WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

IP Commercialization Options in Research and Development Context

WIPO Inter-Regional TTO Meeting “Working Together on Academic IP Commercialization in the Region”

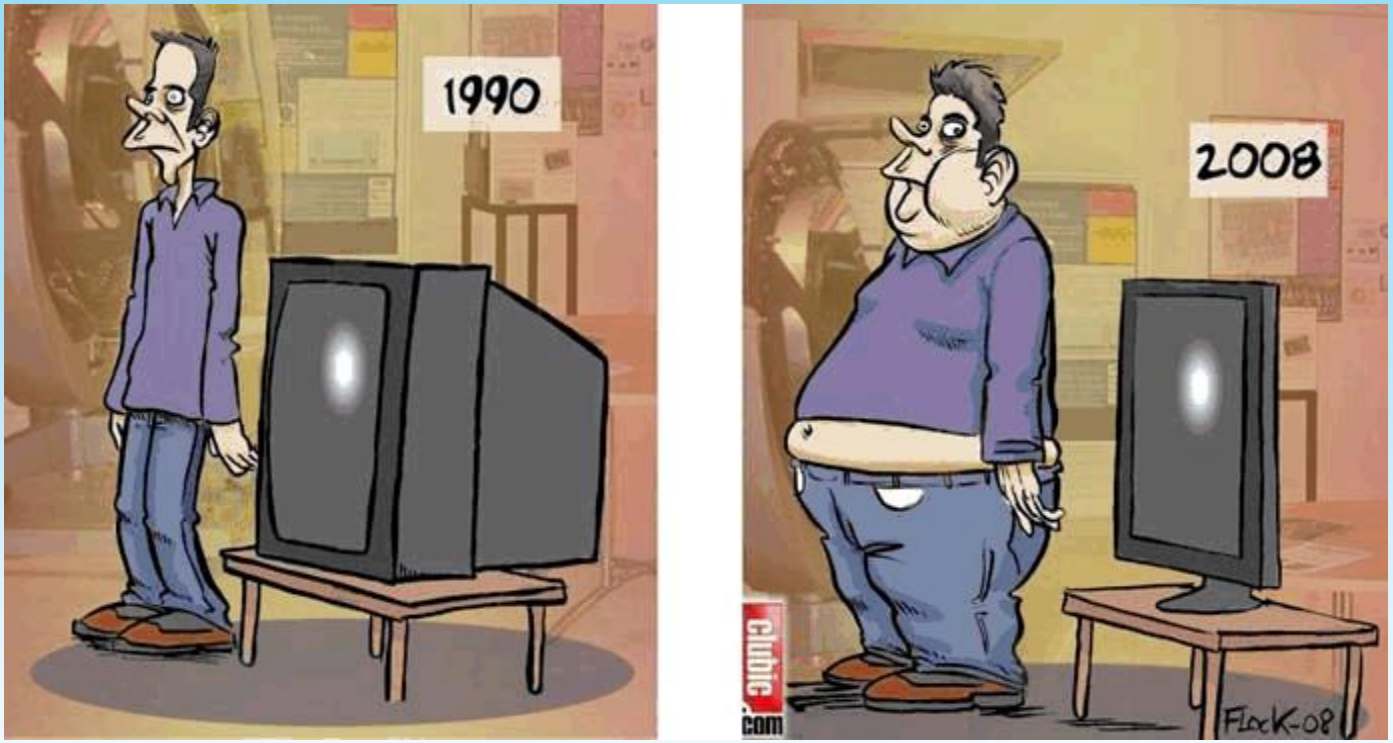
Budapest, September 14 and 15, 2015

Intellectual Property (IP) Commercialization Options in R&D Context

- Very simplified approach – there are three main options:
  - Assignment of IP;
  - Licensing IP;
  - Establishment of spin – off or startup.

Why do we Commercialize IP Generated in Universities and R&D Institutions? Social Benefit?

Karl Klingsheim, prof. dr.ing. & CEO
NTNU Technology Transfer AS, Trondheim, Norway



AMERICAN COMMITTEE FOR THE
WEIZMANN
INSTITUTE OF SCIENCE

SCIENCE FOR THE BENEFIT OF HUMANITY

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

IP Commercialization in R&D Context

- Continuing growing importance of IP for business;
- Academic institutions – partners with innovative potential but with inadequate market experience;
- Challenges for universities – IP valuation, marketing of academic IP, competition with other partners;
- Persistent financial downturn and funding gap for new projects in universities;
- Public funding is decreasing;
- Social responsibility and creation of jobs;
- New collaboration and business models – open innovation and free access to IP;
- “Publish or perish” in the new context;
- Universities develop variety of models of IP commercialization.

AUTM Licensing Activity Survey

- 2013

- 591 new commercial products launched;
- 705 startup companies formed (+5.1 percent), 554 of which had their primary place of business in the licensing institution's home state (+13.8 percent);
- 4,002 startups still operating as of the end of FY2012 (+1.9 percent);
- 5,130 licenses executed (+4.7 percent);
- 23,741 disclosures received (+8.6 percent).

- 2014

- 719 new products and the sales revenue generated from net product sales ($22.8-billion);
- Number of executed licenses and options (6,554);
- The 818 new companies created as a result of technology transfer activities represent an increase of 16% over the prior year and an average of 2.25 new companies per day."

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Intel Science and Technology Centers (ISTCs) – Open Source

- **ISTCs established in US universities-** funded at the rate of $2.5 million a year for five years.
- *INTEL "The IP policies and practices within the ISTCs will typically be designed to level the playing field for all of the participants, thereby enhancing cooperation and open collaboration. The preferred IP policy is to conduct open research wherein ISTC researchers, whether from academia or Intel, agree to not file patents and to publish all patentable inventions. All significant software developed in the course of conducting research will be released under an open source license."*

- Stanford - Visual Computing;
- UC Berkeley - Secure Computing;
- Carnegie Mellon - Cloud Computing;
- Carnegie Mellon - Embedded Computing.

University of Glasgow

KING'S College LONDON

UNIVERSITY OF WOLLONGONG

University of BRISTOL

UNSW
THE UNIVERSITY OF NEW SOUTH WALES
SYDNEY · CANBERRA · AUSTRALIA

Mittuniversitetet
MID SWEDEN UNIVERSITY

UNIVERSITY OF BIRMINGHAM

STAFFORDSHIRE UNIVERSITY

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

RED

- Research development
- Research policy
- Research governance
- Contracts
- Project management
- Business acceleration, the Bristol SETsquared centre
- How we work with business
  - Impact funding
  - Knowledge Transfer Partnerships (KTPs)
  - Innovation Vouchers
  - ESRC Impact Acceleration Account
  - EPSRC Impact Acceleration Account
  - Research consultancy
  - Placements and schemes
  - Academic Business Fellows

University home > RED > How we work with business > Licensing opportunities

Licensing opportunities

The University is keen to promote technology transfer by licensing IP to third parties. We have several technologies which are currently available for licensing. For some licences the University's Essential Medicines Statement may be applicable. Please select a category below:

Emerging | Biotechnology | Science and engineering | Software | Easy access ip

The opportunities listed below are very recent developments which require further technical and business development. Typically, work is continuing in the laboratory to refine the technology or demonstrate the effectiveness of the invention for commercialisation. We are very interested in talking to potential partners to discuss the current state of the work with the respective research teams. In most cases we have filed a provisional patent application and are able to discuss details without an NDA.

Category	Ref	Title
Biotechnology	1725	Autoimmune and Allergy Therapeutic
Composites	1909	Aligned Short Fibre Composites
Photonics	1820	On-chip Single Photon Source

If you would like further information about any of the technologies listed, or you would like to discuss further licensing opportunities, please contact our Research Commercialisation team.

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Carnegie Mellon University – Awarded $ 1.17 Billion for Patent Infringement

- Federal jury in Pittsburgh found that the *Marvell Technology Group* had sold billions of semiconductors using technology developed at the *Carnegie Mellon University* without a license and awarded university with $ 1.17 billion.
- The award is one of the largest in a patent infringement case, and comes after a $1 billion verdict awarded to *Apple* against *Samsung* over *iPhone* design patents.

MANCHESTER 1824

The University of Manchester
Intellectual Property UMIP®

Sign-in

Search here...

You are not signed in. My basket (no items)

Home | My basket | Create account | Contact us | F.A.Q.

Click2Go

Controlled downloads – flexible licensing for academic or commercial users

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

ibridge℠

LINKING IDEAS & INNOVATION

- The iBridge Network was founded in 2005 by the Kauffman Foundation's Kauffman Innovation Network;
- Web-based network providing innovation seekers with access to university-developed innovations;
- Match making site – open market for technology seekers and technology providers.

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Sell Your Patents

Services & Solutions
IP and the Corporate Landscape
License Our Patents
Buy Our Patents
Sell Your Patents
Partner With Us
Collaborate With Us

In today's high-tech world, it's clear that inventions are both strategic and financial assets. Many companies and inventors have patents and patent applications that aren't generating a strong return on investment. Intellectual Ventures purchases inventions from individual inventors and companies of all sizes and licenses them to the world's most innovative companies.

What we buy

Our targeted investment plan addresses current and anticipated needs in our patent portfolio. As we add to our portfolio, we want to be your buyer of choice for technology-related patents. Your U.S. and international issued and pending patent assets are of interest to us—specifically in high-tech areas, including:

- Consumer Electronics
- Datacenter, Cloud, Enterprise Software, and Networking
- Online Services
- Telecom and Media Technologies
- Components, Semi Process, and Equipment
- New Venture Markets

Learn more »

Submit an Invention

Are you looking to sell issued or pending patents in our technology areas of interest? If so, simply use our online invention submission tool. It's quick and easy.

Submit your patent »

INTELLECTUAL VENTURES®

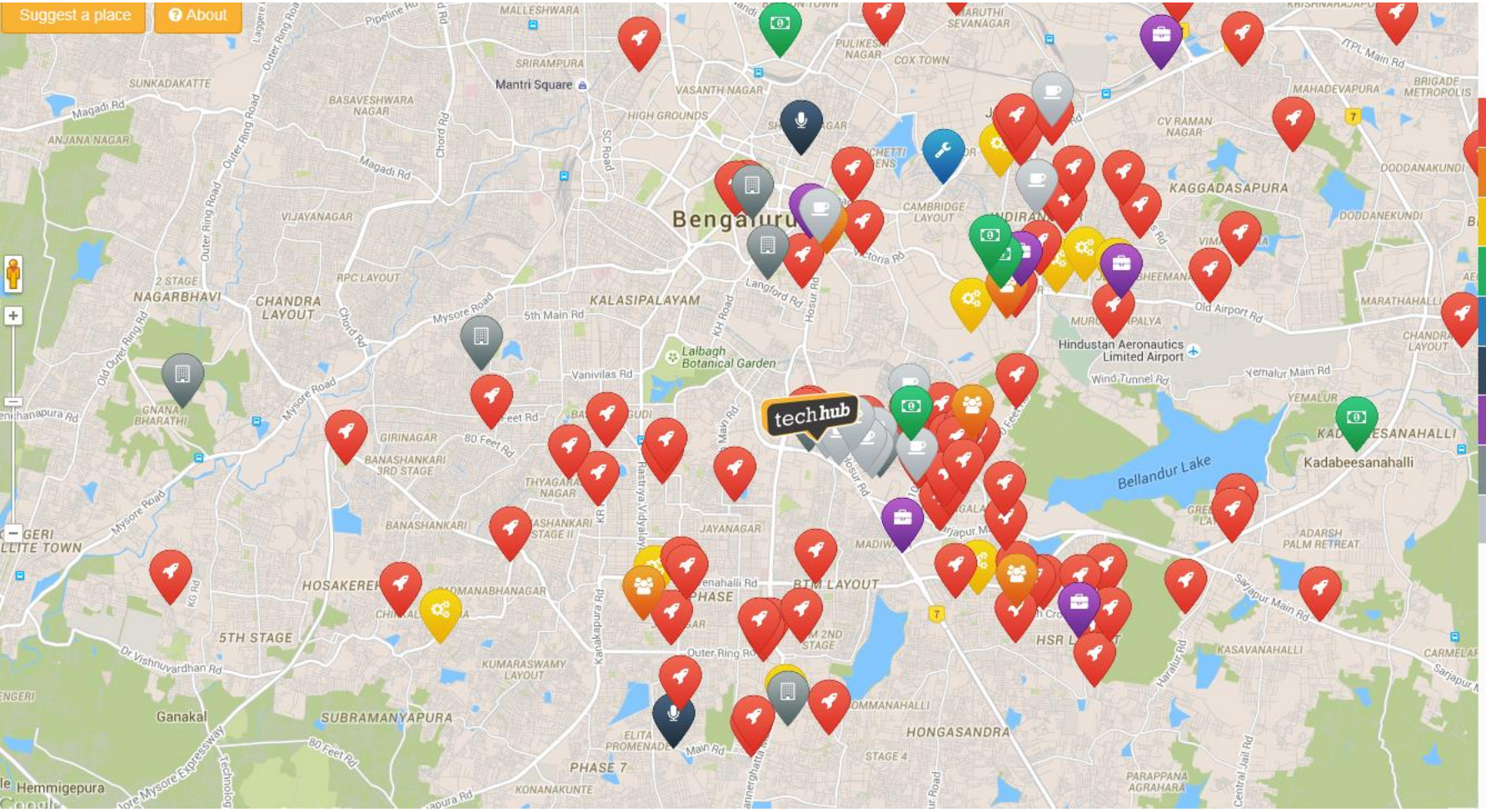
Visit Related Sites: IV Lab | TerraPower | Ky

- Services & Solutions
- IP and the Corporate Landscape
- License Our Patents
- Buy Our Patents
- Sell Your Patents
- Partner With Us
- Collaborate With Us

Buying patents from IV is an effective way for our customers to obtain the high-quality assets they need to:

- Defend against patent litigation (BlueCat Networks)
- Gain a competitive product advantage (Vlingo Corporation)
- Develop an effective intellectual property strategy (Dashwire, Inc.)

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION



WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

IP Commercialization and IP Protection

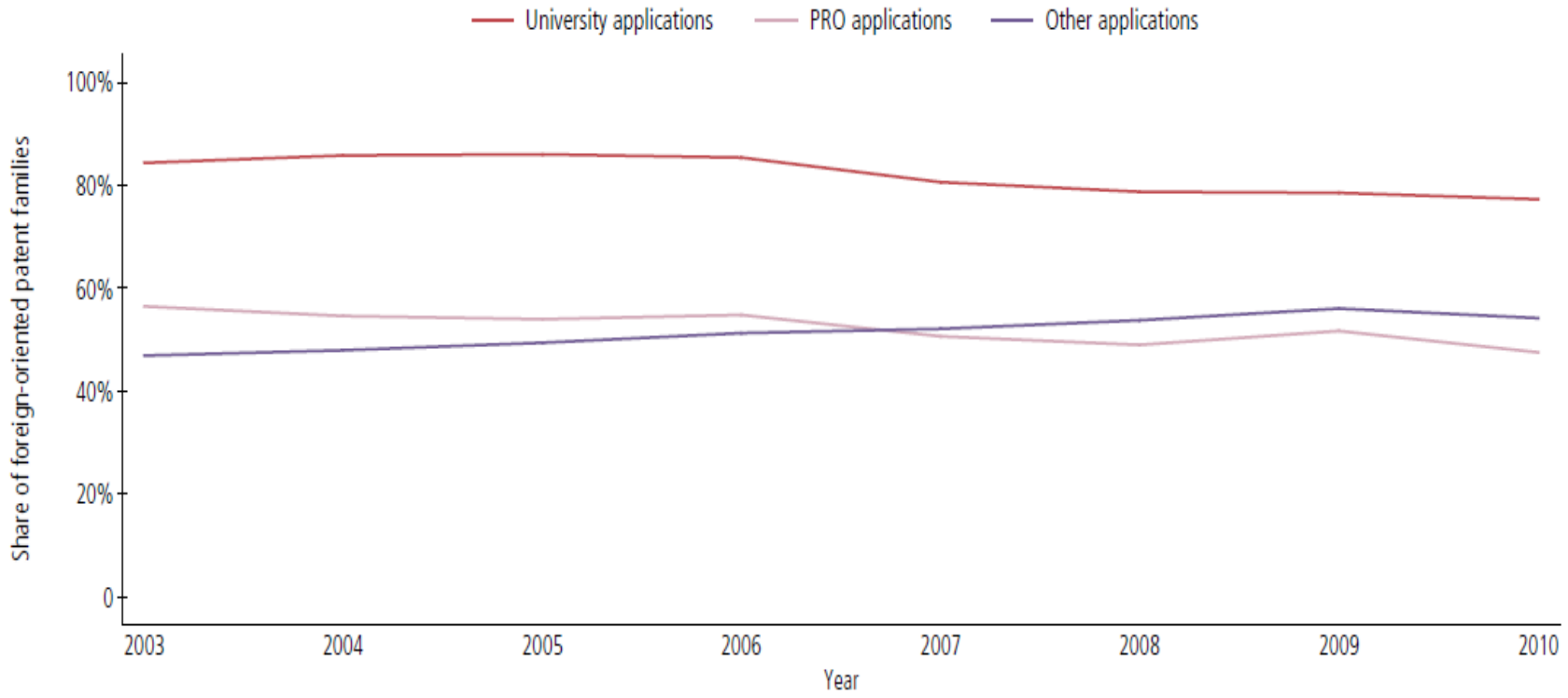
- In order to manage IP you have to own it or have a consent from owner to manage it;
- New trend – development of high quality technologies for competitiveness on the market – strong protection strategy;
- Variety of IP Commercialization options imposed vigilant IPR management;
- In general universities and R&D institutions are protecting more in order to develop competitive portfolios;
- Often in collaboration with businesses and other academic institutions – co applicants in particular for PCT applications;
- Universities have increasing number of partners in PCT applications, however, PROs are leading by the number of filings with co – applicants and by the number of applications entering national phase.

PCT

- During 2011–13, all universities worldwide filed 28,153 PCT applications, most from North America (11,823), Asia (9,065) and Europe (6,421) (table ST1);

- Peking University saw the fastest growth, increasing its applications from 22 in 2005-07 to 198 in 2011–13. But in absolute numbers, the Korea Advanced Institute of Science and Technology recorded the largest increase, filing 232 more applications in 2011–13 than in 2005–07.

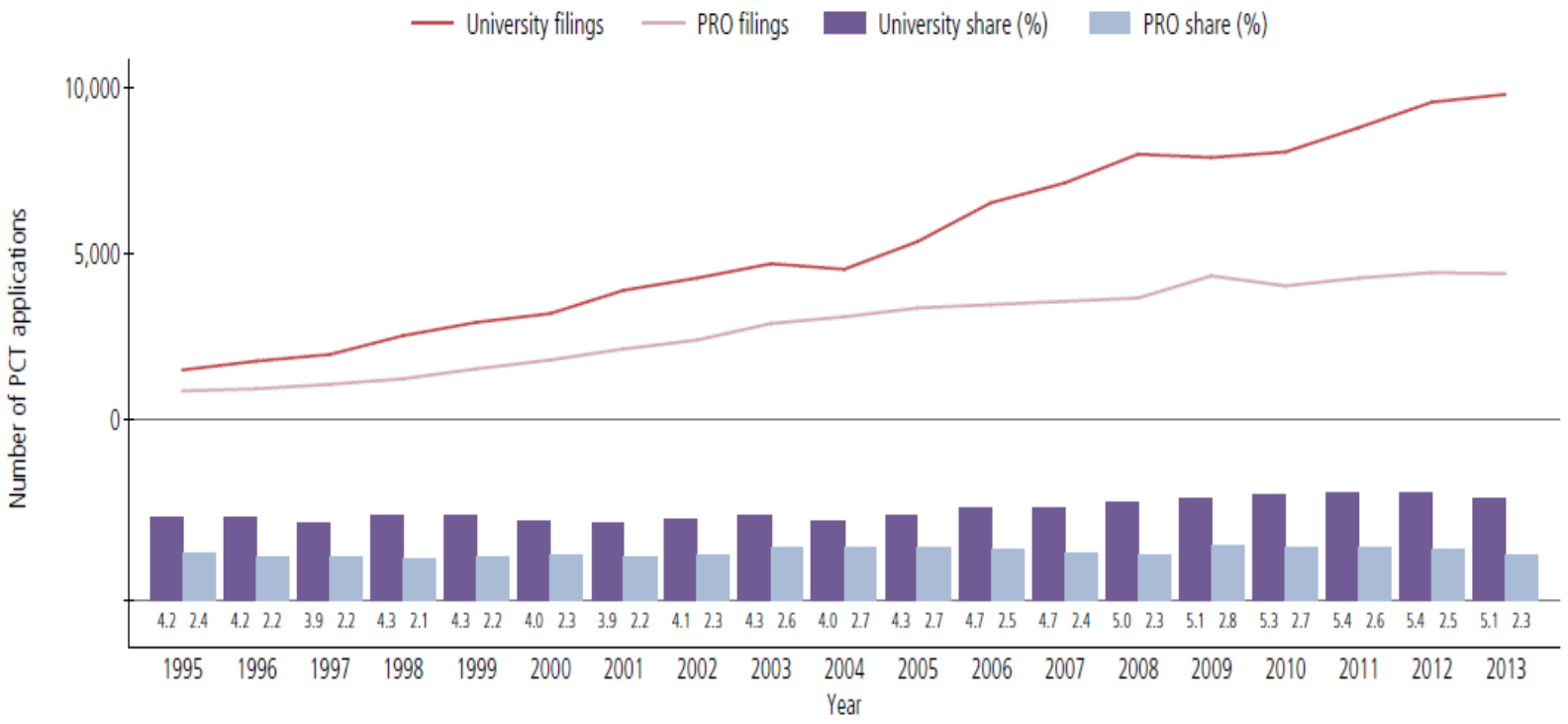
Figure ST1: Share of foreign-oriented patent families using the PCT, 2003-10



Note: The data for this figure exclude patent families that opted for the PCT but subsequently did not see a national phase entry. Universities include all types of educational institutions, and PROs include private nonprofit organizations and hospitals.

Source: WIPO statistics database and EPO PATSTAT database, March 2014

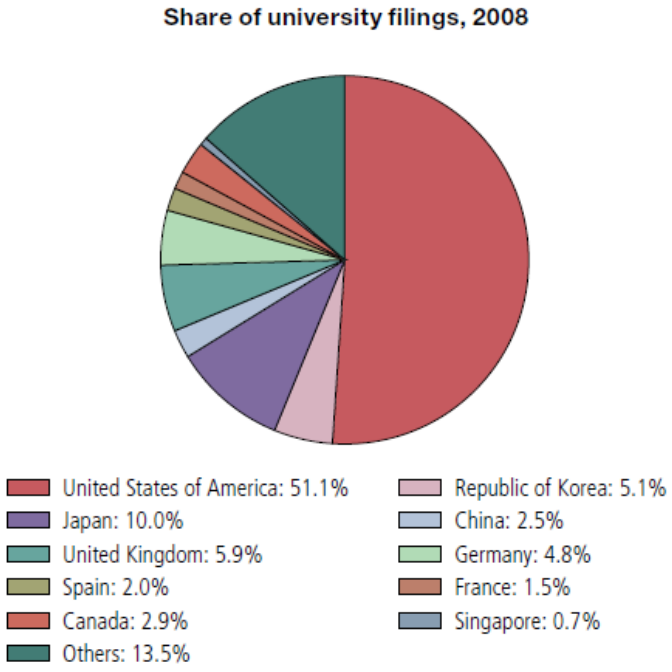
Figure ST2: Trend in university and PRO PCT applications filed and share of total filings

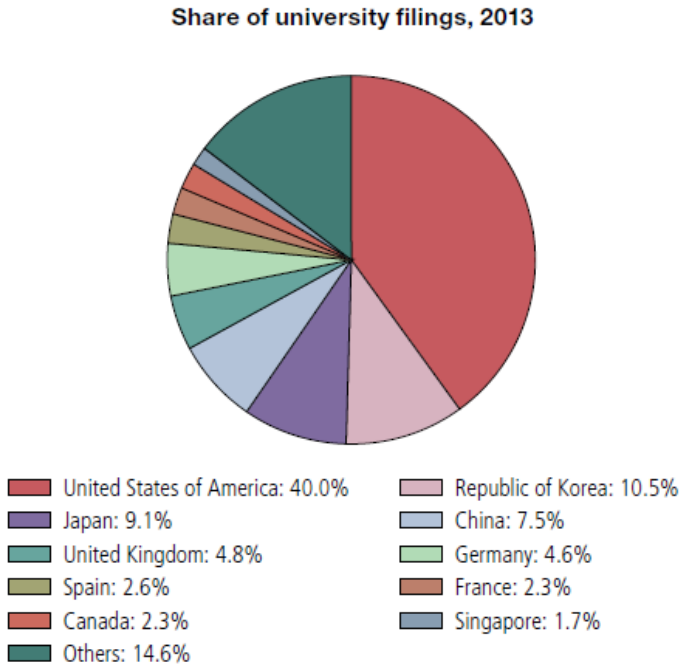


Note: PCT data are based on the publication date and first-named applicants. The university sector includes all types of educational institutions. PROs include private nonprofit organizations and hospitals.

Source: WIPO statistics database, March 2014

Share of university PCT filings for the top 10 origins in 2008 and 2013





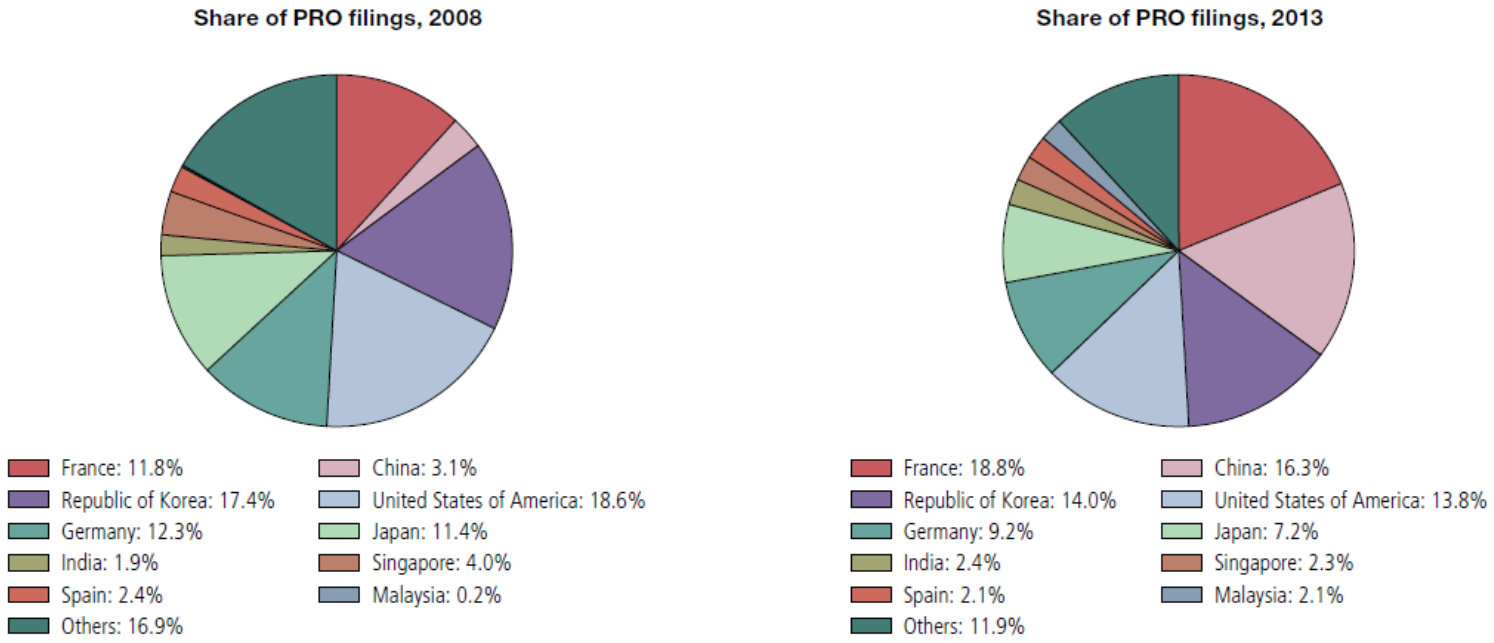
WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Share of university PCT filings for the top 10 origins in 2008 and 2013

- Applications filed by universities are largely dominated by US universities, which filed 3,920 applications in 2013, followed by universities from the Republic of Korea (1,026), Japan (896), China (731) and the UK (474).

- US universities accounted for 40% of all PCT applications filed by universities in 2013, about 11 percentage points less than their 2008 share. The decline was mainly due to a sharp increase in filings from universities in China and the Republic of Korea, each up about five percentage points between 2008 and 2013.

Share of PRO PCT filings for the top 10 origins in 2008 and 2013



Note: PCT data are based on the publication date and first-named applicant. Universities include all types of educational institutions, and PROs include private nonprofit organizations and hospitals.

Source: WIPO statistics database, March 2014

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Share of PRO PCT filings for the top 10 origins in 2008 and 2013

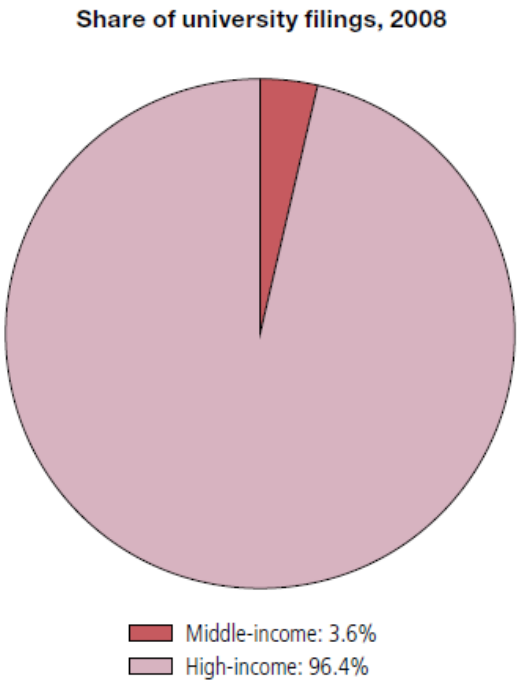
- PRO filings are not dominated by a single country.
- With 829 filings, PROs in France filed the most applications

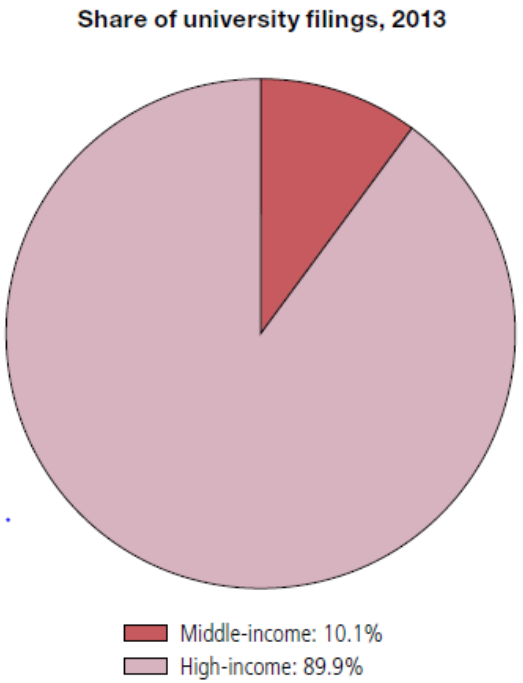
in 2013, followed by China (717), the Republic of Korea

(618), the US (608) and Germany (408).

- Between 2008 and 2013, the share of most origins among the top 10 PRO origins decreased, on account of those of China (+13.2 pourcentage points), France (+7), Malaysia (+1.9) and India (+0.5).
- In 2013, the shares of the top five PRO origins in total PRO filings ranged from 18.8% for France to 9.2% for Germany.
- By contrast, the equivalent share varied for universities from 40% for the US to 4.8% for the UK. But the top 10 PRO origins accounted for around 88% of PRO filings in 2013, up from 83.1% in 2008, and the top 10 university origins for 85.4% in 2013, down from 86.5%.

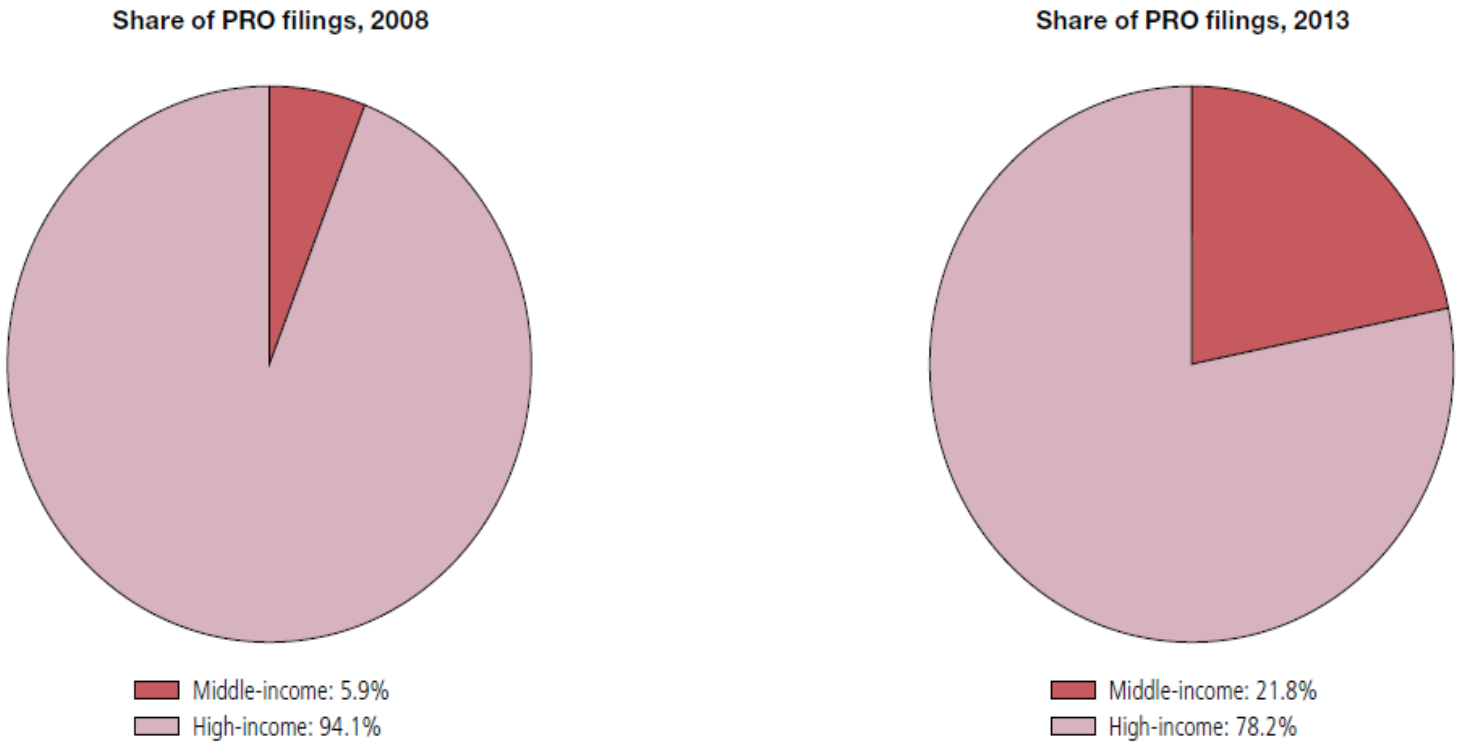
Share of university PCT filings by income group in 2008 and 2013





WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Share of PRO PCT filings by income group in 2008 and 2013



Note: PCT data are based on the publication date and first-named applicant. Universities include all types of educational institutions, and PROs include private nonprofit organizations and hospitals.

Table ST1: Top five university PCT applicants per region, 2005-13

Region	Name	Country	Period			Regional share
			2005-07	2008-10	2011-13	2011-13 (%)
Africa	STELLENBOSCH UNIVERSITY SOUTH AFRICAN SUGARCANE RESEARCH INSTITUTE	South Africa	4	22	33	20.6
	UNIVERSITY OF CAPE TOWN	South Africa	12	23	21	13.1
	UNIVERSITY OF THE WITWATERSRAND	South Africa	9	25	20	12.5
	NORTHWEST UNIVERSITY	South Africa	7	5	14	8.8
	UNIVERSITY OF KWAZULU-NATAL	South Africa	0	3	10	6.3
	Others		10	21	62	38.8
	Total		42	99	160	100.0
Asia	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	Republic of Korea	55	116	287	3.2
	SEOUL NATIONAL UNIVERSITY	Republic of Korea	102	243	280	3.1
	UNIVERSITY OF TOKYO	Japan	140	266	238	2.6
	PEKING UNIVERSITY	China	22	59	198	2.2
	KYOTO UNIVERSITY	Japan	229	133	189	2.1
	Others		3,454	5,100	7,873	86.9
	Total		4,002	5,917	9,065	100.0
Europe	ISIS INNOVATION LIMITED	United Kingdom	114	126	201	3.1
	DANMARKS TEKNISKE UNIVERSITET	Denmark	45	85	119	1.9
	CAMBRIDGE UNIVERSITY	United Kingdom	125	91	110	1.7
	IMPERIAL INNOVATIONS LTD.	United Kingdom	104	136	105	1.6
	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	56	74	101	1.6
	Others		3,679	5,265	5,785	90.1
	Total		4,123	5,777	6,421	100.0

Top 5 PCT University Applicants by the Region

LAC	UNIVERSIDADE FEDERAL DE MINAS GERAIS	Brazil	11	33	40	13.9
	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO	Brazil	21	11	24	8.3
	UNIVERSIDAD DE SANTIAGO DE CHILE	Chile	0	4	21	7.3
	PONTIFICIA UNIVERSIDAD CATOLICA DE CHILE	Chile	2	9	18	6.3
	INSTITUTO TECNOLOGICO Y DE ESTUDIOS SUPERIORES DE MONTERREY	Mexico	5	22	13	4.5
	Others		45	101	172	59.7
	Total		84	180	288	100.0
North America	UNIVERSITY OF CALIFORNIA	United States of America	1,131	984	1,028	8.7
	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	United States of America	475	480	567	4.8
	JOHNS HOPKINS UNIVERSITY	United States of America	238	258	368	3.1
	UNIVERSITY OF TEXAS SYSTEM	United States of America	286	421	358	3.0
	HARVARD UNIVERSITY	United States of America	189	310	354	3.0
	Others		8,149	9,154	9,148	77.4
	Total		10,468	11,607	11,823	100.0
Oceania	UNIVERSITY OF SYDNEY	Australia	31	71	77	19.4
	UNIVERSITY OF QUEENSLAND	Australia	66	96	74	18.7
	MONASH UNIVERSITY	Australia	41	25	68	17.2
	UNIVERSITY OF MELBOURNE	Australia	16	29	27	6.8
	UNIVERSITY OF WESTERN AUSTRALIA	Australia	7	11	18	4.5
	Others		141	140	132	33.3
	Total		302	372	396	100.0
Total			**19,021**	**23,952**	**28,153**	

Note: LAC (Latin America and the Caribbean). PCT data are based on the publication date and on the first-named applicant. Universities include applications

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Table ST2: Top five PRO PCT applicants per region, 2005-13

Region	Name	Country	Period			Regional share
			2005-07	2008-10	2011-13	2011-13 (%)
Africa	CSIR	South Africa	24	21	26	81.3
	SOUTH AFRICAN MEDICAL RESEARCH COUNCIL	South Africa	5	3	2	6.3
	AGRICULTURAL RESEARCH COUNCIL	South Africa	0	1	1	3.1
	COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH	Namibia	0	0	1	3.1
	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	Morocco	0	0	1	3.1
	Others		3	3	1	3.1
	Total		32	28	32	100.0
Asia	CHINA ACADEMY OF TELECOMMUNICATIONS TECHNOLOGY	China	0	0	517	9.3
	AGENCY OF SCIENCE, TECHNOLOGY AND RESEARCH	Singapore	332	447	389	7.0
	INSTITUTE OF MICROELECTRONICS OF CHINESE ACADEMY OF SCIENCES	China	0	1	374	6.7
	MIMOS BERHAD	Malaysia	0	162	336	6.0
	ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE OF KOREA	Republic of Korea	584	1,071	307	5.5
	Others		2,921	2,630	3,644	65.5
	Total		3,837	4,311	5,567	100.0
Europe	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	648	717	1,181	22.7
	FRAUNHOFER-GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Germany	641	849	798	15.3
	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	387	451	559	10.7
	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	101	209	319	6.1
	CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	Spain	199	281	278	5.3
	Others		1,887	2,434	2,072	39.8
	Total		3,863	4,941	5,207	100.0

LAC	EMPRESA BRASILEIRA DE PESQUISA AGROPECUARIA - EMBRAPA	Brazil	1	8	24	36.4
	CONSEJO NACIONAL DE INVESTIGACIONES CIENTIFICAS Y TECNICAS (CONICET)	Argentina	0	18	16	24.2
	CENTRO DE INVESTIGACION Y DE ESTUDIOS AVANZADOS DEL INSTITUTO POLITECNICO NACIONAL	Mexico	4	4	11	16.7
	CENTRO BRASILEIRO DE PESQUISAS FISICAS - CBPF	Brazil	1	2	4	6.1
	INSTITUTO MEXICANO DEL PETROLEO	Mexico	10	9	2	3.0
	Others		20	14	9	13.6
	Total		36	55	66	100.0
North America	U.S.A., AS REPRESENTED BY THE SECRETARY DEPT. OF HEALTH AND HUMAN SERVICES	United States of America	364	324	279	14.0
	BATTELLE MEMORIAL INSTITUTE	United States of America	119	138	166	8.3
	MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH	United States of America	116	174	138	6.9
	CLEVELAND CLINIC FOUNDATION	United States of America	95	87	99	5.0
	UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY OF THE NAVY	United States of America	125	94	89	4.5
	Others		1,450	1,531	1,226	61.4
	Total		2,269	2,348	1,997	100.0
Oceania	COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION	Australia	154	182	149	53.8
	NATIONAL ICT AUSTRALIA LIMITED	Australia	21	41	47	17.0
	MURDOCH CHILDRENS RESEARCH INSTITUTE	Australia	3	9	10	3.6
	AUSTRALIAN NUCLEAR SCIENCE & TECHNOLOGY ORGANISATION	Australia	10	5	9	3.2
	WALTER AND ELIZA HALL INSTITUTE OF MEDICAL RESEARCH	Australia	19	24	8	2.9
	Others		137	99	54	19.5
	Total		344	360	277	100.0
Total			**10,381**	**12,043**	**13,146**	

Note: LAC (Latin America and the Caribbean). PCT data are based on the publication date and first-named applicant. PROs include private nonprofit organizations and hospitals.

Source: WIPO statistics database, March 2014

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

THANK YOU!

Olga Spasic
Head
Innovation Structures Section

SMEs and Entrepreneurship Support Division
World Intellectual Property Organization

olga.spasic@wipo.int