R&D and Innovation

Paris Region, an Innovation Powerhouse

Paris Region is Europe’s leading R&D destination with an overall R&D spending equivalent to that of Silicon Valley. Research and Development accounts for the employment of more than 165,500 people in global R&D centers across a variety of businesses. Its diversified economy is buzzing with top-ranked high-tech clusters and research centers, which generate exciting opportunities for cross-sector collaboration. Research and development in Paris Region is mainly carried out by private companies which account for two thirds of total expenditure and represent more than 85% of design-research jobs.

### #1 in Europe for R&D (2017/18)

#### The highest amount of R&D expenditure in Europe

<table>
<thead>
<tr>
<th>Region</th>
<th>R&amp;D expenditure (€B)</th>
<th>Private companies</th>
<th>Public institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paris Region</td>
<td>20.4</td>
<td>30.5%</td>
<td>69.5%</td>
</tr>
</tbody>
</table>

6.9% of EU and 39.5% of French R&D expenditure 2.7% of Paris Region’s GDP

In the Region, 70% of R&D expenses are made by companies.

Ministry of Education, Higher Education and Research, data 2018

#### The largest R&D talent pool in Europe

<table>
<thead>
<tr>
<th>Region</th>
<th>R&amp;D workforce</th>
<th>Private companies</th>
<th>Public institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paris Region</td>
<td>165,547</td>
<td>35.8%</td>
<td>65.2%</td>
</tr>
<tr>
<td>Researchers</td>
<td>119,742</td>
<td>5.6% of EU</td>
<td>37.5% of French R&amp;D employees</td>
</tr>
</tbody>
</table>

These professors, researchers, engineers, technicians and support staff work in universities, Grandes Ecoles, public institutes and companies.

Ministry of Education, Higher Education and Research, data 2017

Paris Region, the best place in Europe to source R&D talent

<table>
<thead>
<tr>
<th>Region</th>
<th>Total R&amp;D workforce</th>
<th>Researchers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paris Region</td>
<td>165,547</td>
<td>119,742</td>
</tr>
<tr>
<td>Greater London (UK)</td>
<td>115,354</td>
<td>86,692</td>
</tr>
<tr>
<td>Lombardy (IT)</td>
<td>101,924</td>
<td>39,250</td>
</tr>
<tr>
<td>Stuttgart (DE)</td>
<td>97,520</td>
<td>62,608</td>
</tr>
<tr>
<td>Oberbayern (DE)</td>
<td>94,963</td>
<td>59,642</td>
</tr>
<tr>
<td>Comunidad de Madrid (ES)</td>
<td>77,918</td>
<td>51,475</td>
</tr>
<tr>
<td>Catalonia (ES)</td>
<td>71,984</td>
<td>43,484</td>
</tr>
<tr>
<td>Warsaw Capital Region (PL)</td>
<td>70,978</td>
<td>53,679</td>
</tr>
<tr>
<td>Köln (DE)</td>
<td>65,682</td>
<td>42,400</td>
</tr>
<tr>
<td>Auvergne Rhône Alpes (FR)</td>
<td>62,253</td>
<td>39,954</td>
</tr>
</tbody>
</table>

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Paris Region Facts & Figures 2021

EU28 Top 5 regions by R&D expenditure
(millions of euros in 2017)

Internationally Recognized Technological and Scientific Knowledge

In terms of research, the Region’s reputation is internationally recognized, and its researchers have been awarded numerous prizes and distinctions.

33 Nobel Prizes

The two most prestigious awards in mathematics

4 Abel Prizes

11 Fields Medals

At the Forefront of Innovation

Paris, European leader and #10 largest science and technology clusters in the world according to the Global Innovation Index 2020 (GII, 2020)

Paris:
- #2 most innovative city in Europe
- #7 in the world, behind London (#5), and ahead of New York (#8), Seoul (#10) and Munich (#13)

Paris stands out for its:
- High number of international projects
- High volume of start-ups
- Slightly above-average R&D spending as a percentage of GDP
- Large number of international patents filed
- High level of patenting activity, particularly in the private sector
- Areas of excellence, which include transportation equipment, pharmaceuticals and biotechnology

Patents
7,500 patents filed, i.e. 57.5% of the patents filed in France
INPI, data 2019

Paris Region is the European leader, and accounts for 4.4% of all European patent applications in EU 28.

In 2017, the Region’s scientific output accounted for 3.7% of European publications.

Publications
19,917 scientific publications in 2017
36.3% of the national publications.

The Region’s scientific specialization is strong in mathematics, physics, human sciences and social sciences.

Paris Region; 26% of international copublications, especially with the USA, the UK, Italy and Japan.

A Concentration of National Scientific Power

91 doctoral schools

25,012 students enrolled in doctoral programs, i.e. 37.4% in France
Eurométropole, data 2018

7,500 foreign PhD students
Ministry of Research, 2010-20

5,789 foreign researchers
40.2% of foreign researchers in France
FNAP, data 2018

The highest number of people employed in the fields of science and technology - High-Tech sectors (High-Tech manufacturing sector and high-tech and knowledge-based service sector in Europe).

Presence of Major Research Infrastructures

3 out of 10 of the world’s most innovative research institutions

#3 CEA Alternative Energies and Atomic Energy Commission

#8 CNRS National Center for Scientific Research

#9 INSERM National Institute of Health and Medical Research

The worlds most Innovative Research Institutions, Reuters, 2019

Paris Region is home to the highest concentration of mathematicians in the world, including many Abel Prize and Fields Medal winners.
A Multidisciplinary Technological Hub at the Heart of Europe

Paris Region is renowned for its competitiveness clusters, especially in tech. From artificial intelligence to biotechnology, nanotechnology, telecommunications, AR/VR, 3D Animation, and Aerospace, businesses can plug into a fast-growing ecosystem in no time. By bringing together large corporations, SMEs, start-ups, academics and researchers, Paris Region spurs remarkable collaborations and open innovation partnerships.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Industry</th>
<th>Members, incl.</th>
<th>Major groups</th>
<th>SME's</th>
<th>Labs and teaching institutions</th>
<th>Projects funded since the cluster was founded</th>
<th>Total funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTech</td>
<td>Aeronautics, space and defence</td>
<td>299</td>
<td>110</td>
<td>109</td>
<td>48</td>
<td>73</td>
<td>€313 million</td>
</tr>
<tr>
<td>Cap Digital</td>
<td>Digital and ecological transformation</td>
<td>1,032</td>
<td>86</td>
<td>850</td>
<td>75</td>
<td>12 investments funds; 9 urban communities</td>
<td>€1,700 million</td>
</tr>
<tr>
<td>Cosmetic Valley</td>
<td>Perfumery and cosmetics</td>
<td>493</td>
<td>36</td>
<td>418</td>
<td>37</td>
<td>429</td>
<td>€2.25 million</td>
</tr>
<tr>
<td>Finance Innovation</td>
<td>Financial services</td>
<td>600</td>
<td>180</td>
<td>400</td>
<td>20</td>
<td>600</td>
<td>€1 billion</td>
</tr>
<tr>
<td>Medicen</td>
<td>High-tech healthcare and new therapies</td>
<td>493</td>
<td>36</td>
<td>418</td>
<td>37</td>
<td>429</td>
<td>€2.25 million</td>
</tr>
<tr>
<td>Next Move</td>
<td>Automotive and mobility industry</td>
<td>600</td>
<td>47</td>
<td>310</td>
<td>35</td>
<td>15 local authorities and institutional bodies</td>
<td>€1.2 billion</td>
</tr>
<tr>
<td>Polymeris</td>
<td>Rubber, plastics and composites industry</td>
<td>380</td>
<td>30</td>
<td>183</td>
<td>15</td>
<td>55 micro-enterprises, 65 labs and teaching institutions</td>
<td>Over €3.18 billion</td>
</tr>
<tr>
<td>Systematic</td>
<td>European innovation and technology cluster in digital and Deep Tech</td>
<td>900</td>
<td>150</td>
<td>500</td>
<td>20</td>
<td>140 labs and teaching institutions; 20 investors; 20 local authorities and institutional bodies</td>
<td>Over €3.18 billion</td>
</tr>
</tbody>
</table>

8 regional competitiveness clusters make up this dynamic ecosystem.

4,904 members including:
- 4,023 companies
- 620 labs and teaching institutions

Over 2,940 including €8 billion of total funding