Dataset - XSEDE Return on Investment Data and Analysis (July 2014 to August 2019)

All spreadsheets refer to program years of the combined XSEDE and XSEDE2 awards.

Towns, J. et al. NSF Award #1053575. $125,628,751. 6/21/2011-7/23/2016. XSEDE: eXtreme Science and Engineering Discovery Environment. https://www.nsf.gov/awardsearch/showAward?AWD_ID=1053575

Towns, J. et al. NSF Award #1053575. $110,000,000. 8/19/2016-8/31/2021. XSEDE 2.0: Integrating, Enabling and Enhancing National Cyberinfrastructure with Expanding Community Involvement

We take the approach of counting the five program years of XSEDE as PY1 through PY5. Technically, the correct way to count program years for XSEDE2 is PY1 of XSEDE2, PY2 of XSEDE2, etc.

For simplicity, we take the technically incorrect but clear approach of calling PY1 of XSEDE2 as PY6 of the overall XSEDE project.

The Program Years and Dates considered in this report are as follows:

Program Year	Start	End
PY4	7/1/2014	6/30/2015
PY5	7/1/2015	8/31/2016
PY6	9/1/2016	8/31/2017
PY7	9/1/2017	8/31/0201
PY8	9/1/2018	8/31/2019

Table of Contents for this worksheet

XSEDE Value by Category

Category of Value (Return proxy)	PY4 Jul14-Jun15	PY5 Jul15-Aug16	PY6 Sep16-Aug17	PY7 Sep17-Aug18	PY8 Sep18-Aug19	Combined PY4-PY8
XSEDE Return on Investment (Project Years 4-8)						
XSEDE value to L1 SPs	$15,948,215	$12,818,846	$7,241,488	$10,207,774	$12,118,883	$58,335,206
XSEDE value to L2 SPs	$1,104,111	$1,107,633	$1,753,718	$5,056,986	$4,221,851	$13,244,299
XSEDE value to L3 SPs	$756,097	$949,783	$6,424,825	$6,135,790	$6,288,023	$20,554,518
XSEDE value to SPs Subtotal	*$17,808,423*	*$14,876,262*	*$15,420,031*	*$21,400,550*	*$22,628,757*	*$92,134,023*
ECSS value to PIs	$7,822,617	$14,912,466	$9,032,970	$12,165,786	$11,797,278	$55,731,118
Extended Support value Subtotal						
Helpdesk value	NA	$101,156	$112,281	$125,320	$120,077	$458,834
Operations value Subtotal						
Training value	$546,680	$828,359	$549,190	$585,134	$599,745	$3,109,107
Training value Subtotal						
CRI Software Distribution	$29,393	$33,969	$41,961	$48,259	$35,945	$189,527
CRI Site Visits	$39,667	$115,910	$120,722	$236,626	$191,351	$704,276
Resource Integration Subtotal	*$69,060*	*$149,879*	*$162,683*	*$284,885*	*$227,296*	*$893,803*
XSEDE Total Proxy Value	$26,246,780	$30,868,122	$25,277,155	$34,561,675	$35,373,153	$152,326,885
XSEDE Total Expenditure	$23,562,931	$23,067,000	$18,285,622	$19,561,588	$19,993,698	$104,470,839
XSEDE Total ROI proxy	1.11	1.34	1.38	1.77	1.77	1.46

PY4 (Jul14-Jun15)**

XSEDE Project Year 4				Level 1					Level 2					Level 3				
Resource	Actual Cost/FTE	Actual FTEs	Total Resource Budget	Average FTEs/SP	L1 SPs Answers	Total Value per L1 SP	Total Value for Surveyed L1 SPs	Total Value for All L1 SPs extrapolated N=5	Average FTEs/SP	L2 SPs Answers	Total Value per L2 SP	Total Value for Surveyed L2 SPs	Total Value for All L2 SPs extrapolated N=5	Average FTEs/SP	L3 SPs Answers	Total Value per L3 SP	Total Value for Surveyed L3 SPs	Total Value for All L2 SPs extrapolated N=7
Allocations	$ 209,302.33	2.15	$ 450,000.00	2.33	3	$ 488,372	$ 1,465,116	$ 2,441,860	0.10	5	$ 20,930	$ 104,651	$ 104,651	0.20	5	$ 41,860	$ 209,302	$ 293,023
Account Management and Authentication Services	$ 200,000.00	2.85	$ 570,000.00	0.90	3	$ 180,000	$ 540,000	$ 900,000	0.07	5	$ 14,000	$ 70,000	$ 70,000	0.00	5	$ -	$ -	$ -
24x7 Operations	$ 196,593.38	19.99	$ 3,930,000.00	1.67	3	$ 327,656	$ 982,967	$ 1,638,278	0.02	5	$ 3,932	$ 19,659	$ 19,659	0.00	5	$ -	$ -	$ -
Ticket Support	$ 196,593.38	*	*	1.03	3	$ 203,146	$ 609,439	$ 1,015,732	0.02	5	$ 3,932	$ 19,659	$ 19,659	0.00	5	$ -	$ -	$ -
User Survey	$ 237,949.50	1.31	$ 311,000.00	0.18	3	$ 43,624	$ 130,872	$ 218,120	0.01	5	$ 2,379	$ 11,897	$ 11,897	0.00	5	$ -	$ -	$ -
Leadership	$ 221,021.02	6.66	$ 1,472,000.00	0.25	3	$ 55,255	$ 165,766	$ 276,276	0.07	5	$ 15,471	$ 77,357	$ 77,357	0.07	5	$ 15,471	$ 77,357	$ 108,300
Project Management and Financial Functions	$ 200,000.00	4.50	$ 900,000.00	0.50	3	$ 100,000	$ 300,000	$ 500,000	0.04	5	$ 8,000	$ 40,000	$ 40,000	0.00	5	$ -	$ -	$ -
User Information Services, including XSEDE.org	$ 200,000.00	6.36	$ 1,272,000.00	0.45	3	$ 90,000	$ 270,000	$ 450,000	0.00	5	$ -	$ -	$ -	0.02	5	$ 4,000	$ 20,000	$ 28,000
Training and Education	$ 218,902.61	6.51	$ 1,425,056.00	0.75	3	$ 164,177	$ 492,531	$ 820,885	0.30	5	$ 65,671	$ 328,354	$ 328,354	0.17	5	$ 37,213	$ 186,067	$ 260,494
Outreach	$ 236,713.01	9.53	$ 2,255,875.00	0.92	3	$ 216,987	$ 650,961	$ 1,084,935	0.02	5	$ 4,734	$ 23,671	$ 23,671	0.04	5	$ 9,469	$ 47,343	$ 66,280
Network	$ 196,593.38	*	*	0.23	3	$ 45,872	$ 137,615	$ 229,359	0.03	5	$ 5,898	$ 29,489	$ 29,489	0.00	5	$ -	$ -	$ -
Systems Engineering and Deployment	$ 201,019.62	17.83	$ 3,585,000.00	0.33	3	$ 67,007	$ 201,020	$ 335,033	0.12	5	$ 24,122	$ 120,612	$ 120,612	0.00	5	$ -	$ -	$ -
Parallel Computing Support, Advanced Support, Consultation, and Programming	$ 207,008.09	35.71	$ 7,392,000.00	5.83	3	$ 1,207,547	$ 3,622,642	$ 6,037,736	0.25	5	$ 51,752	$ 258,760	$ 258,760	0.00	5	$ -	$ -	$ -
Totals		15.38	$ 23,562,931.00	15.38			$ 9,568,929	$ 15,948,215	1.05			$ 1,104,111	$ 1,104,111	0.50			$ 540,070	$ 756,097

* FTEs and budget for Network and Ticket Support services are included in the Operations budget line

** Budget and FTE values provided by the XSEDE Project Office; all other data reported by SPs

column	definition
F, L, R	Average FTE effort needed for SP to provide same service (per level)
G, M, S	Number of SPs responding the survey (per level)
H, N, T	Average value of service provided to SPs (per level)
I, O, U	Total value received by surveyed SPs (per level)
J, P, V	Estimated total value extrapolating value to full SP population (per level)

PY5 (Jul15-Aug16)**

XSEDE Project Year 5				Level 1					Level 2					Level 3				
Resource	Actual Cost/FTE	Actual FTEs	Total Resource Budget	Average FTEs/SP	L1 SPs Answered	Total Value per L1 SP	Total Value for Surveyed L1 SPs	Total Value for All L1 SPs extrapolated N=5	Average FTEs/SP	L2 SPs Answered	Total Value per L2 SP	Total Value for Surveyed L2 SPs	Total Value for All L2 SPs extrapolated N=5	Average FTEs/SP	L3 SPs Answered	Total Value per L3 SP	Total Value for Surveyed L3 SPs	Total Value for All L3 SPs extrapolated N=7
Allocations	$ 209,302.33	2.15	$ 450,000.00	1.81	4	$ 379,360	$ 1,517,442	$ 1,896,802	0.10	5	$ 20,930	$ 104,651	$ 104,651	0.14	7	$ 29,900	$ 209,302	$ 209,302
Account Management and Authentication Services	$ 200,000.00	2.85	$ 570,000.00	0.80	4	$ 160,000	$ 640,000	$ 800,000	0.07	5	$ 14,000	$ 70,000	$ 70,000	0.00	7	$ -	$ -	$ -
24x7 Operations	$ 216,739.13	18.40	$ 3,988,000.00	1.25	4	$ 270,924	$ 1,083,696	$ 1,354,620	0.02	5	$ 4,335	$ 21,674	$ 21,674	0.00	7	$ -	$ -	$ -
Ticket Support	$ 216,739.13	*	*	0.96	4	$ 208,611	$ 834,446	$ 1,043,057	0.02	5	$ 4,335	$ 21,674	$ 21,674	0.00	7	$ -	$ -	$ -
User Survey	$ 237,404.58	1.31	$ 311,000.00	0.20	4	$ 47,481	$ 189,924	$ 237,405	0.01	5	$ 2,374	$ 11,870	$ 11,870	0.01	7	$ 3,391	$ 23,740	$ 23,740
Leadership	$ 214,031.35	7.12	$ 1,523,903.23	0.21	4	$ 45,482	$ 181,927	$ 227,408	0.07	5	$ 14,982	$ 74,911	$ 74,911	0.11	7	$ 24,461	$ 171,225	$ 171,225
Project Management and Financial Functions	$ 200,020.12	4.81	$ 962,096.77	0.38	4	$ 75,008	$ 300,030	$ 375,038	0.04	5	$ 8,001	$ 40,004	$ 40,004	0.00	7	$ -	$ -	$ -
User Information Services, including XSEDE.org	$ 200,000.00	6.00	$ 1,200,000.00	0.40	4	$ 80,000	$ 320,000	$ 400,000	0.00	5	$ -	$ -	$ -	0.04	7	$ 8,571	$ 60,000	$ 60,000
Training and Education	$ 218,045.11	6.65	$ 1,450,000.00	0.59	4	$ 128,102	$ 512,406	$ 640,508	0.30	5	$ 65,414	$ 327,068	$ 327,068	0.17	7	$ 37,379	$ 261,654	$ 261,654
Outreach	$ 238,512.04	9.14	$ 2,180,000.00	0.71	4	$ 169,940	$ 679,759	$ 849,699	0.02	5	$ 4,770	$ 23,851	$ 23,851	0.04	7	$ 10,222	$ 71,554	$ 71,554
Network	$ 216,739.13	*	*	0.18	4	$ 37,929	$ 151,717	$ 189,647	0.03	5	$ 6,502	$ 32,511	$ 32,511	0.00	7	$ -	$ -	$ -
Systems Engineering and Deployment	$ 201,114.02	15.26	$ 3,069,000.00	0.28	4	$ 55,306	$ 221,225	$ 276,532	0.12	5	$ 24,134	$ 120,668	$ 120,668	0.07	7	$ 14,365	$ 100,557	$ 100,557
Parallel Computing Support, Advanced Support, Consultation, and Programming	$ 207,000.28	35.57	$ 7,363,000.00	4.38	4	$ 905,626	$ 3,622,505	$ 4,528,131	0.25	5	$ 51,750	$ 258,750	$ 258,750	0.04	7	$ 7,393	$ 51,750	$ 51,750
Totals		109.26	$ 23,067,000.00	12.14			$ 10,255,077	$ 12,818,846	1.05			$ 1,107,633	$ 1,107,633	0.64			$ 949,783	$ 949,783

* FTEs and budget for Network and Ticket Support services are included in the Operations budget line

** Budget and FTE values provided by the XSEDE Project Office; all other data reported by SPs

column	definition
F, L, R	Average FTE effort needed for SP to provide same service (per level)
G, M, S	Number of SPs responding the survey (per level)
H, N, T	Average value of service provided to SPs (per level)
I, O, U	Total value received by surveyed SPs (per level)
J, P, V	Estimated total value extrapolating value to full SP population (per level)

PY6 (Sep16-Aug17)**

XSEDE Project Year 6				Level 1					Level 2					Level 3				
Resource	Actual Cost/FTE	Actual FTEs	Total Resource Expenses	Average FTEs/SP	L1 SPs Answered	Total Value per L1 SP	Total Value for Surveyed L1 SPs	Total Value for All L1 SPs extrapolated N=4	Average FTEs/SP	L2 SPs Answered	Total Value per L2 SP	Total Value for Surveyed L2 SPs	Total Value for All L2 SPs extrapolated N=8	Average FTEs/SP	L3 SPs Answered	Total Value per L3 SP	Total Value for Surveyed L3 SPs	Total Value for All L3 SPs extrapolated N=21
Allocations	$ 153,104	2.34	$ 358,264	1.88	4	$ 287,071	$ 1,148,282	$ 1,148,282	0.25	2	$ 38,276	$ 76,552	$ 306,209	0.03	13	$ 4,711	$ 61,242	$ 98,929
Account Management and Authentication Services	$ 132,683	5.52	$ 732,411	0.36	4	$ 48,098	$ 192,391	$ 192,391	0.00	2	$ -	$ -	$ -	0.10	13	$ 13,268	$ 172,488	$ 278,635
24x7 Operations	$ 197,349	14.59	$ 2,879,329	0.30	4	$ 59,205	$ 236,819	$ 236,819	0.01	2	$ 987	$ 1,973	$ 7,894	0.02	13	$ 3,036	$ 39,470	$ 63,759
Ticket Support	$ 197,349	*	*	0.34	4	$ 66,605	$ 266,422	$ 266,422	0.05	2	$ 9,867	$ 19,735	$ 78,940	0.02	13	$ 3,947	$ 51,311	$ 82,887
User Survey	$ 79,239	3.00	$ 237,717	0.18	4	$ 13,867	$ 55,467	$ 55,467	0.25	2	$ 19,810	$ 39,620	$ 158,478.00	0.03	13	$ 2,743	$ 35,658	$ 57,601
Leadership	$ 272,772	7.57	$ 2,064,882	0.24	4	$ 64,783	$ 259,133	$ 259,133	0.13	2	$ 34,096	$ 68,193	$ 272,772	0.30	13	$ 81,412	$ 1,058,354	$ 1,709,649
Project Management and Financial Functions	$ 242,873	6.10	$ 1,481,524	0.24	4	$ 57,682	$ 230,729	$ 230,729	0.03	2	$ 6,072	$ 12,144	$ 48,574.56	0.00	13	$ 934	$ 12,144	$ 19,617
User Information Services, including XSEDE.org	$ 126,416	4.48	$ 566,345	0.26	4	$ 33,184	$ 132,737	$ 132,737	0.13	2	$ 15,802	$ 31,604	$ 126,416.29	0.10	13	$ 12,739	$ 165,605	$ 267,516
Training and Education	$ 150,549	8.38	$ 1,261,600	0.75	4	$ 112,912	$ 451,647	$ 451,647	0.25	2	$ 37,637	$ 75,274	$ 301,097.85	0.41	13	$ 62,304	$ 809,953	$ 1,308,386
Outreach	$ 209,476	4.30	$ 900,747	0.71	4	$ 149,252	$ 597,007	$ 597,007	0.13	2	$ 26,185	$ 52,369	$ 209,476.05	0.15	13	$ 31,744	$ 412,668	$ 666,617
Network	$ 197,349	*	*	0.08	4	$ 14,801	$ 59,205	$ 59,205	0.10	2	$ 19,735	$ 39,470	$ 157,879.59	0.13	13	$ 25,048	$ 325,627	$ 526,012
Systems Engineering and Deployment	$ 214,955	8.44	$ 1,814,219	0.06	4	$ 13,435	$ 53,739	$ 53,739	0.05	2	$ 10,748	$ 21,495	$ 85,981.94	0.07	13	$ 14,881	$ 193,459	$ 312,511
Parallel Computing Support, Advanced Support, Consultation, and Programming	$ 225,899	26.51	$ 5,988,584	3.94	4	$ 889,478	$ 3,557,910	$ 3,557,910	0.00	2	$ -	$ -	$ -	0.22	13	$ 49,176	$ 639,294	$ 1,032,706
Totals		91.23	$ 18,285,622	9.33			$ 7,241,488	$ 7,241,488	1.36			$ 438,430	$ 1,753,718	1.58			$ 3,977,273	$ 6,424,825

* FTEs and expenses for Network and Ticket Support services are included in the Operations budget line

** Expenses and FTE values provided by the XSEDE Project Office; all other data reported by SPs

column	definition
F, L, R	Average FTE effort needed for SP to provide same service (per level)
G, M, S	Number of SPs responding the survey (per level)
H, N, T	Average value of service provided to SPs (per level)
I, O, U	Total value received by surveyed SPs (per level)
J, P, V	Estimated total value extrapolating value to full SP population (per level)

PY7 (Sep17-Aug18)**

XSEDE Project Year 7	Actual Cost/FTE	Actual FTEs	Total Resource Expenses	Level 1					Level 2					Level 3				
Resource				Average FTEs/SP	L1 SPs Answered	Total Value per L1 SP	Total Value for Surveyed L1 SPs	Total Value for All L1 SPs extrapolated N=4	Average FTEs/SP	L2 SPs Answered	Total Value per L2 SP	Total Value for Surveyed L2 SPs	Total Value for All L2 SPs extrapolated N=9	Average FTEs/SP	L3 SPs Answered	Total Value per L3 SP	Total Value for Surveyed L3 SPs	Total Value for All L3 SPs extrapolated N=23
Allocations	$163,016	2.34	$ 381,458	1.75	4	$ 285,278	$ 1,141,114	$ 1,141,114	0.38	8	$ 61,131	$ 489,049	$550,180	0.20	13	$ 32,603	$ 423,842	$ 749,875
Account Management and Authentication Services	$186,325	5.27	$ 981,934	1.11	4	$ 207,287	$ 829,147	$ 829,147	0.13	8	$ 23,524	$ 188,188	$211,712	0.12	13	$ 21,642	$ 281,351	$ 497,775
24x7 Operations	$202,878	15.19	$ 3,081,713	0.25	4	$ 50,719	$ 202,878	$ 202,878	0.25	8	$ 50,973	$ 407,784	$458,757	0.05	13	$ 9,832	$ 127,813	$ 226,131
Ticket Support	$202,878	*	*	0.33	4	$ 65,935	$ 263,741	$ 263,741	0.20	8	$ 39,561	$ 316,489	$356,050	0.05	13	$ 9,676	$ 125,784	$ 222,541
User Survey	$119,499	3.18	$ 380,006	0.14	4	$ 16,431	$ 65,724	$ 65,724	0.10	8	$ 11,352	$ 90,819	$102,171	0.00	13	$ 460	$ 5,975	$ 10,571
Leadership	$347,626	6.76	$ 2,349,954	0.24	4	$ 82,561	$ 330,245	$ 330,245	0.13	8	$ 43,888	$ 351,103	$394,990	0.18	13	$ 62,386	$ 811,012	$ 1,434,868
Project Management and Financial Functions	$220,703	6.17	$ 1,361,737	0.13	4	$ 27,588	$ 110,351	$ 110,351	0.06	8	$ 14,070	$ 112,558	$126,628	0.00	13	$ -	$ -	$ -
User Information Services, including XSEDE.org	$115,749	4.48	$ 518,556	0.33	4	$ 37,618	$ 150,474	$ 150,474	0.26	8	$ 30,529	$ 244,231	$274,759	0.13	13	$ 14,869	$ 193,301	$ 341,994
Training and Education	$147,820	8.37	$ 1,237,253	0.94	4	$ 138,581	$ 554,325	$ 554,325	0.26	8	$ 38,248	$ 305,987	$344,236	0.29	13	$ 42,788	$ 556,246	$ 984,128
Outreach	$251,096	4.01	$ 1,006,896	0.78	4	$ 194,600	$ 778,398	$ 778,398	0.41	8	$102,636	$ 821,085	$923,720	0.18	13	$ 45,390	$ 590,076	$ 1,043,981
Network	$202,878	*	*	0.30	4	$ 60,863	$ 243,453	$ 243,453	0.16	8	$ 31,953	$ 255,626	$287,579	0.00	13	$ 156	$ 2,029	$ 3,589
Systems Engineering and Deployment	$201,770	9.23	$ 1,862,341	0.50	4	$ 100,885	$ 403,541	$ 403,541	0.06	8	$ 12,863	$ 102,903	$115,766	0.02	13	$ 4,967	$ 64,567	$ 114,233
Parallel Computing Support, Advanced Support, Consultation, and Programming	$244,494	25.93	$ 6,339,740	5.25	4	$ 1,283,596	$ 5,134,383	$ 5,134,383	0.41	8	$101,160	$ 809,276	$910,436	0.09	13	$ 22,004	$ 286,058	$ 506,103
Totals		90.93	$ 19,501,588	12.03			$ 10,207,774	$ 10,207,774	2.80			$ 4,495,099	$ 5,056,986	1.31			$ 3,468,055	$ 6,135,790

* FTEs and expenses for Network and Ticket Support services are included in the Operations budget line

** Expenses and FTE values provided by the XSEDE Project Office; all other data reported by SPs

column	definition
F, L, R	Average FTE effort needed for SP to provide same service (per level)
G, M, S	Number of SPs responding the survey (per level)
H, N, T	Average value of service provided to SPs (per level)
I, O, U	Total value received by surveyed SPs (per level)
J, P, V	Estimated total value extrapolating value to full SP population (per level)

PY8 (Sep18-Aug19)**

XSEDE Project Year 8				Level 1					Level 2					Level 3				
Resource	Actual Cost/FTE	Actual FTEs	Total Resource Expenses	Average FTEs/SP	L1 SPs Answered	Total Value per L1 SP	Total Value for Surveyed L1 SPs	Total Value for All L1 SPs extrapolated N=4	Average FTEs/SP	L2 SPs Answered	Total Value per L2 SP	Total Value for Surveyed L2 SPs	Total Value for All L2 SPs extrapolated N=8	Average FTEs/SP	L3 SPs Answered	Total Value per L3 SP	Total Value for Surveyed L3 SPs	Total Value for All L3 SPs extrapolated N=25
Allocations	$163,111	2.35	$ 383,310	2.38	4	$ 387,388	$ 1,549,551	$ 1,549,551	0.20	6	$ 32,622	$ 195,733	$260,977	0.04	17	$ 5,757	$ 97,866	$ 143,921
Account Management and Authentication Services	$201,088	5.50	$ 1,105,984	1.30	4	$ 261,414	$ 1,045,658	$ 1,045,658	0.03	6	$ 6,703	$ 40,218	$53,623	0.06	17	$ 13,012	$ 221,197	$ 325,289
24x7 Operations	$228,115	14.51	$ 3,309,954	0.38	4	$ 85,543	$ 342,173	$ 342,173	0.00	6	$ -	$ -	$0	0.01	17	$ 1,342	$ 22,812	$ 33,546
Ticket Support	$228,115	*	*	0.36	4	$ 82,692	$ 330,767	$ 330,767	0.00	6	$ -	$ -	$0	0.05	17	$ 11,943	$ 203,023	$ 298,563
User Survey	$116,454	3.23	$ 376,145	0.18	4	$ 20,379	$ 81,517	$ 81,517	0.00	6	$ -	$ -	$0	0.02	17	$ 1,850	$ 31,442	$ 46,239
Leadership	$354,514	6.93	$ 2,456,782	0.31	4	$ 110,786	$ 443,142	$ 443,142	0.37	6	$129,988	$ 779,931	$1,039,908	0.14	17	$ 50,049	$ 850,834	$ 1,251,226
Project Management and Financial Functions	$200,292	5.98	$ 1,197,749	0.25	4	$ 50,073	$ 200,292	$ 200,292	0.00	6	$ -	$ -	$0	0.00	17	$ -	$ -	$ -
User Information Services, including XSEDE.org	$202,237	3.73	$ 754,344	0.55	4	$ 111,230	$ 444,921	$ 444,921	0.02	6	$ 3,371	$ 20,224	$26,965	0.15	17	$ 30,217	$ 513,682	$ 755,415
Training and Education	$168,888	9.00	$ 1,519,990	1.13	4	$ 189,999	$ 759,995	$ 759,995	0.42	6	$ 70,370	$ 422,219	$562,959	0.42	17	$ 70,337	$ 1,195,725	$ 1,758,420
Outreach	$253,573	3.97	$ 1,006,684	1.00	4	$ 253,573	$ 1,014,291	$ 1,014,291	0.23	6	$ 57,054	$ 342,323	$456,431	0.13	17	$ 32,517	$ 552,789	$ 812,925
Network	$228,115	*	*	0.36	4	$ 82,692	$ 330,767	$ 330,767	0.42	6	$ 95,048	$ 570,288	$760,385	0.05	17	$ 10,601	$ 180,211	$ 265,016
Systems Engineering and Deployment	$214,570	8.76	$ 1,879,629	0.56	4	$ 120,695	$ 482,781	$ 482,781	0.04	6	$ 8,940	$ 53,642	$71,523	0.01	17	$ 2,146	$ 36,477	$ 53,642
Parallel Computing Support, Advanced Support, Consultation, and Programming	$221,436	27.11	$ 6,003,127	5.75	4	$1,273,256	$ 5,093,025	$ 5,093,025	0.56	6	$123,635	$ 741,810	$989,080	0.10	17	$ 21,753	$ 369,798	$ 543,820
Totals		91.07	$ 19,993,698	14.50			$ 12,118,883	$12,118,883	2.28			$3,166,389	$ 4,221,851	1.16			$ 4,275,855	$ 6,288,023

FTEs and expenses for Network and Ticket Support services are included in the Operations budget line

** *Expenses and FTE values provided by the XSEDE Project Office; all other data reported by SPs*

column	definition
F, L, R	Average FTE effort needed for SP to provide same service (per level)
G, M, S	Number of SPs responding the survey (per level)
H, N, T	Average value of service provided to SPs (per level)
I, O, U	Total value received by surveyed SPs (per level)
J, P, V	Estimated total value extrapolating value to full SP population (per level)

ECSS Months Taken

PI	Timeframe	WBS	Months saved (months taken - 3)	Months it would have taken		Person Years	Value
PY4-PI1	6/25/2015	ESSGW	9	12			
PY4-PI2	2/3/2015	ESCC	-3	0			
PY4-PI3	1/20/2015	ESRT	3	6			
PY4-PI4	12/17/2014	ESCC	21	24			
PY4-PI5	12/11/2014	ESSGW	9	12			
PY4-PI6	12/4/2014	ESCC	0	3			
PY4-PI7	11/25/2014	ESCC	-3	0			
PY4-PI8	10/29/2014	ESSGW	0	3			
PY4-PI9	10/29/2014	ESSGW	9	12			
PY4-PI10	9/26/2014	ESCC	3	6			
PY4-PI11	9/25/2014	ESCC	9	12			
PY4-PI12	9/24/2014	ESSGW	9	12	Person Years	Value
PY4 Total		Actual		102	8.50	$1,444,176
PY4 Projects	65	Average	8.50	552.50	46.04	$7,822,617
Salary 2015	$169,903					
PY5-PI1	8/4/2016	ESRT	21	24			
PY5-PI2	7/28/2016	ESRT	3	6			
PY5-PI3	6/9/2016	ESRT	21	24			
PY5-PI4	6/9/2016	ESRT	0	3			
PY5-PI5	5/19/2016	ESSGW	9	12			
PY5-PI6	5/19/2016	ESCC	11	14			
PY5-PI7	5/17/2016	ESSGW	21	24			
PY5-PI8	5/11/2016	ESSGW	21	24			
PY5-PI9	5/9/2016	ESRT	21	24			
PY5-PI10	5/4/2016	ESRT	3	6			
PY5-PI11	5/4/2016	ESCC	21	24			
PY5-PI12	4/8/2016	ESSGW	10.2	13.2			
PY5-PI13	4/6/2016	ESSGW	21	24			
PY5-PI14	4/6/2016	ESCC	12	15			
PY5-PI15	4/5/2016	ESSGW	15	18			
PY5-PI16	3/31/2016	ESCC	-3	0			
PY5-PI17	3/29/2016	ESCC	21	24			
PY5-PI18	2/5/2016	ESRT	9	12			
PY5-PI19	1/29/2016	ESRT	21	24			
PY5-PI20	11/23/2015	ESRT	21	24			
PY5-PI21	11/3/2015	ESRT	21	24			
PY5-PI22	10/30/2015	ESRT	21	24			
PY5-PI23	10/26/2015	ESRT	3	6			
PY5-PI24	9/24/2015	ESCC	21	24	Person Years	Value
PY5 Total		Actual		417.2	34.77	$6,066,088
PY5 Projects	59	Average	17.38	1025.62	85.47	$14,912,466
Salary 2016	$174,480					

PY6-PI1	8/23/2017	ESSGW	3	6		
PY6-PI2	8/22/2017	ESSGW	21	24		
PY6-PI3	8/18/2017	ESCC	-3	0		
PY6-PI4	8/7/2017	ESSGW	21	24		
PY6-PI5	8/4/2017	ESSGW	3	6		
PY6-PI6	8/4/2017	ESCC	9	12		
PY6-PI7	7/3/2017	ESRT	3	6		
PY6-PI8	6/14/2017	ESCC	2	5		
PY6-PI9	6/13/2017	ESSGW	2	5		
PY6-PI10	6/13/2017	ESCC	21	24		
PY6-PI11	6/12/2017	ESSGW	6	9		
PY6-PI12	5/1/2017	ESRT	1.5	4.5		
PY6-PI13	5/1/2017	ESRT	21	24		
PY6-PI14	4/27/2017	ESRT	15	18		
PY6-PI15	4/20/2017	ESRT	21	24		
PY6-PI16	3/29/2017	ESRT	9	12		
PY6-PI17	2/10/2017	ESSGW	6	9		
PY6-PI18	2/10/2017	ESCC	-3	0		
PY6-PI19	2/7/2017	ESSGW	9	12		
PY6-PI20	2/2/2017	ESCC	-3	0		
PY6-PI21	1/26/2017	ESRT	0	3		
PY6-PI22	12/13/2016	ESSGW	1	4		
PY6-PI23	12/13/2016	ESSGW	21	24		
PY6-PI24	12/6/2016	ESSGW	21	24		
PY6-PI25	12/6/2016	ESSGW	21	24		
PY6-PI26	11/12/2016	ESRT	0	3		
PY6-PI27	11/8/2016	ESRT	1	4		
PY6-PI28	9/27/2016	ESSGW	21	24		
PY6-PI29	9/23/2016	ESCC	3	6		
PY6-PI30	9/20/2016	ESCC	21	24		
PY6-PI31	9/12/2016	ESRT	21	24		
PY6-PI32	9/9/2016	ESCC	0	3		
PY6-PI33	9/2/2016	ESSGW	21	24	Person Years	Value
PY6 Total		Actual		415.5	34.63	$6,210,167
PY6 Projects	48	Average	12.59	604.36	50.36	$9,032,970
Salary 2017	$179,355					
	PY7IPR4	ESRT	21	24		
	PY7IPR4	ESRT	9	12		
	PY7IPR4	ESRT	21	24		
	PY7IPR4	ESRT	21	24		
	PY7IPR4	ESRT	21	24		
PY7-PI1	PY7IPR4	ESSGW	9	12		
	PY7IPR4	ESSGW	3	6		
	PY7IPR5	ESRT	9	12		
	PY7IPR5	ESRT	21	24		

	PY7IPR5	ESRT	21	24			
	PY7IPR5	ESRT	21	24			
	PY7IPR5	ESRT	21	24			
PY7-PI2	PY7IPR5	ESCC	21	24			
	PY7IPR5	ESCC	1	4			
PY7-PI3	PY7IPR5	ESCC	2	5			
PY7-PI4	PY7IPR5	ESSGW	6	9			
PY7-PI5	PY7IPR5	ESSGW	3	6			
	PY7Annual	ESRT	21	24			
	PY7Annual	ESRT	9	12			
	PY7Annual	ESCC	12	15			
	PY7Annual	ESCC	13	16			
	PY7Annual	ESSGW	21	24			
	PY7Annual	ESSGW	3	6			
	PY7Annual	ESSGW	12	15			
PY7-PI6	PY7IPR7	ESSGW	21	24	Person Years	Value	
PY7 Total		Actual		394	32.83	$6,099,613	
PY7 Projects	47	Average	16.72	785.84	65.49	$12,165,786	
Salary 2018	$185,775						
PY8-PI1	PY8IPR7	ESRT	11	14			
PY8-PI2	PY8IPR7	ESRT	21	24			
PY8-PI3	PY8IPR7	ESRT	21	24			
PY8-PI4	PY8IPR7	ESRT	21	24			
PY8-PI5	PY8IPR7	ESCC	0	3			
PY8-PI6	PY8IPR7	ESSGW	0	3			
PY8-PI7	PY8IPR8	ESRT	21	24			
PY8-PI8	PY8IPR8	ESSGW	21	24			
PY8-PI9	PY8IPR8	ESRT	21	24			
PY8-PI10	PY8IPR8	ESCC	21	24			
PY8-PI11	PY8IPR8	ESSGW	21	24			
PY8-PI12	PY8Annual	ESRT	2	5			
PY8-PI13	PY8Annual	ESRT	9	12			
PY8-PI14	PY8Annual	ESRT	6	9			
PY8-PI15	PY8Annual	ESSGW	21	24			
PY8-PI16	PY8IPR9	ESRT	0	3			
PY8-PI17	PY8IPR10	ESSGW	21	24			
PY8-PI18	PY8IPR10	ESSGW	3	6			
PY8-PI19	PY8IPR10	ESCC	3	6			
PY8-PI20	PY8IPR10	ESCC	9	12	Person Years	Value	
PY8 Total		Actual		313	26.08	$5,020,118	
PY8 Projects	47	Average	15.65	735.55	61.30	$11,797,278	
Salary 2019	$192,465						

REPLICATED DATA
Overlapping with PY6 recorded above

PY6IPR3	ESRT			18
PY6IPR3	ESRT			36
PY6IPR3	ESRT			42
PY6IPR3	ESRT			4.5
PY6IPR3	ESRT			6
PY6IPR3	ESCC			24
PY6IPR3	ESCC			5
PY6IPR3	ESCC			14.5
PY6IPR3	ESSGW			9
PY6IPR3	ESSGW			5
PY6IPR3	ESSGW			7
PY6IPR4	ESRT	3	6
PY6IPR4	ESSGW	3	6
PY6IPR4	ESSGW	21	24
PY6IPR4	ESSGW	21	24
PY6IPR4	ESCC	-3	0
PY6IPR4	ESCC	9	12

Accounted for in PY7

Chatzikos	12/18/2017	ESSGW	9
Halzen	12/1/2017	ESSGW	6
Chandran	11/7/2017	ESCC	24
Kooperman	11/7/2017	ESCC	5
Ganapathysubram	9/25/2017	ESSGW	12

ESRT = Extended Support for Research Teams
ESCC = Extended Support Community Codes
ESSGW = Extended Support for Science Gateways

PIs Alphabetical Order
Ascenzi
Barbone
Bell/White
Berman
Bhargava

Bodony

Brown

Casabianca

Cauwenberghs

Chandran

Chatzikos

Cheatham

Choy

Cooperman

Cui

Ferrante

Fragile

Fu

Ganapathy

Ganapathysubram

Gesing

Ghaffari

Golden

Gray

Gubbins

Halzen

Huber

Humphrey

Jewett

Jordan

Kooperman

Kuhn

Kushnir

Lau

LeDuc

Leschziner

Ma

Marean

McGovern

Meneveau

Metcalfe

Moon

Norman

Ong

Oppenheim

Pamidighantam

Pelletier

Pink

Potoff

Rackauckas

Rai

Ramamurthy

Ramkrishna
Ren
Rollet
Rudolph
Ruiz-Juri
Sandholm
Sansosti
Severin
Shen
Shook
Skidmore
Song
Summers Engel
Tao
Tarboton
Tipei
Voth
Wang
Warren
Wise
Wuerffel
Xu
Yeung
Zeng
Zhao

Person-hours of training delivered

	Webinar	Async	Live
PY4	7984	21494	22364
PY5	2479	40492	35386
PY6	4970	15689	30382
PY7	3319	7681	42104
PY8	5380	5981	43079

Dollar equivalent of training person-hours delivered

	PY4	PY5	PY6	PY7	PY8	Cost*
Webinar	7,984	2,479	4,970	3,319	5,380	$9.98
	$79,680	$24,740	$49,601	$33,124	$53,692	
Async	21,494	40,492	15,689	7,681	5,981	$9.98
	$214,510	$404,110	$156,576	$76,656	$59,690	
Live	22,364	35,386	30,382	42,104	43,079	$11.29
	$252,490	$399,508	$343,013	$475,354	$486,362	
Total	$546,680.00	$828,358.52	$549,189.60	$585,134.16	$599,744.69	

*Further explanation on Tabs 12 and 13

XSEDE Training. For PY4-8 number of student-hours (or "viewer-hours) of:

Webinars:
This number is pulled only from webinars offered and registered through the XUP* course listing.
The value is (# registrants) * (length of program in hours)
Does not include walk-ins.

Live:
This number is pulled only from live events offered and registered through the XUP course listing.
Live events include the HPC Monthly Workshop series, which are multicast.
The value is (# registrants) * (length of program in hours)
Does not include:　(1) walk-ins
　　　　　　　　　(2) events through Moodle
　　　　　　　　　(3) events not scheduled through the course calendar, e.g. ECSS symposiums
　　　　　　　　　(4) Events specific to Blue Waters

Async:
Three sources:
1. YouTube/XSEDETraining
Reporting watch time in hours as reported by YouTube.
The YouTube/XSEDETraining channel was created in Dec 2017, and first populated in May 2018.
This is the only data included where we are counting all usage, not just by XUP usernames.

2. CI-Tutor
Reporting (course registrants) * (instruction hours for that course)
ONLY counting registrants using XUP username

3. Cornell Virtual Workshop
Reporting (course users) * (average instruction length for CVW courses)
ONLY counting registrants using XUP username

Note 1: async peak in PY5, with bleed over to PY4 and PY6, largely due to Berkeley courses that were
　　　　offered via CVW at that time, and have since moved to Moodle, which is not tracked by training.
Note 2: async looks flat the last two years, but we see data that shows good usage, less authentication.
　　　　If we don't have the XUP username, we don't count it.

All data based on registrant data and XUP usernames, except for YouTube.

* XUP - XSEDE User Portal

Helpdesk External Tickets

	# External tickets	XSEDE	SP	Cost*	Total
PY4	0	0	0	$22.00	0
PY5	8,733	4598	4135	$22.00	$101,156
PY6	14,715	7216	7499	$15.56	$112,281
PY7	15,377	8054	7323	$15.56	$125,320
PY8	14,436	7717	6719	$15.56	$120,077

*Further explanation on Tabs 12 and 13

CRI Software Distribution

	Downloads	Compensation Cost*	30m $	Total
PY4	973	$120,834	$30.21	$29,393
PY5	1,072	$126,750	$31.69	$33,969
PY6	1,296	$129,510	$32.38	$41,961
PY7	1,478	$130,605	$32.65	$48,259
PY8	1,077	$133,499	$33.37	$35,945

*Further explanation on Tabs 12 and 13

CRI Campus Visits - Totals

	Person Days Savings	Compensation Cost*	1 day $	Days Saved
PY4	$9,667	$120,834	$483.34	20
PY5	$65,910	$126,750	$507.00	130
PY6	$20,722	$129,510	$518.04	40
PY7	$113,626	$130,605	$522.42	218
PY8	$68,351	$133,499	$534.00	128

	Software Savings
PY4	$30,000
PY5	$50,000
PY6	$100,000
PY7	$123,000
PY8	$123,000

	Campus Visits Total
PY4	$39,667
PY5	$115,910
PY6	$120,722
PY7	$236,626
PY8	$191,351

CRI Campus Visits - Data by University

	Marshall	SIU	Bentley	UTEP	Brandeis	SDSU	SRU	Doane	UCincy	Oral Roberts	Total
PY4	20										20
PY5		90	40								130
PY6						20	20				40
PY7		120	40					45		12.5	217.5
PY8	8		40					25	50	5	128

	Marshall	SIU	Bentley	UTEP	Brandeis	SDSU	SRU	Doane	UCincy	Oral Roberts	Total
PY4	$ 30,000										$ 30,000
PY5	$ 30,000		$ 20,000								$ 50,000
PY6	$ 30,000		$ 20,000			$ 50,000					$ 100,000
PY7	$ 30,000		$ 20,000			$ 63,000	$ 10,000				$ 123,000
PY8	$ 30,000		$ 20,000			$ 63,000	$ 10,000				$ 123,000

Salary and total cost to XSEDE for various staff categories
(Done using data by individual WBS)

WBS Mapping	PY4 (Jul14-Jun15)	FTE	FTE Cost	Travel, workstation, et	Total cost
1.3.4	Allocations staff	2.15	$430,000.00	$20,000.00	$450,000.00
1.2.5	Account management staff	2.85	$570,000.00	$0.00	$570,000.00
1.2.1, 1.2.2, 1.2.3, 1.2.6	Operations staff and ticket support staff	19.99	$3,621,000.00	$309,000.00	$3,930,000.00
1.6.9	User survey total cost (staff plus contract)	1.31	$261,000.00	$50,000.00	$311,000.00
1.1.1 (L1/L2s only), 1.1.4, 1.1.5	XSEDE leadership - PI, Co-Pis	6.66	$1,332,000.00	$140,000.00	$1,472,000.00
1.1.1 (PMs & Bus Office)	Project management and financial management staff	4.50	$900,000.00	$0.00	$900,000.00
1.3.2	Web site information	6.36	$1,272,000.00	$0.00	$1,272,000.00
1.3.1, 1.6.1, half 1.6.10	Training staff	6.51	$ 1,302,525.00	$ 122,531.00	$1,425,056.00
1.3.3, 1.6.5-1.6.8, half 1.6.10	Outreach staff	9.53	$ 1,907,125.00	$ 348,750.00	$2,255,875.00
	Network staff (duplicate of "Operations Staff")				$0.00
1.2.4, 1.1.2, 1.1.3, 1.1.6	XCI staff	17.83	$3,567,000.00	$18,000.00	$3,585,000.00
1.4.x, 1.5.x	ECSS staff	35.71	$7,142,000.00	$250,000.00	$7,392,000.00
	Total:	113.40	$22,304,650.00	$1,258,281.00	$23,562,931.00

WBS Mapping	PY5 (Jul15-Aug16)	FTE	FTE Cost	Travel, workstation, et	Total cost
1.3.4	Allocations staff	2.15	$430,000.00	$20,000.00	$450,000.00
1.2.5	Account management staff	2.85	$570,000.00	$0.00	$570,000.00
1.2.1, 1.2.2, 1.2.3, 1.2.6	Operations staff and ticket support staff	18.40	$3,679,000.00	$309,000.00	$3,988,000.00
1.6.9	User survey total cost (staff plus contract)	1.31	$261,000.00	$50,000.00	$311,000.00
1.1.1 (L1/L2s only), 1.1.4, 1.1.5	XSEDE leadership - PI, Co-Pis	7.12	$1,423,903.23	$100,000.00	$1,523,903.23
1.1.1 (PMs & Bus Office)	Project management and financial management staff	4.81	$962,096.77	$0.00	$962,096.77
1.3.2	Web site information	6.00	$1,200,000.00	$0.00	$1,200,000.00
1.3.1, 1.6.1, 1.6.10 (half)	Training staff	6.65	$ 1,330,000.00	$ 120,000.00	$1,450,000.00
1.3.3, 1.6.5-1.6.8, 1.6.10 (half)	Outreach staff	9.14	$ 1,830,000.00	$ 350,000.00	$2,180,000.00
	Network staff (duplicate of "Operations Staff")				$0.00
1.2.4, 1.1.2, 1.1.3, 1.1.6	XCI staff	15.26	$3,051,000.00	$18,000.00	$3,069,000.00
1.4.x, 1.5.x	ECSS staff	35.57	$7,113,000.00	$250,000.00	$7,363,000.00
	Total:	109.24	$21,850,000.00	$1,217,000.00	$23,067,000.00

WBS Mapping	PY6 (Sep16-Aug17)	FTE	FTE Cost	Travel, workstation, etc	Total Cost	Total Cost per FTE
2.5.2	Allocations staff	2.34	$358,264.00	$0.00	$358,264.00	$153,104.27
2.5.3	Account management staff	5.52	$732,411.00	$0.00	$732,411.00	$132,683.15
2.4.2-2.4.5	Operations staff and ticket support staff	14.59	$2,879,329.00	$0.00	$2,879,329.00	$197,349.49
2.6.5 (Eval)	User survey total cost (staff plus contract)	3.00	$237,717.00	$0.00	$237,717.00	$79,239.00
2.x.1 (Mgmt), 2.6.2, 2.6.5 (Strategy)	XSEDE leadership - PI, Co-Pis	7.57	$2,064,882.00	$0.00	$2,064,882.00	$272,771.73
2.x.1 (PMs), 2.6.3, 2.6.4	Project management and financial management staff	6.10	$1,481,524.00	$0.00	$1,481,524.00	$242,872.79
2.1.5	Web site information	4.48	$566,345.00	$0.00	$566,345.00	$126,416.29
2.1.2	Training staff	8.38	$1,261,600.00	$0.00	$1,261,600.00	$150,548.93
2.1.3, 2.1.4, 2.1.6	Outreach staff	4.30	$900,747.00	$0.00	$900,747.00	$209,476.05
	Network staff (duplicate of "Operations Staff")					
2.3.2-2.3.3	XCI staff	8.44	$1,814,219.00	$0.00	$1,814,219.00	$214,954.86
2.2.2-2.2.6	ECSS staff	26.51	$5,988,584.00	$0.00	$5,988,584.00	$225,899.06
	Total:	91.23	$ 18,285,622.00	$ -	$18,285,622.00	$2,005,315.61

WBS Mapping	PY7 (Sep17-Aug18)	FTE	FTE Cost	Travel, workstation, etc	Total cost	Total cost per FTE
2.5.2	Allocations staff	2.34	$381,458.00	$0.00	$381,458.00	$163,016.24
2.5.3	Account management staff	5.27	$981,934.00	$0.00	$981,934.00	$186,325.24
2.4.2-2.4.5	Operations staff and ticket support staff	15.19	$3,081,713.00	$0.00	$3,081,713.00	$202,877.75
2.6.5 (Eval)	User survey total cost (staff plus contract)	3.18	$380,006.00	$0.00	$380,006.00	$119,498.74
2.x.1 (Mgmt), 2.6.2, 2.6.5 (Strategy)	XSEDE leadership - PI, Co-Pis	6.76	$2,349,954.00	$0.00	$2,349,954.00	$347,626.33
2.x.1 (PMs), 2.6.3, 2.6.4	Project management and financial management staff	6.17	$1,361,737.00	$0.00	$1,361,737.00	$220,702.92
2.1.5	Web site information	4.48	$518,556.00	$0.00	$518,556.00	$115,749.11
2.1.2	Training staff	8.37	$1,237,253.00	$0.00	$1,237,253.00	$147,819.95
2.1.3, 2.1.4, 2.1.6	Outreach staff	4.01	$1,006,896.00	$0.00	$1,006,896.00	$251,096.26
	Network staff (duplicate of "Operations Staff")					
2.3.2-2.3.3	XCI staff	9.23	$1,862,341.00	$0.00	$1,862,341.00	$201,770.42
2.2.2-2.2.6	ECSS staff	25.93	$6,399,740.00	$0.00	$6,399,740.00	$246,808.33
	Total:	90.93	$19,561,588.00	$0.00	$19,561,588.00	$2,203,291.29

WBS Mapping	PY8 (Sep18-Aug19)	FTE	FTE Cost	Travel, workstation, etc	Total cost	Total cost per FTE
2.5.2	Allocations staff	2.35	$383,310.00	$0.00	$383,310.00	$163,110.64
2.5.3	Account management staff	5.50	$1,105,984.00	$0.00	$1,105,984.00	$201,088.00
2.4.2-2.4.5	Operations staff and ticket support staff	14.51	$3,309,954.00	$0.00	$3,309,954.00	$228,115.37
2.6.5 (Eval)	User survey total cost (staff plus contract)	3.23	$376,145.00	$0.00	$376,145.00	$116,453.56
2.x.1 (Mgmt), 2.6.2, 2.6.5 (Strategy)	XSEDE leadership - PI, Co-Pis	6.93	$2,456,782.00	$0.00	$2,456,782.00	$354,514.00
2.x.1 (PMs), 2.6.3, 2.6.4	Project management and financial management staff	5.98	$1,197,749.00	$0.00	$1,197,749.00	$200,292.47
2.1.5	Web site information	3.73	$754,344.00	$0.00	$754,344.00	$202,237.00
2.1.2	Training staff	9.00	$1,519,990.00	$0.00	$1,519,990.00	$168,887.78
2.1.3, 2.1.4, 2.1.6	Outreach staff	3.97	$1,006,684.00	$0.00	$1,006,684.00	$253,572.80
	Network staff (duplicate of "Operations Staff")					
2.3.2-2.3.3	XCI staff	8.76	$1,879,629.00	$0.00	$1,879,629.00	$214,569.52
2.2.2-2.2.6	ECSS staff	27.11	$6,003,127.00	$0.00	$6,003,127.00	$221,435.89
	Total:	91.07	$19,993,698.00	$0.00	$19,993,698.00	$2,324,277.02

Cost basis for calculating Return Proxy		PY4 Jul14-Jun15	URL for reference	PY5 Jul15-Aug16	URL for reference	PY6 Sep16-Aug17	URL for reference	PY7 Sep17-Aug18	URL for reference	PY8 Sep18-Aug19	URL for reference
XSEDE value to SPs		Used values from XSEDE budget (different value for each budget category). More details on tab Expenses									
ECSS value to PIs (Reference: Computer and Information Research Scientist)	Salary	$115,580	https://www.bls.gov/oes/special.requests/oesm15nat.zip	$116,320	https://www.bls.gov/oes/2016/may/oes151111.htm	$119,570	https://www.bls.gov/oes/2017/may/oes151111.htm	$123,850	https://www.bls.gov/oes/2018/may/oes151111.htm	$127,460	https://www.bls.gov/oes/current/oes151221.htm
	Benefits	47% ($16.50/ $35.32)	https://www.bls.gov/news.release/archives/ecec_03102016.htm	50% ($18.34/ $36.95)	https://www.bls.gov/news.release/archives/ecec_03172017.htm	50% ($19.11/ $38.90)	https://www.bls.gov/news.release/archives/ecec_03202018.htm	50% ($19.48/ $38.92)	https://www.bls.gov/news.release/archives/ecec_03192019.htm	51% ($20.17/ $39.72)	https://www.bls.gov/news.release/archives/ecec_03192020.htm
CRI software distribution & campus visits (Reference: Network and Computer Systems	Salary	$82,200	https://www.bls.gov/oes/special.requests/oesm15nat.zip	$84,500	https://www.bls.gov/oes/2016/may/oes151142.htm	$86,340	https://www.bls.gov/oes/2017/may/oes151142.htm	$87,070	https://www.bls.gov/oes/2018/may/oes151142.htm	$88,410	https://www.bls.gov/oes/current/oes151244.htm
	Benefits	47% ($16.50/ $35.32)	https://www.bls.gov/news.release/archives/ecec_03102016.htm	50% ($18.34/ $36.95)	https://www.bls.gov/news.release/archives/ecec_03172017.htm	50% ($19.11/ $38.90)	https://www.bls.gov/news.release/archives/ecec_03202018.htm	50% ($19.48/ $38.92)	https://www.bls.gov/news.release/archives/ecec_03192019.htm	51% ($20.17/ $39.72)	https://www.bls.gov/news.release/archives/ecec_03192020.htm
Helpdesk value		$22.00	https://www.thinkhdi.com/~/media/HDICorp/Files/Library-Archive/Rumburg_SevenKPIs.pdf	Same as PY4	Same as PY4	$15.56	https://www.thinkhdi.com/library/supportworld/2017/metric-of-month-service-desk-cost-per-ticket.aspx	Same as PY6	Same as PY6	Same as PY6	Same as PY6
Training value	Live/In person	$11.29	https://www.pryor.com/training-seminars/microsoft-excel-basics/	Same as PY4	Same as PY4	Same as PY4	Same as PY4	Same as PY4	Same as PY4	Same as PY4	Same as PY4
	Web based	$9.98	http://www.hrclassroom.com:80/content/lms-training-basic-pricing.aspx	Same as PY4	Same as PY4	Same as PY4	Same as PY4	Same as PY4	Same as PY4	Same as PY4	Same as PY4

Employer Compensation Cost - used for ECSS data (Computer and Information Research Scientist)

	2019	2018	2017	2016	2015	Source
Salary $	$127,460	$123,850	$119,570	$116,320	$115,580	https://www.bls.gov/oes/tables.htm
Benefits %	51%	50%	50%	50%	47%	https://www.bls.gov/bls/news-release/ecec.htm
Benefits $	$65,005	$61,925	$59,785	$58,160	$54,323	
Total $	$192,465	$185,775	$179,355	$174,480	$169,903	

Employer Compensation Cost - used for CRI data (Network and Computer Systems Administrators)

	2019	2018	2017	2016	2015	Source
Salary $	$88,410	$87,070	$86,340	$84,500	$82,200	https://www.bls.gov/oes/tables.htm
Benefits %	51%	50%	50%	50%	47%	https://www.bls.gov/bls/news-release/ecec.htm
Benefits $	$45,089	$43,535	$43,170	$42,250	$38,634	
Total $	$133,499	$130,605	$129,510	$126,750	$120,834	

Helpdesk Tickets Cost

	2013	2016	Source
MetricNet	$22.00		https://www.thinkhdi.com/~/media/HDICorp/Files/Library-Archive/Rumburg_SevenKPIs.pdf
MetricNet		$15.56	https://www.thinkhdi.com/library/supportworld/2017/metric-of-month-service-desk-cost-per-ticket.aspx

Training Cost

In person
Courses offered in person by Pryor.com: Excel Basics, and Excel Beyond Basics. Both seem to be consistently the same price across years.
$79/7h = $11.29 Excel Basics --- $99/7h = $14.14 Beyond Basics
2008 - http://web.archive.org/web/20080821115207/http://www.pryor.com/mkt_info/seminars/desc/ey.asp $99 (Beyond Basics)
2013 - http://web.archive.org/web/20130522070849/http://www.pryor.com/mkt_info/seminars/desc/Y7.asp?zip=94107 $99 (Beyond Basics)
2016 - http://web.archive.org/web/20160318230032/http://www.pryor.com/mkt_info/seminars/desc/y7.asp?zip=94107 $99 (Beyond Basics)
2018 - https://web.archive.org/web/20181009102824/https://www.pryor.com/training-seminars/microsoft-excel-basics/ $79 (Excel Basics)
2018 - http://web.archive.org/web/20181130055244/http://www.pryor.com/training-seminars/microsoft-excel-beyond-basics/ $99 (Beyond Basics)

2020 - https://www.pryor.com/training-seminars/microsoft-excel-beyond-basics/ $99 (Beyond Basics)
2020 - https://www.pryor.com/training-seminars/microsoft-excel-basics/ $79 (Excel Basics)

Web
HR website that sells units for $9.98. The unit seems to translate to 1h, but the price goes down if your buy a bigger package with more units.
2014 - https://web.archive.org/web/20140127162853/http://www.hrclassroom.com:80/content/lms-training-basic-pricing.aspx
2015 - https://web.archive.org/web/20150218063400/http://www.hrclassroom.com:80/content/lms-training-basic-pricing.aspx
2020 - http://www.hrclassroom.com:80/content/lms-training-basic-pricing.aspx

Response Rate

XSEDE Population	PY4 Jul14-Jun15	PY5 Jul15-Aug16	PY6 Sep16-Aug17	PY7 Sep17-Aug18	PY8 Sep18-Aug19
Service Providers	L1 - 60% (3/5) L2 - 100% (5/5) L3 - 71% (5/7)	L1 - 80% (4/5) L2 - 100% (5/5) L3 - 100% (7/7)	L1 - 100% (4/4) L2 - 25% (2/8) L3 - 62% (13/21)	L1 -100% (4/4) L2 - 89% (8/9) L3 - 56% (13/23)	L1 – 100% (4/4) L2 – 75% (6/8) L3 – 68% (17/25)
ECSS Projects	18% (12/65)	41% (24/59)	69% (33/48)	53% (25/47)	42% (20/47)
XCRI Campus Visits	100% (1/1)	66% (2/3)	100% (2/2)	100% (2/2)	50% (1/2)