



Bay Area Life Sciences

Michelle Nemits, Executive Director, Bay Area
December 6, 2022
San Mateo Chamber of Commerce, Redwood City, CA

Biocom California At-A-Glance

The voice and advocate for the California life science sector.

Largest

Statewide life science member association

1,700+ Members

Over 600 members in the Bay Area

Founded in 1995

25+ years of leadership and programming

6 Offices

South San Francisco, Los Angeles, San Diego, Sacramento, Washington, DC and Tokyo

Advocacy

Federal, state, regional/local

Capital Development

Connecting members to investors, and investors to technologies and companies

Community

200+ events, committee meetings, workshops each year

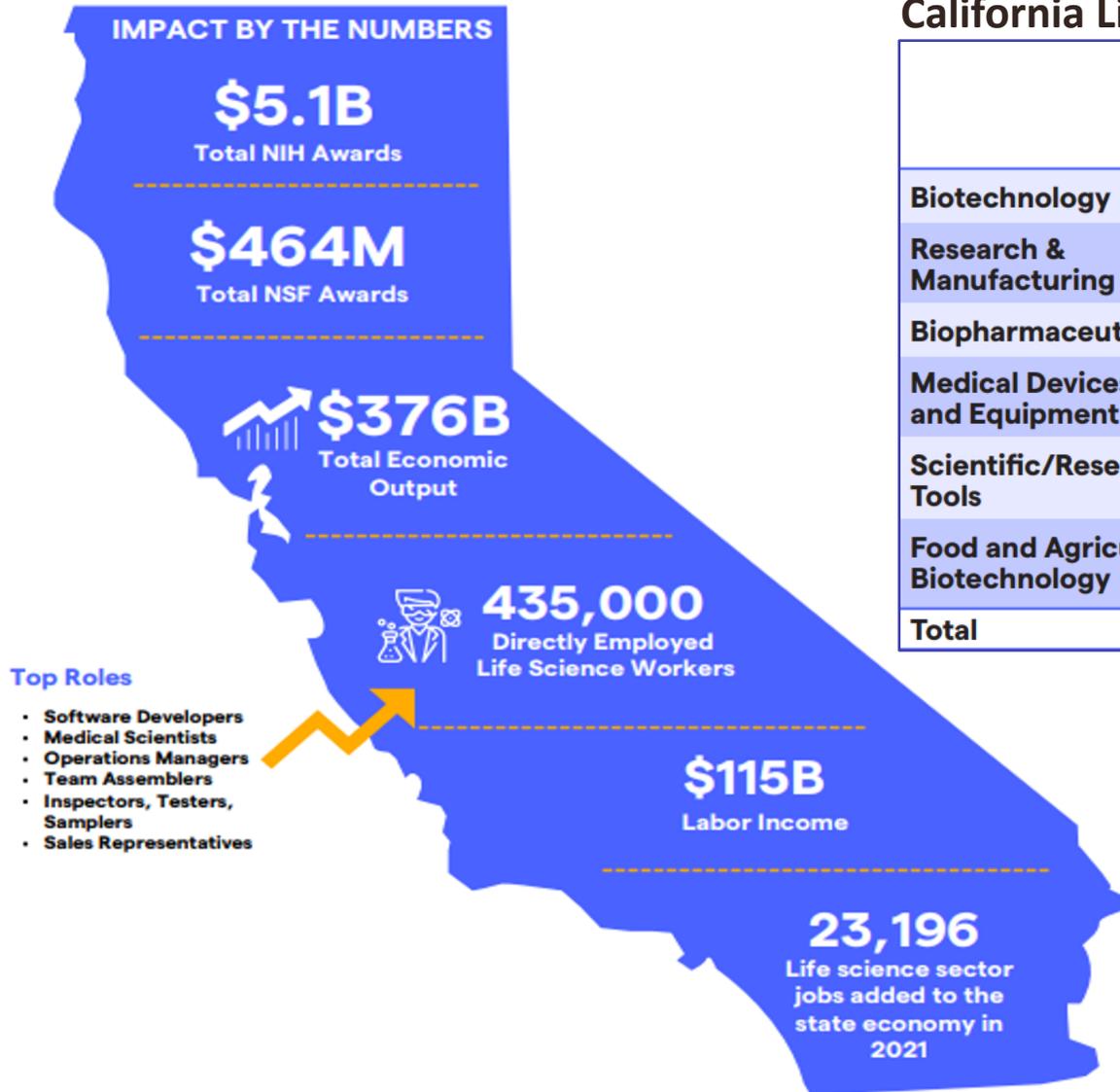
Savings

Savings programs for lab supplies (Thermo Fisher), shipping (FedEx), health insurance (MMA/Anthem), others

Workforce

DE&I, academic partnerships internships, veterans initiative

2022 Life Science Economic Impact Report



California Life Science Economic Impact, 2021

	Employment (# of workers)				Output (U.S. \$ M's)			
	Direct	Indirect + Induced	Total	Multiplier	Direct	Indirect + Induced	Total	Multiplier
Biotechnology	66,290	104,507	170,797	2.58	\$20,527	\$21,156	\$41,683	2.03
Research & Manufacturing	160,753	140,582	301,335	1.87	\$30,465	\$28,513	\$58,978	1.93
Biopharmaceuticals	81,369	264,168	345,537	4.25	\$106,589	\$60,536	\$167,125	1.57
Medical Devices and Equipment	90,631	141,897	232,528	2.56	\$32,986	\$29,673	\$62,659	1.90
Scientific/Research Tools	35,615	82,607	118,222	3.32	\$24,964	\$18,857	\$43,821	1.76
Food and Agriculture Biotechnology	1,035	82,607	4,120	3.98	\$960	\$774	\$1,734	1.81
Total	435,693	736,846	1,172,539	2.69	\$216,491	\$159,509	\$376,000	1.74

California life science job growth in 2021

- 5.8% increase compared to national average of 3.9%

California VC investments into life sciences in 2021

- Record high of \$16.6B
- 31% of all US VC Life Science investment
- 29% increase over 2020

2022 Life Science Economic Impact Report

Bay Area key metrics, 2021

- \$151B in economic impact
- 5,160 life science establishments
- 146,130 people directly employed by life science companies

San Mateo County key metrics, 2021

- \$14B in economic impact
- 807 life science establishments
- 40,349 people directly employed by life science companies

Bay Area Life Science Economic Impact, by County, 2021

Region	Employment (workers)			Labor Income (U.S. \$ M's)			Output (U.S. \$ M's)		
	Direct	Total	Multiplier	Direct	Total	Multiplier	Direct	Total	Multiplier
Alameda County	36,525	116,073	3.18	\$9,314	\$15,332	1.65	\$41,740	\$57,402	1.38
Contra Costa County	4,796	9,205	1.92	\$627	\$992	1.58	\$3,292	\$4,476	1.36
Marin County	3,080	6,325	2.05	\$60	\$97	1.62	\$275	\$443	1.61
Napa County	328	693	2.11	\$24	\$50	2.07	\$186	\$249	1.34
San Francisco County	17,000	26,923	1.58	\$1,310	\$2,728	2.08	\$6,755	\$10,073	1.49
San Mateo County	40,349	70,685	1.75	\$2,686	\$3,920	1.46	\$11,103	\$14,132	1.27
Santa Clara County	38,506	104,074	2.70	\$8,285	\$13,798	1.67	\$45,416	\$59,348	1.31
Solano County	2,566	4,623	1.80	\$145	\$186	1.28	\$840	\$976	1.16
Sonoma County	2,980	9,239	3.10	\$481	\$837	1.74	\$2,731	\$3,797	1.39
Bay Area Total	146,130	347,840	2.38	\$22,932	\$37,939	1.65	\$112,338	\$150,894	1.34

* Total refers to the sum of direct, indirect, and induced impacts

Bay Area Life Science Direct Employment, by County, 2021

Region	Research & Manufacturing	Medical Devices & Equipment	Bio-pharmaceutical	Bio-technology	Scientific/ Research Tools	Food & Ag Biotechnology
Alameda County	15,558	6,953	3,216	6,830	3,920	48
Contra Costa County	1,196	946	685	1,317	631	21
Marin County	346	94	2,035	558	45	2
Napa County	85	78	24	23	118	0
San Francisco County	10,273	536	628	5,001	544	18
San Mateo County	7,801	2,294	11,902	16,792	1,552	8
Santa Clara County	17,210	5,215	5,549	4,310	6,215	7
Solano County	472	557	1,376	123	33	5
Sonoma County	975	1,242	369	22	339	33
Bay Area Total	53,914	17,916	25,784	34,977	13,397	143

Unique Ecosystem that Supports Innovation



Academic &
Research
Institutions



Diverse &
Educated Talent



Capital



Collaboration
Risk-Tolerant
Environment



Supportive
Service
Sector



Government &
Regional
Organizations

San Mateo County Attracts Global Companies



abbvie

AMGEN



illumina®

Johnson & Johnson

Lilly



 Biocom California

Redwood City's World-Class Innovation

- Convergence of biotech + Silicon Valley digital technology is accelerating innovation
- Transformational new technologies such as CRISPR and cell/gene therapy are changing the way we think about addressing diseases – e.g. cures vs treatment
- Biotechnology being used to address some of the world's greatest challenges – e.g. sustainable food and industrial production

 ADVERUM

Gene therapy for ocular diseases

 ALTOS

Aging research

 biomea
FUSION

Drug discovery platform

 BOLT
BIOTHERAPEUTICS

Immuno-oncology

 Coherus™
BIOSCIENCES

Biosimilars, immuno-oncology

 EARLI

Early cancer detection

 KARIUS

Liquid biopsy diagnostics

 KRIYA™
THERAPEUTICS

Enabling gene therapy

 REVOLUTION
MEDICINES

Precision oncology

 SYNTHEGO

Genome engineering tools

 TALIS
Biomedical

Point-of-care diagnostics

 TRANQUIS
THERAPEUTICS

Clinical stage biopharmaceuticals

Outlook for the Bay Area Life Sciences

- Potential challenges: unstable financial markets, local/regional business climate and quality of life, robust talent pipeline
- Millions of square feet of new lab space in development; developers are building for continued growth
- High-paying jobs for a range of skill levels – high school to PhD
- Initiatives to increase diversity in the local workforce, such as internships and fellowship programs for under-represented populations, first-gen college grads, veterans
- Continued leadership on the world stage as the global epicenter of life science innovation



What can local government do to support life science?

Melanie Cohn

Senior Director, Regional Policy & Government Affairs

mcohn@biocom.org

O: 858-832-4158

C: 661-378-1646



Public Policy

Zoning & Building Requirements

Identifying and preserving land for manufacturing, R&D, and distribution is vital to long-term industry stability and growth.

- Where companies can locate and grow
- Land designated specifically for life science
 - San Diego: Prime Industrial Land, EMX Zones
 - LA County: Bioscience Overlay Zone
- General, specific, and community plans (including approval processes)
- How municipalities define life science
 - Berkeley R&D definition
- Activities allowed within buildings
- Reach codes
- Development fees
- Individual development plans for large projects



Public Policy

Inspection & Permitting Processes

- How familiar is city staff with life science?
 - Thousand Oaks
 - South San Francisco
- Regulatory agencies
 - Building and construction permitting
 - Engineering
 - Hazmat (CERS)
 - Fire
 - Security: FBI, police, DEA
 - Waste: trash, recycling, food waste
 - Wastewater, stormwater
 - Compliance with state regulations such as Proposition 65 and Title 24 building code
- Life science specific programs
 - San Diego County Dept of Environmental Health & Quality EPIC+ Program
 - Keep Innovation in Berkeley
 - Pasadena hazardous materials ordinance



Housing

We advocate for expansion of housing availability – especially moderate income and workforce housing.

The average home price in San Mateo County is approximately \$1.5M.

2015 - 2020 Bay Area Building Permit Activity Report

Jurisdiction	Very Low Income					Low Income					Moderate Income					Above Moderate Income			Total				
	RHNA	Permits Issued			% RHNA Met	RHNA	Permits Issued			% RHNA Met	RHNA	Permits Issued			% RHNA Met	RHNA	permits issued	% RHNA Met	RHNA	Permits Issued			% RHNA Met
		Deed-Restricted	Non-Deed-Restricted	Total			Deed-Restricted	Non-Deed-Restricted	Total			Deed-Restricted	Non-Deed-Restricted	Total						Deed-Restricted	Non-Deed-Restricted	Total	
American Canyon	116	57	3	60	52%	54	28	22	50	93%	58	1	133	134	231%	164	143	87%	392	86	301	387	99%
Calistoga	6	23	0	23	383%	2	6	8	14	700%	4	0	9	9	225%	15	49	327%	27	29	66	95	352%
Napa	185	83	0	83	45%	106	65	29	94	89%	141	22	44	66	47%	403	916	227%	835	170	989	1,159	139%
St. Helena	8	10	0	10	125%	5	6	0	6	120%	5	0	0	0	0%	13	50	385%	31	16	50	66	213%
Yountville	4	0	0	0	0%	2	0	0	0	0%	3	0	8	8	267%	8	3	38%	17	0	11	11	65%
Napa Unincorporated	51	0	4	4	8%	30	0	6	6	20%	32	0	51	51	159%	67	88	131%	180	0	149	149	83%
San Francisco County	6,234	2,045	0	2,045	33%	4,639	2,679	0	2,679	58%	5,460	798	1,487	2,285	42%	12,536	17,384	139%	28,869	5,522	18,871	24,393	84%
San Mateo County	4,595	865	189	1,054	23%	2,507	624	467	1,091	44%	2,830	205	542	747	26%	6,486	8,837	110%	16,418	1,694	10,035	11,729	71%
Atherton	35	0	43	43	123%	26	0	18	18	69%	29	0	14	14	48%	3	82	2733%	93	0	157	157	169%
Belmont	116	22	0	22	19%	63	44	0	44	70%	67	0	36	36	54%	222	133	60%	468	66	169	235	50%
Brisbane	25	0	0	0	0%	13	0	0	0	0%	15	0	25	25	167%	30	19	63%	83	0	44	44	53%
Burlingame	276	82	0	82	30%	144	35	0	35	24%	155	57	0	57	37%	288	587	204%	863	174	587	761	88%
Colma	20	31	0	31	155%	8	34	0	34	425%	9	0	0	0	0%	22	10	45%	59	65	10	75	127%
Daly City	400	21	0	21	5%	188	209	88	297	158%	221	11	155	166	75%	541	510	94%	1,350	241	753	994	74%
East Palo Alto	64	89	13	102	159%	54	0	29	29	54%	83	12	34	46	55%	266	18	7%	467	101	94	195	42%
Foster City	148	10	5	15	10%	87	33	0	33	38%	76	10	9	19	25%	119	541	455%	430	53	555	608	141%
Half Moon Bay	52	0	0	0	0%	31	0	0	0	0%	36	0	36	36	100%	121	46	38%	240	0	82	82	34%
Hillsborough	32	0	40	40	125%	17	0	21	21	124%	21	0	16	16	76%	21	12	57%	91	0	89	89	98%
Menlo Park	233	66	24	90	39%	129	43	33	76	59%	143	8	3	11	8%	150	1,168	779%	655	117	1,228	1,345	205%
Millbrae	193	0	7	7	4%	101	0	6	6	6%	112	20	6	26	23%	257	307	119%	663	20	326	346	52%
Pacifica	121	0	0	0	0%	68	0	0	0	0%	70	0	6	6	9%	154	120	78%	413	0	126	126	31%
Portola Valley	21	0	26	26	124%	15	1	4	5	33%	15	0	13	13	87%	13	30	231%	64	1	73	74	116%
Redwood City	706	289	0	289	41%	429	116	157	273	64%	502	0	0	0	0%	1,152	1,492	130%	2,789	405	1,649	2,054	74%
San Bruno	358	0	0	0	0%	161	6	71	77	48%	205	5	42	47	23%	431	175	41%	1,155	11	288	299	26%
San Carlos	195	28	0	28	14%	107	12	0	12	11%	111	11	0	11	10%	183	526	287%	596	51	526	577	97%
San Mateo	859	114	0	114	13%	469	49	0	49	10%	530	22	5	27	5%	1,242	1,410	114%	3,100	185	1,415	1,600	52%
South San Francisco	565	80	0	80	14%	281	6	0	6	2%	313	49	81	130	42%	705	1,273	181%	1,864	135	1,354	1,489	80%
Woodside	23	0	31	31	135%	13	0	6	6	46%	15	0	3	3	20%	11	25	227%	62	0	65	65	105%
San Mateo Unincorporated	153	33	0	33	22%	103	36	34	70	68%	102	0	58	58	57%	555	353	64%	913	69	445	514	56%

Public Policy

Transportation

We support transportation and transit projects for commuting workers.

Infrastructure & Utilities

We focus on reliability and accessibility.

- Water: supply, resource management, sewer, etc.
- Gas & electric
- Transportation
- Public amenities
- Telecommunications
- Readiness of buildings



Public Policy

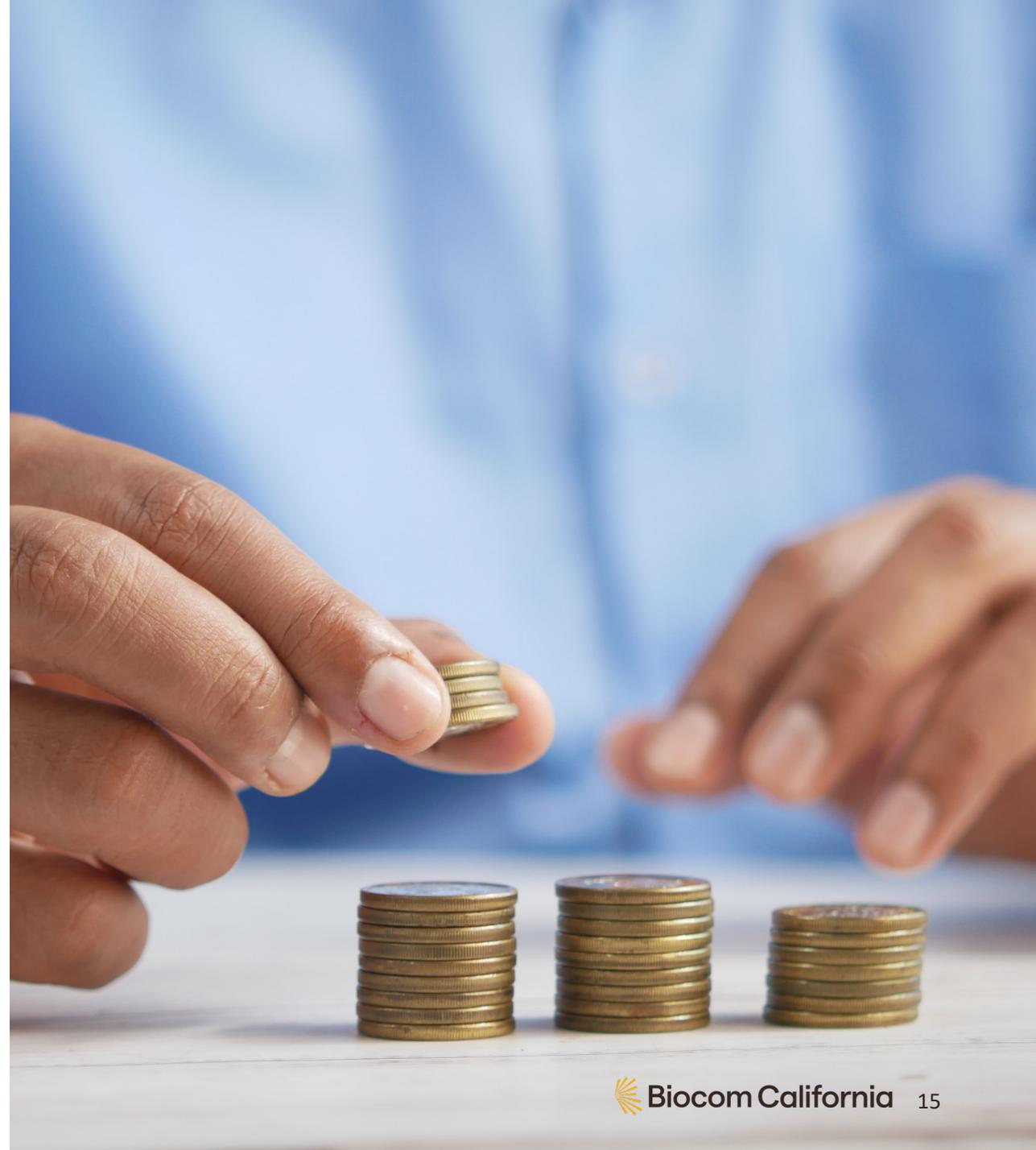
Taxes

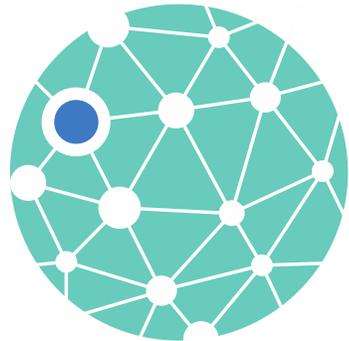
Local taxes and fees can have detrimental effects on the development and production of new treatments. We advocate for measures to be predictable, equitable, transparent, and stable. It is especially important that similar businesses have similar tax burdens.

- Annual business tax
- Gross receipts tax
- Payroll tax
- District specific tax
- Childcare tax
- Commercial rents tax

Economic Development Incentives

Workforce Development





**BIOMEDICAL
MANUFACTURING
NETWORK**

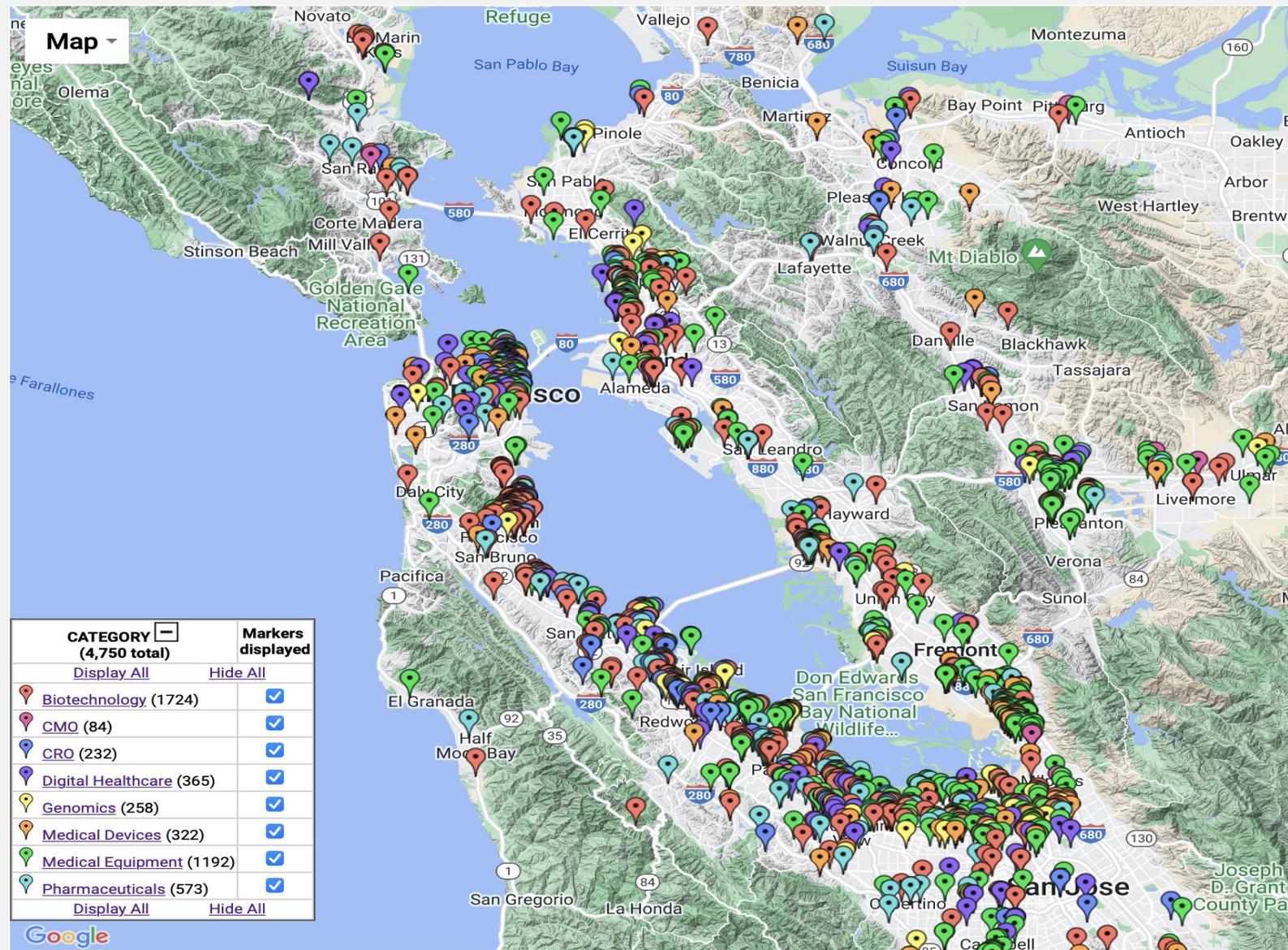
**San Francisco Bay
Area Biomedical
Industry**

Gregory Theyel, Ph.D.
Biomedical Manufacturing Network
gregory.theyel@biomedmfg.org

Biomedical Industry Locations and Drivers

- 1) What life science/biomedical companies are in the mid-peninsula cities today? What do they do?
- 2) How does this relate to the larger SF Bay Area?
- 3) What do you see as the future of the biomedical industry in this area?
- 4) Do more companies want to locate here?
- 5) How will the profile of biomedical companies in the mid-Peninsula begin to evolve?

San Francisco Bay Area Biomedical Industry



What constitutes the biomedical industry?

Biotechnology

The use of living organisms to produce products, including drugs.

Pharmaceuticals

Chemical compounds manufactured for use as medicinal drugs.

Medical Devices

An instrument, apparatus, implement, implant, in vitro reagent, inserted into the body to improve health.

Medical Equipment

Products for use by health care providers, including diagnostic, treatment, life-support, and lab equipment.

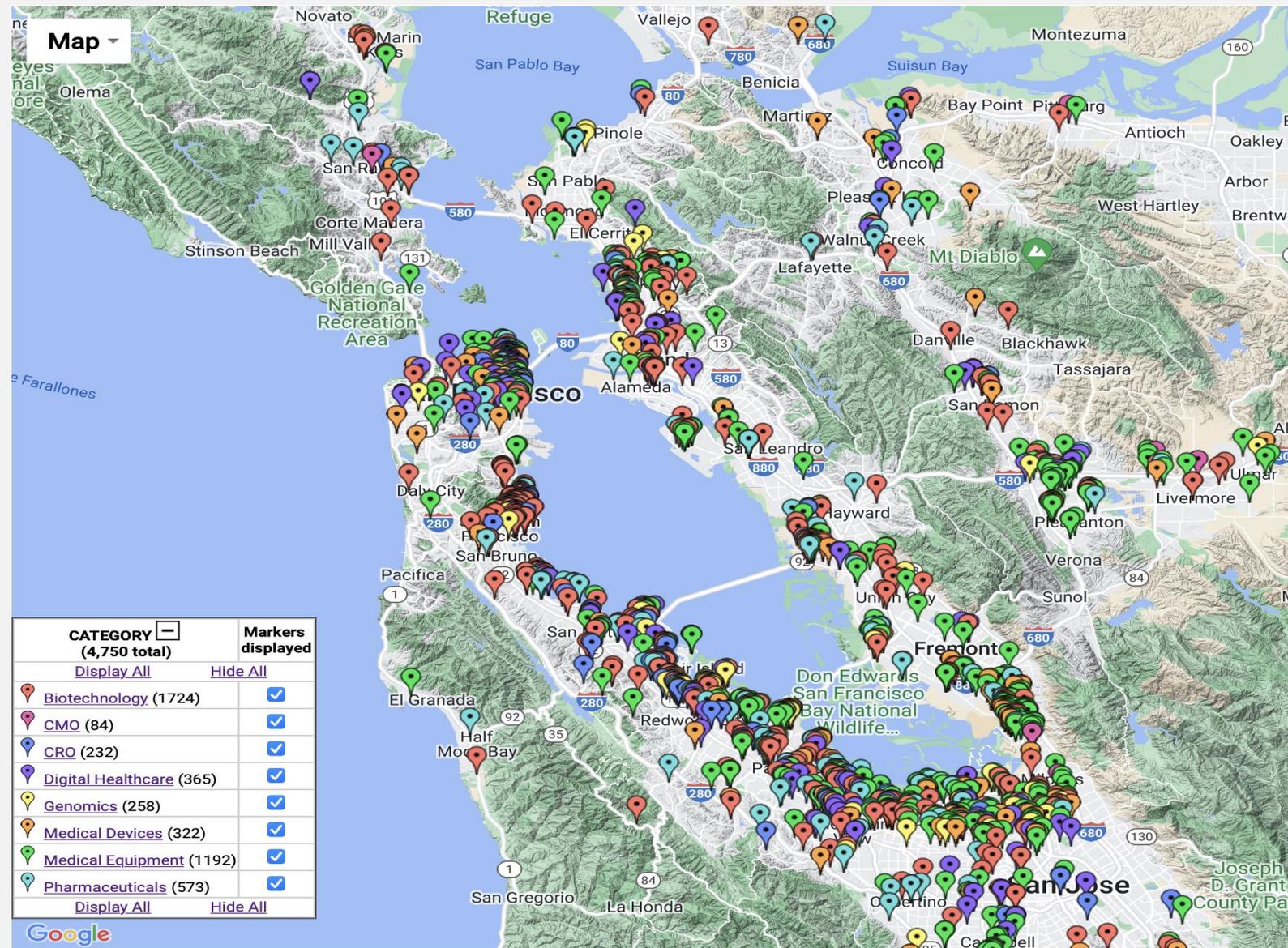
Digital Healthcare

Electronically connecting the points of care so that health information can be shared securely, including mobile health, health information technology, wearable devices, telehealth and telemedicine, and personalized medicine.

Genomics

Studying a person's genes, including interactions of those genes with each other and with the person's environment as part of the person's healthcare.

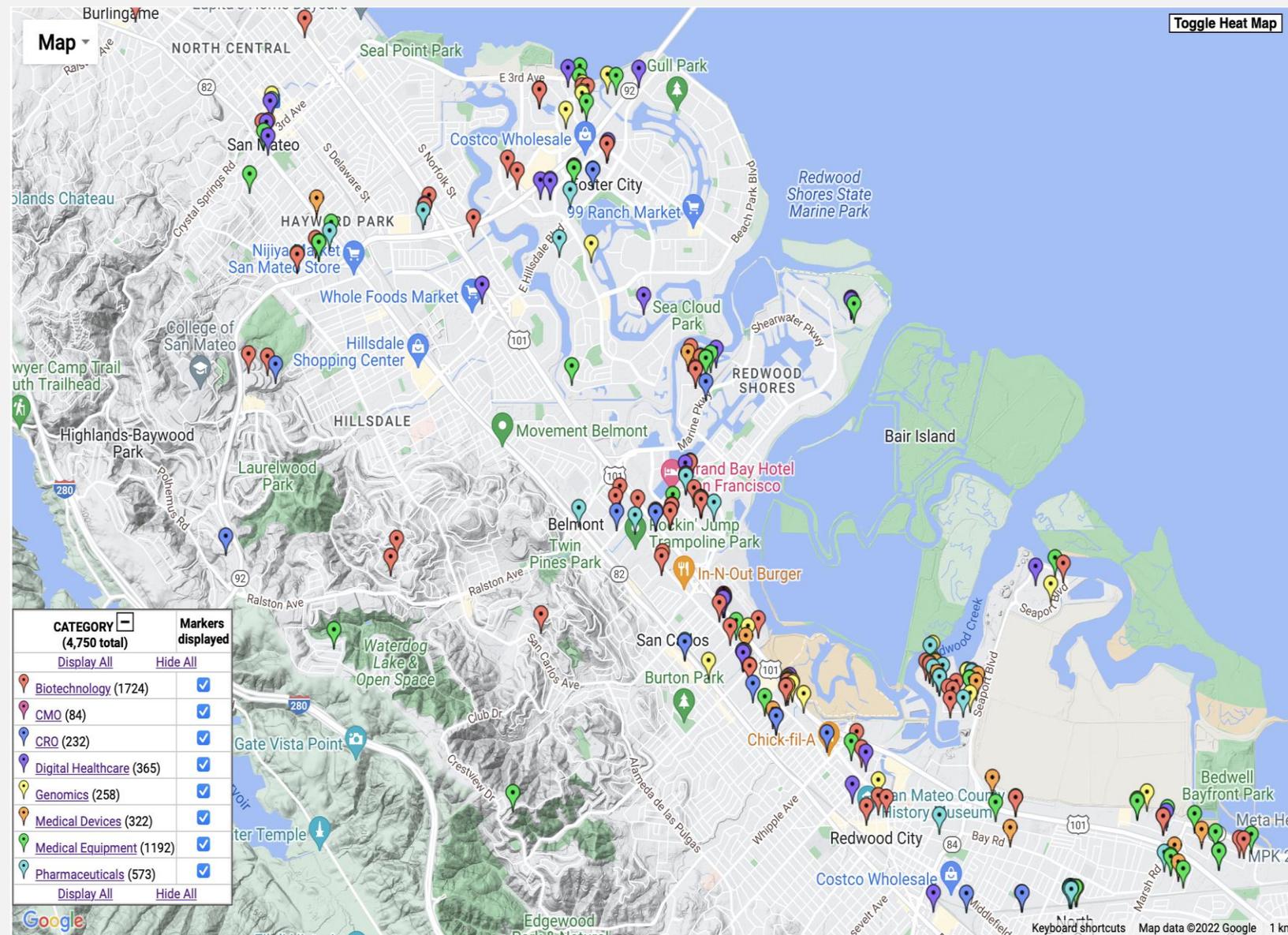
San Francisco Bay Area Biomedical Industry



San Francisco Bay Area Biomedical Industry



San Francisco Bay Area Biomedical Industry



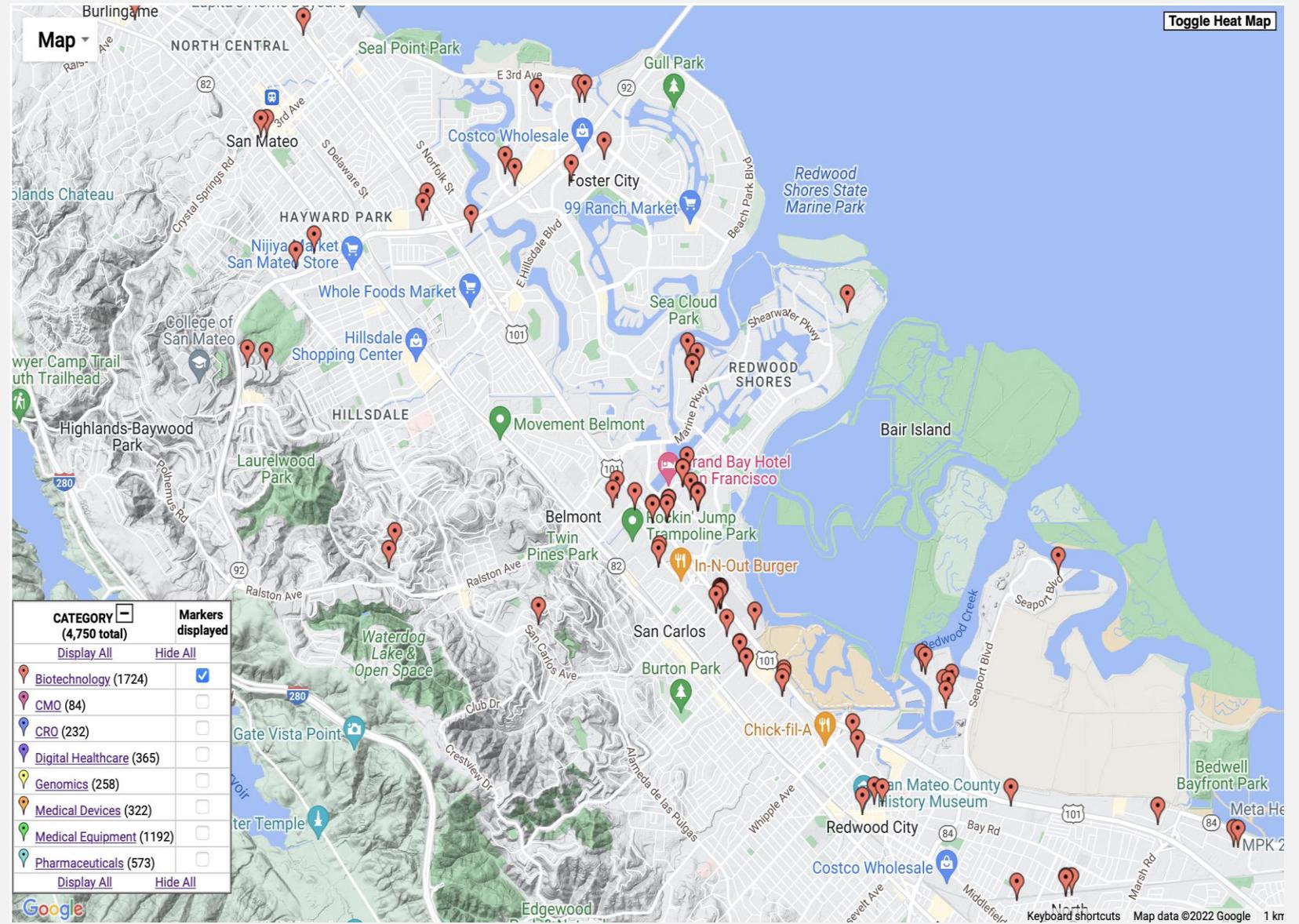
Mid-Peninsula Biomedical Industry

	Biotech	Pharma	Medical Devices	Medical Equipment	Digital Healthcare	Genomics	CRO	CMO	Total
Belmont	5	1	0	2	1	0	1	0	10
Burlingame	16	7	0	7	3	1	2	0	36
Foster City	5	5	0	5	4	6	2	0	27
Redwood City	29	13	8	13	8	7	4	0	82
San Carlos	32	4	4	5	3	6	5	0	59
San Mateo	13	4	1	8	7	1	2	0	36
Total	100	34	13	40	26	21	16	0	250

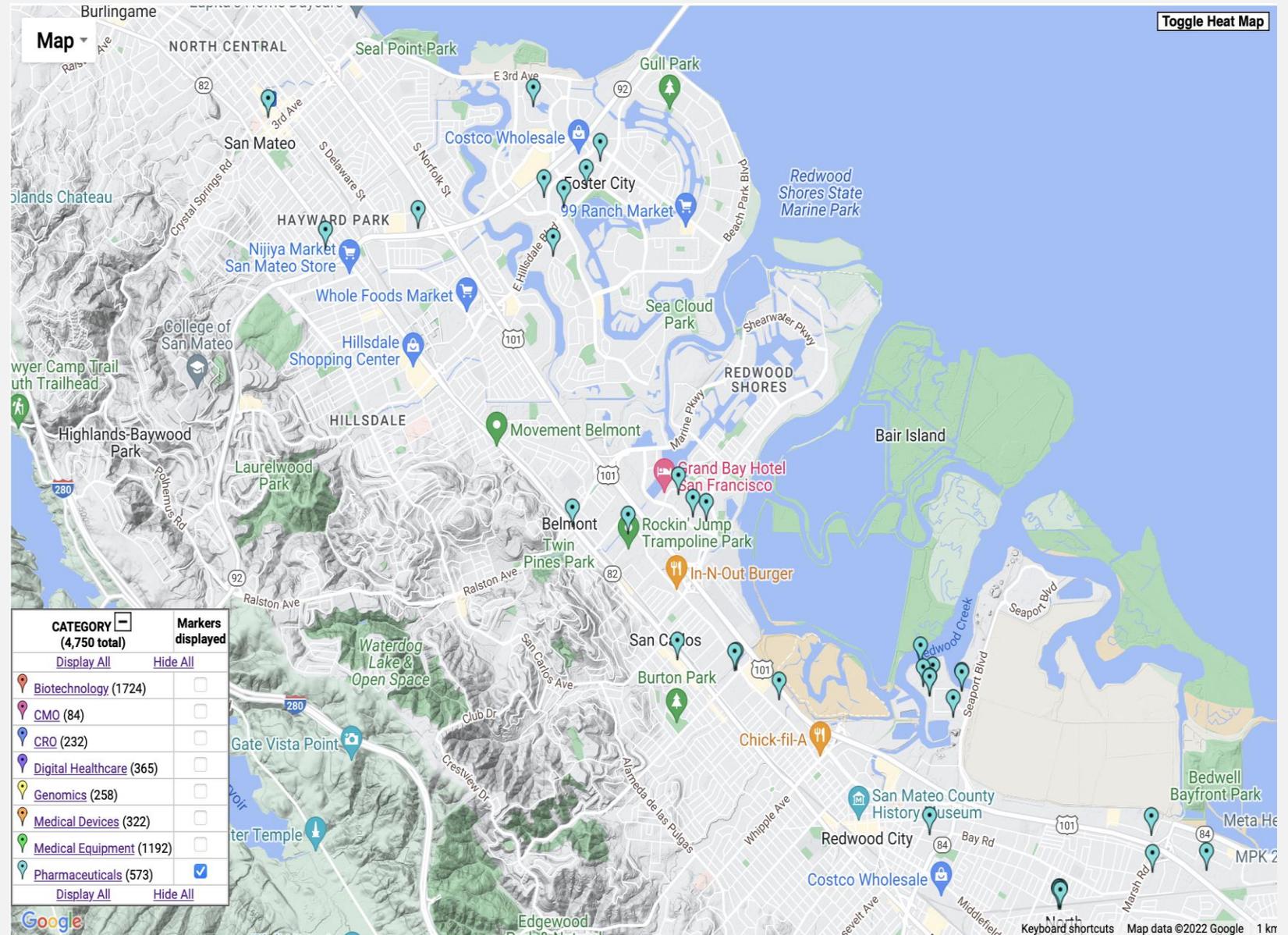
SF Bay Area Biomedical Industry

	Biotech	Pharma	Medical Devices	Medical Equipment	Digital Healthcare	Genomics	CRO	CMO	Total
Alameda	199	49	49	171	34	30	8	5	545
Contra Costa	29	7	8	19	10	4	9	1	87
San Francisco	133	36	22	47	179	18	7	0	442
San Mateo	285	108	22	83	38	50	31	2	619
Santa Clara	158	53	70	178	48	26	16	8	557
Total	804	253	171	498	309	128	71	16	2,250

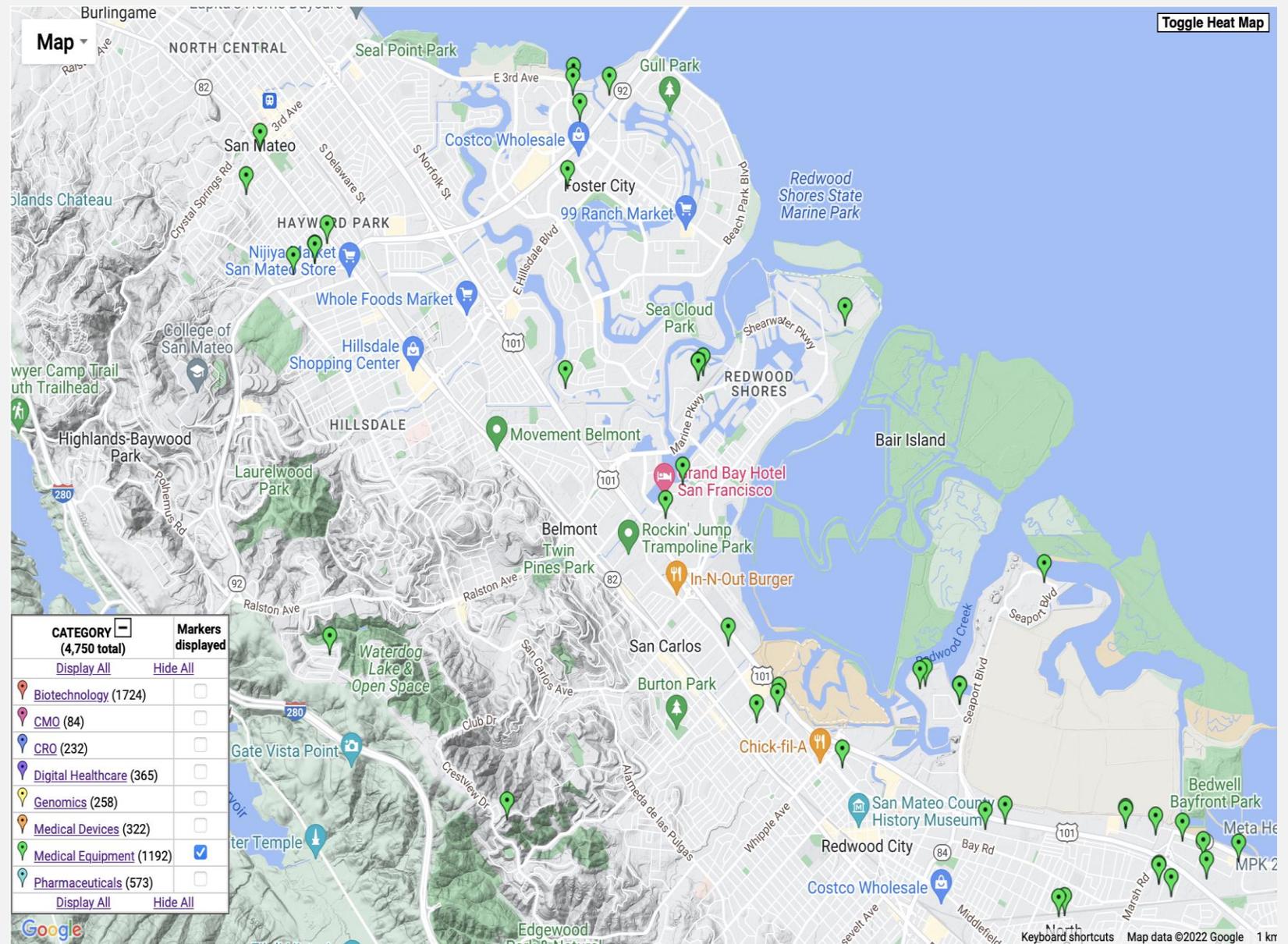
San Francisco Bay Area Biomedical Industry



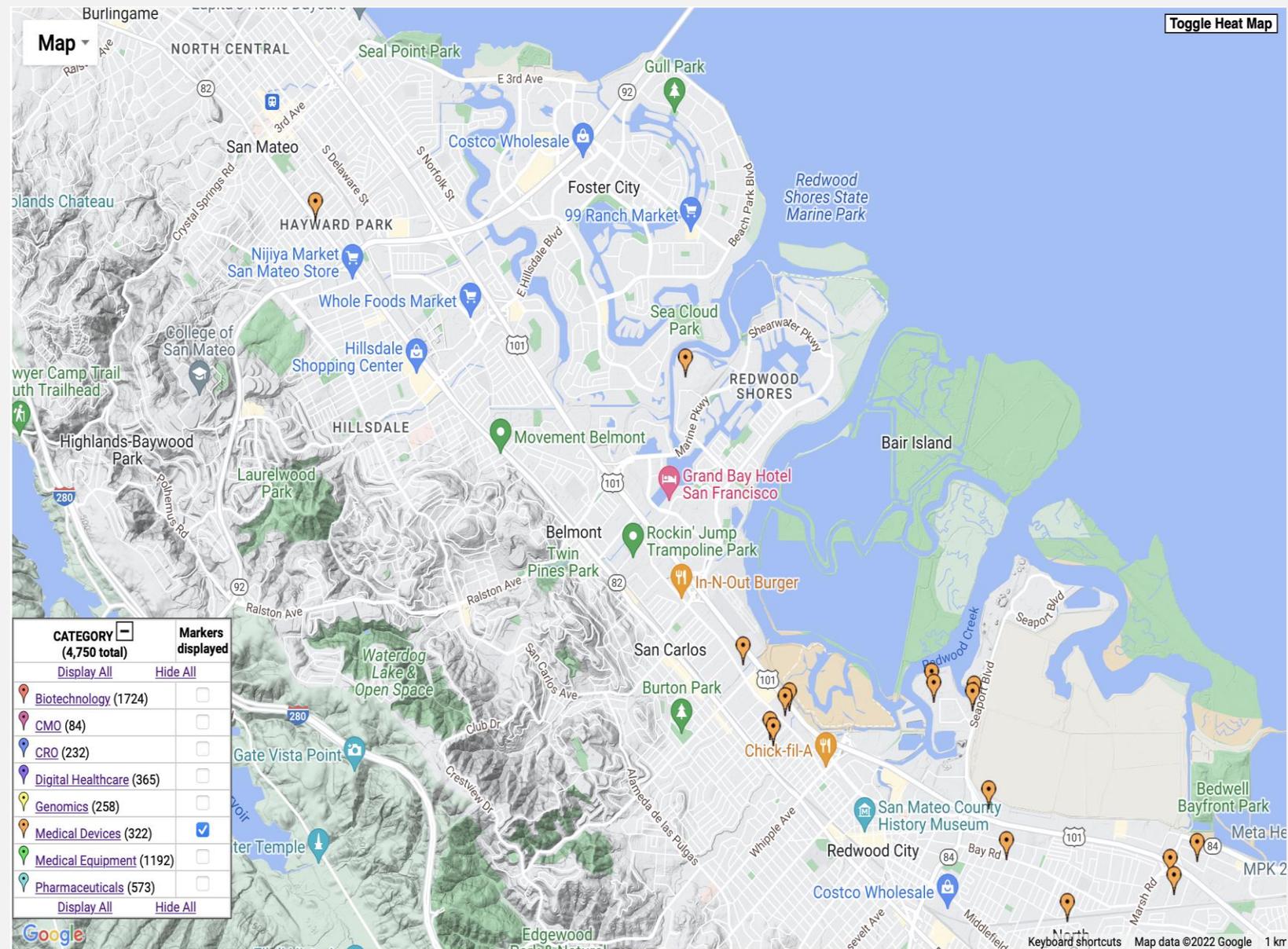
San Francisco Bay Area Biomedical Industry



San Francisco Bay Area Biomedical Industry



San Francisco Bay Area Biomedical Industry



San Francisco Bay Area Biomedical Industry

