

## Wisconsin Center for Nanoscale Technology (WCNT) Survey Report

In Fall 2022, the College of Engineering worked with the University of Wisconsin Survey Center (UWSC) to create and field a survey of the users of the Wisconsin Centers for Nanoscale Technology (WCNT). The WCNT is composed of the Nanoscale Fabrication Center (NFC), the Soft Materials Characterization Laboratory (SMCL) and the Nanoscale Imaging and Analysis Center (NIAC). For more information on the WCNT centers, please visit [www.wcnt.wisc.edu](http://www.wcnt.wisc.edu).

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### Survey Topics

The survey covered several key domains:

- (1) Staff: including satisfaction with level of staffing, staff helpfulness, staff application of center policies, staff respect and helpfulness.
- (2) Instruments: including type and availability of instruments, instrument capability, instrument modernity.
- (3) Training: type of training, usefulness of training, desire for enhanced training.
- (4) New material approval process (NFC only).
- (5) Physical safety: evaluation of physical safety, knowledge, and satisfaction with reporting processes.
- (6) Disability accommodations.
- (7) Working environment: respect from other users, experiences of harassment or discrimination from staff or other users, knowledge of incident reporting processes, confidence that raised concerns would be addressed.
- (8) Overall satisfaction.

### Survey Process and Response Rate

Combined user lists since 2018 from the three WCNT centers resulted in a potential survey participant population of 1457 unique individuals. Some individuals utilize multiple centers, so participants were first asked to indicate which center(s) they utilized so they could respond to items on each center. 246 individuals responded to the survey, for an overall response rate of 17.8%. Because individuals could respond to items for each center that they utilized, response rates for each center were higher: NFC 30.5%, SMCL 20.3% and NIAC 19.4%.

Of all survey respondents, 3% reported having a disability. No other demographic information was collected or reported. For more information on survey processes and sample sizes, please refer to the UWSC Response Rate Report.

### Summary of WCRT Results

Across all three WCRT centers, users that participated in the survey on average were between “somewhat” and “very” satisfied. The lowest overall user satisfaction was at the NFC (M=3.60).

In items related to center staff, for all three centers, the lowest rating was for the level of staffing for advanced research needs. For the NFC and the SMCL, the lowest rating related to instruments was how up to date the instruments are.

A substantial percentage of survey participants that use the SMCL and NIAC did not know or were unsure of where to report issues of safety or of negative working conditions. Specifically, 48% of SMCL users and 44% of NIAC users did not know where to report safety issues or were unsure. In contrast, just 15% of NFC users did not know or were unsure of where to report safety issues. There was similar uncertainty about where to report issues in the working environment (e.g., did not know or unsure: NIAC 34%; SMLC 55%; NIAC 52%). The centers may benefit from providing users with clearer and more frequent information on reporting operational issues.

Among survey participants for each center, there were limited reports of harassment or discrimination from staff or other users. Because of the item responses (never<-> very often), survey responses do not provide information on the actual number of such incidents experienced by survey respondents. However, the proportion of survey respondents that did not respond “never” for harassment or discrimination (e.g., “Percent YES”) from staff varied from a low of 2% (SMLC) to a high of 7% (NLC). Reports of harassment or discrimination from other users varied from a low of 1% (SMLC) to a high of 4.6% (NIAC).

Individuals who have stopped using the center due to such issues may not have been on the survey distribution list. Combined with uncertainty about where to report issues related to working conditions, this is an area that would merit attention.

## NFC

A total of 130 survey respondents reported using the NFC facility, however not all these respondents completed survey items related to the NFC. For the items on the survey shown below, there were between 112-121 respondents.

### Staff

Overall survey participants were satisfied with the staff at the NFC (Table 1), rating staff as both respectful and helpful. The lowest rating seen below is the level of staffing to support advanced research needs.

	Current level of staffing meet your routine research needs	Current level of staffing meet your advanced research needs	Supported your routine research needs by providing helpful staff to assist	Supported your advanced research needs by providing helpful staff to assist	Satisfied with how quickly staff responded to instrument related issues	How satisfied have you been with how staff apply policies	How respectful are staff	How helpful are staff
N	121	121	121	121	120	116	115	115
Mean	3.70	3.28	3.75	3.50	3.69	3.78	4.15	4.01

Median	4.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00
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Table 1

## Instruments

Survey participants of the NFC indicated a generally high level of satisfaction with the availability and capability of instruments offered (Table 2). Of the survey items related to instruments, respondents rated their satisfaction with how “up-to-date” the instruments the lowest, yet still slightly above “somewhat satisfied”.

	Supported your routine research needs by providing the instruments	Supported your routine research needs by providing instrumentati on availability	Supported your advanced research needs by providing the instruments	Supported your advanced research needs by providing instrumentati on availability	Satisfied with capability of instruments offered	Satisfied with how up to date the instruments are	Satisfied with the availability of instruments for routine use	Satisfied with availability of instruments for special, non-routine use
N	121	121	121	121	114	114	114	114
Mean	3.91	3.79	3.53	3.50	3.60	3.22	3.58	3.39
Median	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00

Table 2

## Training

Survey participants who use the NFC report they are “very” satisfied with the training they received at the NFC, however some users would value an increased educational component. For a large majority of users that participated in the survey (91%), training served the purpose of both instrument operation and education.

	Satisfied with the content of the training you received	How much would you value an increased educational component
N	119	116
Mean	3.82	3.34
Median	4.00	3.00

Table 3

What purpose has training served for you?	N Respondents	Percent Respondents
Only instrument operation	8	6.9
Mostly instrument operation with limited educational	32	27.6
More instrument operation than educational	34	29.3
Equally instrument operation and educational	40	34.5
More educational than instrument operation	2	1.7

Total	116	100.0
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Table 4

### Instrument Policies

Survey respondents reported general satisfaction with NFC policies related to instrument usage and gave the most positive response to the transparency of policies.

	How well do the policies in place assure fair access to instrumentation	How familiar are you with the policies	Thinking about the policies, how transparent are they	Thinking about the policies, how fair are they
N	117	117	113	113
Mean	3.68	3.87	3.98	3.78
Median	4.00	4.00	4.00	4.00

Table 5

### New Material Approval

As with instrument policies, survey respondents who use the NFC reported satisfaction with how fairness, transparency and safety of policies related to new material approval.

	How well are you informed about the process	How fair is the process	How well does the process consider the concerns of all users	How well does the process protect users' safety	How well does the process protect processes from contamination
N	116	115	114	114	115
Mean	3.84	3.86	3.84	4.25	4.03
Median	4.00	4.00	4.00	4.00	4.00

Table 6

### Safety

Survey participants that use the NFC overwhelmingly report they know where to report safety issues (85.5% Yes, 5.2% No, 9.6% Not Sure). Further, 92% report feeling "very" or "extremely safe" doing work in the NFC, and 86.6% report feeling comfortable reporting safety concerns.

### Disability Accommodations

No survey respondents that use the NFC reported having sought disability accommodations.

### Working Environment

Survey respondents were asked if they know where to report concerns about the working environment of the NFC. While 66% of respondents reported "Yes", 14% responded "No" and another 20% responded they were "Not Sure". As shown in Table 7 below, users overall felt other users were respectful. A solid majority of respondents (65%) were "Very" or "Extremely satisfied" with avenues for feedback, and another 25% were "Somewhat" satisfied.

	How respectful are other users	How satisfied with avenues for feedback on non-instrument related issues	How confident if you raised any concerns about environment they'd be addressed
N	112	112	114
Mean	3.80	3.66	3.71
Median	4.00	4.00	4.00

Table 7

The survey asked about experiences of harassment or discrimination from NFC staff, based on several personal attributes, and harassment or discrimination from other NFC users. Tables 8 and 9 show the results from these items. The “Percent YES” is the percentage of respondents that had a response other than “never”.

Harassment or discrimination from <u>staff</u> (N=112)	Never	Rarely	Sometimes	Often	Extremely Often	Percent YES
...based on gender	107	3	2	0	0	4.5%
...based on race/ethnicity	106	4	2	0	0	5.4%
...based on Country of Origin	107	4	1	0	0	4.5%
...based on other personal attributes	104	5	2	0	1	7.1%

Table 8

Harassment or discrimination from <u>other users</u> (N=112)	Never	Rarely	Sometimes	Often	Extremely Often	Percent YES
...based on gender	107	4	1	0	0	2.5%
...based on race/ethnicity	109	2	1	0	0	2.7%
...based on Country of Origin	109	2	1	0	0	2.7%
...based on other personal attributes	110	2	0	0	1	2.7%

Table 9

## Overall Satisfaction

Survey participants were asked their overall satisfaction with the support they receive from the NFC. The overall mean level of this item was 3.60 as shown in Table 10 below. Of the 115 respondents, 58% were “Very” or “Extremely” satisfied. However, a substantial minority (41.7%) were “Somewhat”, “Slightly” or “Not at All” satisfied.

NFC Overall Satisfaction (Mean=3.60, Median=4.0)	N Respondents	Percent Respondents
Not at all	6	5.2
Slightly	10	8.7
Somewhat	32	27.8
Very	43	37.4
Extremely	24	20.9
Total N	115	100.0

Table 10

## SMCL

A total of 125 survey respondents endorsed using the SMCL facility, however not all respondents completed items related to the SMCL. Between 102-112 respondents who reported utilizing the SMCL completed items related to the SMCL.

## Staff

Ratings of staff by survey participants that use the SMLC were generally like the ratings of given by NFC users. Staff were given the highest ratings for respect and helpfulness. The lowest rating was for the level of staff to meet advanced research needs.

	Current level of staffing meet your routine research needs	Current level of staffing meet your advanced research needs	Supported your routine research needs by providing helpful staff to assist	Supported your advanced research needs by providing helpful staff to assist	Satisfied with how quickly staff responded to instrument related issues	How satisfied have you been with how staff apply policies	How respectful are staff	How helpful are staff
N	112	110	111	110	112	109	106	106
Mean	3.86	3.54	3.76	3.55	3.82	3.85	4.14	4.06
Median	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Table 11

## Instruments

Respondents generally were positive about instruments offered by the SMCL. The lowest rating was given to how “up-to-date” the instruments in the SMCL are.

	Supported your routine research needs by providing the instruments	Supported your routine research needs by providing the instrument availability	Supported your advanced research needs by providing the instruments	Supported your advanced research needs by providing the instrument availability	Satisfied with, capability of instruments offered	Satisfied with, how up to date the instruments are	Satisfied with, the availability of instruments for routine use	Satisfied with, availability of instruments for special, non-routine use
N	111	111	110	110	103	103	103	103
Mean	3.82	3.82	3.69	3.71	3.64	3.37	3.81	3.68
Median	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Table 12

### Training

Users are generally satisfied with training at SMCL, however many would value increased educational component. The majority (75%) have used training for both instrument operation and educational purposes (Table 14).

	Satisfied with the content of the training you received	How much would you value an increased educational component
N	113	111
Mean	3.73	3.45
Median	4.00	4.00

Table 13

What purpose has training served for you?	N Respondents	Percent Respondents
Only instrument operation	25	22.5
Mostly instrument operation with limited educational	33	29.7
More instrument operation than educational	23	20.7
Equally instrument operation and educational	27	24.3
More educational than instrument operation	1	.9
Mostly educational with limited instrument operation	1	.9
Only educational	1	.9
Total	111	100.0

Table 14

### Instrument Policies

Survey respondents who use the SMCL report satisfaction with the policies related to the fairness and transparency of instrument access, however report lower levels of their own familiarity with the policies.

	How well do the policies in place assure fair access to instrumentation	How familiar are you with the policies	Thinking about the policies, how transparent are they	Thinking about the policies, how fair are they
N	110	110	105	105
Mean	3.93	3.42	3.70	3.77
Median	4.00	3.00	4.00	4.00

Table 15

## Safety

A slight majority of survey respondents that use the SMCL (53%) said that they know where to report safety issues. However, 18% of respondents said they did not, and another 30% said they were “unsure”.

90% of respondents that use the SMCL said they felt “very” or “extremely safe” working in the SMCL, while 10% said they felt “somewhat” safe. Regarding raising safety concerns, 74% felt “very” or “extremely” comfortable. 3% said they were “not at all” comfortable and 24% said they felt “somewhat” comfortable.

## Disability Accommodations

Respondents that have sought disability accommodations at SMCL reported being “very” satisfied with the accommodations provided.

## Working Environment

Survey respondents were asked if they know where to report concerns about the working environment of the SMCL. While 45% reported that they knew where to report concerns, 27% reported that they did not, and 28% reported that they were “not sure”.

	How respectful are other users	How satisfied with avenues for feedback on non-instrument related issues	How confident if you raised any concerns about environment they'd be addressed
N	106	106	103
Mean	4.05	3.64	3.46
Median	4.00	4.00	4.00

Table 16

Survey participants who are users of the SMCL reported low levels of harassment or discrimination from staff of SMCL. Between 2-5% of users have had such experiences. There also appear to be occasional and rare experiences of harassment or discrimination from other users of the SMCL, at approximately the same level of incidence.

Harassment or discrimination from <u>staff</u> (N=104)	Never	Rarely	Sometimes	Often	Very Often	Percent YES
...based on gender	102	2	0	0	0	1.9%
...based on race/ethnicity	100	3	1	0	0	3.8%
...based on Country of Origin	101	2	1	0	0	2.9%



...based on other personal attributes	100	2	2	0	0	3.8%
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Table 17

Harassment or discrimination from <u>other users</u> (N=104)	Never	Rarely	Sometimes	Often	Very Often	
...based on gender	103	1	0	0	0	1.0%
...based on race/ethnicity	101	2	1	0	0	2.9%
...based on Country of Origin	102	1	1	0	0	1.9%
...based on other personal attributes	102	1	1	0	0	1.9%

Table 18

## Overall Satisfaction

A strong majority of users of the SMCL that responded to the survey are “extremely” or “very” satisfied with the center (70%). The overall mean level of satisfaction was 3.72, as shown in Table 19 below.

SMCL Overall Satisfaction (Mean=3.72, Median=4.0)	N Respondents	Percent Respondents
Not at all	1	1.0
Slightly	9	8.7
Somewhat	22	21.4
Very	57	55.3
Extremely	14	13.6
Total	103	100.0

Table 19

## NIAC

A total of 224 survey respondents reported using the NIAC facility, however not all of these respondents completed survey items related to the NIAC. For the survey items shown below, there were between 186-208 respondents.

### Staff

Like the NFC and the SLMC, survey participants that utilize the NIAC gave high marks to the respectfulness and helpfulness of staff. In fact, while the median rating of staff is the same for all three centers (median=4.0), individual items rating staff at the NIAC are the highest of any of the three centers. The lowest rating for items related to staff is the level of staffing available for advanced research needs.

	Current level of staffing meet your routine research needs	Current level of staffing meet your advanced research needs	Supported your routine research needs by providing helpful staff to assist	Supported your advanced research needs by providing helpful staff to assist	Satisfied with how quickly staff responded to instrument related issues	How satisfied have you been with how staff apply policies	How respectful are staff	How helpful are staff
N	207	207	208	207	207	201	200	200
Mean	3.96	3.63	3.90	3.71	3.89	3.86	4.22	4.08

Median	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
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Table 20

## Instruments

Survey participants who use the NIAC gave high ratings for the instrument capabilities and availability. The lowest rating of satisfaction is on the availability of instruments for special/non-routine usage.

	Supported your routine research needs by providing the instruments	Supported your routine research needs by providing instrumentation availability	Supported your advanced research needs by providing the instruments	Supported your advanced research needs by providing instrumentation availability	Satisfied with, capability of instruments offered	Satisfied with, how up to date the instruments are	Satisfied with, the availability of instruments for routine use	Satisfied with, availability of instruments for special, non-routine use
N	208	208	207	207	197	197	197	197
Mean	4.03	3.78	3.83	3.67	3.85	3.59	3.49	3.53
Median	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Table 21

## Training

Participants that use the NIAC gave high ratings to the content of training, and they have some appetite for an increased educational component in the training provided. Like the other two centers, a strong majority (78%) reported training has provided both an instrument operation and educational component for them.

	Satisfied with the content of the training you received	How much would you value an increased educational component
N	205	203
Mean	3.78	3.24
Median	4.00	3.00

Table 22

What purpose has training served for you?	N Respondents	Valid Percent
Only instrument operation	35	17.3
Mostly instrument operation with limited educational	51	25.2
More instrument operation than educational	59	29.2
Equally instrument operation and educational	47	23.3
More educational than instrument operation	7	3.5
Mostly educational with limited instrument operation	1	.5
Only educational	2	1.0

Total	202	100.0
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Table 23

### Instrument Policies

Survey respondents that use the NIAC were generally satisfied with the access, fairness and transparency of policies related to instruments, however the lowest rating on these items was users self-report of their familiarity with the policies.

	How well do the policies in place assure fair access to instrumentation	How familiar are you with the policies	Thinking about the policies, how transparent are they	Thinking about the policies, how fair are they
N	204	204	187	186
Mean	3.74	3.32	3.81	3.80
Median	4.00	3.00	4.00	4.00

Table 24

### Safety

A slight majority of survey respondents that use the NIAC (56%) said they know where to report safety issues. However, 17% of respondents said they did not, and another 27% said they were “unsure”.

95% of respondents that use the NIAC said they felt “very” or “extremely” safe working in the NIAC, while 4% said they felt “somewhat” safe. 1% of respondents felt “slightly” or “not at all” safe. Regarding raising safety concerns, 81% felt “very” or “extremely” comfortable, while 15% felt “somewhat” comfortable. 4% reported feeling “somewhat” or “not at all” comfortable.

### Disability Accommodations

No respondents reported having sought disability accommodations at NIAC.

### Working Environment

Survey respondents were asked if they know where to report concerns about the working environment of the NIAC. While 49% reported that they knew where to report concerns, 23% reported that they did not, and 29% reported that they were “not sure”.

	How respectful are other users	How satisfied with avenues for feedback on non-instrument related issues	How confident if you raised any concerns about environment they'd be addressed
N	196	196	197
Mean	4.02	3.71	3.60
Median	4.00	4.00	4.00

Table 25

Survey participants at the NIAC reported rare and occasional incidents of harassment or discrimination by NIAC Staff. Note that the NIAC had the largest number of survey respondents, so while the absolute numbers shown below are higher, the percentages of users reporting such incidents are similar to the other two centers (3-6%).

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Harassment or discrimination from <u>staff</u> (N=197)	Never	Rarely	Sometimes	Often	Very Often	Percent YES
...based on gender	190	5	1	0	1	3.0%
...based on race/ethnicity	189	5	3	0	0	4.1%
...based on Country of Origin	187	7	3	0	0	5.1%
...based on other personal attributes	185	7	4	0	1	6.1%

Table 26

Harassment or discrimination from <u>other users</u> (N=197)	Never	Rarely	Sometimes	Often	Very Often	Percent YES
...based on gender	193	3	0	0	1	2.0%
...based on race/ethnicity	190	5	1	0	1	3.6%
...based on Country of Origin	189	6	2	0	0	4.1%
...based on other personal attributes	188	6	3	0	0	4.6%

Table 27

### Overall Satisfaction

Survey participants that use the NIAC reported an overall high level of satisfaction with the center, with 74% reporting being “very” or “extremely” satisfied.

NIAC Overall Satisfaction (Mean=3.89, Median=4.0)	N Respondents	Valid Percent
Not at all	3	1.5
Slightly	8	4.1
Somewhat	41	20.8
Very	101	51.3
Extremely	44	22.3
Total	197	100.0

Table 28