

2023 NNCI Economic Impact Survey

Preliminary Results

“They're great for evaluating equipment needs and new techniques as an alternative to hiring expensive commercial labs or spending on costly equipment with uncertain utility for our applications.”

-NNCI-Supported Facility User

Our inspiration...

2013 NNIN Economic Impact Survey & Report

https://www.nnin.org/sites/default/files/NNIN_EIA_Report_4-15-2013_Final.pdf



NNCI I&E survey responses by site, thru 10/10/23

Q7: NNCI Site name	Count	Percent
Center for Nanoscale Systems (...)	31	19.0%
nano@stanford at Stanford Uni...	22	13.5%
San Diego Nanotechnology Infr...	20	12.3%
Nanotechnology Collaborative I...	15	9.2%
Mid-Atlantic Nanotechnology H...	13	8.0%
Northwest Nanotechnology Infr...	13	8.0%
Southeastern Nanotechnology I...	13	8.0%
Montana Nanotechnology Facili...	9	5.5%
Cornell Nanoscale Science and ...	8	4.9%
Virginia Tech National Center fo...	6	3.7%
Midwest Nanotechnology Infras...	4	2.5%
I am unsure of which NNCI-sup...	3	1.8%
Nebraska Nanoscale Facility (N...	3	1.8%
Kentucky Multi-Scale Manufact...	1	0.6%
Research Triangle Nanotechnol...	1	0.6%
Texas Nanofabrication Facility (...)	1	0.6%
Total	163	100.0%

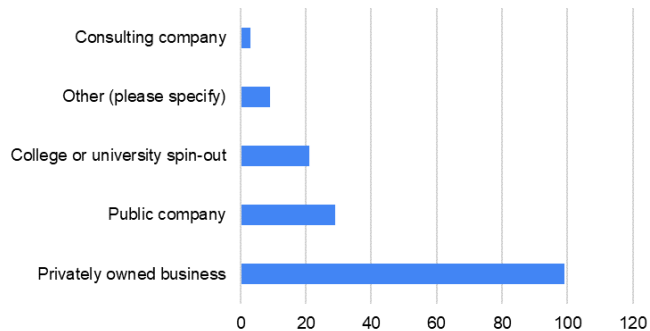
The NNCI Economic Impact Assessment Survey (EIA) was distributed to 1812 unique email addresses representing companies gathered by NNCI-funded user facilities. The useable response rate for the survey is 7%, with a total of 167 partially completed or complete usable responses.

Company Demographics

Who are our users?

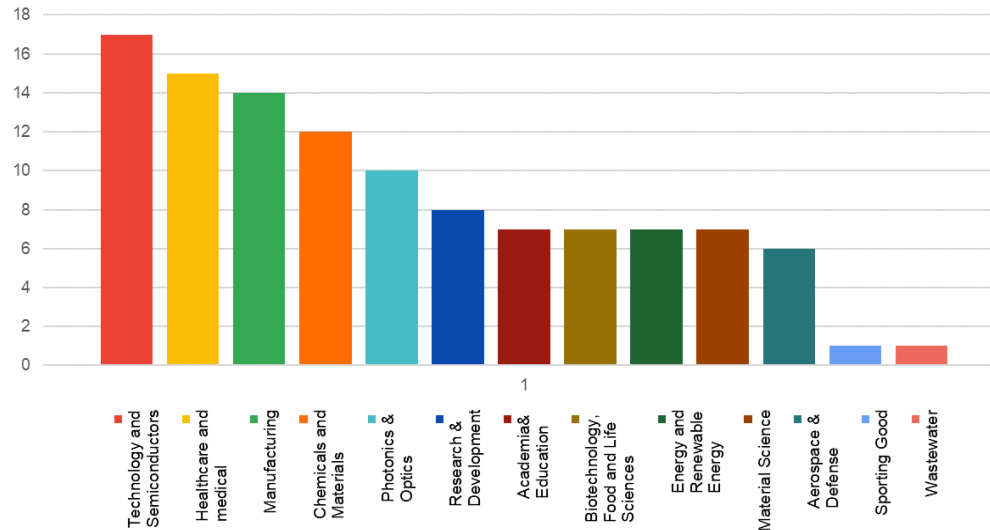
User Profiles of Responding Companies

Business Type

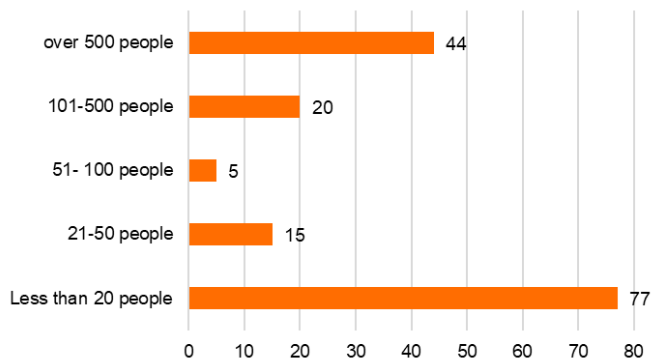


*Other answers included non-profits, university and college users.

Company Field

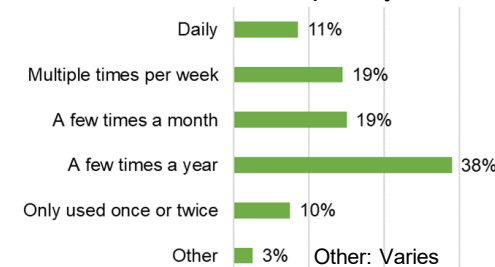


Business Size (employees)



- 30% of companies launched since 2015
- 78% began using NNCI facilities since 2015
- 75% have used NNCI in the last 6 months

Use Frequency



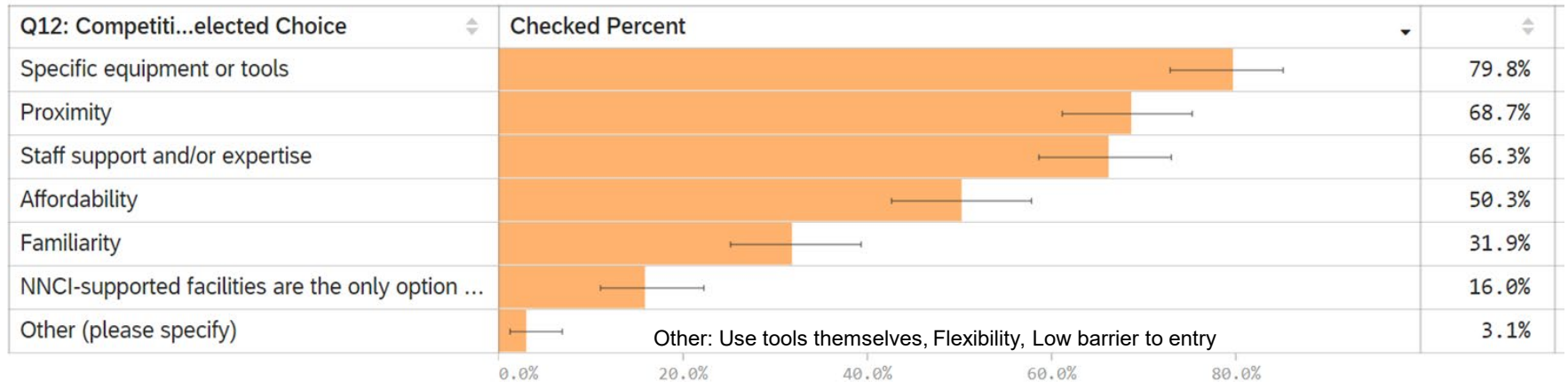
Trends:

This survey identified the following trends describing how users find value in NNCI facilities and services.

NNCI-supported facilities are central to the continued productivity and survival of the companies that use them.

Why choose our facilities?

What, if anything, made NNCI-supported facilities more useful to your business than alternative facilities?
(choose all that apply)

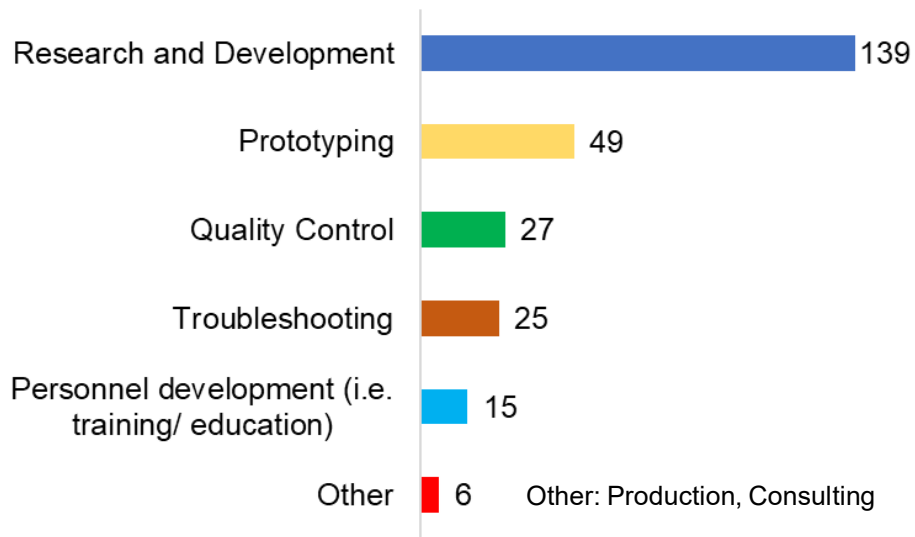


NNCI supports **92%** of our users' products and services.

*"In doing research and development, being able to **operate the tools ourselves** means we have a better chance to understand why the process does and does not work and we have a better chance at setting priorities and schedule"*

What are they using our facilities for?

Primary use of NNCI-supported facilities? (choose all that apply)



61% of businesses report that they have filed at least one patent from using NNCI-supported facilities.

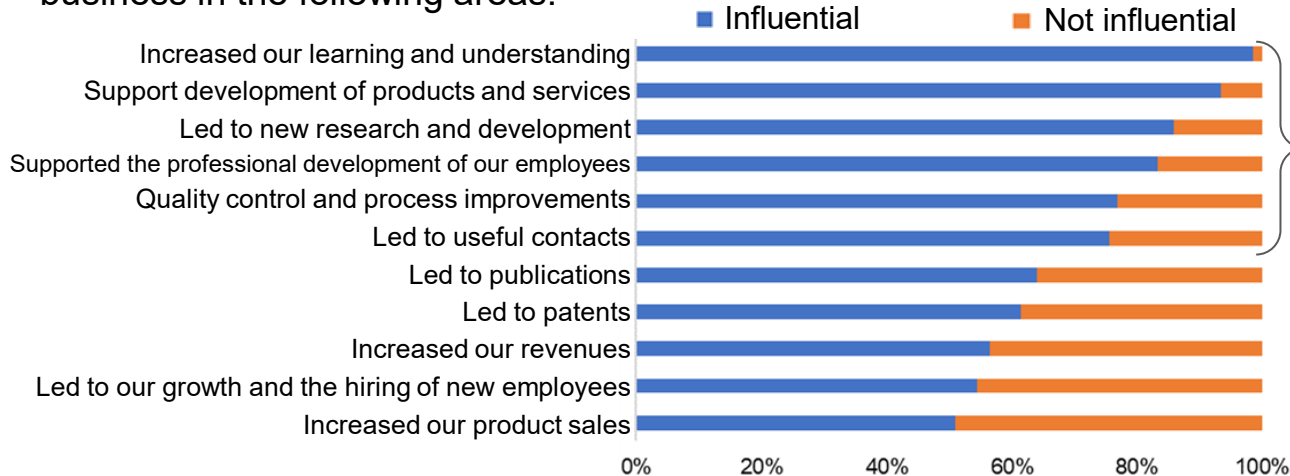
Some of the patent areas include:

- sensors (nanopore, temperature, MEMS, medical)
- implantable medical devices/sensors
- photovoltaic devices
- microtool design
- optics, optical surfaces, optical detectors
- quantum devices
- microfluidics
- chitosan & chitosan-silver packaging film
- carbon nanotubes and graphene
- hemp derived cannabis products
- compostable product packaging
- functional textiles
- lead detection in drinking water

“NNCI-supported facilities provide access to critical equipment that is too expensive for us to buy at this stage. Access to this equipment enables us to perform R&D leading to private and public grant funding and ultimately to functional prototypes, manufacturing, and revenue.”

Effects on Businesses

Please rate how influential access to NNCI-supported facilities are to your business in the following areas:



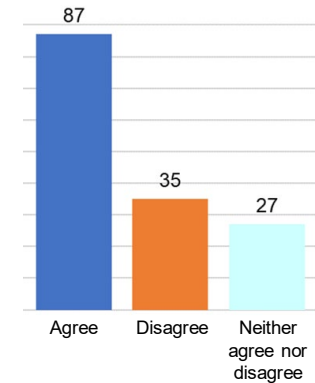
Instrumental in starting 35% of businesses

Enabled 75% of businesses to achieve continuous product innovation

92%

would be affected if they were to no longer have access to NNCI-supported facilities

NNCI-supported facilities are a **major** contributor to our success today



“None of the research conducted through my company would have been possible without access to a NNCI facility.”

Economic Impact of access to NNCI-supported facilities

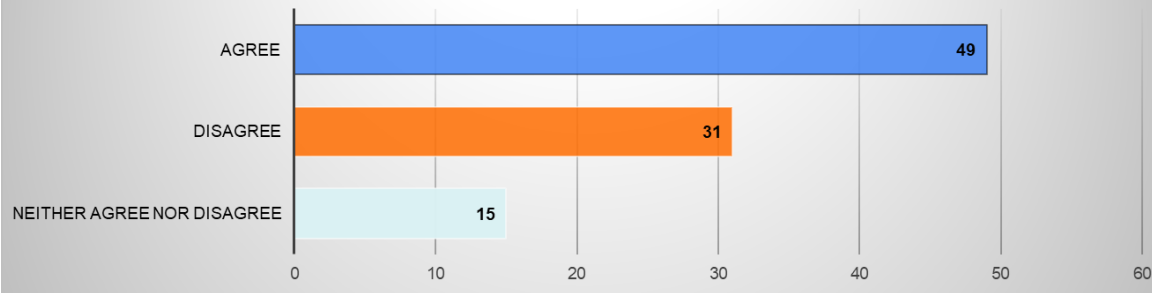
39% agree NNCI helped them hire more employees.

64% agree NNCI facilities helped increase Intellectual Property portfolio.

79% attributed some success with financing to work done at NNCI-supported facilities.

32% of businesses earned more than \$1 Million in revenue in 2022.

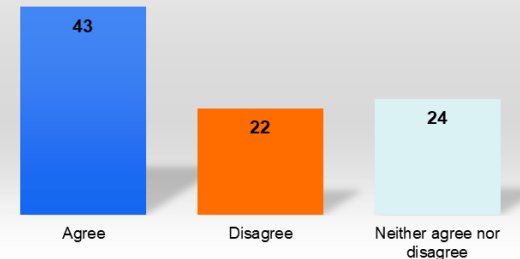
"Your business has products and services that would not exist without NNCI-supported facilities."



"Our work (with NNCI) allowed us to avoid investing in this area too early. We avoided tens of thousand of dollars of wasted work."

Businesses reported raising **\$2.3 billion dollars** in financing since they began work with NNCI facilities.

NNCI-supported facilities are a major contributor to our company's economic development and revenues.



"Access to this equipment enables us to perform R&D leading to private and public grant funding and ultimately to functional prototypes, manufacturing, and revenue."

What's Next?

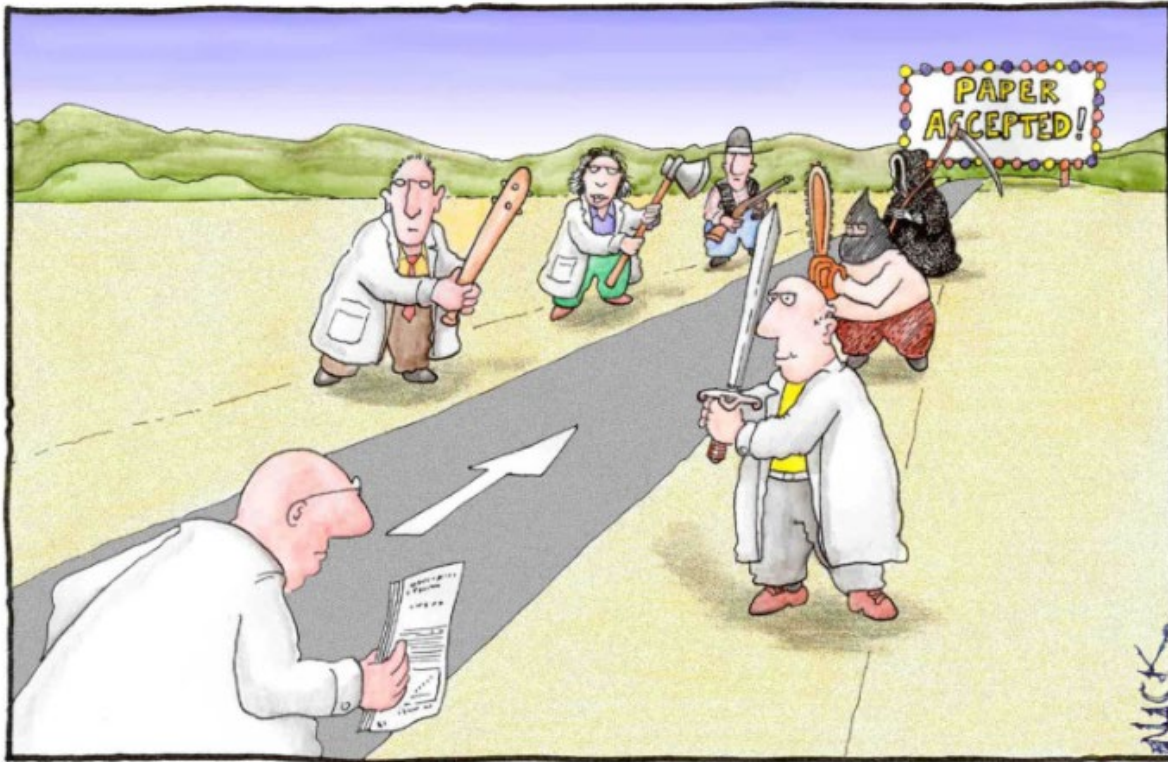
Next Steps

- Still time to respond!
- Full set of raw data will be shared with site survey champions
- Written report

Future Nanotechnology Infrastructure Program

- Innovation and Entrepreneurship staff at individual sites
- External assessor budget / Assessment staff at Coordinating Office

NNCI Site	Survey Champion
Nanotechnology Collaborative Infrastructure Southwest (NCI-SW)	Jessica Hauer
Virginia Tech National Center for Earth and Environmental Nanotechnology Infrastructure (NanoEarth)	Tonya Pruitt
San Diego Nanotechnology Infrastructure (SDNI)	Yves Theriault
Research Triangle Nanotechnology Network (RTNN)	Phillip Strader
nano@stanford	Sara Ostrowski
Montana Nanotechnology Facility (MONT)	Andrew Lingley
Kentucky Multi-Scale Manufacturing and Nano Integration Node (KY Multiscale)	Ana Galiano
Mid-Atlantic Nanotechnology Hub (MANTH)	Gerald Lopez
Midwest Nanotechnology Infrastructure Corridor (MiNIC)	Jim Marti
Cornell Nanoscale Science and Technology Facility (CNF)	Melanie Mallison
Center for Nanoscale Systems (CNS)	Jim Reynolds
Nebraska Nanoscale Facility (NNF)	Jenna Huttenmaier
Northwest Nanotechnology Infrastructure (NNI)	Karl F. Bohringer
Soft and Hybrid Nanotechnology Experimental (SHyNE) Resource	Chad P. Goeser
Southeastern Nanotechnology Infrastructure Corridor (SENIC)	Shyam Aravamudhan & Amy Duke
Texas Nanofabrication Facility (TNF)	Christine Wood & Burt Fowler



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

Cartoon by Nick D Kim,
strange-matter.net

Thank you!