



ticles has been reached in the fields of general science and technology, biomedical research, biology, and mathematics and statistics. The fields where open access availability is most limited are the social sciences and humanities and applied sciences, engineering, and technology.

A recent European Commission Communication identified open access as a core means to improve knowledge circulation and thus innovation in Europe. Therefore, open access will be mandatory for all scientific publications produced with funding from Horizon 2020, the EU's Research & Innovation funding program for 2014–2020. The Communication recommended that Member States take a similar approach to the Commission in their domestic programs.

The study was undertaken by Science-Metrix, a research evaluation consultancy. The study included the 28 EU Member States, as well as Switzer-

land, Lichtenstein, Iceland, Norway, Turkey, The Former Yugoslav Republic of Macedonia, Israel, Brazil, Canada, Japan, and the United States. Two other reports by the same group were also released in the summer, examining open access policies and the issue of open access to data.

Concerning open access policies, the report found that the majority of 48 major science funders considered both key forms of open access acceptable: open access publications in journals and self-archiving. More than 75% accepted embargo periods of between six and 12 months.

The third study found however that currently fewer policies are in place for open access to scientific data than for open access to publications. Open access to research data is rapidly evolving in an environment where citizens, institutions, governments, non-profit and private companies loosely cooperate to develop infrastructure, standards, proto-

types, and business models. Under Horizon 2020, the Commission will start a pilot on open access to data collected during publicly funded research, taking into account legitimate concerns related to the grantee's commercial interests, privacy, and security.

The Commission will make open access to scientific publications a general principle of Horizon 2020. As of 2014, all articles produced with funding from Horizon 2020 will have to be accessible as follows:

- articles will either immediately be made accessible online by the publisher—up-front publication costs can be eligible for reimbursement by the EC; or
- researchers will make their articles available through an open access repository no later than six months (12 months for articles in the fields of social sciences and humanities) after publication.

NSF releases study on regional concentration of scientists and engineers

www.nsf.gov/statistics

According to a recently published report by the National Science Foundation (NSF), science and engineering

(S&E) employment in the United States is geographically concentrated in a small number of states. Furthermore,

several major metropolitan areas within these states account for the highest S&E employment.

California, Texas, and New York together accounted for more than one-fourth of all S&E employment. The states of Florida, Virginia, Pennsylvania, Illinois, Massachusetts, and Ohio accounted for almost another one-fourth. In the physical sciences, high levels of employment were found in areas in the vicinity of Los Angeles, San Diego, Santa Clara, and Oakland, all in California, as well as in Denver, Boston, Houston, and Montgomery County, Md.

According to NSF, S&E expertise is an integral part of a region's capacity to innovate because of the scientists' and engineers' high skill levels, creative ideas, and contributions to scientific knowledge and to research and development.

The data are from the US Census Bureau's 2011 American Community Survey (ACS). Out of the 5.7 million workers employed in S&E, about 368,000 reported being in the physical sciences. □

TABLE. Employment in science and engineering occupations, by PUMA: 2011^a

| S&E occupation and general geographic location | S&E employment | | S&E employment in geographic area | |
|--|----------------|----------------|-----------------------------------|----------------|
| | Number | Standard error | Percent | Standard error |
| Physical sciences | | | | |
| United States | 368,304 | 9,656 | 100.0 | - |
| Los Angeles, CA | 9,306 | 1,535 | 2.5 | 0.41 |
| Denver, CO | 9,093 | 1,516 | 2.5 | 0.41 |
| Boston, MA ^b | 7,992 | 1,369 | 2.2 | 0.38 |
| Houston, TX | 7,874 | 1,411 | 2.1 | 0.38 |
| San Diego, CA | 7,330 | 1,361 | 2.0 | 0.37 |
| Santa Clara, CA | 6,942 | 1,324 | 1.9 | 0.37 |
| Oakland, CA | 6,518 | 1,283 | 1.8 | 0.37 |
| Montgomery County, MD | 6,238 | 1,253 | 1.7 | 0.37 |

PUMA = public use microdata area; S&E = science and engineering.

^aTable selection extracted from Table 2 in the NSF Information Brief, "Regional Concentrations of Scientists and Engineers in the United States," NSF 13-330, August 2013.

^bIn Massachusetts, employment PUMA 3200 covers part of Middlesex County and employment PUMA 3300 covers part of Suffolk County.

SOURCE: Census Bureau, American Community Survey public use microdata sample files, 2011.

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MRS Congressional Fellow 1998-1999
Office of Senator Lieberman

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