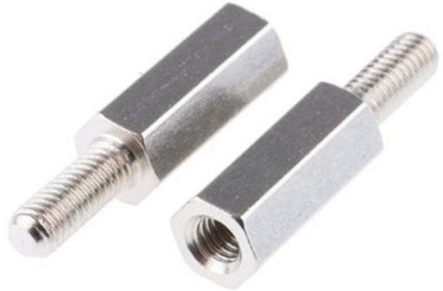
Savannah River National Laboratory®

Optimizing SRNL Resources and Housekeeping with the Creation of an "eDatabase"

Presented by Carina Grady

LEAP Shark Tank Event
22 July 2020

Being an R&D worker…



Lab optimization efforts…

CG

Carina Grady
To Brenda Garcia-Diaz
Cc Jay Gaillard; Joseph Meany

Hi Brenda,

Here is the list of the new lab names we discussed yesterday:

149 – Clean Room
155 – Mechanical Testing Laboratory
152 – Hydrogen Fuel Cell Laboratory
151 – (N/A for now)
145 – Flow Battery Laboratory
142 – Energy Storage Laboratory
135 – Catalyst Laboratory
136 – Induction Catalysis Laboratory
140 – Nanomaterial Synthesis Laboratory
138 – User Facility Characterization Laboratory
191 – Modular Laboratory
194 – Additive Manufacturing Laboratory
193 – High Temperature Laboratory
196 – Permeation Laboratory
195 – Thin Film Synthesis Laboratory (Note: GaTech's lab group is named Polymer Thin Film Processing)

The walkdown was a great review for me to tour all the labs and see all the various equipment. Here is what I think the next steps should be:

- Go down lab-to-lab again, this time recording/labeling where the equipment should be moved. Jay or someone else who is familiar with all of the equipment would have to join me.
- Compile a spreadsheet with the old and proposed rooms for each machine. I can also make a visual if I have the blueprints/layouts of the ARC.
- Email these documents to the lab owners. Get their input and their final approval.
- Move equipment.

I also have a list of machines that are in the database, so I can make sure that is accounted for during the walkdown. Let me know what you think!

Best,

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Energy Materials and Electrochemistry Research
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Objective:

To reorganize, rearrange, and reoptimize HTRL/EMRL lab space to increase productivity and efficiency.

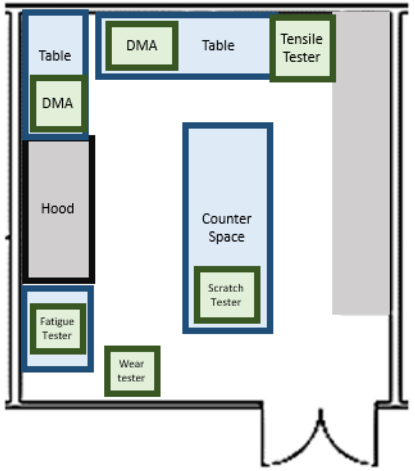
Plan of Action:

1. Talk with lab custodians and PIs of the lab to discuss how they would like their lab rearranged for increased optimization.
2. *Planning phase*: Label and record which equipment they would like moved out or excessed. Discuss relevant available equipment available in other labs to see if they would like it moved in their lab. Update and reference the partial equipment sheet for this step.
3. Create a list of equipment moving in/out of the specific lab as an action plan for arranging. If there is a substantial number of equipment being moved, create a visual map.
4. Move the equipment in accordance to the plan. Enlist the help of available lab technicians, custodians, and support staff.
5. Once the equipment is moved and the lab custodian is satisfied with the rearranging, move on to another lab and repeat the steps.

155: Mechanical Testing

Moving Machines
- DMA (1): move from 195
- DMA (2): -
- Tensile Tester: -
- Scratch Tester: move from 138
- Fatigue Tester: move from 136
- Wear Tester: move from 135

Housekeeping
- Clean/empty out hood
- Move/excess the toolboxes (and other items) under the tables
- Get rid of flammable cabinet



What I had to work with…

	A	B	C	D	E
1	Current Lab	Instrument Type	Model	Analyte / Analysis	Custodian/SME
2	135				
3	135				
4	136				
5	136				
6	136				
7	136				
8	137				
9	138				
10	138				
11	138				
12	138				
13	138				
14	138				
15	138				
16	138				
17	138				
18	138				
19	138				
20	138				
21	145				
22	145				
23	149				
24	151				
25	154				
26	155				
27	155				
28	169				
29	170				
30	170				
31	170				
32	170				
33	170				
34	170				
35	170				
36	170				
37	170				
38	170				
39	184				
40	191				
41	191				
42	191				
43	191				
44	191				
45	191				
46	193				
47	193				
48	194				
49	194				
50	195				
51	195				
52	195				
53	195				
54	195				
55	195				
56	195				
57	195				
58	195				
59	196				
60	196				
61	196				
62	196				

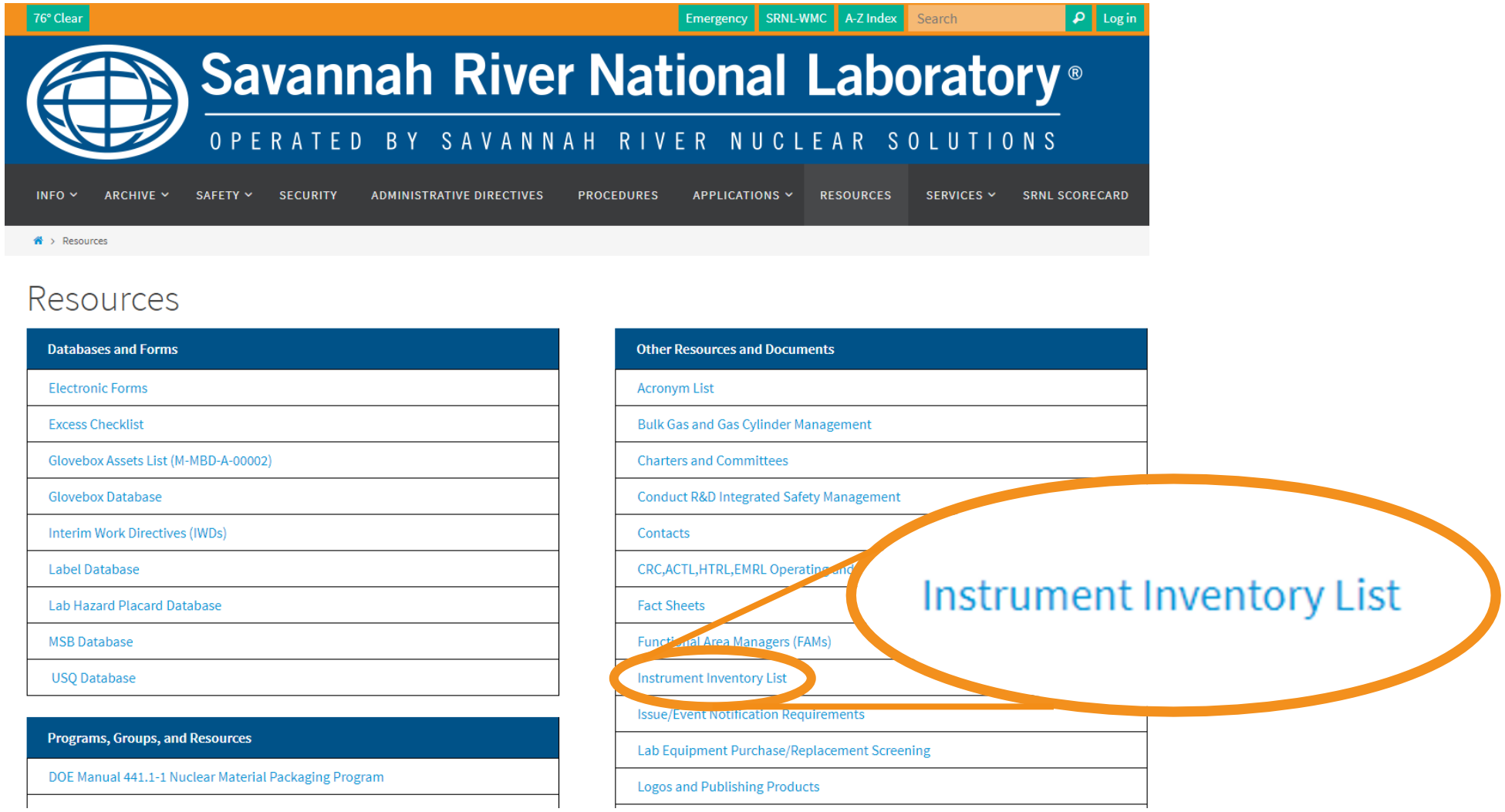
– Outdated

– Incomplete

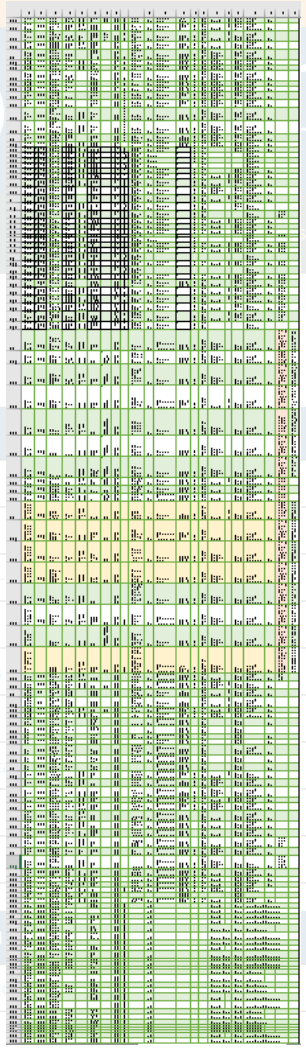
– Hard to find

… Does an item database exist?

Looking for a lab-wide database…



Looking for a lab-wide database…



SRNL Instrument Inventory

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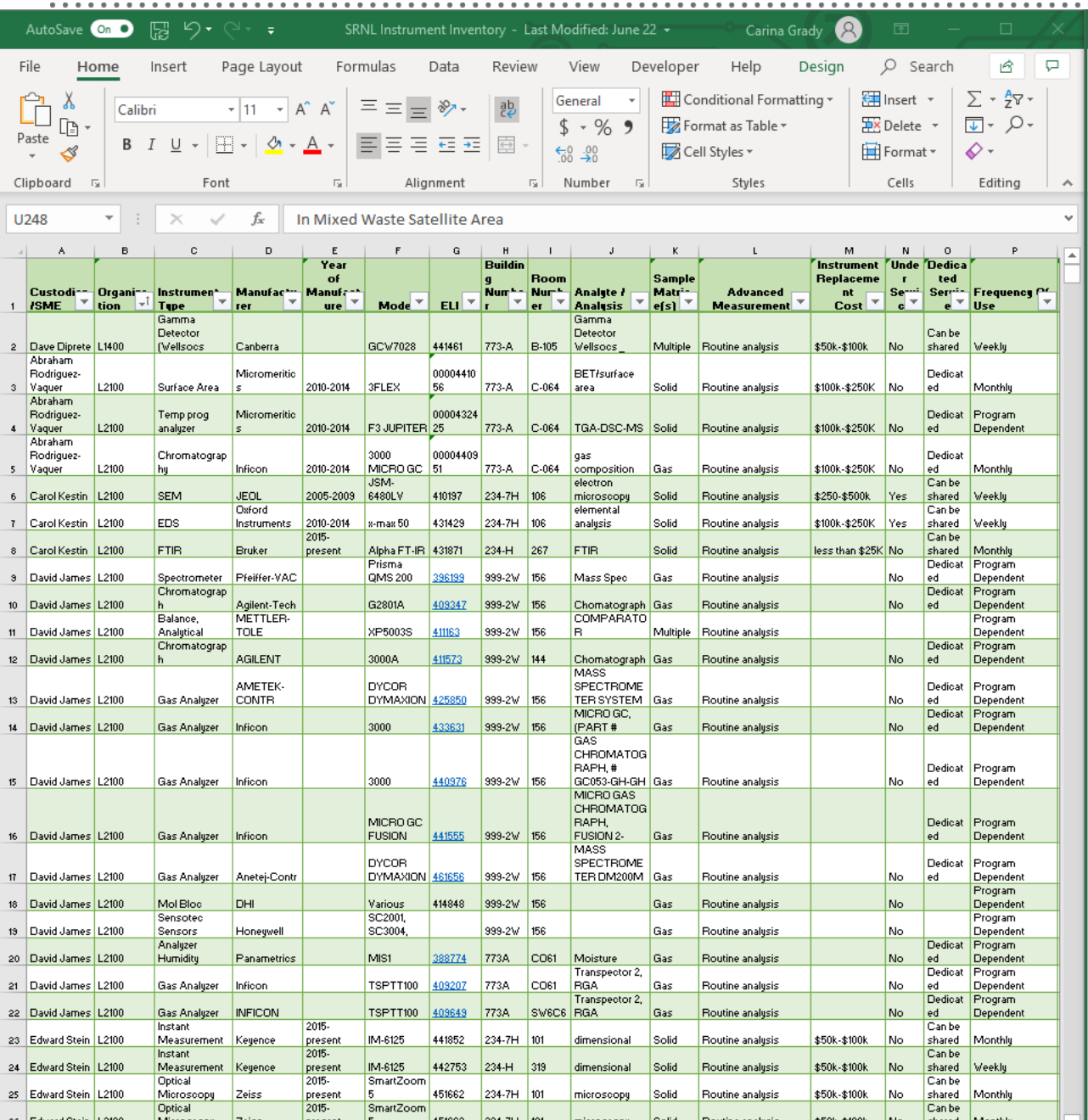
L3330: Energy Materials



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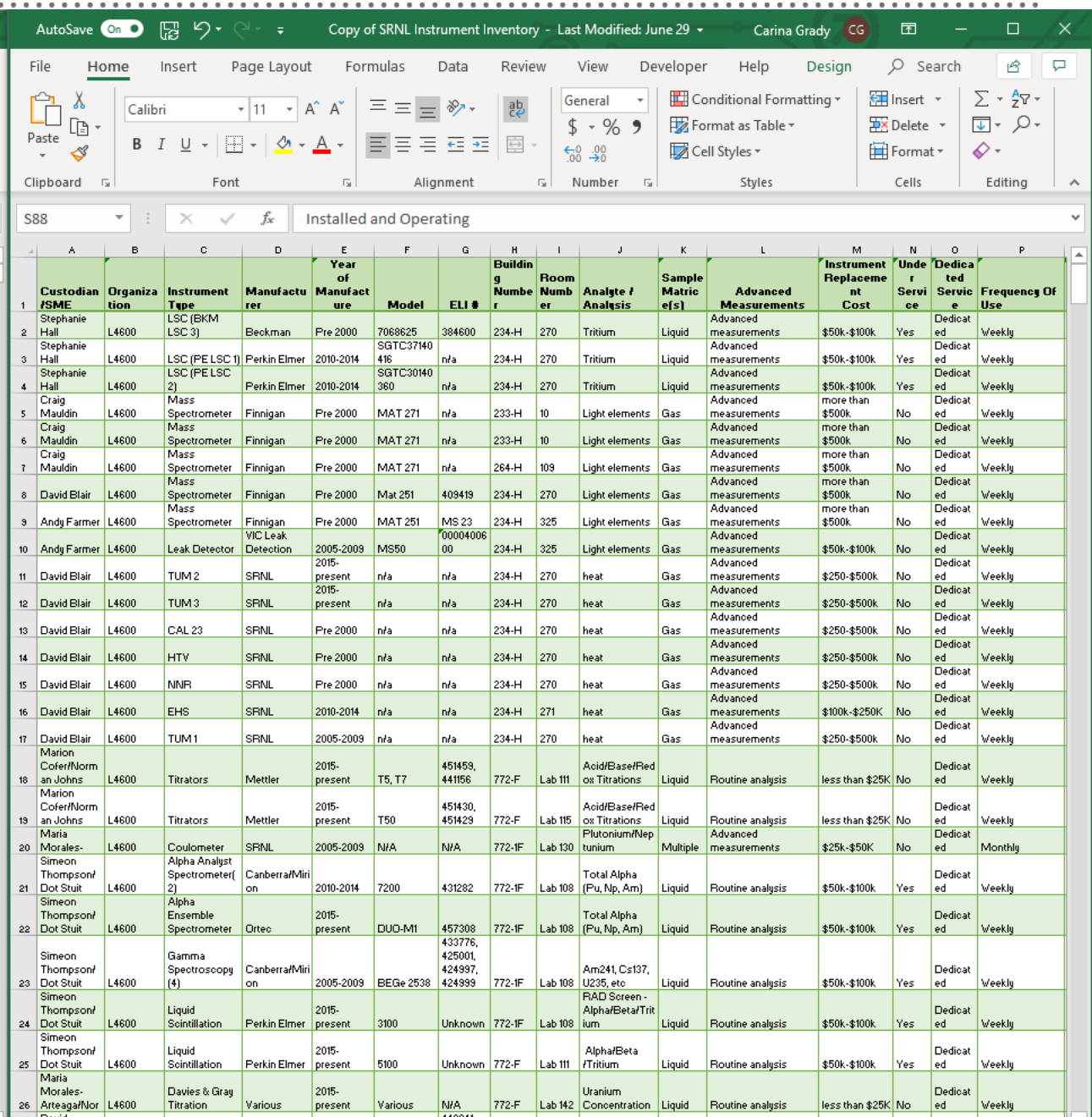
U248 | In Mixed Waste Satellite Area

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Custodian /SME	Organization	Instrument Type	Manufacturer	Year of Manufacture	Model	ELI	Building Number	Room Number	Analyte / Analysis	Sample Matrix(s)	Advanced Measurement	Instrument Replacement Cost	Under Service	Dedicated Service	Frequency Of Use
2	Dave Diprete	L1400	Gamma Detector (Wellsocs	Canberra		GCW7028	441461	773-A	B-105	Gamma Detector Wellsocs_	Multiple	Routine analysis	$50k-$100k	No	Can be shared	Weekly
3	Abraham Rodriguez-Vaquer	L2100	Surface Area	Micromeritics	2010-2014	3FLEX	00004410 56	773-A	C-064	BET/surface area	Solid	Routine analysis	$100k-$250K	No	Dedicated	Monthly
4	Abraham Rodriguez-Vaquer	L2100	Temp prog analyzer	Micromeritics	2010-2014	F3 JUPITER	00004324 25	773-A	C-064	TGA-DSC-MS	Solid	Routine analysis	$100k-$250K	No	Dedicated	Program Dependent
5	Abraham Rodriguez-Vaquer	L2100	Chromatography	Inficon	2010-2014	3000 MICRO GC	00004409 51	773-A	C-064	gas composition	Gas	Routine analysis	$100k-$250K	No	Dedicated	Monthly
6	Carol Kestin	L2100	SEM	JEOL	2005-2009	JSM-6480LV	410197	234-7H	106	electron microscopy	Solid	Routine analysis	$250-$500k	Yes	Can be shared	Weekly
7	Carol Kestin	L2100	EDS	Oxford Instruments	2010-2014	x-max 50	431429	234-7H	106	elemental analysis	Solid	Routine analysis	$100k-$250K	Yes	Can be shared	Weekly
8	Carol Kestin	L2100	FTIR	Bruker	2015-present	Alpha FT-IR	431871	234-H	267	FTIR	Solid	Routine analysis	less than $25K	No	Can be shared	Monthly
9	David James	L2100	Spectrometer	Pfeiffer-VAC		Prisma QMS 200	396199	999-2W	156	Mass Spec	Gas	Routine analysis		No	Dedicated	Program Dependent
10	David James	L2100	Chromatograph	Agilent-Tech		G2801A	409347	999-2W	156	Chomatograph	Gas	Routine analysis		No	Dedicated	Program Dependent
11	David James	L2100	Balance, Analytical	METTLER-TOLE		XP5003S	411163	999-2W	156	COMPARATOR	Multiple	Routine analysis				Program Dependent
12	David James	L2100	Chromatograph	AGILENT		3000A	411573	999-2W	144	Chomatograph	Gas	Routine analysis		No	Dedicated	Program Dependent
13	David James	L2100	Gas Analyzer	AMETEK-CONTR		DYCOR DYMAXION	425850	999-2W	156	MASS SPECTROMETER SYSTEM	Gas	Routine analysis		No	Dedicated	Program Dependent
14	David James	L2100	Gas Analyzer	Inficon		3000	433631	999-2W	156	MICRO GC, (PART #	Gas	Routine analysis		No	Dedicated	Program Dependent
15	David James	L2100	Gas Analyzer	Inficon		3000	440976	999-2W	156	GAS CHROMATOGRAPH, # GC053-GH-GH	Gas	Routine analysis		No	Dedicated	Program Dependent
16	David James	L2100	Gas Analyzer	Inficon		MICRO GC FUSION	441555	999-2W	156	MICRO GAS CHROMATOGRAPH, FUSION 2-	Gas	Routine analysis			Dedicated	Program Dependent
17	David James	L2100	Gas Analyzer	Anetej-Contr		DYCOR DYMAXION	461656	999-2W	156	MASS SPECTROMETER DM200M	Gas	Routine analysis		No	Dedicated	Program Dependent
18	David James	L2100	Mol Bloc	DHI		Various	414848	999-2W	156		Gas	Routine analysis		No		Program Dependent
19	David James	L2100	Sensotec Sensors	Honeywell		SC2001, SC3004,		999-2W	156		Gas	Routine analysis		No		Program Dependent
20	David James	L2100	Analyzer Humidity	Panametrics		MIS1	388774	773A	C061	Moisture	Gas	Routine analysis		No	Dedicated	Program Dependent
21	David James	L2100	Gas Analyzer	Inficon		TSPTT100	409207	773A	C061	Transpector 2, RGA	Gas	Routine analysis		No	Dedicated	Program Dependent
22	David James	L2100	Gas Analyzer	INFICON		TSPTT100	409649	773A	SW6C6	Transpector 2, RGA	Gas	Routine analysis		No	Dedicated	Program Dependent
23	Edward Stein	L2100	Instant Measurement	Keyence	2015-present	IM-6125	441852	234-7H	101	dimensional	Solid	Routine analysis	$50k-$100k	No	Can be shared	Monthly
24	Edward Stein	L2100	Instant Measurement	Keyence	2015-present	IM-6125	442753	234-H	319	dimensional	Solid	Routine analysis	$50k-$100k	No	Can be shared	Weekly
25	Edward Stein	L2100	Optical Microscopy	Zeiss	2015-present	SmartZoom 5	451662	234-7H	101	microscopy	Solid	Routine analysis	$50k-$100k	No	Can be shared	Monthly
26	Edward Stein	L2100	Optical Microscopy	Zeiss	2015-present	SmartZoom 5									Can be	

L9100: Advanced Modeling, Simulation, & Analytics



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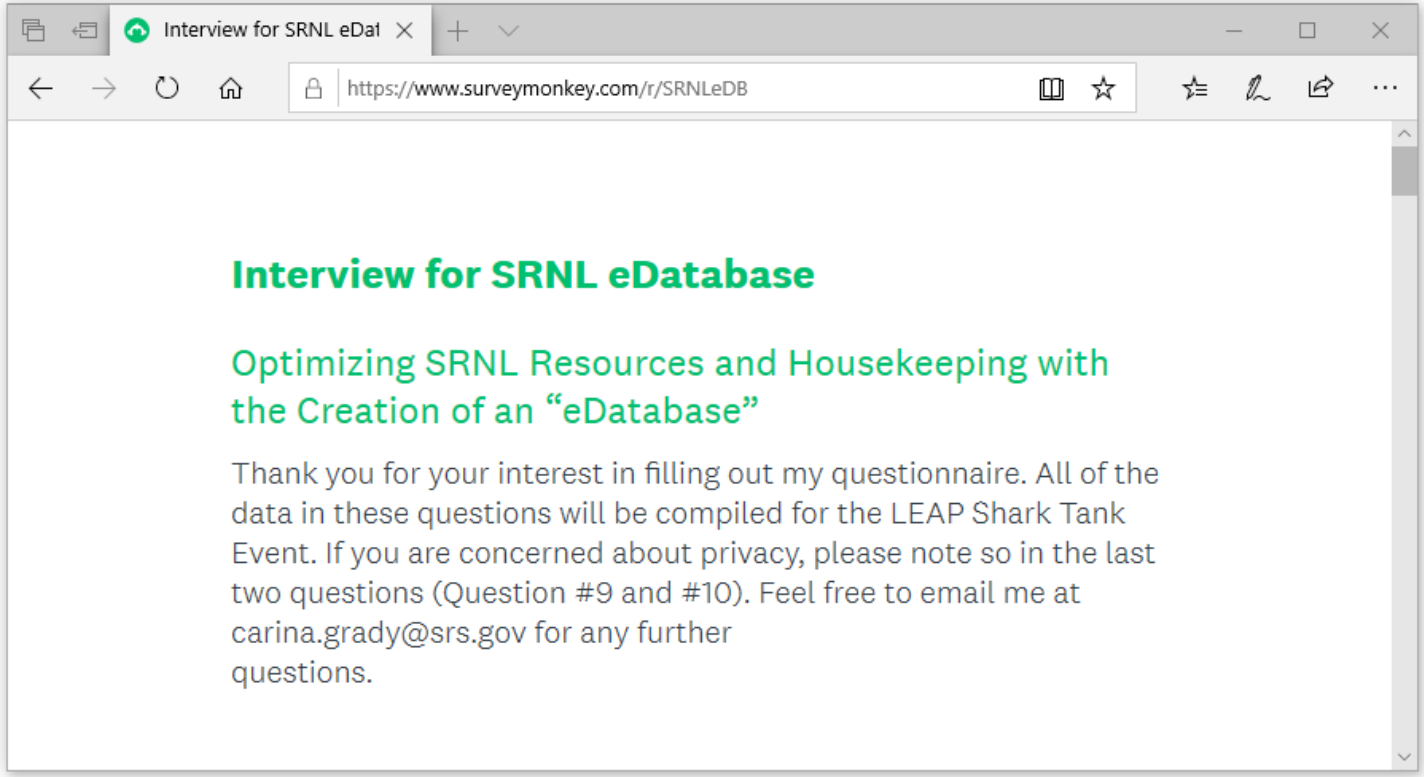
S88 | Installed and Operating

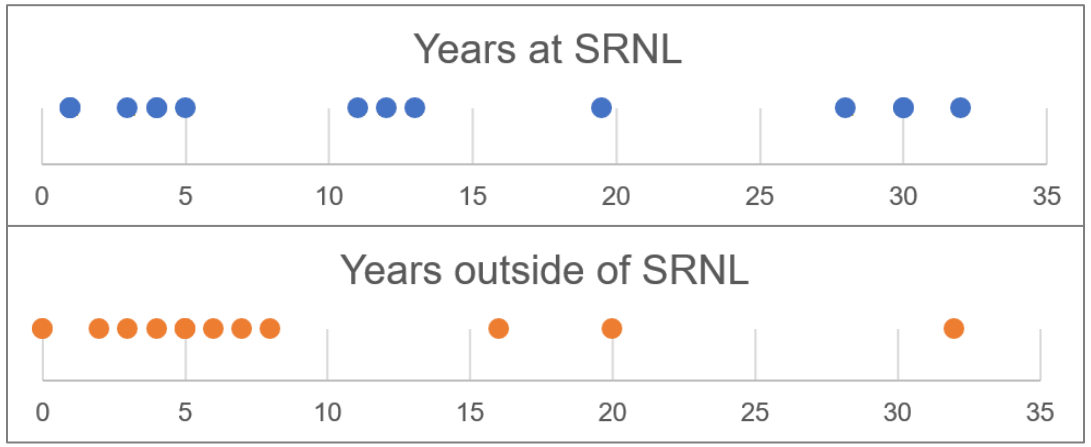
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Custodian /SME	Organization	Instrument Type	Manufacturer	Year of Manufacture	Model	ELI #	Building Number	Room Number	Analyte / Analysis	Sample Matrix(s)	Advanced Measurements	Instrument Replacement Cost	Under Service	Dedicated Service	Frequency Of Use
2	Stephanie Hall	L4600	LSC (BKM LSC 3)	Beckman	Pre 2000	7068625	384600	234-H	270	Tritium	Liquid	Advanced measurements	$50k-$100k	Yes	Dedicated	Weekly
3	Stephanie Hall	L4600	LSC (PE LSC 1)	Perkin Elmer	2010-2014	SGTC37140 416	n/a	234-H	270	Tritium	Liquid	Advanced measurements	$50k-$100k	Yes	Dedicated	Weekly
4	Stephanie Hall	L4600	LSC (PE LSC 2)	Perkin Elmer	2010-2014	SGTC30140 360	n/a	234-H	270	Tritium	Liquid	Advanced measurements	$50k-$100k	Yes	Dedicated	Weekly
5	Craig Mauldin	L4600	Mass Spectrometer	Finnigan	Pre 2000	MAT 271	n/a	233-H	10	Light elements	Gas	Advanced measurements	more than $500k	No	Dedicated	Weekly
6	Craig Mauldin	L4600	Mass Spectrometer	Finnigan	Pre 2000	MAT 271	n/a	233-H	10	Light elements	Gas	Advanced measurements	more than $500k	No	Dedicated	Weekly
7	Craig Mauldin	L4600	Mass Spectrometer	Finnigan	Pre 2000	MAT 271	n/a	264-H	109	Light elements	Gas	Advanced measurements	more than $500k	No	Dedicated	Weekly
8	David Blair	L4600	Mass Spectrometer	Finnigan	Pre 2000	Mat 251	409419	234-H	270	Light elements	Gas	Advanced measurements	more than $500k	No	Dedicated	Weekly
9	Andy Farmer	L4600	Mass Spectrometer	Finnigan	Pre 2000	MAT 251	MS 23	234-H	325	Light elements	Gas	Advanced measurements	more than $500k	No	Dedicated	Weekly
10	Andy Farmer	L4600	Leak Detector	VIC Leak Detection	2005-2009	MS50	00004006 00	234-H	325	Light elements	Gas	Advanced measurements	$50k-$100k	No	Dedicated	Weekly
11	David Blair	L4600	TUM 2	SRNL	2015-present	n/a	n/a	234-H	270	heat	Gas	Advanced measurements	$250-$500k	No	Dedicated	Weekly
12	David Blair	L4600	TUM 3	SRNL	2015-present	n/a	n/a	234-H	270	heat	Gas	Advanced measurements	$250-$500k	No	Dedicated	Weekly
13	David Blair	L4600	CAL 23	SRNL	Pre 2000	n/a	n/a	234-H	270	heat	Gas	Advanced measurements	$250-$500k	No	Dedicated	Weekly
14	David Blair	L4600	HTV	SRNL	Pre 2000	n/a	n/a	234-H	270	heat	Gas	Advanced measurements	$250-$500k	No	Dedicated	Weekly
15	David Blair	L4600	NMR	SRNL	Pre 2000	n/a	n/a	234-H	270	heat	Gas	Advanced measurements	$250-$500k	No	Dedicated	Weekly
16	David Blair	L4600	EHS	SRNL	2010-2014	n/a	n/a	234-H	271	heat	Gas	Advanced measurements	$100k-$250K	No	Dedicated	Weekly
17	David Blair	L4600	TUM 1	SRNL	2005-2009	n/a	n/a	234-H	270	heat	Gas	Advanced measurements	$250-$500k	No	Dedicated	Weekly
18	Marion Cofer/Norman Johns	L4600	Titrators	Mettler	2015-present	T5, T7	451459, 441156	772-F	Lab 111	Acid/Base/Redox Titrations	Liquid	Routine analysis	less than $25K	No	Dedicated	Weekly
19	Marion Cofer/Norman Johns	L4600	Titrators	Mettler	2015-present	T50	451430, 451429	772-F	Lab 115	Acid/Base/Redox Titrations	Liquid	Routine analysis	less than $25K	No	Dedicated	Weekly
20	Maria Morales-Arteaga/Nor	L4600	Coulometer	SRNL	2005-2009	N/A	N/A	772-1F	Lab 130	Plutonium/Neptunium	Multiple	Advanced measurements	$25k-$50K	No	Dedicated	Monthly
21	Simeon Thompson/Dot Stuit	L4600	Alpha Analyst Spectrometer(2)	Canberra/Miri on	2010-2014	7200	431282	772-1F	Lab 108	Total Alpha (Pu, Np, Am)	Liquid	Routine analysis	$50k-$100k	Yes	Dedicated	Weekly
22	Simeon Thompson/Dot Stuit	L4600	Alpha Ensemble Spectrometer	Ortec	2015-present	DUO-M1	457308	772-1F	Lab 108	Total Alpha (Pu, Np, Am)	Liquid	Routine analysis	$50k-$100k	Yes	Dedicated	Weekly
23	Simeon Thompson/Dot Stuit	L4600	Gamma Spectroscopy (4)	Canberra/Miri on	2005-2009	BEGe 2538	433776, 425001, 424997, 424999	772-1F	Lab 108	Am241, Cs137, U235, etc	Liquid	Routine analysis	$50k-$100k	Yes	Dedicated	Weekly
24	Simeon Thompson/Dot Stuit	L4600	Liquid Scintillation	Perkin Elmer	2015-present	3100	Unknown	772-1F	Lab 108	RAD Screen - Alpha/Beta/Trium	Liquid	Routine analysis	$50k-$100k	Yes	Dedicated	Weekly
25	Simeon Thompson/Dot Stuit	L4600	Liquid Scintillation	Perkin Elmer	2015-present	5100	Unknown	772-F	Lab 111	Alpha/Beta /Tritium	Liquid	Routine analysis	$50k-$100k	Yes	Dedicated	Weekly
26	Maria Morales-Arteaga/Nor	L4600	Davies & Gray Titration	Various	2015-present	Various	N/A	772-F	Lab 142	Uranium Concentration	Liquid	Routine analysis	less than $25K	No	Dedicated	Weekly

Creating a survey…



15 Responses:
R&D Hands-On Workers

Experience, Location, Workgroup, Title



Location	Total
999-2W	5
773-A	3
773-41A	2
773-42A	3
735-A	3
723-A	1

List of Workgroups

Analytical Development
Energy and Biotech Projects
Energy Materials
Environmental Sciences
Hydrogen Isotope Proc Science
Nonproliferation Technologies Section
Research and Development Engineering
Weapons Production Technology

List of Positions

Laboratory Specialist
Associate Engineer
Engineer
Senior Engineer
Principal Engineer
Fellow Engineer
Principal Scientist
Senior Fellow Scientist

* Some information not listed for anonymity

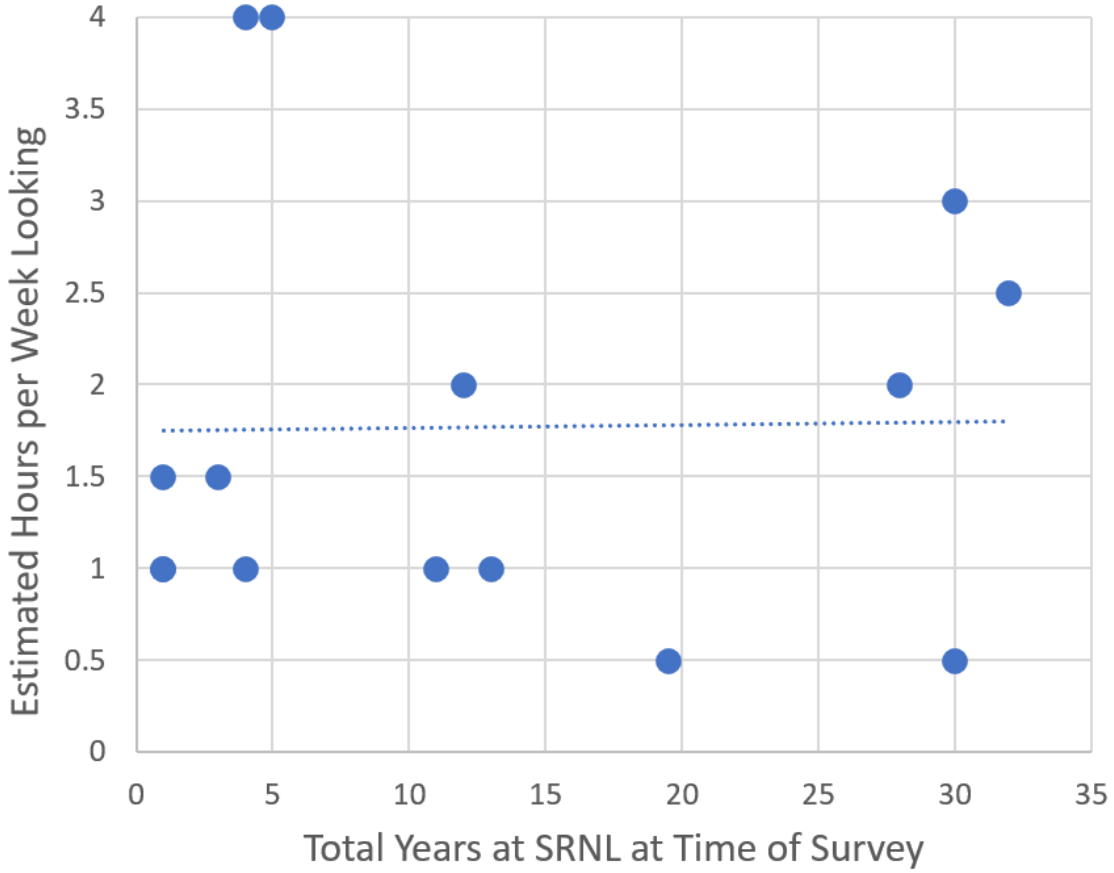
“How often do you look for items? How much time per week?”

3. On average, how much time per week do you spend looking for items, tools, equipment, and/or samples?

- ◯ None
- ◯ 0 to 0.5 hour
- ◯ 0.5 to 1 hour
- ◯ 1 to 1.5 hours
- ◯ 1.5 to 2 hours
- ◯ 2 to 2.5 hours
- ◯ 2.5 to 3 hours
- ◯ More than 3 hours

Title	How Long per Week
Senior Engineer	More than 3 hours
Senior Engineer	More than 3 hours
Senior Engineer	2.5 to 3 hours
Senior Fellow Scientist	2 to 2.5 hours
Principal Engineer	1.5 to 2 hours
Principal Scientist	1.5 to 2 hours
Associate Engineer	1 to 1.5 hours
Lab Specialist	1 to 1.5 hours
Associate Engineer	0.5 to 1 hour
Engineer	0.5 to 1 hour
Fellow Engineer	0.5 to 1 hour
Principal Scientist	0.5 to 1 hour
Senior Engineer	0.5 to 1 hour
Fellow Engineer	0 to 0.5 hour
Senior Fellow Engineer	0 to 0.5 hour

“How often do you look for items? How much time per week?”



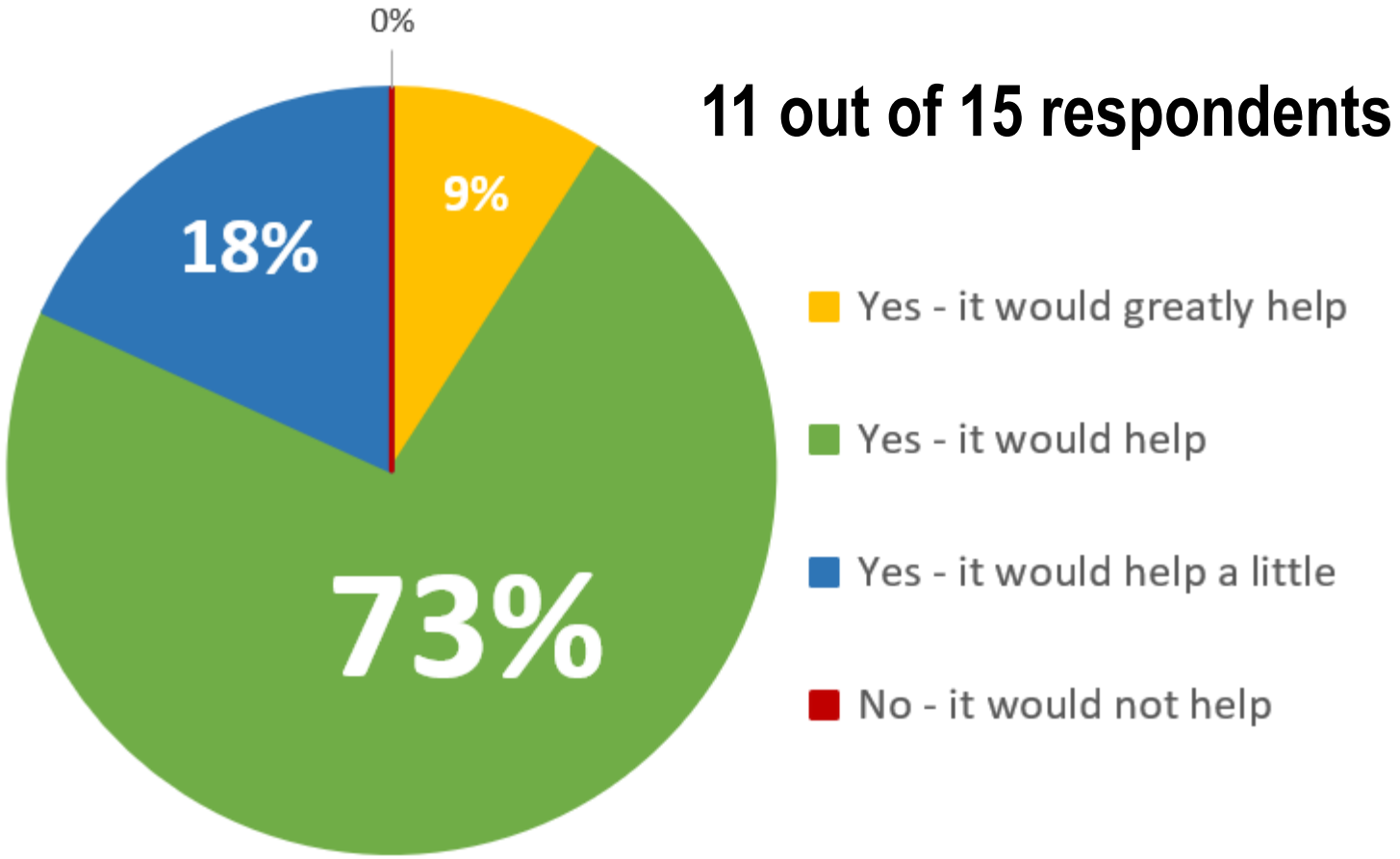
Title	How Long per Week
Senior Engineer	More than 3 hours
Senior Engineer	More than 3 hours
Senior Engineer	2.5 to 3 hours
Senior Fellow Scientist	2 to 2.5 hours
Principal Engineer	1.5 to 2 hours
Principal Scientist	1.5 to 2 hours
Associate Engineer	1 to 1.5 hours
Lab Specialist	1 to 1.5 hours
Associate Engineer	0.5 to 1 hour
Engineer	0.5 to 1 hour
Fellow Engineer	0.5 to 1 hour
Principal Scientist	0.5 to 1 hour
Senior Engineer	0.5 to 1 hour
Fellow Engineer	0 to 0.5 hour
Senior Fellow Engineer	0 to 0.5 hour

“Would a database of research equipment help you write more proposals?”

7. (For proposal writers) Say there is a list or database of SRNL's high-value research equipment. Would this list motivate you to write more proposals?

i.e. Because John Doe had access to an equipment database, he knew SRNL's research capability. Because of this, he submitted a proposal knowing that he did not need to buy expensive equipment.

- ◯ Yes - it would greatly help.
- ◯ Yes - it would help.
- ◯ Yes - it would help a little.
- ◯ No - it would not help.
- ◯ N/A

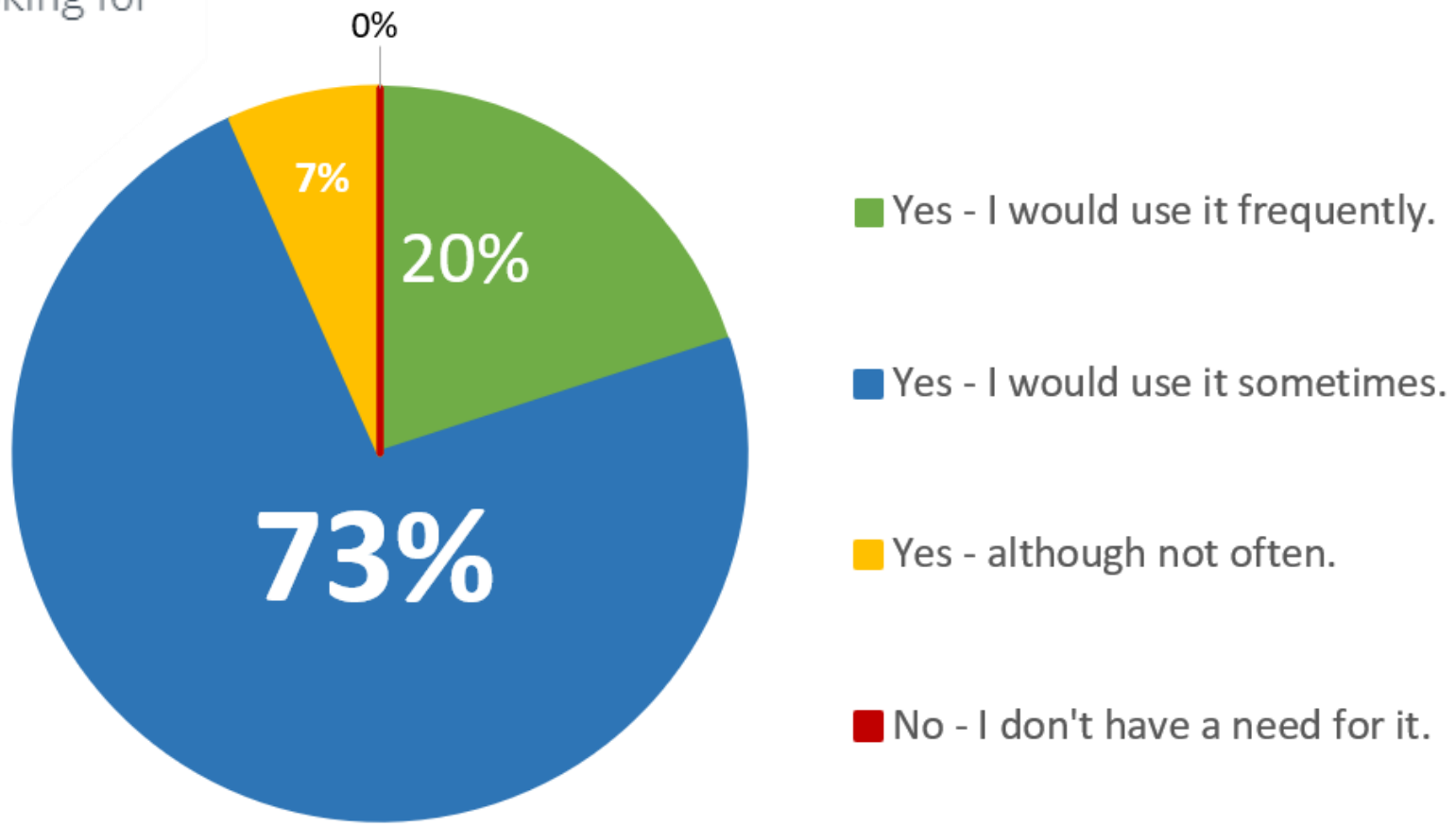


11 out of 15 respondents

“Would you use a database that lists lab items?”

8. If there was an electronic database that lists SRNL's items, tools, and equipment, would you utilize it rather than conventionally looking for an item or asking around?

- ◯ Yes - I would use it frequently.
- ◯ Yes - I would use it sometimes.
- ◯ Yes - although not often.
- ◯ No - I don't have a need for it.



Various input…

Hi Carina,

Happy to help. I think this is a good idea, an emphasis on the capital equipment, specifically analytical capabilities is an idea I had that I think would help promote proposals and facilitate more research.

A question interrogating how a lack of knowledge about analytical equipment has hindered prior proposal writing efforts or discovery of analytical equipment after the fact may have benefited a submitted proposal may be germane to your survey, this would be slightly different than #7.

Additionally, some method to weight how much "lab work" and proposal writing someone is doing may be helpful to help weight your responses. I see 2 benefits here, in making existing in-lab work easier, and making it easier for someone to leverage SRNL capabilities when writing proposals, but it's probably important to try and separate those signals as much possible to bolster the points you're making.

I think the ability to search capital equipment and its custodian would be a major enabler for basic science proposal writing.

The most important is that there is no real way of finding capabilities or expertise in the lab. Only by word of mouth.

For what it is worth, I attempted to do something similar with the mechanical testing equipment spread across the Lab a while ago. There is a lot of equipment in numerous labs with several owners and no one really knew what was available. I used a MS-Access database with the equipment information, calibrations, pictures, POC's if available; sort of a 'Distributed Mechanical Testing Facility'. The main problem I had was limited management buy in, so it did not get farther than the database.

A bit of unsolicited comments, (I was the LEAP-Professional Development chair for 2 years when we started the Shark Tank, and this is a good concept and the comments are intended as support). Even recently, I have lost a large amount of time, months, trying to find an oven or furnace for a small project and took a lot of asking around and then follow up checking to see if the equipment would be compatible. After all that, now going to the Glass Shop for a custom device.
-Labor rate seems very low, LDRDs are unburdened and the rates are generally over $100/hr, fully burdened rates are ~>$250/hr. There are some good estimating templates available.
-It almost seems like too much, combining large capital equipment with consumables in the same database. The smaller items might do well in an inventory tracking software (COTS) with barcode scanning. Also, at least in 773-A there is a material supply 'store' that is starting to address some of the smaller consumable needs and the Tool Crib for small tool items. A separate system might be needed or an integrated approach could build on what is already available. The small dollar items are fairly mobile and tend to walk around quite a bit, keeping tack of number and location might be fairly time consuming. That being said, it seems to be working for the chemical inventory system.
-Instead of iPads, a decent amount of staff have iPhones and almost everyone at EMRL/HTRL, and there are numerous apps that can handle scanning barcodes or QR's, and would reduce the hardware costs and lower the threshold for people adopting it.
-Might get asked about a cost comparison of a commercial inventory system vs developing one internal.
-Another option, at least for the larger equipment, is to use GRANTA. It is a very powerful data management software that we/Lab have access and it is implemented across the DOE complex, mostly for AM applications but the use of it is spreading into other areas. While it is primarily for experimental, reference, and modeling data storage several groups have started storing equipment data in it as well, e.g. you do a Raman test and link to the instrument and it carries over all the equipment information, calibration dates/tests etc.. I believe there should be a way that the equipment information could be exported to a web page/user interface that could then be searchable.

Carina,
All of the instruments are supposed to be listed in the ELN now although most people have not input that information. The ELN is not the most convenient method to look up instrumentation from a database viewpoint, but you will likely hear this as a response to your idea. I would suggest finding advantages of what you are proposing over the search methods for instruments in the ELN.

To be honest, groups are very protective of the items they buy. An older college had a locker full of never used pumps locked away because he didn't want to share and now they are past their expiration. You may want to set up a way for groups to not only see if another group has a piece of equipment but also if they are will to sell, lend or schedule time to use it. That way no one feels like toes have been stepped on.

This would be extremely compatible with SRNL R&D Supply cage (common lab items available to all SRNL). Also advertised on homepage (SRNL Consumable Supply Area) and is a CI initiative.

I filled out the survey and submitted it. I didn't think about this until afterwards, but in addition to tracking equipment, it would be nice to have a central database where we could shop for services. For instance, if I wanted a certain type of analysis done, who could I pay to do it? If I wanted a web site developed, who could I pay to create one?

If you develop an electronic database for this equipment, it needs to be kept up to date. If it is not, the database is of limited value. We have tried this in the past, and it is frequently out of date. How will your proposal be different?

Did survey.

There are 2 links you should look at on SRNL home page, both under pother resources.

Equipment listing and Consumable supply area.

I think your data base would fit nicely with the consumable supply area – CI initiative.

Nice job.

There is a list on the SRNL homepage of available equipment (under other resources and documents, Instrument Inventory List). Mark Barnes had it put together and posted. I do not know how frequently (or if) it is updated

Good idea, just want to have a system in place to ensure it is kept up to date.

In theory it is a great idea. I just see it being hard to motivate people to put the smaller items in a database, time is precious. Also, just look at accountable equipment inventory process. It is hard to get people to track what is required vs an optional system.

Because we do ultra low level work, we would tend not to share equipment outside the group. Something that would be very helpful is if a database/system could be set up that we could use within our group to track tools, equipment, supplies, etc... and that would indicate their location and who they are checked out to. Anything set up would need to be simple and not time consuming. For example, we have a set of cabinets with Swagelok parts. It would be extremely helpful to have a system that parts could be scanned out when people take them so that the parts get charge to the correct job, and so that we can order more as they get low.

SRNL Electronic Database – “eDatabase”

The SRNL Electronic Database (eDatabase) is a one-stop shop database that lists all items. This will result in cost savings, optimized resources, and increased convenience.

Graded Approach:

1. Capital Items
2. Uncommon Items
   - *Tools*
   - *Inventory*
   - *Equipment*
3. Common Items
4. Bonus Features
   - *Excess*
   - *Skill Collaboration*
   - *Samples*
   - *Waste*

Phase I: Capital Items

Tensile Tester

DOE SRS

POC: John Jones

Location: L155, 999-2W

Analysis:
Manufacturer:
Model Number:

ONH Analyzer

DOE SRS

POC: Jane Doe

Location: L194, 999-2W

Analysis:
Manufacturer:
Model Number:

3D Printer

DOE SRS

POC: Joe Schmoe

Location: L194, 999-2W

Analysis:
Manufacturer:
Model Number:

Spark Plasma Sintering

DOE SRS

POC: Jill Hill

Location: L136, 999-2W

Analysis:
Manufacturer:
Model Number:

Phase I: Capital Items

- Every individual item is logged.
- Search ELI to easily look it up.
- POC is accountable.
- These items are typically large, expensive, and don't get move around often.
- If they do move around, the POC must update the location.

Phase II: Uncommon Items

Strap Wrench

POC: John Jones

Location: L137, 999-2W

Analysis:

Oil Pump Hose

POC: Jane Doe

Location: L137, 999-2W

Analysis:

Hot Plate and Stirrer

POC: Joe Schmoe

Location: L194, 999-2W

Analysis:

Sonication Bath

POC: Jill Hill

Location: L145, 999-2W

Analysis:

Optical Microscope

POC: Joan Johnson

Location: L138, 999-2W

Analysis:

Phase II: Uncommon Items – Categories

Tools

Inventory

Equipment

To Borrow:
- Search item in eDatabase
- Borrow item
- Return when done

To Take:
- Search item in eDatabase
- Take item
- Notify procurement if supply is low

To Borrow:
- Search item in eDatabase
- Borrow item
- Return when done

To Take:
- Buy a new one using project spending

To Store:
- Store in location per eDatabase and change quantity available

Phase II: Uncommon Items

- Not logged individually.
- Not held accountable due to inconvenience.
- These items are typically medium-to-small in size and may be pricy but still affordable.
- Quantity is noted and kept in supply.
- Categorized:
  - *Tools → Borrow*
  - *Inventory → Take (Notify procurement if supply is low)*
  - *Equipment → Borrow, Store*

Phase III: Common Items

Fasteners

Location: L137, 999-2W

Hex Wrenches

Location: L137, 999-2W

Plastic Bags

Location: L194, 999-2W

Syringes

Location: L145, 999-2W

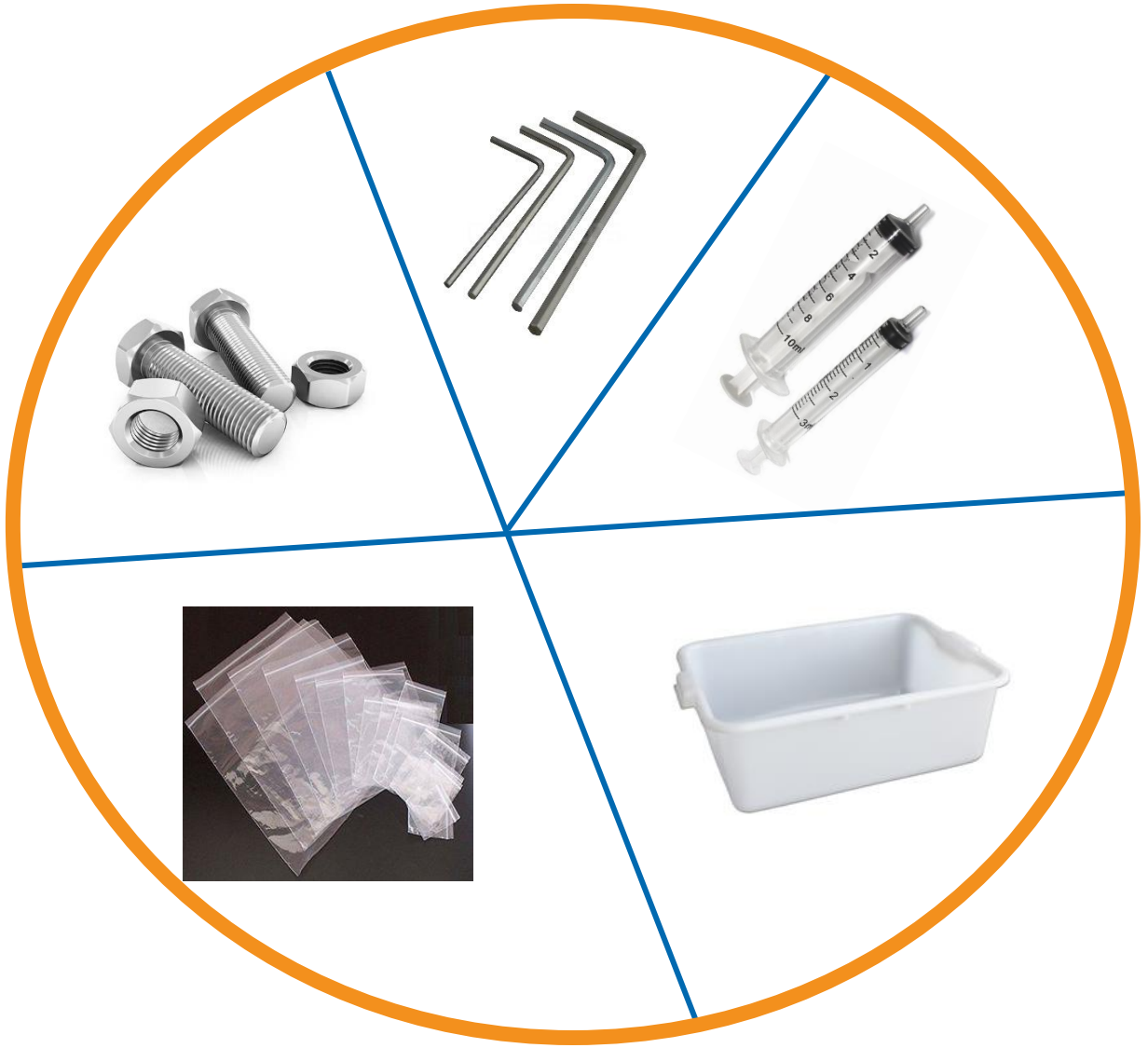
Container Bins

Location: L138, 999-2W

Similar to SRNL Lab Consumable Supply Area

Phase III: Common Items

- Logged as a general item and place.
- These items are typically small in size, inexpensive, and are consumables/easily lost.
- Quantity is not noted but kept in supply.
- Notify procurement if supply is low.



A new culture…

This initiative has been done before…
How is this idea different?
How can we ensure the database gets up-to-date?

A Culture of Housekeeping & Accountability

Housekeeping

Accountability

Teamwork

Potential Savings

Assumptions

- 2-4 weeks to develop in SharePoint done by Digital Transformation
- Man-Hour Rate: $200/hour
- Assume one workgroup for now (15 people)

Yearly Costs: No eDatabase
Cost savings of thousands of dollars

Low Range

Item	Time	Rate	Yearly Cost per Researcher	Yearly Cost per X15 Researchers
Researcher	0.5 hour/week	$200/hour	$5,200	$78,000

High Range

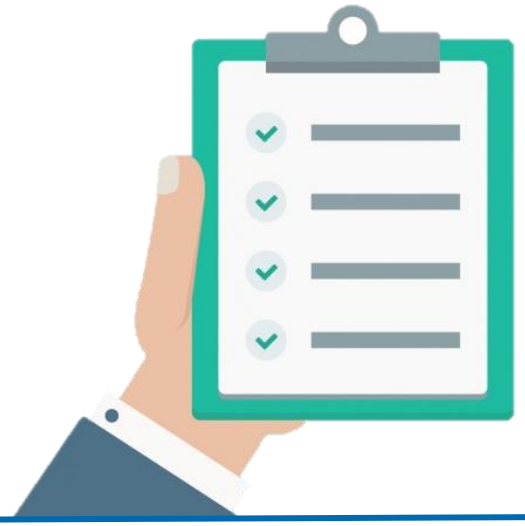
Item	Time	Rate	Yearly Cost per Researcher	Yearly Cost per X15 Researchers
Researcher	3 hours/week	$200/hour	$31,200	$468,000

Item	Rate	Quantity	Total Cost
Software Development	$200/hour	160 hours	$32,000
Initial System Inventory	$200/hour	160 hours	$32,000
		Total	**$64,000**

Overall Benefits

Cost Savings

- Time saved looking
- Accidental repurchasing
- More funding from proposals



More Convenient

- Increased productivity
- Increased collaboration
- Easily accessible

Optimize Resources

- Sharing tools
- Lessen likelihood of losing items
- Reuse excess equipment

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Any questions?