



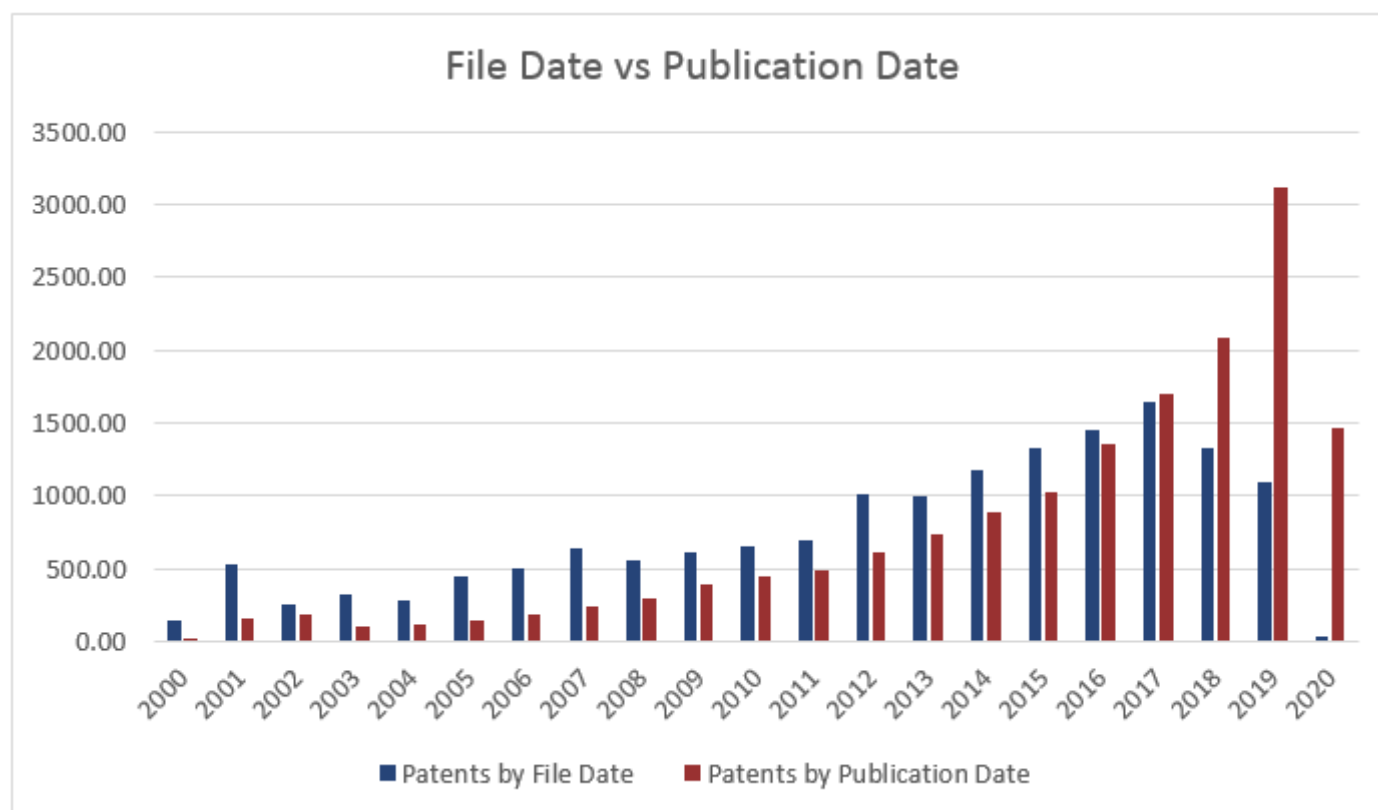
15 Jun  
2020

## The University of California builds its patent portfolio, but not its royalty returns

The National Academy of Inventors and the Intellectual Property Owners Association teamed up again this year to produce the [Top 100 Worldwide Universities Granted US Utility Patents in 2019](#) ranking. The Regents of the University of California was crowned the top recipient, with 631 grants. It has been the same story [since 2012](#). The institution uses its high-quality assets to generate sizeable royalties, but its most recent figures indicate that returns are not what they were.

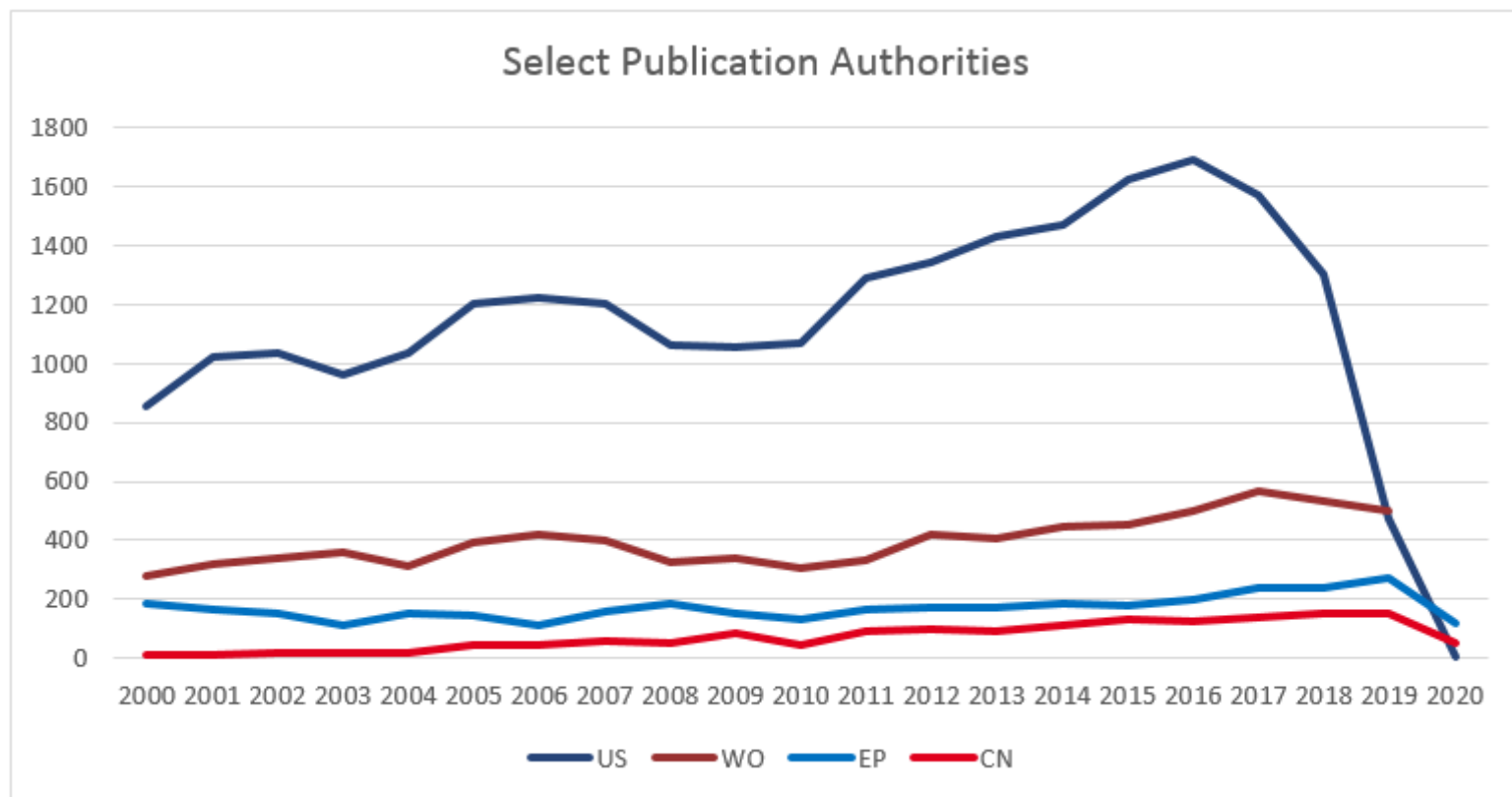
The University of California (UC) was always an active patent filer in the university sector, but it doubled down on portfolio building after it published a [Report of the Working Group on Technology Transfer](#) in 2012 (see graph below). The paper argued that there was significant potential to increase revenue given the school's research expenditure, but it flagged the unpredictability of inventions becoming blockbusters as a major issue.

To open more licensing opportunities the working group decided it needed more innovation and more patents. Ultimately, the recommendation was to play a numbers game with patent filings in the hope that this would increase the chances of stumbling upon lucrative technologies. Today the university, including its 10 campuses, owns 15,791 active patents globally, according to [Anaqua's AcclaimIP](#). Of these, 7,735 are grants and 7,984 are pending applications.



Source: Anaqua's AcclaimIP Analytics Software; Data is accurate as of 12 June 2020. The data for 2019 and 2020 is incomplete given the 18-month lag between when a patent is filed and when it is published.

Since 1980, the US, Australia, Japan and Canada have been the top offices for UC patent filings, according to [Patent-Pilot](#). It is also an active filer at the EPO and via the PCT. The graph below shows the publication authorities that have been the most popular in recent years, with a clear bias shown to the US. Notably, applications filed via WIPO have been on an upward trend since 2010. The UC has been the [top PCT applicant](#) for the university sector since 1993.



Source: Patent-Pilot; Note: Data is for the publication authority given on a filings' publications and is accurate as of 11 June 2020. The data for 2019 and 2020 is incomplete given the 18-month lag between when a patent is filed and when it is published.

Townsend and Townsend and Crew, which merged with Kilpatrick Stockton in 2011 to become Kilpatrick Townsend & Stockton LLP, is the UC's top external representative for patent prosecution (see table below). Bozicevic, Field & Francis and O'Banion & Ritchey take the second and third spots.

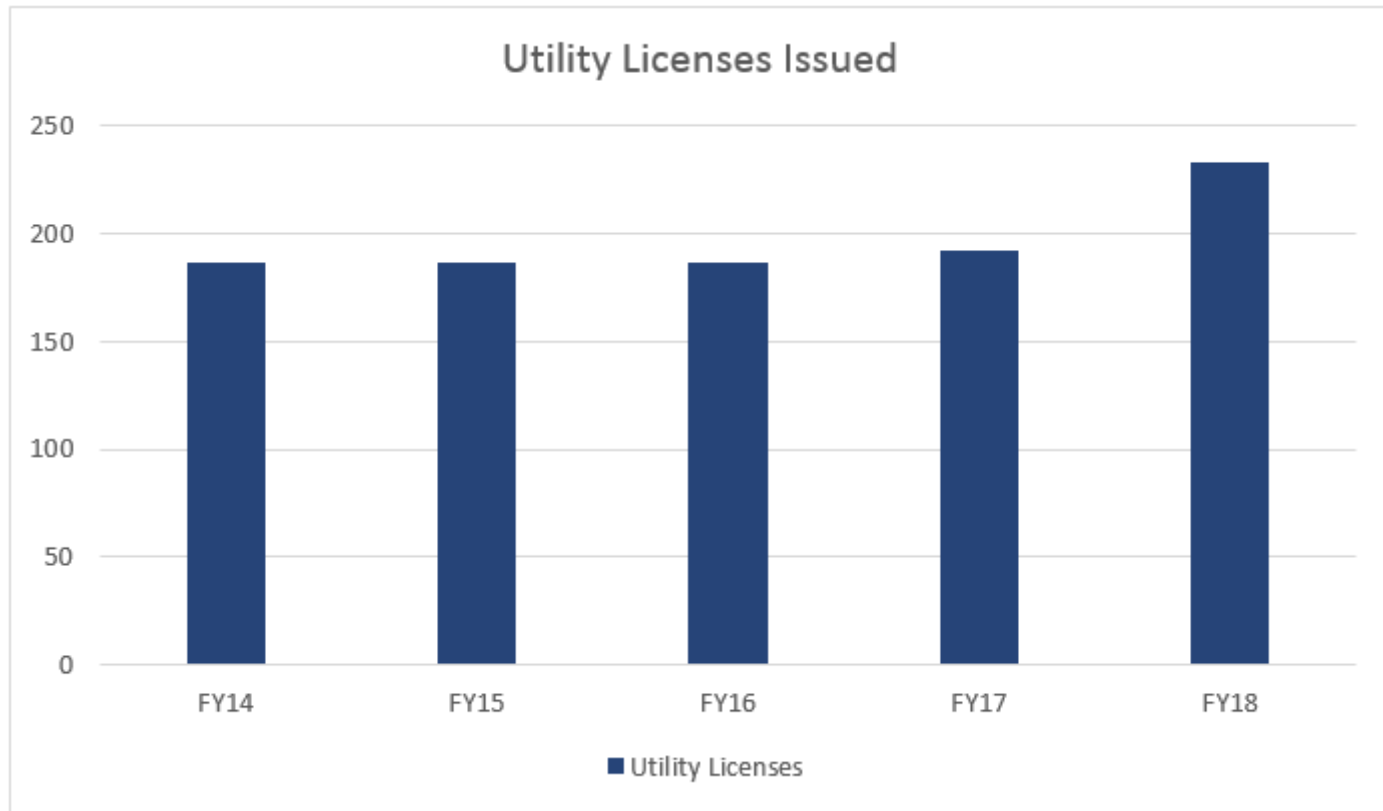
#### Top External Representatives

Townsend and Townsend and Crew LLP	2,441
Bozicevic, Field & Francis LLP	2,424
O'Banion & Ritchey LLP	1,967
Kilpatrick Townsend & Stockton LLP	1,537
Gates & Cooper	1,504
Smart & Biggar/Fetherstonhaugh	1,160
Morrison & Foerster LLP	1,056
Gavrilovich, Dodd & Lindsey LLP	925
Weaver Austin Villeneuve & Sampson LLP	883
JA Kemp	806

Source: Patent-Pilot

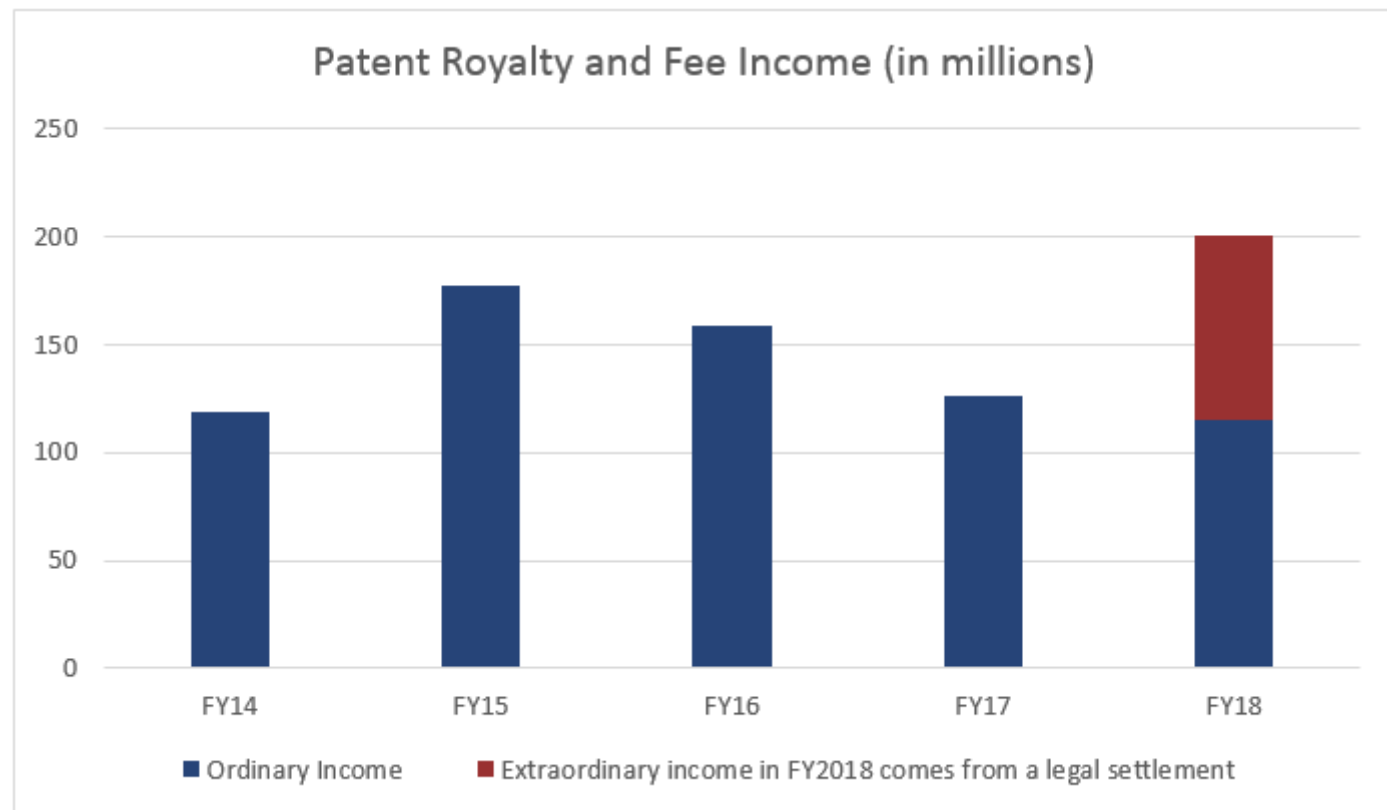
The purpose of growing out the patent portfolio was to increase the in-flow of revenue. The UC's most recent [Technology Commercialisation Report](#), which documents technology commercialisation activity for fiscal year 2018, sheds light on its progress.

The number of licences issued per year remained stagnant between FY2014 and FY2017 but saw a noticeable uptick in FY2018 (see graph below). The university now has 1,592 active utility licences, down from 1,702 in FY2014.



Source: Technology Commercialisation Report 2018

UC finished 2018 with \$200.6 million in total technology commercialisation income (see graph below). UC Los Angeles (UCLA), UC San Francisco and UC San Diego were the top contributors to the total, accounting for \$92.2 million, \$38.2 million, and \$22.6 million, respectively. The school saw its highest earnings from technology commercialisation in 2018 since 2015, but a significant chunk of this money came from a UCLA legal settlement. Without considering this sum, there is a clear downward trend in patent royalty and fee income.



Source: Technology Commercialisation Report 2018

While the previous charts don't paint the most positive picture, it is worth noting that there is another indicator to measure technology transfer success: start-ups formed. A study published by the Milken Institute in April 2017, [Concept to Commercialisation: The best universities for technology transfer](#), ranks American universities using four key metrics, and finds that UC's campuses generally score much better on this indicator than the others (patents issued, licences issued and licensing income). In fact, UCLA ranked 15<sup>th</sup> in this index, up 30 places since 2016, and it is first among all universities in its performance in start-ups. The full ranking can be seen in the link above, while the table below shows the results for each of UC's campuses.

**Milken Institute Technology Transfer and Commercialisation Index: UC Campuses**

Rank	Institution	Patent Issued Score	Licensing Issued Score	Licensing Income Score	Start-up Score	Index Score
15	University of California, Los Angeles	93.32	77.37	68.43	100.00	91.48
20	University of California, San Diego	89.14	83.65	65.76	93.53	88.36
41	University of California, Davis	78.72	90.23	64.82	85.56	84.36
53	University of California, Berkley	79.85	74.21	61.99	87.81	81.73
54	University of California, San Francisco	75.40	78.56	67.52	82.19	81.68
64	University of California, Irvine	77.17	70.49	63.70	84.71	80.17
83	University of California, Santa Barbra	88.37	69.16	62.33	77.29	78.44
120	University of California, Riverside	65.91	82.13	62.37	65.72	72.53
152	University of California, Santa Cruz	62.63	55.49	51.33	71.06	65.52
171	University of California, Merced	53.68	57.61	44.15	62.69	58.52

Source: *Concept to Commercialisation: The best universities for technology transfer*

UC has [published](#) its own stats relating to start-up formation across the entire system. In 2018, 93 new start-up companies were formed from UC inventions, and 1,218 start-ups have been founded since 1980.

### Litigation deep dive

It is important to remember that UC prioritises commercialisation rather than sheer revenue. But, nonetheless, building and maintaining a patent portfolio is a critical component of this approach – and a costly one at that. If the university's royalty incomes stall, it's important that there are other monetisation tools at its disposal.

There are generally two other ways for academic institutes to earn money: sales on the secondary market and litigation. The former is rarely utilised by American universities, which account for less than one-quarter of all transfers by academic patent sellers, according to data collected between 2012 and 2017 published in [US Patent Sales by Universities and Research Institutes](#). The UC is no exception to this pattern, having transferred five assets in one sale for monetisation purposes within the period studied.

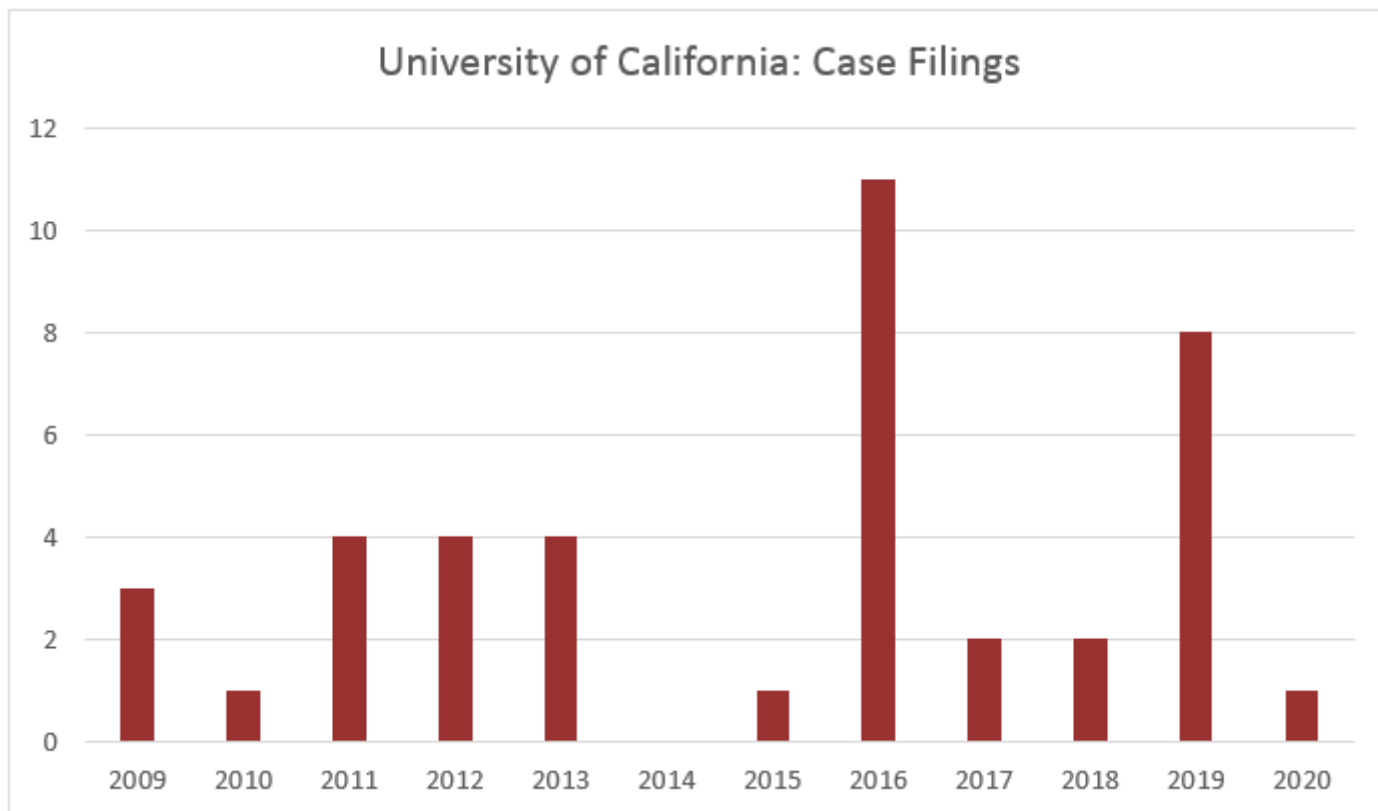
This leaves litigation. Overall, UC has been involved in 44 US district court patent cases (see graph below). It has appeared as the plaintiff in 33 instances, the defendant in nine, and the third-party in two. Its busiest years were in 2016 and 2019, when it was a party in 11 and eight disputes respectively.

In 2016, it initiated 10 patent suits. Its main targets were in the pharmaceutical industry with Zydus Pharmaceuticals and its parent company Cadila Healthcare, as well as Apotex, featuring as the top defendants.

The university was predominantly the plaintiff in its 2019 disputes, appearing as the defendant only once. In one notable campaign, it [targeted](#) Amazon, Walmart, Target Corp, Ikea and Bed Bath & Beyond Inc across five lawsuits for the alleged infringement of four patents relating to "filament" LED light bulbs. All these cases have since been terminated.

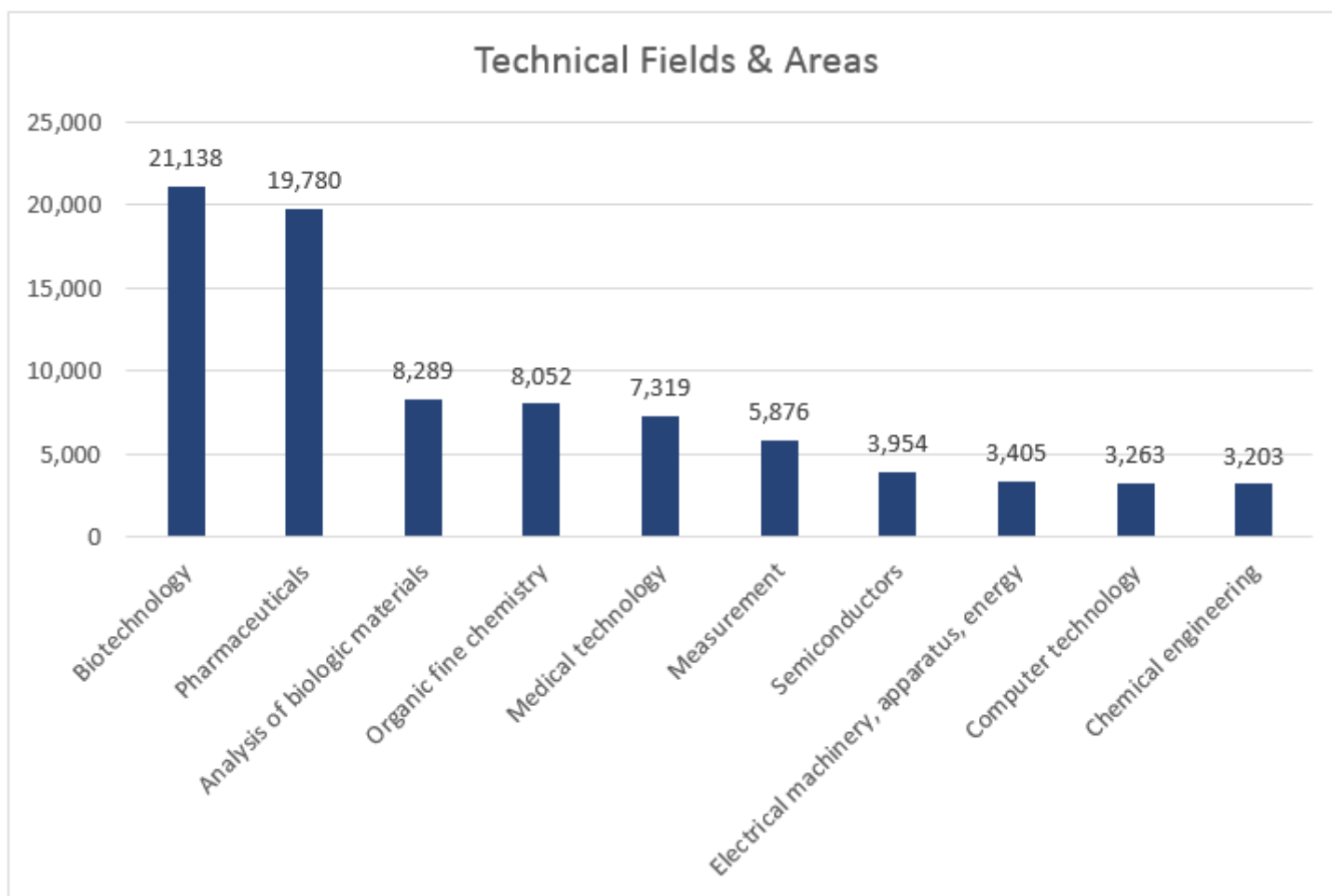
At the time, UC sought unspecified damages, including royalties, and demanded the retailers enter licence agreements. Its lawyers at Nixon Peabody described the litigation as the "first-of-its kind direct patent enforcement" campaign against an entire industry. In a statement that may foreshadow future developments, the university said that it intended "to spearhead a broader, national response to the existential threat" posed by those who disregarded the patent rights of universities.

Taking corporations to court can be an attractive option for academic institutions. For UC the value is evident in its FY2018 patent royalty and fee income numbers, where settlements topped up the amount by \$85.8 million.



Source: [Lex Machina](#)

UC certainly innovates in some highly litigious technology areas. A breakdown of the school's patent filings reveals that biotechnology, pharmaceuticals and analysis of biologic materials are its top technical fields (see graph below).



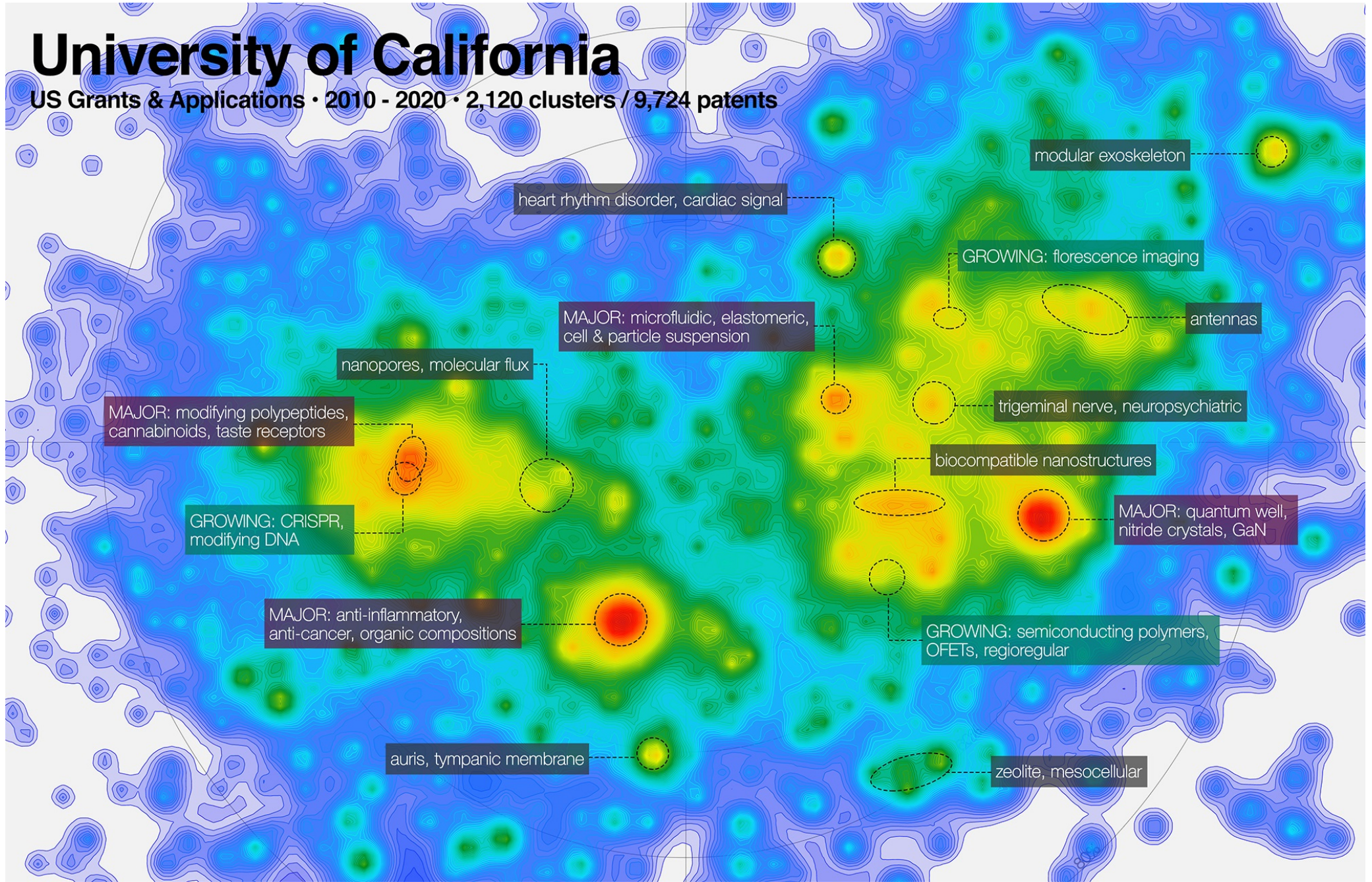
Source: Patent-Pilot; Based on WIPO's concept for technology classification (2008). Note: Cumulated values of this chart do not necessarily match the total number of the company's filings. Many filings are associated with multiple technical fields and counted once for each of those fields then.

Analysts from [Valuenex](#) conducted an additional study of 2010-2020 grants and applications owned by the Regents of the University of California to gain a better understanding of its patent landscape. Overall, the bulk of the technology seems to be medical-related in one way or another. Chemical and biological related patents appear on the left-hand side of the image below, and hardware related innovations feature on the right. Generally, these have been the two broad regions of focus, and the portfolio has grown steadily across both areas over the past decade.

Biotechnology is a growing focus for patent enforcers. It also happens to be a field in which UC is a key player. The Milken Institute [ranked](#) UC San Francisco as the second top university when it comes to quality and quantity of biotechnology patents issued in the US. The university is [currently embroiled](#) in a battle with the Broad Institute over rights to CRISPR-cas9, a potentially highly lucrative technology.

# University of California

US Grants & Applications • 2010 - 2020 • 2,120 clusters / 9,724 patents



Source: VALUENEX; see full-size image [here](#)

## IAM says:

UC definitely gains monetary value from technology commercialisation and its patent portfolio more broadly, but it may be thinking of new ways to monetise its assets. In 2018 its top five inventions accounted for 73% of its royalty and fee income, and its top 25 inventions accounted for 86.2%. [In 2012](#), the top five inventions and top 25 inventions made up 43.6% and 72.3% of royalty and fee income respectively.

Over the years fewer inventions have accounted for more and more of its revenue, despite the “numbers game” approach to its patent portfolio. The university is no doubt in possession of high-quality assets in important technology areas, and we may see it become increasingly aggressive as it seeks to find effective ways to exploit its patents and secure its return on investment.