

Appendix C:

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Utility Patents Awarded in San Diego, by Cluster: 1990 - 1999

including detail by cluster, four-digit SIC code, and organization

Cluster SIC	Sector Description	COMPANY	Number of Patents 1990-99
Biomedical Products			362
3821	Laboratory apparatus & furniture		
3827	Optical instruments & lenses		
		ASTROTERRA CORPORATION	1
		DEEPSEA POWER & LIGHT, INC.	3
		HOLOMETRICS, INC.	2
		LITEL INSTRUMENTS, INC.	29
		SURFACE OPTICS CORPORATION	5
		VISMED, INC.	1
3841	Surgical & medical instruments		
		ALARIS MEDICAL SYSTEMS, INC. (formerly IVAC and IMED corporations)	78
		BAXTER INTERNATIONAL INC.	13
		DYNOTEC CORPORATION	2
		INTERVENTIONAL TECHNOLOGIES INC.	33
		MEDTRONIC INC.	49
		PACIFIC DEVICE, INC.	2
		THERMOSCAN INC.	8
		UROS CORPORATION	3
		VIA MEDICAL CORPORATION	10
3842	Surgical appliances & supplies		
		BREG, INC.	19
		MEDMETRIC CORPORATION	5
		PURITAN-BENNETT CORPORATION	30
3843	Dental equipment & supplies		
3844	X-ray apparatus & tubes		
		THERMOTREX CORPORATION	14
3845	Electromedical equipment		
		ACCULASE, INC.	4
		BIOMAGNETIC TECHNOLOGIES, INC.	38
		KINETIKOS MEDICAL, INC.	2
		LXN CORPORATION	2
		NELLCOR PURITAN BENNETT INC.	9
3851	Ophthalmic goods		
Biotechnology and Pharmaceuticals			1629
2819	Industrial inorganic chemicals, nec		
		JOHNSON MATTHEY INC.	29
2833	Medicinals & botanicals		
2834	Pharmaceuticals preparations		
		AGOURON PHARMACEUTICALS, INC.	39
		ALLIANCE PHARMACEUTICAL CORPORATION	41
		AXIOM BIOTECHNOLOGIES, INC.	2
		CHUGAI BIOPHARMACEUTICALS, INC.	1
		CYTEL CORPORATION	20
		DEPOTECH CORPORATION	11
		GENSIA PHARMACEUTICALS, INC.	12
		GENSIA SICOR INC.	11
		ISIS PHARMACEUTICALS, INC.	184
		IXSYS, INC.	10
		LIGAND PHARMACEUTICALS INC.	27
		MERCK + CO., INC.	20
		NEUROCRINE BIOSCIENCES, INC.	5

Utility Patents Awarded in San Diego, by Cluster: 1990 - 1999

including detail by cluster, four-digit SIC code, and organization

Cluster SIC	Sector Description	COMPANY	Number of Patents 1990-99
		SALK INSTITUTE BIOTECHNOLOGY/INDUSTRIAL ASSOCIATES, INC.	19
		SIBIA NEUROSCIENCES, INC.	36
		SIGNAL PHARMACEUTICALS, INC.	10
		THE IMMUNE RESPONSE CORPORATION	14
2835	Diagnostic substances		
		BIOSITE DIAGNOSTICS, INC.	27
		GEN-PROBE INC.	108
		GENSURA LABORATORIES, INC.	2
		HOUGHTEN PHARMACEUTICALS, INC.	7
		INVITROGEN CORPORATION	2
		MOLECULAR BIOSYSTEMS, INC.	33
		MYELOS NEUROSCIENCES CORPORATION	2
		PACIFIC BIOTECH, INC.	5
		QUIDEL CORPORATION	16
		SYNTRON BIORESEARCH, INC.	1
2836	Biological products excluding diagnostic		
		ABBOTT LABORATORIES	10
		ADVANCED TISSUE SCIENCES, INC.	19
		BIORESEARCH, INC.	2
		DIVERSA CORPORATION	12
		GENTA INC.	13
		IDEC PHARMACEUTICAL CORPORATION	21
		LA JOLLA PHARMACEUTICAL COMPANY	17
		PHARMINGEN	1
		SYNTRO CORPORATION	23
		TREGA BIOSCIENCES, INC.	13
		VICAL INC.	15
2869	Industrial organic chemicals, nec		
2899	Chemical preparations		
		KING LEE TECHNOLOGIES	1
		NATIONAL INK INC.	2
8731	Commercial physical research (60%)		
		BOIT, INC.	1
		INNOVA LABORATORIES, INC.	3
		LEIGH AEROSYSTEMS CORPORATION	2
		NANOGEN, INC.	8
		TOMINY, INC.	1
		TORANAGA TECHNOLOGIES, INC.	4
		*UNIVERSITY OF CALIFORNIA, THE REGENTS OF (SIC 8221, grouped here with 8731)	194
		VOLUTION	1
8733	Noncommercial research org.		
		AMYLIN PHARMACEUTICALS, INC.	18
		CORVAS INTERNATIONAL, INC.	45
		GENETRONICS, INC.	18
		HOWARD HUGHES MEDICAL INSTITUTE	1
		ICHOE MEDICAL SYSTEMS, INC.	1
		LA JOLLA CANCER RESEARCH FOUNDATION	109
		METABASIS THERAPEUTICS, INC.	4
		ONTOGEN CORPORATION	11
		PROTEIN POLYMER TECHNOLOGIES, INC.	11
		SALK INSTITUTE FOR BIOLOGICAL STUDIES	151
		SAN DIEGO REGIONAL CANCER CENTER	1

Utility Patents Awarded in San Diego, by Cluster: 1990 - 1999

including detail by cluster, four-digit SIC code, and organization

Cluster SIC	Sector Description COMPANY	Number of Patents 1990-99
	SCRIPPS CLINIC AND RESEARCH FOUNDATION	44
	THE SCRIPPS RESEARCH INSTITUTE	232
8734	Testing laboratories	
	GEOSCIENCE LIMITED	2
	OFFSHORE MODEL BASIN	1
	PULSED POWER TECHNOLOGIES, INC.	1
	TEXAS BIOTECHNOLOGY CORPORATION	8
Business Services		10
2741	Miscellaneous publishing	
2752	Commercial printing, lithographic	
	THE UPPER DECK COMPANY	4
7311	Advertising agencies	
7319	Advertising agencies	
7334	Photocopying & duplication services	
7361	Employment agencies	
7363	Help supply services	
7375	Information retrieval services	
7376	Computer facilities management	
7377	Computer rental & leasing	
7389	Business services, nec	
	POWER PLUS CORPORATION	1
8111	Legal services	
8712	Architectural services	
8720	Accounting, auditing, & bookkeeping	
8741	Management services	
	VISTA MEDICAL TECHNOLOGIES, INC.	2
8742	Management consulting services	
	RAVI & ASSOCIATES	3
8748	Business consulting, nec	
Communications		631
3661	Telephone & telegraph apparatus	
	COMSTREAM CORPORATION	6
3663	Radio & TV communications	
	CUBIC COMMUNICATIONS, INC.	1
	GENERAL INSTRUMENT CORPORATION	104
	HUGHES ELECTRONIC DEVICES CORPORATION	18
	MOTOROLA, INC.	9
	NOKIA MOBILE PHONES LTD.	33
	NOKIA TELECOMMUNICATIONS, INC.	3
	REMEC, INC.	3
	TITAN CORPORATION	8
	VIASAT, INC.	2
3669	Communications equipment, nec	
	AMERICAN TECHNOLOGY CORPORATION	8
	SYSTECH CORPORATION	1
	TACAN CORPORATION	14
4812	Radiotelephone communications	
	QUALCOMM, INC.	292
4813	Telephone communications, except radiotelephone	
	AT&T CORPORATION	1

Utility Patents Awarded in San Diego, by Cluster: 1990 - 1999

including detail by cluster, four-digit SIC code, and organization

Cluster SIC	Sector Description	COMPANY	Number of Patents 1990-99
4899	Communications services		
		HUGHES ELECTRONICS CORPORATION	19
		*GENERAL ATOMIC COMPANY (1/2 - see also Defense)	110
8711	Engineering services (10%)		
		INTERLOG, INC.	1
		NURLOGIC DESIGN, INC.	1
		ORINCON CORPORATION	1
8731	Commercial physical research (25%)		
		BOIT, INC.	1
		INNOVA LABORATORIES, INC.	3
		LEIGH AEROSYSTEMS CORPORATION	2
		NANOGEN, INC.	8
		TOMINY, INC.	1
		TORANAGA TECHNOLOGIES, INC.	4
		*UNIVERSITY OF CALIFORNIA, THE REGENTS OF (SIC 8221, grouped here with 8731)	194
		VOLUTION	1
Computer & Electronics Manufacturing			907
3571	Electronic computers		
		MAXWELL LABORATORIES, INC.	21
		SUN MICROSYSTEMS, INC.	4
		UNISYS CORPORATION	68
3572	Computer storage devices		
		ANACOMP, INC.	10
		CONNER PERIPHERALS, INC.	11
		IOMEGA CORPORATION	17
3577	Computer peripheral equipment, nec		
		HEWLETT-PACKARD COMPANY	421
		MESA RIDGE TECHNOLOGIES, INC.	1
		PROXIMA CORPORATION	41
		PYXIS CORPORATION	5
3629	Electrical industrial apparatus, nec		
3651	Household audio & video equipment		
		SONY CORPORATION	54
3671	Electron tubes		
		ELECTRON VISION CORPORATION	2
3672	Printed circuit boards		
		SILICON PACKAGING TECHNOLOGY	1
		XSCRIBE CORPORATION	2
3674	Semiconductors & related devices		
		APPLIED MICRO CIRCUITS CORPORATION	9
		BROOKTREE CORPORATION	35
		CYMER, INC.	60
		FAIRCHILD SEMICONDUCTOR CORPORATION	1
		LSI LOGIC CORPORATION	5
		NATIONAL SEMICONDUCTOR CORPORATION	12
		PACIFIC TRINETICS CORPORATION	5
		PEREGRINE SEMICONDUCTOR CORPORATION	13
		*SCIENCE APPLICATIONS INTERNATIONAL CORPORATION (1/2 - see also 7373)	25
3675	Electronic capacitors		
		MAXWELL ENERGY PRODUCTS, INC.	1
3676	Electronic resistors		

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Cluster SIC	Sector Description	COMPANY	Number of Patents 1990-99
3677	Electronic coils & transformers		
3678	Electronic connectors		
		XYTRONYX, INC.	7
3679	Electronic components, nec		
		AMISTAR CORPORATION	3
		JABRA CORPORATION	6
		PALOMAR TECHNOLOGIES CORPORATION	6
		PULSE ENGINEERING INC.	17
		STRATEDGE CORPORATION	4
3695	Magnetic & optical recording media		
3699	Electrical equipment & supplies, nec		
		CUBIC CORPORATION	3
3825	Instruments to measure electricity		
		APPLIED DIGITAL ACCESS, INC.	15
		PHASE METRICS, INC.	23
		TEMPO RESEARCH CORPORATION	9
		XITRON TECHNOLOGIES	1
		Z-COMMUNICATIONS, INC.	1
Defense and Transportation Manufacturing			970
3511	Steam engines & turbines		
		SOLAR TURBINES INC.	81
3721	Aircraft		
		MCDONNELL DOUGLAS CORPORATION	26
		ROCKWELL INTERNATIONAL CORPORATION	5
3724	Aircraft engines & engine parts		
		SUNDSTRAND CORPORATION	187
3728	Aircraft parts & equipment, nec		
		BRILES RIVET CORPORATION	4
		ROHR, INC.	45
3731	Ship building & repairing		
3732	Boat building & repairing		
3761	Guided missiles & space vehicles		
3769	Space vehicle equipment		
3812	Search & navigation equipment		
		GDE SYSTEMS, INC.	3
		HUGHES AIRCRAFT COMPANY	113
		RAYTHEON COMPANY	15
D	Defense Industries - general classification where detail not available		
		*GENERAL ATOMIC COMPANY (1/2 - see also 4899)	110
		GENERAL DYNAMICS CORPORATION ELECTRONICS DIVISION	19
		GENERAL DYNAMICS CORPORATION, SPACE SYSTEMS DIV.	31
		GENERAL DYNAMICS, CONVAIR DIVISION	22
		HUGHES MISSILE SYSTEMS COMPANY	10
		JAYCOR	4
		UNITED STATES OF AMERICA, AIR FORCE	5
		UNITED STATES OF AMERICA, NAVY	345
Entertainment and Amusement			0
4830	Radio & TV broadcasting stations		
7812	Motion picture & video tape production		
7819	Services allied to motion picture production		

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Cluster SIC	Sector Description	COMPANY	Number of Patents 1990-99
7922	Theatrical producers & services		
7941	Sports clubs, managers, & promoters		
7992	Public golf courses		
7996	Amusement parks		
7999	Amusement & recreation, nec		
8412	Museums & art galleries		
8422	Botanical & zoological gardens		
Environmental Technology			82
3564	Blowers & fans		
3569	General industrial machinery, nec		
		DELTA DESIGN INC.	2
		MACHINE VISION PRODUCTS, INC.	1
3589	Service industry machinery, nec		
		POLARIS POOL SYSTEMS, INC.	1
3823	Process control instruments		
		FLUID COMPONENTS, INC.	12
		GAMMA-METRICS	5
		MICROBICS CORPORATION	2
		SENDX MEDICAL, INC.	8
3824	Fluid meters & counting devices		
3826	Analytical instruments		
		C.C. IMEX	1
		CHROMAGEN, INC.	2
		STRATAGENE	46
3829	Measuring & controlling devices, nec		
		ACCUMETRICS, INC.	1
		KAHL SCIENTIFIC INSTRUMENT CORPORATION	1
Financial Services			0
6035	Saving institutions, Federally chartered		
6036	Saving institutions, not Federally chartered		
6061	Credit unions, Federally chartered		
6062	State credit unions		
6091	Non-deposit trust facilities		
6099	Functions related to deposit banking		
6140	Personal credit institutions		
6162	Mortgage bankers & loan correspondents		
6163	Loan brokers		
6282	Investment advice		
Fruits and Vegetables			0
0161	Vegetables & melons		
0171	Berry crops		
0172	Grapes		
0174	Citrus fruits		
0175	Deciduous tree fruits		
0179	Fruits & tree nuts, nec		
0762	Farm management services		
2033	Canned fruits & vegetables		
2449	Wood containers, nec		

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Cluster SIC	Sector Description	COMPANY	Number of Patents 1990-99
Horticulture			0
0181	Ornamental nursery products		
0182	Food crops grown under cover		
0191	General farms, primarily crop		
0711	Soil preparation services		
0781	Landscape counseling & planning		
0783	Ornamental shrub & tree services		
Medical Services			5
7352	Medical equipment rental		
8011	Offices & clinics of doctors of medicine		
		ALVARADO ORTHOPEDIC	1
8021	Offices & clinics of dentists		
8049	Offices of health practitioners, nec		
8062	General medical & surgical hospitals		
8063	Psychiatric hospitals		
8069	Specialty hospitals, except psychiatric		
8071	Medical laboratories		
8072	Dental laboratories		
		ORMCO CORPORATION	1
8092	Kidney dialysis centers		
8093	Specialty outpatient facilities, nec		
8099	Health & allied services, nec		
		SONIQUE SURGICAL SYSTEMS, INC.	3
Recreational Goods Manufacturing			39
3942	Dolls & stuffed toys		
3944	Games, toys & children's vehicles, except dolls & bicycles		
3949	Sporting & athletic goods, nec		
		CALLAWAY GOLF COMPANY	19
		CARBITE, INC.	2
		TAYLOR MADE GOLF COMPANY, INC.	12
		UNDERWATER KINETICS	1
		ZEVO GOLF CO., INC.	5
Software and Computer Services			63
7371	Computer programming services		
		IMAGEWARE SOFTWARE, INC.	5
		RETICULAR SYSTEMS, INC.	4
7372	Prepackaged software		
		CARDIFF SOFTWARE, INC.	2
7373	Computer integrated systems design		
		APPLIED DATA TECHNOLOGY, INC.	2
		AUTODESK, INC.	1
		*SCIENCE APPLICATIONS INTERNATIONAL CORPORATION (1/2 - see also 3674)	25
7374	Computer processing & data prep. services		
		FAIRBANKS SYSTEMS GROUP	1
7379	Computer related services, nec		
		HYPERFORM TECHNOLOGIES, INC.	1
		ORINCON TECHNOLOGIES, INC.	1
		PREDICATE LOGIC, INC.	1
8711	Engineering services (5%)		

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Cluster SIC	Sector Description	COMPANY	Number of Patents 1990-99
		INTERLOG, INC.	1
		NURLOGIC DESIGN, INC.	1
		ORINCON CORPORATION	1
8731	Commercial physical/biol. research (15%)		
		BOIT, INC.	1
		INNOVA LABORATORIES, INC.	3
		LEIGH AEROSYSTEMS CORPORATION	2
		NANOGEN, INC.	8
		TOMINY, INC.	1
		TORANAGA TECHNOLOGIES, INC.	4
		*UNIVERSITY OF CALIFORNIA, THE REGENTS OF (SIC 8221, grouped here with 8731)	194
		VOLUTION	1
Visitor Industry Services			0
4489	Water passenger transportation, nec		
4499	Water transportation services, nec		
4512	Air transportation, scheduled		
4581	Airports, flying fields, & airport terminal services		
4724	Travel agencies		
4725	Tour operators		
5812	Eating places (55%)		
5813	Drinking places (55%)		
7011	Hotels & motels		
7021	Rooming & boarding houses		
7032	Sporting & recreational camps		
7033	Trailer parks & campsites		
7041	Organization hotels & lodging house		
7514	Passenger car rental		

Utility Patents Awarded to San Diego Organizations: 1990 - 1999

Seq #	Company	# Pat	SIC	Cluster
1	~Individually Owned Patent	2800	Indv	
2	HEWLETT-PACKARD COMPANY	421	3577	Computer & Electronics Mfg
3	UNITED STATES OF AMERICA, NAVY	345	D	Defense & Transportation Mfg
4	QUALCOMM, INC.	292	4812	Communications
5	THE SCRIPPS RESEARCH INSTITUTE	232	8733	Biotechnology & Pharmaceuticals
6	UNIVERSITY OF CALIFORNIA, THE REGENTS OF	194	8221	60% Biotech / 15% Software / 25% Comm
7	SUNDSTRAND CORPORATION	187	3724	Defense & Transportation Mfg
8	ISIS PHARMACEUTICALS, INC.	184	2834	Biotechnology & Pharmaceuticals
9	EASTMAN KODAK COMPANY	152	3861	
10	SALK INSTITUTE FOR BIOLOGICAL STUDIES	151	8733	Biotechnology & Pharmaceuticals
11	MYCOGEN CORPORATION	120	700	
12	HUGHES AIRCRAFT COMPANY	113	3812	Defense & Transportation Mfg
13	GENERAL ATOMIC COMPANY	110	4899 and D	Communications & Defense Mfg
14	LA JOLLA CANCER RESEARCH FOUNDATION	109	8733	Biotechnology & Pharmaceuticals
15	GEN-PROBE INC.	108	2835	Biotechnology & Pharmaceuticals
16	GENERAL INSTRUMENT CORPORATION	104	3663	Communications
17	NCR CORPORATION	87	3578	
18	SOLAR TURBINES INC.	81	3511	Defense & Transportation Mfg
19	ALARIS MEDICAL SYSTEMS, INC. (formerly IVAC and IMED corporations)	78	3841	Biomedical Products
20	UNISYS CORPORATION	68	3571	Computer & Electronics Mfg
21	CYMER, INC.	60	3674	Computer & Electronics Mfg
22	SONY CORPORATION	54	3651	Computer & Electronics Mfg
23	MEDTRONIC INC.	49	3841	Biomedical Products
24	STRATAGENE	46	3826	Environmental Technology
25	CORVAS INTERNATIONAL, INC.	45	8733	Biotechnology & Pharmaceuticals
26	ROHR, INC.	45	3728	Defense & Transportation Mfg
27	SCRIPPS CLINIC AND RESEARCH FOUNDATION	44	8733	Biotechnology & Pharmaceuticals
28	ALLIANCE PHARMACEUTICAL CORPORATION	41	2834	Biotechnology & Pharmaceuticals
29	PROXIMA CORPORATION	41	3577	Computer & Electronics Mfg
30	TRW INC.	41	3714	
31	AGOURON PHARMACEUTICALS, INC.	39	2834	Biotechnology & Pharmaceuticals
32	BIOMAGNETIC TECHNOLOGIES, INC.	38	3845	Biomedical Products
33	SIBIA NEUROSCIENCES, INC.	36	2834	Biotechnology & Pharmaceuticals
34	BROOKTREE CORPORATION	35	3674	Computer & Electronics Manufacturing
35	INTERVENTIONAL TECHNOLOGIES INC.	33	3841	Biomedical Products
36	MOLECULAR BIOSYSTEMS, INC.	33	2835	Biotechnology & Pharmaceuticals
37	NOKIA MOBILE PHONES LTD.	33	3663	Communications
38	GENERAL DYNAMICS CORP., SPACE SYSTEMS DIV.	31	D	Defense & Transportation Mfg
39	PURITAN-BENNETT CORPORATION	30	3842	Biomedical Products
40	JOHNSON MATTHEY INC.	29	2819	Biotechnology & Pharmaceuticals
41	LITEL INSTRUMENTS, INC.	29	3827	Biomedical Products
42	BIOSITE DIAGNOSTICS, INC.	27	2835	Biotechnology & Pharmaceuticals
43	HUNTER INDUSTRIES, INC.	27	3432	
44	LIGAND PHARMACEUTICALS INC.	27	2834	Biotechnology & Pharmaceuticals
45	MCDONNELL DOUGLAS CORPORATION	26	3721	Defense & Transportation Mfg
46	SCIENCE APPLICATIONS INTERNATIONAL CORPORATION	25	3674 and 7373	Computer & Electronics Mfg. Software & Comprr Serv
47	AIR PRODUCTS AND CHEMICALS, INC.	24	2813	
48	PHASE METRICS, INC.	23	3825	Computer & Electronics Mfg

Utility Patents Awarded to San Diego Organizations: 1990 - 1999

Seq #	Company	# Pat	SIC	Cluster
49	SYNTRO CORPORATION	23	2836	Biotechnology & Pharmaceuticals
50	GENERAL DYNAMICS, CONVAIR DIVISION	22	D	Defense & Transportation Mfg
51	IDEC PHARMACEUTICAL CORPORATION	21	2836	Biotechnology & Pharmaceuticals
52	MAXWELL LABORATORIES, INC.	21	3571	Computer & Electronics Mfg
53	CYTEL CORPORATION	20	2834	Biotechnology & Pharmaceuticals
54	MERCK + CO., INC.	20	2834	Biotechnology & Pharmaceuticals
55	ADVANCED TISSUE SCIENCES, INC.	19	2836	Biotechnology & Pharmaceuticals
56	BREG, INC.	19	3842	Biomedical Products
57	CALLAWAY GOLF COMPANY	19	3949	Recreational Goods Mfg.
58	GENERAL DYNAMICS CORP. ELECTRONICS DIVISION	19	D	Defense & Transportation Mfg
59	HUGHES ELECTRONICS CORPORATION	19	4899	Communications
60	HUGHES-JVC TECHNOLOGY CORPORATION	19	3861	
61	SALK INSTITUTE BIOTECHNOLOGY/INDUSTRIAL ASSOCIATES, INC.	19	2834	Biotechnology & Pharmaceuticals
62	WATKINS MANUFACTURING COMPANY	19	3088	
63	AMYLIN PHARMACEUTICALS, INC.	18	8733	Biotechnology & Pharmaceuticals
64	GENETRONICS, INC.	18	8733	Biotechnology & Pharmaceuticals
65	HUGHES ELECTRONIC DEVICES CORPORATION	18	3663	Communications
66	IOMEGA CORPORATION	17	3572	Computer & Electronics Mfg
67	LA JOLLA PHARMACEUTICAL COMPANY	17	2836	Biotechnology & Pharmaceuticals
68	PULSE ENGINEERING INC.	17	3679	Computer & Electronics Mfg
69	QUIDEL CORPORATION	16	2835	Biotechnology & Pharmaceuticals
70	APPLIED DIGITAL ACCESS, INC.	15	3825	Computer & Electronics Mfg
71	RAYTHEON COMPANY	15	3812	Defense & Transportation Mfg
72	VICAL INC.	15	2836	Biotechnology & Pharmaceuticals
73	BUCK KNIVES, INC.	14	3421	
74	ELECTRO SCIENTIFIC INDUSTRIES, INC.	14	3690	
75	TACAN CORPORATION	14	3669	Communications
76	THE IMMUNE RESPONSE CORPORATION	14	2834	Biotechnology & Pharmaceuticals
77	THERMOTREX CORPORATION	14	3844	Biomedical Products
78	BAXTER INTERNATIONAL INC.	13	3841	Biomedical Products
79	GENTA INC.	13	2836	Biotechnology & Pharmaceuticals
80	PEREGRINE SEMICONDUCTOR CORPORATION	13	3674	Computer & Electronics Mfg
81	REPUBLIC TOOL + MANUFACTURING CORPORATION	13	3524	
82	TREGA BIOSCIENCES, INC.	13	2836	Biotechnology & Pharmaceuticals
83	DIVERSA CORPORATION	12	2836	Biotechnology & Pharmaceuticals
84	FLUID COMPONENTS, INC.	12	3823	Environmental Technology
85	GENSIA PHARMACEUTICALS, INC.	12	2834	Biotechnology & Pharmaceuticals
86	NATIONAL SEMICONDUCTOR CORPORATION	12	3674	Computer & Electronics Mfg
87	TAYLOR MADE GOLF COMPANY, INC.	12	3949	Recreational Goods Mfg.
88	CONNER PERIPHERALS, INC.	11	3572	Computer & Electronics Mfg
89	DEPOTECH CORPORATION	11	2834	Biotechnology & Pharmaceuticals
90	GENSIA SICOR INC.	11	2834	Biotechnology & Pharmaceuticals
91	HYUNDAI ELECTRONICS AMERICA	11	5045	
92	ONTOGEN CORPORATION	11	8733	Biotechnology & Pharmaceuticals
93	PROTEIN POLYMER TECHNOLOGIES, INC.	11	8733	Biotechnology & Pharmaceuticals
94	ABBOTT LABORATORIES	10	2836	Biotechnology & Pharmaceuticals
95	ANACOMP, INC.	10	3572	Computer & Electronics Mfg
96	GENERAL DYNAMICS CORPORATION	10	6531	
97	HUGHES MISSILE SYSTEMS COMPANY	10	D	Defense & Transportation Mfg
98	IXSYS, INC.	10	2834	Biotechnology & Pharmaceuticals
99	LOCKHEED MARTIN CORPORATION	10	3760	
100	NEXTEC APPLICATIONS, INC.	10	2295	
101	PRYOR PRODUCTS, INC.	10	5932	

Utility Patents Awarded to San Diego Organizations: 1990 - 1999

Seq #	Company	# Pat	SIC	Cluster
102	SIGNAL PHARMACEUTICALS, INC.	10	2834	Biotechnology & Pharmaceuticals
103	VIA MEDICAL CORPORATION	10	3841	Biomedical Products
104	APPLIED MICRO CIRCUITS CORPORATION	9	3674	Computer & Electronics Manufacturing
105	MOTOROLA, INC.	9	3663	Communications
106	NELLCOR PURITAN BENNETT INC.	9	3845	Biomedical Products
107	NUTRITION 21	9	5159	
108	TEMPO RESEARCH CORPORATION	9	3825	Computer & Electronics Mfg
109	AMERICAN TECHNOLOGY CORPORATION	8	3669	Communications
110	NANOGEN, INC.	8	8731	60% Biotech / 15% Software / 25% Communications
111	SENDX MEDICAL, INC.	8	3823	Environmental Technology
112	TEXAS BIOTECHNOLOGY CORPORATION	8	8734	Biotechnology & Pharmaceuticals
113	THERMOSCAN INC.	8	3841	Biomedical Products
114	TITAN CORPORATION	8	3663	Communications
115	HONEYWELL INC.	7	3822	
116	HOUGHTEN PHARMACEUTICALS, INC.	7	2835	Biotechnology & Pharmaceuticals
117	SOLANA TECHNOLOGY DEVELOPMENT CORPORATION	7	6794	
118	XEROX CORPORATION	7	3579	
119	XYTRONYX, INC.	7	3678	Computer & Electronics Mfg
120	COMSTREAM CORPORATION	6	3661	Communications
121	JABRA CORPORATION	6	3679	Computer & Electronics Mfg
122	PALOMAR TECHNOLOGIES CORPORATION	6	3679	Computer & Electronics Mfg
123	VORAD SAFETY SYSTEMS, INC.	6	3714	
124	EBERT COMPOSITES CORPORATION	5	5031	
125	GAMMA-METRICS	5	3823	Environmental Technology
126	IMAGEWARE SOFTWARE, INC.	5	7371	Software and Computer Services
127	LSI LOGIC CORPORATION	5	3674	Computer & Electronics Mfg
128	MEDMETRIC CORPORATION	5	3842	Biomedical Products
129	NEUROCRINE BIOSCIENCES, INC.	5	2834	Biotechnology & Pharmaceuticals
130	PACIFIC BIOTECH, INC.	5	2835	Biotechnology & Pharmaceuticals
131	PACIFIC TRINETICS CORPORATION	5	3674	Computer & Electronics Mfg
132	PYXIS CORPORATION	5	3577	Computer & Electronics Mfg
133	ROCKWELL INTERNATIONAL CORPORATION	5	3721	Defense & Transportation Mfg
134	SAN DIEGO STATE UNIVERSITY	5	9200	
135	SPECTRUM CONCEPTS, INC.	5	3089	
136	SURFACE OPTICS CORPORATION	5	3827	Biomedical Products
137	UNITED STATES OF AMERICA, AIR FORCE	5	D	Defense & Transportation Mfg
138	ZEVO GOLF CO., INC.	5	3949	Recreational Goods Mfg.
139	ACCULASE, INC.	4	3845	Biomedical Products
140	ADVANTAGE LIFT SYSTEMS, INC.	4	3613	
141	AMERICAN GREETINGS CORPORATION	4	5947	
142	AMERICAN INNOTEX, INC.	4	7359	
143	BRILES RIVET CORPORATION	4	3728	Defense & Transportation Mfg
144	CIRCAID MEDICAL PRODUCTS, INC.	4	5047	
145	JAYCOR	4	D	Defense & Transportation Mfg
146	METABASIS THERAPEUTICS, INC.	4	8733	Biotechnology & Pharmaceuticals
147	PLOP GOLF COMPANY	4	5091	
148	RETICULAR SYSTEMS, INC.	4	7371	Software and Computer Services
149	STRATEDGE CORPORATION	4	3679	Computer & Electronics Mfg
150	SUN MICROSYSTEMS, INC.	4	3571	Computer & Electronics Mfg
151	THE UPPER DECK COMPANY	4	2752	Business Services

Utility Patents Awarded to San Diego Organizations: 1990 - 1999

Seq #	Company	# Pat	SIC	Cluster
152	TORANAGA TECHNOLOGIES, INC.	4	8731	60% Biotech / 15% Software / 25% Communications
153	WATER SAVERS, INC.	4	1711	
154	ACUPRINT, INC.	3	5045	
155	AMISTAR CORPORATION	3	3679	Computer & Electronics Mfg
156	CUBIC CORPORATION	3	3699	Computer & Electronics Mfg
157	DEEPSEA POWER & LIGHT, INC.	3	3827	Biomedical Products
158	ESCO CORPORATION	3	3531	
159	FOODCO CORPORATION	3	3556	
160	GDE SYSTEMS, INC.	3	3812	Defense & Transportation Mfg
161	INNOVA LABORATORIES, INC.	3	8731	60% Biotech / 15% Software / 25% Communications
162	NOKIA TELECOMMUNICATIONS, INC.	3	3663	Communications
163	RAVI & ASSOCIATES	3	8742	Business Services
164	RAYZIST PHOTOMASK, INC.	3	2675	
165	REMEC, INC.	3	3663	Communications
166	SONIQUE SURGICAL SYSTEMS, INC.	3	8099	Medical Services
167	UNIQUE FUNCTIONAL PRODUCTS	3	3799	
168	UROS CORPORATION	3	3841	Biomedical Products
169	ZEST ANCHORS, INC.	3	5047	
170	APPLIED DATA TECHNOLOGY, INC.	2	7373	Software and Computer Services
171	ARCOA INDUSTRIES, INC.	2	3423	
172	AXIOM BIOTECHNOLOGIES, INC.	2	2834	Biotechnology & Pharmaceuticals
173	BIORESEARCH, INC.	2	2836	Biotechnology & Pharmaceuticals
174	CARBITE, INC.	2	3949	Recreational Goods Manufacturing
175	CARDIFF SOFTWARE, INC.	2	7372	Software and Computer Services
176	CHROMAGEN, INC.	2	3826	Environmental Technology
177	CINTAS TECHNOLOGIES, INC.	2	5065	
178	DELTA DESIGN INC.	2	3569	Environmental Technology
179	DYNOTEC CORPORATION	2	3841	Biomedical Products
180	ELECTRON VISION CORPORATION	2	3671	Computer & Electronics Mfg
181	GENSURA LABORATORIES, INC.	2	2835	Biotechnology & Pharmaceuticals
182	GEOSCIENCE LIMITED	2	8734	Biotechnology & Pharmaceuticals
183	HARKEN, INC.	2	5088	
184	HARTWELL MEDICAL CORPORATION	2	5047	
185	HOLOMETRICS, INC.	2	3827	Biomedical Products
186	INVITROGEN CORPORATION	2	2835	Biotechnology & Pharmaceuticals
187	KINETIKOS MEDICAL, INC.	2	3845	Biomedical Products
188	LEIGH AEROSYSTEMS CORPORATION	2	8731	60% Biotech / 15% Software / 25% Communications
189	LXN CORPORATION	2	3845	Biomedical Products
190	MICROBICS CORPORATION	2	3823	Environmental Technology
191	MYELOS NEUROSCIENCES CORPORATION	2	2835	Biotechnology & Pharmaceuticals
192	NATIONAL INK INC.	2	2899	Biotechnology & Pharmaceuticals
193	PACIFIC DEVICE, INC.	2	3841	Biomedical Products
194	PATRIOT SCIENTIFIC CORPORATION	2	5065	
195	SAHAR TECHNOLOGIES, INC.	2	3599	
196	SQUARE D COMPANY	2	3613	
197	VIASAT, INC.	2	3663	Communications
198	VISTA MEDICAL TECHNOLOGIES, INC.	2	8741	Business Services
199	XSCRIBE CORPORATION	2	3672	Computer & Electronics Manufacturing
200	ACCUMETRICS, INC.	1	3829	Environmental Technology

Utility Patents Awarded to San Diego Organizations: 1990 - 1999

Seq #	Company	# Pat	SIC	Cluster
201	ACI MEDICAL, INC.	1	3089	
202	AIR LIQUIDE AMERICA CORPORATION	1	2813	
203	ALVARADO ORTHOPEDIC	1	8011	Medical Services
204	AMERICAN MANUFACTURING CONCEPTS, INC.	1	2353	
205	AMERICAN NATIONAL RED CROSS	1	8322	
206	ASTROTERRA CORPORATION	1	3827	Biomedical Products
207	AT&T CORPORATION	1	4813	Communications
208	AUTODESK, INC.	1	7373	Software and Computer Services
209	BASIC NEEDS, INC.	1	2591	
210	BOIT, INC.	1	8731	60% Biotech / 15% Software / 25% Communications
211	C.C. IMEX	1	3826	Environmental Technology
212	CASIO MANUFACTURING CORPORATION	1	3931	
213	CHUGAI BIOPHARMACEUTICALS, INC.	1	2834	Biotechnology & Pharmaceuticals
214	CLEAN TEAM COMPANY	1	2842	
215	CLINICON CORPORATION	1	5047	
216	CREATIVE LEARNING SYSTEMS, INC.	1	5734	
217	CUBIC COMMUNICATIONS, INC.	1	3663	Communications
218	DELECTABLE DISPLAY, INC.	1	5199	
219	EDDY PUMP CORPORATION	1	5084	
220	ENTEK MANUFACTURING INC.	1	3531	
221	ERICOMP, INC.	1	3822	
222	FAIRBANKS SYSTEMS GROUP	1	7374	Software and Computer Services
223	FAIRCHILD SEMICONDUCTOR CORPORATION	1	3674	Computer & Electronics Mfg
224	HODGE PRODUCTS, INC.	1	3429	
225	HOWARD HUGHES MEDICAL INSTITUTE	1	8733	Biotechnology & Pharmaceuticals
226	HYPERFORM TECHNOLOGIES, INC.	1	7379	Software and Computer Services
227	ICHOR MEDICAL SYSTEMS, INC.	1	8733	Biotechnology & Pharmaceuticals
228	INTERLOG, INC.	1	8711	10% Communications / 5% Software
229	KAHL SCIENTIFIC INSTRUMENT CORPORATION	1	3829	Environmental Technology
230	KING LEE TECHNOLOGIES	1	2899	Biotechnology & Pharmaceuticals
231	KNEE-PRO INDUSTRIES, INC.	1	3089	
232	MACHINE VISION PRODUCTS, INC.	1	3569	Environmental Technology
233	MARITIME RESOURCE GROUP	1	5099	
234	MAXWELL ENERGY PRODUCTS, INC.	1	3675	Computer & Electronics Mfg
235	MESA RIDGE TECHNOLOGIES, INC.	1	3577	Computer & Electronics Mfg
236	METALLIC POWER, INC.	1	3692	
237	NEVER COMPROMISE, INC.	1	5091	
238	NEW AGE PRODUCTS, INC.	1	5719	
239	NURLOGIC DESIGN, INC.	1	8711	10% Communications / 5% Software
240	OFFSHORE MODEL BASIN	1	8734	Biotechnology and Pharmaceuticals
241	ORINCON CORPORATION	1	8711	10% Communications / 5% Software
242	ORINCON TECHNOLOGIES, INC.	1	7379	Software and Computer Services
243	ORMCO CORPORATION	1	8072	Medical Services
244	PAUL ECKE RANCH, INC.	1	181	Horticulture
245	PHARMINGEN	1	2836	Biotechnology & Pharmaceuticals
246	POLARIS POOL SYSTEMS, INC.	1	3589	Environmental Technology
247	POWER PLUS CORPORATION	1	7389	Business Services
248	POWERPAK EQUIPMENT	1	5063	
249	PRECISION ENGINE CONTROLS CORPORATION	1	3625	

Utility Patents Awarded to San Diego Organizations: 1990 - 1999

Seq #	Company	# Pat	SIC	Cluster
250	PREDICATE LOGIC, INC.	1	7379	Software and Computer Services
251	PULSED POWER TECHNOLOGIES, INC.	1	8734	Biotechnology & Pharmaceuticals
252	RANDALL PRODUCTS INTERNATIONAL	1	2844	
253	REFLEX CORPORATION	1	2399	
254	SAN DIEGO REGIONAL CANCER CENTER	1	8733	Biotechnology & Pharmaceuticals
255	SANYO ENERGY (U.S.A.) CORPORATION	1	5063	
256	SILICON PACKAGING TECHNOLOGY	1	3672	Computer & Electronics Mfg
257	SUNREZ CORPORATION	1	3087	
258	SYNTRON BIORESEARCH, INC.	1	2835	Biotechnology & Pharmaceuticals
259	SYSTECH CORPORATION	1	3669	Communications
260	TEAL ELECTRONICS CORPORATION	1	3612	
261	TOMINY, INC.	1	8731	60% Biotech / 15% Software / 25% Communications
262	T-SYSTEMS CORPORATION	1	3052	
263	UNDERWATER KINETICS	1	3949	Recreational Goods Mfg.
264	UNIVERSAL CONTAINER, INC.	1	5113	
265	VANTAGE ASSOCIATES, INC.	1	3089	
266	VISMED, INC.	1	3827	Biomedical Products
267	VOLUTION	1	8731	60% Biotech / 15% Software / 25% Communications
268	WYNTEK DIAGNOSTICS, INC.	1	5047	
269	XITRON TECHNOLOGIES	1	3825	Computer & Electronics Mfg
270	YOUNGDALE MANUFACTURING CORPORATION	1	3429	
271	Z-COMMUNICATIONS, INC.	1	3825	Computer & Electronics Mfg
STATISTICS				
	Category		Share	
Patent Statistics				
	<i>Patents to organizations with assigned SIC Codes</i>	5,420	49.3%	
	Individually Owned Patents	2,800	25.5%	
	<i>Subtotal</i>	8,220	74.8%	
	Other - patents to organizations without assigned SIC Codes	2,764	25.2%	
	TOTAL	10,984	100%	
Organization Statistics				
	Number of organizations with assigned SIC codes	271	18.5%	
	Number of organizations without assigned SIC Codes	1,192	81.5%	
	TOTAL (excludes individually owned)	1,463	100%	

San Diego Utility Patents by Year & Cluster Based on The Organization's SIC Code

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total	Share
Biomedical Products	20	17	30	46	49	30	35	30	57	48	362	3.3%
Biotechnology and Pharmaceuticals	31	45	67	102	93	108	173	262	391	359	1,629	14.8%
Business Services				2		1	2	2	2	1	10	0.1%
Communications	20	30	49	28	43	45	74	78	118	147	631	5.7%
Computer and Electronics Mfg.	49	46	37	44	66	84	113	134	145	190	907	8.3%
Defense and Transportation Mfg.	116	159	151	112	117	75	71	60	57	55	970	8.8%
Entertainment and Amusement											-	0.0%
Environmental Technology	2	2	7	3	10	8	14	7	14	15	82	0.7%
Financial Services											-	0.0%
Fruits and Vegetables											-	0.0%
Horticulture											-	0.0%
Medical Services			2				1		1	1	5	0.0%
Recreational Goods Mfg.		3		1	3		1	2	17	12	39	0.4%
Software and Computer Services	2	3	3	4	5	5	8	10	12	10	63	0.6%
Visitor Industry Services											-	0.0%
Total - All Clusters	239	305	345	341	386	355	491	584	814	837	4,697	42.8%
Individual Patents	270	297	274	253	255	257	290	243	316	345	2,800	25.5%
Clusters + Individuals	509	602	619	594	641	612	781	827	1,130	1,182	7,497	68.3%
Other or not classified	252	268	241	281	296	296	334	409	543	567	3,487	31.7%
TOTAL	761	870	860	875	937	908	1,115	1,236	1,673	1,749	10,984	100.0%

Plant Patents Awarded to San Diego Organizations, 1990-1999

Number	Company	SIC	Cluster
47	PAUL ECKE RANCH, INC.	0181	Horticulture
15	DEVOR NURSERIES, INC.	5261	
9	NATIVE PLANTS, INC.	5261	
8	TERRA NIGRA HOLDING B.V.	5193	
8	KENT'S BROMELIAD NURSERY, INC.	0181	Horticulture
3	HINES NURSERIES INC.	5193	
1	PONTO NURSERY, INC.	0181	Horticulture
1	NOR'EAST MINIATURE ROSES, INC.	5261	
92	Total		

STATISTICS

Category	Number	Share
Patent Statistics		
<i>Patents to organizations with assigned SIC Codes</i>	92	73.6%
Individually Owned Patents	33	26.4%
TOTAL	125	100.0%
Company Statistics		
Number of organizations with assigned industry codes	8	100.0%
Number of organizations without assigned industry codes	0	0.0%
TOTAL (excludes individually owned)	8	100.0%

Source: US Office of Patent and Trademark

Employment Data for San Diego Region's Technology Clusters

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Employment By Technology Cluster										
Biomedical Products	7,645	7,184	7,351	7,125	6,559	6,431	6,135	5,765	6,444	6,256
Biotechnology & Pharmaceuticals	12,311	14,881	16,266	16,338	17,235	18,629	20,371	23,008	21,385	23,056
Communications	12,340	13,443	14,144	14,721	14,789	16,422	18,174	20,646	25,771	24,878
Computer & Electronics Manufacturing	23,427	20,979	21,124	20,022	20,303	21,679	22,990	25,058	23,734	24,169
Defense Manufacturing	40,844	35,143	28,435	22,997	20,466	18,953	19,578	19,113	19,559	18,149
Environmental Technology	3,238	3,368	3,157	3,150	3,356	4,154	4,280	4,469	4,627	4,580
Horticulture	6,097	5,995	5,620	5,889	5,900	6,243	6,175	6,325	6,483	6,644
Recreational Goods	2,216	2,410	2,930	3,770	5,081	5,270	5,631	6,195	4,598	4,939
Software & Computer Services	8,935	9,510	10,315	11,422	12,367	13,645	15,453	17,660	18,363	21,290
Technology Cluster Employment:	117,053	112,913	109,342	105,434	106,056	111,426	118,788	128,239	130,964	133,961
Total Regional Employment:	976,975	957,505	949,040	960,927	982,357	1,016,423	1,060,167	1,115,048	1,157,670	1,198,357
Technology Share of Region:	12.0%	11.8%	11.5%	11.0%	10.8%	11.0%	11.2%	11.5%	11.3%	11.2%
Non-Technology Employment:	859,922	844,592	839,698	855,493	876,301	904,997	941,379	986,809	1,026,706	1,064,396
Employment Shares By Technology Cluster										
Biomedical Products	6.5%	6.4%	6.7%	6.8%	6.2%	5.8%	5.2%	4.5%	4.9%	4.7%
Biotechnology & Pharmaceuticals	10.5%	13.2%	14.9%	15.5%	16.3%	16.7%	17.1%	17.9%	16.3%	17.2%
Communications	10.5%	11.9%	12.9%	14.0%	13.9%	14.7%	15.3%	16.1%	19.7%	18.6%
Computer & Electronics Manufacturing	20.0%	18.6%	19.3%	19.0%	19.1%	19.5%	19.4%	19.5%	18.1%	18.0%
Defense Manufacturing	34.9%	31.1%	26.0%	21.8%	19.3%	17.0%	16.5%	14.9%	14.9%	13.5%
Environmental Technology	2.8%	3.0%	2.9%	3.0%	3.2%	3.7%	3.6%	3.5%	3.5%	3.4%
Horticulture	5.2%	5.3%	5.1%	5.6%	5.6%	5.6%	5.2%	4.9%	5.0%	5.0%
Recreational Goods	1.9%	2.1%	2.7%	3.6%	4.8%	4.7%	4.7%	4.8%	3.5%	3.7%
Software & Computer Services	7.6%	8.4%	9.4%	10.8%	11.7%	12.2%	13.0%	13.8%	14.0%	15.9%
Technology Cluster Employment:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Source:	California Employment Development Department									

Payroll Data for San Diego Region's Technology Clusters

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Payroll By Technology Cluster (in millions of Nominal Dollars)										
Biomedical Products	245.3	235.2	245.2	242.9	251.5	253.9	248.8	239.4	263.3	289.2
Biotechnology & Pharmaceuticals	466.5	604.9	679.4	712.6	795.8	936.2	1,125.0	1,287.3	1,287.4	1,619.9
Communications	496.1	570.8	641.4	648.6	701.9	795.6	895.5	1,060.3	2,739.3	2,893.4
Computer & Electronics Manufacturing	900.0	824.7	843.2	858.4	902.0	1,083.1	1,212.0	1,355.0	1,463.9	1,755.1
Defense Manufacturing	1,498.7	1,458.1	1,144.3	965.1	878.6	806.0	913.6	1,004.6	996.5	963.9
Environmental Technology	104.0	115.5	114.1	115.7	126.9	161.0	176.7	193.0	202.2	208.1
Horticulture	95.0	96.3	91.0	96.6	101.1	109.4	118.5	139.3	142.5	148.7
Recreational Goods	51.0	65.8	102.2	139.4	164.6	195.7	216.3	225.1	183.5	208.4
Software & Computer Services	403.3	423.4	475.0	547.4	638.3	721.1	881.0	1,126.6	1,285.5	1,689.5
Technology Cluster Payroll:	4,260.0	4,394.6	4,335.9	4,326.7	4,560.6	5,062.0	5,787.6	6,630.6	8,564.2	9,776.1
Total Regional Payroll:	24,423	25,106	25,151	26,195	27,368	29,266	32,304	35,872	40,187	45,024
Technology Share of Region:	17.4%	17.5%	17.2%	16.5%	16.7%	17.3%	17.9%	18.5%	21.3%	21.7%
Non-Technology Payroll:	20,163	20,712	20,815	21,868	22,808	24,204	26,516	29,242	31,622	35,248
Payroll Shares By Technology Cluster:										
Biomedical Products	5.8%	5.4%	5.7%	5.6%	5.5%	5.0%	4.3%	3.6%	3.1%	3.0%
Biotechnology & Pharmaceuticals	10.9%	13.8%	15.7%	16.5%	17.4%	18.5%	19.4%	19.4%	15.0%	16.6%
Communications	11.6%	13.0%	14.8%	15.0%	15.4%	15.7%	15.5%	16.0%	32.0%	29.6%
Computer & Electronics Manufacturing	21.1%	18.8%	19.4%	19.8%	19.8%	21.4%	20.9%	20.4%	17.1%	18.0%
Defense Manufacturing	35.2%	33.2%	26.4%	22.3%	19.3%	15.9%	15.8%	15.2%	11.6%	9.9%
Environmental Technology	2.4%	2.6%	2.6%	2.7%	2.8%	3.2%	3.1%	2.9%	2.4%	2.1%
Horticulture	2.2%	2.2%	2.1%	2.2%	2.2%	2.2%	2.0%	2.1%	1.7%	1.5%
Recreational Goods	1.2%	1.5%	2.4%	3.2%	3.6%	3.9%	3.7%	3.4%	2.1%	2.1%
Software & Computer Services	9.5%	9.6%	11.0%	12.7%	14.0%	14.2%	15.2%	17.0%	15.0%	17.3%
Technology Cluster Payroll:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Source:	California Employment Development Department									

Number of Firms in San Diego Region's Technology Clusters

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Firms By Technology Cluster										
Biomedical Products	111	107	117	121	127	131	135	127	137	125
Biotechnology & Pharmaceuticals	310	314	321	323	365	397	408	449	507	540
Communications	280	318	338	363	405	442	469	522	551	525
Computer & Electronics Manufacturing	296	296	313	325	328	346	338	338	332	302
Defense Manufacturing	152	159	165	160	141	139	132	138	145	151
Environmental Technology	84	84	87	87	102	109	106	113	123	109
Horticulture	518	510	522	507	521	518	484	509	504	472
Recreational Goods	89	94	105	105	119	121	129	137	141	124
Software & Computer Services	572	599	657	714	887	990	1,024	1,251	1,397	1,440
Technology Cluster:	2,412	2,481	2,625	2,705	2,995	3,193	3,225	3,584	3,837	3,788
Total Number Regional Firms:	65,518	67,623	69,153	66,742	71,680	69,144	66,172	72,540	75,147	72,365
Technology Share of Region:	3.7%	3.7%	3.8%	4.1%	4.2%	4.6%	4.9%	4.9%	5.1%	5.2%
Non-Technology Firms:	63,106	65,142	66,528	64,037	68,685	65,951	62,947	68,956	71,310	68,577
Firms Shares By Technology Cluster										
Biomedical Products	4.6%	4.3%	4.5%	4.5%	4.2%	4.1%	4.2%	3.5%	3.6%	3.3%
Biotechnology & Pharmaceuticals	12.9%	12.7%	12.2%	11.9%	12.2%	12.4%	12.7%	12.5%	13.2%	14.3%
Communications	11.6%	12.8%	12.9%	13.4%	13.5%	13.8%	14.5%	14.6%	14.4%	13.9%
Computer & Electronics Manufacturing	12.3%	11.9%	11.9%	12.0%	11.0%	10.8%	10.5%	9.4%	8.7%	8.0%
Defense Manufacturing	6.3%	6.4%	6.3%	5.9%	4.7%	4.4%	4.1%	3.9%	3.8%	4.0%
Environmental Technology	3.5%	3.4%	3.3%	3.2%	3.4%	3.4%	3.3%	3.2%	3.2%	2.9%
Horticulture	21.5%	20.6%	19.9%	18.7%	17.4%	16.2%	15.0%	14.2%	13.1%	12.5%
Recreational Goods	3.7%	3.8%	4.0%	3.9%	4.0%	3.8%	4.0%	3.8%	3.7%	3.3%
Software & Computer Services	23.7%	24.1%	25.0%	26.4%	29.6%	31.0%	31.8%	34.9%	36.4%	38.0%
Technology Cluster Firms:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Source:	California Employment Development Department									
Note:	Number firms in the Recreational Goods Manufacturing cluster in 1997 is an estimate									

Average Annual Wages for San Diego Technology Clusters and Non-Technology Employees

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Average Annual Wage By Technology Cluster										
Biomedical Products	\$ 32,091	\$ 32,746	\$ 33,359	\$ 34,088	\$ 38,339	\$ 39,481	\$ 40,556	\$ 41,529	\$ 40,856	\$ 46,227
Biotechnology & Pharmaceuticals	\$ 37,888	\$ 40,645	\$ 41,771	\$ 43,617	\$ 46,173	\$ 50,256	\$ 55,228	\$ 55,949	\$ 60,200	\$ 70,259
Communications	\$ 40,199	\$ 42,460	\$ 45,345	\$ 44,059	\$ 47,462	\$ 48,447	\$ 49,273	\$ 51,356	\$ 106,296	\$ 116,301
Computer & Electronics Manufacturing	\$ 38,418	\$ 39,311	\$ 39,918	\$ 42,872	\$ 44,429	\$ 49,959	\$ 52,716	\$ 54,074	\$ 61,679	\$ 72,616
Defense Manufacturing	\$ 36,694	\$ 41,489	\$ 40,244	\$ 41,965	\$ 42,930	\$ 42,525	\$ 46,667	\$ 52,562	\$ 50,949	\$ 53,111
Environmental Technology	\$ 32,120	\$ 34,283	\$ 36,151	\$ 36,746	\$ 37,806	\$ 38,765	\$ 41,296	\$ 43,183	\$ 43,709	\$ 45,429
Horticulture	\$ 15,589	\$ 16,064	\$ 16,188	\$ 16,396	\$ 17,130	\$ 17,517	\$ 19,188	\$ 22,018	\$ 21,986	\$ 22,383
Recreational Goods	\$ 23,025	\$ 27,286	\$ 34,896	\$ 36,983	\$ 32,388	\$ 37,143	\$ 38,420	\$ 36,340	\$ 39,916	\$ 42,197
Software & Computer Services	\$ 45,141	\$ 44,526	\$ 46,045	\$ 47,924	\$ 51,612	\$ 52,846	\$ 57,012	\$ 63,792	\$ 70,007	\$ 79,360
Technology Average Wage:	\$ 36,394	\$ 38,920	\$ 39,655	\$ 41,037	\$ 43,002	\$ 45,429	\$ 48,722	\$ 51,705	\$ 65,394	\$ 72,978
Non Technology Average Wage:	\$ 23,447	\$ 24,523	\$ 24,789	\$ 25,562	\$ 26,027	\$ 26,745	\$ 28,167	\$ 29,632	\$ 30,800	\$ 33,115
Wage Ratio: Tech / Non-Tech:	155.2%	158.7%	160.0%	160.5%	165.2%	169.9%	173.0%	174.5%	212.3%	220.4%
Average Wage for Entire Region:	\$ 24,999	\$ 26,221	\$ 26,502	\$ 27,260	\$ 27,860	\$ 28,793	\$ 30,470	\$ 32,171	\$ 34,713	\$ 37,571

Average Annual Growth Rates

Technology Cluster:	Employment			Payroll	Nominal Average Wages			Firms
	91 to 94	94 to 2000	91 to 2000		91 to 2000	91 to 94	94 to 2000	91 to 2000
Biomedical Products	-2.3%	-2.0%	-2.0%	2.0%	2.1%	5.9%	4.9%	1.4%
Biotechnology & Pharmaceuticals	10.9%	6.9%	9.7%	27.5%	5.0%	10.2%	9.5%	8.2%
Communications	6.4%	11.5%	11.3%	53.7%	3.2%	27.3%	21.0%	9.7%
Computer & Electronics Manufacturing	-4.8%	3.5%	0.4%	10.6%	3.9%	11.6%	9.9%	0.2%
Defense Manufacturing	-14.6%	-3.5%	-6.2%	-4.0%	4.8%	4.4%	5.0%	-0.1%
Environmental Technology	-0.9%	7.6%	4.6%	11.1%	4.8%	3.9%	4.6%	3.3%
Horticulture	-1.1%	2.1%	1.0%	6.3%	1.7%	6.1%	4.8%	-1.0%
Recreational Goods	23.4%	5.2%	13.7%	34.3%	20.2%	2.3%	9.3%	4.4%
Software & Computer Services	9.3%	14.4%	15.4%	35.4%	2.1%	10.9%	8.4%	16.9%
Technology Total:	-3.3%	4.5%	1.6%	14.4%	4.3%	13.0%	11.2%	6.3%
Non Technology:	-0.2%	4.1%	2.6%	8.3%	3.0%	4.9%	4.6%	1.2%
Region Total:	-0.5%	4.1%	2.5%	9.4%	3.0%	6.3%	5.6%	1.0%

Ratio of Utility Patents Per Employee By Cluster

Based on SIC Code of Company Holding Utility Patents

Total Utility Patents = 10,984

Cluster	Patents		Employees in 2000		Ratio
	Number	Shares	Number	Shares	Patents Per
	90 to 99	Shares	Number	Shares	1,000 Employee
Biotechnology & Pharmaceuticals	1,629	34.7%	23,056	7.8%	70.7
Defense & Transportation Mfg	970	20.6%	18,149	6.1%	53.4
Computer & Electronics Mfg	907	19.3%	24,169	8.2%	37.5
Communication	631	13.4%	24,878	8.4%	25.4
Biomedical Products	362	7.7%	6,256	2.1%	57.9
Environment Technology	82	1.7%	4,580	1.5%	17.9
Software & Computer Services	63	1.3%	21,290	7.2%	3.0
Recreational Goods Mfg	39	0.8%	4,939	1.7%	7.9
Business Services	10	0.2%	97,062	32.8%	0.1
Medical Services	5	0.1%	71,889	24.3%	0.1
Total	4,698	100.0%	296,268	100.0%	15.9
Patents Accounted For =	42.8%				

Ratio of Plant Patents Per Employee By Cluster

Based on SIC Code of Company Holding Plant Patents

Total Plant Patents = 125

Cluster	Patents		Employees in 2000		Ratio
	Number	Shares	Number	Shares	Patents Per
	90 to 99	Shares	Number	Shares	1,000 Employee
Horticulture	56	100.0%	6,644	100.0%	8.4
Patents Accounted For =	44.8%				

Source: All patent data from the Office of Patent and Trademark
All employment data from the California State Employment
Development Department

Notes: For utility patents, there are 2,800 patents assigned to individuals leaving 8,184 assigned to 1,463 organizations. Of this total, we are able to assign SIC codes to 267 organizations with 5,420 patents. Of that total, 86% are found in clusters [4,698 / 5,420].
For plant patents, there are 33 patents assigned to individuals leaving 92 assigned to 8 companies. Of this total, we are able to assign SIC codes to 8 companies with 92 patents. Of that total, 61% are found in the horticulture cluster [56 / 92].

R & D at Universities as a Share of Gross Metropolitan Product

Metropolitan Regions	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Atlanta, GA	0.39%	0.40%	0.39%	0.38%	0.39%	0.39%	0.39%	0.39%	0.38%	0.36%	
Austin-San Marcos, TX	1.70%	1.72%	1.54%	1.54%	1.41%	1.17%	1.11%	1.03%	0.98%	0.96%	
Baltimore, MD	1.23%	1.30%	1.32%	1.30%	1.32%	1.28%	1.27%	1.26%	1.24%	1.19%	
Boston, MA-NH NECMA	0.60%	0.62%	0.70%	0.72%	0.69%	0.67%	0.64%	0.65%	0.63%	0.62%	
Denver-Boulder, CO	0.42%	0.40%	0.41%	0.42%	0.46%	0.45%	0.43%	0.42%	0.44%	0.42%	
Houston, TX	0.13%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%	0.14%	0.13%	
Miami-Ft Lauderdale, FL	0.14%	0.14%	0.14%	0.17%	0.16%	0.16%	0.16%	0.16%	0.15%	0.15%	
Minneapolis-St.Paul, MN	0.45%	0.49%	0.44%	0.44%	0.39%	0.39%	0.37%	0.36%	0.34%	0.33%	
Norfolk-Va Beach VA	0.08%	0.08%	0.08%	0.10%	0.11%	0.11%	0.10%	0.11%	0.11%	0.12%	
Orange, CA	0.10%	0.11%	0.12%	0.13%	0.13%	0.13%	0.13%	0.12%	0.12%	0.12%	
Phoenix-Mesa, AZ	0.13%	0.13%	0.13%	0.11%	0.09%	0.11%	0.11%	0.09%	0.10%	0.10%	
Pittsburgh, PA	0.45%	0.46%	0.49%	0.52%	0.52%	0.50%	0.51%	0.50%	0.49%	0.52%	
Portland-Salem, OR-WA	0.16%	0.16%	0.17%	0.19%	0.20%	0.21%	0.20%	0.21%	0.21%	0.22%	
Raleigh-Durham, NC	1.91%	2.05%	2.03%	2.09%	2.14%	2.03%	2.00%	2.00%	2.02%	2.12%	
Sacramento, CA	0.57%	0.55%	0.56%	0.58%	0.56%	0.57%	0.56%	0.54%	0.54%	0.52%	
San Diego, CA	0.43%	0.47%	0.50%	0.53%	0.54%	0.56%	0.56%	0.51%	0.52%	0.53%	
San Francisco, CA	0.36%	0.39%	0.43%	0.45%	0.44%	0.44%	0.40%	0.39%	0.41%	0.42%	
San Jose, CA	0.65%	0.67%	0.78%	0.64%	0.64%	0.60%	0.60%	0.62%	0.60%	0.59%	
Seattle-Tacoma, WA	0.40%	0.43%	0.46%	0.47%	0.47%	0.50%	0.49%	0.45%	0.43%	0.45%	
Tampa-St. Pete., FL	0.18%	0.17%	0.15%	0.15%	0.16%	0.16%	0.16%	0.15%	0.15%	0.16%	
Washington, DC	0.23%	0.26%	0.27%	0.28%	0.25%	0.27%	0.28%	0.26%	0.26%	0.25%	
California	0.25%	0.26%	0.28%	0.28%	0.28%	0.28%	0.29%	0.29%	0.30%	0.30%	
United States	0.28%	0.29%	0.30%	0.30%	0.30%	0.30%	0.29%	0.29%	0.29%	0.30%	

Research Funding in San Diego County, 1993-1999

Type Organization	Billions \$	Share	Awards		Dollars Reported
			Average \$	Number	
Educational Institutions	1.55	25.5%	156,938	10,577	93.2%
Non-Profit Non-Education	0.82	13.5%	165,165	5,116	96.8%
Federal Government	0.28	4.7%	60,356	5,056	92.8%
Individual Business	3.26	53.8%	687,845	4,922	96.4%
State & Local Government	0.13	2.1%	1,149,572	113	100.0%
Private Educational Instit.	0.02	0.3%	202,728	87	100.0%
Other	0.00	0.0%	70,440	31	100.0%
Not Specified	0.00	0.0%	62,807	24	100.0%
Private Individual	0.00	0.0%	66,567	17	100.0%
Other Government	0.00	0.0%	99,933	4	100.0%
Total	6.06	100.0%	247,350	25,947	

Source:

Carolyn W.B. Lee & Mary L. Walshok, "A County Level Analysis of California's R&D Activity". A report prepared for the California Technology, Trade & Commerce Agency and the San Diego Regional Technology Alliance, forthcoming April, 2002. This report draws upon a Rand developed database, RaDiUS, which encompasses federal R&D funding across 17 agencies.

Research and Innovation at the University of California at San Diego												
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
R & D Expenditures [millions]	237.0	261.4	282.1	307.1	331.9	357.3	371.5	376.7	418.8	461.6		
US Patents Awarded	6	7	7	11	14	14	27	30	33	40	58	59
US Patents Filed						107	70	88	86	129	128	150
Licensing Income [millions]						2.97	3.68	4.28	8.33	6.15	9.05	8.35
Start-Up Companies Formed											5	10
Correlation Coefficient Between R&D & Patents:			0.949									
Sources:	R&D Expenditures: National Science Foundation											
	US Patents Awarded:			1990 to 1994 = US Office of Patent & Trademark								
				1995 to 2001 = UCSD Technology Transfer Office								
	Licensing Income: UCSD Technology Transfer Office											
Notes:	Income is all licensing income received by offices											
	Information is UCSD Campus Office and UC Office of the President Combined											

San Diego Small Business Innovation Research Awards

	1993	1994	1995	1996	1997	1998	1999	Total	Share
Biomedical Products	3	8	13	7	9	10		50	5.0%
Biotechnology and Pharmaceuticals	45	33	45	63	75	52		312	30.9%
Business Services	0	0	0	0	1	0		1	0.1%
Communications	11	30	18	22	23	22		126	12.4%
Computer and Electronics Mfg.	11	16	11	2	4	7		51	5.0%
Defense and Transportation Mfg.	3	2	1	0	2	1		9	0.9%
Entertainment and Amusement	0	0	0	0	0	0		-	0.0%
Environmental Technology	11	7	7	5	4	4		38	3.8%
Financial Services	0	0	0	0	0	0		-	0.0%
Fruits and Vegetables	0	0	0	0	0	0		-	0.0%
Horticulture	0	0	0	0	0	0		-	0.0%
Medical Services	0	0	0	0	0	1		1	0.1%
Recreational Goods Mfg.	0	0	0	0	0	0		-	0.0%
Software and Computer Services	14	17	19	27	27	19		123	12.2%
Visitor Industry Services	0	0	0	0	0	0		-	0.0%
Total - All Clusters	98	112	114	126	145	116		711	70.4%
Other or not classified	70	49	54	41	41	44		299	29.6%
TOTAL	168	161	168	167	186	160		1,010	100.0%

Source: United States Small Business Administration

Note: Number of awards based on Companies SIC code.

San Diego Small Business Innovation Research Award Amounts

in thousands of nominal dollars

	1993	1994	1995	1996	1997	1998	1999	Total	Share
Biomedical Products	856	607	3,844	1,591	3,308	3,547		13,752	6.3%
Biotechnology & Pharmaceuticals	9,314	6,555	7,225	13,396	18,761	18,081		73,333	33.8%
Business Services	-	-	-	-	98	-		98	0.0%
Communications	2,175	6,761	3,357	6,691	4,463	6,340		29,786	13.7%
Computer & Electronics Mfg.	1,363	1,794	4,287	130	1,350	1,720		10,644	4.9%
Defense & Transportation Mfg.	465	335	350	-	175	75		1,399	0.6%
Entertainment & Amusement	-	-	-	-	-	-		-	0.0%
Environmental Technology	1,423	898	658	2,617	994	1,443		8,033	3.7%
Financial Services	-	-	-	-	-	-		-	0.0%
Fruits and Vegetables	-	-	-	-	-	-		-	0.0%
Horticulture	-	-	-	-	-	-		-	0.0%
Medical Services	-	-	-	-	-	93		93	0.0%
Recreational Goods Mfg.	-	-	-	-	-	-		-	0.0%
Software & Computer Services	3,045	2,739	3,319	5,650	6,290	6,257		27,299	12.6%
Visitor Industry Services	-	-	-	-	-	-		-	0.0%
Total - All Clusters	18,642	19,689	23,040	30,074	35,438	37,555		164,438	75.8%
Other or not classified	8,737	7,131	10,164	8,580	9,181	8,704		52,496	24.2%
TOTAL	27,379	26,820	33,205	38,654	44,618	46,258		216,934	100.0%
Source:	United States Small Business Administration								
Note:	Allocations to clusters based on Companies SIC code								

San Diego Venture Capital Invested By PWC Industry Groups in Billions of Nominal Dollars								
PWC Industry Groups	1995	1996	1997	1998	1999	2000	Total	Shares
Biopharmaceutical	0.062	0.160	0.136	0.143	0.226	0.417	1.145	22.5%
Communication & Networking	0.000	0.047	0.046	0.060	0.189	0.379	0.721	14.2%
Consumer & Business Prod.	0.007	0.001	0.000	0.000	0.000	0.000	0.008	0.2%
Consumer & Business Svcs.	0.041	0.025	0.056	0.056	0.159	0.364	0.700	13.8%
Electronics & Computer Hardware	0.009	0.008	0.016	0.047	0.000	0.047	0.127	2.5%
Healthcare Services	0.004	0.004	0.011	0.014	0.008	0.000	0.040	0.8%
Industrial	0.020	0.002	0.000	0.000	0.016	0.020	0.058	1.1%
Information Services	0.003	0.023	0.010	0.049	0.185	0.124	0.392	7.7%
Medical Devices & Equipment	0.041	0.091	0.108	0.091	0.305	0.232	0.867	17.0%
Medical Information Systems	0.017	0.010	0.026	0.011	0.022	0.134	0.219	4.3%
Retail	0.004	0.004	0.027	0.004	0.038	0.004	0.081	1.6%
Semiconductors	0.023	0.028	0.027	0.005	0.057	0.164	0.305	6.0%
Software	0.022	0.030	0.022	0.039	0.164	0.145	0.422	8.3%
Total	0.252	0.431	0.485	0.519	1.368	2.030	5.086	100.0%
Source:	PriceWaterhouseCoopers [PWC] Money Tree							
Note:	Industry definitions from PWC MoneyTree and may be seen in the glossary							

San Diego Venture Capital Invested in Technology Clusters in Billions of Nominal Dollars

		1995	1996	1997	1998	1999	2000	Total	Shares
San Diego Technology Clusters	PWC Industry Groups								
Biomedical Products	Medical Devices & Equipment	0.041	0.091	0.108	0.091	0.305	0.232	0.867	17.0%
Biotechnology & Pharmaceuticals	Biopharmaceutical	0.062	0.160	0.136	0.143	0.226	0.417	1.145	22.5%
Communications	Communication & Networking	0.000	0.047	0.046	0.060	0.189	0.379	0.721	14.2%
Computer & Electronics Mfg.	Electronics & Computer Hardware PLUS Semiconductors	0.033	0.036	0.043	0.052	0.057	0.211	0.432	8.5%
Software & Computer Services	Software & Medical Info Systems	0.038	0.040	0.048	0.050	0.186	0.279	0.640	12.6%
Technology Cluster Total:		0.174	0.373	0.381	0.396	0.963	1.518	3.805	74.8%
	Non Technology:	0.078	0.058	0.104	0.123	0.406	0.512	1.280	25.2%
	TOTAL	0.252	0.431	0.485	0.519	1.368	2.030	5.086	100.0%
Source:	PriceWaterhouseCoopers [PWC] Moneytree								
Notes:	Industry definitions are provided by PWC Moneytree and may be seen in the Glossary. Using PWC's definitions and the definitions of Clusters in San Diego, the VC dollars are allocated to the various technology clusters.								

San Diego Clusters with IPO Proceeds in Millions of Nominal Dollars

SIC Code	Cluster Description	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	Shares
Biomedical Products = A			52.0	6.4			33.0	0.0	10.4				101.8	2.1%
3821	Laboratory apparatus & furniture													
3827	Optical instruments & lenses								10.4					
3841	Surgical & medical instruments			6.4										
3842	Surgical appliances & supplies		52.0				33.0							
3843	Dental equipment & supplies													
3844	X-ray apparatus & tubes													
3845	Electromedical equipment													
3851	Ophthalmic goods													
Biotechnology and Pharmaceuticals = B			42	117.0			20.7	23.0	41.5		117.3	200.1	561.6	11.5%
2819	Industrial inorganic chemicals, nec							23.0						
2833	Medicinals & botanicals													
2834	Pharmaceuticals preparations						20.7				56.9			
2835	Diagnostic substances			20.0							60.4	200.1		
2836	Biological products excluding diagnostic													
2869	Industrial organic chemicals, nec													
2899	Chemical preparations													
8731	Commercial physical research (60%)													
8733	Noncommercial research org. (100%)		42.0	97.0										
8734	Testing laboratories								41.5					
Business Services = C									55.0		184.9		239.9	4.9%
2741	Miscellaneous publishing										67.5			
2752	Commercial printing, lithographic													
7311	Advertising agencies													
7319	Advertising agencies													
7334	Photocopying & duplication services													
7361	Employment agencies													
7363	Help supply services													
7375	Information retrieval services								19.0					
7376	Computer facilities management													
7377	Computer rental & leasing													
7389	Business services, nec													
8111	Legal services													
8712	Architectural services													
8720	Accounting, auditing, & bookkeeping													
8741	Management services								36.0					
8742	Management consulting services										48.4			
8748	Business consulting, nec										69.0			

San Diego Clusters with IPO Proceeds in Millions of Nominal Dollars

SIC Code	Cluster Description	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	Shares
7032	Sporting & recreational camps													
7033	Trailer parks & campsites													
7041	Organization hotels & lodging house													
7514	Passenger car rental													
Outside Clusters		44.1	384.9	50.8	73.0	46.5	32.0	26.7	111.1	0.0	326.5	221.2	1,316.8	27.0%
3581				22.0										
3652											289.8			
4832							15.2							
5045					26.0									
5047					3.9									
5049												157.0		
5065					3.2							64.2		
5074								5.0						
5083									13.6					
5122				28.8										
5137					40.0									
5621											36.7			
5714		3.3												
5999						46.5								
6141								16.7						
6798		40.8	268.0					5.0	97.5					
7299			105.0											
7366							9.4							
7833							7.5							
Unknown			11.9											
Totals		90.3	681.1	760.6	300.1	105.3	238.1	300.2	416.3	84.6	870.4	1,033.8	4,880.9	100.0%

Source: Piper Jaffrey

San Diego Initial Public Offerings [IPO] By SIC Code, 1990 - 2000

Trade date	Filing date	Issuer	Stock ticker symbol	Total Amount Offered in millions \$	Issuer City	Issuer State	SIC Code	Cluster
05-May-99	25-Feb-99	Comps.com		67.5	San Diego	CA	2741	Bus Svc
02-Oct-96	18-Jul-96	CN Biosciences, Inc.		23.0	San Diego	CA	2819	Biotech
31-Jul-95	14-Jun-95	Sequana Therapeutics, Inc.		20.7	La Jolla	CA	2834	Biotech
28-Jun-99	12-Mar-99	Women's First Healthcare, Inc.	WFHC	56.9	San Diego	CA	2834	Biotech
19-Mar-92	10-Feb-92	Telios Pharmaceuticals, Inc.		20.0	San Diego	CA	2835	Biotech
26-Feb-99	10-Dec-98	Invitrogen Corp	IVGN	60.4	Carlsbad	CA	2835	Biotech
14-Feb-00	16-Dec-99	Diversa Corp	DVSA	200.1	San Diego	CA	2835	Biotech
21-Feb-97	23-Dec-96	Overland Data Inc.	OVRL	34.5	San Diego	CA	3572	Comp Mfg
29-Jul-92	18-Mar-92	Pyxis Corporation		64.4	San Diego	CA	3577	Comp Mfg
16-Dec-93	14-Oct-93	ENCAD, Inc.	ENCD	8.6	San Diego	CA	3577	Comp Mfg
13-Mar-92	28-Jan-92	Glacier Water Services Inc	HOO	22.0	Oceanside	CA	3581	
20-Jul-99	14-May-99	MP3.com	MPPP	289.8	San Diego	CA	3652	
01-Feb-96	13-Dec-95	Remec, Inc	REMC	27.6	San Diego	CA	3663	Comm
12-May-99	01-Mar-99	Copper Mountain Networks, Inc.	CMTN	96.6	San Diego	CA	3663	Comm
22-Apr-94	14-Dec-93	Microelectronic Packaging, Inc.		8.0	San Diego	CA	3674	Comp Mfg
18-Sep-96	18-Jul-96	Cymer, Inc.	CYMI	36.5	San Diego	CA	3674	Comp Mfg
24-Nov-97	10-Oct-97	Applied Micro Circuits Corp	AMCC	51.1	San Diego	CA	3674	Comp Mfg
11-Jun-91	26-Apr-91	Pulse Engineering Incorporated		26.8	San Diego	CA	3679	Comp Mfg
25-Jun-93	23-Apr-93	Global E-Point Inc	GEPT	36.2	San Diego	CA	3699	Comp Mfg
26-Jan-95	16-Dec-94	Tylan General, Inc.		16.1	San Diego	CA	3699	Comp Mfg
12-Dec-96	21-Oct-96	Messagemedia Inc.	MESG	18.0	San Diego	CA	3699	Comp Mfg
02-Aug-95	05-May-95	Planet Polymer Technologies, Inc.	POLY	7.8	San Diego	CA	3823	Envr Tech
19-Jun-97	15-Apr-97	Metrika Systems Corporation		35.7	San Diego	CA	3826	Envr Tech
19-Jun-97	02-Apr-97	Laser Power Corporation		10.4	San Diego	CA	3827	Biomed
11-Sep-92	24-Apr-92	Escalon Medical Corp.	ESMC	6.4	San Diego	CA	3841	Biomed
21-Nov-91	15-Oct-91	Epimmune Inc.	EPMN	52.0	San Diego	CA	3842	Biomed
02-Jun-95	11-Apr-95	ResMed, Inc.	RMD	33.0	Poway	CA	3842	Biomed
27-Feb-92	16-Dec-91	Callaway Golf Company	ELY	59.8	Carlsbad	CA	3949	Rec Mfg
08-Jun-93	23-Apr-93	Aldila, Inc.	ALDA	37.0	San Diego	CA	3949	Rec Mfg
21-Sep-93	30-Jul-93	Cobra Golf Incorporated II.		78.5	Carlsbad	CA	3949	Rec Mfg
13-Dec-91	13-Sep-91	Qualcomm Inc	QCOM	62.4	San Diego	CA	4812	Comm
29-Mar-94	15-Feb-94	Applied Digital Access, Inc.		35.9	San Diego	CA	4813	Comm
07-Sep-95	06-Jul-95	Triathlon Broadcasting Company		15.2	San Diego	CA	4832	
30-Mar-92	12-Feb-92	Xircom, Inc		56.4	San Diego	CA	4899	Comm
04-Feb-93	21-Dec-92	Proxima Corp.		26.0	San Diego	CA	5045	
11-Feb-93	31-Dec-92	BioSafety Systems, Inc.		3.9	San Diego	CA	5047	
31-Jan-00	24-Nov-99	Sequenom, Inc.	SQNM	157.0	San Diego	CA	5049	

San Diego Initial Public Offerings [IPO] By SIC Code, 1990 - 2000

Trade date	Filing date	Issuer	Stock ticker symbol	Total Amount Offered in millions \$	Issuer City	Issuer State	SIC Code	Cluster
30-Jun-93	29-Mar-93	Solutions Technology Inc	SOLU	3.2	San Diego	CA	5065	
15-Nov-00	28-Jul-00	Novatel Wireless, Inc.	NVTL	64.2	San Diego	CA	5065	
08-Aug-96	18-Jan-96	Innovative Medical Services	PURE	5.0	El Cajon	CA	5074	
17-Jan-97	08-Nov-96	Eco Soil Systems, Inc.	ESSI	13.6	San Diego	CA	5083	
06-Feb-92	16-Dec-91	Dura Pharmaceuticals Inc.		28.8	San Diego	CA	5122	
16-Nov-93	02-Sep-93	Safeskin Corporation		40.0	San Diego	CA	5137	
20-Oct-99	02-Aug-99	Charlotte Russe Holding, Inc.	CHIC	36.7	San Diego	CA	5621	
26-Apr-90	05-Dec-89	JMAR Industries, Inc.	JMAR	3.3	San Diego	CA	5714	
04-Mar-92	27-Nov-91	Jack in the Box Inc.	JBX	257.3	San Diego	CA	5812	Visitor
22-Sep-93	12-Aug-93	Hometown Buffet, Inc.		34.5	San Diego	CA	5812	Visitor
16-May-95	17-Mar-95	Garden Fresh Restaurant Corp	LTUS	13.5	San Diego	CA	5812	Visitor
22-Jul-97	03-Apr-97	Creative Host Services, Inc.	CHST	5.2	San Diego	CA	5812	Visitor
21-May-99	26-Mar-99	Rubio's Restaurants	RUBO	38.0	San Diego	CA	5812	Visitor
17-Mar-94	13-Jan-94	Petco Animal Supplies, Inc.		46.5	San Diego	CA	5999	
17-May-96	26-Oct-95	ACC Consumer Finance Corp.		16.7	San Diego	CA	6141	
14-Aug-92	28-Jul-92	American Residential Holding Corporation		40.8	La Jolla	CA	6798	
04-Aug-93	24-May-93	New Plan Excel Realty Trust	NXL	118.5	San Diego	CA	6798	
05-Aug-93	11-Jun-93	Price REIT, Inc, The		149.5	La Jolla	CA	6798	
17-Apr-96	25-Mar-96	Host Funding, Inc.	HFDI	5.0	La Jolla	CA	6798	
28-Oct-97	14-Aug-97	American Residential Investment Trust, Inc.	INV	97.5	Del Mar	CA	6798	
29-Oct-91	04-Sep-91	Jenny Craig Incorporated	JC	105.0	Del Mar	CA	7299	
23-May-95	31-Mar-95	Interactive Group, Inc.		9.4	San Diego	CA	7336	
20-Jun-95	05-May-95	HNC Software Inc	HNCS	36.2	San Diego	CA	7371	Comp Svc
03-Apr-92	19-Feb-92	ChipSoft, Inc.		45.6	San Diego	CA	7372	Comp Svc
06-Aug-96	17-Jun-96	TriTeal Corp.	TEAL	23.0	Carlsbad	CA	7372	Comp Svc
20-Sep-96	19-Jun-96	Document Sciences Corp.	DOCX	31.7	San Diego	CA	7372	Comp Svc
09-Apr-97	10-Feb-97	Peregrine Systems, Inc.	PRGN	20.7	San Diego	CA	7372	Comp Svc
24-Feb-98	04-Nov-97	GlobalDigitalCommerce.com	GDXX	6.9	San Diego	CA	7372	Comp Svc
09-Feb-00	01-Nov-99	Lightspan, Inc.	LSPN	103.5	San Diego	CA	7372	Comp Svc
28-Mar-00	28-Jan-00	Websense, Inc.	WBSN	82.8	San Diego	CA	7372	Comp Svc
29-Sep-95	23-Aug-95	Depotech Corp.		41.4	La Jolla	CA	7373	Comp Svc
26-Oct-95	22-Sep-95	Dataworks Corporation		37.4	San Diego	CA	7373	Comp Svc
13-Feb-97	18-Dec-96	DAOU Systems, Inc.	DAOU	18.0	San Diego	CA	7373	Comp Svc
20-Nov-97	13-Aug-97	InterVU, Inc.	ITVU.x	19.0	Solana Beach	CA	7375	Bus Svc
09-Jun-92	05-Mar-92	Intramed Labs Inc		6.6	San Diego	CA	7379	Comp Svc
24-Nov-92	17-Sep-92	Wilshire Technologies, Inc.		7.5	La Jolla	CA	7379	Comp Svc
26-Oct-99	03-Sep-99	JNI Corp	JNIC	107.1	San Diego	CA	7379	Comp Svc

San Diego Initial Public Offerings [IPO] By SIC Code, 1990 - 2000

Trade date	Filing date	Issuer	Stock ticker symbol	Total Amount Offered in millions \$	Issuer City	Issuer State	SIC Code	Cluster
07-Feb-95	25-Nov-94	CinemaStar Luxury Theaters	LUXY	7.5	Oceanside	CA	7833	
05-Jun-90	27-Apr-90	Sicor, Inc.	SCRI	30.8	San Diego	CA	8069	Med Svc
20-Oct-94	02-Jun-94	FPA Medical Management, Inc.		15.0	San Diego	CA	8099	Med Svc
07-May-92	17-Mar-92	Previo, Inc.	PRVO	41.4	Carlsbad	CA	8711	Comm
02-May-90	30-Mar-90	Immune Response Corp	IMNR	15.4	Carlsbad	CA	8731	Comm
17-May-91	02-Apr-91	Isis Pharmaceuticals, Inc.	ISIP	25.0	Carlsbad	CA	8731	Comm
24-Jul-91	30-May-91	Thermotrex Corporation		18.0	San Diego	CA	8731	Comm
17-Sep-91	21-May-91	IDEC Pharmaceuticals Corp.	IDPH	45.0	San Diego	CA	8731	Comm
17-Dec-91	04-Nov-91	Genta Inc.	GNTA	25.0	San Diego	CA	8731	Comm
17-Nov-92	16-Apr-92	Ligand Pharmaceuticals Incorporated	LGND	47.4	San Diego	CA	8731	Comm
09-Mar-93	07-Jan-93	Vical Inc	VICL	11.5	San Diego	CA	8731	Comm
16-Dec-93	29-Oct-93	Viagene, Inc.		20.7	San Diego	CA	8731	Comm
01-Apr-96	14-Feb-96	Trega Biosciences Inc.		30.4	San Diego	CA	8731	Comm
09-May-96	20-Mar-96	Sibia Neurosciences, Inc.		23.1	La Jolla	CA	8731	Comm
23-May-96	03-Apr-96	Neurocrine Biosciences, Inc	NBIX	38.6	San Diego	CA	8731	Comm
03-Dec-96	01-Oct-96	ViaSat, Inc	VSAT	21.6	Carlsbad	CA	8731	Comm
12-Feb-97	11-Dec-96	Biosite Diagnostics, Inc.	BSTE	33.1	San Diego	CA	8731	Comm
13-Apr-98	19-Dec-97	Nanogen, Inc	NGEN	42.9	San Diego	CA	8731	Comm
08-May-98	15-Oct-97	CombiChem, Inc.		18.9	San Diego	CA	8731	Comm
02-Jul-98	24-Apr-98	Collateral Therapeutics, Inc.	CLTX	16.0	San Diego	CA	8731	Comm
27-Jul-00	12-May-00	Applied Molecular Evolution, Inc.	AMEV	101.6	San Diego	CA	8731	Comm
27-Jul-00	09-May-00	Discovery Partners International, Inc.	DPII	90.0	San Diego	CA	8731	Comm
27-Jul-00	03-Apr-00	Illumina, Inc.	ILMN	110.4	San Diego	CA	8731	Comm
28-Jul-00	28-Apr-00	Arena Pharmaceuticals, Inc.	ARNA	124.2	San Diego	CA	8731	Comm
17-Apr-91	08-Mar-91	Brooktree Corporation		42.0	San Diego	CA	8733	Biotech
17-Jan-92	27-Nov-91	Amylin Pharmaceuticals, Inc.	AMLN	61.0	San Diego	CA	8733	Biotech
30-Jan-92	13-Dec-91	Corvas International Inc	CVAS	36.0	San Diego	CA	8733	Biotech
19-Jun-97	14-Mar-97	Aurora Biosciences Corp		41.5	La Jolla	CA	8734	Biotech
02-Jul-97	07-Mar-97	Vista Medical Technologies, Inc.	VMTIC	36.0	Carlsbad	CA	8741	Bus Svc
21-May-99	02-Sep-98	Newgen Results Corporation		48.4	San Diego	CA	8742	Bus Svc
04-Nov-99	18-Aug-99	Wireless Facilities, Inc.	WFII	69.0	San Diego	CA	8748	Bus Svc
10-Oct-91	26-Aug-91	Body Drama Incorporated		11.9	San Diego	CA		
		Total		4,880.9				
Source:	Piper Jaffray							