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Generating User Engagement in an Academic Core Research Facility

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Universities across the world invest millions of dollars in facility infrastructure and instrumentation to support their current and future research activities. These core facilities are also used to attract new faculty and students. The engagement of faculty with the core research facility tends to be focused on instrument acquisition, budgets, and user rates while the engagement of students tends to be focused on safety, training, and instrument use. The core facility administration and staff have to become creative in today's world to gain the attention and eventual engagement of these students. We have attempted several different strategies to engage the student users in becoming more involved in the user community, offering a voice in the administration and operation of our core facility. It is definitely not one size fits all; in fact we found that many different strategies are needed to engage the broad community of users. Presented are a few strategies that we have implemented to increase student user engagement within our core research facility at UF. Whenever possible, we use data to drive the decisions and the strategy.

The first and most important step in this engagement strategy is to have the facility staff realize that the students are customers and we are operating a service oriented facility. If the staff is unwilling to participate in an open and effective communication environment, then one cannot expect the students to engage. Once the staff is on-board with the engagement strategy, the next step is to get the students to open up and communicate and engage. It turns out this is a lot harder than the actual research itself.

We have instituted numerous methods of communication to the student user base to achieve an effective communication happy medium. Emails become too numerous and get lost in the inbox, so it was suggested by several student users to implement a chat type of app. We used an app and created different channels for different instrument types. This has shown to be somewhat effective. The data shows that the majority of the messages are coming from facility staff. The highest student messages are on the electron microscopy channel, with postings of 2.7x the next highest channel. Additionally we publish a short weekly facility newsletter with the topic of the week, a safety note, and other articles of interest. We were not sure of the readership for these weekly notes and we started putting in an occasional small prizes and Easter eggs. There is a group of students who were responding to the prizes and are having fun with it. These are a different group of students from the chat app group.

We also engaged the students with bi-monthly seminars with topics ranging from instrumentation, thesis preparation, safety, vendor talks, and staff focused talks. We encouraged the students to provide talks, but these have been very slow in developing. During the reduction of campus activities in March 2020, we started weekly webinars to keep the student users engaged and up to date with our facility preparations to resume activities. This was well attended and very helpful to keep the students up to date. Over a year after resuming in-person activities, we have seen a decline in the attendance of the weekly webinar series and are changing the period based on a survey feedback. Figure 1. Over 60% of the students felt that weekly was too frequent since resuming campus activities. We want to show the

students that their interests matter and we are working to accommodate their feedback into our operations.

We created a user advisory committee where each research group that uses the facility has a representative. This committee is an open forum where the users can express their comments/concerns regarding the facility operation, safety, training, and facility effectiveness. This has become a great meeting where the students' voice is heard directly by the facility administration. This group meets monthly and the students are encouraged by the faculty to attend and to present the meeting notes in their respective group meetings. This user advisory committee is different from our faculty advisory committee, which as the title states, is made of the faculty who use the facility. This committee has benefitted both the facility and the student community and we always use examples of how their input was implemented into our daily operations whenever possible.

Upon resumption of campus activities in the summer of 2020, we frequently engaged this committee to review our proposed protocols, got their input and had numerous discussions. This allowed for the student community to have a direct hand in how we were resuming activities with the time and occupancy constraints in place. These students were a lot less surprised and were prepared to return to activities than those who did not participate. Additionally, as we were adding occupancy and hours back into our operations, we beta tested several different versions of our plan with a select group of students. By constantly updating and engaging these students, we were able to create a system that was workable and acceptable by all.

One area of concern with faculty tends to be the transition between user training and user experience, meaning, the time between the student is trained and when the student is able to take publication quality data or images. Typically instrument training consists of several of the following: instrument background quiz, safety training, instrument standard operating procedure review, instrument demonstration, hands-on instrument training, and driving tests. Different facilities and even different instruments within a facility may have varying requirements. Many times faculty want to their students to become highly competent operators of instruments but may be unwilling to wait (or pay) for their student to gain the competence. This places pressure on the students to become better operators which does not always lead to better results.

Through understanding the federal, state, and university regulations we realized that we can apply a small portion of our university subsidy to an extended training program that provides the students with additional instrument operation time to improve their novice skills without increasing the expenses to the faculty's grants. We now provide the recently trained students with an hour each morning to reserve the instrument to practice with a standard sample, not their research sample. From reviewing instrument use records, we noticed that there is low instrument use earlier in the day. Figure 2. Therefore we allow this extended training to take place during these low user hours to benefit the newly trained students without disrupting the bulk of the research activities. This has shown to be very popular with the students and the faculty and has led to increased communication with the students and better instrument operators.

One final area of greatly needed engagement is safety. Running a large user facility that includes microscopy, spectroscopy, particle analysis and a semiconductor fabrication cleanroom is full of safety challenges. There are 8 members of the technical staff but over 400 registered and active users of the core facility, so roughly 50 users per staff member. Fortunately not all registered users are in the facility at one time, but learning the safety habits of everyone and monitoring safe operations is an on-going

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challenge. We have encouraged a safety culture of "keep each other safe" and "see something, say something", but this has been our biggest community engagement challenge to date. Thankfully we maintain a very safe research environment, but there are too many minor issues that are showing up more and more frequently. This can be attributed to the nature of an academic core facility, students learn and graduate, new students replace them and the education process starts all over again. Fortunately we are seeing small improvements in the safety communication from the students. By making safety a priority and using a "learning moment" strategy when dealing with safety issues, we seek to achieve the same level of community engagement that we have seen in other aspects of the user community.

All these examples of communication avenues have helped the facility administration and staff get a better understanding of the students' wants and needs. We will admit that not all students are engaged in the user community, however, we are breaking communication barriers and making progress. We have seen that not one communication path works for a majority, but several paths get the messages out and feedback returned.[1]

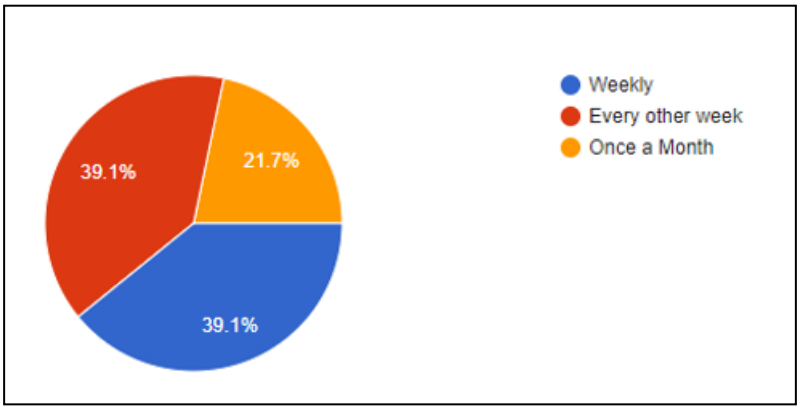

Figure 1. Student responses to survey on webinar frequency.

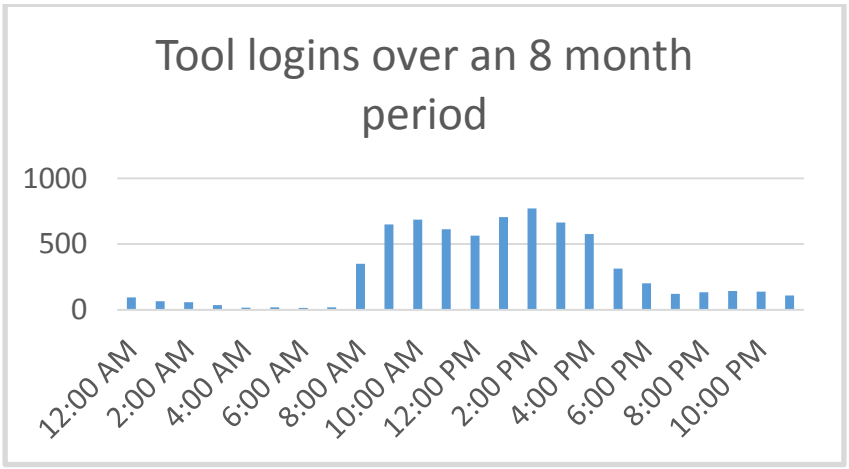

Figure 2. Tool login numbers per time of login.

Reference:

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