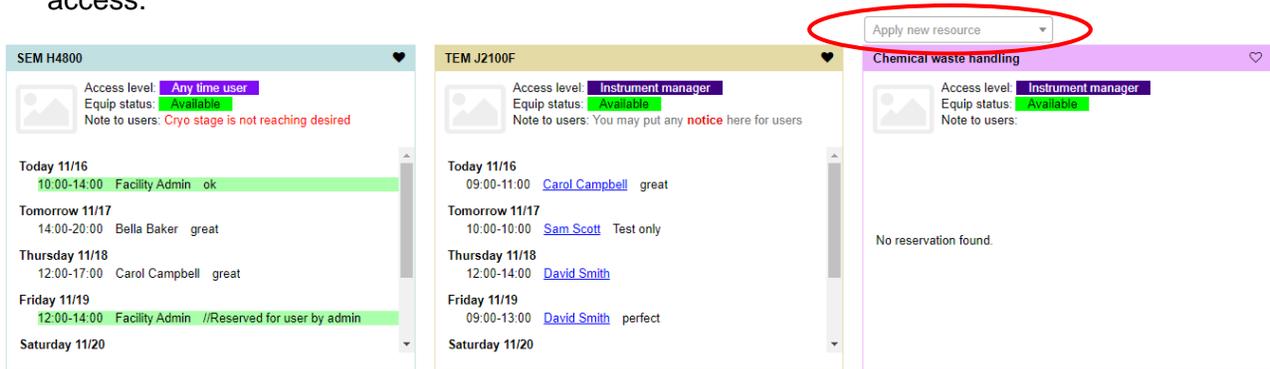
This part is the same as Section 4.

## 9.2 Maintain financial account number

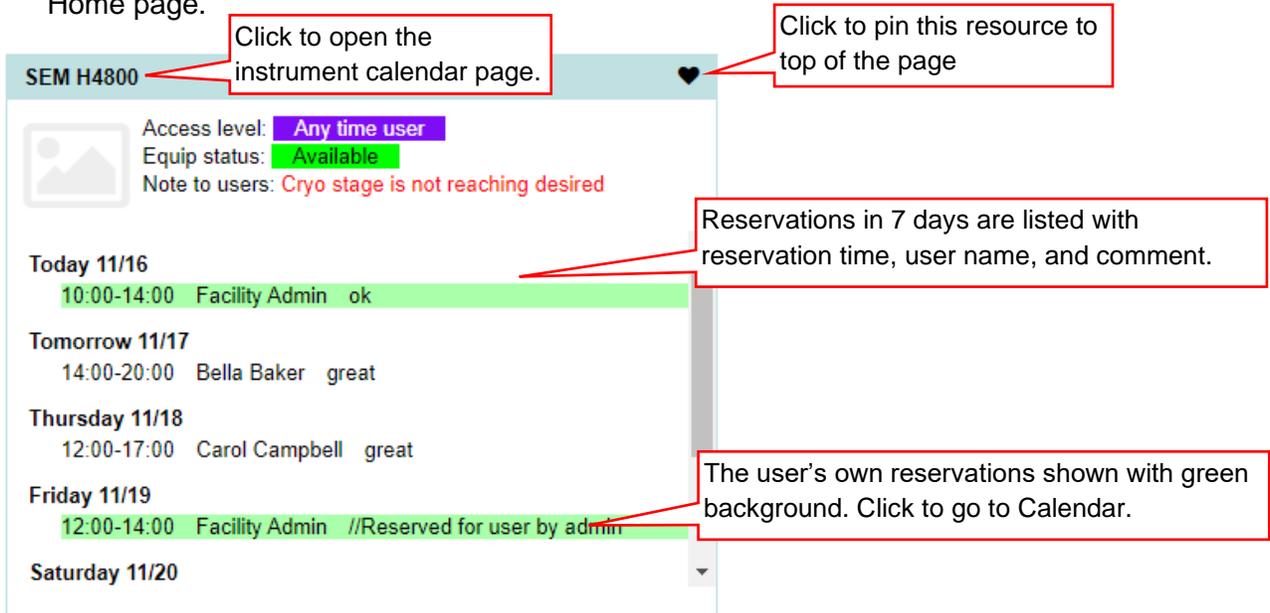
This part is the same as Section 5.

## 9.3 User home and apply to use an instrument

- a) In user home page, search for the instrument using the upper-right drop-down list to apply access.



- b) After training and your account activated, you will see the instrument card shown in the User Home page.



## 9.4 Sign up to attend a training session

As a to-be-trained user, you can view the instrument calendar. If you see a training session booked by a manager, you can click the time slot to sign up to attend the training.

The screenshot shows the FOM (Facility Online Manager) interface. On the left is a navigation menu with options like 'Admin Home', 'User Home', 'Equipment ...', 'Supervisors', 'Resources Admin', 'Maintenance Records', 'Users Admin', 'Email List', 'Collaborate & Service', 'Usage Records', 'Purchase Supplies', 'Chemicals', 'Lending Items', 'Documents', 'User Report', 'My Profile', 'My Accounts', 'Contact Manager', and 'Logout'. The main area displays a calendar for December 2020. A reservation for 'Facility Admin' on Thursday, Dec 10, from 8:59 to 9:07 is circled in red. A modal window titled 'Future reservation' is open, showing details for the reservation: Resource: Helios DualBeam FIB, User: Facility Admin(facadmin), User email: facadmin@acme.edu, Department/Company: IT Services, Reservation: 12/10 10:00 - 12/10 10:30, and Comment: //For training. Allow up to 3 attendees. //Bella Baker. A link 'Sign up to attend this training session' is circled in red at the bottom of the modal.

You may withdraw the signup if necessary.

This is a close-up of the 'Future reservation' modal window. It displays the same reservation details as the previous screenshot: Resource: Helios DualBeam FIB, User: Facility Admin(facadmin), User email: facadmin@acme.edu, Department/Company: IT Services, Reservation: 12/11 13:30 - 12/11 16:30, and Comment: //For training Allow up to 3 attendees. //Bella Baker//Carol Campbell. A link 'Remove myself from this training session' is circled in red at the bottom of the modal.

## 9.5 Safety requirements for instrument use

The required safety certificates are automatically summarized depends on which instruments that the user is to use. If any safety certificates are expired or invalid, the user will see a warning pop-up window as soon as the user logs into FOM system. Safety Certificate URL is presented to users to direct the user how to get the required certificates.

**Safety Training Required**

You are required to get the following safety certificates in order to access the corresponding resources. Please click the name of the certificate and take one of the courses there.

Safety certificate name	Deadline	Related resources
<a href="#">Laboratory Safety Certification</a>	04/01/2013	SPF UC7/FC7 Ultramicrotome,SPF Critical Point Dryer
<a href="#">Personal Protective Equipment Certification</a>	03/28/2013	SPF UC7/FC7 Ultramicrotome,SPF Critical Point Dryer,EB53
<a href="#">X-Ray Safety Certification</a>	04/28/2014	Scintag,2-circle,Dmax-Dewey

## 9.6 Reservation, cancellation, logon, and logoff

- a) In user home page, the authorized instruments are listed on the left side, and all the available but unauthorized instruments are listed on the right side. In user home page, click the instrument name that you want to use, or you may click the drop-down selection of equipment on left side menu to see the calendar of the instrument.

User Shortcuts:

- RESERVED: You reserved TEM J2100F from 2020-12-11 14:00:00.0 to 2020-12-11 16:00:00.0 [Click here to go to equipment calendar](#)

**Authorized Resources (Click to view schedule)**

Show my favorite resources only  Show all resources [Go to My Profile page to set favorite resources](#)

Select or type to search

▲ TEM J2100F Any time user Available  
You may put any notice here for users to see on their calendar pages.

Cleanroom

- Cleanroom 1 1 user

Chemical Stockroom

- Room 103 0 user

**Available Resources (Click to request training or usage approval) [Hide this section](#)**

Select or type to search

- Cleanroom
- Electron Microscopy Lab
- Genomics Facility
- Mass Spectrometry Lab
- ▲ TSQ 9000 GC-MS

Note from resource manager  
Formatted text

Helios DualBeam FIB Available Day time user  
Focus Ion Beam

Dec 2020 <Prev Today Next>

Mon 12/07	Tue 12/08	Wed 12/09	Thu 12/10	Fri 12/11	Sat 12/12	Sun 12/13
11:30	11:30	11:30	11:30	Facility Admin 11:30 - 13:30 //Reserve for a user	11:30	11:30
12:00	12:00	12:00	12:00		12:00	12:00
12:30	12:30	12:30	12:30		12:30	12:30
13:00	13:00	13:00	13:00		13:00	13:00
13:30	13:30	13:30	13:30	13:30	13:30	13:30
14:00	14:00	14:00	14:00	14:00	14:00	14:00
14:30	14:30	14:30	Carol Campbell 14:30 - 16:30	14:30	14:30	14:30
15:00	15:00	15:00		15:00	15:00	15:00
15:30	15:30	15:30		15:30	15:30	15:30
16:00	16:00	16:00		16:00	16:00	16:00
16:30	16:30	16:30	16:30	16:30	16:30	16:30
17:00	17:00	17:00	17:00	17:00	17:00	17:00

- b) To reserve a session, click on the time you want to start with. Then you will see the window like the one below. Choose a proper financial account and the planned start and end time to make the reservation.

New reservation

**Resource:** Helios DualBeam FIB  
**User:** Carol Campbell (Day time user)  
**Multiple equipments:**  
Select to book multiple equipments  
**Financial account:** Crayons  
**Reservation:** 12/11 13:30 - 12/11 14:00  
**Estimated cost:** 0.00  
**Comment:**

Reserve Close

- c) A reserved time may be canceled if the planned start time is before the Late Cancellation timeout set by the instrument manager. To cancel or modify a reserved session, click on your own reserved time.

Future reservation

**Resource:** Helios DualBeam FIB  
**User:** Carol Campbell (Day time user)  
**Financial account:** Crayons  
**Reservation:** 12/11 14:30 - 12/11 16:00  
**Estimated cost:** 0.00  
**Comment:**

Cancel reserved time Modify Close

- d) Many facilities configure their resources so that no cancellation can be done within X hours of the reserved start time. Some facilities also configure to charge cancellation fee for late cancellation. If such timeouts are set and you click on a reservation within this set hours, you may see the following window, with “Too late to modify”. Some facilities may configure to disallow cancellation within X hours, then you will see “Too late to Cancel” message.

Future reservation
×

**Resource:** Helios DualBeam FIB  
**User:** Carol Campbell (Day time user)  
**Financial account:** Crayons  
**Reservation:** 12/10 14:30 - 12/10 16:30  
**Estimated cost:** -  
**Comment:**

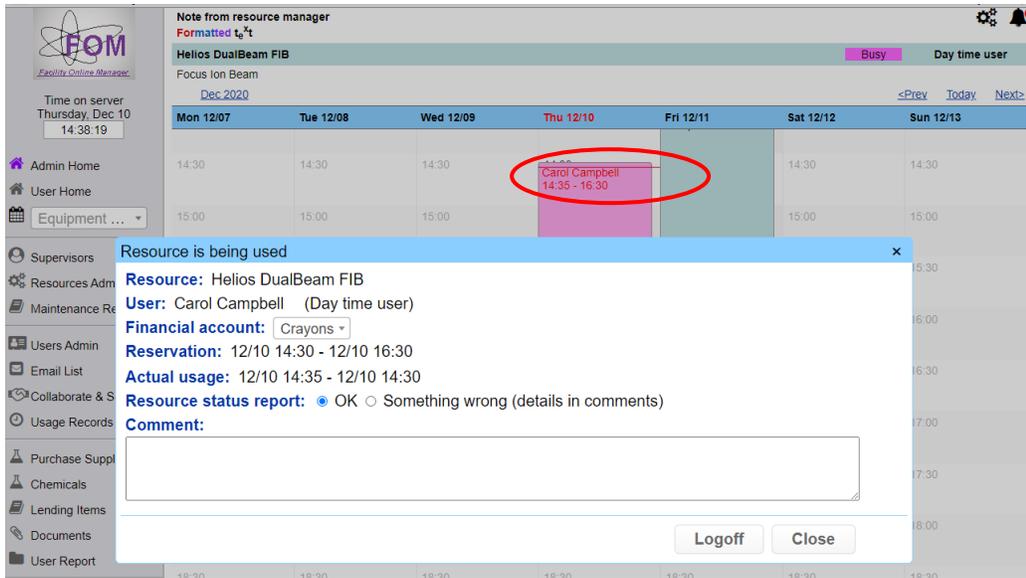
Cancel reserved time
[Too late to modify]
Close

- e) To logon a reserved session or do an express logon, click on the current time (red line).

The screenshot shows the Facility Online Manager interface. On the left is a navigation menu with items like 'Admin Home', 'User Home', 'Equipment...', 'Supervisors', 'Resources Admin', 'Maintenance Records', 'Users Admin', 'Email List', 'Collaborate & Se', 'Usage Records', 'Purchase Supplie', 'Chemicals', 'Lending Items', 'Documents', 'User Report', 'My Profile', 'My Accounts', 'Contact Manager', and 'Logout'. The main area displays a calendar for December 2020 for the resource 'Helios DualBeam FIB'. The calendar shows time slots from 12:00 to 14:30 on Monday through Sunday. A reservation for 'Carol Campbell' is shown for Thursday, 12/10, from 14:30 to 16:30, highlighted with a red circle. A 'Current reservation' dialog box is open in the foreground, containing the following information:

**Comment by previous user:** //For training. Allow up to 3 attendees. //Bella Baker  
**Resource:** Helios DualBeam FIB  
**User:** Carol Campbell (Day time user)  
**Financial account:** Crayons  
**Reservation:** 12/10 14:30 - 12/10 16:30  
**Comment:** [Text input field]  
 Logon Close

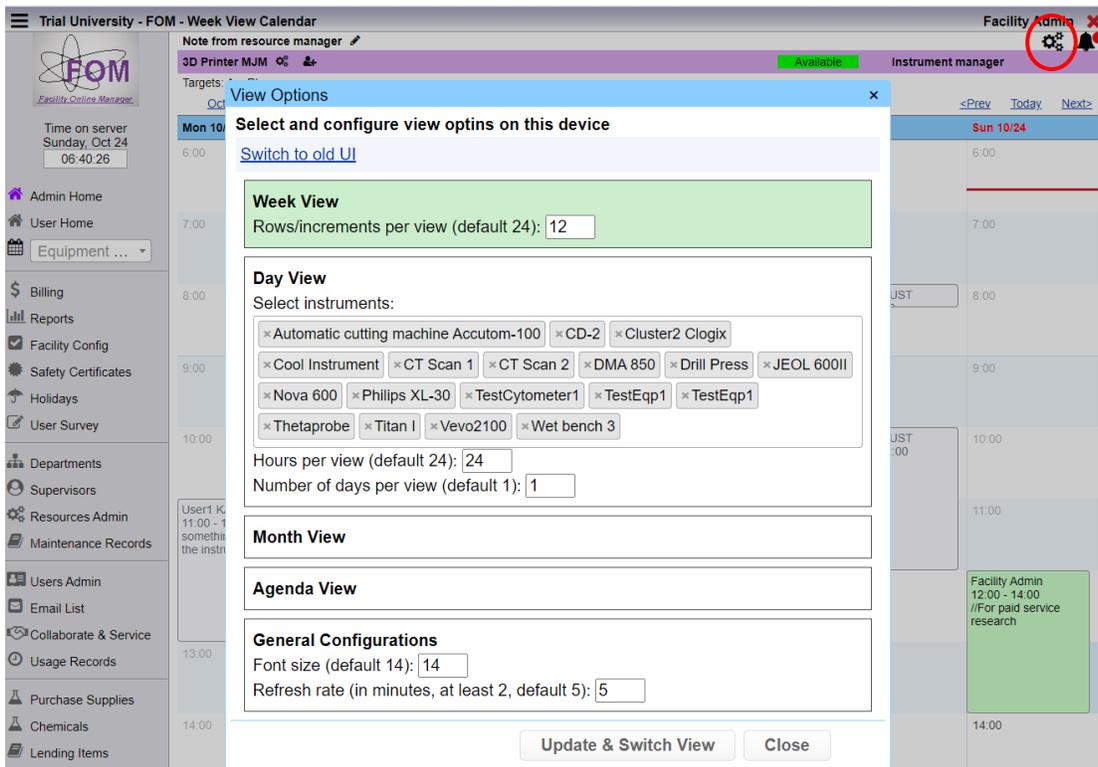
- f) When you are using the instrument your time slot is shown with pink background. Once you finish using the instrument, you need to click the current time slot to logoff.



- g) Fill in consumables if you have used. Choose "Something wrong" if you want to report problem of the instrument. Fill in comment, select account number to use, then click logoff.

## 9.7 Week view, day view and monthly view of calendars

In the resource calendar page, you may click the gears icon at the top-right corner, and then you can switch from week view to day view, month view, and agenda view of the instrument calendar.



## 9.8 Forgot logoff sessions

If you forgot logoff your session, you would receive email reminder after the reserved ending time. Also, the next immediate user who reserved the instrument can log you off. You would receive email if another user forced you off an instrument.

## 9.9 Download instrument operation manual

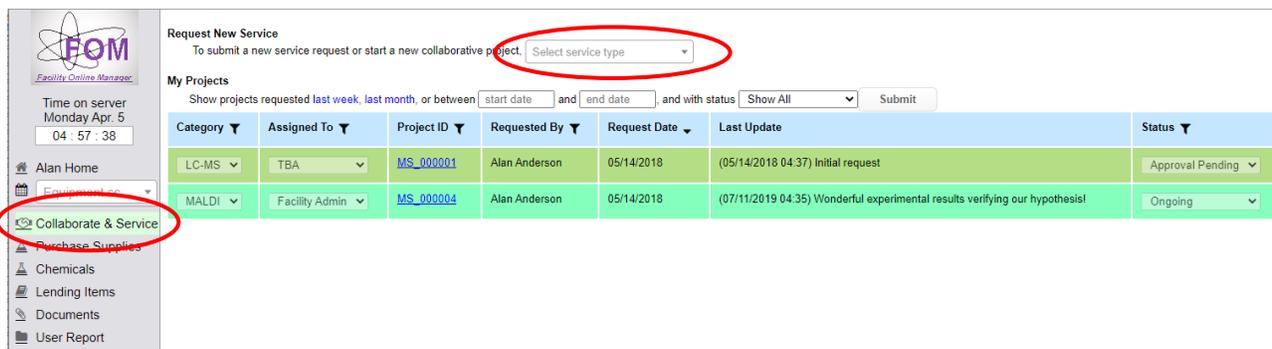
Click on "Documents" link on the left side to download instrument documents.

## 9.10 User report

Click on "User Report" link to download report of your usage in the facility with given start time and end time.

## 9.11 Submit service request form

A user may submit a service request form if the service is provided by the facility lab staff. Click "Collaborate & Service" on the left side menu, then click the service link.



The screenshot displays the FOM interface. On the left is a navigation menu with items like 'Collaborate & Service' (circled in red), 'Purchase Supplies', 'Chemicals', 'Lending Items', 'Documents', and 'User Report'. The main content area is titled 'Request New Service' and includes a dropdown menu for 'Select service type' (circled in red). Below this is a 'My Projects' section with a table of project data.

Category	Assigned To	Project ID	Requested By	Request Date	Last Update	Status
LC-MS	TBA	<a href="#">MS_00001</a>	Alan Anderson	05/14/2018	(05/14/2018 04:37) Initial request	Approval Pending
MALDI	Facility Admin	<a href="#">MS_00004</a>	Alan Anderson	05/14/2018	(07/11/2019 04:35) Wonderful experimental results verifying our hypothesis!	Ongoing

Once a service request is submitted, the project will be listed in this page and the corresponding manager will follow up with you about the progress of the collaborative project.

Click the Project ID link you will see the details of the collaboration history. You may share files, and comments in this page with all the involved collaborators.

MS\_000004 Project Details

Comment	Document	Comment By	Comment Date	Status
Initial request	<a href="#">Initial Request HTML</a>	Alan Anderson	05/14/2018 05:43	Initial Request
A recent paper published in Microscopy Today	<a href="#">Uploaded File</a>	Alan Anderson	07/11/2019 04:33	Initial Request
Wonderful experimental results verifying our hypothesis!	<a href="#">Uploaded File</a>	Facility Admin	07/11/2019 04:35	Initial Request

Current Collaborators: Facility Admin, Alan Anderson

Add Comment:

Attachment:

Send Email to all collaborators:

Update Project Status To: Ongoing

Submit

## 9.12 Purchase supplies

If a laboratory provides consumables for sale, you may click the Purchase Supplies link on the left side menu to check out the consumables.



Time on server  
Thursday Dec 10  
15:14:33

Bella Home

Equipment sc...

Collaborate & Service

Purchase Supplies

Chemicals

Lending Items

Purchase Consumables

Electron Microscopy Lab

Search/Filter:

Consumable Name	Unit	Price	Amount in stock	Quantity
LN2	litres	1.5	9999	<input type="text"/>
Stainless Steel Tweezer	pairs	100	20	<input type="text"/>
TEM Grid Au 300Mesh	pieces	10	500	<input type="text"/>

Bees and Ants

## 9.13 Borrow items from the lab

If a laboratory has set up small devices or tools for rent, you may click the Lending Items link on the left side menu to check out and return the items you are borrowing from the lab.



Time on server  
Thursday Dec 10  
15:17:53

Bella Home

Equipment ...

Collaborate & Service

Purchase Supplies

Chemicals

Lending Items

Documents

User Report

Select Facility: Chemical Stockroom

Search/Filter:

Name	User	Default location	Actions	Borrowed at	Planned return	Condition	Comment
Multimeter	Available	Room 101, Left Cabinet	<input type="button" value="🔍"/>				Broken/Missing parts
Oscilloscope	Bella Baker	Room 101, Left Cabinet	<input type="button" value="➡"/>	12/3/2020 9:43	12/10/2020 12:00	OK	
Portable GPS	Available	Room 101, Right Cabinet	<input type="button" value="🔍"/>			OK	

## 9.14 Keep track of chemicals in the lab

Click the Chemicals link on the left side menu to find whether a chemical is available in the facility, where it is located, and the current amount in stock.

The screenshot shows the FOM interface with a sidebar on the left containing navigation links like 'Bella Home', 'Equipment ...', 'Collaborate & Service', 'Purchase Supplies', 'Chemicals', and 'Lending Items'. The main content area is titled 'Select Facility: Chemical Stockroom' and includes a search filter for 'Chemical name' and 'Location'. Below this is a table with the following data:

Chemical Name	Default location	Sublocation	Amount	Unit	
Perchloric Acid	101	Left Cabinet, Top shelf	1000	ml	...
Potassium Hydroxide	102	Right cabinet, bottom shelf	2000	ml	...

## 9.15 User Preferences and Email opt-outs

Click on "My Profile" link to update your contact information and other user preference items.

The screenshot shows the 'Update User Preferences' page in the FOM system. The sidebar on the left includes links for 'Admin Home', 'User Home', 'Billing', 'Reports', 'Facility Config', 'Safety Certificates', 'Holidays', 'User Survey', 'Departments', 'Supervisors', 'Resources Admin', 'Maintenance Records', 'Users Admin', 'Email List', 'Collaborate & Service', 'Usage Records', 'Purchase Supplies', 'Chemicals', 'Lending Items', 'Documents', 'User Report', 'My Profile', 'My Accounts', 'Contact Manager', and 'Logout'. The main content area is titled 'Update User Preferences' and contains the following information:

**User Class:** Internal User  
**Login Name:** facadmin  
**Password:** [Redacted]  
**Password Again:** [Redacted]  
**First Name:** Facility  
**Last Name:** Admin  
**Email:** facadmin@acme.edu  
**Phone Number:** 224-225-9168  
**Category:**  
**Discipline:** Other research  
**Department:** IT Services  
**Supervisor:** Adam Butler

**User Preferences:** (No need to submit. It is updated as soon as you click!)

**Auto Logon**  
 Log me on automatically on this computer until I manually logout  
Enter device name [ ] Generate Authentication Code [ ]

**Show Handy Links**  
 Show handy links. (Note: If you clicked an advertisement link more than 5 times, it will automatically turn into non-flashy text link.)

**Show FOM reservations in your Outlook or Google calendar** (Google Calendar synchronize every 24 hours, Outlook synchronize every time you Send/Receive email)  
http://localhost:8080/fomv2/sch.ics?p=5D5luNYKT00132

**Email when a reservation is cancelled within pre-defined time (typically 24 hrs)**  
[ ]

**Email when equipment status is changed (except you have reservation in two days)**  
[ x Helios DualBeam FIB ] [ x SEM H4800 ] [ x TEM J2100F ] [ x TSQ 9000 GC-MS ]

**Email several days before your session starts so you can add to your personal calendar**  
[ ]

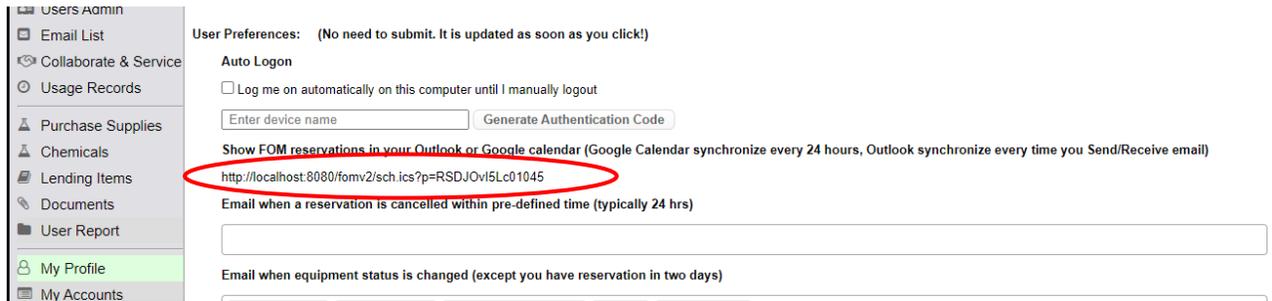
**Email after your reserved session ends and you are still logged on (means you may have forgotten to logoff)**  
[ ]

**My favorite resources:**  
[ x SEM H4800 ] [ x TEM J2100F ] [ x TSQ 9000 GC-MS ]

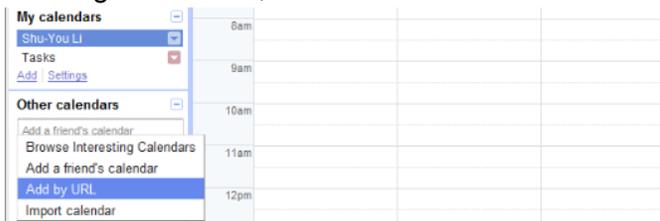
**Stop Using this FOM System**  
I am not using this FOM system any more. [Deactivate](#) my username so I will not log into FOM nor get email from FOM.

## 9.16 Link FOM reservations with your Outlook or Google Calendar

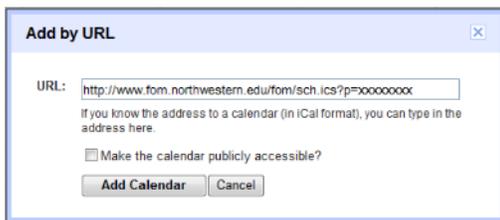
In “My Profile” page, you can find a URL to “Show FOM reservations in your Outlook or Google calendar”.



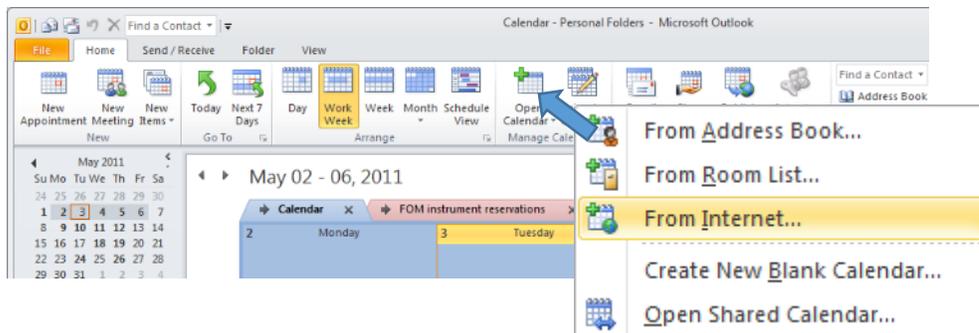
In Google Calendar, Click the “Add” link at the lower left corner, then select “Add by URL”.



Paste the URL you have got from Step #1 in the URL field and click “Add Calendar”.



In Outlook, go to Calendar view, click Open Calendar, and then select “From Internet”.



Paste the URL that you have got from Step #1. If your FOM schedule URL starts with <http://>, change your link to start with <webcal://>; If your FOM schedule URL starts with <https://>, change your link to start with <webcals://>.

## 9.17 Update account number

Click on "My Accounts" to add your account number(s). For auditing purposes, you cannot modify an account number once it has been validated and added to the system, but you can make it inactive if you don't use an account number anymore.



Facility Online Manager

Time on server  
Thursday Dec. 10  
14 : 50 : 03

- Admin Home
- User Home
- Equipment sc...
- Supervisors
- Resources Admin
- Maintenance Records
- Users Admin
- Email List
- Collaborate & Service
- Usage Records
- Purchase Supplies
- Chemicals
- Lending Items
- Documents
- User Report
- My Profile
- My Accounts**
- Contact Manager
- Logout

### Update WBS Number

#	Research name	WBS Number	Is Active?	Set as default
1	Admin_Use	0000	<input type="checkbox"/>	<input type="radio"/>
2	Crayons	650-4735000-60012001	<input checked="" type="checkbox"/>	<input type="radio"/>
3	Graphene	650-4735000-60012002	<input checked="" type="checkbox"/>	<input type="radio"/>

[Set default WBS Number for each equipment](#)

---

### Add a new account

Research name:  (Format: Research Name - Account owner, eg: XYZ Material Analysis - James Wong)

WBS Number:

GL Code:

Category:

Description:

[Click here to go back to User Home](#)

## 9.18 Contact managers

Click on "Contact Manager" to write message to instrument manager(s).



Facility Online Manager

Time on server  
Thursday Dec. 10  
17 : 46 : 55

- Auditor Home
- Bella Home
- Equipment sc...
- Collaborate & Service
- Purchase Supplies
- Chemicals
- Lending Items
- Documents
- User Report
- My Profile
- My Accounts
- Contact Manager**
- Logout

Select the person(s) you want to contact with and fill in the message at bottom.

<input type="checkbox"/> Chemical Stockroom Facility Admin	<input type="checkbox"/> Electron Microscopy Lab Facility Admin	<input type="checkbox"/> Machine Shop Facility Admin
<input type="checkbox"/> Cleanroom Facility Admin Carol Campbell	<input type="checkbox"/> Genomics Facility Facility Admin Carol Campbell	<input type="checkbox"/> Mass Spectrometry Lab Facility Admin
<input type="checkbox"/> ECE Electronics Services Shop Facility Admin	<input type="checkbox"/> High Throughput Analysis Core Facility Admin	<input type="checkbox"/> NMR facility Facility Admin

---

Subject:

Message:

**1 + 2 + 5 = ?**  Add the three numbers and enter the answer.

# 10 Supervisor Assistant Tasks

Supervisor Assistant's access is granted to normal user in the Supervisors page. A supervisor may be the Assistant to themselves. Any Facility Administrator or Instrument Manager can add or remove Supervisor Assistants from Supervisor's profile

Supervisor Information

Butler, Adam

Search supervisor: Type to search... Add new supervisor

Download this supervisor's usage report: Select facility 03/01/2021 - 04/01/2021 Submit

Title Prof

First Name Adam

Last Name Butler

Phone 224.225.9168

Email adam.butler@acme.edu

Office Room Number 101

Office Building Research Institute

Supervisor Report  Yes  No

Assistant(s) bella.baker@acme.edu system Leave blank if not needed. Multiple emails allowed with commas, must be valid user emails in the system.

Update

Once a user is granted Supervisor Assistant access, the user can login and go to Supervisor Home page. In the Supervisor Home page, a Supervisor Assistant can edit the Supervisor information and group member information, download group member usage records, billing records, set expense limit, and more.

Supervisor Home

Time on server Thursday Dec. 10 15:26:53

Pr Adam Butler 224.225.9168 adam.butler@acme.edu 101 Research Institi Yes No bella.baker@acme.edu

Group members' activity report: Start date: 01/11/2020 end date: 01/12/2020 Submit

Monthly report: Start date: 01/11/2020 end date: 01/12/2020 Submit

Usage charge by equipment: Start date: 01/11/2020 end date: 01/12/2020 Submit

Note: The start date is included but the end date only includes the previous date of the requested date entered.

WBS Number	User Name	Research name	WBS Number Status	Is Default	Expiration Date	Expense Limit
<a href="#">302-4785600-1</a>	Facility Admin	Pilot Research	Inactive	No	01/01/2109	0.00
<a href="#">6-218-5246-Bees-Ants</a>	Bella Baker	Bees and Ants	Active	No	14/05/2118	0.00
<a href="#">610-4735000-60012002</a>	Alan Anderson	Animal Research	Active	No	14/05/2118	0.00
<a href="#">650-4735000-60012001</a>	Carol Campbell	Crayons	Active	No	14/05/2118	0.00
<a href="#">650-4735000-60012002</a>	Carol Campbell	Graphene	Active	No	14/05/2118	0.00
<a href="#">YD000002.CC1510.PG00032.PJ029586.ML378</a>	Facility Admin	MCC 2	Active	No	01/01/2109	0.00

Facility Online Manager© www.fomnetworks.com, Program Version 3.2.80 Number of online users: 2

# 11 Business Manager and Auditor Tasks

Business Manager and Auditor's access can be granted by Facility Administrator or System Administrator for each facility (see section 6.2).



Facility Online Manager

Time on server  
Monday Apr. 5  
05 : 06 : 41

- Admin Home
- User Home
- Equipment sc...
- Billing
- Reports
- Facility Config
- Safety Certificates
- Holidays
- User Survey
- Departments
- Supervisors
- Resources Admin
- Maintenance Records
- Users Admin
- Email List
- Collaborate & Service
- Usage Records
- Purchase Supplies
- Chemicals
- Lending Items
- Documents
- User Report
- My Profile
- My Accounts

### Facility information

Electron Microscopy Lab

Facility name: Electron Microscopy Lab

Facility description (keep short, no line breaks):

Facility website URL:

Invoice template file name: /fom\_config/user\_html\_files/Yale\_MCC\_External\_Invoice\_Templ

User agreement URL: This file is shown when user apply to use equipment

User verification: 0  
 0: No verification needed. New user can request training on equipments right away;  
 1-98: Verification needed before use of facility. Verification expires in the number of years. Put 99 if it never expires.

Facility Administrators: Facility Admin(facadmin@acme.edu)

Open to public user applications:  Open to every registered user  Private group use only

Send email when user equipment level changes:  Always send  Never send  Prompt each time

Facility status:  Active  Inactive

---

### Business Manager and Auditor's Access

Auditor #1: Bella Baker(bella.baker@acme.edu)

Access to Reports:

- Billing
- Equipment User Usage-Times
- Revenue and usage by supervisors and departments
- Cleanroom Activity Report
- Reserved-Actual-Combined Minutes
- Time and revenue per user per instrument
- Active users of instruments during defined period

Add new auditor:

Once granted Auditor access and given access to specific report types, the auditor may login to Auditor Home page, where the auditor can download various reports.



Facility Online Manager

Time on server  
Thursday Dec. 10  
15 : 29 : 23

- Auditor Home
- Bella Home
- Equipment sc...
- Collaborate & Service
- Purchase Supplies
- Chemicals

**Be patient! It may take several minutes to create a report !!!**  
 Note: For all the reports, the start date is included, but the end date is not.

Report Type	Parameters	Submit
<a href="#">Click here to go to FOM billing page</a>		
Usage details with purpose	Start date: <input type="text" value="01/11/2020"/> End date: <input type="text" value="01/12/2020"/>	<input type="button" value="Submit"/>

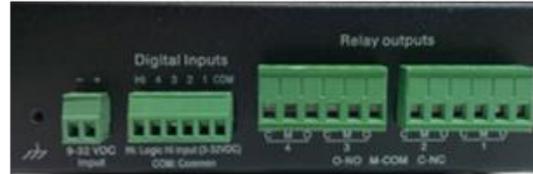
# 12 FOM<sup>®</sup> Hardware Access Control Interlocks



FLOB-01 rear view 3D



NP-02 series front view



NP-04D rear view



NP-02 rear view



NP-02H rear view



NP-08 rear view

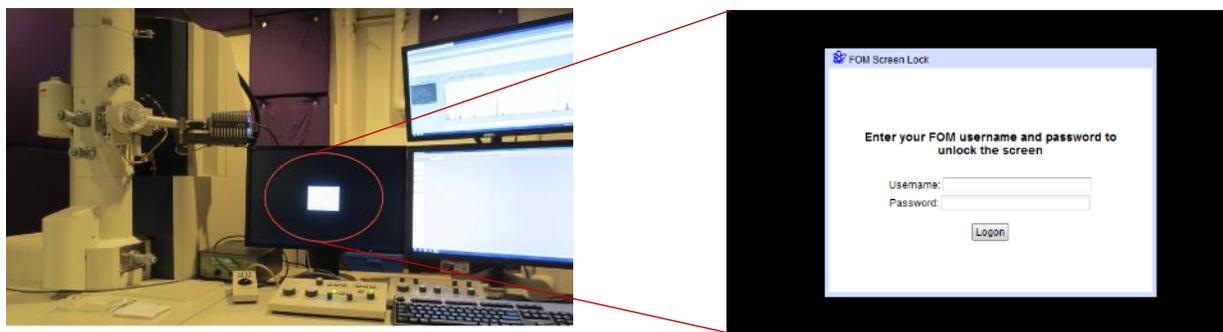


NP-08H rear view

## System Specifications

Model	FLOB-01	NP-02	NP-02H	NP-04D	NP-08	NP-08H
<b>Input Voltage</b>	100-240VAC	120 VAC	220 VAC	9-32 VDC	120 VAC	220 VAC
<b>No. of Ports</b>	2	2	2	4	8	8
<b>Output Type</b>	1x NEMA15 1x Dry Contact	NEMA15	IEC320	Dry Contact	NEMA15	IEC320
<b>Max. Output Voltage</b>	AC or Relay	120 VAC	220 VAC	Relay AC or DC	120 VAC	220 VAC
<b>Max. output Current</b>	10 A	13 A	10 A	2 A	15 A	10 A

# 13 FOM<sup>®</sup> Software Access Control System



*FOMLock Software Access Control provided an alternative cost-effective solution to the hardware access controls.*

## System Requirements

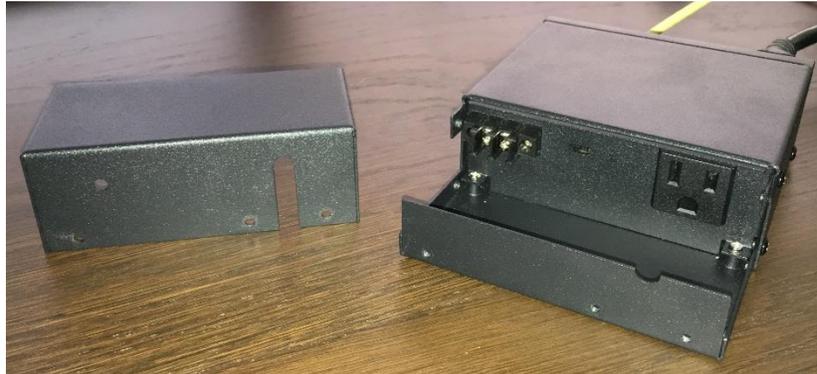
- Support Operating System Windows XP SP4 or up
- .Net Framework 4.0 or up must be installed before using the FOMLock.exe
- The computer must be connected to the Ethernet
- Port 2011 must be set to be allowed on local and campus network firewall policies.

## Price List of FOM Access Controls

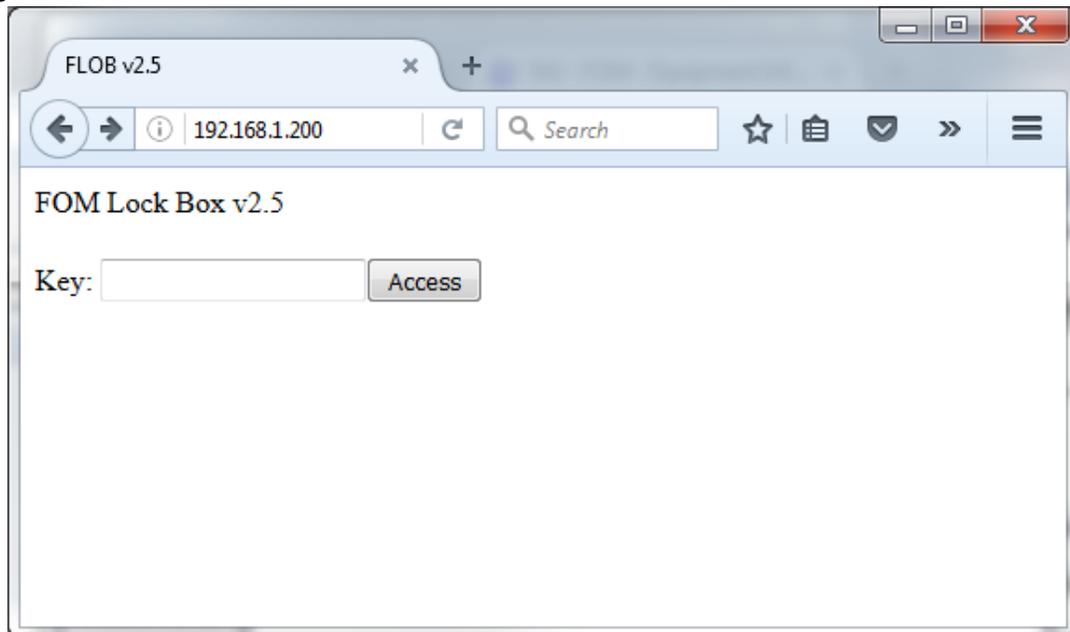
Model	Description	Unit Price
<b>FLOB-01</b>	1-port power control and 1-port dry contact	\$200/ea
<b>NP-02</b>	2-port power control with US type plugs	\$200/ea
<b>NP-04D</b>	4-port signal control with dry contacts	\$450/ea
<b>NP-08</b>	8-port power control with US type plugs	\$450/ea
<b>NP-02H</b>	2-port power control with UK type plugs	\$230/ea
<b>NP-08H</b>	8-port power control with UK type plugs	\$520/ea
<b>S&amp;H</b>	Shipping and handling is 5% of total order price, minimum charge \$20. International shipping charge is 20% of total order price.	
<b>FOMLock</b>	Software access control. FOM Lock can be installed on unlimited number of instrument PCs once license is paid.	\$800/license

# Appendix 1. Set up and Connection of FLOB-01 Relay Boxes

Note: This manual is for the box that comes with a locker compartment so that you can hide the power plug or dry contacts from normal user's access. For the configuration of the other type of FOM boxes such as NP-02 or NP-08 series, please refer to Appendix 2.

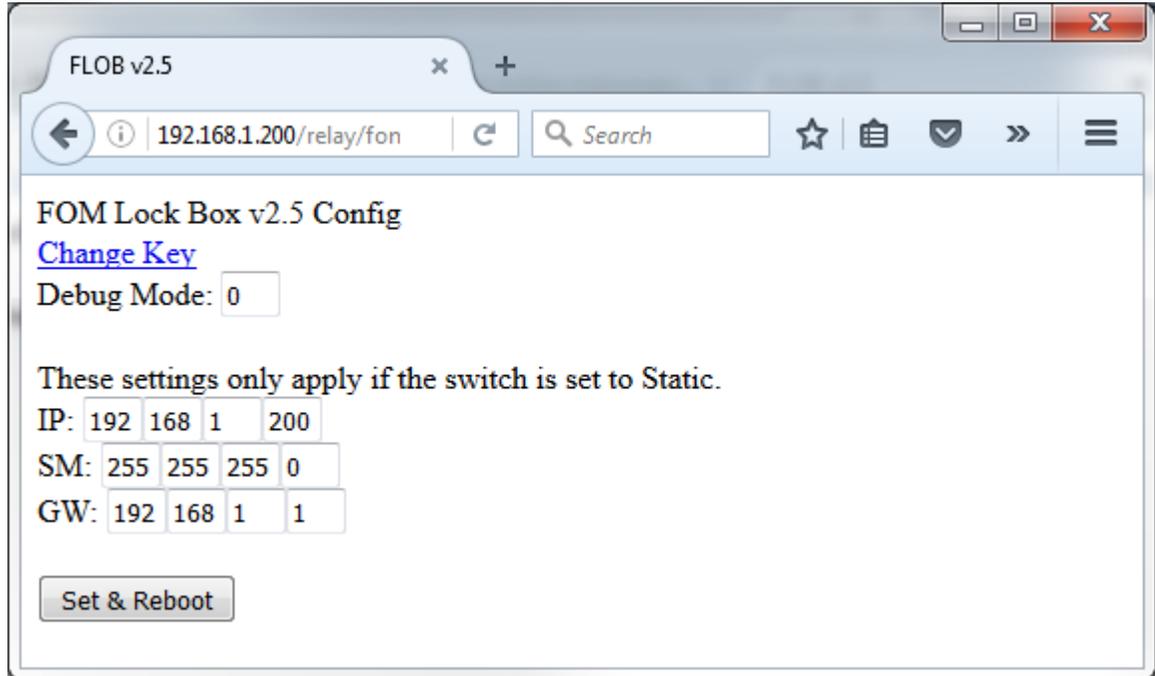


1. This box has a hardware switch to either use DHCP or static IP. If your network issues permanent IP address with a fixed MAC address, you just need to turn the switch to DHCP and don't need to set the IP address in the following steps. **You should always change the default access key for security reasons.**
2. Open a browser and type the IP address of the box in the browser address bar. The default static IP address of the box is **192.168.1.200**. If your network uses static IP. You need first change your computer's IP address to 192.168.1.1 in order to access the box configuration page.



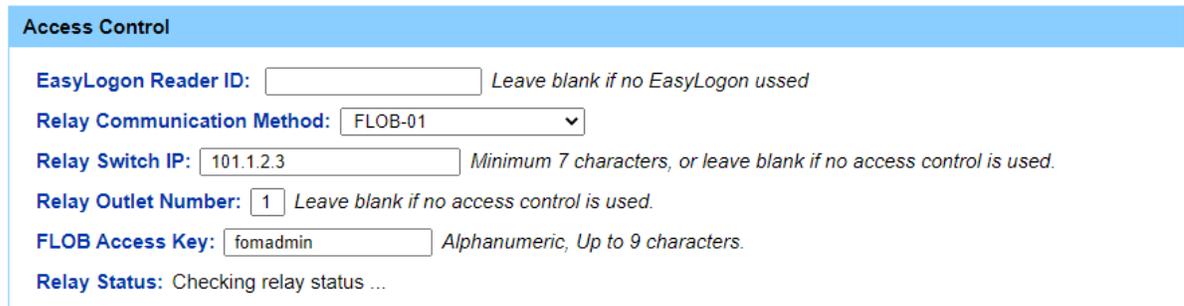
3. Enter the key to this box and click Access (keyboard Enter doesn't work here). The default key is **fomadmin**. You are recommended to change as soon as you first set up the box.

- In the opened page, you can change the key to this box, update IP, SM (Subnet Mask), and GW (default Gateway). The Debug Mode field should be always set to 0. **You should always change the default access key for security reasons.**



- Once the key is updated and the IP is configured, you need to go to FOM and update the corresponding resource admin page. **You need to update the key even you are using the default key of fomadmin.**

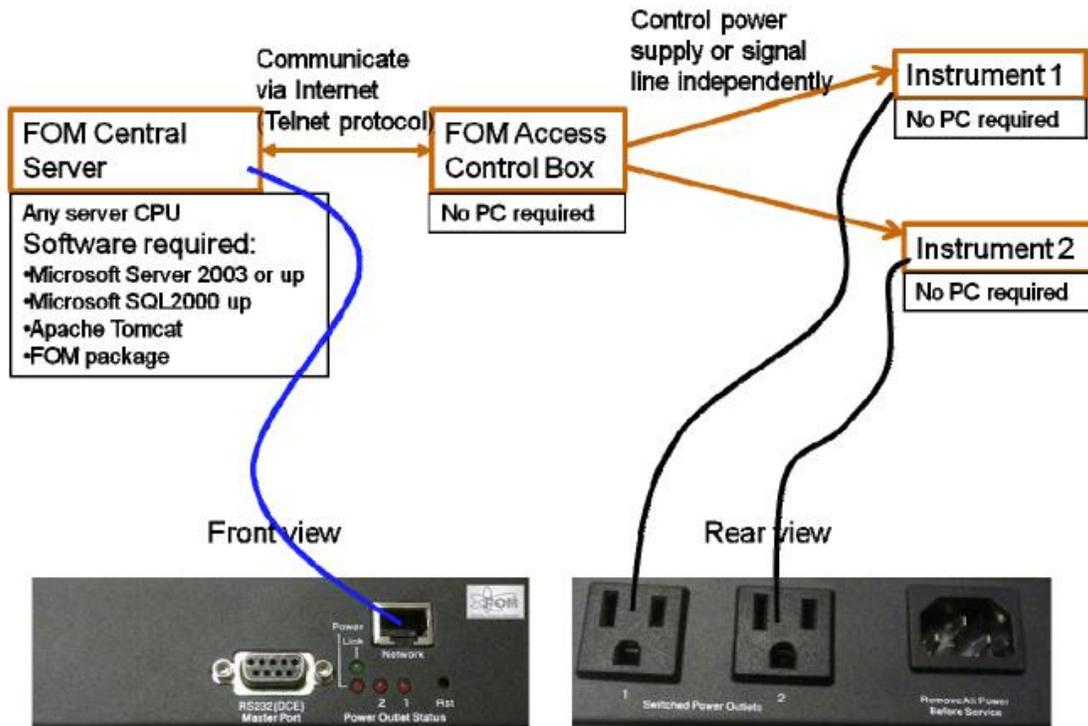
**Note:** If you are using NAT port mapping, you need to put the IP address with the NAT port number, such as 192.168.1.200:5080 and another one 192.168.1.200:5081



- Now you can connect this box onto the corresponding instrument.

**Note:** To reset FLOB-01 to factory settings: Unplug the power, then while holding the RESET PIN, plug the power back on. Continue holding the reset pin for about 10 seconds and then release.

## Appendix 2. Set up and Connection of NP series Relay Boxes



1. You will need the following to start with:
  - a. For each relay box, you need to request a permanent IP address from your IT department. It might be standard internet IP address or local area network with Port Mapping. Your IT department should also give you the Subnet Mask and Default Gateway. In this manual we use the following as an example:

IP Address: 10.1.1.201

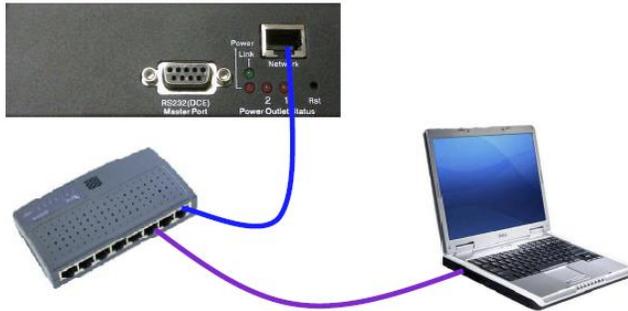
Subnet Mask: 255.255.0.0

Default Gateway: 10.1.1.1

- b. Also notify your IT department that inbound PORT 80 (HTTP) communication must be allowed from the FOM server to each of the relay boxes.

*If you are using online FOM server, the IP address of the FOM server is 69.65.29.2 ([www.instrumentschedule.com](http://www.instrumentschedule.com)).*

- c. You will need two Ethernet cables and an internet hub or switch, as shown below (or a cross-over type cable to connect directly).



2. The default IP address of the box is 192.168.1.100. So you need to first set your computer IP to the same range. For example, you may configure your PC with IP 192.168.1.101, subnet mask 255.255.255.0, Default gateway may be left empty.
3. Connect both your PC and the box to one hub or switch.
4. Open a browser, type in address <http://192.168.1.100>. You will need username and password to access this website. The default username is admin and password is also admin. You may change the username/password after logging in (recommended).
5. After logging in, you see a window similar to this:

Outlet #	On/Off	Reboot	Status	Name	Reservation
1				Outlet1	
2				Outlet2	

Destination IP	Outlet List	Receive Echoes/Total Pings	Reboot Times
0.0.0.0	1	0/0	0
0.0.0.0	2	0/0	0

6. Click Network on left side, then change the following items:
  - **Obtain IP using DHCP** = No
  - **Static IP:** (the static IP you received from IT department)
  - **Subnet Mask:** the subnet mask you received from IT department)
  - **Gateway IP:** the gateway IP you received from your IT department)

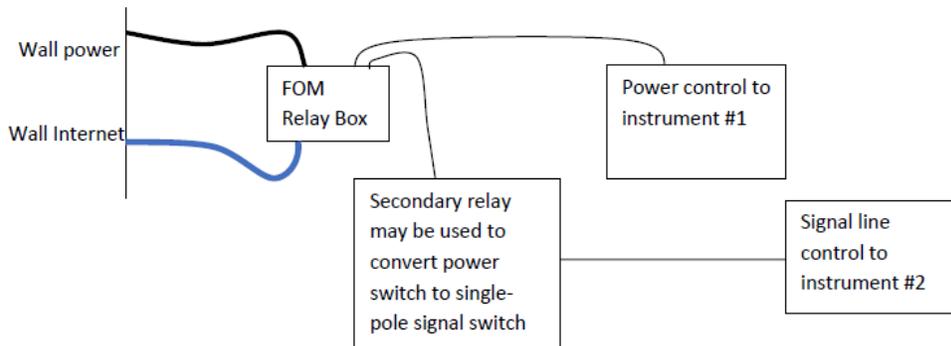
netBooster™ Model: NP-02(B)

Obtain IP Using DHCP	No
Static IP (x.x.x.x)	192.168.1.100
Subnet Mask (x.x.x.x)	255.255.0.0
Gateway IP(x.x.x.x)	192.168.1.1
Set DNS Server IP Manually	Disable
Primary DNS IP (x.x.x.x)	0.0.0.0
Secondary DNS IP(x.x.x.x)	0.0.0.0
HTTP Port # (Default-80)	80
Telnet Port # (Default-23)	23
SMTP Port # (Default-25)	25
Outgoing Email-SMTP Server	
SMTP Requires Auth	<input type="checkbox"/>
Account Name (e.g.: mySys@sbcglobal.net)	
Account Password	
Out Email 1	
Out Email 2	

Submit Undo

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- Submit the form. You may see page loading error page, because the IP address of the box has been changed.
- After IP is configured, you may disconnect the box and connect it to your instrument.



- Once the hardware is connected, you may now log into FOM, go to the Resources Admin page, and select "NP Series" from the Relay Communication Method dropdown list.

Access Control

EasyLogon Reader ID:  Leave blank if no EasyLogon used

Relay Communication Method:

New User Rules

No Access Control

FLOB-01

NP Series

FOMLock software client

- Once the Relay Communication Method is selected, you will see more fields where you need update the **Relay Switch IP** address, the **Relay port number** , and the Relay username/password. Once these fields are updated, in the Relay Status line you should see the status of the relay. If you see the Relay Status returned ERROR, you need to find out whether there is firewall blocking the traffic from the FOM server to the relay box.

Note: If you are using NAT port mapping, you need to put the IP address with the NAT port number, such as 192.168.1.200:5080 and another one 192.168.1.200:5081

### Access Control

**EasyLogon Reader ID:**  *Leave blank if no EasyLogon used*

**Relay Communication Method:**  

**Relay Switch IP:**  *Minimum 7 characters, or leave blank if no access control is used.*

**Relay Outlet Number:**  *Leave blank if no access control is used.*

**Relay Username:**  *Alphanumeric, Up to 9 characters.*

**Relay Password:**  *Up to 31 characters.*

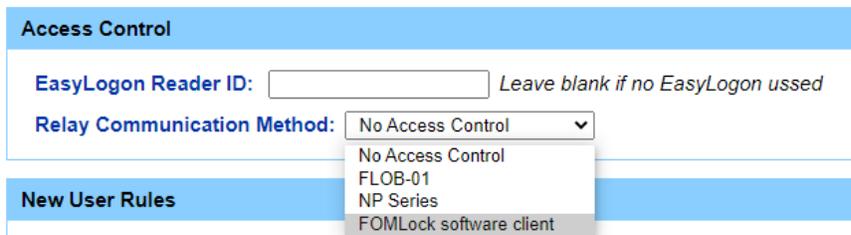
**Relay Status:** Checking relay status ...

## Appendix 3. Set up and connection of software screen locks

The following steps assume that you already have the FOM standard or enterprise license installed and received the FOMLock client package from FOM Networks, Inc. If not, please contact Dr. Shuyou Li at [shuyou@fomnetworks.com](mailto:shuyou@fomnetworks.com).

The computers on which you are to install the soft lock must have static IP address and have .Net framework version 4.0 installed. Please contact your IT support if you are not sure the computer meets the requirements. In the following steps we use IP address 192.168.1.2 as an example. When you follow the procedures, replace 192.168.1.2 with the IP address of the to-be-controlled PC.

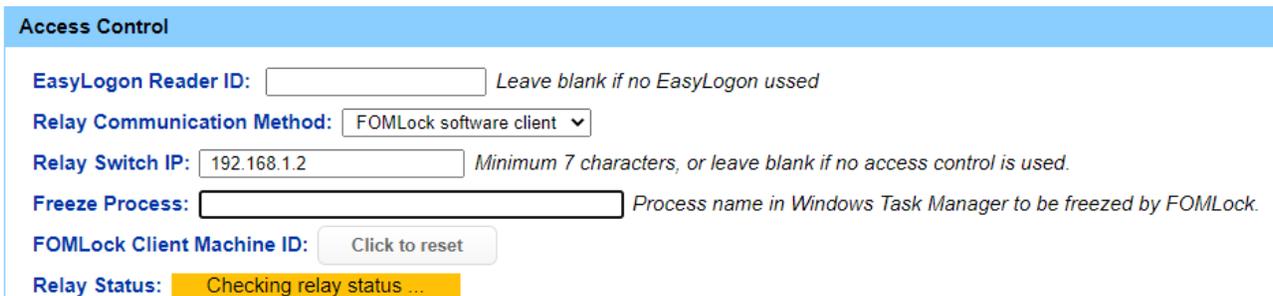
1. Login FOM as Facility Admin or Instrument Manager. Go to Resources Admin, and select the instrument where the soft lock will be installed.
2. In the Relay Communication Method field, select FOMLock software client.



The screenshot shows the 'Access Control' section of a web interface. It includes a text input for 'EasyLogon Reader ID' with a placeholder 'Leave blank if no EasyLogon ussed'. Below it is a dropdown menu for 'Relay Communication Method' with the following options: 'No Access Control', 'FLOB-01', 'NP Series', and 'FOMLock software client'. The 'FOMLock software client' option is highlighted.

3. After the Relay Communication Method is selected, you will see more fields where you can set the Relay switch IP, Freeze Process, and FOMLock Client Machine ID fields. Type in the IP address of the to-be-controlled computer. The Freeze Process field is optional if you want to freeze a program when the screen is locked.

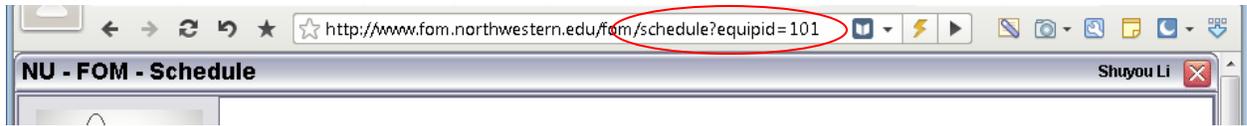
**Note:** If you are using NAT port mapping, you need to put the IP address with the NAT port number, such as 192.168.1.200:5080 and another one 192.168.1.200:5081



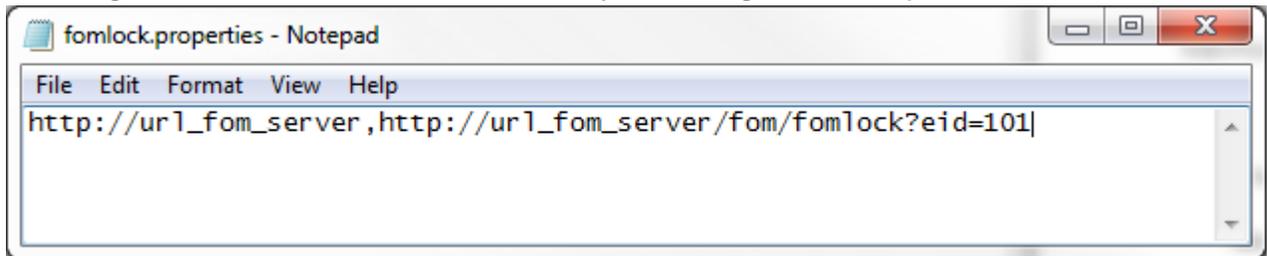
The screenshot shows the 'Access Control' section with the following fields filled out: 'EasyLogon Reader ID' is empty; 'Relay Communication Method' is set to 'FOMLock software client'; 'Relay Switch IP' is '192.168.1.2' with a note 'Minimum 7 characters, or leave blank if no access control is used.'; 'Freeze Process' is empty with a note 'Process name in Windows Task Manager to be freezed by FOMLock.'; 'FOMLock Client Machine ID' has a 'Click to reset' button; and 'Relay Status' is 'Checking relay status ...'.

4. If the to-be-controlled PC is a replacement of an existing computer, you need to reset the FOMLock machine ID.

5. Open Schedule page of the instrument to be controlled. In the address bar, you can find the Equipment ID number. Please write it down. We will need this number in next steps.



6. On the to-be-controlled PC, unzip the FOMLock package to C:\FOMLock\ folder (All the following configurations refer to this folder. If you unzip to another drive or folder, you need check carefully all the configurations to make sure the reference is correct).
7. Use Notepad.exe to open the file "fomlock.properties" in FOMLock folder. Update the line with the URL of your FOM home page, eg.  
<https://www.instrumentschedule.com>, <https://www.instrumentschedule.com/fom/fomlock?eid=101>  
Make sure the URL starts with either http or https depends on your FOM server setting. The eid must match the number you have got from step #3 above.



8. On the to-be-controlled PC, configure firewall so that FOMLock.exe is allowed for inbound TCP port 2011. To do this, right-click on the file SetupFirewall.bat and choose Run As Administrator.
9. You may test the firewall and other settings with the following command in DOS mode:

Fomlock.exe testmode

10. When starting FOMLock with testmode parameter, if everything is working properly, you should see something like the following in the CMD window:

```
[4/24/2021 03:42:08 PM] Starting in Debug Mode
[4/24/2021 03:42:09 PM] PREFIX: http://127.0.0.1:8080
[4/24/2021 03:42:09 PM] URL: http://127.0.0.1:8080/fomv2/fomlock?eid=32
[4/24/2021 03:42:09 PM] HIDE: False
[4/24/2021 03:42:09 PM] If it weren't debug mode, I would lock the screen.
[4/24/2021 03:42:09 PM] Got page: about:blank
[4/24/2021 03:42:09 PM] Ignoring about blank in prefix inject check
[4/24/2021 03:42:10 PM] Received: GET /pset%201%200/4C4C4544-0030-4710-8037-C3C04E315432-C0G71T2-BFEBFBFF000506E3 HTTP/1.1
[4/24/2021 03:42:10 PM] Got page: http://127.0.0.1:8080/fomv2/fomlock?eid=32
```

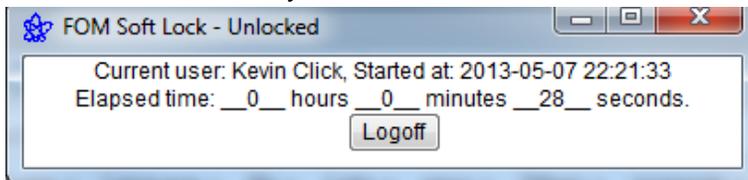
[4/24/2021 03:42:10 PM] Has prefix, injecting code.

In the log above, the circled line is critical, which indicates that the FOMLock client successfully received command from the FOM server. If you don't see this line, you need to troubleshoot and find what is blocking the traffic from the FOM server to the FOMLock client computer.

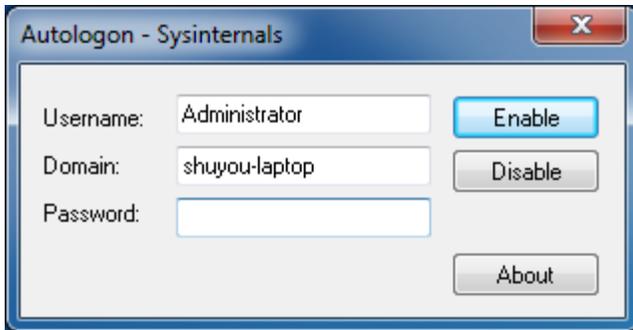
11. Run FOMLock.exe, you should see the computer is locked, with only the FOM welcome page shown up on screen. Like the screenshot below.



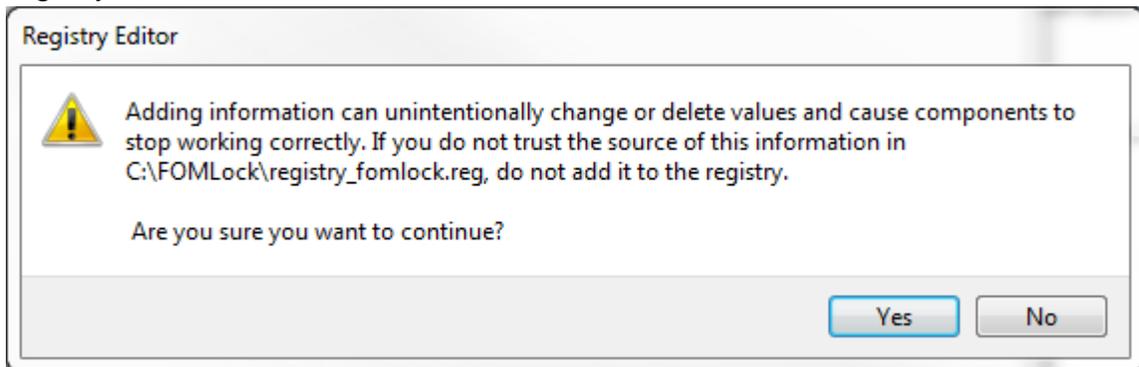
12. To unlock the screen, you need login FOM, and then logon this instrument as you normally do to start using the instrument. This may be done on the locked PC or another internet connected PC.
13. With successful logon, the FOM screen should be unlocked and you see normal desktop again. The FOM Lock window is now a normal window shown at the top-center of the computer screen, with a timer shown and a logoff button. You may minimize until the end of your session.



14. If steps above are successful, you may now configure Windows to auto start FOMLock when Windows reboot. Right-click Autologon.exe in the FOMLock folder and select "run as administrator". Enter username and password for the username that you want Windows to automatically logon with, then click Enable.



15. Double click the file “registry\_fomlock.reg” to add auto-start FOMLock script to the registry. Click Yes to continue.



16. Reboot the computer to confirm that the FOMLock is started automatically.

Now, inform your users with the following instructions on how to use the soft lock of FOM.

1. Reserve instrument on FOM calendar with any internet-connected computer.
2. Before starting experiment on the instrument, you should see the computer screen locked with only the FOM welcome page shown.
3. Login FOM as normal, and the computer screen will be unlocked with a successful logon of this instrument.
4. After experiment, you must click “Logoff” in the FOM Lock window. This will log you off FOM session and lock the computer screen and be ready for the next user.

## Appendix 4. Contact information and problem reports

*FOM® Technical Issues and System Troubleshooting:*

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