

*Daoine*  
**PEOPLE**

*Feabhas*  
**EXCELLENCE**

*Cáil*  
**REPUTATION**

*Fiontraíocht*  
**ENTERPRISE**

*Aistriú Eolais*  
**KNOWLEDGE TRANSFER**

*Research for Ireland's Future*

# Annual Census 2009

Science Foundation Ireland





# SFI Census 2009

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# Executive Summary

The SFI Census of the holders of SFI's major grant categories<sup>1</sup> is conducted annually and provides information on research outputs, team compositions, collaborations and funding. This is the third year that the census has been conducted and the key findings are summarised below:

- » Human capital has grown in accordance with the targets set out in the Government's Strategy for Science, Technology & Innovation (SSTI) 2006-2013. In 2009, SFI directly supported 3,225 team members<sup>2</sup> (up 15% from 2008).
- » There were 4,057 peer reviewed publications reported (up 26% on 2008), which contribute significantly to Ireland's on-going ascent from below EU average volumes of scientific output to OECD levels<sup>3</sup>. They assist Ireland's drive up the international rankings of scientific quality (now in the Top 20, up from 36th in 2003).
- » A steady stream of 'pre-commercial' outputs were produced in 2009:
  - » 136 invention disclosures (up from 135 in 2008)
  - » 108 patent filings (up from 97 in 2008)
  - » 13 international standards (up from 6 in 2008)
  - » 20 license agreements (down from 22 in 2008)
  - » 6 early stage spinouts (up from 3 in 2008)
- » Academic-industry partnerships grew extensively. 601 collaborations with companies were reported (up from 402 in 2008), half of which are based on legal agreements. These collaborations involve 389 distinct companies/organizations (up from 311 in 2008), including 184 Multinational Corporations (MNC), 165 Small-Medium Enterprises (SME) and 40 Other<sup>4</sup>. These collaborations are helping to drive the Industrial Development Authority's (IDA) profile shift towards Research Development & Innovation (RD&I) investments (from less than 10% five years ago to almost 50% in 2009)
- » Academic-academic collaborative networks expanded, growing Ireland's scientific networks/international reputation. 1,967 academic-academic collaborations were reported (up from 1,338 in 2008). 45% of these are with partners outside the European Union (EU); 31% with rest-of-EU partners outside Ireland and 24% with Irish partners.
- » €159m funding was secured from non SFI sources, including increases in funding from:
  - » The European Union (EU) and Wellcome Trust, which is an indicator of international competitiveness; and
  - » Enterprise Ireland (EI), an indicator of evolution of research towards commercialisation.

The next section contains a short report on the key highlights, which is followed by a section containing tables from the census.

<sup>1</sup> SFI Principal Investigator (PI), SFI President of Ireland Young Researcher Award (PIYRA), SFI Principal Investigator Career Advancement Award (PICA), SFI Maths Initiative (MI), SFI Research Frontiers Programme (RFP), SFI Centres for Science, Engineering and Technology (CSET), SFI Strategic Research Clusters (SRC), SFI Research Professor Recruitment Award (RP), SFI Charles Parsons Energy Research (CP), SFI US Ireland R&D Partnership Programme (US Irl) and the SFI Starting Investigator Research Grant Programme (SIRG).

<sup>2</sup> Led by 340 SSTI Principal Investigators (up from 322 in 2008).

<sup>3</sup> Number of scientific publications per million population.

<sup>4</sup> Other includes Government Departments or Semi-state bodies, private foundations, charities & Non-Governmental Organisations (NGOs).

# Census Report

**The third SFI Census was conducted among the holders of SFI's major grant categories. These are:**

- » SFI Principal Investigator (PI)
- » SFI President of Ireland Young Researcher Award (PIYRA)
- » SFI Principal Investigator Career Advancement Award (PICA)
- » SFI Maths Initiative (MI)
- » SFI Research Frontiers Programme (RFP)
- » SFI Centres for Science, Engineering and Technology (CSET)
- » SFI Strategic Research Clusters (SRC)
- » SFI Research Professor Recruitment Award (RP)
- » SFI Charles Parsons Energy Research (CP)
- » SFI US Ireland R&D Partnership Programme (US Irl)
- » SFI Starting Investigator Research Grant Programme (SIRG).

In the two previous censuses, the questionnaire was sent to all those who held an award on the 31st December of the census year, i.e. "active awards". This year, awards which expired during the year ("inactive awards") were also surveyed, as a first step towards capturing information from awards post-expiration date. The results relating to teams are based on active awards only, whereas data on outputs & publications refer to both active and inactive awards.

The census form was sent to 621 individuals representing 844 awards. Census forms were returned for 822 awards (active and inactive), corresponding to a response rate of 97%. Separating out the active awards, 666 forms were returned representing a 100% response rate.

The census results are presented in summary form under eight key headings, as follows:

1. Respondents & Awards
2. Research Team Compositions
3. First Destinations of Departing Team Members
4. Academic Outputs
5. Pre-Commercial Outputs
6. Industry - Research Collaborations
7. Academic Collaborations & Internationalisation
8. Funding Information

## 1. Respondents & Awards

600 award holders completed the census and held 822 awards between them. Of these 822 awards, 666 were active at 31st December 2009. This represents a net growth of 13% in 2009 in the number of active awards. This year there were two additional award categories; SIRG (15 awards) and US Ireland (three awards).

The 2009 data also includes six additional SRCs and one new CSET.

**Table 1.6: Breakdown of Awards by Award Category**

	Total Number of Awards	Total Number of Active Awards
CP	7	7
CSET	10	10
MI	6	6
PI	169	149
PICA	10	8
PIYRA	18	15
RFP	552	428
RP	13	6
SIRG	15	15
SRC	19	19
US Irl	3	3
<b>Total</b>	<b>822</b>	<b>666</b>

For example, all ten CSET awards were active in 2009, and remained active at the end of 2009, while 169 PI awards were active in 2009, 20 expired during the year, leaving 149 active at year end.

## 2. Research Team Compositions

The 666 active awards supported 3,225 team members, which represents a growth of 15% on the 2,806 team members funded in 2008. The most significant percentage increases were in the numbers of Postdoctoral Researchers (23%), Research Assistants (20%), PhD students (17%) and MSc students (14%).

Table 2.1a describes the profile of these teams in terms of gender and nationality.

Nationality in the context of the census is described as Irish, EU-non Irish or non-EU.

**Table 2.1a: Research Team Compositions for Active Awards (SFI-Funded Team Members)**

	Male	Female	Irish	EU (Non-Irish)	Non-EU	Total	Category as % of Total
Award Holder	424	105	313	163	53	529	16%
Postdoctoral Researchers	580	266	328	288	230	846	26%
PhD Students	834	510	698	302	344	1344	42%
Masters Students	51	33	39	27	18	84	3%
Technicians	28	18	37	7	2	46	1%
Research Assistants	48	60	72	20	16	108	3%
Administrators	25	78	87	7	9	103	3%
Other	116	49	90	45	30	165	5%
<b>Total</b>	<b>2106</b>	<b>1119</b>	<b>1664</b>	<b>859</b>	<b>702</b>	<b>3225</b>	<b>100%</b>
<b>Gender/Nationality as % of total</b>	65%	35%	52%	27%	22%	100%	

**Gender**

The ratio of males to females is approximately two thirds to one third. However, further analysis shows that there is a loss of female researchers at the point of progression from team members (65% male:35% female) to grant holders (80% male:20% female).

**Nationality**

Approximately half the SFI team members are of Irish nationality. A further 27% are from other EU countries and the remaining 22% are from outside the EU.

**Role**

The majority of teams are made up of PhD Students (42%) and Postdoctoral Researchers (26%). Figure 2.1 shows the composition of SFI-funded teams by award category.

**Team Leveraging**

In addition to their SFI-funded staff, the SFI award holders fund an additional 3,225 team members from non-SFI sources. Referred to as the “team leveraging effect”, this effectively doubles the team sizes, meaning that SFI grant holders collectively lead teams of 5,921 team members.

Figure 2.1a shows the breakdown of these teams by role.

Fig 2.1: Breakdown of SFI-Funded Team by Award

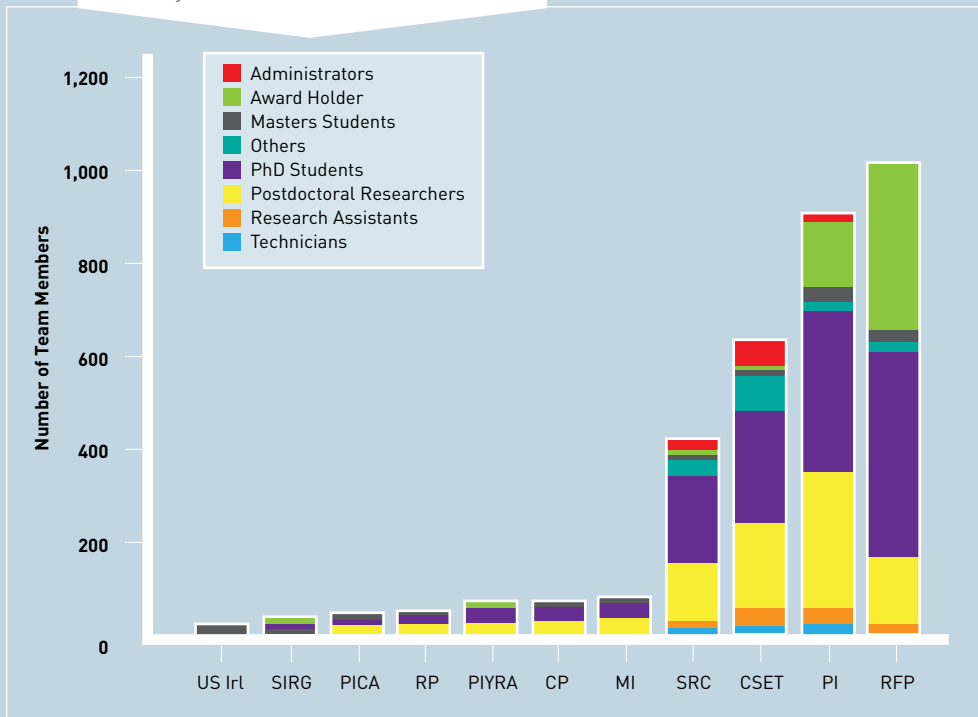
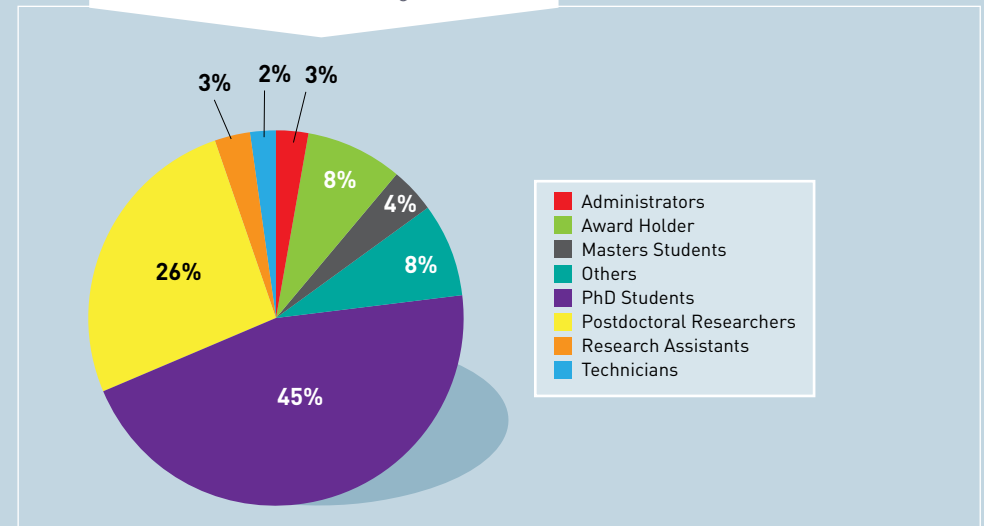


Fig 2.1a: Role Based Breakdown of Research Team (all funding sources)



### 3. First Destination of Departing Team Members

450 team members left SFI-funded research teams in 2009. This represents a 10% increase on the numbers of leavers in 2008. 53% of the leavers moved outside Ireland, while 47% remained in Ireland. This is a reversal of the trend in 2008, where 43% of leavers moved abroad and 57% remained in Ireland. The largest change in the number of leavers is in the MSc and PhD students' category.

The first destination position of these departing team members varies by role (Postdoctoral Researcher, PhD student etc.) but the overall trend is highlighted in Figure 3.1. 35% went on to conduct postdoctoral research in a Higher Education Institute (HEI) and 21% went into industry.

### 4. Academic Outputs

A total of 4,057 peer reviewed publications were produced in 2009, equating to a 26% increase in publication output from 2008. In this context it should be noted that Ireland's relative volume of scientific publications has grown from below EU average levels to OECD levels over the past decade<sup>5</sup>.

Whilst the SFI census does not measure the quality of scientific output it is noteworthy that Ireland is now in the top 20 of the Thomson Scientific "Top Countries in All Fields" measure of citation impact, up from 36th in the world in 2003.

Figure 4.1 shows the breakdown of these publications.

Fig 3.1: Departing Team Members - What did they do?

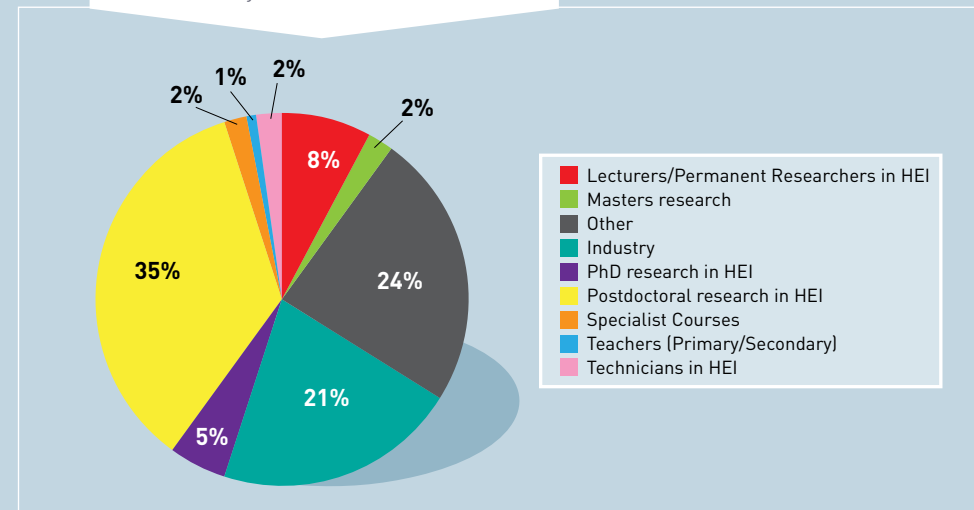
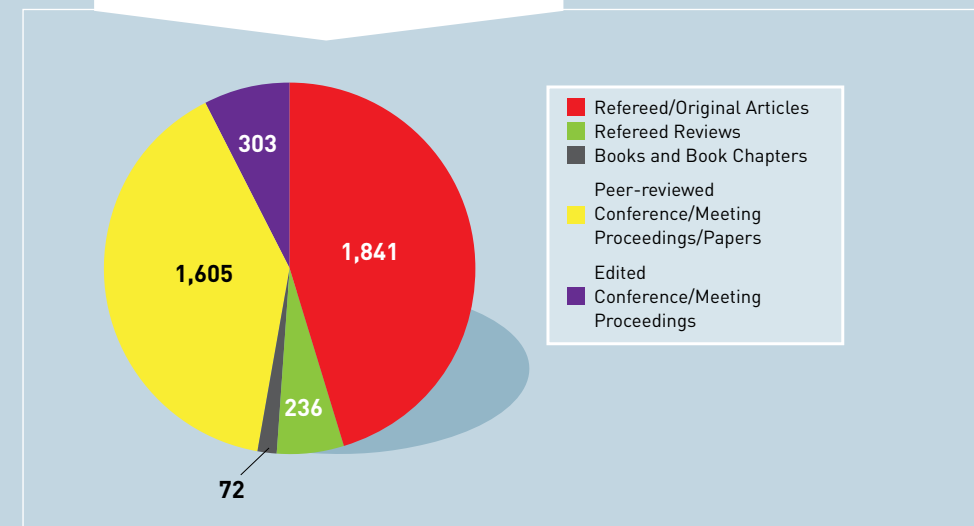


Fig 4.1: Publication Output in 2009



<sup>5</sup> Number of scientific publications per million population.



## 5. Pre-Commercial Outputs<sup>6</sup>

In 2009 a total of 136 Invention Disclosures, 108 Patents Filed, 10 Patents Awarded, 13 Standards, 20 Licences and 6 Spin Offs were reported. A summary of 2009 and 2008 pre-commercial outputs are presented in Table 5.1.

**Table 5.1: Summary of Pre-Commercial Outputs 2009 and 2008**

	2009	2008
Invention Disclosures	136	135
Patents Filed	108	97
Patents Awarded	10	13
Standards Contributed To	13	6
Spin-Offs Reported	6	3
Licensed Technologies	20	22

A summary of outputs by award type is presented for Invention Disclosures, Patents Filed/Awarded and Standards in the Tables 5.4, 5.5, 5.7 and 5.9

**Table 5.4: Invention Disclosures arising from SFI Funding in 2009 by Award Type**

	CP	CSET	PI	PICA	PIYRA	RFP	RP	SIRG	SRC	Total by Award
<b>Total Number of Invention Disclosures</b>	6	44	38	2	6	18	3	1	18	<b>136</b>

**Table 5.5: Number of Patents Filed arising from SFI Funding in 2009 by Award Type**

	CP	CSET	PI	PICA	PIYRA	RFP	RP	SRC	Total by Award
<b>Total Number of Patents Filed</b>	4	27	46	5	2	14	1	9	<b>108</b>

**Table 5.7: Number of Awarded Patents arising from SFI Funding in 2009 by Jurisdiction of Patent and Award Type**

	CSET	PI	RFP	Total by Jurisdiction
United States of America (USA)	3	1	0	4
Ireland	1	1	1	3
China	1	1	0	2
Netherlands	0	1	0	1
<b>Total by Award</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>10</b>

<sup>6</sup> Although Invention Disclosures, Patents, Spin Outs and Licences are reported here as arising from SFI-funded research, it is important to stress that SFI does not produce these outputs directly. They are the product of the research and commercialisation ecosystem and are dependent upon EI, the HEI Technology Transfer Offices (TTOs) and other stakeholders.

**Table 5.9: Number of Standards contributed to arising from SFI Funding in 2009 by Award Type**

	CP	CSET	PI	RFP	Total by Award
<b>Total Number of Standards Contributed To</b>	1	5	6	1	<b>13</b>

The information on licences and spin-offs is not award specific and is presented by HEI in Table 5.3.

**Table 5.3: Non-Award Specific Pre-Commercial Outputs by HEI**

	Total Licensed Technologies	Total Spin-Offs Reported
Dublin City University	3	1
National University of Ireland, Galway	3	0
National University of Ireland, Maynooth	1	1
Queen's University Belfast	1	0
Trinity College Dublin	5	1
Tyndall National Institute	1	0
University College Cork	3	2
University College Dublin	3	1
<b>Total</b>	<b>20</b>	<b>6</b>

## 6. Industry-Research Collaborations

2009 saw strong growth in the number of industry-research collaborations. 601 collaborations were reported, involving 389 distinct organisations, with half of the collaborations having legal agreements in place. This is a 50% increase over the 2008 number of collaborations and a 25% increase in the number of organisations involved. The largest increase in collaborative research came from the SME sector, with 165 companies collaborating in 2009 compared to 108 in 2008 (53% increase). 184 MNCs collaborated with SFI groups in 2009, up from 170 in 2008.

Figure 6.1: Industry-Research Collaborations 2009

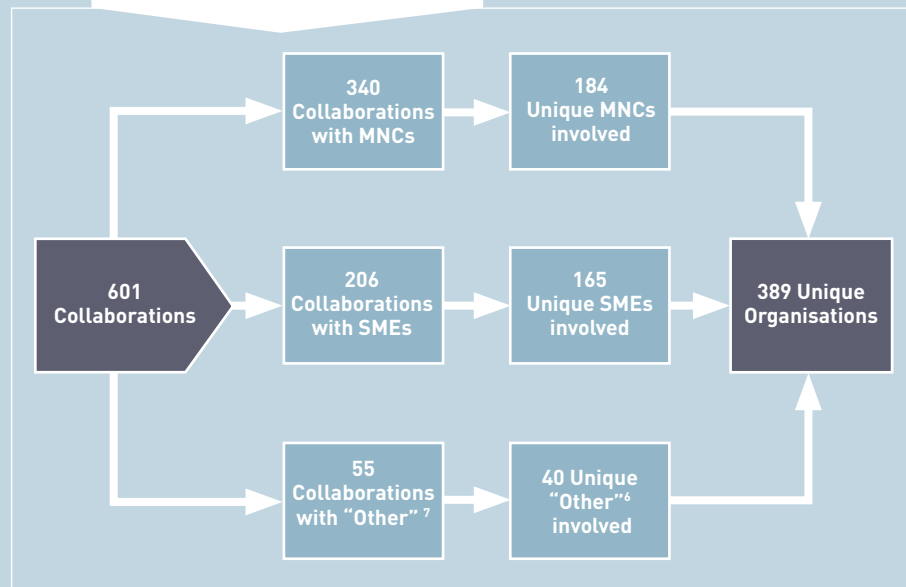
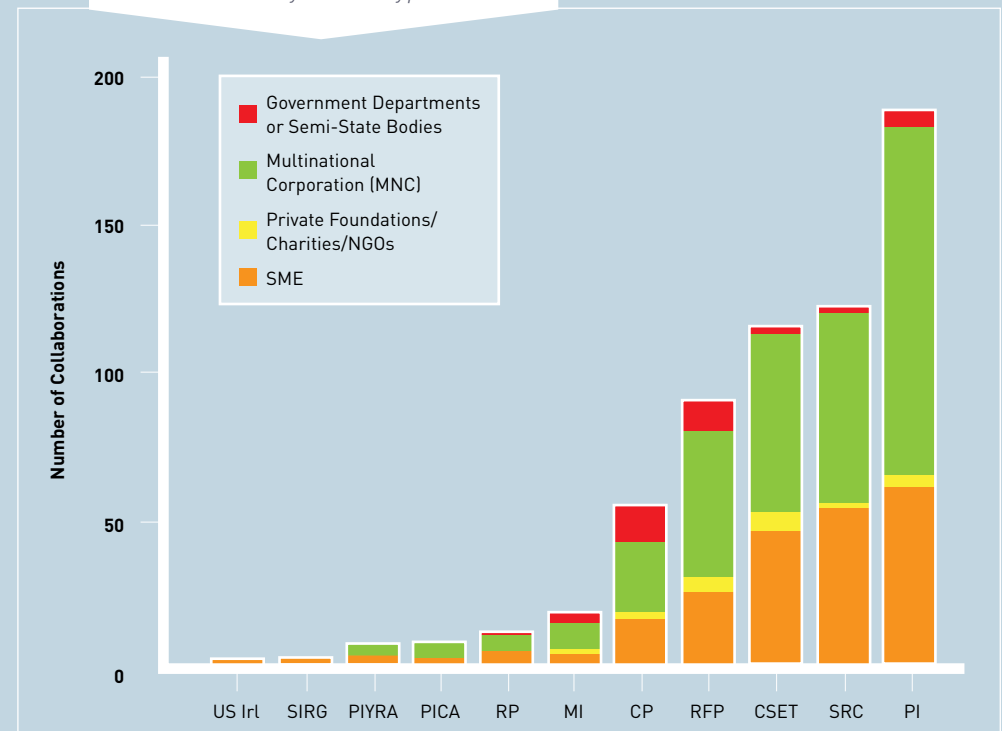


Fig 6.2: Number of Industry-Research Collaborations by Award Type



For the vast majority of researchers, the main aim of the collaboration reported is to assist the company achieve a research objective or to gain access to material, equipment, software or data.

SFI-supported research is a key 'reference sell' for IDA Ireland in attracting/retaining high tech Foreign Direct Investment (FDI) to/in Ireland, especially through the CSET and SRC programmes. In 2009 49% of IDA investments were in RD&I, with a value in excess of €500m.

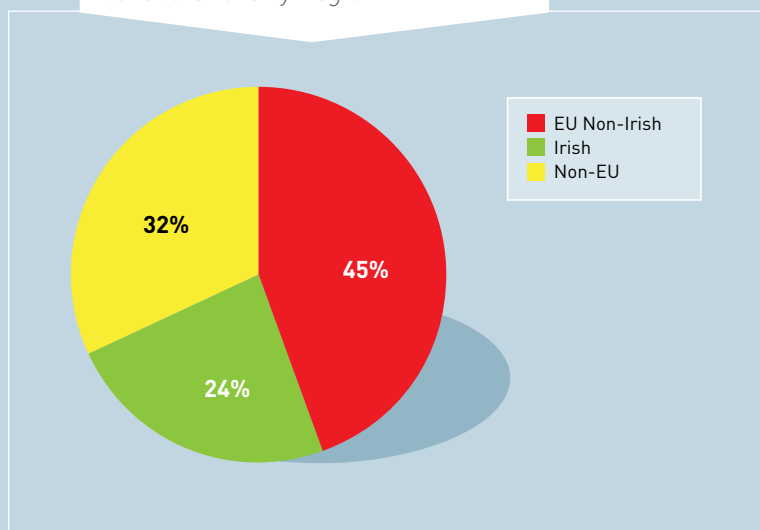
Figure 6.2 shows the number of collaborations by award type.

7 "Other" includes Government Departments or Semi-state bodies, private foundations, charities & NGOs.

## 7. Academic Collaborations & Internationalisation

A key objective of the Government's framework for sustainable economic renewal, "Building Ireland's Smart Economy", is to "accelerate Ireland's global science reputation" to ensure that Ireland is visible to the international research community and the global high-tech business community. SFI researcher engagement with international peers, participation in international events, collaboration with international enterprise and securing of international funding are all indicators of the internationalisation of Irish research. Academic collaborations are summarised below, while external funding is covered in section 8.

Fig 7.1: Academic Collaborations by Region



SFI-funded researchers engaged in 1,967 academic collaborations in 2009, 76% of which were with partners based outside Ireland. These collaborations are important for sharing resources, carrying out joint research and publications and for building networks and relationships, essential for creating clusters of excellence and for accessing external sources of funding.

SFI-funded researchers hosted 392 international events in 2009; approximately one third of these were held in Ireland. Table 7.5 shows the breakdown of location and the role of participants at these events. SFI-funded groups were members of the programme committee for 495 events and were invited to speak at 1,303 events. These figures reflect how Irish researchers are playing their part in communicating the excellence of Irish science and are firmly present on the international stage.

Table 7.5: Breakdown of Location and Member Roles at International Events in 2009<sup>8</sup>

	Ireland	EU (excluding Ireland)	Outside the EU	Total
Host	144	130	118	392
Invited Speaker	322	584	397	1303
Meeting Participant	372	423	253	1048
Paper Presented	348	679	471	1498
Poster Presented	422	448	344	1214
Programme Committee Member	138	168	189	495
<b>Total</b>	<b>1746</b>	<b>2432</b>	<b>1772</b>	<b>5950</b>

<sup>8</sup> Note these event participations are not mutually exclusive, for e.g. a researcher may have presented a paper and a poster at the same event, which would be counted twice here.

## 8. Leveraging Additional Funding

In 2009, SFI researchers reported securing €159 million worth of research funding from non-SFI sources. 44% of these funds came from non-exchequer sources, chief among them the EU (€38 million), demonstrating significant success in leveraging international funding into Ireland. 56% came from exchequer sources, including €21 million under Enterprise Ireland programmes, indicating a strong link between the research community supported by SFI and Enterprise Ireland applied research and commercialisation programmes.

**Table 8.2: Amount of External Funding Secured by SFI-Funded Researchers by Source of Funding (amounts in €s)**

	Total
EU	38,470,460
EI	20,861,999
HEA	16,978,569
IRCSET	14,753,825
Other Irish Government Source	13,847,596
HRB	12,011,968
Private Enterprise	11,969,358
Other Source	7,708,525
Other International Government Source	5,555,312
Charity/Non-Profit Organisation (Irish)	4,884,150
Wellcome Trust	3,996,398
Charity/Non-Profit Organisation (International)	3,013,564
DCENR	1,575,000
Other International Interest Organisation	1,485,182
Teagasc	974,334
NIH	914,270
IDA	130,200
<b>Total Funding from External Sources</b>	<b>159,130,710</b>

# SFI Census 2009 Tables

Tables of results are presented in the following sections:

1. Respondents & Awards
2. Research Team Compositions
3. First Destinations of Departing Team Members
4. Academic Outputs
5. Pre-Commercial Outputs
6. Industry - Research Collaborations
7. Academic Collaborations & Internationalisation
8. Funding Information

## Notes for reading the tables:

Award holders were asked to fill in one census form only if they held one or more awards from the following categories: PI, PIYRA, PICA, MI, RFP, RP, CP, US IrI, SIRG.

SRC and CSET award holders were requested to fill out a separate census form for the SRC or CSET.

For example: If an award holder held a PI-like award and an SRC or CSET award, he/she was requested to fill in two separate census forms.

If an award holder held a PI and RFP award, he/she was requested to only fill in one census form with information for both awards.

For collaborative awards, such as CSETs or SRCs, which are conducted across multiple HEIs, outputs are assigned to the primary/host HEI.

## Section 1: Respondents & Awards

Table 1.1: SFI Award Holders

	Award Holders		Number of Active Awards		Number of Awards (Active + Inactive)	
	Count	%	Count	%	Count	%
Female	117	20%	126	19%	151	18%
Male	483	81%	540	81%	671	82%
<b>Total</b>	<b>600</b>	<b>100%</b>	<b>666</b>	<b>100%</b>	<b>822</b>	<b>100%</b>

Table 1.2: SFI Award Holders by HEI

	Number of Award Holders	% of Award Holders by HEI
University College Dublin	153	25.5%
Trinity College Dublin	130	21.7%
University College Cork	73	12.2%
National University of Ireland, Galway	64	10.7%
Dublin City University	46	7.7%
National University of Ireland, Maynooth	39	6.5%
University of Limerick	24	4.0%
Royal College of Surgeons Ireland	21	3.5%
Tyndall National Institute	19	3.2%
Dublin Institute of Technology	9	1.5%
Dublin Institute for Advanced Studies	8	1.3%
Waterford Institute of Technology	3	0.5%
Other	2	0.3%
Dundalk Institute of Technology	2	0.3%
Cork Institute of Technology	2	0.3%
University of Ulster	1	0.2%
Sligo Institute of Technology	1	0.2%
Queen's University Belfast	1	0.2%
Institute of Technology, Tralee	1	0.2%
Athlone Institute of Technology	1	0.2%
<b>Total</b>	<b>600</b>	<b>100.0%</b>

Table 1.3: Total Number of Each Award Type held by Respondent and by HEI in 2009

	CSET	CP	PI	MI	PICA	PIYRA	RFP	RP	SIRG	SRC	US Irl	Total Number of Awards (Active+Inactive)
University College Dublin	2	2	38	1	3	7	133	4	1	6	1	198
Trinity College Dublin	2	0	46	0	3	6	133	2	4	1	0	197
University College Cork	1	1	23	1	2	1	68	1	1	2	0	101
National University of Ireland, Galway	2	1	18	1	0	2	59	2	3	2	0	90
Dublin City University	2	0	12	1	0	0	43	1	0	3	1	63
National University of Ireland, Maynooth	0	0	6	0	1	1	40	3	0	1	0	52
Royal College of Surgeons Ireland	0	0	8	0	1	1	23	0	0	0	0	33
University of Limerick	1	1	3	2	0	0	18	0	0	1	0	26
Tyndall National Institute	0	0	11	0	0	0	5	0	4	2	1	23
Dublin Institute for Advanced Studies	0	0	0	0	0	0	12	0	0	0	0	12
Dublin Institute of Technology	0	0	0	0	0	0	10	0	1	0	0	11
Waterford Institute of Technology	0	0	1	0	0	0	1	0	1	1	0	4
Cork Institute of Technology	0	0	1	0	0	0	2	0	0	0	0	3
Other	0	0	0	0	0	0	2	0	0	0	0	2
Dundalk Institute of Technology	0	0	1	0	0	0	1	0	0	0	0	2
University of Ulster	0	1	0	0	0	0	0	0	0	0	0	1
Sligo Institute of Technology	0	0	0	0	0	0	1	0	0	0	0	1
Queen's University Belfast	0	1	0	0	0	0	0	0	0	0	0	1
Institute of Technology, Tralee	0	0	0	0	0	0	1	0	0	0	0	1
Athlone Institute of Technology	0	0	0	0	0	0	1	0	0	0	0	1
<b>Total</b>	<b>10</b>	<b>7</b>	<b>168</b>	<b>6</b>	<b>10</b>	<b>18</b>	<b>553</b>	<b>13</b>	<b>15</b>	<b>19</b>	<b>3</b>	<b>822</b>

For example, there were two CSET awards where the host HEI was University College Dublin.



Table 1.4: SFI Award Holders by Nationality

	Number of Award Holders	% of Award Holders of this Nationality		Number of Award Holders	% of Award Holders of this Nationality
Ireland	361	60.2%	Trinidad and Tobago	1	0.2%
Great Britain	94	15.7%	Switzerland	1	0.2%
Germany	39	6.5%	Singapore	1	0.2%
United States of America	22	3.6%	Romania	2	0.3%
Italy	12	2.0%	Greece	2	0.3%
Russian Federation	8	1.3%	Czech Republic	2	0.3%
India	4	0.7%	China	2	0.3%
France	5	0.8%	Bulgaria	2	0.3%
Canada	5	0.8%	Slovenia	1	0.2%
Spain	6	1.0%	Poland	1	0.2%
Netherlands	6	1.0%	New Zealand	1	0.2%
Sweden	3	0.5%	Hungary	1	0.2%
Israel	4	0.7%	Brazil	1	0.2%
Denmark	3	0.5%	Austria	1	0.2%
South Africa	1	0.2%	Algeria	1	0.2%
Iceland	1	0.2%	Afghanistan	1	0.2%
Belgium	3	0.5%			
Australia	2	0.3%			
			<b>Total</b>	<b>600</b>	<b>100%</b>

The 600 respondents are made up of 35 nationalities.

**Table 1.5: Total Number of each Award Type by Award Holders and Gender in 2009**

	All	Female	Male
CSET	10	1	9
CP	7	0	7
PI	168	20	148
MI	6	0	6
PICA	10	10	0
PIYRA	18	5	13
RFP	553	110	443
RP	13	0	13
SIRG	15	4	11
SRC	19	0	19
US Irl	3	1	2
<b>Number of Awards</b>	<b>822</b>	<b>151</b>	<b>671</b>

**Table 1.5a: Total Number of Active Awards by Award Holders and Gender in 2009**

	Active Total	Female	Male
CSET	10	1	9
CP	7	0	7
PI	148	18	130
MI	6	0	6
PICA	8	8	0
PIYRA	15	4	11
RFP	429	90	339
RP	6	0	6
SIRG	15	4	11
SRC	19	0	19
US Irl	3	1	2
<b>Number of Awards</b>	<b>666</b>	<b>126</b>	<b>540</b>

There were 822 awards held during 2009. Table 1.5 breaks these out by award type; for example, there were ten CSETs, seven Charles Parsons, 168 PI awards etc. and shows the gender of the lead PI for each of these awards. For example, in the case of the ten CSETs, nine are led by a male PI and one is led by a female PI.

Table 1.5a shows the same breakdown as in Table 1.5 but only for those awards that were “active” at 31/12/2009 i.e. 666 out of the 822 awards were still active at the end of 2009. Of these 666 active awards, 126 of the awards are held by females and 540 are held by males.

## Section 2: Research Team Compositions

Table 2.1: Research Team Compositions for Active Awards (All funding sources)

	Male	Female	Irish	EU (Non-Irish)	Non-EU	Total	Category as % of Total
Award Holder	424	105	313	163	53	529	8%
Postdoctoral Researchers	1150	541	712	573	406	1691	26%
PhD Students	1786	1132	1656	630	632	2918	45%
Masters Students	151	85	144	46	46	236	4%
Technicians	92	73	131	22	12	165	3%
Research Assistants	106	116	146	51	25	222	3%
Administrators	40	140	152	15	13	180	3%
Other	367	142	313	117	79	509	8%
<b>Total</b>	<b>4116</b>	<b>2334</b>	<b>3567</b>	<b>1617</b>	<b>1266</b>	<b>6450</b>	<b>100%</b>
<b>Gender/Nationality as % of total</b>	64%	36%	55%	25%	20%	100%	

All funding sources refers to all funding received from SFI and other sources (leveraged). For example, on the 31/12/2009, the research teams of SFI award holders were made up of 6,450 people, funded from SFI and other sources. Of this, 3,225 are directly funded by SFI (see Table 2.1a).

There were 600 respondents in total to the census, however 529 of these held active awards only. The team compositions of inactive awards are not included in Tables 2.1, 2.1a or 2.2.

Table 2.1a: Research Team Compositions for Active Awards (SFI-Funded Team Members)

	Male	Female	Irish	EU (Non-Irish)	Non-EU	Total	Category as % of Total
Award Holder	424	105	313	163	53	529	16%
Postdoctoral Researchers	580	266	328	288	230	846	26%
PhD Students	834	510	698	302	344	1344	42%
Masters Students	51	33	39	27	18	84	3%
Technicians	28	18	37	7	2	46	1%
Research Assistants	48	60	72	20	16	108	3%
Administrators	25	78	87	7	9	103	3%
Other	116	49	90	45	30	165	5%
<b>Total</b>	<b>2106</b>	<b>1119</b>	<b>1664</b>	<b>859</b>	<b>702</b>	<b>3225</b>	<b>100%</b>
<b>Gender/Nationality as % of total</b>	65%	35%	52%	27%	22%	100%	

Table 2.2: Composition of SFI-Funded Team involved in each Award Type

	Award Holder	Postdoctoral Researchers	PhD Students	Masters Students	Technicians	Research Assistants	Administrators	Other	Total
RFP	357	147	439	29	4	11	2	19	1008
PI	149	289	350	27	19	34	16	16	900
CSET	10	179	240	12	11	40	57	79	628
SRC	19	131	192	5	7	19	20	38	431
MI	6	25	32	8	1	0	3	0	75
CP	7	21	32	1	0	0	3	3	67
PIYRA	15	18	27	1	1	1	0	2	65
RP	6	15	9	1	0	2	1	8	42
PICA	8	12	14	0	2	1	1	0	38
SIRG	15	6	9	0	0	0	0	0	30
US Irl	3	3	0	0	1	0	0	0	7
<b>Total</b>	<b>595</b>	<b>846</b>	<b>1344</b>	<b>84</b>	<b>46</b>	<b>108</b>	<b>103</b>	<b>165</b>	<b>3291</b>

The total number of active award holders here (595) will not equal the total number in Table 2.1 and 2.1a (529) because some award holders hold more than one award type and so fall into more than one award category. For example, a grant holder with a RFP and a PI award will be counted twice, once in each category. There were 66 award holders who held more than one award type.

## Section 3: First Destination of Departing Team Members

The tables below indicate the destinations of team members who left SFI-funded research teams in 2009.

**Table 3.1: Departing Postdoctoral Researchers**

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Postdoctoral research in HEI	50	61%	32	39%	82	43%
Industry	25	66%	13	34%	38	20%
Lecturers/ Permanent researchers in HEI	29	78%	8	22%	37	19%
Other	11	38%	18	62%	29	15%
Specialist Courses	2	50%	2	50%	4	2%
Teachers (primary/ secondary)		0%	1	100%	1	1%
<b>Total</b>	<b>117</b>	<b>61%</b>	<b>74</b>	<b>39%</b>	<b>191</b>	<b>100%</b>

For example, 191 postdoctoral researchers left SFI teams in 2009. 82 of these went on to carry out further postdoctoral research in a HEI, 50 (61%) outside of Ireland and 32 (39%) within Ireland.

**Table 3.2: Departing PhD Researchers**

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Postdoctoral research in HEI	39	53%	35	47%	74	50%
Other	19	48%	21	53%	40	27%
Industry	12	38%	20	63%	32	21%
Technicians in HEI	0	0%	2	100%	2	1%
Teachers (primary/ secondary)	0	0%	1	100%	1	1%
<b>Total</b>	<b>70</b>	<b>47%</b>	<b>79</b>	<b>53%</b>	<b>149</b>	<b>100%</b>

**Table 3.3: Departing Masters Students**

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Other	6	50%	6	50%	12	28%
PhD research in HEI	4	33%	8	67%	12	28%
Industry	7	54%	6	46%	13	30%
Specialist Courses	1	50%	1	50%	2	5%
Teachers	0	0%	2	100%	2	5%
Technicians in HEI	1	50%	1	50%	2	5%
<b>Total</b>	<b>19</b>	<b>44%</b>	<b>24</b>	<b>56%</b>	<b>43</b>	<b>100%</b>

Table 3.4: Departing Research Assistants

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Other	10	40%	15	60%	25	42%
Industry	5	45%	6	55%	11	18%
PhD research in HEI	6	60%	4	40%	10	17%
Masters research	5	71%	2	29%	7	12%
Specialist Courses	1	33%	2	67%	3	5%
Technicians in HEI	0	0%	3	100%	3	5%
Teachers (primary/secondary)	1	100%	0	0%	1	2%
<b>Total</b>	<b>28</b>	<b>47%</b>	<b>32</b>	<b>53%</b>	<b>60</b>	<b>100%</b>

Table 3.5: Departing Technicians

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Industry	1	50%	1	50%	2	29%
Technicians in HEI	0	0%	2	100%	2	29%
Other	1	100%	0	0%	1	14%
PhD research in HEI	1	100%	0	0%	1	14%
Specialist Courses	0	0%	1	100%	1	14%
<b>Total</b>	<b>3</b>	<b>43%</b>	<b>4</b>	<b>57%</b>	<b>7</b>	<b>100%</b>

Table 3.6: All Departing Team Members

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Postdoctoral research in HEI	89	57%	67	43%	156	35%
Other	47	44%	60	56%	107	24%
Industry	50	52%	46	48%	96	21%
Lecturers/Permanent researchers in HEI	29	78%	8	22%	37	8%
PhD research in HEI	11	48%	12	52%	23	5%
Specialist Courses	4	40%	6	60%	10	2%
Technicians in HEI	1	11%	8	89%	9	2%
Masters research	5	71%	2	29%	7	2%
Teachers (primary/secondary)	1	20%	4	80%	5	1%
<b>Total</b>	<b>237</b>	<b>53%</b>	<b>213</b>	<b>47%</b>	<b>450</b>	<b>100%</b>

## Section 4: Academic Outputs

Table 4.1 shows the number of peer reviewed publications for each award type in 2009. For example, the Charles Parsons awards produced 174 publications in 2009, comprising 74 refereed/original articles, two refereed reviews, five books and book chapters, 91 peer-reviewed conference/meetings papers/proceedings and two edited conference/meeting proceedings.

**Table 4.1: Publication Output in 2009**

	CP	CSET	MI	PI	PICA	PIYRA	RFP	RP	SIRG	SRC	US Irl	Total by Award
Refereed/Original Articles	74	281	136	560	23	58	537	47	8	113	4	1841
Refereed Reviews	2	41	0	86	2	16	63	7	3	14	2	236
Books & Book Chapters	5	23	3	17	4	0	7	4	0	9	0	72
Peer-reviewed Conference/ Meeting Proceedings/ Papers	91	377	20	376	12	50	442	20	5	212	0	1605
Edited Conference/ Meeting Proceedings	2	24	24	58	4	16	147	1	1	26	0	303
<b>Total Academic Outputs</b>	<b>174</b>	<b>746</b>	<b>183</b>	<b>1097</b>	<b>45</b>	<b>140</b>	<b>1196</b>	<b>79</b>	<b>17</b>	<b>374</b>	<b>6</b>	<b>4057</b>

Table 4.2: Publication Output in 2009 (with a Named Co-Author from Outside Ireland)

	CP	CSET	MI	PI	PICA	PIYRA	RFP	RP	SIRG	SRC	US Irl	Total by Award
Refereed/Original Articles	9	99	77	304	10	28	281	32	7	40	2	889
Refereed Reviews	0	8	0	30	0	5	25	4	3	3	0	78
Books & Book Chapters	0	6	1	5	2	0	2	3	0	1	0	20
Peer-reviewed Conference/ Meeting Proceedings/ Papers	18	107	13	114	2	5	124	10	3	33	0	429
Edited Conference/ Meeting Proceedings	0	19	14	20	4	3	77	0	0	10	0	147
<b>Total Academic Outputs</b>	<b>27</b>	<b>239</b>	<b>105</b>	<b>473</b>	<b>18</b>	<b>41</b>	<b>509</b>	<b>49</b>	<b>13</b>	<b>87</b>	<b>2</b>	<b>1563</b>

For example, of the 174 publications by Charles Parsons awards (Table 4.1) 27 have been co-authored with international partners (nine refereed/original articles and 18 peer-reviewed conference/meeting proceedings).



Table 4.2a: Publication Output in 2009: Percentage of Publications with Named Co-Author Outside Ireland

	CP	CSET	MI	PI	PICA	PIYRA	RFP	RP	SIRG	SRC	US Irl	Total % for Publication Type
Refereed/Original Articles	12%	35%	57%	54%	43%	48%	52%	68%	88%	35%	50%	48%
Refereed Reviews	0%	20%	0%	35%	0%	31%	40%	57%	100%	21%	0%	33%
Books & Book Chapters	0%	26%	33%	29%	50%	0%	29%	75%	0%	11%	0%	28%
Peer-reviewed Conference/Meeting Proceedings/Papers	20%	28%	65%	30%	17%	10%	28%	50%	60%	16%	0%	27%
Edited Conference/Meeting Proceedings	0%	79%	58%	34%	100%	19%	52%	0%	0%	38%	0%	49%
<b>Total % for Award Type</b>	<b>16%</b>	<b>32%</b>	<b>57%</b>	<b>43%</b>	<b>40%</b>	<b>29%</b>	<b>43%</b>	<b>62%</b>	<b>76%</b>	<b>23%</b>	<b>33%</b>	<b>39%</b>

Table 4.2a shows the number of publications with a named co-author from outside Ireland as a percentage of all publications. 39% of all publications had a named co-author from outside Ireland, a positive indicator of the measure of international engagement by SFI researchers.

Table 4.3: Publication Output by HEI in 2009

	Refereed/Original Articles	Refereed Reviews	Books & Book Chapters	Peer-reviewed Conference/Meeting Proceedings/Papers	Edited Conference/Meeting Proceedings	Total Publication Output
University College Dublin	385	38	13	335	54	825
Trinity College Dublin	457	63	12	204	57	793
University College Cork	186	44	18	192	15	455
Dublin City University	149	12	6	193	37	397
National University of Ireland, Galway	123	38	3	177	45	386
University of Limerick	187	5	11	143	39	385
National University of Ireland, Maynooth	88	10	3	109	12	222
Tyndall National Institute	103	3	1	87	3	197
Royal College of Surgeons Ireland	59	19	4	43	5	130
Queen's University Belfast	30	0	0	30	0	60
Dublin Institute for Advanced Studies	18	1	0	12	26	57
Cork Institute of Technology	13	1	0	24	0	38
Waterford Institute of Technology	8	1	0	27	1	37
Dundalk Institute of Technology	14	0	1	10	0	25
University of Ulster	11	1	0	9	0	21
Dublin Institute of Technology	7	0	0	5	4	16
Sligo Institute of Technology	0	0	0	4	4	8
Institute of Technology, Tralee	3	0	0	0	0	3
Athlone Institute of Technology	0	0	0	1	1	2
Other	0	0	0	0	0	0
<b>Total</b>	<b>1841</b>	<b>236</b>	<b>72</b>	<b>1605</b>	<b>303</b>	<b>4057</b>

There were 4,057 publications in total in 2009, 1,841 refereed/original articles, 236 refereed reviews, 72 books and book chapters, 1,605 peer-reviewed conference/meetings papers/proceedings and 303 edited conference/meeting proceedings.

## Section 5: Pre-Commercial Outputs<sup>9</sup>

Table 5.1 summarises the pre-commercial outputs for 2009.

Table 5.1: Summary of Pre-Commercial Outputs 2009	
	Total Number
Invention Disclosures	136
Patents Filed	108
Patents Awarded	10
Standards Contributed To	13
Spin-Offs Reported	6
Licensed Technologies	20

Data for Invention Disclosures, Patents and Standards was collected on an “award” basis, whereas data on Spin Offs and Licensed Technology was collected on a “researcher” basis. For example, if a researcher started a spin off company in 2009 and that researcher held more than one SFI award (e.g. PI & RFP award) then the spin off company was not attributed to one award over another.

Table 5.2: Summary of Pre-Commercial Outputs by HEI

	Total Invention Disclosures	Total Patents Filed	Total Patents Awarded	Total Standards Contributed to	Total per HEI
Cork Institute of Technology	0	0	1	0	1
Dublin City University	23	16	0	2	41
Dundalk Institute of Technology	0	0	0	2	2
National University of Ireland, Galway	17	8	0	4	29
National University of Ireland, Maynooth	1	4	0	0	5
Royal College of Surgeons Ireland	4	8	1	0	13
Trinity College Dublin	20	29	1	2	52
Tyndall National Institute	15	9	1	0	25
University College Cork	14	8	2	2	26
University College Dublin	34	20	2	0	56
University of Limerick	4	4	2	1	11
University of Ulster	4	2	0	0	6
<b>Total</b>	<b>136</b>	<b>108</b>	<b>10</b>	<b>13</b>	<b>267</b>

For example, there was one patent awarded to a researcher in CIT in 2009.

<sup>9</sup> Although Invention Disclosures, Patents, Spin Outs and Licences are reported here as arising from SFI-funded research, it is important to stress that SFI does not produce these outputs directly. They are the product of the research and commercialisation ecosystem and are dependent upon EI, the HEI Technology Transfer Offices (TTOs) and other stakeholders.

Table 5.3: Non-Award Specific Pre-Commercial Outputs by HEI

	Total Licensed Technologies	Total Spin-Offs Reported
Dublin City University	3	1
National University of Ireland, Galway	3	0
National University of Ireland, Maynooth	1	1
Queen's University Belfast	1	0
Trinity College Dublin	5	1
Tyndall National Institute	1	0
University College Cork	3	2
University College Dublin	3	1
<b>Total</b>	<b>20</b>	<b>6</b>

Table 5.4: Invention Disclosures arising from SFI Funding in 2009 by HEI and Award Type

	CP	CSET	PI	PICA	PIYRA	RFP	RP	SIRG	SRC	Total by HEI
University College Dublin	0	5	6	1	5	6	0	1	10	34
Dublin City University	0	14	2	0	0	2	3	0	2	23
Trinity College Dublin	0	10	5	0	0	5	0	0	0	20
National University of Ireland, Galway	0	11	2	0	1	1	0	0	2	17
Tyndall National Institute	0	0	12	0	0	0	0	0	3	15
University College Cork	1	4	6	1	0	1	0	0	1	14
University of Ulster	4	0	0	0	0	0	0	0	0	4
University of Limerick	1	0	2	0	0	1	0	0	0	4
Royal College of Surgeons Ireland	0	0	2	0	0	2	0	0	0	4
National University of Ireland, Maynooth	0	0	1	0	0	0	0	0	0	1
<b>Total by Award</b>	<b>6</b>	<b>44</b>	<b>38</b>	<b>2</b>	<b>6</b>	<b>18</b>	<b>3</b>	<b>1</b>	<b>18</b>	<b>136</b>

For example, UCD reported 34 Invention Disclosures; five from CSET awards, six from PI, one from PICA, five from PIYRA, six from RFPs, one from SIRG and 10 from SRC awards.

Table 5.5: Number of Patents Filed arising from SFI Funding in 2009 by HEI and Award Type

	CP	CSET	PI	PICA	PIYRA	RFP	RP	SRC	Total by HEI
Dublin City University	0	10	3	0	0	1	1	1	16
National University of Ireland, Galway	0	4	2	0	0	0	0	2	8
National University of Ireland, Maynooth	0	0	1	2	0	1	0	0	4
Royal College of Surgeons Ireland	0	0	4	0	0	4	0	0	8
Trinity College Dublin	0	8	15	0	0	6	0	0	29
Tyndall National Institute	0	0	9	0	0	0	0	0	9
University College Cork	0	0	6	1	0	0	0	1	8
University College Dublin	0	5	4	2	2	2	0	5	20
University of Limerick	2	0	2	0	0	0	0	0	4
University of Ulster	2	0	0	0	0	0	0	0	2
<b>Total by Award</b>	<b>4</b>	<b>27</b>	<b>46</b>	<b>5</b>	<b>2</b>	<b>14</b>	<b>1</b>	<b>9</b>	<b>108</b>

Table 5.6: Number of Patents Filed arising from SFI Funding in 2009 by Patent Office and Award Type

	CP	CSET	PI	PICA	PIYRA	RFP	RP	SRC	Total by HEI
Irish	1	8	15	0	0	4	0	5	33
EU	1	10	14	0	1	6	0	3	35
US	0	8	11	1	0	4	1	0	25
Other	2	1	6	4	1	0	0	1	15
<b>Total by Award</b>	<b>4</b>	<b>27</b>	<b>46</b>	<b>5</b>	<b>2</b>	<b>14</b>	<b>1</b>	<b>9</b>	<b>108</b>

For example, there was one patent filed in the Irish patent office arising from a Charles Parson award.

**Table 5.7: Number of Awarded Patents arising from SFI Funding in 2009 by HEI and Award Type**

	AWARD			Total by HEI
	CSET	PI	RFP	
Cork Institute of Technology	0	0	1	1
Royal College of Surgeons Ireland	0	1	0	1
Trinity College Dublin	0	1	0	1
Tyndall National Institute	0	1	0	1
University College Cork	1	1	0	2
University College Dublin	2	0	0	2
University of Limerick	2	0	0	2
<b>Total by Award</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>10</b>

There were ten patents awarded to SFI-funded researchers in 2009; five arising from CSET awards, four arising from PI awards and one arising from an RFP award.

**Table 5.8: Number of Awarded Patents arising from SFI Funding in 2009 by Jurisdiction of Patent and Award Type**

	CSET	PI	RFP	Total by HEI
United States of America (USA)	3	1	0	4
Ireland	1	1	1	3
China	1	1	0	2
Netherlands	0	1	0	1
<b>Total by Award</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>10</b>

**Table 5.9: Number of Standards contributed to arising from SFI Funding in 2009 by HEI and Award Type**

	CP	CSET	PI	RFP	Total by HEI
National University of Ireland, Galway	0	3	1	0	4
University College Cork	1	0	1	0	2
Trinity College Dublin	0	0	2	0	2
Dundalk Institute of Technology	0	0	2	0	2
Dublin City University	0	1	0	1	2
University of Limerick	0	1	0	0	1
<b>Total by Award</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>1</b>	<b>13</b>

For example, there were three Standards contributed to arising from CSET awards in NUIG in 2009.

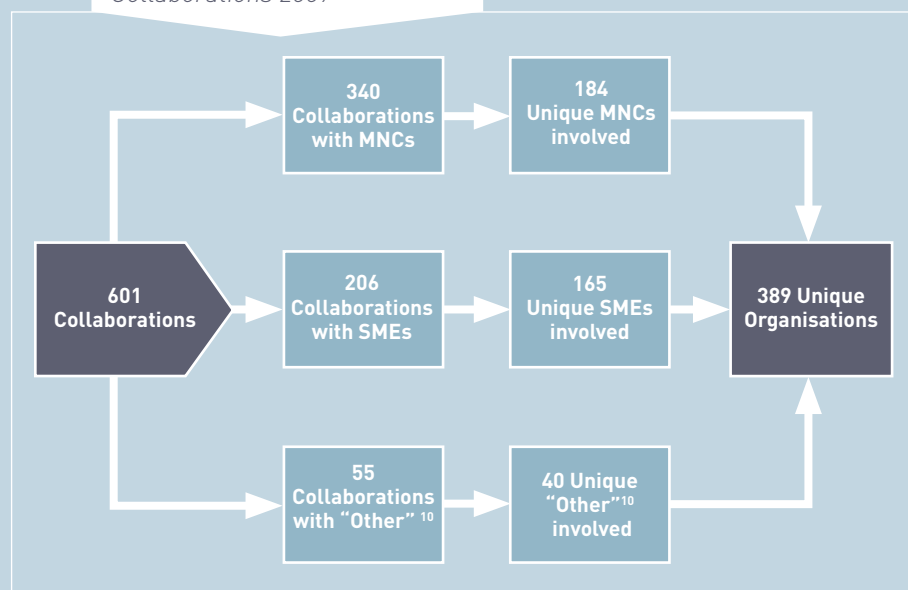
**Table 5.10: Number of Standards Contributed to arising from SFI Funding in 2009 by Role within Sub Group and Award Type**

	CP	CSET	PI	RFP	Total by HEI
Member	1	4	4	0	9
Other	0	1	1	1	3
Chair	0	0	1	0	1
<b>Total by Award</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>1</b>	<b>13</b>

Within the Standards that were contributed to in 2009, SFI-funded researchers acted as members to a standard body for nine and Chair for three.

## Section 6: Industry-Research Collaborations

Figure 6.1: Industry-Research Collaborations 2009



There were 601 Industry-Research collaborations reported in the SFI Census 2009, involving 389 unique/distinct companies.

Table 6.1: Industry-Research Collaborations by Award Type

	Multinational Corporation (MNC)	SME	Government Departments or Semi-State Bodies	Private Foundations/Charities/Non Government Organisations (NGO)	Total
PI	117	60	5	4	186
SRC	66	51	2	1	120
CSET	60	44	2	7	113
RFP	49	24	10	5	88
CP	24	15	12	2	53
MI	9	3	3	1	16
RP	5	4	1	0	10
PICA	6	1	0	0	7
PIYRA	4	2	0	0	6
US Irl	0	1	0	0	1
SIRG	0	1	0	0	1
<b>Total</b>	<b>340</b>	<b>206</b>	<b>35</b>	<b>20</b>	<b>601</b>

<sup>10</sup> "Other" includes Government Departments or Semi-state bodies, private foundations, charities & Non-Governmental Organisations (NGOs)

**Table 6.2: Number of Unique Companies Involved in Industry-Research Collaborations by Award Type**

	Multinational Corporation (MNC)	SME	Government Departments or Semi-State Bodies	Private Foundations/Charities/Non Government Organisations (NGO)	Total
CSET	48	43	2	7	100
SRC	48	47	2	1	98
RFP	45	24	9	5	83
CP	18	15	9	2	44
MI	9	3	3	1	16
RP	5	4	1	0	10
PICA	6	1	0	0	7
PIYRA	4	2	0	0	6
US Irl	0	1	0	0	1
SIRG	0	1	0	0	1
<b>Total</b>	<b>259</b>	<b>190</b>	<b>31</b>	<b>20</b>	<b>500</b>

The total in Table 6.2 will not be the same as in Figure 6.1 because it refers to unique companies within an award category: the same company may be collaborating within several award categories and it is not possible to uniquely attribute it to one over the other.

**Table 6.3: Industry-Research Collaborations with Legal Agreements in place**

	Legal Agreement in place			
	YES		NO	
	Total Collaborations	Unique Companies	Total Collaborations	Unique Companies
Multinational Corporation (MNC)	167	90	173	94
SME	120	89	86	76
Government Departments or Semi-State Bodies	13	7	22	15
Private Foundations/Charities/Non Government Organisations (NGO)	5	4	15	14
<b>Total</b>	<b>305</b>	<b>190</b>	<b>296</b>	<b>199</b>

There are 305 collaborations with legal agreements in place, involving 190 unique companies. This corresponds to 49% of companies and collaborations with legal agreements.



Table 6.4: Number of Industry-Research Collaborations with Legal Agreements by Award Type

	Multinational Corporation (MNC)		SME		Government Departments or Semi-State Bodies		Private Foundations/ Charities/Non Government Organisations (NGO)		Total	
	Total Collaborations	Unique Companies	Total Collaborations	Unique Companies	Total Collaborations	Unique Companies	Total Collaborations	Unique Companies	Total Collaborations	Unique Companies
PI	68	46	37	28	2	2	2	2	109	78
CSET	42	35	35	34	1	1	0	0	78	70
SRC	24	21	27	25	1	1	1	1	53	48
RFP	17	16	11	11	5	5	2	2	35	34
MI	4	4	1	1	3	3	0	0	8	8
CP	3	3	5	5	0	0	0	0	8	8
RP	2	2	2	2	1	1	0	0	5	5
PIYRA	4	4	1	1	0	0	0	0	5	5
PICA	3	3	0	0	0	0	0	0	3	3
US Irl	0	0	1	1	0	0	0	0	1	1
<b>Total</b>	<b>167</b>	<b>134</b>	<b>120</b>	<b>108</b>	<b>13</b>	<b>13</b>	<b>5</b>	<b>5</b>	<b>305</b>	<b>260</b>

50% of MNC collaborations have legal agreements in place. The corresponding figure for the SME collaborations is 58% and 33% of other collaborations.

Appendix A contains a list of collaborating companies.

Table 6.5: Breakdown of Nature of Industry-Research Collaborations

	Collaborations	% of Collaborations of this Nature
Joint Research	356	59%
Access to/provision of material, equipment, software, data	271	45%
Contract research	68	11%
Financial support to postgraduate students	64	11%
Training and Career & Professional Development (CPD)	58	10%
Event sponsorship	10	2%

For example, 59.2% of collaborations reported cite joint research as the nature of their collaboration.

Table 6.6: Breakdown of the Objective of Industry-Research Collaborations

	Collaborations	% of Collaborations with this Objective
Assist the company achieve a research objective	280	47%
Building networks & relationships	265	44%
Joint publication	167	28%
Licence development	114	19%
Other	94	16%
Start-up development	32	5%

The primary objective cited is to assist the company achieve a research objective.

## Section 7: Academic Collaborations & Internationalisation

**Table 7.1: Academic Collaborations by Region of Collaboration Partner**

Irish	470	23.9%
EU Non-Irish	877	44.6%
Non-EU	620	31.5%
<b>Total</b>	<b>1967</b>	<b>100.0%</b>

**Table 7.2: Academic Collaborations by Award Type**

RFP	715	36.3%
PI	589	29.9%
CSET	209	10.6%
SRC	122	6.2%
MI	97	4.9%
CP	65	3.3%
RP	63	3.2%
PIYRA	63	3.2%
SIRG	19	1.0%
PICA	17	.9%
US Irl	8	.4%
<b>Total</b>	<b>1967</b>	<b>100.0%</b>

**Table 7.3: Academic Collaborations by Award Type and Region**

	Irish		EU Non-Irish		Non-EU		Total
RFP	163	23%	332	46%	220	31%	715
PI	141	24%	239	41%	209	35%	589
CSET	47	22%	103	49%	59	28%	209
SRC	27	22%	51	42%	44	36%	122
MI	14	14%	56	58%	27	28%	97
CP	24	37%	31	48%	10	15%	65
RP	24	38%	19	30%	20	32%	63
PIYRA	21	33%	22	35%	20	32%	63
SIRG	6	32%	9	47%	4	21%	19
PICA	2	12%	12	71%	3	18%	17
US Irl	1	13%	3	38%	4	50%	8
<b>Total</b>	<b>470</b>	<b>24%</b>	<b>877</b>	<b>45%</b>	<b>620</b>	<b>32%</b>	<b>1967</b>

Table 7.4: Academic Collaborations by Objective

	Collaborations	% of Collaborations with this Objective
Access to/provision of material, equipment, software, data	683	35%
Training and Career & Professional Development (CPD)	249	13%
Joint Research/Publication	1666	85%
Licence development	41	2%
Start-up development	21	1%
Building networks & relationships	455	23%
Other	78	4%

For example, the principal objective of 34.7% of academic-academic collaborations is access to/provision of material, equipment, software and data.

Table 7.5: Breakdown of Location and Member Roles at International Events in 2009

	Irish	EU (Non-Irish)	Non-EU	Total
Host	144	130	118	392
Invited Speaker	322	584	397	1303
Meeting Attendee	372	423	253	1048
Paper Presented	348	679	471	1498
Poster Presented	422	448	344	1214
Programme Committee Member	138	168	189	495
<b>Total</b>	<b>1746</b>	<b>2432</b>	<b>1772</b>	<b>5950</b>

Table 7.5 shows SFI-funded researchers hosted 392 international events in 2009; approximately one third of these were held in Ireland. SFI-funded groups were members of the programme committee for 495 events and were invited to speak at 1,303 events.

## Section 8: Funding Information

Table 8.1: Research Group Dependency on SFI in 2009 by Award

	CSET	CP	PI	MI	PICA	PIYRA	RFP	RP	SIRG	SRC	US Irl	Number of Active Awards	Number of Awards
Very Low Dependency (0-20%)	0 .0%	1 14.3%	10 6.0%	0 .0%	0 .0%	1 5.6%	88 15.9%	1 7.7%	5 33.3%	2 10.5%	0 .0%	78 11.7%	108 13.1%
Low Dependency (21-40%)	0 .0%	3 42.9%	19 11.3%	1 16.7%	3 30.3%	1 5.6%	103 18.6%	0 .0%	1 6.7%	0 .0%	0 .0%	104 15.6%	131 15.9%
Dependent (41-60%)	4 40.0%	2 28.6%	40 23.8%	0 .0%	4 40.0%	4 22.2%	121 21.9%	0 .0%	0 .0%	6 31.6%	1 33.3%	156 23.4%	182 22.1%
High Dependency (61-80%)	5 50.0%	1 14.3%	43 25.6%	2 33.3%	1 10.0%	3 16.7%	92 16.6%	4 30.8%	1 6.7%	5 26.3%	2 66.7%	131 19.7%	159 19.3%
Very High Dependency (81-100%)	1 10.0%	0 .0%	56 33.3%	3 50.0%	2 20.0%	9 50.0%	149 26.9%	8 61.5%	8 53.3%	6 31.6%	0 .0%	197 29.6%	242 29.4%
<b>Total</b>	<b>10</b> <b>100%</b>	<b>7</b> <b>100%</b>	<b>168</b> <b>100%</b>	<b>6</b> <b>100%</b>	<b>10</b> <b>100%</b>	<b>18</b> <b>100%</b>	<b>553</b> <b>100%</b>	<b>13</b> <b>100%</b>	<b>15</b> <b>100%</b>	<b>19</b> <b>100%</b>	<b>3</b> <b>100%</b>	<b>666</b> <b>100%</b>	<b>822</b> <b>100%</b>

**Table 8.2: Amount of External Funding Secured by SFI-Funded Researchers by Source of Funding (amounts in €s)**

	Total
EU	38,470,460
EI	20,861,999
HEA	16,978,569
IRCSET	14,753,825
Other Irish Government Source	13,847,596
HRB	12,011,968
Private Enterprise	11,969,358
Other Source	7,708,525
Other International Government Source	5,555,312
Charity/Non-Profit Organisation (Irish)	4,884,150
Wellcome Trust	3,996,398
Charity/Non-Profit Organisation (International)	3,013,564
DCENR	1,575,000
Other International Interest Organisation	1,485,182
Teagasc	974,334
NIH	914,270
IDA	130,200
<b>Total Funding from External Sources</b>	<b>159,130,710</b>

# Appendix A:

## List of Companies Collaborating with SFI Researchers

Note: These companies are reported to be collaborating with SFI researchers.

Companies				
Abbott	Amgen	Baxter Medical Corporation	Bristol Myers Squibb	CODEX Discovery
Abem Instruments AB	Anachem Ltd	Bayer Technology Services (BTS) GmbH	British Biocell International (BBI)	CognoPlus Ltd
Abtran Ltd	Analog Devices Inc	Becton Dickinson, Inc	British Energy	Collplant
ACRA Control	Andor Technology Plc	Bell Labs	British Telecom (BT)	Copeland Ltd
Action Point	Anti Cancer Inc	BHP-Billiton	Bruker Biospin GmbH	Covidien
Adaptive HVM Ltd	APC Biotechnologies Services Inc	BiancaMed	Butler Manufacturing Services (BMS)	CR Entertainment
Aerogen Ltd	Aquafact International Services Ltd	BIAS - Bremer Institut Fur Angewandte Strahltechnik GMBH	Caliper LifeSciences	Cree
Agilent Technologies	Argutus Medical Ltd	Big River Streaming	Carbery	Creganna
Airbus SAS	Ark Therapeutics Group Plc	BioCEP	Carefusion Corporation	Critech Research
Airtricity	Armac Systems	Biolitec AG	Cathx	Cylon Controls
Aixtron AG	ARUP	BioMerieux	Cellix Ltd	Cynar Plc
AIXUV	AstraZeneca	Biomining Inc	Cellology	Cyntelix Corporation
Ajinomoto Co., Inc	Asylum Research	Bioniche Pharma	Celtic Catalysts Ltd	DataKraft
Akyuz Plastik A.S.	AT&T	Biospark (Imperative Energy and Sustainable Biopolymers)	Celtrak Ltd	De Puy Inc
Alcatel-Lucent	Atlas Polymers	Biostat Limited	Charles Rivers Laboratories	DeBeers Group
Alchemy Software Development (Europe)	Audit Diagnostics (Ireland)	Biosurf SA	Ciena Corporation	Decawave
Alcon Laboratories Ireland Ltd	Aughinish Alumina (Ireland)	Biotrin International Ltd	CIP Technologies	Dell
Alimentary Health Ltd	Avanex	Boehringer Ingelheim	Cisco Systems Inc	Deloitte & Touche
Allergan Inc	AvantiCell Science Ltd	Boliden Tara Mines Ltd	The Citco Group Ltd	Denator AB
Almac Group Ltd	Axellis Ltd	Bosch	Citi Group Inc	Depfa Bank Plc
Alnac Diagnostics	Axion Consulting	Boston Scientific	Clarochem	Devro Ltd
Amdocs (ChangingWorlds)	B9 Energy Group	Brahms	ClearSight Ltd	Diageo
	Bank of Ireland Group		Clerici-Sacco Group	Diamond Detectors Ltd
	Bausch & Lomb Inc			Digital Domain

Dionex UK Ltd	FairView Analytics Ltd	Holfeld Plastic Ltd	KPMG	Novabiotics Ltd
DNP	Falk	HOLOEYE PHOTONICS AG	Lam Research	Novartis
Dresser Rand	Ferfics Ltd	Hospira Inc	Landtech Soils Ltd	Novo-Nordisk
Royal DSM NV	FibroGen, Inc	HSG Zander GMBH	Lexas Research Ltd	Novozymes A/S
EADS	Fidelity Investments (FISC)	Huawei Technology Co. Ltd	Lipo Technologies Inc	NTE SA
Eblana Photonics Ltd	Fineos	Huntsman	Lumension	Nujira
Eboroil Udmartia Inc	Finisar Corporation	Huron Consulting Group	Luxcel Biosciences Ltd	NXP
eDaq Pty Ltd	Fintrax Group	IBM	Lyncée TEC SA	Ocean Energy Ltd
Egret Technologies Inc	Firecomms	IdentiGEN Ltd	M/A COM	Oceanlinx
Eire Composites	France Telecom	Imagine Eyes	M4S	Openlink Software (USA) Ltd
EirGrid	FrieslandCampina	iMobile	MagiQ Technologies Inc	Opsona Therapeutics
Elan Pharmaceuticals (Ireland)	Frontier Scientific	Impedans Ltd	MagSense Life Sciences	Ortho Clinical Diagnostics
Elastin Specialties, Inc	Frontier Silicon	Infineon	Marigot Ltd	Orthomimetics
Electricity Supply Board (ESB)	Fugro-BKS	Innocoll	mBio Diagnostics	Oxford Metrics Group
Eli Lilly S.A. (Ireland)	Full Flight Technology	Innolume, Inc	Medtronic	Paraytech
EMC (Ireland) Ltd	Gaelectric Developments Ltd	Integra Life Sciences	Mendel Biotechnology, Inc	Parexel International UK
Emerson Process Management	GE Healthcare	Intel Corporation	Merck Sharp & Dohme	Pavement Management Services Ltd
EnBio Ltd	Gemalto (eGO)	Intelligent Data Systems Inc	MetaOme	Pfizer
Enfer Scientific Ltd	General Electric	Intercept Pharma Inc	Microsoft Corporation	Pharmatrin Ltd
Enzolve Technologies Ltd	Genzyme Corporation	Intervet Schering Plough	Millipore	PicoMetrics Inc
EPPRA SAS	Glantreo	Intune Networks	Milron Metal Fabricators Inc	Pilkington Glass (UK)
Ericsson	Glas-seal Ltd	Inverness Medical Innovations, Inc	MITRE	Pioneer Investments
Erigal	GlaxoSmithKline	Isotron	MobaNode	Piper Systems Ltd
Erin Energy Ltd	Glebe Scientific Ltd	Itasca Consulting Group, Inc	Motorola	Polecat Ltd
eSpatial	Glen Dimplex Group	Jam Media Ltd	Movidius	Polyplus Transfection
ESRI Ireland Inc	G-Media	Janssen Pharmaceutical Ltd	Moving Media	Prognosys Biosciences Inc
Eudaemon Consulting Ltd	Gtelemetry	JBA Group	NeoSurgical	Prospect 23
EUVLitho Inc	Halcyon Solutions	Johnson and Johnson	Nokia Siemens Networks	Proxy Biomedical Ltd
Evergreen Engineering	Hemcon Medical Technologies	JS Bolger (Racehorse trainer)	Norkom Technologies	Qiagen GmbH
EverSeen Ltd	Hewlett-Packard (HP)	Kedco Ltd	Nortel Networks Corporation	QinetiQ
Fairchild Semiconductors	HMH (Houghton Mifflin Harcourt)	Kerry Group	Noscira	Qualcomm



Racktivity	Snap-On Inc	Therakine Inc
RedBoxDirect Ltd	Socowave	ThermoFisher Scientific
Renault Group	Softedge Systems LLC	Toray Industries Inc
Renishaw Ltd	Soitec	Toshiba China
RES Ltd	Solaprint Ltd	Traslan
Resource Kraft Ltd	Somex Limited	Tullow Oil Plc
Rio Tinto Minerals	Soni Ltd	UCB Pharma
RoBioSystems Ltd	SpeechStorm	United Technologies Corporation
Roche Group	Spokesoft Technologies Ltd	Unternehmensberatung Biogas
Rolls-Royce Group Plc	SpongeIT	VI Systems GmbH
Rovsing Ireland Ltd	Sports Index	Viridian Group
S3 Group	SQW Energy Scotland	VistaTEC
Saab Combitech Systems AB	SSE renewables	Vitalograph (Ireland) Ltd
SAES Getters S.p.A.	St Gobain Glass	Vitesse
Sanofi-Aventis	StatSports Ireland Ltd	Vivasure Medical Ltd
SAP AG	Storm Technology Ltd	Voco GmbH
Saudi Aramco	Strep Ltd	Warwick Effect Polymers
Scandinavian Homes Ltd	Summit PLC	Waters Corporation
Schering-Plough	Superlum Ireland	Wikki
SDL Enterprise Technology (Ireland)	SWS Group	Willis Plumbing and Heating Ltd
Seagate Technologies LLC	Sygnature Chemical Services Ltd	Wirelite Sensors Ltd
SensL	Symantec Corporation	Xilinx Research Labs
Servier Laboratories	Synopsys International Ltd.	
Sheeran Ltd	T2M	
Shimadzu Corporation	Taiho Pharmaceutical (Ireland) Ltd	
Siemens AG	Tango Telecom SA	
Sigma Aldrich Corporation	Technology From Ideas Ltd	
Sigmoid Pharma	Technotree Co. Ltd	
Skyware Global	Telefonica R&D	
SLR Consulting Ltd		

## Government Departments or Semi-State Bodies

Bord Gáis  
 Bord Na Mona  
 BreastCheck  
 Commission for Energy Regulation  
 Coillte Teo  
 Cyprus Police Force  
 ERSE  
 European Investment Bank  
 European Space Agency (Netherlands)  
 Hertfordshire Constabulary  
 Health Service Executive (HSE)  
 National Institute of Standards & Technology (NIST)  
 National Museum of Ireland  
 The National Institute for Bioprocessing Research and Training (NIBRT)  
 Northern Ireland Electricity Plc  
 Scottish Association for Marine Science  
 St Vincent's University Hospital  
 Teagasc  
 Van Haringen Institute

## Private Foundations/Charities/Non Government Organisations (NGO)

Briglec Ltd  
 Carers Ireland  
 Centre for Inclusive Technology  
 Crosscare  
 DEBRA Ireland  
 European Ocean Energy Association  
 GFM Systems  
 Inagh Valley Trust  
 Information Retrieval Facility  
 Irish Hockey  
 KWPN (Royal Warmblood Studbook of the Netherlands)  
 Nerviano Medical Sciences  
 Pat Falvey Foundation  
 Tennis Ireland  
 Thomas Jefferson University  
 VTT Finland  
 WiSen - Wireless Sensors Enterprise Led Network

## Appendix B: Glossary

**CP** Charles Parsons Award

**CSET** SFI Centres for Science, Engineering and Technology

**DAFF** Department of Agriculture, Fisheries and Food

**DCENR** Department of Communications, Energy and Natural Resources

**DETI** Department of Enterprise, Trade and Innovation

**EI** Enterprise Ireland

**EPA** Environmental Protection Agency

**EU** European Union

**FDI** Foreign Direct Investment

**HEA** Higher Education Authority

**HEI** Higher Education Institutions

**HRB** Health Research Board

**HSE** Health Service Executive

**IDA** Industrial Development Authority, Ireland

**IRCSET** Irish Research Council for Science, Engineering and Technology

**MI** SFI Mathematics Initiative

**MNC** Multi-national Corporation

**NIH** National Institute of Health, USA

**PI** SFI Principal Investigator Programme

**PICA** SFI Principal Investigator Career Advancement Award

**PIYRA** SFI President of Ireland Young Researcher Award

**RD&I** Research, Development and Innovation

**RFP** SFI Research Frontiers Programme

**RP** SFI Research Professor Recruitment Award

**SIRG** SFI Starting Investigator Research Grant

**SME** Small-Medium Enterprise

**SRC** SFI Strategic Research Clusters

**SSTI** Strategy for Science, Technology & Innovation 2006 - 2013

**Teagasc** The Irish Agriculture and Food Development Authority

**US Irl** US Ireland R&D Partnership Programme

**Wellcome** Wellcome Trust, UK



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