

## Coauthorship share of United States, EU-15, Japan, and East Asia-4 on international S&amp;E articles of indicated region and country/economy: 1988

(Percent)

Region and country/economy	S&E articles (number)		United States	EU-15							Japan	East Asia-4		
	Total	International		Total	France	Germany <sup>a</sup>	Italy	Netherlands	Spain	UK		Total	China	South Korea
<b>Major S&amp;E article producers</b>														
United States.....	187,225	19,294	na	47.0	7.4	9.4	5.1	3.0	1.6	10.6	7.9	4.6	2.7	0.8
EU-15.....	144,157	25,179	48.2	na	na	na	na	na	na	na	4.0	2.0	1.7	0.1
Austria.....	2,678	782	20.9	54.1	4.3	29.0	4.3	2.7	0.5	5.7	2.2	0.6	0.5	0.0
Belgium.....	4,386	1,425	21.1	57.8	18.0	7.9	4.7	11.3	2.2	7.3	1.5	0.3	0.3	0.0
Denmark.....	4,044	1,090	25.9	50.6	3.9	10.2	5.0	2.5	1.0	11.0	2.0	0.5	0.5	0.0
Finland.....	3,185	724	27.6	47.6	4.2	5.9	1.8	3.4	0.3	7.9	1.6	0.5	0.5	0.0
France.....	24,393	5,681	25.2	41.5	na	9.2	7.0	2.9	4.1	8.3	2.1	1.0	0.8	0.1
Germany <sup>b</sup> .....	29,164	6,435	28.6	38.7	8.1	na	4.4	4.0	1.6	8.2	3.8	1.2	1.0	0.1
Greece.....	1,487	448	34.4	48.8	11.3	12.7	2.1	1.5	0.5	16.1	1.2	0.3	0.3	0.0
Ireland.....	941	286	21.3	58.5	7.2	5.7	2.2	4.0	1.1	33.2	1.7	2.1	1.9	0.0
Italy.....	12,821	3,096	31.3	45.1	12.4	8.5	na	2.5	2.4	10.7	1.4	1.4	1.2	0.1
Netherlands.....	9,797	2,192	27.8	51.8	7.8	12.0	3.8	na	1.6	12.4	2.1	0.8	0.7	0.0
Portugal.....	542	203	21.3	67.9	15.7	7.8	2.1	5.5	4.9	25.4	0.7	0.3	0.3	0.0
Spain.....	6,109	1,255	24.6	58.4	18.8	8.4	6.9	2.6	na	15.1	1.7	0.1	0.1	0.0
Sweden.....	8,767	2,211	31.5	42.1	4.9	7.4	3.8	2.8	0.7	8.4	2.1	0.9	0.7	0.0
United Kingdom.....	40,335	7,125	29.7	36.1	6.6	7.4	4.9	3.7	2.5	na	2.2	1.9	1.4	0.1
Japan.....	36,041	3,097	49.5	25.5	3.9	7.8	1.6	1.5	0.7	5.3	na	6.7	4.1	1.4
East Asia-4.....	8,194	1,824	50.9	20.9	3.4	4.4	2.3	1.0	0.1	7.1	13.1	na	na	na
China.....	5,256	1,181	44.8	26.1	4.3	5.4	3.1	1.4	0.1	8.2	12.0	0.9	na	0.1
Singapore.....	468	111	21.9	26.8	1.2	0.6	0.9	0.0	0.0	18.5	6.8	4.8	2.6	0.6
South Korea.....	909	249	60.6	9.0	2.4	3.1	0.9	0.4	0.0	1.7	21.8	1.0	0.3	na
Taiwan.....	1,581	303	71.9	6.3	1.4	1.1	0.4	0.2	0.0	2.5	11.5	2.8	1.8	0.4
<b>Other regions/countries</b>														
<b>Other Asia</b>														
Bangladesh.....	129	63	34.1	39.1	0.0	4.4	4.4	0.0	0.0	20.5	4.4	0.7	0.0	0.0
India.....	9,403	976	34.5	38.5	4.3	10.9	3.0	1.6	0.4	14.4	4.5	0.7	0.4	0.0
Indonesia.....	106	81	23.3	37.3	8.9	0.7	0.0	13.4	0.0	10.9	12.4	4.1	0.6	1.0
Malaysia.....	254	83	18.3	38.9	3.1	4.1	0.0	0.0	0.0	29.2	10.2	5.7	2.4	1.4
Pakistan.....	277	78	27.0	43.7	0.0	8.4	1.2	0.0	0.0	22.8	3.1	0.0	0.0	0.0
Philippines.....	171	83	38.2	19.0	4.4	7.0	1.1	1.7	0.0	2.3	20.4	1.8	1.5	0.0
Sri Lanka.....	144	66	20.0	45.8	10.9	7.7	0.0	2.7	0.0	16.4	3.6	0.9	0.0	0.9
Thailand.....	397	205	29.5	31.8	2.0	4.5	0.0	1.4	0.0	16.8	17.3	1.2	0.2	0.5
Vietnam.....	71	37	0.0	55.2	14.7	12.9	2.6	8.6	0.0	0.0	0.0	0.0	0.0	0.0
<b>Other Western Europe</b>														
Cyprus.....	18	5	0.0	81.8	0.0	0.0	27.3	0.0	0.0	36.4	0.0	0.0	0.0	0.0
Iceland.....	94	44	3.3	58.3	3.0	5.3	0.0	0.0	0.0	31.5	1.0	0.0	0.0	0.0
Norway.....	2,564	684	3.1	55.3	2.6	7.6	1.9	1.9	0.5	12.0	1.3	0.6	0.4	0.0
Switzerland.....	6,764	2,485	2.8	59.2	12.6	16.5	9.8	2.8	1.7	7.0	2.4	0.8	0.8	0.0
Turkey.....	576	129	5.4	44.4	4.1	15.4	1.8	2.0	0.5	14.9	1.1	0.5	0.5	0.0
Yugoslavia.....	1,482	491	30.2	43.8	4.8	19.6	4.9	1.8	0.5	5.2	1.2	0.5	0.2	0.0

**Coauthorship share of United States, EU-15, Japan, and East Asia-4 on international S&E articles of indicated region and country/economy: 1988**

(Percent)

Region and country/economy	S&E articles (number)		United States	EU-15						East Asia-4				
	Total	International		Total	France	Germany <sup>a</sup>	Italy	Netherlands	Spain	UK	Japan	Total	China	South Korea
Eastern Europe/former USSR .....	43,219	3,485	20.5	62.2	8.7	13.3	6.6	2.7	0.8	6.1	2.1	0.5	0.4	0.0
Bulgaria.....	1,233	270	8.3	41.0	7.2	8.5	4.8	0.4	0.1	5.0	1.6	0.1	0.1	0.0
Hungary .....	2,110	718	24.3	43.4	4.8	11.0	4.5	1.9	0.6	4.6	2.6	0.1	0.1	0.0
Poland.....	4,696	1,211	21.4	53.3	9.1	14.2	5.7	2.9	0.8	6.0	1.0	0.5	0.5	0.0
Romania.....	440	88	18.7	43.6	4.9	6.9	14.1	2.5	1.1	6.0	3.0	2.1	2.1	0.0
Former USSR.....	32,240	615	8.8	44.5	5.4	22.4	4.4	1.5	0.4	2.7	1.1	0.3	0.2	0.0
Central/South America .....	6,612	1,896	44.9	41.1	10.3	7.1	4.4	1.2	4.3	8.3	1.7	0.2	0.1	0.0
Argentina .....	1,566	266	31.1	46.0	16.0	7.8	7.5	0.9	2.9	5.5	0.3	0.0	0.0	0.0
Brazil.....	2,100	621	39.6	38.9	10.4	8.5	4.1	1.1	1.7	8.3	1.8	0.5	0.3	0.0
Chile.....	820	247	37.6	38.4	7.3	8.7	4.0	1.7	9.9	2.8	1.4	0.0	0.0	0.0
Colombia.....	118	59	59.8	25.6	4.4	6.2	4.0	0.0	1.5	8.5	1.5	0.0	0.0	0.0
Costa Rica.....	80	47	59.1	21.3	0.0	11.3	0.0	2.0	1.3	1.6	0.0	0.0	0.0	0.0
Cuba .....	98	55	5.3	51.1	5.9	0.0	15.6	0.0	1.6	0.8	0.0	0.0	0.0	0.0
Mexico .....	1,058	321	50.4	31.1	8.5	4.5	1.0	1.6	6.4	5.8	0.7	0.0	0.0	0.0
Peru .....	108	70	41.1	39.5	9.5	8.2	0.8	0.0	4.1	9.0	4.7	0.3	0.3	0.0
Uruguay .....	50	16	19.6	46.4	11.3	6.2	0.0	0.0	6.2	6.2	0.0	0.0	0.0	0.0
Venezuela.....	360	124	40.6	37.9	7.0	1.5	4.0	0.0	5.9	14.0	2.0	0.0	0.0	0.0
Near East/North Africa .....	9,326	2,691	49.9	36.3	13.2	7.6	1.4	1.0	0.3	9.3	1.1	0.3	0.3	0.0
Algeria.....	109	78	3.1	86.4	74.5	1.7	1.5	0.0	0.0	5.6	0.0	0.0	0.0	0.0
Egypt.....	1,292	306	31.9	38.4	8.5	12.2	2.2	0.7	0.0	10.7	1.5	0.5	0.5	0.0
Iran .....	112	47	41.1	33.0	5.8	1.9	3.9	0.0	1.3	18.1	0.0	2.6	2.6	0.0
Israel.....	5,845	1,706	62.4	24.6	5.2	8.3	1.1	1.2	0.2	5.2	1.2	0.3	0.1	0.0
Jordan.....	191	55	41.8	34.1	2.5	8.2	0.0	0.0	0.0	20.1	0.0	0.0	0.0	0.0
Kuwait.....	342	74	22.1	42.4	1.3	1.3	0.0	0.7	0.0	30.7	2.8	0.9	0.9	0.0
Lebanon.....	64	17	41.2	43.7	30.3	0.0	0.0	3.4	0.0	10.1	0.0	0.0	0.0	0.0
Morocco.....	178	119	14.6	79.1	72.6	2.3	0.8	0.0	1.7	1.2	0.8	0.8	0.8	0.0
Oman .....	22	14	19.8	58.9	8.7	4.7	0.0	11.6	0.0	21.1	0.0	0.0	0.0	0.0
Saudi Arabia.....	638	131	36.2	28.9	0.0	0.7	2.7	0.7	0.0	23.4	0.0	0.0	0.0	0.0
Tunisia.....	139	79	3.5	94.3	88.1	1.2	1.2	1.2	1.2	0.0	0.0	0.6	0.6	0.0
United Arab Emirates.....	29	11	11.0	39.0	4.9	8.5	0.0	0.0	0.0	25.6	2.4	0.0	0.0	0.0
Sub-Saharan Africa.....	5,195	1,247	29.0	51.1	11.5	5.8	2.6	1.9	0.1	19.4	2.1	0.5	0.2	0.0
Cameroon.....	52	31	14.2	68.7	42.9	0.0	0.0	0.0	0.0	20.0	3.8	0.0	0.0	0.0
Ethiopia.....	91	37	10.3	61.5	0.0	9.4	8.5	2.6	0.0	25.6	0.0	0.0	0.0	0.0
Ghana .....	48	18	20.2	60.0	7.1	0.0	6.3	3.2	0.0	34.0	9.5	0.0	0.0	0.0
Kenya.....	371	146	35.5	34.8	1.5	1.8	0.0	1.7	0.0	22.9	3.3	0.0	0.0	0.0
Nigeria .....	966	153	37.5	43.1	3.3	6.8	2.1	1.7	0.2	23.8	1.9	0.2	0.2	0.0
Senegal.....	0	0	na	na	na	na	na	na	na	na	na	na	na	na
South Africa.....	2,724	385	35.7	36.3	2.5	9.6	2.7	0.9	0.2	15.4	2.2	0.5	0.0	0.0
Tanzania.....	86	39	12.8	46.8	3.7	7.0	0.0	3.1	0.0	16.7	2.3	0.0	0.0	0.0
Uganda.....	25	7	0.0	75.1	14.0	0.0	4.0	0.0	0.0	57.1	0.0	0.0	0.0	0.0
Zimbabwe.....	144	52	23.9	43.3	0.0	0.0	0.0	5.4	0.0	25.1	0.0	0.0	0.0	0.0

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Region and country/economy	S&E articles (number)		United States	EU-15							Japan	East Asia-4		
	Total	International		Total	France	Germany <sup>a</sup>	Italy	Netherlands	Spain	UK		Total	China	South Korea
Other														
Australia.....	10,951	1,985	37.3	32.8	2.3	5.4	1.3	1.3	0.2	17.9	3.3	3.6	2.4	0.1
Canada.....	24,008	4,906	51.3	27.3	7.3	3.2	1.6	1.6	0.6	7.8	3.6	2.2	1.5	0.2
New Zealand .....	2,349	493	35.6	25.5	2.7	2.2	0.3	0.8	0.1	16.5	2.5	0.8	0.7	0.0

na = not applicable

EU = European Union; UK = United Kingdom; USSR = Union of Soviet Socialist Republics

<sup>a</sup>Includes former East Germany.<sup>b</sup>Includes former West Germany only.

NOTES: Data are region/country/economy's share of internationally coauthored articles with indicated region/country/economy. Authorship based on institutional address. International articles are those with at least one author at institutional address in given country/economy and one author at foreign address. Share based on article counts calculated on whole-count basis, i.e., each collaborating institution is credited one count. EU-15 consists of 15 EU countries before expansion of member countries on May 1, 2004 (listed countries plus Luxembourg). China data include Hong Kong. Eastern Europe consists of Bulgaria, Czech Republic, Hungary, Poland, and Romania.

SOURCES: Thomson ISI, *Science Citation Index* and *Social Sciences Citation Index*, <http://www.isinet.com/products/citation/>; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

*Science and Engineering Indicators 2006*