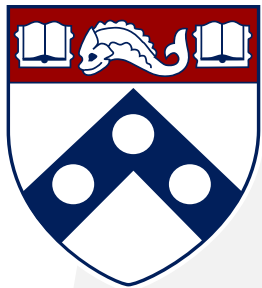
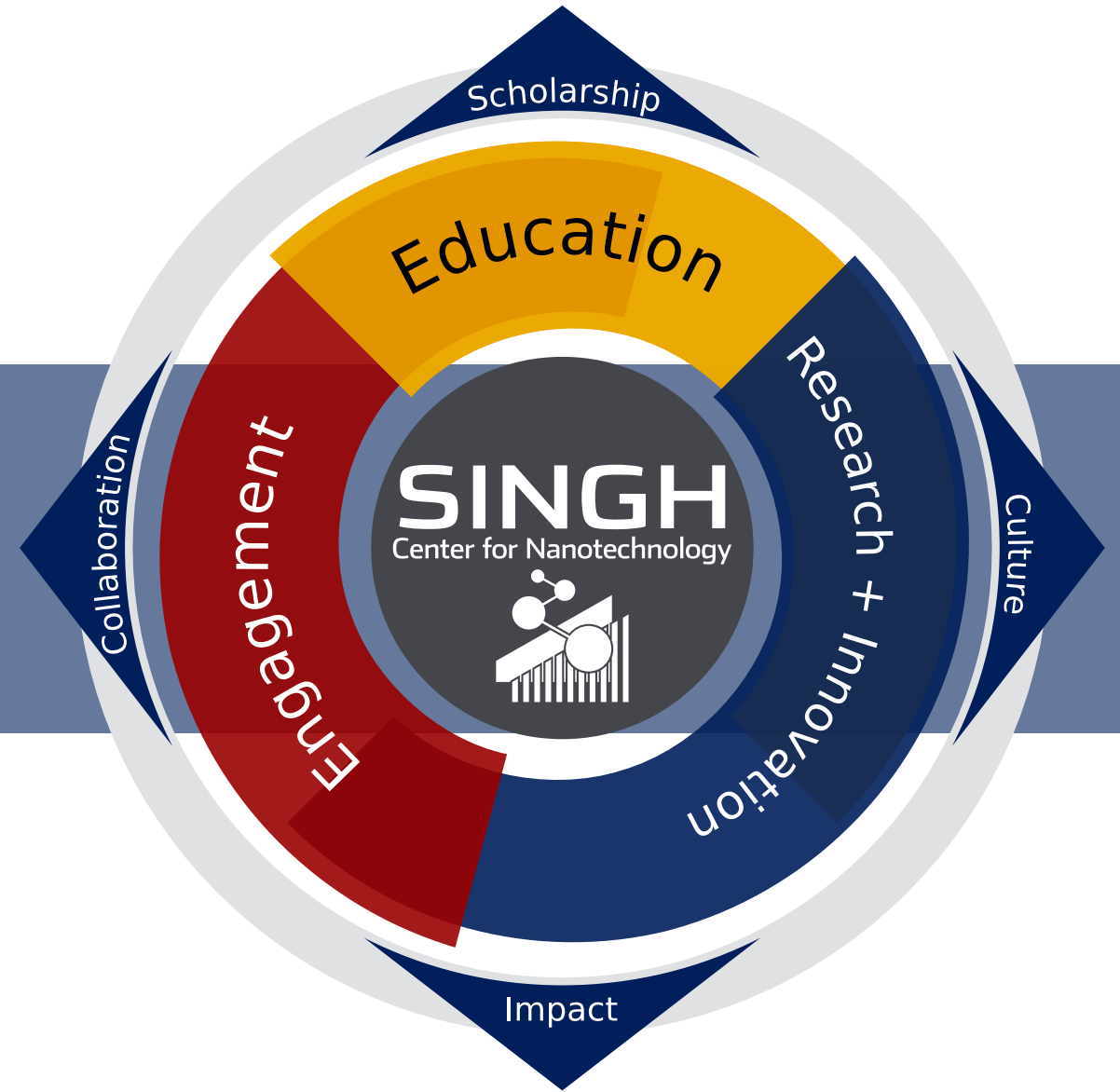


Sharable Data Analytics

Gerald G. Lopez, Ph.D.
Director of Operations and Business Development



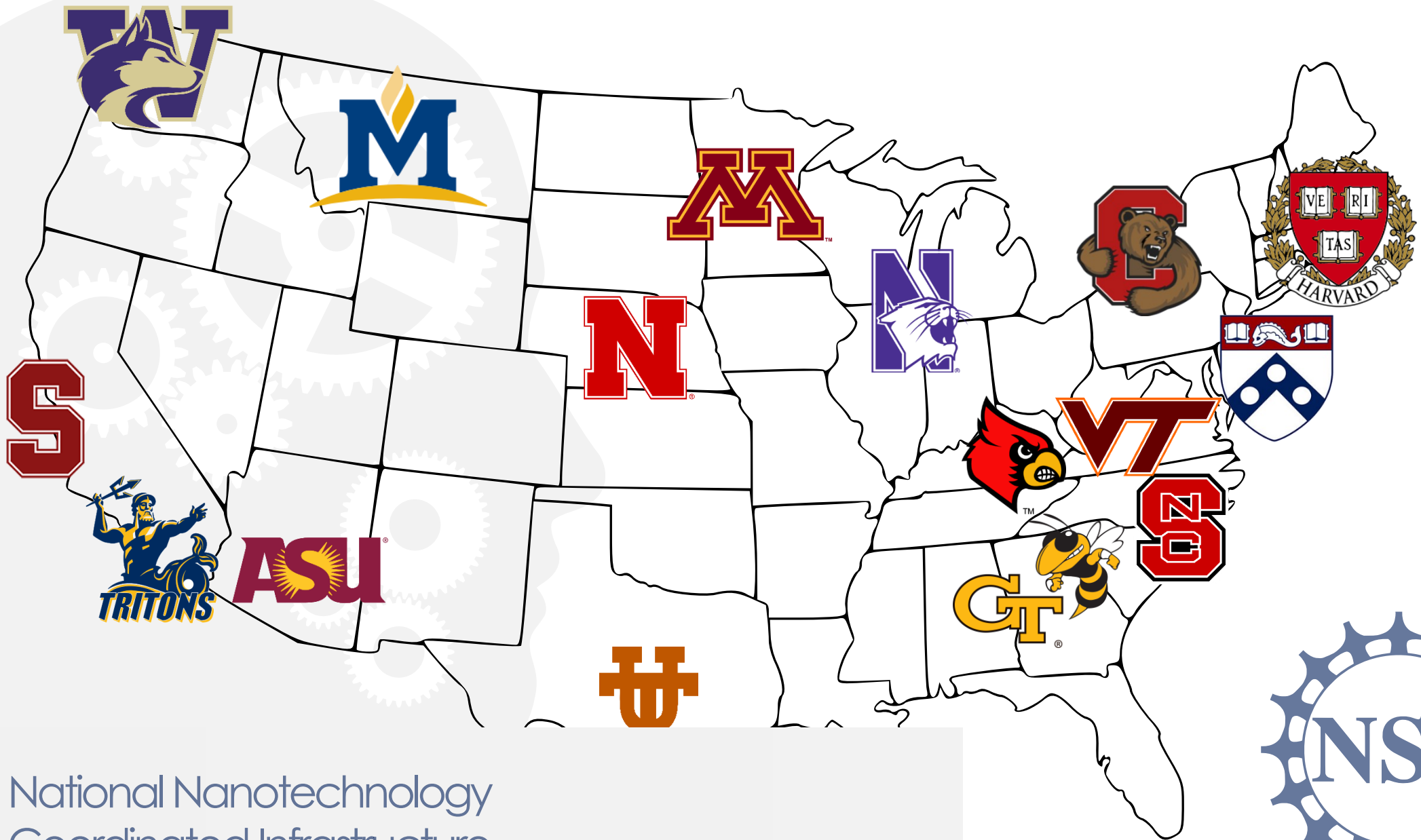
Penn
UNIVERSITY of PENNSYLVANIA



National Nanotechnology
Coordinated Infrastructure

www.nano.upenn.edu





National Nanotechnology
Coordinated Infrastructure



The Singh Center: Penn's Nanotech Nexus



Three Core Facilities

Quattrone Nanofabrication Facility (QNF)

Nanoscale Characterization Facility (NCF)

Scanning and Local Probe Facility (SLPF)

94 Tools

13

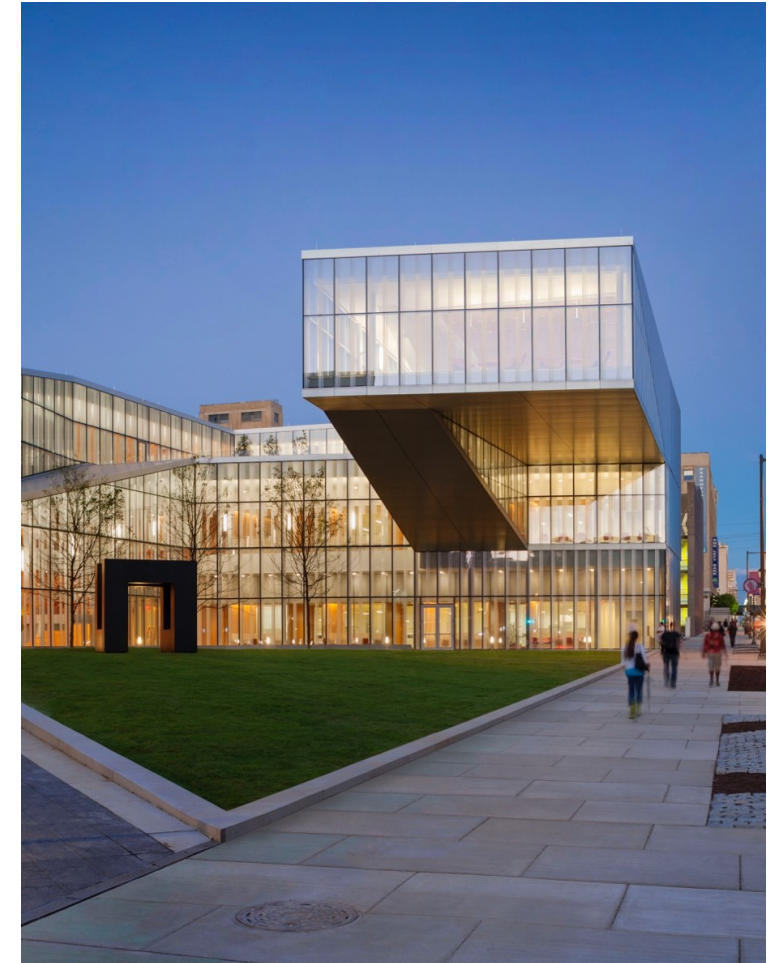
Nanoscale
Characterization Facility

72

Quattrone
Nanofabrication Facility

9

Scanning and Local
Probe Facility



Singh Center Personnel



Mark Allen, PhD
Singh Center



Gerald Lopez, PhD
Singh Center



G. Pat Watson, PhD
NNCI/Singh Center



Kristin Field, PhD
NNCI/Singh Center



Doug Yates, PhD
NCF



Matt Brukman, PhD
SLPF



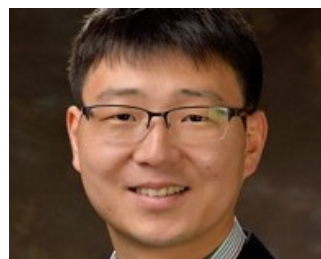
Eric Johnston
QNF



Jamie Ford, PhD
NCF



David Barth
QNF



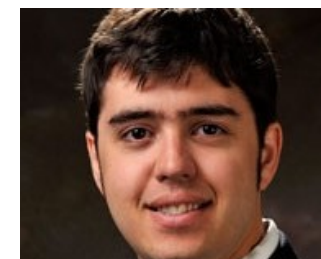
Guyseok Kim, PhD
NNCI/Singh Center



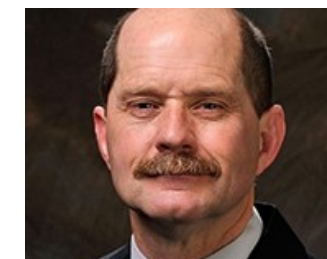
Sam Azadi
QNF



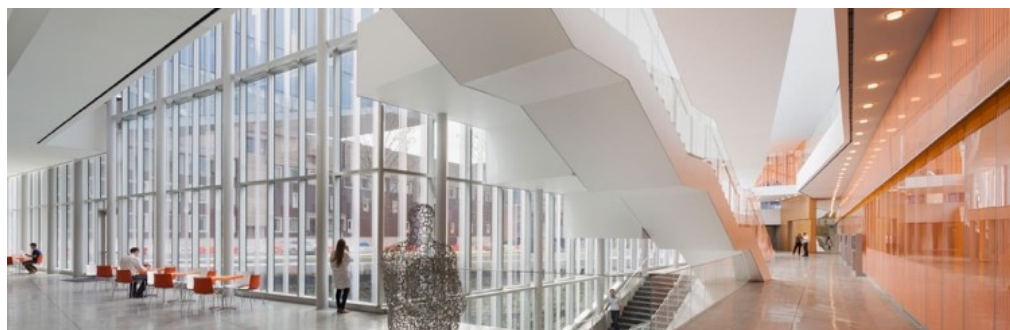
Kyle Keenan
QNF



David Jones
QNF



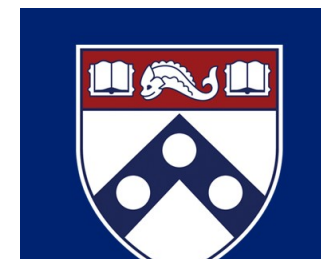
Charlie Veith
QNF



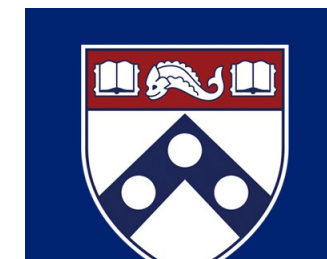
Chris Montowski
Singh Center



John Russell
Singh Center



Jarrett Gillinger
QNF



Feaz Kalamodeen
QNF

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Facility	User	Project PI	Department	Affiliation	Discipline	On Site/Re	Date	Item	Tool ID	Reserved H	Duration	Efficiency	Uncapped	Capped
2	Quattrone	Xilin Feng	Liang Feng	Electrical a	Local Site A	Electronics	On Site	6/7/2022 1:00	Elionix ELS-EBL-01		2	2.56	1.28	127.78	127.7
3	Quattrone	Xilin Feng	Liang Feng	Electrical a	Local Site A	Electronics	On Site	6/6/2022 23:29	Spinner - E-SPN-06		1.29	1.29	1	0	
4	Quattrone	Chloe Lebl	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 21:28	Spinner - E-SPN-06		0.53	0.53	1	0	
5	Quattrone	Chloe Lebl	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 21:08	Zeiss Axio I MET-14		0.32	0.32	1	0	
6	Quattrone	Xilin Feng	Liang Feng	Electrical a	Local Site A	Electronics	On Site	6/6/2022 21:00	Filmetrics I MET-04		0.5	3.71	7.42	55.65	55.6
7	Quattrone	Chloe Lebl	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 20:56	MPT Corp. BE-05		0.32	0.53	1.68	13.33	
8	Quattrone	Xilin Feng	Liang Feng	Electrical a	Local Site A	Electronics	On Site	6/6/2022 20:30	Oxford Cob DE-05		2.5	4.39	1.75	175.48	175.4
9	Quattrone	Chloe Lebl	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 20:10	Lesker PVD PVD-04		0.83	0.71	0.85	17.76	
10	Quattrone	Xilin Feng	Liang Feng	Electrical a	Local Site A	Electronics	On Site	6/6/2022 19:30	Litho Work EBL-02		0.5	0.05	0.09	2.33	2.3
11	Quattrone	Siddharth S	Daeyeon Le	Chemical a	Local Site A	Medicine	On Site	6/6/2022 18:36	Spinner - N-SPN-04		1.45	1.45	1	0	
12	Quattrone	Seungk Sc	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 18:30	Lesker Nan PVD-01		2	3.17	1.59	79.35	
13	Quattrone	Siddharth S	Daeyeon Le	Chemical a	Local Site A	Medicine	On Site	6/6/2022 18:30	SUSS Micro MA-01		0.5	1.45	2.91	36.34	36.3
14	Quattrone	Di Lan	Wen-Qing	II-VI	Large Com	Electronics	On Site	6/6/2022 18:20	Oxford 80 I DE-04		1	1.29	1.29	96.75	96.7
15	Quattrone	Chloe Lebl	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 18:00	Lesker PVD PVD-04		1	1		31.28	
16	Quattrone	Xingyu Du	Roy Olsson	Electrical a	Local Site A	Electronics	On Site	6/6/2022 17:48	Zeiss Axio I MET-12		2.69	2	1	0	
17	Quattrone	Chloe Lebl	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 17:47	Zeiss Axio I MET-15		0.08	0	1	0	
18	Nanoscale	Shengsong	Christophe	Chemistry	Local Site A	Chemistry	On Site	6/6/2022 17:30	JEOL NEOA NEOARM		1.5	1	1.25	1.1	131
19	Quattrone	Seungk Sc	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 17:30	SUSS Micro MA-01		1	0	0.61	29	
20	Quattrone	Seungk Sc	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 17:18	Zeiss Axio I MET-12		0.32	0	1	0	
21	Quattrone	Chloe Lebl	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 17:15	Zeiss Axio I MET-15		0.08	0	1	0	
22	Quattrone	Chloe Lebl	Deep Jariw	Electrical a	Local Site A	Electronics	On Site	6/6/2022 17:14	Spinner - P-SPN-03		0.35	0	1	0	

Data

Access complex and repetitive metrics

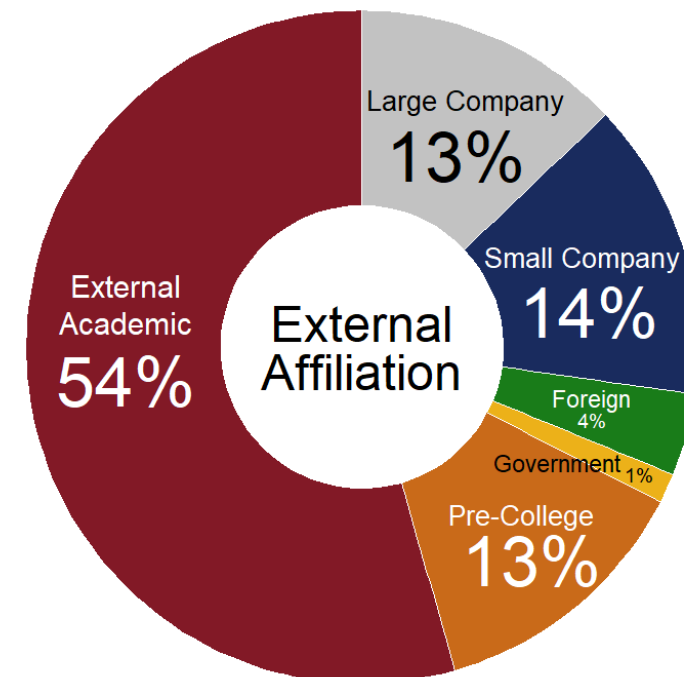
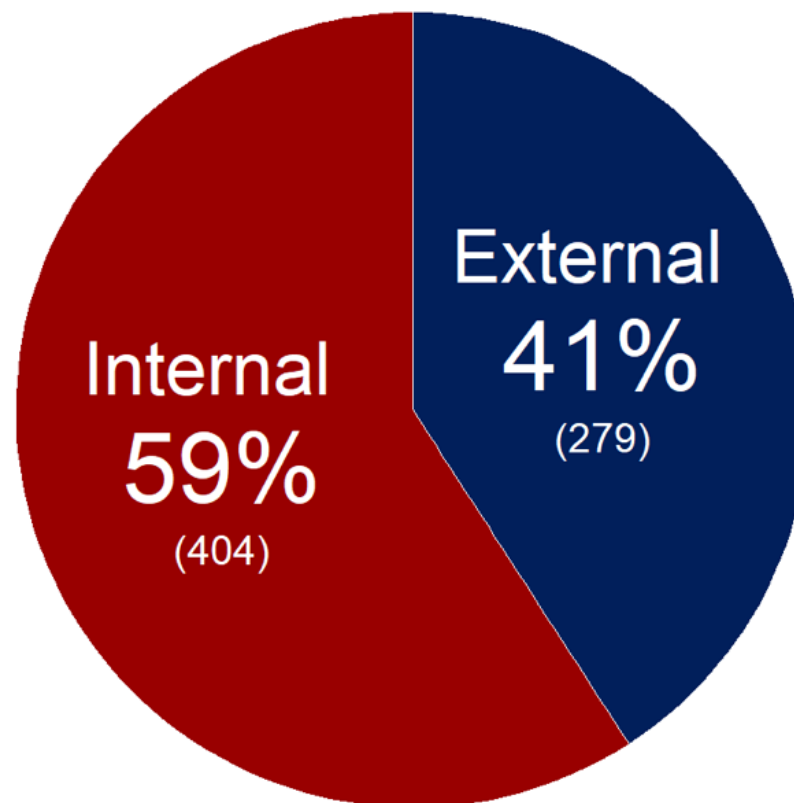
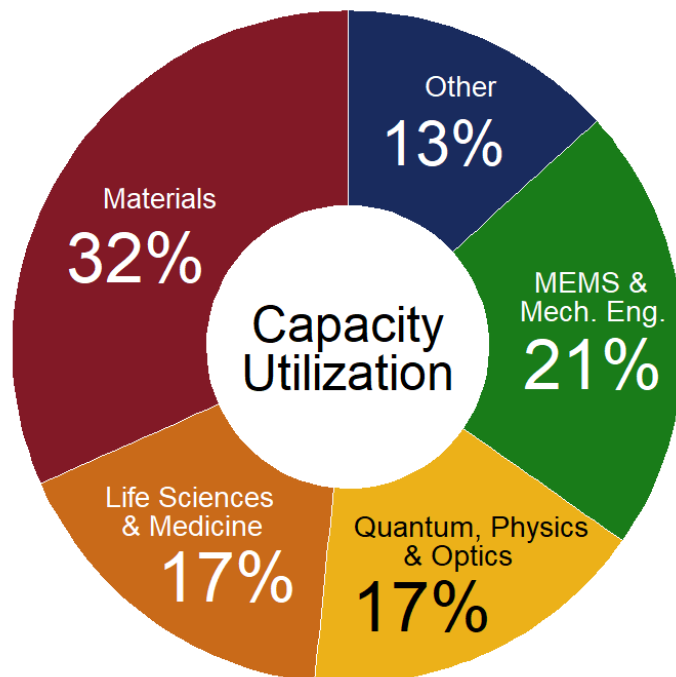
- Occupancy tracking across three cores
- Financial modeling and forecasting
- Operations and performance evaluation
- Surveys and reporting
- Campaign tracking

Caveats

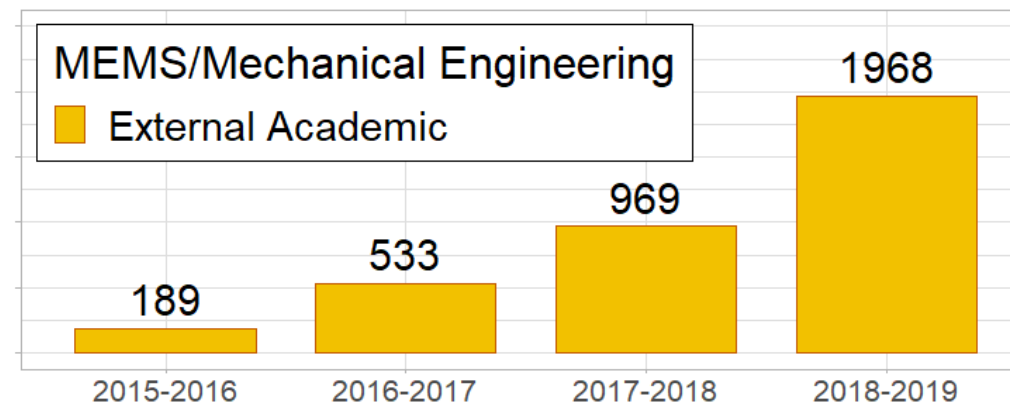
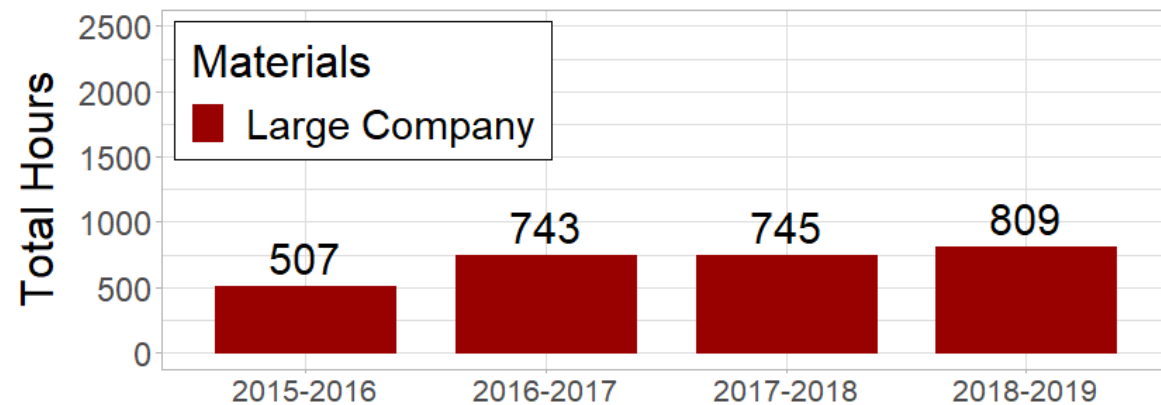
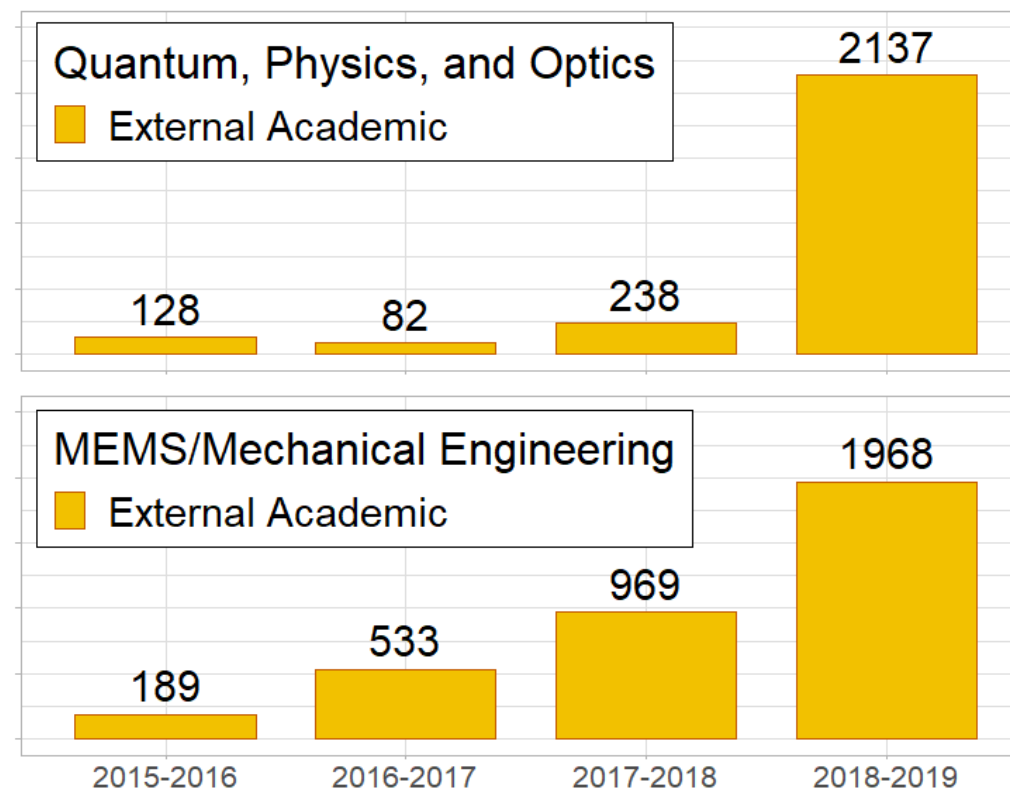
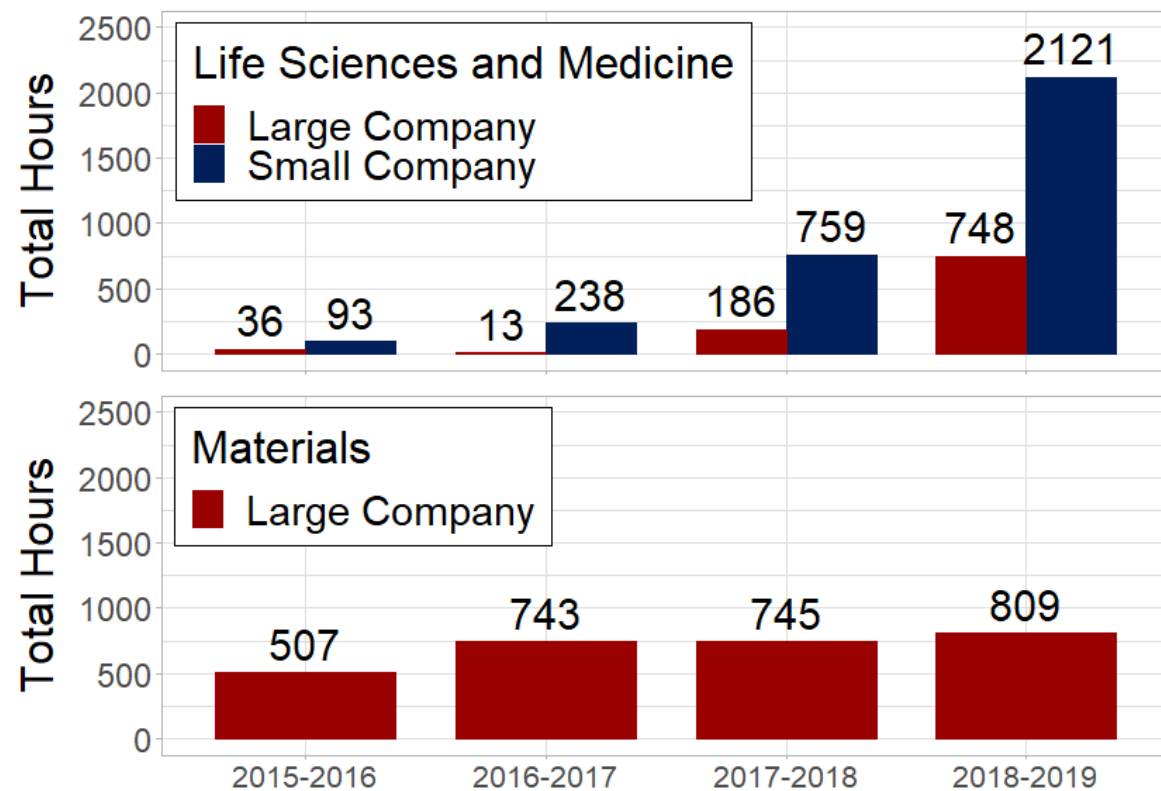
- No Excel, no spreadsheets
- Drop-In raw data
- Easy to use
- **Sharable**



Overall Focus + External User Demographics

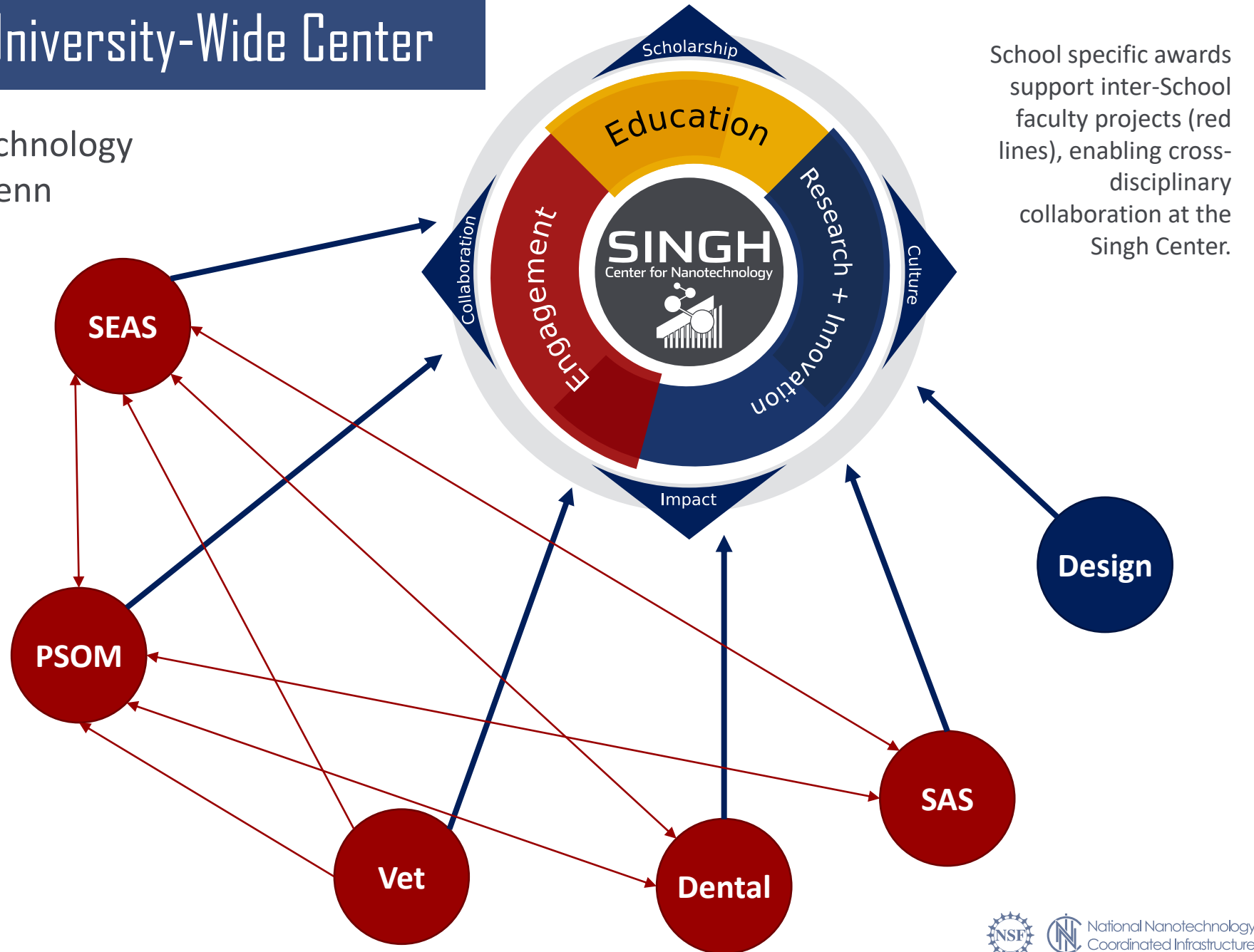


Identify User Trends + Interests



A Multi-Disciplinary, University-Wide Center

The Singh Center for Nanotechnology is connected to 6 of the 12 Penn Schools across campus.



Which Platform?

The R Project for Statistical Computing



<https://www.r-project.org/>



<https://www.rstudio.com/>



<https://www.shinyapps.io/>

The R Project for Statistical Computing

Full Stack Development

- Frontend
 - GUI/UX
- Backend
 - Business Logic
 - Data Management

Execution

- Run locally
- Deploy to **shinyapps.io**





Dashboard



Summary

Let's start sharing the algorithms!

<https://www.r-project.org/>

<https://www.rstudio.com/>

<https://www.shinyapps.io/>

<https://www.rstudio.com/resources/cheatsheets/>

