



*“Driving Innovation and Technology
in the Bio-pharma Supply Chain”*



Because life depends on us™

***PANEL: “The Resurgence of Manufacturing in
Biomedical and Bio-pharma Manufacturing:
Overcoming Trials and Tribulations”***

Mike Prindiville, Director of Production, Intuitive Surgical

Mike Zuerlein, Director of Production, Illumina

Dr. Gregory Theyel, Program Director, Biomedical Manufacturing Network

**Moderator: Kelly Kline, Chief Innovation Officer & Director, Economic
Development, City of Fremont**

BUILDING SUPPLY CHAIN EXCELLENCE END TO END

Mapping the San Francisco Bay Area Biomedical Industry

Gregory Theyel, Director
Biomedical Manufacturing Network



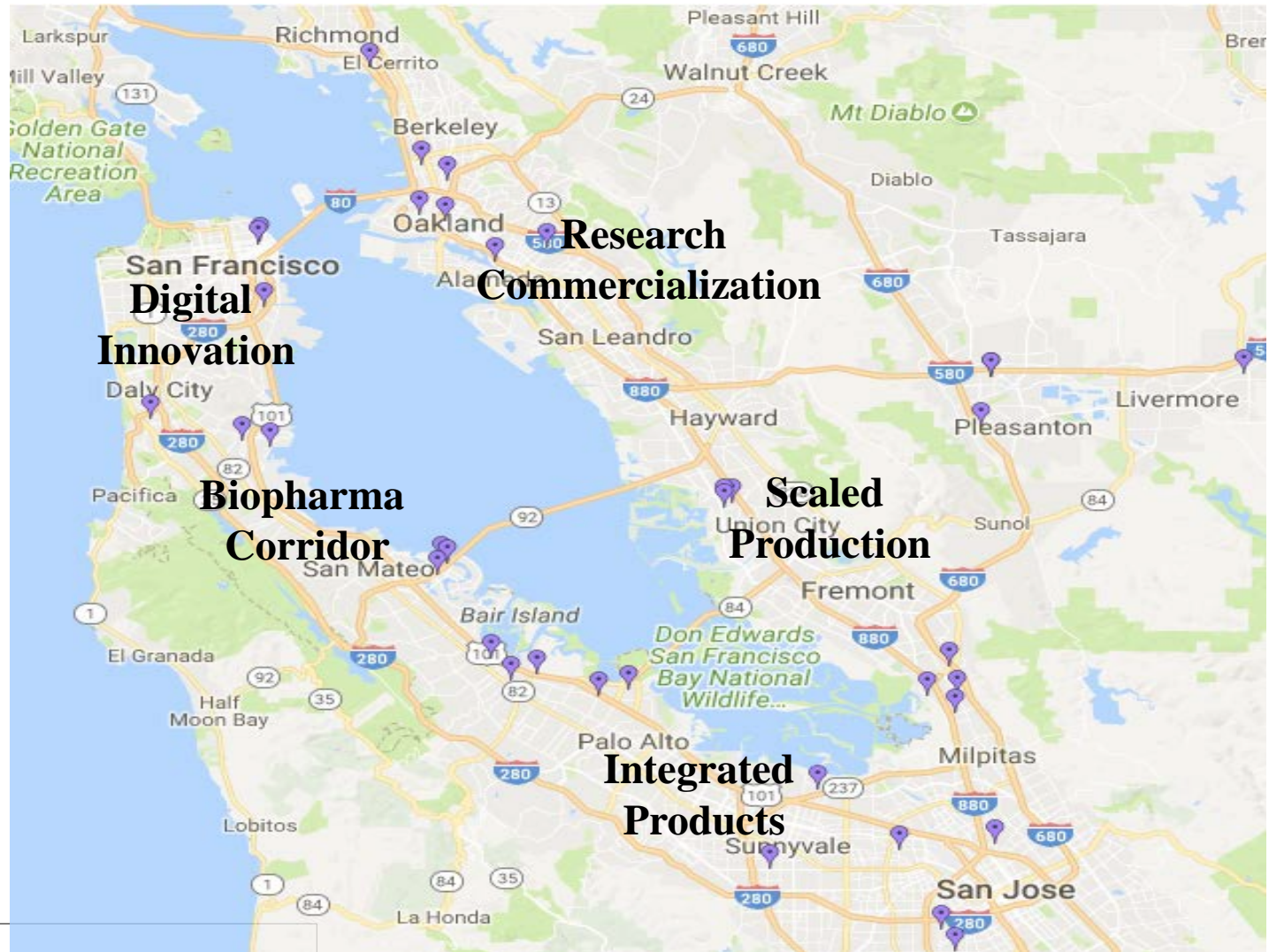
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San Francisco Bay Area Biomedical Industry



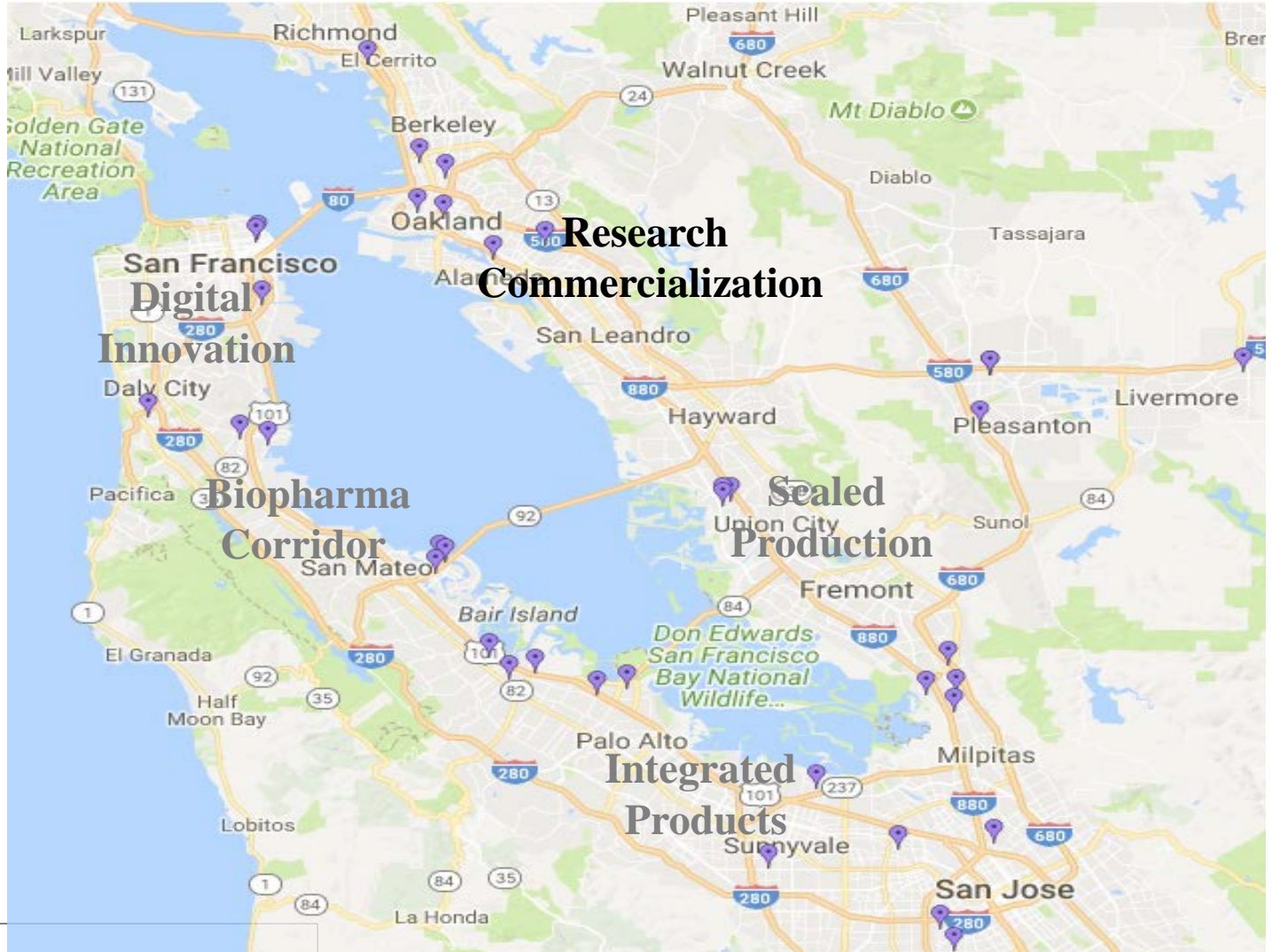
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Microclimates of Biomedical Innovation



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University and Laboratory Research Commercialization

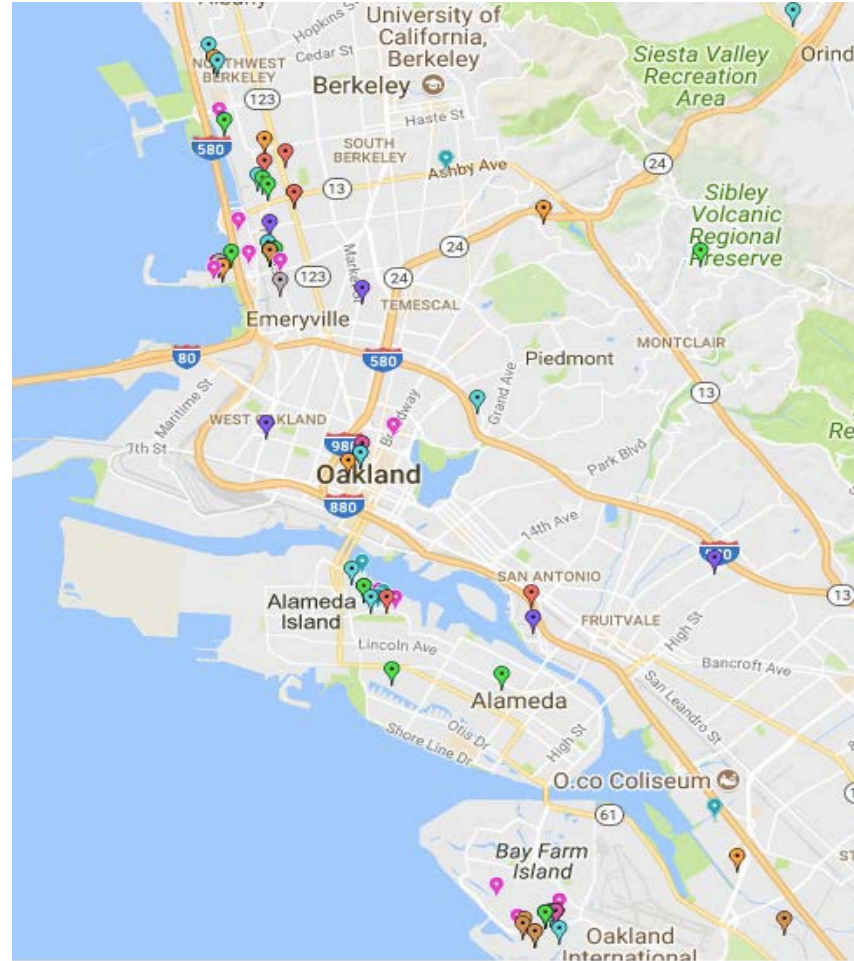
Firms

125+ biomedical companies in Berkley-Emeryville-Alameda (biopharma and medical devices); Most very small with Bayer, Grifols and Novartis as exceptions

Over half with roots to UC Berkeley and/or LBNL



GRIFOLS



Talent

80%+ have at least a Bachelors degree, 40% have a Masters or higher; many people have doctorates

Investment

Most are early stage with SBIR funding; limited venture funding

Infrastructure

12 incubators; Wareham facilities; wet lab and fermentation facility needs (limited supply)

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Scaled Production

Firms

115+ biopharmaceutical companies in Fremont – most making medical devices and equipment (100 companies). Twice the size on average

Talent

50%+ jobs to people with HS or 2-year degree (middle skill jobs) ; Ohlone College programs; relatively affordable cost of living

Investment

Corporate and institutional investment; revenue

Infrastructure

Manufacturing focus; support CMOs; newer space that is cheaper

Policy

Engaged city economic development; streamlined permitting and location assistance

stryker[®]

Boston
Scientific

ThermoFisher
SCIENTIFIC

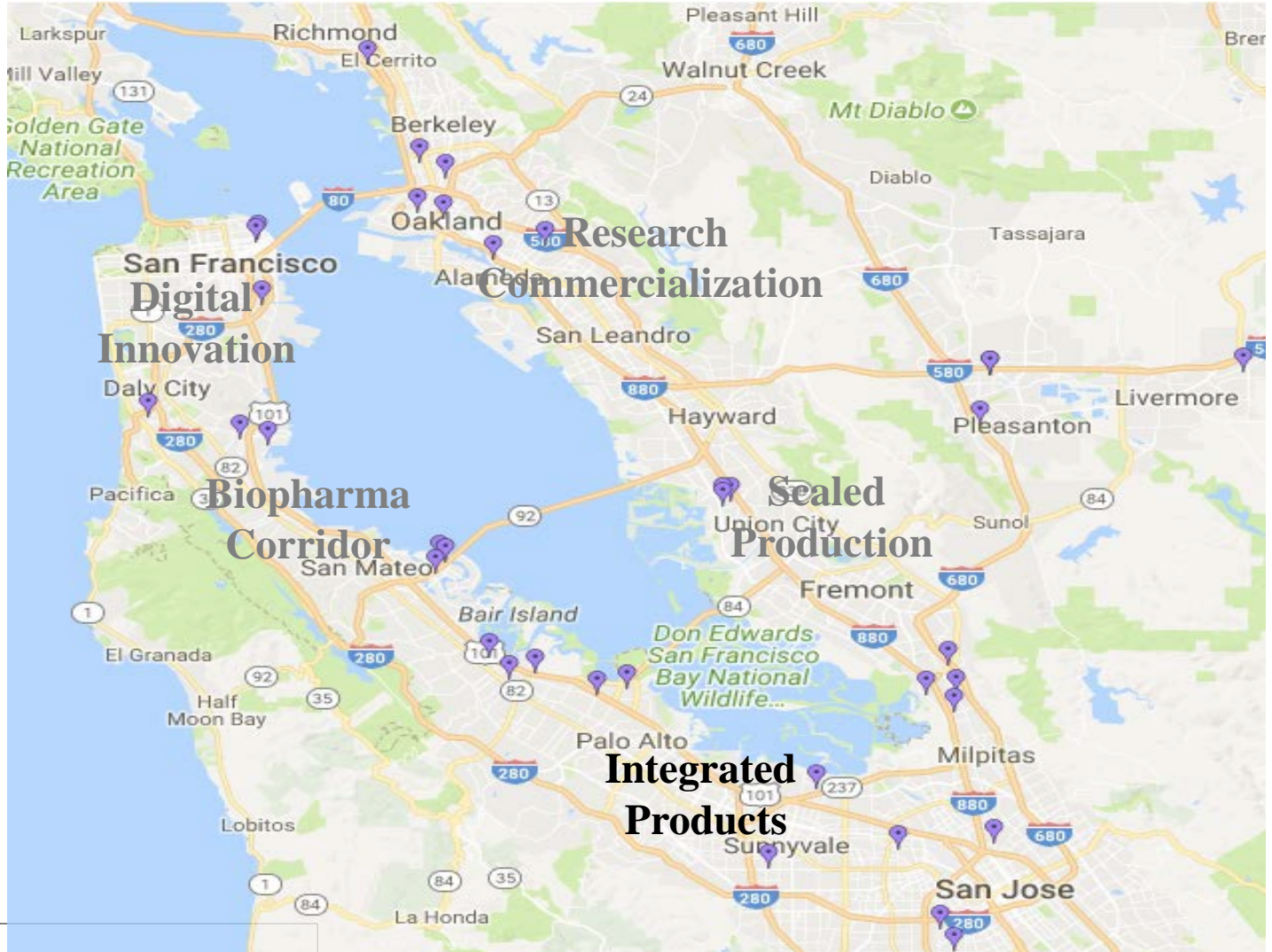
THINK
SURGICAL

ALTER [®]
Anti-Gravity Treadmill[®]



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Integrated Products

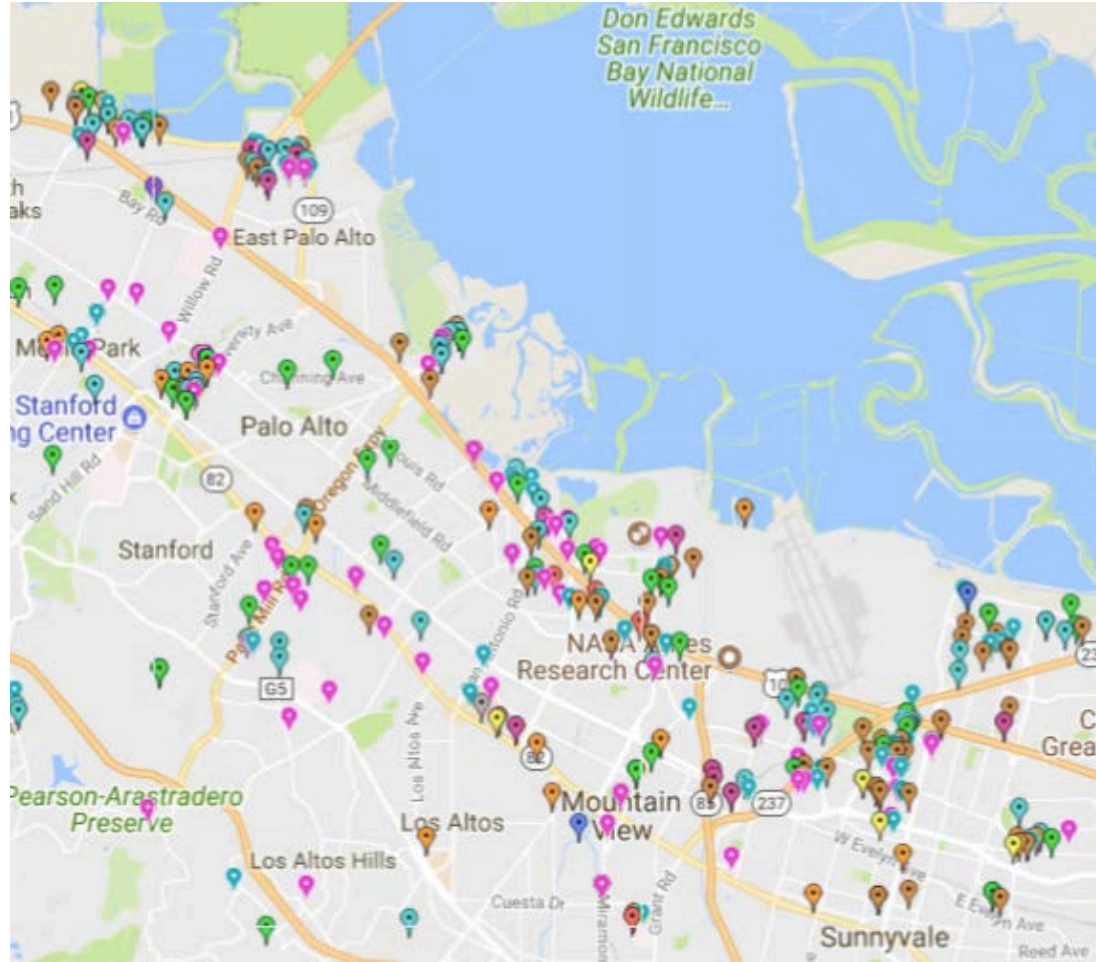
Firms

300+ companies;
Palo Alto, Menlo
Park, Sunnyvale,
Mountain View

High location
quotients for
software, sensors
semiconductors

Investment

Best location of
venture capital; tech
money, SV Bank



Talent

70%+ have at least a
Bachelors degree,
40% have a Masters
or higher; some
middle skill jobs in
manufacturing; high
cost of living

Infrastructure

Stanford University;
Spin-outs from tech
companies; law
firms; climate of
entrepreneurship

INTUITIVE

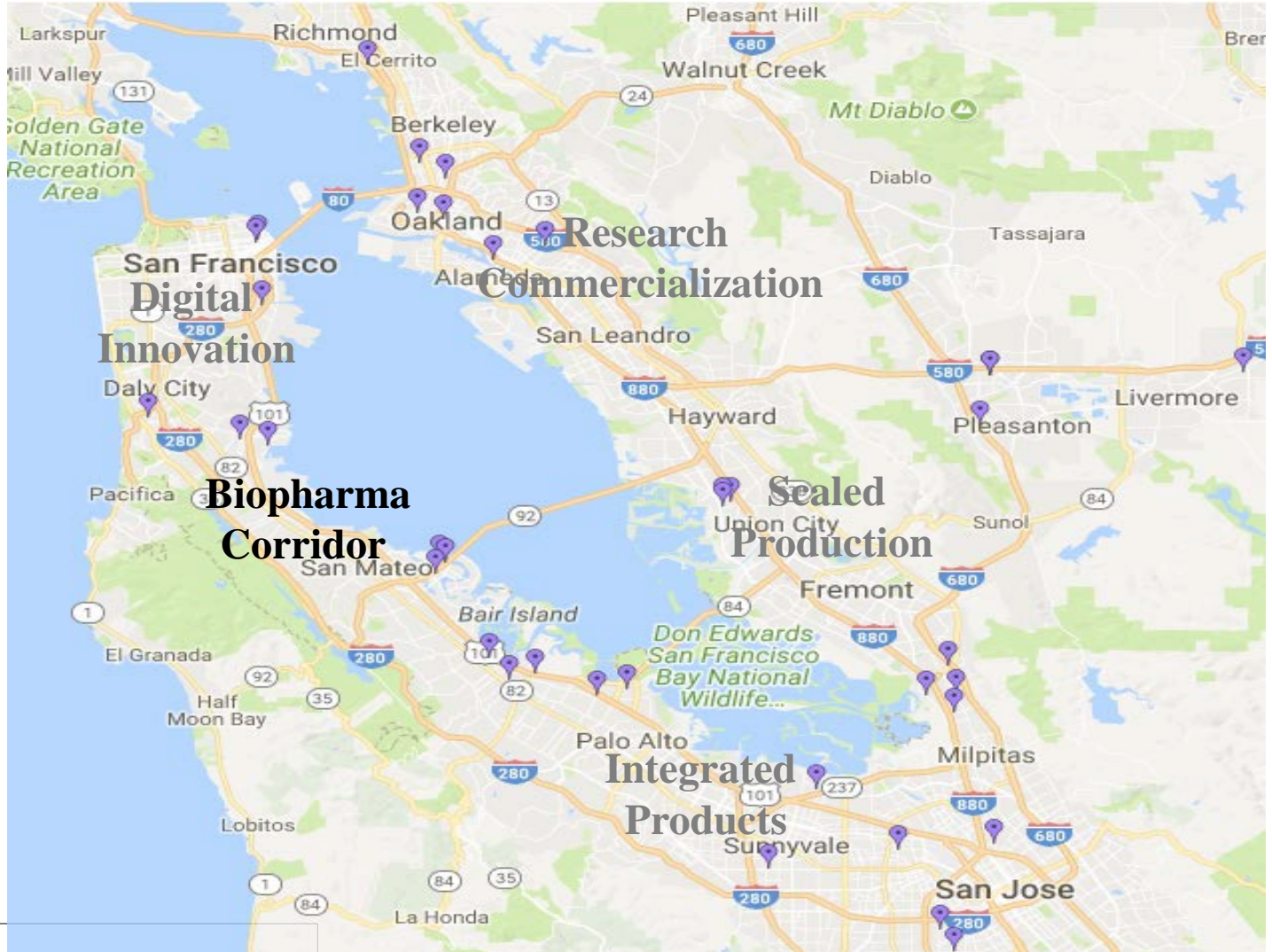
VARIAN
medical systems

Cepheid.
A better way.

MOLECULAR
DEVICES

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BioPharma Corridor

Firms

200+ biopharmaceutical companies from SSF to Foster City – 125 biotechnology and 75 pharmaceuticals

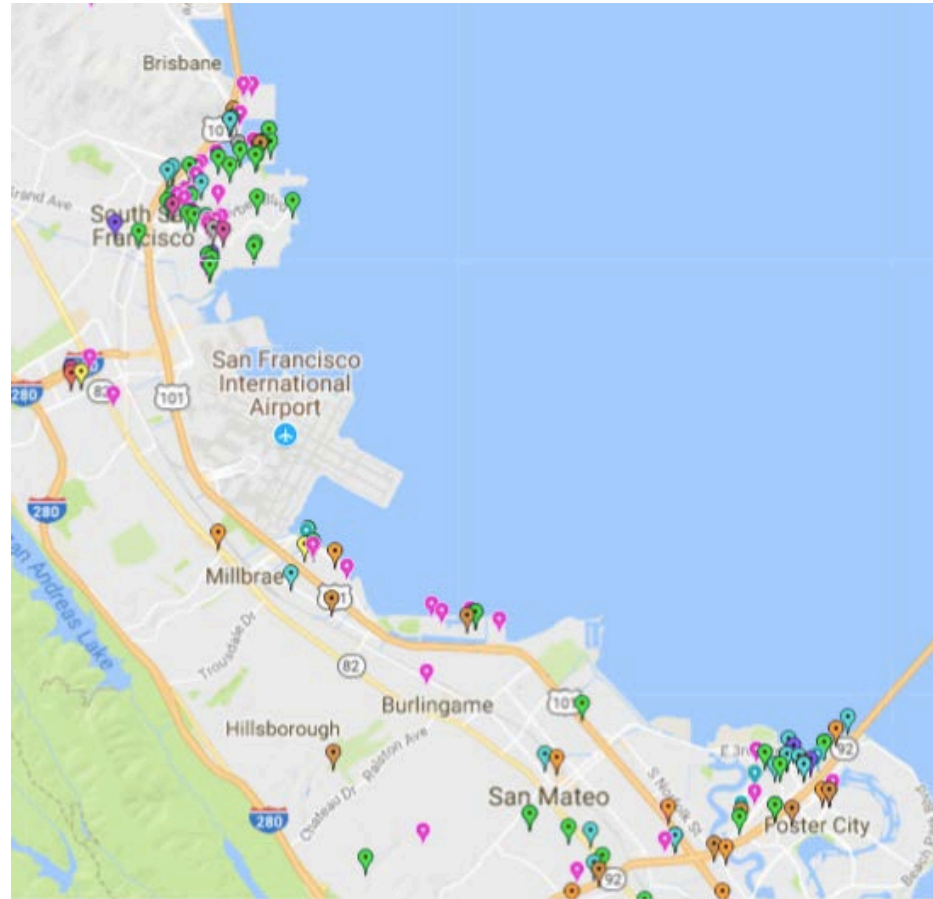
Only 20 companies with more than 20 employees

Genentech

 **GILEAD**

 **aimmune™**
THERAPEUTICS

 **ICONIC**
THERAPEUTICS



Talent

85%+ have at least a Bachelors degree, 50% have a Masters or higher; few middle skill jobs

Investment

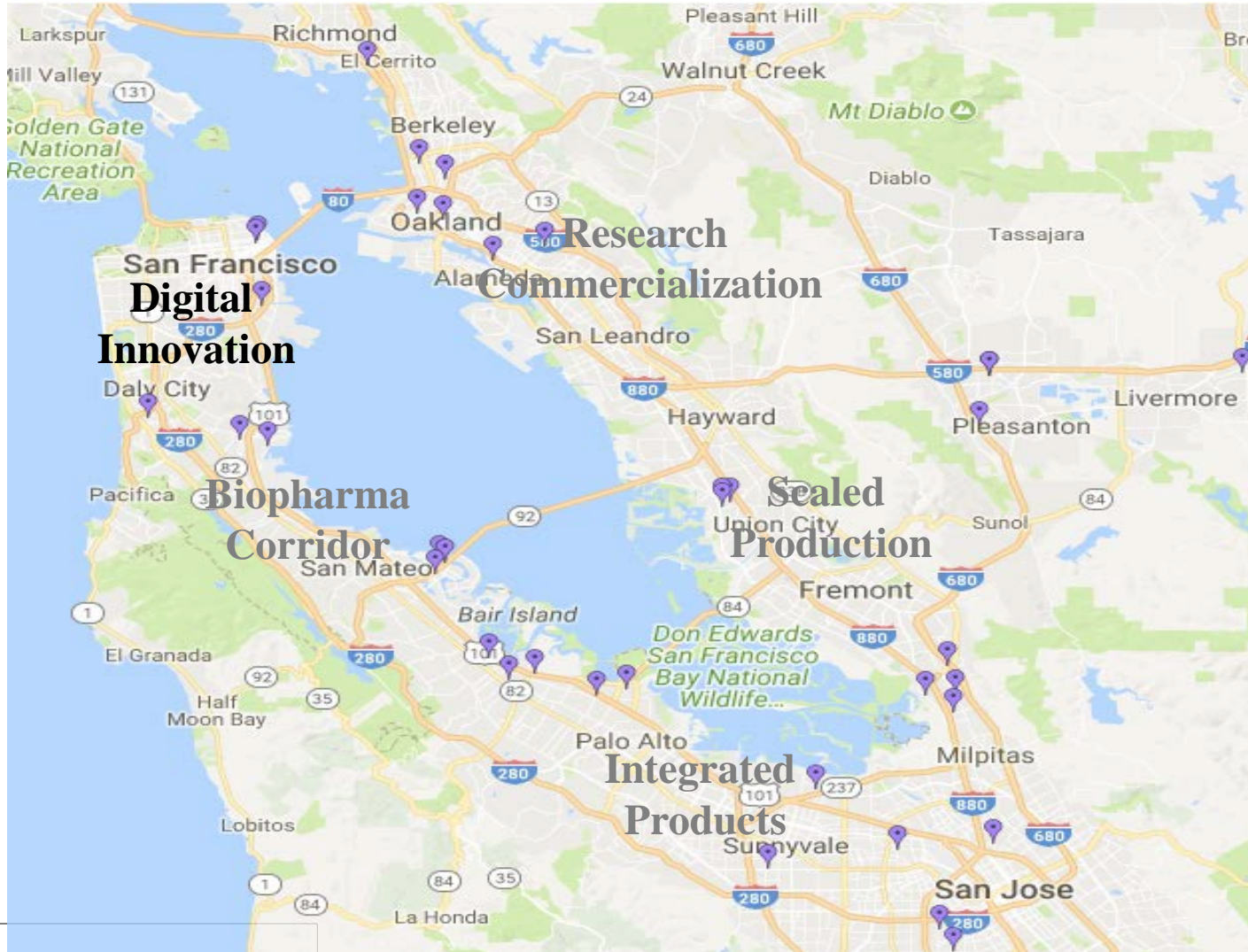
Corporate venture funding (J&J, Thermo, Roche, Google); VC funding for start-ups

Infrastructure

Density and proximity to support resources; housing and transport challenges

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Digital Innovation

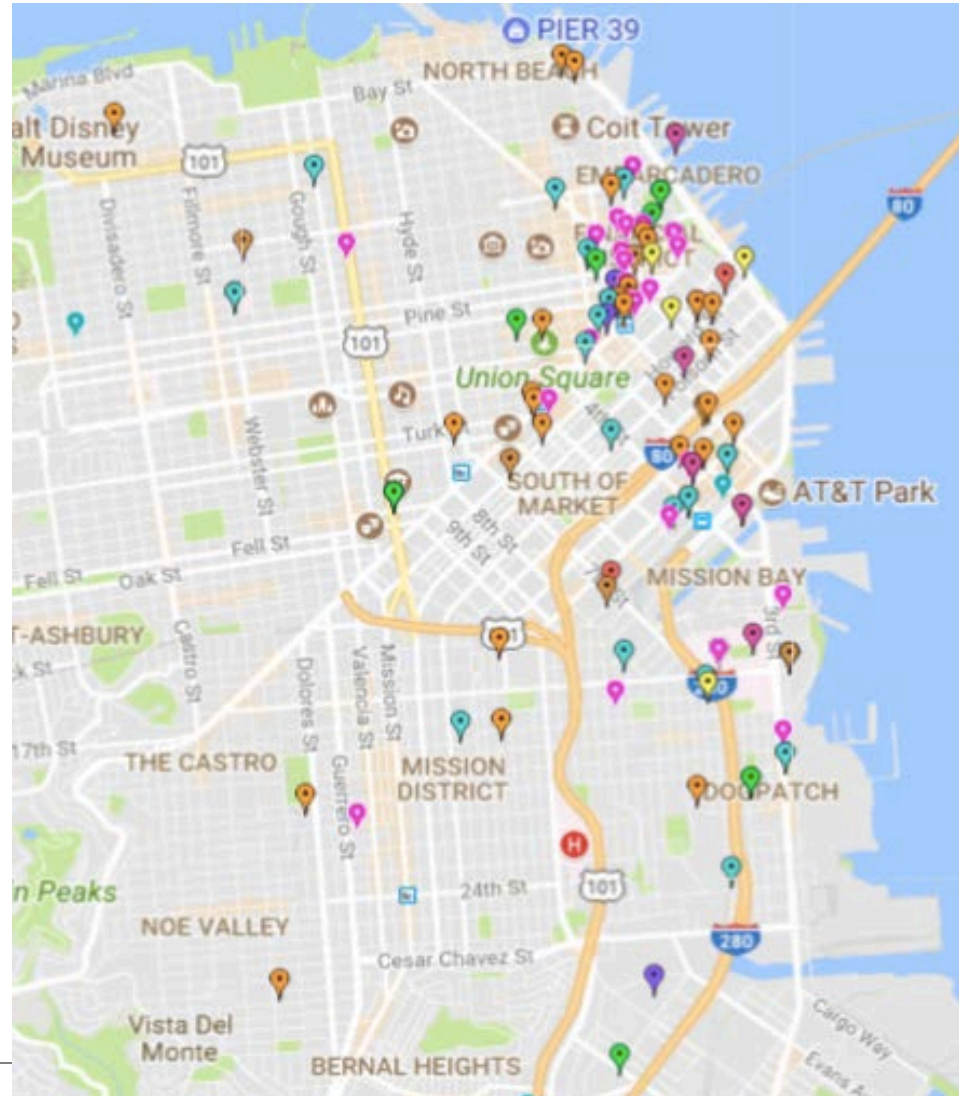
Firms

100+ companies, most with a digital health care focus; South of Market and Mission Bay

High location quotients for software and business services

Investment

Growing VC community
Tech investment, spin offs, proximity to financial district; shorter exits; fastest growing sector



Talent

80%+ have at least a Bachelors degree, 40% have a Masters or higher (Comp Sci, Engineering); access and competition for talent

Infrastructure

10+ incubators and accelerators; Rock Health; QB3; UCSF; access to consulting and law firms



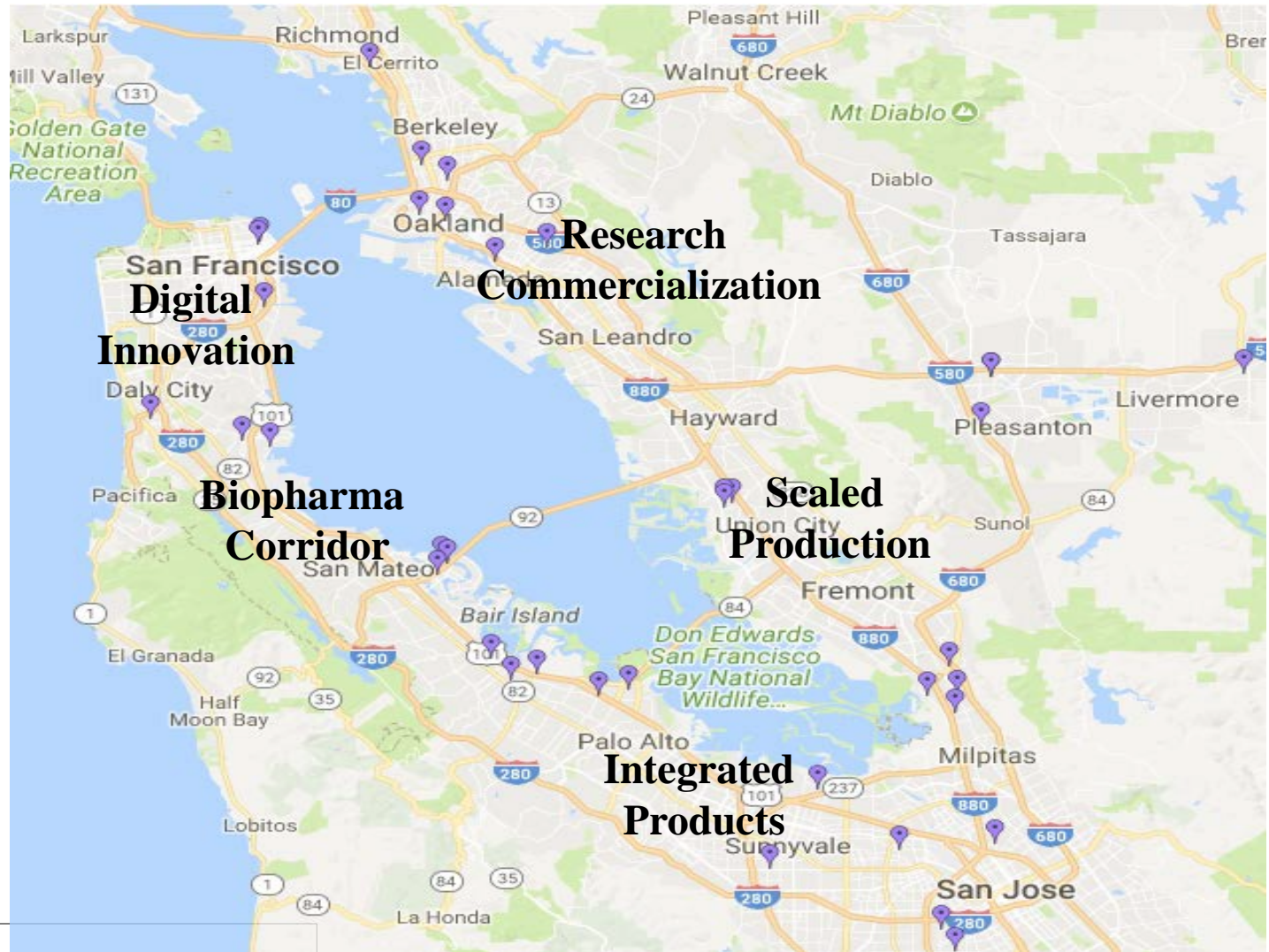
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