



**NATIONAL SCIENCE FOUNDATION
INDUSTRY/UNIVERSITY COOPERATIVE RESEARCH CENTERS**

FINAL Report

2015-2016 STRUCTURAL INFORMATION¹

- **TABLE 1:** GENERAL CENTER INFORMATION
- **TABLE 2:** OPERATING BUDGET: TOTAL FUNDING
- **TABLE 3:** CAPITAL AND IN-KIND SUPPORT
- **TABLE 4:** INDUSTRY MEMBERSHIP DESCRIPTORS
- **TABLE 5:** HUMAN RESOURCES
- **TABLE 6:** CENTER DIRECTOR DESCRIPTORS
- **TABLE 7:** CENTER OUTCOMES
- **TABLE 8:** ALUMNI CAREER OUTCOMES
- **TABLE 9:** INTELLECTUAL PROPERTY AND COMMERCIALIZATION EVENTS
- **APPENDIX:** FOOTNOTES: SPECIAL CONSIDERATIONS
(Footnotes appear on top of columns and/or at end of rows for each table and are described in the appendix on the last page).

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¹**NOTE:** 2015-2016 data collected from 68/68 Center Director Surveys (100% response rate).

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Table 1: 2015-2016 GENERAL CENTER INFORMATION (Sorted Chronologically)**

Yr Started:	Center Name	University Name: Director	Partner University 1 Director	Partner University 2 Director	Partner University 3 Director	Partner University 4 Director
Active						
2001*	Identification Technology Research	Clarkson Univ. Schuckers	West Virginia Univ. Valenti	Univ. of Arizona Burgoon	Univ. of Buffalo Govindaraju	
2001*	Intelligent Maintenance Systems	Univ. of Cincinnati Lee	Univ. of Michigan, Ann Arbor Ni	Missouri Univ. of Science & Tech. Sarangapani	Univ. of Texas, Austin Djurđjanovic	
2002	Connection One: Telecommunications	Arizona State Univ. Kiaei	Ohio State Univ. Volakis			
2002	Cooling Technologies Research Center	Purdue Univ. Garimella				
2002	Excellence in Logistics and Distribution	Univ. of Arkansas Rossetti	Clemson Univ. Ferrell	Univ. of Missouri, Columbia Noble	Virginia Tech. Ellis	
2002	Plasmas & Lasers in Advanced Manufacturing	Univ. of Virginia Gupta	Southern Methodist Univ. Kovacevic	Univ. of Illinois, Urbana Champaign Ruzic		
2003	E-Design ^a	Iowa State Univ. Terpenney (Yilmaz)	Univ. of Massachusetts Krishnamurty	Wayne State Univ. Kim	Univ. of Buffalo Lewis	Brigham Young Univ. Salmon
2005	Child Injury Prevention Studies	Children's Hospital of Philadelphia Winston (Arbogast)	Ohio State Univ. Bolte			
2006	High-Performance Reconfigurable Computing	Univ. of Florida George	Brigham Young Univ. Wirthlin	Virginia Tech. Athanas		
2007	Advanced Forestry Systems ^b	North Carolina State Univ. Goldfarb	Oregon State Univ. Howe	Purdue Univ. Saunders	Virginia Tech. Fox	Univ. of Maine Weiskittel
2007	Smart Vehicle Concepts	Ohio State Univ. Singh				
2008	Advanced Knowledge Enablement	Florida International Univ. Rishe	Florida Atlantic Univ. Furht	Dubna International Univ. (Russia) Cheremisina		
2008	Cloud & Autonomic Computing ^c	Texas Tech. Sill	Univ. of Arizona Hariri	Mississippi State Univ. Banicescu		
2008	Health Organization Transformation	Texas A&M Health Science Center Kash	Georgia Institute of Tech. Lee	Northeastern Univ. Benneyan	Pennsylvania State Univ. Tucker	
2008	Particulate and Surfactant Systems	Univ. of Florida Moudgil	Columbia Univ. Somasundaran	Dharmsinh Desai Univ. (India) Mukherjee		
2009	Electromagnetic Compatibility	Missouri Univ. of Science & Tech. Fan	Univ. of Houston Chen			
2009	Embedded Systems	Arizona State Univ. Vrudhula	Southern Illinois Univ., Carbondale Tragoudas			
2009	Grid-Connected Advanced Power Electronic Systems	Univ. of Arkansas Mantooth	Univ. of South Carolina Dougal			
2009	Hybrid Multicore Productivity Research	Univ. Maryland, Baltimore County Yesha	Univ. of California, San Diego Brown	Univ. of Utah DuVall	Rutgers Univ. Adam	
2009	Integration of Composites into Infrastructure	West Virginia Univ. GangaRao	Univ. of Miami Nanni	North Carolina State Univ. Rizkalla	Univ. of Texas, Arlington Pupalla	

* Report sorted by Status. Organized by Year Started. Starting in 2013-2014 report, centers' Year Funded changed to Year Started. * = Last year funded by NSF.

a. Additional universities for E-Design are Oregon State Univ. (Stone).

b. Additional universities for the Center for Advanced Forestry Systems are: Univ. of Georgia (Kane), Univ. of Washington (Ettl), Univ. of Idaho (Coleman) and Auburn Univ. (Enebak).

c. For the Center for Cloud and Autonomic Computing, no information is reported for a new site Univ. of Arizona (Hariri).

IUCRC Structure Database, FY 2015-2016

<i>Yr Started:</i>	<i>Center Name</i>	<i>University Name: Director</i>	<i>Partner University 1 Director</i>	<i>Partner University 2 Director</i>	<i>Partner University 3 Director</i>	<i>Partner University 4 Director</i>
2009	Net-Centric and Cloud Software and Systems	Univ. of North Texas Kavi	Univ. of Texas, Dallas Bastani	Arizona State Univ. Spanias		
2009	Research in Intelligent Storage	Univ. of Minnesota Du	Temple Univ. Kant	Texas A&M Reddy		
2009	Water and Environmental Technology	Temple Univ. Suri	Univ. of Arizona Pepper	Arizona State Univ. Abbaszadegan		
2010	Ceramics Composites and Optical Materials Center	State Univ. of New York Haber	Clemson Univ. Brown			
2010	Energy Harvesting Materials and Systems	Virginia Tech. Hajj	Leibniz Univ. (Germany) Tweifei			
2010	Manufacturing and Materials Joining Innovation Center	Ohio State Univ. Ramirez	Univ. of Tennessee, Knoxville Rawn	Lehigh Univ. DuPont	Colorado School of Mines Liu	
2010	Membrane Science, Engineering & Technology Center	New Jersey Institute of Technology Sirkar	Univ. of Colorado, Boulder Greenberg	Univ. of Arkansas Wickramasinghe		
2010	Pharmaceutical Development	Georgia Institute of Tech. Bommarius	Univ. of Kentucky Munson	Univ. of Delaware Roberts		
2010	Resource Recovery and Recycling	Worcester Polytechnic Institute Apelian	Colorado School of Mines Mishra	KU Leuven (Belgium) Blanpain		
2010	Security and Software Engineering Research Center	Ball State Univ. Zage	Virginia Tech. Clancy	Georgetown Univ. Burger		
2010	Surveillance Research	Wright State Univ. Rigling	Ohio State Univ. Potter			
2010	Water Equipment and Policy	Univ. Wisconsin, Milwaukee Chen	Marquette Univ. Zitomer			
2010	Wood-Based Composites	Virginia Tech. Frazier	Oregon State Univ. Kamke			
2010**	Advanced Processing and Packaging Studies	Ohio State Univ. Schwartz	North Carolina State Univ. Sandeep			
2010**	Power Systems Engineering Research Center ^d	Arizona State Univ. Vittal (Heydt)	Cornell Univ. Tong	Texas A&M Kezunovic	Washington State Univ. Bose	Univ. of Wisconsin, Madison DeMarco
2011	Advanced Non-Ferrous Structural Alloys ^e	Colorado School of Mines Kaufman	Univ. of North Texas Collins			
2011	Biophotonics Sensors and Systems	Boston Univ. Bifano (Dudley)	Univ. of California, Davis Matthews			
2011	Dynamic Data Analytics	Rutgers Univ. Metaxas	State Univ. of New York Kaufman			
2011	Energy-Smart Electronic Systems	Binghamton Univ., State Univ. of New York Sammakia	Villanova Univ. Ortega	Univ. of Texas, Arlington Agonafer	Georgia Institute of Tech. Joshi	
2011	Metamaterials	City Univ. of New York, City College Crouse	Clarkson Univ. Babu	Univ. of North Carolina, Charlotte Aggarwal		
2011	Next Generation Photovoltaics	Univ. of Texas, Austin Korgel	Colorado State Univ. Sampath	Texas A&M Porter		
2011 [^]	Berkeley Sensor & Actuator Center	Univ. of California, Berkeley Cable	Univ. of California, Davis Horsley			

* Report sorted by Status. Organized by Year Started. Starting in 2013-2014 report, centers' Year Funded changed to Year Started. * = Last year funded by NSF.

IUCRC Structure Database, FY 2015-2016

[^] Centers are Phase III grant recipients that have had a break in their NSF IUCRC funding. They are formerly funded centers that recompleted for a third five year award.

^d. Additional universities for the Power Systems Engineering Research Center are: Iowa State Univ. (Ajjarapu), Wichita State Univ. (Jewell) Univ. of Illinois, Urbana Champaign (Sauer), Georgia Institute of Tech. (Meliopoulos), Howard Univ. (Momoh), Univ. of California, Berkeley (Oregon).

^e. For the center for Advanced Non-Ferrous Structural Alloys, director Collins moved from Univ. of North Texas to Iowa State University which became the center's second site.

<i>Yr Started:</i>	<i>Center Name</i>	<i>University Name: Director</i>	<i>Partner University 1 Director</i>	<i>Partner University 2 Director</i>	<i>Partner University 3 Director</i>	<i>Partner University 4 Director</i>
2012	Sustainably Integrated Buildings and Sites	Univ. of North Carolina, Charlotte Cox	City Univ. of New York Paaswell (Bobker)			
2012	Tire Research	Virginia Tech. Taheri	Univ. of Akron Batur			
2012	Visual and Decision Informatics	Univ. of Louisiana, Lafayette Raghavan (Gottumukkala)	Drexel Univ. Hu/Alexander	Tampere Univ. of Technology (Finland) Gabbouj		
2013	Arthropod Management Technologies	Iowa State Univ. Bonning	Univ. of Kentucky Palli			
2013	Broadband Wireless Access and Applications	Univ. of Arizona Bose	Univ. of Virginia Patek	Virginia Tech. Park	Notre Dame Laneman	Univ. of Mississippi Viswanathan
2013	Configuration Analytics and Automation	Univ. of North Carolina, Charlotte Al-Shaer	George Mason Univ. Jajodia			
2013	Cyber-Physical Systems for the Hospital Operating Room	Houston Methodist Garbey	Univ. of Florida Bercceli			
2013	Freeform Optics	Univ. of Rochester Rolland	Univ. of North Carolina, Charlotte Davies			
2013	Research in Storage Systems	Univ. of California, Santa-Cruz Miller				
2013	Science Center for Marine Fisheries	Univ. of Southern Mississippi Powell	Virginia Institute for Marine Science Mann			
2013	Spatiotemporal Thinking, Computing and Application	George Mason Univ. Yang	Harvard Univ. Bol	Univ. of California, Santa Barbara Clarke		
2013	Unmanned Aircraft Systems	Brigham Young Univ. McLain	Univ. of Colorado Frew	Virginia Polytechnic Univ. Woolsey		
2013	Wheat Genetics	Kansas State Univ. Gill	Colorado State Univ. Byrne			
2014	Advanced Design and Man of Integrated Microfluidics	Univ. of California, Irvine Lee	Univ. of Cincinnati Papautsky			
2014	Bioplastics and Biocomposites	Iowa State Univ. Grewell	Washington State Univ. Kessler			
2014	Dielectrics and Piezoelectrics	North Carolina State Univ. Dickey	Pennsylvania State Univ. Troler-McKinstry			
2014	Disruptive Musculoskeletal Innovations	Univ. of California, San Francisco Lotz	Univ. of Toledo Goel			
2014	Electrochemical Processes and Technologies	Ohio Univ. Botte				
2014	iPerform - IUCRC for Assistive Technologies to Enhance Human Performance	Univ. of Texas, Arlington Makedon	Univ. of Texas, Dallas Daescu			
2014	Multi-functional Integrated System Technology	Univ. of Florida Nishida	Univ. of Central Florida Yuan			
2014	Novel High-Voltage/Temperature Materials and Structures	Univ. of Denver Kumosa	Michigan Technological Univ. Odegard	Univ. of Illinois, Urbana Champaign Jasiuk		
2014	Robots and Sensors for the Human Well-being	Univ. of Minnesota, Twin Cities Morellas	Univ. of Pennsylvania Daniilidis	Univ. of Denver Andrews	Univ. of North Carolina, Charlotte Xiao	Purdue Univ. Voyles

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IUCRC Structure Database, FY 2015-2016

<i>Yr Started:</i>	<i>Center Name</i>	<i>University Name: Director</i>	<i>Partner University 1 Director</i>	<i>Partner University 2 Director</i>	<i>Partner University 3 Director</i>	<i>Partner University 4 Director</i>
2014	Wind Energy Science, Technology and Research	Univ. of Massachusetts, Lowell Niezrecki	Univ. of Texas, Dallas Leonardi			
2015	Atomically Thin Multifunctional Coatings	Pennsylvania State Univ. Terrones	Rice Univ. Lou (Ajayan)			
2015	Fiber-Wireless Integration and Networking	Georgia Institute of Tech. Chang	Univ. of Maryland Davis			
2015	Rational Catalyst Synthesis	Univ. of South Carolina, Columbia Regalbuto	Virginia Commonwealth Univ. Gupton			
New/Recompeted						
2016	Advanced Electronics through Machine Learning	Univ. of Illinois, Urbana Champaign Rosenbaum	Georgia Tech. Swaminathan	North Carolina State Univ. Franzon		
2016	Advanced Mammalian Biomanufacturing Innovation Center	John Hopkins Univ. Betenbaugh	Univ. of Massachusetts, Lowell Yoon	Univ. of Delaware Lee	Clemson Univ. Harcum	
2016	Advanced Research in Drying	Worcester Polytechnic Institute Yagoobi	Univ. of Illinois, Urbana Champaign Feng			
2016	Biotechnology and Genomic Medicine	Mayo Clinic, Rochester Iyer	Univ. of Illinois, Urbana Champaign Wang			
2016	Efficient Vehicles and Sustainable Transportation Systems	Univ. of Louisville Prater	Univ. of Alabama, Tuscaloosa Hong	Arizona State Univ. Yu	Univ. of Texas, Austin Matthews	

* Report sorted by Status. Organized by Year Started. Starting in 2013-2014 report, centers' Year Funded changed to Year Started. * = Last year funded by NSF.

IUCRC Structure Database, FY 2015-2016

** The Center for Electric Vehicles: Transportation and Electricity Convergence was on a no-cost extension during the reporting period. However, they have ceased all center activity as of July 31, 2016 and had no data to report. Therefore, they are not included in the report.

Table 2: 2015-2016 OPERATING BUDGET AND TOTAL FUNDING**

<i>Center Name</i>	<i>Total ⁴ Funding</i>	<i>NSF/⁵ IUCRC</i>	<i>Other ⁶ NSF</i>	<i>Member ⁷ Fees</i>	<i>Add'l ⁸ Industry</i>	<i>State ⁹</i>	<i>Other¹⁰ Federal</i>	<i>Non- ¹¹ Federal</i>
Advanced Design and Man of Integr	\$1,094,310	\$193,175	\$200,000	\$450,000	\$0	\$0	\$0	\$251,135
Advanced Forestry Systems	\$4,757,872	\$750,370	\$66,542	\$3,604,345	\$151,090	\$26,125	\$77,400	\$82,000
Advanced Knowledge Enablement	\$4,778,845	\$52,000	\$4,003,110	\$442,973	\$0	\$0	\$81,984	\$198,778
Advanced Non-Ferrous Structural Al	\$1,771,521	\$343,000	\$0	\$384,000	\$10,000	\$788,021	\$154,500	\$92,000
Advanced Processing and Packagin	\$426,302	\$0	\$0	\$345,000	\$81,302	\$0	\$0	\$0
Arthropod Management Technologe	\$662,500	\$162,500	\$0	\$450,000	\$0	\$50,000	\$0	\$0
Atomically Thin Multifunctional Coat	\$723,247	\$182,605	\$0	\$540,642	\$0	\$0	\$0	\$0
Berkeley Sensor & Actuator Center	\$11,111,675	\$44,000	\$0	\$1,760,834	\$718,259	\$84,083	\$8,121,441	\$383,058
Biophotonics Sensors and Systems	\$503,097	\$31,430	\$0	\$445,000	\$0	\$0	\$0	\$26,667
Bioplastics and Biocomposites	\$682,500	\$202,500	\$0	\$480,000	\$0	\$0	\$0	\$0
Broadband Wireless Access and Ap	\$1,727,639	\$956,136	\$0	\$771,503	\$0	\$0	\$0	\$0
Ceramics Composites and Optical	\$655,500	\$98,250	\$16,000	\$541,250	\$0	\$0	\$0	\$0
Child Injury Prevention Studies	\$2,639,907	\$304,124	\$1,383,985	\$835,000	\$116,798	\$0	\$0	\$0
Cloud & Autonomic Computing	\$130,000	\$60,000	\$0	\$70,000	\$0	\$0	\$0	\$0
Configuration Analytics and Automat	\$600,000	\$350,000	\$0	\$250,000	\$0	\$0	\$0	\$0
Connection One: Telecommunicatio	\$516,290	\$0	\$0	\$485,599	\$0	\$30,691	\$0	\$0
Cooling Technologies Research Ce	\$1,390,000	\$30,000	\$0	\$420,000	\$100,000	\$200,000	\$640,000	\$0
Cyber-Physical Systems for the Hos	\$863,363	\$301,963	\$17,600	\$350,000	\$0	\$0	\$65,000	\$128,800
Dielectrics and Piezoelectrics	\$1,843,425	\$179,117	\$129,045	\$879,000	\$0	\$0	\$520,755	\$135,508
Disruptive Musculoskeletal Innovatio	\$2,202,886	\$178,100	\$0	\$307,930	\$0	\$471,074	\$159,606	\$1,086,176
Dynamic Data Analytics	\$13,635,000	\$335,000	\$4,712,000	\$438,000	\$800,000	\$4,800,000	\$2,550,000	\$0
E-Design	\$1,478,696	\$430,348	\$92,000	\$856,348	\$0	\$0	\$100,000	\$0
Electrochemical Processes and Tec	\$601,739	\$112,275	\$0	\$300,000	\$0	\$0	\$189,464	\$0
Electromagnetic Compatibility	\$2,221,000	\$141,000	\$65,000	\$1,666,000	\$310,000	\$0	\$0	\$39,000
Embedded Systems	\$812,500	\$200,000	\$0	\$612,500	\$0	\$0	\$0	\$0
Energy Harvesting Materials and Sy	\$450,000	\$0	\$0	\$450,000	\$0	\$0	\$0	\$0
Energy-Smart Electronic Systems	\$1,763,540	\$688,540	\$0	\$775,000	\$50,000	\$130,000	\$120,000	\$0
Excellence in Logistics and Distribut	\$692,553	\$45,960	\$0	\$609,988	\$0	\$18,250	\$0	\$18,355
Fiber-Wireless Integration and Netw	\$575,885	\$150,885	\$0	\$425,000	\$0	\$0	\$0	\$0
Freeform Optics	\$961,367	\$264,367	\$0	\$697,000	\$0	\$0	\$0	\$0
Grid-Connected Advanced Power El	\$737,975	\$157,975	\$0	\$550,000	\$30,000	\$0	\$0	\$0
Health Organization Transformation	\$1,505,061	\$381,101	\$0	\$1,075,000	\$0	\$0	\$0	\$48,960
High-Performance Reconfigurable C	\$1,952,851	\$197,000	\$0	\$1,742,451	\$0	\$0	\$0	\$13,400
Hybrid Multicore Productivity Resear	\$1,121,889	\$112,089	\$0	\$815,000	\$194,800	\$0	\$0	\$0
Identification Technology Research	\$3,338,784	\$331,775	\$546,927	\$999,142	\$0	\$0	\$1,395,940	\$65,000
Integration of Composites into Infr	\$1,331,265	\$386,975	\$0	\$781,790	\$12,500	\$0	\$100,000	\$50,000
Intelligent Maintenance Systems	\$2,502,426	\$1,057,927	\$99,999	\$1,224,000	\$113,500	\$0	\$0	\$7,000
iPerform - I/UCRC for Assistive Tec	\$601,368	\$242,000	\$0	\$359,368	\$0	\$0	\$0	\$0
Manufacturing and Materials Joining	\$2,140,820	\$183,000	\$10,000	\$1,922,820	\$25,000	\$0	\$0	\$0
Membrane Science, Engineering &	\$1,237,627	\$167,627	\$100,000	\$850,000	\$0	\$0	\$120,000	\$0
Metamaterials	\$812,520	\$205,000	\$0	\$607,520	\$0	\$0	\$0	\$0
Multi-functional Integrated System T	\$675,583	\$190,500	\$0	\$470,000	\$0	\$15,083	\$0	\$0
Net-Centric and Cloud Software and	\$897,043	\$367,043	\$0	\$530,000	\$0	\$0	\$0	\$0
Next Generation Photovoltaics	\$2,609,000	\$482,000	\$0	\$950,000	\$42,000	\$885,000	\$0	\$250,000
Novel High-Voltage/Temperature M	\$1,357,132	\$246,532	\$240,000	\$520,000	\$200,000	\$0	\$50,000	\$100,600
Particulate and Surfactant Systems	\$995,882	\$331,382	\$0	\$479,500	\$185,000	\$0	\$0	\$0
Pharmaceutical Development	\$563,944	\$225,610	\$0	\$335,833	\$0	\$2,500	\$0	\$0
Plasmas & Lasers in Advanced Man	\$701,185	\$133,685	\$0	\$527,500	\$0	\$0	\$0	\$40,000
Power Systems Engineering Resear	\$3,965,094	\$165,000	\$475,000	\$2,271,711	\$0	\$3,600	\$150,000	\$899,783
Rational Catalyst Synthesis	\$420,000	\$150,000	\$0	\$270,000	\$0	\$0	\$0	\$0
Research in Intelligent Storage	\$1,478,909	\$458,909	\$0	\$950,000	\$70,000	\$0	\$0	\$0

* Report sorted Alphabetically by Center

** Total funding in this report is not comparable to reports prior to FY 2014-2015 because university and other cash support data are no longer collected.

*** The centers in gray are on no cost extension.

<i>Center Name</i>	<i>Total ⁴ Funding</i>	<i>NSF/⁵ IUCRC</i>	<i>Other ⁶ NSF</i>	<i>Member ⁷ Fees</i>	<i>Add'l ⁸ Industry</i>	<i>State ⁹</i>	<i>Other¹⁰ Federal</i>	<i>Non- ¹¹ Federal</i>
Research in Storage Systems	\$473,750	\$93,750	\$0	\$380,000	\$0	\$0	\$0	\$0
Resource Recovery and Recycling	\$820,100	\$285,100	\$40,000	\$495,000	\$0	\$0	\$0	\$0
Robots and Sensors for the Human	\$1,057,187	\$406,919	\$0	\$650,268	\$0	\$0	\$0	\$0
Science Center for Marine Fisheries	\$926,368	\$179,868	\$0	\$325,000	\$166,000	\$0	\$245,000	\$10,500
Security and Software Engineering	\$1,514,196	\$252,800	\$0	\$845,000	\$416,396	\$0	\$0	\$0
Smart Vehicle Concepts	\$772,734	\$106,925	\$0	\$665,809	\$0	\$0	\$0	\$0
Spatiotemporal Thinking, Computing	\$1,642,832	\$272,000	\$300,000	\$485,832	\$5,000	\$100,000	\$480,000	\$0
Surveillance Research	\$1,031,819	\$110,676	\$0	\$601,000	\$144,461	\$0	\$175,682	\$0
Sustainably Integrated Buildings an	\$478,000	\$148,000	\$0	\$330,000	\$0	\$0	\$0	\$0
Tire Research	\$1,707,480	\$967,480	\$0	\$620,000	\$0	\$120,000	\$0	\$0
Unmanned Aircraft Systems	\$1,058,254	\$349,000	\$0	\$709,254	\$0	\$0	\$0	\$0
Visual and Decision Informatics	\$745,996	\$135,000	\$15,996	\$345,000	\$0	\$250,000	\$0	\$0
Water and Environmental Technolo	\$795,780	\$180,000	\$0	\$615,780	\$0	\$0	\$0	\$0
Water Equipment and Policy	\$1,062,000	\$377,000	\$0	\$685,000	\$0	\$0	\$0	\$0
Wheat Genetics	\$1,002,500	\$192,500	\$0	\$600,000	\$0	\$210,000	\$0	\$0
Wind Energy Science, Technology a	\$532,187	\$180,937	\$0	\$351,250	\$0	\$0	\$0	\$0
Wood-Based Composites	\$440,184	\$40,175	\$0	\$400,009	\$0	\$0	\$0	\$0
Grand Mean	\$1,607,072	\$253,513	\$184,018	\$705,570	\$57,972	\$120,359	\$227,894	\$57,746
Grand Sum	\$109,280,883	\$17,238,905	\$12,513,204	\$47,978,749	\$3,942,106	\$8,184,427	\$15,496,772	\$3,926,720

* Report sorted Alphabetically by Center

** Total funding in this report is not comparable to reports prior to FY 2014-2015 because university and other cash support data are no longer collected.

Table 3: 2015-2016 CAPITAL AND IN-KIND SUPPORT

<i>Center Name</i>	<i>Capital and In-Kind Support</i> ¹²							<i>% Overhead to Mem Fees</i> ¹³	<i>Admin Budget</i> ¹⁴
	<i>Total Funding</i>	<i>Total Cap In-Kind</i>	<i>Equip-ment</i>	<i>Facilities</i>	<i>Personnel</i>	<i>Software</i>	<i>Other Support</i>		
Advanced Design and Man of Integ	\$1,094,310	\$125,000	\$0	\$0	\$0	\$50,000	\$75,000	10	20
Advanced Forestry Systems	\$4,757,872	\$1,897,507	\$434,000	\$503,429	\$592,014	\$35,000	\$333,064	0	25
Advanced Knowledge Enablement	\$4,778,845	\$633,050	\$147,500	\$0	\$40,000	\$445,550	\$0	10	20
Advanced Non-Ferrous Structural	\$1,771,521	\$0	\$0	\$0	\$0	\$0	\$0	10	15
Advanced Processing and Packagi	\$426,302	\$0	\$0	\$0	\$0	\$0	\$0	0	20
Arthropod Management Technologi	\$662,500	\$0	\$0	\$0	\$0	\$0	\$0	0	25
Atomically Thin Multifunctional Co	\$723,247	\$0	\$0	\$0	\$0	\$0	\$0	10	26
Berkeley Sensor & Actuator Center	\$11,111,675	\$75,000	\$25,000	\$50,000	\$0	\$0	\$0	10	5
Biophotonics Sensors and System	\$503,097	\$0	\$0	\$0	\$0	\$0	\$0	10	18
Bioplastics and Biocomposites	\$682,500	\$557,526	\$0	\$0	\$196,026	\$0	\$361,500	0	20
Broadband Wireless Access and A	\$1,727,639	\$0	\$0	\$0	\$0	\$0	\$0	10	15
Ceramics Composites and Optical	\$655,500	\$0	\$0	\$0	\$0	\$0	\$0	0	25
Child Injury Prevention Studies	\$2,639,907	\$671,145	\$35,100	\$40,000	\$61,745	\$5,000	\$529,300	0	10
Cloud & Autonomic Computing	\$130,000	\$42,000	\$42,000	\$0	\$0	\$0	\$0	10	15
Configuration Analytics and Autom	\$600,000	\$0	\$0	\$0	\$0	\$0	\$0	10	10
Connection One: Telecommunicati	\$516,290	\$0	\$0	\$0	\$0	\$0	\$0	10	5
Cooling Technologies Research C	\$1,390,000	\$0	\$0	\$0	\$0	\$0	\$0	0	5
Cyber-Physical Systems for the Ho	\$863,363	\$0	\$0	\$0	\$0	\$0	\$0	10	12
Dielectrics and Piezoelectrics	\$1,843,425	\$92,000	\$0	\$0	\$0	\$0	\$92,000	10	4
Disruptive Musculoskeletal Innovati	\$2,202,886	\$877,990	\$662,435	\$11,600	\$203,955	\$0	\$0	10	10
Dynamic Data Analytics	\$13,635,000	\$350,000	\$0	\$0	\$350,000	\$0	\$0	0	3
E-Design	\$1,478,696	\$552,375	\$30,000	\$0	\$35,475	\$486,900	\$0	0	55
Electrochemical Processes and Te	\$601,739	\$0	\$0	\$0	\$0	\$0	\$0	10	10
Electromagnetic Compatibility	\$2,221,000	\$13,000	\$13,000	\$0	\$0	\$0	\$0	0	7
Embedded Systems	\$812,500	\$0	\$0	\$0	\$0	\$0	\$0	10	24
Energy Harvesting Materials and S	\$450,000	\$30,000	\$0	\$0	\$0	\$0	\$30,000	0	16
Energy-Smart Electronic Systems	\$1,763,540	\$2,250,000	2,150,000	\$0	\$0	\$100,000	\$0	10	2
Excellence in Logistics and Distrib	\$692,553	\$60,000	\$0	\$0	\$0	\$0	\$60,000	10	10
Fiber-Wireless Integration and Net	\$575,885	\$0	\$0	\$0	\$0	\$0	\$0	10	1
Freeform Optics	\$961,367	\$24,000	\$0	\$0	\$0	\$0	\$24,000	10	11
Grid-Connected Advanced Power	\$737,975	\$20,000	\$20,000	\$0	\$0	\$0	\$0	0	10
Health Organization Transformatio	\$1,505,061	\$360,000	\$0	\$100,000	\$225,000	\$0	\$35,000	10	40
High-Performance Reconfigurable	\$1,952,851	\$372,000	\$52,000	\$0	\$220,000	\$100,000	\$0	10	10
Hybrid Multicore Productivity Rese	\$1,121,889	\$0	\$0	\$0	\$0	\$0	\$0	10	10
Identification Technology Research	\$3,338,784	\$0	\$0	\$0	\$0	\$0	\$0	10	10
Integration of Composites into Infra	\$1,331,265	\$100,000	\$0	\$0	\$0	\$0	\$100,000	0	4
Intelligent Maintenance Systems	\$2,502,426	\$112,000	\$100,000	\$0	\$0	\$12,000	\$0	0	15
iPerform - I/UCRC for Assistive Te	\$601,368	\$0	\$0	\$0	\$0	\$0	\$0	10	40
Manufacturing and Materials Joinin	\$2,140,820	\$538,949	\$166,882	\$0	\$0	\$50,000	\$322,067	10	15
Membrane Science, Engineering &	\$1,237,627	\$0	\$0	\$0	\$0	\$0	\$0	6	10
Metamaterials	\$812,520	\$32,000	\$0	\$0	\$0	\$0	\$32,000	10	32
Multi-functional Integrated System	\$675,583	\$0	\$0	\$0	\$0	\$0	\$0	4.3	10
Net-Centric and Cloud Software an	\$897,043	\$70,000	\$35,000	\$0	\$35,000	\$0	\$0	0	13
Next Generation Photovoltaics	\$2,609,000	\$100,000	\$50,000	\$50,000	\$0	\$0	\$0	10	13
Novel High-Voltage/Temperature	\$1,357,132	\$570,600	\$0	\$175,000	\$395,600	\$0	\$0	10	10
Particulate and Surfactant Systems	\$995,882	\$0	\$0	\$0	\$0	\$0	\$0	0	10
Pharmaceutical Development	\$563,944	\$40,000	\$0	\$15,000	\$25,000	\$0	\$0	10	13
Plasmas & Lasers in Advanced Ma	\$701,185	\$105,000	\$105,000	\$0	\$0	\$0	\$0	0	15
Power Systems Engineering Rese	\$3,965,094	\$1,010,000	\$360,000	\$115,000	\$120,000	\$165,000	\$250,000	5.5	20
Rational Catalyst Synthesis	\$420,000	\$0	\$0	\$0	\$0	\$0	\$0	0	15
Research in Intelligent Storage	\$1,478,909	\$5,000	\$5,000	\$0	\$0	\$0	\$0	10	10

* Report sorted Alphabetically by Center

IUCRC Structure Database, FY 2015-2016

Capital and In-Kind Support ¹²

<i>Center Name</i>	<i>Total Funding</i>	<i>Total Cap In-Kind</i>	<i>Equip-ment</i>	<i>Facilities</i>	<i>Personnel</i>	<i>Software</i>	<i>Other Support</i>	<i>% Overhead to Mem</i>	<i>Admin Fees</i>	<i>Budget</i>
Research in Storage Systems	\$473,750	\$0	\$0	\$0	\$0	\$0	\$0	10	15	
Resource Recovery and Recycling	\$820,100	\$49,216	\$0	\$0	\$35,966	\$0	\$13,250	0	10	
Robots and Sensors for the Human	\$1,057,187	\$102,938	\$37,938	\$0	\$0	\$65,000	\$0	10	5	
Science Center for Marine Fisherie	\$926,368	\$284,525	\$40,000	\$0	\$229,525	\$15,000	\$0	10	32	
Security and Software Engineering	\$1,514,196	\$681,130	\$0	\$0	\$169,198	\$0	\$511,932	10	15	
Smart Vehicle Concepts	\$772,734	\$0	\$0	\$0	\$0	\$0	\$0	10	9	
Spatiotemporal Thinking, Computin	\$1,642,832	\$420,000	\$80,000	\$200,000	\$40,000	\$100,000	\$0	10	10	
Surveillance Research	\$1,031,819	\$0	\$0	\$0	\$0	\$0	\$0	10	4	
Sustainably Integrated Buildings an	\$478,000	\$0	\$0	\$0	\$0	\$0	\$0	10	10	
Tire Research	\$1,707,480	\$285,000	\$285,000	\$0	\$0	\$0	\$0	0	0	
Unmanned Aircraft Systems	\$1,058,254	\$0	\$0	\$0	\$0	\$0	\$0	0	14	
Visual and Decision Informatics	\$745,996	\$56,144	\$0	\$0	\$0	\$0	\$56,144	10	40	
Water and Environmental Technolo	\$795,780	\$0	\$0	\$0	\$0	\$0	\$0	10	10	
Water Equipment and Policy	\$1,062,000	\$0	\$0	\$0	\$0	\$0	\$0	10	15	
Wheat Genetics	\$1,002,500	\$0	\$0	\$0	\$0	\$0	\$0	10	10	
Wind Energy Science, Technology	\$532,187	\$124,759	\$0	\$21,000	\$60,000	\$0	\$43,759	10	17	
Wood-Based Composites	\$440,184	\$545,765	\$0	\$44,711	\$432,580	\$68,474	\$0	5	50	
Grand Mean	\$1,607,072	\$209,347	\$71,704	\$19,496	\$50,987	\$24,969	\$42,191	6.63	15.22	
Grand Sum	\$109,280,883	\$14,235,619	\$4,875,855	\$1,325,740	\$3,467,085	\$1,697,924	\$2,869,016	N/A	N/A	

* Report sorted Alphabetically by Center

Table 4: 2015-2016 INDUSTRY MEMBERSHIP DESCRIPTORS

Center Name	2015-2016 MEMBERS				LIFETIME MEMBERS			ANNUAL FEES ¹⁵		
	Current	Starting	New	Left	Starting	New	Left	Primary	Secondary	Tertiary
Advanced Design and Man of Integrate	14	13	2	1	13	15	1	\$50,000	\$25,000	
Advanced Forestry Systems	107	107	10	10	68	181	75	\$25,000	\$5,000	
Advanced Knowledge Enablement	32	33	11	12	10	80	51	\$50,000	\$5,000	
Advanced Non-Ferrous Structural Alloy	13	13	2	2	9	19	6	\$48,000	\$16,000	
Advanced Processing and Packaging	14	14	1	1	11	19	4	\$35,000	\$20,000	
Arthropod Management Technologies	9	8	2	1	7	10	1	\$50,000		
Atomically Thin Multifunctional Coatin	12	12	0	0	12	12	0	\$43,500	\$21,750	
Berkeley Sensor & Actuator Center ^a	37	36	6	5	35	61	24	\$135,000	\$50,000	
Biophotonics Sensors and Systems	8	7	2	1	9	17	9	\$50,000		
Bioplastics and Biocomposites	26	31	0	5	31	31	5	\$30,000	\$15,000	
Broadband Wireless Access and Applic	22	18	8	4	16	29	7	\$40,000		
Ceramics Composites and Optical Mat	17	16	3	2	19	31	14	\$40,000	\$15,000	
Child Injury Prevention Studies	20	22	1	3	6	27	7	\$50,000	\$25,000	\$15,000
Cloud & Autonomic Computing	3	7	1	5	13	46	28	\$35,000		
Configuration Analytics and Automatio	6	7	1	2	7	8	3	\$50,000		
Connection One: Telecommunications	10	12	1	3	9	75	75	\$50,000		
Cooling Technologies Research Center	14	14	1	1	14	92	53	\$30,000		
Cyber-Physical Systems for the Hospit	7	7	1	1	6	10	3	\$50,000		
Dielectrics and Piezoelectrics	24	24	2	2	24	26	2	\$36,000	\$12,000	
Disruptive Musculoskeletal Innovations	8	7	2	1	7	9	1	\$40,000		
Dynamic Data Analytics	10	10	0	0	5	17	7	\$35,000	\$10,000	
E-Design	25	31	4	10	9	82	64	\$30,000		
Electrochemical Processes and Techn	6	5	2	1	5	7	1	\$50,000	\$25,000	
Electromagnetic Compatibility	28	24	10	6	15	64	34	\$60,000	\$30,000	
Embedded Systems	10	8	3	1	7	21	11	\$50,000	\$25,000	\$5,000
Energy Harvesting Materials and Syste	10	10	0	0	11	26	16	\$40,000	\$20,000	
Energy-Smart Electronic Systems	21	24	6	9	15	33	14	\$50,000	\$25,000	
Excellence in Logistics and Distribution	11	12	2	3	29	96	119	\$60,000	\$30,000	
Fiber-Wireless Integration and Network	9	9	0	0	9	9	0	\$100,000	\$50,000	\$25,000
Freeform Optics	16	9	8	1	7	20	4	\$48,000	\$24,000	
Grid-Connected Advanced Power Elect	17	15	6	4	17	35	18	\$40,000	\$5,000	
Health Organization Transformation	26	20	7	1	10	42	16	\$50,000		
High-Performance Reconfigurable Com	37	35	8	6	21	112	65	\$40,000		
Hybrid Multicore Productivity Research	16	14	7	5	14	38	21	\$45,000	\$20,000	
Identification Technology Research	17	21	2	6	8	62	51	\$40,000	\$10,000	
Integration of Composites into Infrastru	31	21	15	5	15	67	36	\$50,000	\$40,000	\$15,000
Intelligent Maintenance Systems	39	38	6	5	25	109	97	\$40,000	\$12,000	
iPerform - I/UCRC for Assistive Techno	9	7	2	0	8	10	0	\$50,000	\$20,000	
Manufacturing and Materials Joining In	38	30	12	4	25	56	18	\$50,000	\$25,000	
Membrane Science, Engineering & Tec	19	16	3	0	8	22	3	\$60,000		
Metamaterials	14	14	0	0	8	16	2	\$40,000	\$25,000	
Multi-functional Integrated System Tec	10	10	2	2	10	12	2	\$40,000	\$20,000	
Net-Centric and Cloud Software and Sy	14	20	1	7	12	45	31	\$35,000	\$10,000	
Next Generation Photovoltaics	16	16	3	3	6	29	13	\$50,000		
Novel High-Voltage/Temperature Mater	13	13	2	2	13	15	2	\$40,000	\$20,000	
Particulate and Surfactant Systems	15	15	7	7	43	66	50	\$35,000	\$15,000	
Pharmaceutical Development	8	12	2	6	4	19	10	\$50,000	\$25,000	
Plasmas & Lasers in Advanced Manufa	17	19	3	5	9	52	39	\$35,000	\$10,000	
Power Systems Engineering Research	40	37	6	3	38	55	15	\$50,000	\$25,000	\$25,000
Rational Catalyst Synthesis	7	7	0	0	7	7	0	\$40,000	\$20,000	
Research in Intelligent Storage	20	18	2	0	8	36	16	\$50,000	\$15,000	

* Report sorted Alphabetically by Center

IUCRC Structure Database, FY 2015-2016

a. For Berkeley Sensor Actuator Center, a higher primary "Collaborative Membership" fee level of \$135,000 was established that provides members with enhanced benefits and privileges.

<i>Center Name</i>	<i>2015-2016 MEMBERS</i>				<i>LIFETIME MEMBERS</i>			<i>ANNUAL FEES¹⁵</i>		
	<i>Current</i>	<i>Starting</i>	<i>New</i>	<i>Left</i>	<i>Starting</i>	<i>New</i>	<i>Left</i>	<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>
Research in Storage Systems	9	11	1	3	10	15	6	\$50,000	\$15,000	
Resource Recovery and Recycling	17	17	5	5	14	38	21	\$33,000		
Robots and Sensors for the Human We	21	15	10	4	15	25	4	\$35,000	\$10,000	
Science Center for Marine Fisheries	10	8	2	0	9	11	1	\$50,000	\$25,000	
Security and Software Engineering Res	17	27	3	13	20	47	30	\$40,000	\$5,000	
Smart Vehicle Concepts	18	18	0	0	14	40	22	\$40,000	\$10,000	
Spatiotemporal Thinking, Computing a	10	9	3	2	10	16	5	\$50,000		
Surveillance Research	11	8	3	0	8	14	3	\$50,000	\$25,000	
Sustainably Integrated Buildings and Si	7	7	2	2	4	10	3	\$50,000	\$25,000	\$15,000
Tire Research	15	17	2	4	18	15	10	\$40,000	\$20,000	
Unmanned Aircraft Systems	22	22	1	1	9	24	2	\$40,000		
Visual and Decision Informatics	9	11	3	5	17	21	12	\$30,000		
Water and Environmental Technology	37	36	2	1	33	64	27	\$30,000	\$10,000	\$3,000
Water Equipment and Policy	15	12	4	1	6	20	5	\$50,000	\$10,000	
Wheat Genetics	12	13	0	1	12	13	1	\$50,000	\$20,000	
Wind Energy Science, Technology and	10	10	2	2	10	12	2	\$40,000	\$15,000	\$5,000
Wood-Based Composites	15	11	4	0	8	20	5	\$30,000		
Grand Mean	18.04	17.65	3.46	3.06	14.18	36.51	19.16	\$45,566	\$19,505	\$13,500
Grand Sum	1227	1200	235	208	964	2483	1303			

Table 5: 2015-2016 HUMAN RESOURCES

<i>Center Name</i>	RESEARCHERS				STUDENTS		
	<i>Faculty¹⁶ Scientists</i>	<i>Admin- istrative</i>	<i>Research Staff</i>	<i>Post Docs</i>	<i>PhD</i>	<i>Masters</i>	<i>Under- graduate</i>
Advanced Design and Man of Integrated Microfluidics	9	2	2	3	16	1	5
Advanced Forestry Systems	35	7	32	6	22	22	28
Advanced Knowledge Enablement	32	2	7	1	13	17	16
Advanced Non-Ferrous Structural Alloys	15	2	2	3	5	8	0
Advanced Processing and Packaging Studies	12	1	2	0	7	5	0
Arthropod Management Technologies	14	3	3	5	9	3	2
Atomically Thin Multifunctional Coatings	8	1	0	0	11	0	0
Berkeley Sensor & Actuator Center	13	3	0	35	93	2	11
Biophotonics Sensors and Systems	10	3	1	4	8	1	1
Bioplastics and Biocomposites	6	1	3	5	1	4	6
Broadband Wireless Access and Applications	49	2	2	1	83	36	10
Ceramics Composites and Optical Materials Center	9	3	2	1	12	2	5
Child Injury Prevention Studies	12	8	1	1	8	6	16
Cloud & Autonomic Computing	14	1	1	0	2	9	3
Configuration Analytics and Automation	8	1	2	0	5	2	0
Connection One: Telecommunications	19	2	5	3	17	26	0
Cooling Technologies Research Center	11	1	1	3	25	2	11
Cyber-Physical Systems for the Hospital Operating Room	10	1	4	3	4	8	5
Dielectrics and Piezoelectrics	20	2	1	6	22	0	4
Disruptive Musculoskeletal Innovations	19	11	15	5	9	24	17
Dynamic Data Analytics	11	2	0	0	5	6	0
E-Design	44	3	3	4	16	14	20
Electrochemical Processes and Technologies	4	2	3	3	4	0	3
Electromagnetic Compatibility	8	4	0	11	25	34	0
Embedded Systems	15	2	0	0	17	2	1
Energy Harvesting Materials and Systems	12	1	1	4	6	1	0
Energy-Smart Electronic Systems	16	6	0	2	28	42	6
Excellence in Logistics and Distribution	19	1	0	1	13	7	11
Fiber-Wireless Integration and Networking	7	1	11	2	8	1	0
Freeform Optics	17	3	2	0	11	3	0
Grid-Connected Advanced Power Electronic Systems	9	3	2	2	14	6	8
Health Organization Transformation	20	6	2	7	31	18	75
High-Performance Reconfigurable Computing	13	2	2	0	23	50	22
Hybrid Multicore Productivity Research	6	3	5	1	6	12	2
Identification Technology Research	29	2	1	1	33	18	22
Integration of Composites into Infrastructure	17	3	7	4	13	16	10
Intelligent Maintenance Systems	5	4	1	3	35	6	4
iPerform - I/UCRC for Assistive Technologies to Enhance	12	1	1	0	5	0	28
Manufacturing and Materials Joining Innovation Center	21	2	3	1	11	18	15
Membrane Science, Engineering & Technology Center	21	3	7	4	15	1	1
Metamaterials	9	1	1	3	12	3	9
Multi-functional Integrated System Technology	12	1	0	1	19	4	15
Net-Centric and Cloud Software and Systems	19	3	1	2	20	22	7
Next Generation Photovoltaics	14	2	2	3	12	2	11
Novel High-Voltage/Temperature Materials and Structures	9	0	0	2	18	5	7
Particulate and Surfactant Systems	3	4	2	4	7	3	5
Pharmaceutical Development	11	3	2	2	13	0	5
Plasmas & Lasers in Advanced Manufacturing	4	0	2	3	14	1	4
Power Systems Engineering Research Center	73	2	2	8	76	14	4
Rational Catalyst Synthesis	12	2	0	2	7	0	0
Research in Intelligent Storage	11	1	0	2	21	5	2

* Report sorted Alphabetically by Center

<i>Center Name</i>	<i>RESEARCHERS</i>				<i>STUDENTS</i>			
	<i>Faculty¹⁶ Scientists</i>	<i>Admin- istrative</i>	<i>Research Staff</i>	<i>Post Docs</i>	<i>PhD</i>	<i>Masters</i>	<i>Under- graduate</i>	
Research in Storage Systems	5	1	0	2	14	4	8	
Resource Recovery and Recycling	6	5	0	3	4	3	1	
Robots and Sensors for the Human Well-being	22	3	2	2	22	6	9	
Science Center for Marine Fisheries	13	1	3	0	3	4	2	
Security and Software Engineering Research Center	28	12	5	0	7	13	13	
Smart Vehicle Concepts	4	1	2	5	15	6	5	
Spatiotemporal Thinking, Computing and Application	21	3	11	2	20	8	6	
Surveillance Research	16	1	0	0	11	9	1	
Sustainably Integrated Buildings and Sites	8	2	5	0	3	7	20	
Tire Research	16	1	0	2	12	5	1	
Unmanned Aircraft Systems	23	0	0	1	18	23	30	
Visual and Decision Informatics	10	7	2	0	16	4	5	
Water and Environmental Technology	13	3	3	4	6	11	4	
Water Equipment and Policy	18	0	1	5	20	12	15	
Wheat Genetics	7	1	6	2	1	2	35	
Wind Energy Science, Technology and Research	9	2	0	0	6	1	6	
Wood-Based Composites	14	0	0	0	10	8	7	
	Grand Mean	15.31	2.54	2.78	2.87	16.15	9.09	8.90
	Grand Sum	1041	173	189	195	1098	618	605

Table 6: 2015-2016 CENTER DIRECTOR DESCRIPTORS

<i>*Includes only primary center director</i>			TIME ALLOCATION ¹⁷				
Center Name	Rank	Tenure	Center Administration	Other Administration	Research	Teaching	Other
Advanced Design and Man of Integrated M	Full Professor	Tenured	10	35	40	10	5
Advanced Forestry Systems	Full Professor	Tenured	25	0	15	50	10
Advanced Knowledge Enablement	Full Professor	Tenured	10	10	40	20	20
Advanced Non-Ferrous Structural Alloys	Full Professor	Tenured	20	40	20	10	10
Advanced Processing and Packaging Stud	Full Professor	Tenured	10	20	40	10	20
Arthropod Management Technologies	Full Professor	Tenured	35	10	30	15	10
Atomically Thin Multifunctional Coatings	Full Professor	Tenured	10	10	40	20	20
Berkeley Sensor & Actuator Center	No academic rank	Non-tenure track	80	0	0	0	20
Biophotonics Sensors and Systems	Full Professor	Tenured	10	50	20	20	0
Bioplastics and Biocomposites	Full Professor	Tenured	50	20	25	5	0
Broadband Wireless Access and Applicatio	Full Professor	Tenured	15	50	20	10	5
Ceramics Composites and Optical Material	Full Professor	Tenured	15	35	30	10	10
Child Injury Prevention Studies	Full Professor	Tenured	10	30	50	0	10
Cloud & Autonomic Computing	Full Professor	Non-tenure track	10	70	20	0	0
Configuration Analytics and Automation	Full Professor	Tenured	30	0	70	0	0
Connection One: Telecommunications	Full Professor	Tenured	15	10	30	35	10
Cooling Technologies Research Center	Full Professor	Tenured	5	80	15	0	0
Cyber-Physical Systems for the Hospital O	Full Professor	Non-tenure track	10	60	20	10	0
Dielectrics and Piezoelectrics	Full Professor	Tenured	20	10	50	18	2
Disruptive Musculoskeletal Innovations	Full Professor	Tenured	5	25	40	20	10
Dynamic Data Analytics	Full Professor	Tenured	10	10	40	30	10
E-Design	Full Professor	Tenured	25	50	20	0	5
Electrochemical Processes and Technolog	Full Professor	Tenured	15	5	50	30	0
Electromagnetic Compatibility	Full Professor	Tenured	35	5	15	40	5
Embedded Systems	Full Professor	Tenured	15	15	40	15	15
Energy Harvesting Materials and Systems	Full Professor	Tenured	10	24	36	30	0
Energy-Smart Electronic Systems	Full Professor	Tenured	10	55	35	0	0
Excellence in Logistics and Distribution	Full Professor	Tenured	25	10	30	35	0
Fiber-Wireless Integration and Networking	Full Professor	Tenured	25	25	25	10	15
Freeform Optics	Full Professor	Tenured	30	5	50	10	5
Grid-Connected Advanced Power Electroni	Full Professor	Tenured	15	35	30	10	10
Health Organization Transformation	Associate Professor	Tenured	20	5	40	30	5
High-Performance Reconfigurable Computi	Full Professor	Tenured	15	5	50	25	5
Hybrid Multicore Productivity Research	Full Professor	Tenured	30	0	40	30	0
Identification Technology Research	Full Professor	Tenured	25	0	40	25	10
Integration of Composites into Infrastructur	Full Professor	Tenured	13	6	45	30	6
Intelligent Maintenance Systems	Full Professor	Tenured	30	10	30	25	15
iPerform - I/UCRC for Assistive Technologi	Full Professor	Tenured	25	5	30	30	10
Manufacturing and Materials Joining Innov	Full Professor	Tenured	10	30	25	30	5
Membrane Science, Engineering & Techno	Full Professor	Tenured	10	5	50	30	5
Metamaterials	Associate Professor	Tenured	20	5	40	30	5
Multi-functional Integrated System Technol	Full Professor	Tenured	25	20	25	25	5
Net-Centric and Cloud Software and Syste	Full Professor	Tenured	15	10	45	30	0
Next Generation Photovoltaics	Full Professor	Tenured	10	10	50	30	0
Novel High-Voltage/Temperature Materials	Full Professor	Tenured	20	5	30	45	0
Particulate and Surfactant Systems	Full Professor	Tenured	40	10	30	10	10
Pharmaceutical Development	Full Professor	Tenured	15	25	30	25	5
Plasmas & Lasers in Advanced Manufactur	Full Professor	Tenured	15	5	40	25	15
Power Systems Engineering Research Ce	Full Professor	Tenured	7	15	40	35	3
Rational Catalyst Synthesis	Full Professor	Tenured	30	10	30	20	10

** Report sorted Alphabetically by Center*

IUCRC Structure Database, FY 2015-2016

*Includes only primary center director

TIME ALLOCATION ¹⁷

<i>Center Name</i>	<i>Rank</i>	<i>Tenure</i>	<i>Center</i>				
			<i>Administration</i>	<i>Other Administration</i>	<i>Research</i>	<i>Teaching</i>	<i>Other</i>
Research in Intelligent Storage	Full Professor	Tenured	15	5	40	30	10
Research in Storage Systems	Full Professor	Tenured	15	20	30	35	0
Resource Recovery and Recycling	Full Professor	Tenured	20	10	40	20	10
Robots and Sensors for the Human Well-b	No academic rank	Non-tenure track	15	15	60	0	10
Science Center for Marine Fisheries	Full Professor	Tenured	35	5	45	10	5
Security and Software Engineering Resear	Full Professor	Tenured	50	0	25	25	0
Smart Vehicle Concepts	Full Professor	Tenured	22	0	38	5	35
Spatiotemporal Thinking, Computing and A	Full Professor	Tenured	15	5	30	30	20
Surveillance Research	Full Professor	Tenured	15	25	25	25	10
Sustainably Integrated Buildings and Sites	Associate Professor	Tenured	20	0	25	50	5
Tire Research	Full Professor	Tenured	15	10	55	20	0
Unmanned Aircraft Systems	Full Professor	Tenured	15	20	25	30	10
Visual and Decision Informatics	Full Professor	Tenured	20	5	35	20	20
Water and Environmental Technology	Full Professor	Tenured	25	25	25	25	0
Water Equipment and Policy	Full Professor	Tenured	20	5	45	25	5
Wheat Genetics	Full Professor	Tenured	20	10	60	5	5
Wind Energy Science, Technology and Re	Full Professor	Tenured	10	30	45	10	5
Wood-Based Composites	Full Professor	Tenured	10	5	50	30	5
Grand Mean			19.74	17.35	35.21	20.56	7.29

Table 7: 2015-2016 CENTER OUTCOMES

Center Name:	STUDENTS RECEIVING DEGREE ¹⁸			STUDENTS HIRED BY MEMBERS ¹⁹			PROJECTS ²⁰	PUBLICATIONS ²¹		
	BS Grad	MS Grad	PhD Grad	BS Hired*	MS Hired*	PhD Hired*		w/ Ctr Research	w/ IAB Members	Present.
Advanced Design and Man of Integrated	0	0	4	0	0	0	11	3	1	10
Advanced Forestry Systems	4	23	10	1	7	0	51	83	6	216
Advanced Knowledge Enablement	9	21	5	2	3	1	6	42	8	39
Advanced Non-Ferrous Structural Alloys	2	1	0	2	0	0	19	20	2	9
Advanced Processing and Packaging Stu	0	4	1	0	4	0	12	3	1	4
Arthropod Management Technologies	0	0	0	0	0	0	10	3	1	4
Atomically Thin Multifunctional Coatings	0	0	0	0	0	0	7	0	0	49
Berkeley Sensor & Actuator Center	0	5	11	0	2	6	83	68	11	120
Biophotonics Sensors and Systems	0	0	2	0	0	0	8	12	0	10
Bioplastics and Biocomposites	1	1	0	0	0	0	9	4	0	9
Broadband Wireless Access and Applicati	2	7	5	1	1	1	14	49	2	35
Ceramics Composites and Optical Materi	0	1	1	0	0	0	14	16	0	19
Child Injury Prevention Studies	0	1	1	0	1	1	16	17	1	23
Cloud & Autonomic Computing	0	3	0	0	0	0	6	10	2	10
Configuration Analytics and Automation	1	2	5	1	2	0	5	6	0	25
Connection One: Telecommunications	0	15	8	0	1	2	11	29	0	15
Cooling Technologies Research Center	1	0	5	0	0	1	12	35	1	25
Cyber-Physical Systems for the Hospital	0	3	2	0	0	0	10	5	1	15
Dielectrics and Piezoelectrics	2	0	4	0	0	0	14	9	2	88
Disruptive Musculoskeletal Innovations	3	4	1	1	0	0	9	37	0	23
Dynamic Data Analytics	3	9	7	0	0	0	19	12	5	21
E-Design	8	8	6	0	2	0	29	32	2	40
Electrochemical Processes and Technolo	0	0	0	0	0	0	6	1	0	3
Electromagnetic Compatibility	0	16	9	0	7	7	28	67	1	37
Embedded Systems	0	4	1	0	0	1	14	17	0	28
Energy Harvesting Materials and Systems	0	1	1	0	0	0	10	30	1	20
Energy-Smart Electronic Systems	0	2	8	0	0	1	18	41	14	29
Excellence in Logistics and Distribution	6	6	1	1	1	0	13	4	2	17
Fiber-Wireless Integration and Networking	0	1	1	0	0	1	6	5	3	8
Freeform Optics	0	1	4	0	0	1	13	15	0	16
Grid-Connected Advanced Power Electro	2	2	0	0	0	0	23	27	1	6
Health Organization Transformation	13	6	7	2	1	2	21	29	12	41
High-Performance Reconfigurable Compu	15	19	6	0	4	2	11	36	4	44
Hybrid Multicore Productivity Research	2	4	2	0	1	1	8	11	2	11
Identification Technology Research	14	8	13	2	0	0	20	79	1	58
Integration of Composites into Infrastructu	2	8	6	2	1	0	20	50	11	45
Intelligent Maintenance Systems	0	7	6	0	0	2	27	18	1	68
iPerform - I/UCRC for Assistive Technolog	0	0	0	0	0	0	6	3	1	6
Manufacturing and Materials Joining Inno	8	10	3	0	1	0	30	16	7	65
Membrane Science, Engineering & Techn	0	0	2	0	0	1	22	13	3	29
Metamaterials	4	3	2	0	2	0	18	43	9	67
Multi-functional Integrated System Techn	0	1	7	0	0	1	9	4	0	4
Net-Centric and Cloud Software and Syst	3	22	12	2	2	5	16	37	4	42
Next Generation Photovoltaics	2	1	4	0	0	0	13	9	4	16
Novel High-Voltage/Temperature Material	1	5	3	0	1	0	9	33	0	9
Particulate and Surfactant Systems	0	2	2	0	0	0	9	6	0	26
Pharmaceutical Development	3	0	1	1	0	0	11	3	2	39
Plasmas & Lasers in Advanced Manufact	4	1	5	1	1	2	11	21	9	10
Power Systems Engineering Research Ce	47	27	28	16	9	12	34	115	20	126
Rational Catalyst Synthesis	0	0	3	0	0	0	6	6	0	6

* Report sorted by Alphabetically by Center

IUCRC Structure Database, FY 2015-2016

* See Table 8 for additional alumni career outcomes.

STUDENTS RECEIVING DEGREE ¹⁸	STUDENTS HIRED BY MEMBERS ¹⁹	PROJECTS ²⁰	PUBLICATIONS ²¹
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Center Name:	BS Grad	MS Grad	PhD Grad	BS Hired*	MS Hired*	PhD Hired*		PUBLICATIONS ²¹		
								w/ Ctr Research	w/ IAB Members	
Research in Intelligent Storage	0	3	4	0	1	2	17	9	5	17
Research in Storage Systems	0	3	4	0	3	2	6	7	0	9
Resource Recovery and Recycling	0	1	1	0	0	0	10	11	0	17
Robots and Sensors for the Human Well-	2	3	4	0	0	1	17	16	2	14
Science Center for Marine Fisheries	0	0	0	0	0	0	19	8	0	27
Security and Software Engineering Resea	6	4	3	1	1	0	25	17	0	73
Smart Vehicle Concepts	0	2	5	0	0	2	17	29	0	47
Spatiotemporal Thinking, Computing and	0	1	0	0	0	0	12	22	5	19
Surveillance Research	0	2	2	0	0	0	18	17	4	31
Sustainably Integrated Buildings and Site	9	2	1	0	0	0	8	2	0	8
Tire Research	0	0	4	0	0	3	14	15	2	16
Unmanned Aircraft Systems	6	8	4	0	2	2	14	32	1	19
Visual and Decision Informatics	2	1	4	0	0	0	9	9	0	3
Water and Environmental Technology	3	6	4	0	0	0	23	8	2	12
Water Equipment and Policy	4	4	4	0	0	0	14	18	2	27
Wheat Genetics	12	1	2	0	0	0	8	20	0	21
Wind Energy Science, Technology and R	0	0	0	0	0	0	6	6	0	7
Wood-Based Composites	5	2	3	0	2	0	19	13	0	22
Grand Mean	3.10	4.53	3.88	0.53	0.93	0.93	15.63	21.96	2.66	30.50
Grand Sum	211	308	264	36	63	63	1063	1493	181	2074

* Report sorted by Alphabetically by Center

Table 8: 2015-2016 ALUMNI CAREER OUTCOMES

Table 8a: Centers Reporting One or More Alumni Career Outcome Last Fiscal Year

Alumni Outcome	# of Centers	% of Centers
Hired by Industry Members	37	57%
Hired by Governmental Members	10	15%
Hired by Non-Member Industry	52	80%
Hired by Non-Member Governmental Agency	11	17%
Faculty Positions	15	23%
Postdoc Positions	19	29%

Table 8b: Total Number and Means of Alumni Career Outcomes Last Fiscal Year

Alumni Outcome	Total for All Centers	Mean for All Centers
Hired by Industry Members	104	1.60
Hired by Government Members	16	0.25
Hired by Non-Member Industry	236	3.63
Hired by Non-Member Governmental Agency	13	0.20
Faculty Positions	26	0.40
Postdoc Positions	25	0.38

**Table 9: 2015-2016 INTELLECTUAL PROPERTY
AND COMMERCIALIZATION EVENTS**

Table 9: Centers Reporting One or More Intellectual Property and Commercialization Event Last Fiscal Year

Intellectual Property Event	# of Centers	% of Centers
Invention Disclosures	28	40%
Patent Applications	31	44%
Software Copyrights	2	3%
Patents Granted/Derived	12	17%
Licensing Agreements	7	10%
Royalties Realized	1	1%
Spinoff Companies Formed	8	11%

Table 9: Total Number and Means of Intellectual Property and Commercialization Events Last Fiscal Year

Intellectual Property Event	Total for All Centers	Mean for All Centers
Invention Disclosures	99	1.41
Patent Applications	87	1.24
Software Copyrights	6	0.09
Patents Granted/Derived	40	0.57
Licensing Agreements	12	0.17
Royalties Realized	6	0.09
Spinoff Companies Formed	12	0.17

APPENDIX

FOOTNOTES AND SPECIAL CONSIDERATIONS

Footnotes appear on top of columns and/or at end of rows for each Table and are described in this Appendix.

- 1) All averages and sums exclude missing data. With the exception of percentages, data from multi-university centers has been aggregated across universities; percentages represent averages for the reporting universities.
- 2) This report includes only data on Centers which were considered active participants in the NSF IUCRC Program during the 2015-2016 fiscal year.
- 3) On Table 1, "YEAR FUNDED" indicates the year NSF gave the center the operating grant under which it was originally established as an IUCRC.
- 4) On Table 2, "TOTAL FUNDING" refers to the total cash income coming into the Center from the sources listed.
- 5) On Table 2, "NSF IUCRC" refers to the total funding provided by the IUCRC program, including operating grant, self-sustaining Center funding, evaluator support, Clusters for Grand Challenges awards, etc.
- 6) "OTHER NSF" refers to funding for the Center provided by other NSF groups or divisions. Neither of these categories includes money transferred through NSF from other Federal Agencies (MIPRs).
- 7) On Table 2, "MEMBER FEES" refers to the total funding collected by a center from membership fees, including MIPRs covering membership support.
- 8) On Table 2, "ADDITIONAL INDUSTRY" refers to additional member funding (e.g., enhancements, donations, etc.) which is applied to the Center as a whole (e.g., income that results in outcomes shared equally by all Center members). This includes additional support provided by members through MIPRs that is above and beyond the membership fee paid.
- 9) On Table 2, "STATE TOTAL" refers to the funding provided by state government and/or an agency or program funded by state government.
- 10) On Table 2, "OTHER FEDERAL AGENCY" refers to funding for the Center provided by other Federal funding sources, but does NOT include funding from NSF.
- 11) On Table 2, "OTHER NON-FEDERAL AGENCY" refers to funding for the Center provided by other non-Federal funding sources, foundations, etc.
- 12) On Table 3, "CAPITAL AND IN-KIND CONTRIBUTIONS" refers to capital support for items of value over \$25,000 and includes equipment, facilities, personnel, and software.
- 13) On Table 3, "% to MEM" refers to the overhead rate charged to industry membership fees.
- 14) On Table 3, "ADMIN. BUDGET (%)" refers to the estimated percentage of the primary site's direct operating budget allocated to administration (e.g., administrative salaries, travel, telephone).
- 15) On Table 4, "FEES" are broken down into primary, secondary, and tertiary (the latter two represent variable membership fees).
- 16) On Table 5, "FACULTY SCIENTISTS" includes the Center Director(s) and Faculty Researchers.
- 17) On Table 6, "TIME ALLOCATION" refers to allocation of primary site director's full-time equivalent for budgetary purposes.
- 18) On Table 7, "STUDENTS RECEIVING DEGREE" refers to the number of Center trained Ph.D.'s, M.S.'s, and B.A./B.S.'s that received a degree during the reporting period.
- 19) On Table 7, "STUDENTS HIRED BY MEMBERS" refers to the number of Ph.D.'s, M.S.'s, and B.A./B.S.'s that were hired by industry and government members during the reporting period. Additional alumni career outcomes are reported in table 8.
- 20) On Table 7, "PROJECTS" refers to the number of research projects funded by a) IAB member fees, b) NSF IUCRC support, or c) any other support that would not have been obtained without the existence of the Center AND the results of which are shared with ALL center members. Does NOT include project that are not shared with all Center's members. Does NOT include projects carried out by Center affiliated researchers which are unrelated to the Center AND/OR the results of which are not shared with Center members.
- 21) On Table 7, "PUBLICATIONS" refers to the publications in the open literature the Center researchers produced based on Center research including publications reported that have a Center member as an author.

Additional Notes: Two changes were made in this report that will affect comparability to reports prior 2014-2015 FY. We are no longer capturing university contributions nor other cash support. Because we are no longer capturing these funding sources, the total funding for the center is not comparable to prior year's reports.