

TABLE 1
1989-1990 GENERAL INFORMATION

STATUS	YEAR FUNDED	UNIVERSITY (CENTER)	DIRECTOR	# OF DEPTS. INVOLVED
SELF-SUSTAINING	1979	Ohio State University (Center for Welding Research)	Dickinson, David W.	3
	1980	University of Massachusetts (Center on Research on Polymers)	Kantor, Simon W.	2
	1981	Case Western Reserve (Center for Applied Polymer Research)	Hiltner, Anne	2
	1982	North Carolina State University (Center for Communications & Signal Processing)	Abbott, George	2
		Rutgers University (Center for Ceramics Research)	Niesz, Dale E.	1
		Georgia Institute of Technology (Materials Handling Research center)	Pence, I.W. Jr.	1
		Pennsylvania State University (Center for Dielectric Studies)	Dougherty, Joseph P.	1
		Colorado School of Mines (Steel Research Center)	Krauss, George	1
		University of Washington (Center for Process Analytical Processing)	Kowalski, Bruce & Callis, James	5
		New Jersey Institute of Technology (Center for Hazardous & Toxic Waste Management)	Magee, Richard S.	1
		University of Arizona (Center for Optical Circuitry)	Gibbs, Hyat M.	1
		Northwestern University (Center for Engineering Tribology)	Chung, Yip-Wah	1
		University of Arizona (Center for Microcontamination & Control)	O'Hanlon, John	1
		Northeastern University (Center for Electromagnetics Research)	Silevitch, Michael B.	1
	Lehigh University (Chemical Process Modeling & Control Research Center)	Georgakis, Christos	1	
MEAN # SELF-SUSTAINING:				3.91
3 to 5 YEAR OLDS	1984	Rutgers University (Centers for Plastics Recycling Research)	Wenzel, Jack	2
	1984	University of Texas - San Antonio (Health Science Center)	Boyan, Barbara D.	2
		Carnegie Mellon University (Center for Iron & Steelmaking Research)	Fruehan, R.J.	2
		Lehigh University (Center for Innovation Management Studies)	Bean, Alden S.	2
		University of Texas - Arlington (Center for Advanced Electron Devices)	Sobol, Harold	2
		University of Tennessee (Measurement & Control Engineering)	Muly, E.C.	6
	1986	Oklahoma State University (Web Handling Research Center)	Reid, Karl N.	5
		Alfred University (Center for Glass Research)	Pye, L. David	5
		New Mexico Institute of Mining & Technology (Research Center for Energetic Materials)	Persson, Per-Anders	2
		University of Florida/Purdue University (Software Engineering Research Center)	DeMillo, Richard A.	2
		University of California - Berkeley (Sensors & Actuators Centers)	Muller, Richard & White, Richard	2
	1987	University of Iowa (Center for Simulation & Design Optimization of Mechanical Systems)	Haug, Edward J.	1
		USC/UCLA (Center for Manufacturing Automation)	Bekey, G.A. & Melkanoff, M.A.	1
		North Carolina State University (Center for Aseptic Processing & Packing Studies)	Swartzel, K.R.	3
MEAN # 3 to 5 YEAR OLDS:				3.80
2 YEARS & LESS	1988	University of Colorado (Microwave & Millimeter Computer-Aided Design)	Chang, David	2
		State University of New York at Buffalo (Center for Biosurfaces)	Baier, R. & Gardella, J.	2
	1989	Iowa State University (Center for Nondestructive Evaluation)	Thompson, Donald O.	4
		University of Pittsburgh (Parallel & Distributive Intelligence Systems Research Center)	Chang, Shi-kuo	1
		University of New Mexico (Center for Micro-Engineered Ceramics)	Smith, Douglas M.	5
		Brown University/University of Rhode Island (Center for Thin Film & Interface Research)	Loferski, Joseph & Mitra, Shanka	7
		University of California at San Diego (Center for Integrated Circuits & Systems)	Ku, Walter	2
		Georgia Institute of Technology/University of Arizona (Information Management Research)	McCracken, W.M.	4
		University of Maryland (Center for Life Cycle Engineering)	Pecht, Michael G.	1
		Washington State University (Center for Analog/Digital Integrated Circuits)	Shamash, Yacov	3
	1990	University of Illinois, Urbana	Bullard, Clark W.	2
	University of Connecticut	Howes, Trevor D.	1	
	University of Michigan	Wu, S.M.	1	
MEAN # 2-YEARS & LESS:				3.89

TABLE 2

1989-1990 OPERATING BUDGET: BREAKDOWN OF DIRECT FUNDING

STATUS	YEAR	ABBREVIATED NAME	TOTAL DIRECT	NSF FUNDING	INDUSTRY MEMBER FEES	OTHER INDUSTRY FUNDING	STATE FUNDING	OTHER FUNDING	UNIVERSITY DIRECT FUNDS	UNIVERSITY RETURNED OVERHEAD
SELF-SUSTAINING	1979	Ohio State (Welding)	.	.	.	.	.	.	.	.
	1980	Mass. (Polymers)	\$682,021	\$47,833	\$453,000	\$0	\$0	\$0	\$0	\$181,188
	1981	Case Western (Polymers)	.	.	.	.	.	.	.	.
	1982	NCSU (Communication/Signal Proc.)	\$850,000	\$8,000	\$480,000	\$361,000	\$0	\$0	\$0	\$0
		Rutgers (Ceramics)	\$2,813,282	\$265,438	\$545,135	\$236,358	\$1,552,819	\$160,046	\$0	\$53,486
		Georgia Tech. (Materials Handling)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$300,000
		Penn. State (Dielectrics Studies)	\$0	\$4,050	\$0	\$0	\$180,000	\$0	\$93,000	\$0
	1983	Colorado School of Mines (Steel)	\$0	\$46,775	\$533,900	\$16,949	\$0	\$0	\$0	.
		Washington (Process Analytical Chem.)	\$1,431,779	\$33,113	\$1,162,408	\$124,206	\$122,500	\$0	\$52,000	\$0
		NJIT (Hazardous Waste Mgmt.)	\$7,621,049	\$173,826	\$614,286	\$809,490	\$3,731,614	#####	\$0	\$0
		Arizona (Optical)	.	\$75,000	\$400,000	\$0	\$175,000	.	.	.
		Northwestern (Engineering Tribology)	\$65,000	\$38,000	\$300,000	\$194,000	\$0	\$153,000	\$0	\$12,000
		Arizona (Microcontamination)	.	.	.	.	.	.	.	.
		Northeastern (Electromagnetics)	\$0	\$58,000	\$465,000	\$0	\$0	\$137,000	\$0	\$0
	Lehigh (Chemical Process)	\$616,849	\$105,000	\$335,000	\$75,479	\$0	\$0	\$1,040	\$0	
MEAN "SELF-SUSTAINING:"			\$1,217,971	\$71,253	\$440,727	\$151,457	\$480,161	\$249,444	\$13,276	\$54,667
3 to 5 YEAR OLDS	1984	Rutgers (Plastics)	\$2,075,226	\$101,949	\$820,536	\$622,230	\$594,000	\$0	\$166,057	\$370,754
	1985	Texas - San Antonio (Health Science)	\$1,010,576	\$42,476	\$120,000	\$655,093	\$0	\$2,600	\$260,408	\$0
		Carnegie Mellon (Iron & Steel)	\$5,500	\$25,800	\$419,400	\$0	\$0	.	.	\$0
		Lehigh (Innovation)	\$307,902	\$12,902	\$240,000	\$0	\$0	\$55,000	\$0	\$0
		Texas - Arlington (Adv. Electron Devices)	\$704,402	\$128,981	\$237,500	\$37,536	\$293,215	\$0	\$7,170	\$0
		Tennessee (Measurement & Control)	\$772,000	\$55,000	\$535,000	\$50,000	\$0	\$107,000	\$25,000	\$0
	1986	Oklahoma State (Web Handling)	\$707,000	\$55,000	\$375,000	\$42,000	\$55,000	\$150,000	\$30,000	\$0
		Alfred (Glass)	\$565	\$90,000	\$400,000	\$0	\$75,000	\$0	\$0	\$0
		New Mexico Inst. (Energetic)	\$529,000	\$80,153	\$400,763	\$0	\$0	.	\$48,092	\$0
		Florida/Purdue (Software Eng.)	\$204,341	\$35,370	\$120,805	\$6,579	\$0	.	\$0	\$41,587
		Calif. - Berkeley (Sensors & Actuators)	\$1,134,167	\$200,806	\$760,000	\$0	\$126,176	\$47,185	\$0	\$0
	1987	Iowa (Simulation & Design)	\$2,166,861	\$68,861	\$920,000	\$0	\$0	\$845,000	\$333,000	\$0
		S. California (Manufacturing)	\$1,127,577	\$335,135	\$616,194	\$0	\$176,198	.	.	\$0
		NCSU (Aseptic Processing)	\$410,121	\$71,240	\$282,700	\$28,000	\$28,181	.	.	\$0
MEAN "3 to 5 YEAR OLDS:"			\$878,228	\$93,120	\$446,278	\$102,960	\$96,269	\$134,087	\$79,066	\$29,453
2 YEARS & LESS	1988	Colorado (Microwave)	\$574,852	\$82,701	\$490,000	\$0	\$0	.	.	\$2,151
		SUNY at Buffalo (Biosurfaces)	\$491,051	\$71,813	\$142,476	\$0	\$146,874	\$35,087	\$93,728	\$1,073
	1989	Iowa State (Nondestructive Evaluation)	\$1,145,638	\$78,358	\$717,500	\$0	\$275,000	\$0	\$74,800	\$0
		Pittsburgh (Intelligence Systems)	\$234,965	\$34,965	\$200,000	\$0	\$0	\$0	\$0	\$0
		New Mexico (Micro-Engineered Ceramics)	\$4319,377	\$104,377	\$400,000	\$1,405,000	\$80,000	#####	\$125,000	\$205,000
		Brown/Rhode Island (Film)	.	\$98,000	\$320,000	\$0	\$200,000	.	.	.
		Calif. - San Diego (Integrated Circuits)	\$325,000	\$100,000	\$100,000	\$0	\$0	\$125,000	\$0	\$0
		Ga. Tech./Arizona (Information Mgmt.)	.	.	.	.	.	.	.	.
		Maryland (Life Cycle Engineering)	\$688,000	\$32,000	\$620,000	\$0	\$0	\$0	\$36,000	\$0
		Washington State (Integrated Circuits)	\$727,000	\$77,000	\$355,000	\$0	\$180,000	\$0	\$115,000	\$0
	1990	Univ. of Illinois (Air Conditioning)	\$996,000	\$41,000	\$680,000	\$150,000	\$90,000	\$0	\$35,000	\$0
	Univ. of Connecticut (Grinding)	\$327,500	\$80,000	\$285,000	\$0	\$0	\$37,500	\$175,000	\$0	
	Univ. of Michigan (Measurement Tech.)	\$480,000	\$50,000	\$350,000	\$0	\$80,000	.	.	\$0	
MEAN "2 YEAR OLDS & LESS:"			\$869,037	\$70,851	\$388,331	\$129,583	\$87,656	\$133,065	\$72,725	\$18,929

TABLE 3
1989-1990 BUDGET FIGURES & CAPITAL FUNDING

STATUS	YEAR	ABBREVIATED NAME					EFFECTIVE BUDGET (C + D)	CAPITAL TOTAL FUNDING	NSF OVERHEAD (%)	INDUSTRY OVERHEAD (%)
			A	B	C	D				
			DIRECT FUNDING	OVERHEAD CHARGES	TOTAL BUDGET	UNIVERSITY WAIVED OVERHEAD				
SELF-SUSTAINING	1979	Ohio State (Welding)	.	.	.	.	.	.	.
	1988	Mass. (Polymers)	\$682,021	\$241,584	\$742,750	\$0	\$742,750	\$0	52%	50%
	1981	Case Western (Polymers)	.	.	.	.	.	.	.	.
	1982	NCSU (Communication/Signal Proc.)	\$850,000	\$0	\$850,000	\$408,000	\$1,258,000	\$0	48%	0%
		Rutgers (Ceramics)	\$2,813,282	\$311,150	\$3,070,946	\$631,859	\$3,702,805	\$0	65%	65%
		Georgia Tech. (Materials Handling)	\$0	\$0	\$1,690,000	\$15,000	\$1,705,000	\$0	63%	63%
		Penn. State (Dielectrics Studies)	\$0	\$0	\$1,038,000	\$350	\$687,500	\$0	46%	46%
		Colorado School of Mines (Steel)	\$0	\$0	\$708,000	\$0	.	.	.	.
		Washington (Process Analytical Chem.)	\$1,433,779	\$420,756	\$1,854,535	\$0	\$0	\$25,000	53%	53%
		NJIT (Hazardous Waste Mgmt.)	\$7,623,049	\$1,030,379	\$8,653,428	\$910,385	\$9,563,813	\$210,000	0%	0%
		Arizona (Optical)	\$0	\$0	\$780,000	\$0	\$780,000	\$0	49%	49%
		Northwestern (Engineering Tribology)	\$697,000	\$231,000	\$928,000	\$129,000	\$1,057,000	\$0	53%	10%
		Arizona (Microcontamination)	.	.	.	.	.	.	.	.
	Northeastern (Electromagnetics)	\$0	\$0	\$820,000	\$0	\$820,000	\$0	62%	0%	
	Lehigh (Chemical Process)	\$516,519	\$0	\$0	.	.	.	.	.
MEAN SELF-SUSTAINING:			\$1,217,971	\$186,239	\$1,921,424	\$190,418	\$2,031,687	\$315,615	49%	34%
5 TO 9 YEAR OLDS	1984	Rutgers (Plastics)	\$2,675,526	\$486,285	\$2,791,057	\$0	\$2,675,526	\$0	64%	64%
		Texas - San Antonio (Health Science)	\$1,080,577	\$24,141	\$1,104,718	\$297,770	\$1,402,488	\$0	45%	10%
		Carnegie Mellon (Iron & Steel)	\$475,200	\$244,800	\$840,000	\$0	\$0	\$0	55%	55%
		Lehigh (Innovation)	\$307,902	\$7,098	\$315,000	\$0	\$307,902	\$0	55%	0%
		Texas - Arlington (Adv. Electron Devices)	\$704,402	\$2,716	\$717,118	\$262,056	\$969,174	\$0	55%	0%
		Tennessee (Measurement & Control)	\$772,000	\$43,000	\$815,000	\$240,000	\$1,055,000	\$35,000	0%	0%
	1987	Oklahoma State (Web Handling)	\$707,000	\$0	\$707,000	\$177,000	\$884,000	\$0	42%	0%
		Alfred (Glass)	\$565	\$0	\$0	\$100	\$565	\$0	79%	79%
		New Mexico Inst. (Energetic)	\$529,008	\$149,084	\$678,092	\$0	\$678,092	\$0	.	.
		Florida/Purdue (Software Eng.)	\$204,341	\$77,246	\$240,000	\$0	\$240,000	\$0	.	.
		Calif. - Berkeley (Sensors & Actuators)	\$1,134,167	\$132,921	\$1,267,088	\$0	\$0	\$0	.	.
	1987	Iowa (Simulation & Design)	\$2,166,861	\$22,446	\$2,189,317	\$636,611	\$2,825,928	\$1,055,000	41%	0%
		S. California (Manufacturing)	\$1,127,527	\$172,473	\$1,300,000	\$0	\$1,300,000	\$0	46%	10%
	NCSU (Aseptic Processing)	\$410,121	\$33,600	\$443,721	\$172,251	\$615,971	\$0	42%	0%	
MEAN #3 to 5 YEAR OLDS:			\$878,228	\$99,701	\$957,722	\$127,536	\$925,332	\$539,500	48%	20%
2 YEARS & LESS	1988	Colorado (Microwave)	\$574,852	\$41,825	\$614,526	\$38,064	\$652,590	\$0	.	.
		SUNY at Buffalo (Biosurfaces)	\$491,051	\$30,624	\$520,602	\$77,400	\$598,011	\$2,000,000	.	.
	1989	Iowa State (Nondestructive Evaluation)	\$1,145,658	\$26,642	\$1,172,300	\$367,902	\$1,540,202	\$0	.	.
		Pittsburgh (Intelligence Systems)	\$234,965	\$65,035	\$300,000	\$25,000	\$325,000	\$0	43%	10%
		New Mexico (Micro-Engineered Ceramics)	\$3,319,377	\$50,623	\$3,165,000	\$0	\$3,165,000	\$0	49%	0%
		Brown/Rhode Island (Film)	.	.	\$618,000	\$200,000	\$818,000	\$200,000	.	.
		Calif. - San Diego (Integrated Circuits)	\$325,000	\$0	\$325,000	\$159,250	\$484,250	\$0	0%	0%
		Ga. Tech./Arizona (Information Mgmt.)	.	.	.	.	.	\$0	.	.
		Maryland (Life Cycle Engineering)	\$688,000	\$18,000	\$706,000	\$320,000	\$1,040,000	\$0	46%	0%
		Washington State (Integrated Circuits)	\$727,000	\$15,000	\$742,000	\$238,000	\$980,000	\$0	45%	0%
1990	Univ. of Illinois (Air Conditioning)	\$996,000	\$14,000	\$1,010,000	\$209,000	\$1,219,000	\$255,000	53%	0%	
	Univ. of Connecticut (Grinding)	\$577,500	\$25,500	\$503,000	\$83,000	\$686,000	\$65,000	60%	0%	
	Univ. of Michigan (Measurement Tech.)	\$480,000	\$0	\$480,000	\$288,000	\$76,800	\$100,000	0%	0%	
MEAN #2 YEARS & LESS:			\$869,037	\$26,114	\$846,369	\$167,135	\$965,404	\$524,000	37%	1%

TABLE 4
1989-1990 INDUSTRY MEMBERSHIP DESCRIPTORS

STATUS	YEAR	ABBREVIATED NAME	CURRENT MEMBERS	1989-1990 MEMBERS			LIFETIME MEMBERS			FEES				
				ORIGINAL	NEW	LEFT	ORIGINAL	NEW	LEFT	ANNUAL MEMBERSHIP PRIMARY	MEMBER FEE SECONDARY	MEMBER FEE TERTIARY		
SELF-SUSTAINING	1979	Ohio State (Welding)	1	•	•	•	•	•	•	•	•	•	•	•
	1980	Mass. (Polymers)	17	18	2	3	13	17	13	\$40,000				
	1981	Case Western (Polymers)	•	•	•	•	•	•	•	•				
	1982	NCSU (Communication/Signal Proc.)	7	8	0	1	8	12	13	\$50,000				
		Rutgers (Ceramics)	8	15	3	0	•	•	•	•				
		Georgia Tech. (Materials Handling)	20	20	0	0	20	15	15	\$40,000				
		Penn. State (Dielectrics Studies)	20	19	3	2	19	21	20	\$20,000				
		Colorado School of Mines (Steel)	9	19	2	2	7	16	4	•				
		Washington (Process Analytical Chem.)	48	48	4	2	21	40	11	\$35,000				
		NJIT (Hazardous Waste Mgmt.)	29	29	5	5	8	29	8	\$30,000	\$15,000			
		Arizona (Optical)	10	10	0	1	8	6	5	\$50,000				
		Northwestern (Engineering Tribology)	12	12	0	0	14	4	6	\$27,500				
		Arizona (Microcontamination)	•	•	•	•	•	•	•	•				
		Northeastern (Electromagnetics)	•	•	•	•	•	•	•	\$50,000				
	Lehigh (Chemical Process)	10	10	4	0	•	•	•	•					
	MEAN "SELF-SUSTAINING:"	20.1	19.8	1.9	1.6	13.1	17.8	10.6	\$38,056	\$15,000	N/A			
3 to 5 YEAR OLDS	1985	Rutgers (Plastics)	6	50	14	2	•	•	•	•				
		Texas - San Antonio (Health Science)	5	5	2	2	•	•	•	\$65,000	\$40,000	\$25,000		
		Carnegie Mellon (Iron & Steel)	11	11	14	1	4	16	7	\$20,000				
		Lehigh (Innovation)	0	0	1	1	6	5	3	\$75,000	\$50,000	\$25,000		
		Texas - Arlington (Adv. Electron Devices)	4	4	4	0	•	•	•	•				
	1986	Tennessee (Measurement & Control)	4	4	6	•	5	13	3	\$25,000				
		Oklahoma State (Web Handling)	0	0	0	0	•	•	•	\$25,000				
		Alfred (Glass)	•	•	•	•	9	6	•	•				
		New Mexico Inst. (Energetic)	15	12	3	•	•	•	•	•				
		Florida/Purdue (Software Eng.)	12	15	0	3	•	•	•	•				
		Calif. - Berkeley (Sensors & Actuators)	10	19	1	3	•	•	•	\$40,000				
		Iowa (Simulation & Design)	23	21	2	2	4	•	•	\$100,000				
	S. California (Manufacturing)	7	7	•	•	8	4	2	\$35,000					
	NCSU (Aseptic Processing)	10	8	4	2	10	4	2	•					
	MEAN "3 to 5 YEAR OLDS:"	16.3	13.2	4.3	1.2	8.7	17.8	5.1	\$43,507	\$35,000	N/A			
2 YEARS & LESS	1988	Colorado (Microwave)	12	11	1	0	14	•	•	•				
	1989	SUNY at Buffalo (Biosurfaces)	5	4	1	•	2	4	•	\$25,000				
		Iowa State (Nondestructive Evaluation)	21	18	3	0	8	0	0	\$30,000	\$10,000			
		Pittsburgh (Intelligence Systems)	6	6	0	•	14	NONE	0	•				
		New Mexico (Micro-Engineered Ceramics)	10	8	3	1	6	NONE	NONE	\$75,000	\$50,000	\$25,000		
		Brown/Rhode Island (Film)	14	14	0	0	•	•	•	•				
		Calif. - San Diego (Integrated Circuits)	6	6	0	0	•	•	•	\$50,000				
		Ga. Tech./Arizona (Information Mgmt.)	•	•	•	•	11	3	0	\$30,000				
		Maryland (Life Cycle Engineering)	11	6	6	1	•	•	•	•				
	1990	Washington State (Integrated Circuits)	14	12	2	0	7	1	1	\$50,000				
	Univ. of Illinois (Air Conditioning)	17	13	4	0	8	8	•	\$50,000					
	Univ. of Connecticut (Grinding)	14.5	9.7	2.4	0.6	8.8	3.4	0.8	\$43,125	\$30,000	N/A			

Univ. of Michigan (Measurement Tech.)
MEAN "2 YEARS & LESS:"

TABLE 5
HUMAN RESOURCES

STATUS	YEAR	ABBREVIATED NAME	RESEARCHER BREAKDOWN				STUDENTS		ADMINISTRATIVE			
			TOTAL #	# FACULTY	NON-FACULTY		# OF	# OF	PROFESSIONALS		CLERICALS	
			RESEARCHERS	SCIENTIST	FT	PT	GRADS	UNDEGRAD	FT	PT	FT	PT
Self-Sustaining	1979	Ohio State (Welding)	.	.	.	.	.	.	.	.	.	.
Self-Sustaining	1980	Mass. (Polymers)	19	17	2	0	16	2	1	0	0	1
Self-Sustaining	1981	Case Western (Polymers)	.	.	.	.	.	.	.	.	.	.
Self-Sustaining	1982	NCSU (Communication/Signal Proc.)	14	12	2	0	35	2	1	0	1	0.5
Self-Sustaining	1982	Rutgers (Ceramics)	.	.	.	.	.	.	.	.	.	.
Self-Sustaining	1982	Georgia Tech. (Materials Handling)	15	15	0	7	30	2	1	0	3	1
Self-Sustaining	1982	Penn. State (Dielectrics Studies)	18	18	0	5	16	5	0	1	0	1
Self-Sustaining	1984	Colorado School of Mines (Steel)	8	7	1	1	20	6	0	1	0	1
Self-Sustaining	1984	Washington (Process Analytical Chem.)	15	11	4	0	25	2	4	0	4	5
Self-Sustaining	1984	NJIT (Hazardous Waste Mgmt.)	61	56	5	4	68	6	4	0	2	0
Self-Sustaining	1984	Arizona (Optical)	9	7	2	2	10	0	0	1	0	1
Self-Sustaining	1984	Northwestern (Engineering Tribology)	12	6	6	0	15	0	1	0	1	0
Self-Sustaining	1984	Arizona (Microcontamination)	.	.	.	.	.	.	.	.	.	.
Self-Sustaining	1984	Northeastern (Electromagnetics)	26	16	10	2	15	10	4	2	2	1
		Average for Self-Sustaining:	19.7	16.5	3.2	2.1	25.0	3.5	1.6	0.5	1.3	1.2
3-5 years old	1984	Lehigh (Chemical Process)	8	8	0	3	9	1	2	0	2	0
3-5 years old	1984	Rutgers (Plastics)	25	22	3	4	8	12	3	2	6	2
3-5 years old	1985	Texas, San Antonio (Health Science)	.	.	.	.	.	.	.	.	.	.
3-5 years old	1985	Carnegie Mellon (Iron & Steel)	8	5	3	0	8	2	0	0	0	0.3
3-5 years old	1985	Lehigh (Innovation)	28	27	1	0	1	0	0	2	1	2
3-5 years old	1985	Texas- Arlington (Adv. Electron Devices)	7	5	2	0	13	4	0	1	1	3
3-5 years old	1985	Tennessee (Measurement & Control)	.	.	.	.	.	.	.	.	.	.
3-5 years old	1986	Oklahoma State (Web Handling)	14	13	1	1	22	3	0	1	0	4
3-5 years old	1986	Alfred (Glass)	12	12	0	0	12	6	1	0.4	1	0.2
3-5 years old	1986	New Mexico Inst. (Energetic)	2	2	0	6	6	11	0	3	0	4
3-5 years old	1986	Florida/Purdue (Software Eng.)	13	13	0	1	15	0	0	3	1	0
3-5 years old	1986	Calif.-Berkeley (Sensors & Actuators)	9	8	1	0	33	2	2	0	3	0
		Average for Self-Sustaining:	14.3	12.3	2.0	1.6	13.9	4.5	1.1	1.2	1.5	1.5
0-2 years old	1987	Iowa (Simulation & Design)	23	10	13	0	44	9	3	0	4	3
0-2 years old	1987	S. California (Manufacturing)	11	10	1	1	12	1	1	2	0	2
0-2 years old	1987	NCSU (Aseptic Processing)	19	16	3	3	6	2	0	3	0	1
0-2 years old	1988	Colorado (Microwave)	12	7	5	0	18	3	3	1	0	1
0-2 years old	1988	SUNY at Buffalo (Biosurfaces)	14	10	4	0	12	3	4	0	1	0
0-2 years old	1989	Iowa State (Nondestructive Evaluation)	13	13	0	20	21	0	0	2	0	2
0-2 years old	1989	Pittsburgh (Intelligence Systems)	5	4	1	0	2	0	0	4	1	0
0-2 years old	1989	New Mexico (Micro-Engineered Ceramics)	21	13	8	12	30	5	1	1	2	0
0-2 years old	1989	Brown/Rhode Island (Film)	9.5	8	1.5	0	5	3	0	2	0	1
0-2 years old	1989	Calif.- San Diego (Integrated Circuits)	7	7	0	0	19	0	0	2	1	2
0-2 years old	1989	Ga. Tech./Arizona (Information Mgmt.)	.	.	.	.	.	.	.	.	.	.
0-2 years old	1989	Maryland (Life Cycle Engineering)	14	5	9	0	22	5	1	0	0	2
0-2 years old	1989	Washington State (Integrated Circuits)	14	14	0	14	19	8	0	5	1	2
0-2 years old	1990	Univ. of Illinois (Air Conditioning)	.	.	.	.	.	.	.	.	.	.
0-2 years old	1990	Univ. of Connecticut (Grinding)	10	7	3	0	8	4	1	3	2	0
0-2 years old	1990	Univ. of Michigan (Measurement Technology)	.	5	.	.	.	.	0	2	1	0
		Average for Self-Sustaining:	12.6	9.1	3.1	4.5	14.7	3.0	0.8	2.1	0.8	0.9

TABLE 6

CENTER DIRECTOR DESCRIPTORS

STATUS	YEAR	ABBREVIATED NAME	DIRECTOR'S RANK	DIRECTOR TENURE	DIRECTOR REPORTS TO	% CENTER ADMIN.	TIME ALLOCATION				ADMIN. % OF TOTAL
							% OTHER ADMIN.	% RESEARCH	% TEACHING	% OTHER	
Self-Sustaining	1979	Ohio State (Welding)	.	.	.	.	.	.	.	.	.
Self-Sustaining	1980	Mass. (Polymers)	Professor	No	Dept. Head	50	15	35	0	0	31
Self-Sustaining	1981	Case Western (Polymers)	.	.	.	.	.	.	.	.	.
Self-Sustaining	1982	NCSU (Communication/Signal Proc.)	Professor	Yes	Dean	20	0	40	40	0	11
Self-Sustaining	1982	Rutgers (Ceramics)	.	.	.	.	.	.	.	.	.
Self-Sustaining	1982	Georgia Tech. (Materials Handling)	Director	No	V-Pres.	30	10	5	0	55	15
Self-Sustaining	1982	Penn. State (Dielectrics Studies)	Sr. Researcher	No	Director	40	0	60	0	0	.
Self-Sustaining	1984	Colorado School of Mines (Steel)	.	.	.	15	5	35	25	20	8
Self-Sustaining	1984	Washington (Process Analytical Chem.)	Professor	Yes	V-Pres.	20	10	40	20	10	25
Self-Sustaining	1984	NJIT (Hazardous Waste Mgmt.)	Professor	Yes	V-Pres.	50	50	0	0	0	18
Self-Sustaining	1984	Arizona (Optical)	Professor	Yes	Director	40	20	40	0	0	15
Self-Sustaining	1984	Northwestern (Engineering Tribology)	Professor	Yes	Dean	25	10	25	40	0	5
Self-Sustaining	1984	Arizona (Microcontamination)	.	.	.	.	.	.	.	.	.
Self-Sustaining	1984	Northeastern (Electromagnetics)	Professor	Yes	Dean	20	0	40	40	0	10
Average for Self-Sustaining:							12.0	32.0	16.5	8.5	15.3
3-5 years old	1984	Lehigh (Chemical Process)	.	.	.	25	25	20	30	0	28
3-5 years old	1984	Rutgers (Plastics)	Professor	Yes	Director	65	10	0	25	0	20
3-5 years old	1985	Texas- San Antonio (Health Science)	.	.	.	.	.	.	.	.	.
3-5 years old	1985	Carnegie Mellon (Iron & Steel)	Professor	Yes	Dean	20	5	50	20	5	10
3-5 years old	1985	Lehigh (Innovation)	Professor	Yes	Dean	25	25	15	25	10	40
3-5 years old	1985	Texas- Arlington (Adv. Electron Devices)	Professor	Yes	Chairman	20	30	20	30	0	5
3-5 years old	1985	Tennessee (Measurement & Control)	.	.	.	.	.	.	.	.	.
3-5 years old	1986	Oklahoma State (Web Handling)	Professor	Yes	V-Pres.	20	70	10	0	0	5
3-5 years old	1986	Alfred (Glass)	Professor	Yes	Dean	30	10	30	20	10	20
3-5 years old	1986	New Mexico Inst. (Energetic)	.	.	.	20	20	40	10	10	19
3-5 years old	1986	Florida/Purdue (Software Eng.)	.	.	.	10	0	10	0	80	34
3-5 years old	1986	Calif.-Berkeley (Sensors & Actuators)	.	.	.	20	5	30	45	0	30
Average for 3-5 years old:							17.7	24.8	21.8	10.3	19.7
0-2 years old	1987	Iowa (Simulation & Design)	Professor	Yes	Dean	40	10	25	25	0	10
0-2 years old	1987	S. California (Manufacturing)	Professor	Yes	Dean	20	0	40	20	20	4
0-2 years old	1987	NCSU (Aseptic Processing)	Professor	Yes	Dept. Head	61	0	19	20	0	5
0-2 years old	1988	Colorado (Microwave)	.	.	.	20	20	40	10	.	39
0-2 years old	1988	SUNY at Buffalo (Biosurfaces)	.	.	.	20	20	20	20	20	30
0-2 years old	1989	Iowa State (Nondestructive Evaluation)	.	.	.	20	0	12.5	0	.	10
0-2 years old	1989	Pittsburgh (Intelligence Systems)	Professor	Yes	Dean	10	30	30	30	0	10
0-2 years old	1989	New Mexico (Micro-Engineered Ceramics)	Professor	Yes	VP	40	0	35	25	0	10
0-2 years old	1989	Brown/Rhode Island (Film)	.	.	.	30	0	20	50	0	10
0-2 years old	1989	Calif.- San Diego (Integrated Circuits)	Professor	Yes	Chair	10	0	40	50	0	22
0-2 years old	1989	Ga. Tech./Arizona (Information Mgmt.)	.	.	.	.	.	.	.	.	.
0-2 years old	1989	Maryland (Life Cycle Engineering)	Associate Professor	Yes	Dean	0	0	70	20	0	15
0-2 years old	1989	Washington State (Integrated Circuits)	Professor & Chair	Yes	Dean	35	55	10	0	0	23
0-2 years old	1990	Univ. of Illinois (Air Conditioning)	.	.	.	.	.	.	.	.	.
0-2 years old	1990	Univ. of Connecticut (Grinding)	Professor	Track	Dean	50	1	20	15	15	20
0-2 years old	1990	Univ. of Michigan (Measurement Technology)	Professor	Yes	Dean	20	5	50	25	0	10
Average for 0-2 years old:							10.9	30.5	22.1	3.5	17.0

FOOTNOTES
(SPECIAL CONSIDERATIONS)

- 1) Averages and sums exclude missing data.
- 2) Missing data indicated by small "bullets."
- 3) Brown University/Rhode Island were reported together so appear as one listing.
- 4) On Table 2, "Other Funding" refers to grants and awards from other sources (e.g., DOD, foundations, etc).
- 5) On Table 2, "University Returned Overhead" refers to overhead collect from members which is returned to the center.
- 6) On Table 3, "University-Waived Overhead" refers to the value of normal overhead that the university has not charged industry.
- 7) On Table 3, "Effective Budget" refers to the value of the center's budget if full overhead were collected.
- 8) On Table 3, "Capital Total Funding" sometimes includes major capital investments (e.g., buildings), normally amortized over a number of years.
- 9) On Table 4, "Fees" are broken down into primary, secondary, and tertiary (the latter two represent variable membership fees).
- 10) On Table 5, "FT" means "Full-time" and "PT" means "Part-time."
- 11) On Table 6, "Time Allocation" refers to allocation of director's full-time equivalent for budgetary purposes.
- 12) On Table 6, "Admin. Budget (%)" refers to estimated percentage of direct budget allocated to administrative salaries, center supplies, telephone, travel and related costs.
- 13) These Tables are updated from those that were disseminated at the preceding January meeting.