LIGHT SOURCE BEAMLINE NUMBERS

DENNIS MILLS
Advanced Photon Source

5-way Meeting October 9, 2017

DATA COLLECTED FOR FY17, FY19, AND FY21

- Beamline techniques (approx 150 categories to select from) rolled up into a dozen or so high levels for viewing here.
  - For instance PX beamlines were divided into 3 categories depending on focusing capabilities
  - Hardest decisions were for BLs that use diffraction, for instance, to image the sample - is that a "diffraction" beamline or "imaging" beamline?

- Collected data on both BL "count" and BL "operational count" for all 3 fiscal years.

- There is a column available to indicate fraction of time BL used "time-resolved" techniques. (These are beamlines with specialized equipment for pump/probe experiments that often use the pulsed nature of the x-rays.)

- Need to send collected data back to facility reps for check for errors and/or updates.

- At this point, LCLS data is not included due to the unique properties of the FEL so mapping onto storage ring beamlines may not be too useful.

BEAMLINE DATA BY FACILITY - APS

	APS ID BL Count FY17	APS BM BL Count FY17	APS ID Ops Count FY17	APS BM Ops Count FY17	APS ID BL Count FY19	APS BM BL Count FY19	APS ID Ops Count FY19	APS BM Ops Count FY19	APS ID BL Count FY21	APS BM BL Count FY21	APS ID Ops Count FY21	APS BM Ops Count FY21
Spectroscopy	**8.55**	**5.00**	**8.55**	**5.00**	**8.55**	**5.00**	**8.55**	**5.00**	**8.55**	**5.00**	**8.55**	**5.00**
01 - Low Energy Spectroscopy (E < 200 eV)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
02 - Soft X-Ray Spectroscopy (200 eV < E < 5000 eV)	**1.30**	**0.50**	**1.30**	**0.50**	**1.30**	**0.50**	**1.30**	**0.50**	**1.30**	**0.50**	**1.30**	**0.50**
02.1 Soft X-rays(200 eV < E < 2000 eV)	1.20	0.00	1.20	0.00	1.20	0.00	1.20	0.00	1.20	0.00	1.20	0.00
02.2 - Tender X-rays(2000 eV < E < 5000 eV)	0.10	0.50	0.10	0.50	0.10	0.50	0.10	0.50	0.10	0.50	0.10	0.50
03 - Hard X-ray Spectroscopy (E > 5000 eV)	**7.25**	**4.00**	**7.25**	**4.00**	**7.25**	**4.00**	**7.25**	**4.00**	**7.25**	**4.00**	**7.25**	**4.00**
04 - Optics/Calibration/Metrology	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.50**
Scattering/Diffraction	**30.85**	**12.00**	**29.60**	**10.54**	**30.55**	**12.00**	**29.80**	**10.54**	**30.55**	**12.00**	**29.80**	**10.54**
05 X-ray Diffraction (ordered systems)	**9.45**	**8.05**	**8.95**	**7.90**	**9.45**	**8.05**	**9.45**	**7.90**	**9.45**	**8.05**	**9.45**	**7.90**
05.1 Hard X-rays(5000 eV < E < 30000 eV)	7.70	3.85	7.45	3.70	7.70	3.85	7.70	3.70	7.70	3.85	7.70	3.70
05.2 High Energy X-rays(E > 30000 eV)	1.75	4.20	1.50	4.20	1.75	4.20	1.75	4.20	1.75	4.20	1.75	4.20
06 MX, footprinting (ordered systems)	**11.50**	**3.00**	**10.75**	**1.84**	**11.50**	**3.00**	**10.75**	**1.84**	**11.50**	**3.00**	**10.75**	**1.84**
07 Hard X-ray Scattering (E > 5000 eV)	**9.30**	**0.95**	**9.30**	**0.80**	**9.00**	**0.95**	**9.00**	**0.80**	**9.00**	**0.95**	**9.00**	**0.80**
07.1 Hard X-rays(5000 eV < E < 30000 eV)	6.50	0.95	6.50	0.80	6.50	0.95	6.50	0.80	6.50	0.95	6.50	0.80
07.2 High Energy X-rays(E > 30000 eV)	2.80	0.00	2.80	0.00	2.50	0.00	2.50	0.00	2.50	0.00	2.50	0.00
08 Soft X-Ray Scattering (200 eV < E < 5000 eV)	**0.60**	**0.00**	**0.60**	**0.00**	**0.60**	**0.00**	**0.60**	**0.00**	**0.60**	**0.00**	**0.60**	**0.00**
08.1 Soft X-rays(200 eV < E < 2000 eV)	0.60	0.00	0.60	0.00	0.60	0.00	0.60	0.00	0.60	0.00	0.60	0.00
08.2 - Tender X-rays(2000 eV < E < 5000 eV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Imaging	**7.60**	**4.00**	**7.60**	**2.10**	**7.90**	**4.00**	**7.90**	**2.10**	**7.90**	**4.00**	**7.90**	**2.10**
09- Hard X-ray Imaging (E > 5000 eV)	**7.40**	**4.00**	**7.40**	**2.10**	**7.70**	**4.00**	**7.70**	**2.10**	**7.70**	**4.00**	**7.70**	**2.10**
09.1 Hard X-rays(5000 eV < E < 30000 eV)	7.10	4.00	7.10	2.10	7.10	4.00	7.10	2.10	7.10	4.00	7.10	2.10
09.2 High Energy X-rays(E > 30000 ev)	0.30	0.00	0.30	0.00	0.60	0.00	0.60	0.00	0.60	0.00	0.60	0.00
10- Soft X-ray Imaging (200 eV < E < 5000 eV)	**0.20**	**0.00**	**0.20**	**0.00**	**0.20**	**0.00**	**0.20**	**0.00**	**0.20**	**0.00**	**0.20**	**0.00**
10.1 Soft X-rays(200 eV < E < 2000 eV)	0.20	0.00	0.20	0.00	0.20	0.00	0.20	0.00	0.20	0.00	0.20	0.00
10.2 - Tender x-rays(2000 eV < E < 5000 eV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11- IR Imaging	**0.00**											
	47.00	**21.00**	**45.75**	**17.64**	**47.00**	**21.00**	**46.25**	**17.64**	**47.00**	**21.00**	**46.25**	**17.64**
	68.00		**63.39**		**68.00**		**63.89**		**68.00**		**63.89**	

BEAMLINE DATA BY FACILITY - ALS

	ALS ID BL Count FY17	ALS BM BL Count FY17	ALS ID Ops Count FY17	ALS BM Ops Count FY17	ALS ID BL Count FY19	ALS BM BL Count FY19	ALS ID Ops Count FY19	ALS BM Ops Count FY19	ALS ID BL Count FY21	ALS BM BL Count FY21	ALS ID Ops Count FY21	ALS BM Ops Count FY21
Spectroscopy	**7.00**	**7.00**	**7.00**	**7.00**	**8.75**	**6.60**	**8.75**	**6.70**	**8.50**	**6.70**	**8.50**	**5.95**
01 - Low Energy Spectroscopy (E < 200 eV)	**2.75**	**0.25**	**2.75**	**0.25**	**2.75**	**0.25**	**2.75**	**0.25**	**2.75**	**0.25**	**2.75**	**0.25**
02 - Soft X-Ray Spectroscopy (200 eV < E < 5000 eV)	**2.50**	**4.75**	**2.50**	**4.75**	**4.25**	**4.85**	**4.25**	**4.85**	**4.00**	**4.85**	**4.00**	**4.85**
02.1 Soft X-rays(200 eV < E < 2000 eV)	2.50	3.00	2.50	3.00	4.25	3.00	4.25	3.00	4.00	3.00	4.00	3.00
02.2 - Tender X-rays(2000 eV < E < 5000 eV)	0.00	1.75	0.00	1.75	0.00	1.85	0.00	1.85	0.00	1.85	0.00	1.85
03 - Hard X-ray Spectroscopy (E > 5000 eV)	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.50**
04 - Optics/Calibration/Metrology	**1.75**	**1.50**	**1.75**	**1.50**	**1.75**	**1.00**	**1.75**	**1.10**	**1.75**	**1.10**	**1.75**	**0.35**
Scattering/Diffraction	**4.75**	**8.60**	**4.50**	**8.60**	**5.75**	**8.75**	**5.50**	**8.75**	**5.50**	**8.75**	**5.25**	**8.75**
05 X-ray Diffraction (ordered systems)	**0.00**	**2.00**	**0.00**	**2.00**	**0.00**	**2.00**	**0.00**	**2.00**	**0.00**	**2.00**	**0.00**	**2.00**
05.1 Hard X-rays(5000 eV < E < 30000 eV)	0.00	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	2.00
05.2 High Energy X-rays(E > 30000 eV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06 MX, footprinting (ordered systems)	**3.00**	**4.60**	**3.00**	**4.60**	**4.00**	**4.60**	**4.00**	**4.60**	**4.00**	**4.60**	**4.00**	**4.60**
07 Hard X-ray Scattering (E > 5000 eV)	**0.00**	**1.50**	**0.00**	**1.50**	**0.00**	**1.50**	**0.00**	**1.50**	**0.00**	**1.50**	**0.00**	**1.50**
07.1 Hard X-rays(5000 eV < E < 30000 eV)	0.00	1.50	0.00	1.50	0.00	1.50	0.00	1.50	0.00	1.50	0.00	1.50
07.2 High Energy X-rays(E > 30000 eV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08 Soft X-Ray Scattering (200 eV < E < 5000 eV)	**1.75**	**0.50**	**1.50**	**0.50**	**1.75**	**0.65**	**1.50**	**0.65**	**1.50**	**0.65**	**1.25**	**0.65**
08.1 Soft X-rays(200 eV < E < 2000 eV)	1.75	0.25	1.50	0.25	1.75	0.25	1.50	0.25	1.50	0.25	1.25	0.25
08.2 - Tender X-rays(2000 eV < E < 5000 eV)	0.00	0.25	0.00	0.25	0.00	0.40	0.00	0.40	0.00	0.40	0.00	0.40
Imaging	**2.50**	**9.00**	**1.50**	**7.50**	**2.75**	**9.00**	**1.75**	**8.00**	**3.25**	**9.00**	**2.25**	**8.00**
09- Hard X-ray Imaging (E > 5000 eV)	**0.00**	**2.25**	**0.00**	**2.25**	**0.00**	**2.25**	**0.00**	**2.25**	**0.00**	**2.25**	**0.00**	**2.25**
09.1 Hard X-rays(5000 eV < E < 30000 eV)	0.00	2.25	0.00	2.25	0.00	2.25	0.00	2.25	0.00	2.25	0.00	2.25
09.2 High Energy X-rays(E > 30000 ev)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10- Soft X-ray Imaging (200 eV < E < 5000 eV)	**2.50**	**4.00**	**1.50**	**3.00**	**2.75**	**4.00**	**1.75**	**3.00**	**3.25**	**4.00**	**2.25**	**3.00**
10.1 Soft X-rays(200 eV < E < 2000 eV)	2.50	4.00	1.50	3.00	2.75	4.00	1.75	3.00	3.25	4.00	2.25	3.00
10.2 - Tender x-rays(2000 eV < E < 5000 eV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11- IR Imaging	**0.00**	**2.75**	**0.00**	**2.25**	**0.00**	**2.75**	**0.00**	**2.75**	**0.00**	**2.75**	**0.00**	**2.75**
	14.25	**24.60**	**13.00**	**23.10**	**17.25**	**24.35**	**16.00**	**23.45**	**17.25**	**24.45**	**16.00**	**22.70**
	38.85		**36.10**		**41.60**		**39.45**		**41.70**		**38.70**	

BEAMLINE DATA BY FACILITY - NSLS II

	NSLS ID BL Count FY17	NSLS BM BL Count FY17	NSLS ID Ops Count FY17	NSLS BM Ops Count FY17	NSLS ID BL Count FY19	NSLS BM BL Count FY19	NSLS ID Ops Count FY19	NSLS BM Ops Count FY19	NSLS ID BL Count FY21	NSLS BM BL Count FY21	NSLS ID Ops Count FY21	NSLS BM Ops Count FY21
Spectroscopy	**4.00**	**2.60**	**2.30**	**0.37**	**5.70**	**4.85**	**3.78**	**3.41**	**5.70**	**4.75**	**5.05**	**3.79**
01 - Low Energy Spectroscopy (E < 200 eV)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.80**	**0.00**	**1.08**	**0.00**	**1.80**	**0.00**	**1.08**
02 - Soft X-Ray Spectroscopy (200 eV < E < 5000 eV)	**2.00**	**0.30**	**0.80**	**0.03**	**3.70**	**0.75**	**2.08**	**0.38**	**3.70**	**0.75**	**3.30**	**0.68**
02.1 Soft X-rays(200 eV < E < 2000 eV)	2.00	0.15	0.80	0.02	2.85	0.38	1.83	0.19	2.85	0.38	2.57	0.34
02.2 - Tender X-rays(2000 eV < E < 5000 eV)	0.00	0.15	0.00	0.02	0.85	0.38	0.26	0.19	0.85	0.38	0.72	0.34
03 - Hard X-ray Spectroscopy (E > 5000 eV)	**2.00**	**2.30**	**1.50**	**0.34**	**2.00**	**2.30**	**1.70**	**1.95**	**2.00**	**2.20**	**1.75**	**2.03**
04 - Optics/Calibration/Metrology	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Scattering/Diffraction	**9.00**	**1.70**	**4.97**	**0.94**	**9.55**	**1.70**	**8.00**	**1.55**	**9.55**	**1.80**	**8.77**	**1.72**
05 X-ray Diffraction (ordered systems)	**1.50**	**0.20**	**0.85**	**0.00**	**2.10**	**0.20**	**1.83**	**0.15**	**2.10**	**0.30**	**1.93**	**0.27**
05.1 Hard X-rays(5000 eV < E < 30000 eV)	1.00	0.20	0.50	0.00	1.00	0.20	0.90	0.15	1.00	0.30	0.90	0.27
05.2 High Energy X-rays(E > 30000 eV)	0.50	0.00	0.35	0.00	1.10	0.00	0.93	0.00	1.10	0.00	1.03	0.00
06 MX, footprinting (ordered systems)	**3.00**	**0.50**	**1.10**	**0.34**	**3.00**	**0.50**	**2.40**	**0.50**	**3.00**	**0.50**	**2.70**	**0.50**
07 Hard X-ray Scattering (E > 5000 eV)	**3.50**	**1.00**	**2.12**	**0.60**	**3.85**	**1.00**	**3.23**	**0.90**	**3.85**	**1.00**	**3.57**	**0.95**
07.1 Hard X-rays(5000 eV < E < 30000 eV)	3.00	1.00	1.77	0.60	3.00	1.00	2.60	0.90	3.00	1.00	2.80	0.95
07.2 High Energy X-rays(E > 30000 eV)	0.50	0.00	0.35	0.00	0.85	0.00	0.63	0.00	0.85	0.00	0.77	0.00
08 Soft X-Ray Scattering (200 eV < E < 5000 eV)	**1.00**	**0.00**	**0.90**	**0.00**	**0.60**	**0.00**	**0.54**	**0.00**	**0.60**	**0.00**	**0.57**	**0.00**
08.1 Soft X-rays(200 eV < E < 2000 eV)	1.00	0.00	0.90	0.00	0.60	0.00	0.54	0.00	0.60	0.00	0.57	0.00
08.2 - Tender X-rays(2000 eV < E < 5000 eV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Imaging	**3.00**	**1.70**	**1.70**	**0.07**	**4.75**	**1.45**	**3.73**	**1.05**	**4.75**	**1.45**	**4.13**	**1.20**
09- Hard X-ray Imaging (E > 5000 eV)	**2.00**	**1.00**	**1.40**	**0.00**	**3.05**	**1.00**	**2.35**	**0.80**	**3.05**	**1.00**	**2.55**	**0.85**
09.1 Hard X-rays(5000 eV < E < 30000 eV)	2.00	1.00	1.40	0.00	3.00	1.00	2.30	0.80	3.00	1.00	2.50	0.85
09.2 High Energy X-rays(E > 30000 ev)	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.05	0.00	0.05	0.00
10- Soft X-ray Imaging (200 eV < E < 5000 eV)	**1.00**	**0.70**	**0.30**	**0.07**	**1.70**	**0.25**	**1.38**	**0.13**	**1.70**	**0.25**	**1.59**	**0.23**
10.1 Soft X-rays(200 eV < E < 2000 eV)	1.00	0.14	0.30	0.01	1.55	0.05	1.34	0.03	1.55	0.05	1.46	0.05
10.2 - Tender x-rays(2000 eV < E < 5000 eV)	0.00	0.56	0.00	0.06	0.15	0.20	0.05	0.10	0.15	0.20	0.13	0.18
11- IR Imaging	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.20**	**0.00**	**0.12**	**0.00**	**0.20**	**0.00**	**0.12**
	16.00	**6.00**	**8.97**	**1.37**	**20.00**	**8.00**	**15.50**	**6.00**	**20.00**	**8.00**	**17.95**	**6.70**
	22.00		**10.34**		**28.00**		**21.50**		**28.00**		**24.65**	

BEAMLINE DATA BY FACILITY - SSRL

	SSRL ID BL Count FY17	SSRL BM BL Count FY17	SSRL ID BL Count FY19	SSRL BM BL Count FY19	SSRL ID BL Count FY21	SSRL BM BL Count FY21
Spectroscopy	**8.79**	**3.75**	**9.34**	**5.75**	**10.34**	**5.75**
01 - Low Energy Spectroscopy (E < 200 eV)	**1.34**	**0.80**	**1.34**	**0.80**	**1.34**	**0.80**
02 - Soft X-Ray Spectroscopy (200 eV < E < 5000 eV)	**2.00**	**1.75**	**2.00**	**1.75**	**2.00**	**1.75**
02.1 Soft X-rays(200 eV < E < 2000 eV)	1.00	1.00	1.00	1.00	1.00	1.00
02.2 - Tender X-rays(2000 eV < E < 5000 eV)	1.00	0.75	1.00	0.75	1.00	0.75
03 - Hard X-ray Spectroscopy (E > 5000 eV)	**5.45**	**1.00**	**6.00**	**1.00**	**7.00**	**1.00**
04 - Optics/Calibration/Metrology	**0.00**	**0.20**	**0.00**	**2.20**	**0.00**	**2.20**
Scattering/Diffraction	**7.83**	**3.10**	**8.83**	**3.10**	**8.83**	**3.10**
05 X-ray Diffraction (ordered systems)	**2.50**	**1.60**	**2.50**	**1.60**	**2.50**	**1.60**
05.1 Hard X-rays(5000 eV < E < 30000 eV)	2.50	1.60	2.50	1.60	2.50	1.60
05.2 High Energy X-rays(E > 30000 eV)	0.00	0.00	0.00	0.00	0.00	0.00
06 MX, footprinting (ordered systems)	**4.00**	**1.00**	**5.00**	**1.00**	**5.00**	**1.00**
07 Hard X-ray Scattering (E > 5000 eV)	**1.00**	**0.50**	**1.00**	**0.50**	**1.00**	**0.50**
07.1 Hard X-rays(5000 eV < E < 30000 eV)	1.00	0.50	1.00	0.50	1.00	0.50
07.2 High Energy X-rays(E > 30000 eV)	0.00	0.00	0.00	0.00	0.00	0.00
08 Soft X-Ray Scattering (200 eV < E < 5000 eV)	**0.33**	**0.00**	**0.33**	**0.00**	**0.33**	**0.00**
08.1 Soft X-rays(200 eV < E < 2000 eV)	0.33	0.00	0.33	0.00	0.33	0.00
08.2 - Tender X-rays(2000 eV < E < 5000 eV)	0.00	0.00	0.00	0.00	0.00	0.00
Imaging	**1.38**	**1.15**	**1.83**	**1.15**	**1.83**	**1.15**
09- Hard X-ray Imaging (E > 5000 eV)	**1.05**	**0.90**	**1.50**	**0.90**	**1.50**	**0.90**
09.1 Hard X-rays(5000 eV < E < 30000 eV)	1.05	0.90	1.50	0.90	1.50	0.90
09.2 High Energy X-rays(E > 30000 ev)	0.00	0.00	0.00	0.00	0.00	0.00
10- Soft X-ray Imaging (200 eV < E < 5000 eV)	**0.33**	**0.25**	**0.33**	**0.25**	**0.33**	**0.25**
10.1 Soft X-rays(200 eV < E < 2000 eV)	0.33	0.00	0.33	0.00	0.33	0.00
10.2 - Tender x-rays(2000 eV < E < 5000 eV)	0.00	0.25	0.00	0.25	0.00	0.25
11- IR Imaging	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	18.00	**8.00**	**20.00**	**10.00**	**21.00**	**10.00**
	26.00		**30.00**		**31.00**	
	this uses old SSRL data		this uses old SSRL data		this uses old SSRL data	

Argonne NATIONAL LABORATORY

SUMMARY DATA AND APS FRACTION

	Total ID BL Count FY17	Total BM BL Count FY17	Total ID BL Count FY19	Total BM BL Count FY19	Total ID BL Count FY21	Total BM BL Count FY21	APS ID BL Count FY21	APS BM BL Count FY21	Percentage of IDs Lost During APS-U Dark Time	Percentage of BMs Lost During APS-U Dark Time
Spectroscopy	**28.34**	**18.35**	**32.34**	**22.20**	**33.09**	**22.20**	**8.55**	**5.00**	**26%**	**23%**
01 - Low Energy Spectroscopy (E < 200 eV)	**4.09**	**1.05**	**4.09**	**2.85**	**4.09**	**2.85**	**0.00**	**0.00**	**0%**	**0%**
02 - Soft X-Ray Spectroscopy (200 eV < E < 5000 eV)	**7.80**	**7.30**	**11.25**	**7.85**	**11.00**	**7.85**	**1.30**	**0.50**	**12%**	**6%**
02.1 Soft X-rays (200 eV < E < 2000 eV)	6.70	4.15	9.30	4.38	9.05	4.38	1.20	0.00	13%	0%
02.2 - Tender X-rays (2000 eV < E < 5000 eV)	1.10	3.15	1.95	3.48	1.95	3.48	0.10	0.50	5%	14%
03 - Hard X-ray Spectroscopy (E > 5000 eV)	**14.70**	**7.80**	**15.25**	**7.80**	**16.25**	**7.70**	**7.25**	**4.00**	**45%**	**52%**
04 - Optics/Calibration/Metrology	**1.75**	**2.20**	**1.75**	**3.70**	**1.75**	**3.80**	**0.00**	**0.50**	**0%**	**13%**
Scattering/Diffraction	**52.43**	**25.4**	**54.68**	**25.55**	**54.43**	**25.65**	**30.55**	**12.00**	**56%**	**47%**
05 X-ray Diffraction (ordered systems)	**13.45**	**11.85**	**14.05**	**11.85**	**14.05**	**11.95**	**9.45**	**8.05**	**67%**	**67%**
05.1 Hard X-rays (5000 eV < E < 30000 eV)	11.20	7.65	11.20	7.65	11.20	7.75	7.70	3.85	69%	50%
05.2 High Energy X-rays (E > 30000 eV)	2.25	4.20	2.85	4.20	2.85	4.20	1.75	4.20	61%	100%
06 MX, footprinting (ordered systems)	**21.50**	**9.10**	**23.50**	**9.10**	**23.50**	**9.10**	**11.50**	**3.00**	**49%**	**33%**
07 Hard X-ray Scattering (E > 5000 eV)	**13.80**	**3.95**	**13.85**	**3.95**	**13.85**	**3.95**	**9.00**	**0.95**	**65%**	**24%**
07.1 Hard X-rays (5000 eV < E < 30000 eV)	10.50	3.95	10.50	3.95	10.50	3.95	6.50	0.95	62%	24%
07.2 High Energy X-rays (E > 30000 eV)	3.30	0.00	3.35	0.00	3.35	0.00	2.50	0.00	75%	0%
08 Soft X-Ray Scattering (200 eV < E < 5000 eV)	**3.68**	**0.50**	**3.28**	**0.65**	**3.03**	**0.65**	**0.60**	**0.00**	**20%**	**0%**
08.1 Soft X-rays (200 eV < E < 2000 eV)	3.68	0.25	3.28	0.25	3.03	0.25	0.60	0.00	20%	0%
08.2 - Tender X-rays (2000 eV < E < 5000 eV)	0.00	0.25	0.00	0.40	0.00	0.40	0.00	0.00	0%	0%
Imaging	**14.48**	**15.85**	**17.23**	**15.60**	**17.73**	**15.60**	**7.90**	**4.00**	**45%**	**26%**
09- Hard X-ray Imaging (E > 5000 eV)	**10.45**	**8.15**	**12.25**	**8.15**	**12.25**	**8.15**	**7.70**	**4.00**	**63%**	**49%**
09.1 Hard X-rays (5000 eV < E < 30000 eV)	10.15	8.15	11.60	8.15	11.60	8.15	7.10	4.00	61%	49%
09.2 High Energy X-rays (E > 30000 ev)	0.30	0.00	0.65	0.00	0.65	0.00	0.60	0.00	92%	0%
10- Soft X-ray Imaging (200 eV < E < 5000 eV)	**4.03**	**4.95**	**4.98**	**4.50**	**5.48**	**4.50**	**0.20**	**0.00**	**4%**	**0%**
10.1 Soft X-rays (200 eV < E < 2000 eV)	4.03	4.14	4.83	4.05	5.33	4.05	0.20	0.00	4%	0%
10.2 - Tender x-rays (2000 eV < E < 5000 eV)	0.00	0.81	0.15	0.45	0.15	0.45	0.00	0.00	0%	0%
11- IR Imaging	**0.00**	**2.75**	**0.00**	**2.95**	**0.00**	**2.95**	**0.00**	**0.00**	**0%**	**0%**
	95.25	**59.60**	**104.25**	**63.35**	**105.25**	**63.45**	**47.00**	**21.00**	**45%**	**33%**
	154.85		**167.60**		**168.70**		**68.00**		**40%**	

SUMMARY

- Need to get updated SSRL, clean up some spreadsheets, do a little deeper analysis, etc.

- No surprise that Users requiring high-energy x-rays will be hit hard during the dark time. In FY21 APS will operate:
  - 92% of ID beamlines (0.6 BLEs) for imaging above 30 keV
  - 75% of ID beamlines (2.5 BLEs) for scattering above 30 keV
  - 61% of ID beamlines (1.75 BLEs) and 100% of BM beamlines (4.2 BLEs) for diffraction above 30 keV

- Other areas that could be heavily impacted by the dark period. In FY21 APS will operate:
  - 69% of ID beamlines (7.7 BLEs) for diffraction that operate between 5 keV and 30 keV
  - 61% of ID beamlines (7.1 BLEs) for imaging that operate between 5 keV and 30 keV
  - 52% of BM beamlines (4 BLEs) for spectroscopy above 5 keV BLs
  - 49% of ID beamlines (11.5 BLEs) for PX - *more about that from Bob Fischetti et al*

- Some extra capacity could be generated on existing beam lines that are limited by staffing.
  - ALS (in FY21) will have about 3 beam line equivalents (BLEs) idle
  - NSLS II (in FY21) will have about 3.35 BLEs of capacity idle

QUESTIONS?