

## Science Foundation Ireland (SFI) Census 2011

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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 fifth year that the census has been conducted and the key results are summarised below:

- → Forms were returned for 511 active awards and these directly supported 2.995 individuals in 2011.
- → A total of 5,740 publications were reported in 2011, a 15% increase on the 2010 level.
- → Almost one-third of individuals who departed from their SFI funded team in 2011 took up employment in industry, up from one fifth in 2010. 66% of these were in companies based in Ireland.
- → Individuals reported 10 early stage spin out companies in 2011, up from 4 in 2010.
- → In addition to the spin out companies, a number of pre-commercial outputs were produced in 2011:
  - → 170 Invention Disclosures
  - → 79 Patents Filed
  - → 27 Patents Awarded
  - → 21 Standards Contributed To
  - → 39 Licensed Technologies

- → There was a 19% increase in the number of collaborations between SFI Researchers, companies, government departments and the Non-governmental organisation (NGO) sector this year. This equates to 583 companies partaking in 1,035 collaborations with SFI funded researchers. 56% of these collaborations are underpinned by legal agreements.
- → Academic to academic collaborations also grew by 15% in one year. Almost three-quarters of these collaborations are with international research bodies.
- → SFI funded researchers secured an additional €156m in non-SFI funding in 2011. Almost 60% of this funding is from non-Irish Exchequer sources.

The following section contains a short report on the key highlights of the 2011 census, which is followed by a section containing detailed tables on the findings.

<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), Charles Parsons Award (CP), SFI Research Professor Recruitment Award (RP), US Ireland R&D Partnership Programme (US IRL) and the SFI Starting Investigator Research Grant (SIRG).

## Census Report

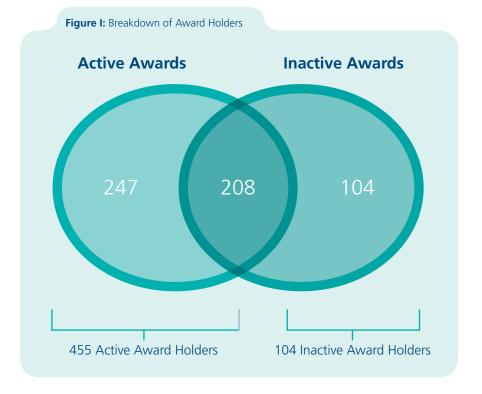
### SFI People and Awards<sup>2</sup>

### **Census Response Rates**

Table I: Response Rates

	R	espondents		Awards			
	Total	Active Inactive		Total	Active	Inactive	
Form Sent	843	455	388	1361	511	850	
Form Returned	570	455	114	985	511	474	
Response Rate	68%	100%	29%	72%	100%	56%	

- → The Census form was sent to 843 researchers representing 1,361 active and inactive awards. The overall response rate was 68% for individuals and 72% for awards.
- → For active awards, the response rate was 100% for both individuals and awards.
- → The results of the census are therefore based on 570 respondents representing 985 awards, broken out as 455 active award holders³ and 114 inactive award holders⁴.
- → The 985 awards are made up of 511 active awards and 474 inactive awards.



- → 247 individuals hold active awards only.
- → 208 individuals hold active and inactive awards.
- → 104 hold inactive awards only.

<sup>2.</sup> Active Awards refer to awards that received funding from SFI in 2011 and will continue to receive funding from SFI in 2012. Inactive awards are considered "expired" by SFI, i.e. on the 31/12/2011 they were no longer receiving funding from SFI.

<sup>3.</sup> Note active award holders may also hold inactive awards in their portfolio.

<sup>4.</sup> These award holders only hold inactive awards and are no longer on SFI's "books".

### **Respondents and Awards**

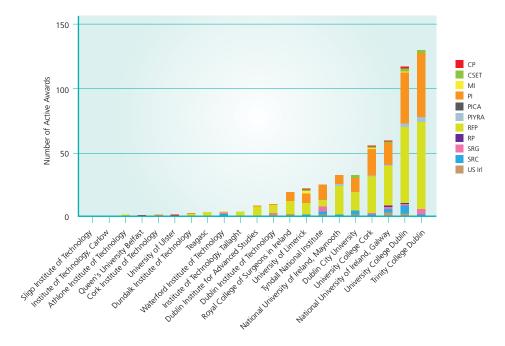
This year there was a total of 511 active awards held by individuals.

This indicates a net loss of 46 individuals and 84 awards from 2010.

**Table II:** Comparison of Active Awards 2011 and 2010

	Total Number of Active Awards 2011	Total Number of Active Awards 2010	Difference	Difference %
СР	7	7	0	0
CSET	9	9	0	0
MI	4	6	-2	-33%
PI	173	186	-13	-7%
PICA	0	3	-3	-100%
PIYRA	10	13	-3	-23%
RFP	265	326	-61	-19%
RP	2	3	-1	-33%
SIRG	14	14	0	0
SRC	19	20	-1	-5%
US Irl	8	8	0	0
Total	511	595	-84	-14%

Figure II: Number of Active Awards of each type held by Higher Education Institute (HEI)



47% of active awards are held in Trinity College Dublin (TCD) and University College Dublin (UCD).

### **Research Team Compositions**

Forms were returned for 511 active awards and these supported 2,995 team members in 2011. Support for a further 1,914 team members was secured from other sources of funding.

**Table III:** Research Team Composition (SFI Funded Team Members) as at 31/12/2011

	Ma	le	Fem		
	Number	% of Total	Number	% of Total	Total
Award Holder	368	81%	87	19%	455
Co-Investigators	73	90%	8	10%	81
Postdoctoral Researchers	485	67%	243	33%	728
PhD Students	816	64%	468	36%	1284
Masters Students	37	62%	23	38%	60
Technicians	47	75%	16	25%	63
Research Assistants	49	53%	43	47%	92
Administrators	12	17%	60	83%	72
Management Staff	20	56%	16	44%	36
Education & Outreach Staff	5	31%	11	69%	16
Other Team Members	76	70%	32	30%	108
Total	1988	66%	1007	34%	2995

**Table IV:** Research Team Composition by Nationality (SFI Funded Team Members) as at 31/12/2011

	lris	sh	EU (No	n-Irish)	Non		
	Number	% of Total	Number	% of Total	Number	% of Total	Total
Award Holder	333	73%	84	18%	38	8%	455
Co-Investigators	52	64%	22	27%	7	9%	81
Postdoctoral Researchers	296	41%	236	32%	196	27%	728
PhD Students	680	53%	305	24%	299	23%	1284
Masters Students	41	68%	11	18%	8	13%	60
Technicians	48	76%	9	14%	6	10%	63
Research Assistants	55	60%	23	25%	14	15%	92
Administrators	62	86%	8	11%	2	3%	72
Management Staff	29	81%	4	11%	3	8%	36
Education & Outreach Staff	14	88%	1	6%	1	6%	16
Other Team Members	72	67%	23	21%	13	12%	108
Total	1682	56%	726	24%	587	20%	2995

**Table V:** Research Team Composition by Gender (All funding sources) as at 31/12/2011

	Ma	le	Fem							
	Number	% of Total	Number	% of Total	Total					
Award Holder	368	81%	87	19%	455					
Co-Investigators	87	90%	10	10%	97					
Postdoctoral Researchers	845	66%	429	34%	1274					
PhD Students	1419	63%	846	37%	2265					
Masters Students	107	62%	65	38%	172					
Technicians	80	70%	34	30%	114					
Research Assistants	98	57%	73	43%	171					
Administrators	20	17%	96	83%	116					
Management Staff	23	59%	16	41%	39					
Education & Outreach Staff	5	28%	13	72%	18					
Other Team Members	133	71%	55	29%	188					
Total	3185	65%	1724	35%	4909					

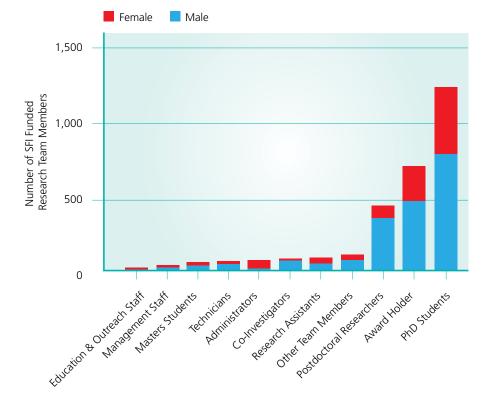
**Table VI:** Research Team Composition by Nationality (All funding sources) as at 31/12/2011

	Irish		EU (Nor	n-Irish)	Non		
	Number	% of Total	Number	% of Total	Number	% of Total	Total
Award Holder	333	73%	84	18%	38	8%	455
Co-Investigators	56	58%	30	31%	11	11%	97
Postdoctoral Researchers	521	41%	433	34%	320	25%	1274
PhD Students	1234	54%	502	22%	529	23%	2265
Masters Students	109	63%	28	16%	35	20%	172
Technicians	90	79%	12	11%	12	11%	114
Research Assistants	103	60%	43	25%	25	15%	171
Administrators	99	85%	14	12%	3	3%	116
Management Staff	32	82%	4	10%	3	8%	39
Education & Outreach Staff	16	89%	1	6%	1	6%	18
Other Team Members	116	62%	42	22%	30	16%	188
Total	2709	55%	1193	24%	1007	21%	4909

#### Gender

- → The ratio of male to female award holders is 80:20. This has remained unchanged for the past four Census reports.
- → For the overall team, the ratio of male to female is two thirds to one third. As in previous years, this shows that there is a loss of female researchers in the progression from postdoctoral research level to award holder.

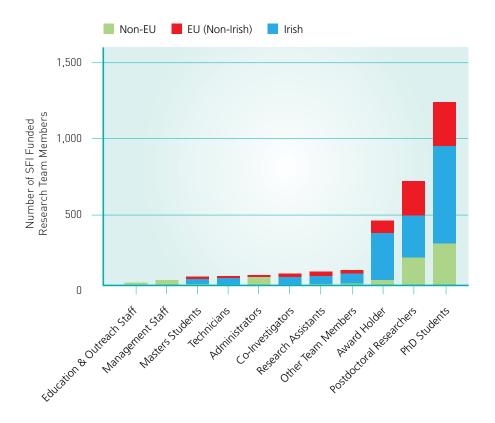
Figure III: Gender Breakdown of Research Team (SFI Funded Members) as at 31/12/2011



### **Nationality**

- → 23% of award holders are non-Irish, compared to 40% in 2010.
- → 47% of SFI funded teams are non-Irish, excluding award holders.
- → Within this group, almost 60% of SFI funded Postdoctoral Researchers and 47% PhD students are from abroad.

Figure IV: Nationality Breakdown of Research Team (SFI Funded Members) as at 31/12/2011



## First Destination of Departing Team Members<sup>5</sup>

A total of 535 team members left SFI funded research groups in 2011. This represents an increase of 13% on 2010 figures. Of these, 54% remained in Ireland and 46% went abroad. These percentages are similar to the figures presented in 2010 (53% in Ireland, 47% abroad).

Table VII: All Departing Team Members in 2011

	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% Total Leavers
Industry	56	34.1%	108	65.9%	164	30.7%
Postdoctoral research in HEI	92	58.2%	66	41.8%	158	29.5%
Other	26	49.1%	27	50.9%	53	9.9%
Lecturers/Permanent researchers in HEI	32	76.2%	10	23.8%	42	7.9%
PhD research in HEI	9	30.0%	21	70.0%	30	5.6%
Career Break	17	73.9%	6	26.1%	23	4.3%
Technicians in HEI	6	31.6%	13	68.4%	19	3.6%
Unemployment	5	29.4%	12	70.6%	17	3.2%
Specialist Courses	3	23.1%	10	76.9%	13	2.4%
Maternity Leave	0	0.0%	10	100.0%	10	1.9%
Teachers (primary/secondary)	3	60.0%	2	40.0%	5	0.9%
Short term secondment to another institute	0	0.0%	1	100.0%	1	0.2%
Total	249	46.5%	286	53.5%	535	100.0%

### **All Departing Team Members**

- → Almost one third of individuals who left SFI funded teams in 2011 went into industry, compared to just 22% in 2010. Within this cohort, 66% of individuals took up employment in industry in Ireland.
- → Another 30% proceeded to postdoctoral research, compared to 34% in 2010. Just over half of these took up research positions abroad.
- → More than half of all team leavers in 2011 remained in Ireland. For those that stayed in Ireland, industry was the largest employer (38%).

### **Departing Postdoctoral Researchers**

→ 229 Postdoctoral Researchers departed SFI research groups in 2011. Over half of these Postdoctoral Researchers left Ireland, mostly to continue postdoctoral research in a Higher Education Institute (HEI) abroad. Of those remaining in Ireland, 41% went into industry and 33% continued postdoctoral research in a HEI. Industry as a first destination, both in and outside Ireland, attracted 32% of Postdoctoral Researchers. This is a significant increase on the 2010 figures, where 24% took first employment with industry. See table 3.1 for detailed information.

### **Departing PhDs**

→ 184 PhD students departed their SFI funded teams this year. Just over half of these left Ireland. This is an 8% decrease versus leavers in 2010. Almost 50% of those PhD students who left Ireland obtained postdoctoral research positions in HEIs abroad. The first destination for 25% of all PhD leavers, who left SFI funded teams in 2011, was in industry, primarily within Ireland (59%), compared to 21% in 2010.

### **Departing Research Masters**

→ 83 Masters Students departed their SFI funded teams this year. 74% of these students found employment within Ireland and the majority of these found employment in industry (54%). Almost one third proceeded to PhD level.

<sup>5.</sup> When interpreting the percentages in this section, bear in mind that the numbers used as a basis for these percentages are very small.

### **Academic Outputs**

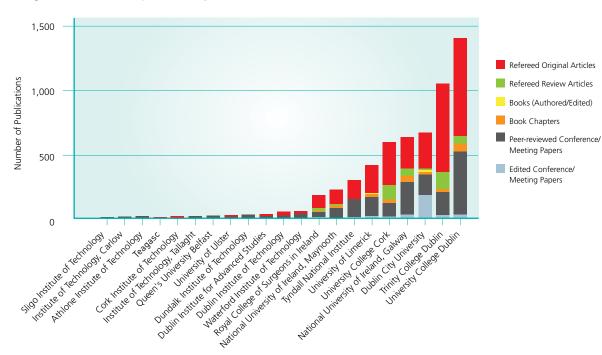
A total of 5,740 publications were reported in 2011 by SFI funded researchers from active awards. This is a 15% increase on the number of publications reported in 2010. 3,351 publications were attributed to SFI funding and 2,389 were attributed to other funding sources. In addition, there were 713 publications reported from inactive awards.

Of the total number of SFI funded publications from active awards, 31% have a named co-author with an address other than Ireland and 40% are available in open-access repositories.

**Table VIII:** Publication Output in 2011 for Active Awards

	СР	CSET	MI	PI	PIYRA	RFP	RP	SIRG	SRC	US Irl	Total from SFI Funding	Other Funding Sources
Outputs with a non-Irish co-author	24	222	51	412	16	148	1	13	158	5	1050	858
Outputs available in Open Access Repositories	15	465	51	414	18	157	2	9	220	5	1356	652
SFI Accredited Outputs	66	627	139	861	28	296	2	32	526	6	2583	665
Total Research Outputs	111	823	145	1075	40	421	2	58	666	10	3351	2389

Figure V: Publication Output in 2011 by HEI



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

**Table IX:** Summary of Pre-Commercial Outputs in 2011 (Active Awards)

	Total
Invention Disclosures	160
Patents Filed	72
Patents Awarded	25
Standards Contributed To	21
Spin Outs Reported	9
Licensed Technologies	38

 Table X: Summary of Pre-Commercial Outputs in 2011 (Inactive Awards)

	Total
Invention Disclosures	10
Patents Filed	7
Patents Awarded	2
Standards Contributed To	0
Spin Outs Reported	1
Licensed Technologies	1

### **Spin Outs**

9 spin out companies were reported this year from active awards compared to 4 last year. This is a 150% increase on 2010.

### **Licensed Technologies**

There were 38 licensed technologies in 2011 from active awards. This is a 73% increase on the 22 technologies reported in 2010.

**Table XI:** Summary of Pre-Commercial Outputs by HEI - Active Awards in 2011

	Invention Disclosures	Patents Filed	Patents Awarded	Standards Contributed to
Dublin City University	29	5	0	0
Dublin Institute of Technology	2	0	0	2
Dundalk Institute of Technology	0	0	0	3
National University of Ireland, Galway	23	5	0	5
National University of Ireland, Maynooth	2	2	1	0
Royal College of Surgeons in Ireland	5	8	2	0
Trinity College Dublin	23	11	3	1
Tyndall National Institute	12	6	2	0
University College Cork	20	7	1	2
University College Dublin	35	21	6	2
University of Limerick	4	2	9	6
University of Ulster	4	4	1	0
Waterford Institute of Technology	1	1	0	0
Total	160	72	25	21

### **Invention Disclosures**

160 invention disclosures arose from active awards in 2011 compared to 150 in 2010.

#### **Patents**

There were 72 patents filed in 2011 compared to 59 patents filed from active awards in 2010. There was a significant increase in the number of patents awarded from active awards in 2011. There were 25 awarded in 2011 compared to 8 in 2010. This is a growth of 213%.

#### **Standards**

The number of standards contributed to in 2011 was 21. This is an increase from 18 in 2010.

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

## Industry-Academic Collaborations

There was a 19% increase in the number of collaborations between SFI researchers, companies, government departments and the NGO sector in 2011, i.e. 1,035 collaborations in total versus 867 in 2010. This, in addition to the growth witnessed last year, means that there has been a 72% increase in non-academic collaborations in just two years.

There was a corresponding increase of 21% in the number of companies collaborating with SFI funded researchers, i.e. 583 companies in 2011 compared to 482 in 2010 or an additional 101 companies working with SFI researchers.

The number of collaborations or relationships with multinational corporations (MNCs) increased by 14% and involved 246 MNCs in 2011.

There was a 27% increase in the number of collaborations with small-medium enterprises (SMEs). There are now 337 SMEs working with SFI researchers. This is the largest growing category of companies working with SFI researchers and represents a 38% increase in the number of SMEs working with SFI Funded Researchers in 2010. It is worth noting that in 2008, there were 108 SMEs collaborating with SFI researchers, which increased to 165 in 2009, 245 in 2010 and now is at 337, which represents just over a 200% increase in 4 years.

There was a 17% increase in the number of collaborations reported with government departments/semi-state bodies and private foundations, charities and NGOs compared to 2010.

Over half (56%) of all these collaborations have legal agreements in place.

Table XII: 2011-2010 Comparison of Industry-Research Collaborations (Active Awards)

	Collaborations 2011	Collaborations 2010	% Change	Companies 2011	Companies 2010	% Change
Multinational Corporation (MNC)	515	450	+14%	246	237	+4%
SME	424	335	+27%	337	245	+38%
Government Departments or Semi-State Bodies	73	55	+33%	38	28	+36%
Private Foundations/ Charities/ Non Government Organisations (NGO)	23	27	-15%	21	24	-13%
Total by Award	1035	867	+19%	642	534	+20%

### Academic-Academic Collaborations

- → There were 2,581 academic-academic collaborations in 2011, an increase of 15% on 2010.
- → 74% of these collaborations are with international partners.
- → The largest cohort of academic collaborations is with EU academic institutes (44%). Almost all of these academic collaborations are for the purpose of joint research and/or publication, while training and career & professional development and the sharing of material and resources still remain important factors in engaging with external institutes.

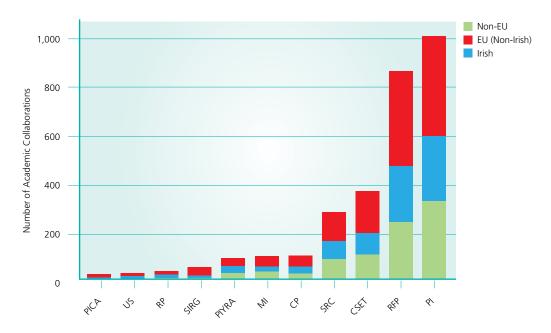
**Table XIII:** Academic Collaborations in 2011 by Objective

- Active Awards in 2011

	Collaborations	% of Collaborations with this Objective
Joint Research/Publication	2540	99.6%
Access to/provision of material, equipment, software, data	1463	57.4%
Training and Career & Professional Development (CPD)	654	25.7%
Licence development	173	6.8%
Start-up development	27	1.1%
Building networks & relationships	10	0.4%
Other	8	0.3%

31% of publications (1050) have a named co-author with an address other than Ireland. OECD figures for Ireland show a slightly larger percentage and place Ireland at average in terms of international co-authorship.<sup>7</sup>

Figure VII: Academic Collaborations in 2011 by Award Type and Region



<sup>7.</sup> http://www.oecd.org/dataoecd/28/49/45188320.pdf

### International Events

There was a 13% increase in the number of international events attended since 2010. SFI researchers played an active role in international conferences, from organising to presenting at these events.

Table XIV: Breakdown of Location and Member Roles at International Events in 2011

	Ireland	EU (excl Ireland)	Outside EU	Total
Host	146	54	38	238
Programme Committee Member	121	181	122	424
Invited Speaker	409	755	507	1671
Oral Presentation of a Paper	373	727	421	1521
Poster Presented	575	594	332	1501
Meeting Participant	234	240	106	580
Total	1858	2551	1526	5935

**Note:** These figures are not mutually exclusive. For example, an individual could have both hosted and presented a paper at an event.

### **External Funding**

- → The amount of additional funding obtained by SFI researchers increased by 18% to €156m.
- → Funding leveraged from the Irish Exchequer remained relatively constant at €63m.
- → Funding secured from the EU has decreased by 10% to €56m.
- → Funding secured from Enterprise Ireland and the HEA has increased by 46% and 44% respectively.
- → Also, there has been a 43% increase from funding secured from Charity/Non-Profit Organisation (Irish).

**Table XV:** Amount of non-SFI Funding secured by SFI Funded Researchers in 2011 (By Source for Active Awards, amounts in €s)<sup>8</sup>

	External Funding Leveraged	% change from 2010
EU	56,203,077	-10%
Enterprise Ireland	20,166,029	+46%
НЕА	18,995,365	+44%
Private Enterprise	16,572,804	+11%
IRCSET	8,537,973	-31%
Charity/Non-Profit Organisation (Irish)	8,511,685	+43%
HRB	7,839,278	-17%
Other Irish Government Source	3,153,911	-54%
Other International Government Source	3,132,193	-24%
Wellcome Trust	2,821,960	+64%
Department of Agriculture Fisheries and Food	1,805,780	+0.4%
Charity/Non-Profit Organisation (International)	1,420,932	-20%
EPA	1,380,350	-45%
Other International Interest Organisation	1,358,380	+12%
NIH	1,274,198	+20%
Other Source	853,709	+137%
Teagasc	714,100	-32%
NSF	617,500	+68%
DCENR	614,010	+514%
Marine Institute	40,000	-91%
Total	156,013,234	+18%

<sup>8.</sup> Acronyms are explained in Appendix B.

**Table XVI:** Amount of External Funding secured by SFI Funded Researchers in 2011 by Irish Exchequer vs Non-Irish Exchequer and National vs International Funding Sources (Active Awards, amounts in €s)

	Irish Exchequer	Non-Irish Exchequer	National	International	
EU		56,203,077		56,203,077	
Enterprise Ireland	20,166,029		20,166,029		
HEA	18,995,365		18,995,365		
Private Enterprise		16,572,804			
IRCSET	8,537,973		8,537,973		
Charity/Non-Profit Organisation (Irish)		8,511,685	8,511,685		
HRB	7,839,278		7,839,278		
Other Source		853,709			
Other International Government Source		3,132,193		3,132,193	
Wellcome Trust		2,821,960		2,821,960	
Other Irish Government Source	3,153,911		3,153,911		
Department of Agriculture Fisheries and Food	1,805,780		1,805,780		
EPA	1,380,350		1,380,350		
Charity/Non-Profit Organisation (International)		1,420,932		1,420,932	
NIH		1,274,198		1,274,198	
Other International Interest Organisation		1,358,380		1,358,380	
Teagasc	714,100		714,100		
NSF		617,500		617,500	
DCENR	614,010		614,010		
Marine Institute	40,000		40,000		
Total by Source	63,246,796	92,766,438	71,758,481	66,828,240	
Total Amount	156,013	3,234 <sup>9</sup>	138,586,721 <sup>10</sup>		

The figure reported is multi-annual funding secured in 2011. Multi-annual SFI funding invested in 2011, for comparison, was €104,787,000.
 This figure is lower than the total as not all funding can be described as national or international for example, private funding or funding from "other sources".

# Annual Census 2011 Tables and Graphs

## SFI People and Awards

Table 1.1: Response Rates

		People		Awards				
	Total	Active Inactive		Total	Active	Inactive		
Form Sent	843	455	388	1361	511	850		
Form Returned	570	455	114	985	511	474		
Response Rate	68%	100%	29%	72%	100%	56%		

**Table 1.2:** Total Number of each Award Type by Award Holder in 2011

	Total Number of Awards	Number of Active Awards 2011
СР	7	7
CSET	9	9
MI	5	4
PI	283	173
PICA	7	0
PIYRA	16	10
RFP	604	265
RP	11	2
SIRG	14	14
SRC	21	19
US Irl	8	8
Total	985	511

Table 1.3: SFI Award Holders 2011

	Award Holders			of Active ards	Number of Awards [Active + Inactive]		
Female	87	19.1%	98	19.2%	182	18.5%	
Male	368	80.9%	413	80.8%	803	81.5%	
Total	455	100.0%	511	100.0%	985	100.0%	

Figure 1.1: Award Holders 2011

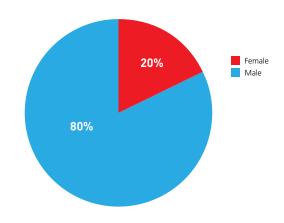


Table 1.4: SFI Active Award Holders 2011

	Active Awar	d Holders	Number of Active Awards			
Female	87	19.1%	98	19.2%		
Male	368	80.9%	413	80.8%		
Total	455	100.0%	511	100.0%		

**Table 1.5:** SFI Award Holders (Active) by HEI in 2011

	Number of Active Award Holders	% of Active Award Holders by HEI
Trinity College Dublin	108	23.7%
University College Dublin	106	23.3%
National University of Ireland, Galway	52	11.4%
University College Cork	49	10.8%
National University of Ireland, Maynooth	27	5.9%
Dublin City University	26	5.7%
Tyndall National Institute	21	4.6%
University of Limerick	20	4.4%
Royal College of Surgeons in Ireland	16	3.5%
Dublin Institute of Technology	9	2.0%
Dublin Institute for Advanced Studies	6	1.3%
Waterford Institute of Technology	3	0.7%
Teagasc	3	0.7%
Institute of Technology, Tallaght	3	0.7%
Dundalk Institute of Technology	2	0.4%
University of Ulster	1	0.2%
Queen's University Belfast	1	0.2%
Cork Institute of Technology	1	0.2%
Athlone Institute of Technology	1	0.2%
Total	455	100.0%

Figure 1.2: Active Award Holders 2011

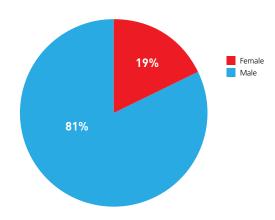


Figure 1.3: SFI Active Award Holders by HEI in 2011

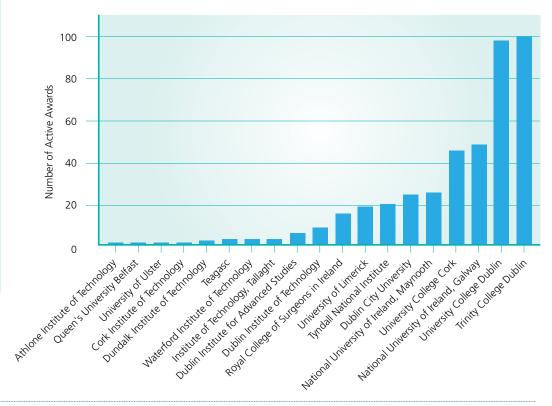


 Table 1.6: Total Number of Active Awards of Each Award Type held by Respondents and by HEI in 2011

	СР	CSET	PI	МІ	PICA	PIYRA	RFP	RP	SIRG	SRC	US Irl	Number of Active Awards
Trinity College Dublin	0	2	49	0	0	4	67	0	4	1	0	127
University College Dublin	2	2	39	1	0	3	58	1	1	6	2	115
National University of Ireland, Galway	1	1	17	0	0	1	30	1	2	3	2	58
University College Cork	1	1	20	1	0	1	28	0	1	1	0	54
National University of Ireland, Maynooth	0	0	7	0	0	1	22	0	0	1	0	31
Dublin City University	0	2	11	0	0	0	14	0	0	3	1	31
Tyndall National Institute	0	0	12	0	0	0	5	0	4	2	1	24
University of Limerick	1	1	7	2	0	0	9	0	0	1	0	21
Royal College of Surgeons in Ireland	0	0	7	0	0	0	10	0	0	0	1	18
Dublin Institute of Technology	0	0	1	0	0	0	6	0	1	0	1	9
Dublin Institute for Advanced Studies	0	0	1	0	0	0	7	0	0	0	0	8
Waterford Institute of Technology	0	0	0	0	0	0	1	0	1	1	0	3
Teagasc	0	0	0	0	0	0	3	0	0	0	0	3
Institute of Technology, Tallaght	0	0	0	0	0	0	3	0	0	0	0	3
Dundalk Institute of Technology	0	0	1	0	0	0	1	0	0	0	0	2
University of Ulster	1	0	0	0	0	0	0	0	0	0	0	1
Queen's University Belfast	1	0	0	0	0	0	0	0	0	0	0	1
Cork Institute of Technology	0	0	1	0	0	0	0	0	0	0	0	1
Athlone Institute of Technology	0	0	0	0	0	0	1	0	0	0	0	1
Total	7	9	173	4	0	10	265	2	14	19	8	511

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

Figure 1.4: Number of Active Awards of each type held by Higher Education Institute (HEI)

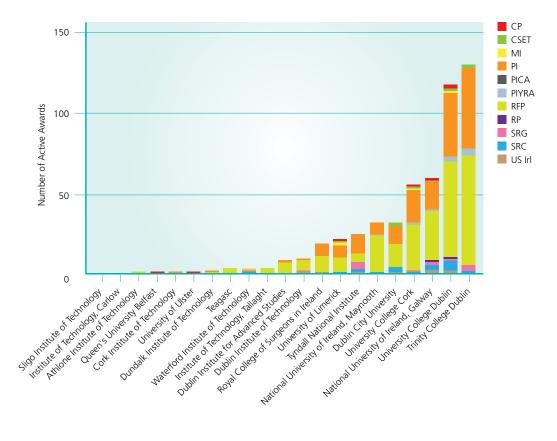


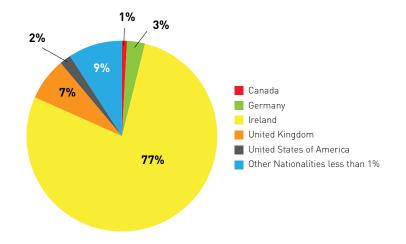
Table 1.7: SFI Active Awards by Nationality of Award Holder in 2011

	Number of Active Award Holders	% of Active Award Holders of this Nationality
Ireland	333	73.2%
United Kingdom	36	7.9%
Germany	17	3.7%
United States of America	11	2.4%
Canada	6	1.3%
Italy	5	1.1%
India	5	1.1%
Sweden	3	0.7%
Spain	3	0.7%
Russian Federation	3	0.7%
Netherlands	3	0.7%
France	3	0.7%
Denmark	3	0.7%
Australia	3	0.7%
Switzerland	2	0.4%
Belgium	2	0.4%
Austria	2	0.4%
Trinidad & Tobago	1	0.2%
Taiwan	1	0.2%
South Africa	1	0.2%
Slovenia	1	0.2%
Portugal	1	0.2%
Poland	1	0.2%
New Zealand	1	0.2%
Malaysia	1	0.2%
Israel	1	0.2%
Iceland	1	0.2%
Hungary	1	0.2%
Greece	1	0.2%
Czech Republic	1	0.2%
China	1	0.2%
Bulgaria	1	0.2%
Total	455	100.00%

**Table 1.8:** Total Number of Active Award Holders by Region of Nationality in 2011

	Active Award Holders		Number of Act	tive Awards
Ireland	333	73.2%	374	73.2%
EU (non-Irish)	84	18.5%	95	18.6%
Non-EU	38	8.4%	42	8.2%
Total	455	100.0%	511	100.0%

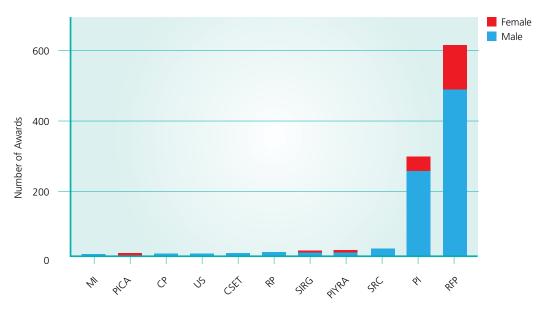
Figure 1.5: Nationality of Award Holders in 2011



**Table 1.9:** Total Number of Active Awards by Award Holder and Gender in 2011

	Active Total	Female	Male
СР	7	0	7
CSET	9	1	8
MI	4	0	4
PI	173	22	151
PICA	0	0	0
PIYRA	10	4	6
RFP	265	67	198
RP	2	0	2
SIRG	14	3	11
SRC	19	0	19
US Irl	8	1	7
Number of Active Awards	511	98	413

Figure 1.6: SFI Awards held by Gender in 2011



## Research Team Compositions

**Table 2.1:** Research Team Composition (SFI Funded Team Members) as at 31/12/2011

	Number	Category as % of Total
Award Holder	455	15.2%
Co-Investigators	81	2.7%
Postdoctoral Researchers	728	24.3%
PhD Students	1284	42.9%
Masters Students	60	2.0%
Technicians	63	2.1%
Research Assistants	92	3.1%
Administrators	72	2.4%
Management Staff	36	1.2%
Education & Outreach Staff	16	.5%
Other Team Members	108	3.6%
Total	2995	100.0%

**Table 2.2:** Research Team Composition by Gender (SFI Funded Team Members) as at 31/12/2011

	Male	Female	Total	Category as % of Total
Award Holder	368	87	455	15.2%
Co-Investigators	73	8	81	2.7%
Postdoctoral Researchers	485	243	728	24.3%
PhD Students	816	468	1284	42.9%
Masters Students	37	23	60	2.0%
Technicians	47	16	63	2.1%
Research Assistants	49	43	92	3.1%
Administrators	12	60	72	2.4%
Management Staff	20	16	36	1.2%
Education & Outreach Staff	5	11	16	.5%
Other Team Members	76	32	108	3.6%
Total	1988	1007	2995	100.0%

**Table 2.3:** Research Team Composition by Nationality (SFI Funded Team Members) as at 31/12/2011

	Irish	EU (Non-Irish)	Non-EU	Total	Category as % of Total
Award Holder	333	84	38	455	15.2%
Co-Investigators	52	22	7	81	2.7%
Postdoctoral Researchers	296	236	196	728	24.3%
PhD Students	680	305	299	1284	42.9%
Masters Students	41	11	8	60	2.0%
Technicians	48	9	6	63	2.1%
Research Assistants	55	23	14	92	3.1%
Administrators	62	8	2	72	2.4%
Management Staff	29	4	3	36	1.2%
Education & Outreach Staff	14	1	1	16	0.5%
Other Team Members	72	23	13	108	3.6%
Total	1682	726	587	2995	100.0%

**Table 2.4:** Research Team Composition (All funding sources)

	Total	Category as % of Total
Award Holder	455	9.3%
Co-Investigators	97	2.0%
Postdoctoral Researchers	1274	25.9%
PhD Students	2265	46.3%
Masters Students	172	3.5%
Technicians	114	2.2%
Research Assistants	171	3.5%
Administrators	116	2.3%
Management Staff	39	0.8%
Education & Outreach Staff	18	0.4%
Other Team Members	188	3.8%
Total	4909	100.0%

 Table 2.5: Research Team Composition by Gender (All funding sources)

	Male	Female	Total	Category as % of Total
Award Holder	368	87	455	9.3%
Co-Principal Investigators	87	10	97	2.0%
Postdoctoral Researchers	845	429	1274	25.9%
PhD Students	1419	846	2265	46.3%
Masters Students	107	65	172	3.5%
Technicians	80	34	114	2.2%
Research Assistants	98	73	171	3.5%
Administrators	20	96	116	2.3%
Management Staff	23	16	39	0.8%
Education & Outreach Staff	5	13	18	0.4%
Other Team Members	133	55	188	3.8%
Total	3185	1724	4909	100.0%

 Table 2.6: Research Team Composition by Nationality (All funding sources)

	Irish	EU (Non-Irish)	Non-EU	Total	Category as % of Total
Award Holder	333	84	38	455	9.3%
Co-Principal Investigators	56	30	11	97	2.0%
Postdoctoral Researchers	521	433	320	1274	25.9%
PhD Students	1234	502	529	2265	46.3%
Masters Students	109	28	35	172	3.5%
Technicians	90	12	12	114	2.2%
Research Assistants	103	43	25	171	3.5%
Administrators	99	14	3	116	2.3%
Management Staff	32	4	3	39	0.8%
Education & Outreach Staff	16	1	1	18	0.4%
Other Team Members	116	42	30	188	3.8%
Total	2709	1193	1007	4909	100.0%

## First Destination of Departing Team Members

The tables and graphs below indicate the destinations of team members who left SFI-funded research teams in 2011.

 Table 3.1: Departing Postdoctoral Researchers in 2011

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Post Doctoral research in HEI	47	56.6%	36	43.4%	83	36.2%
Industry	28	38.4%	45	61.6%	73	31.9%
Lecturers/Permanent researchers in HEI	32	76.2%	10	23.8%	42	18.3%
Maternity Leave	0	0.0%	8	100.0%	8	3.5%
Other	4	57.1%	3	42.9%	7	3.1%
Unemployment	3	42.9%	4	57.1%	7	3.1%
Career Break	4	66.7%	2	33.3%	6	2.6%
Technicians in HEI	1	50.0%	1	50.0%	2	0.9%
Specialist Courses	0	.0%	1	100.0%	1	0.4%
Total	119	52.0%	110	48.0%	229	100.0%

Table 3.2: Departing PhD Researchers in 2011

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Post Doctoral research in HEI	45	60.0%	30	40.0%	75	40.8%
Industry	19	41.3%	27	58.7%	46	25.0%
Other	13	50.0%	13	50.0%	26	14.1%
Unemployment	2	22.2%	7	77.8%	9	4.9%
Specialist Courses	3	33.3%	6	66.7%	9	4.9%
Career Break	7	87.5%	1	12.5%	8	4.3%
Technicians in HEI	2	40.0%	3	60.0%	5	2.7%
Teachers (primary/secondary)	2	66.7%	1	33.3%	3	1.6%
Maternity Leave	0	0.0%	2	100.0%	2	1.1%
Short term secondment to another institute	0	0.0%	1	100.0%	1	0.5%
Total	93	50.5%	91	49.5%	184	100.0%

 Table 3.3: Departing Masters Students in 2011

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Industry	5	13.2%	33	86.8%	38	45.8%
PhD research in HEI	8	34.8%	15	65.2%	23	27.7%
Other	4	44.4%	5	55.6%	9	10.8%
Career Break	5	71.4%	2	28.6%	7	8.4%
Technicians in HEI	0	0.0%	3	100.0%	3	3.6%
Specialist Courses	0	0.0%	3	100.0%	3	3.6%
Total	22	26.5%	61	73.5%	83	100.0%

 Table 3.4: Departing Research Assistants in 2011

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Other	5	45.5%	6	54.5%	11	35.5%
PhD research in HEI	1	14.3%	6	85.7%	7	22.6%
Industry	4	66.7%	2	33.3%	6	19.4%
Technicians in HEI	1	50.0%	1	50.0%	2	6.5%
Teachers (primary/secondary)	1	50.0%	1	50.0%	2	6.5%
Career Break	1	50.0%	1	50.0%	2	6.5%
Unemployment	0	0.0%	1	100.0%	1	3.2%
Total	13	41.9%	18	58.1%	31	100.0%

 Table 3.5: Departing Technicians in 2011

Destination	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Technicians in HEI	2	28.6%	5	71.4%	7	87.5%
Industry	0	0.0%	1	100.0%	1	12.5%
Total	2	25.0%	6	75.0%	8	100.0%

**Table 3.6:** All Departing Team Members in 2011

	Outside Ireland	% Outside Ireland	Within Ireland	% Within Ireland	Total	% of Total Leavers
Industry	56	34.1%	108	65.9%	164	30.7%
Post Doctoral research in HEI	92	58.2%	66	41.8%	158	29.5%
Other	26	49.1%	27	50.9%	53	9.9%
Lecturers/Permanent researchers in HEI	32	76.2%	10	23.8%	42	7.9%
PhD research in HEI	9	30.0%	21	70.0%	30	5.6%
Career Break	17	73.9%	6	26.1%	23	4.3%
Technicians in HEI	6	31.6%	13	68.4%	19	3.6%
Unemployment	5	29.4%	12	70.6%	17	3.2%
Specialist Courses	3	23.1%	10	76.9%	13	2.4%
Maternity Leave	0	0.0%	10	100.0%	10	1.9%
Teachers (primary/secondary)	3	60.0%	2	40.0%	5	0.9%
Short term secondment to another institute	0	0.0%	1	100.0%	1	0.2%
Total	249	46.5%	286	53.5%	535	100.0%

**Table 3.7:** Departing Members by Nationality by Destination in 2011

		Irish			EU (Non Irish)			Non-EU	
	Within Ireland	Outside Ireland	Total	Within Ireland	Outside Ireland	Total	Within Ireland	Outside Ireland	Total
Postdoctoral Researchers	63	27	90	30	44	74	17	48	65
	70.0%	30.0%	100.0%	40.5%	59.5%	100.0%	26.2%	73.8%	100.0%
PhD Students	63	29	92	15	26	41	13	38	51
PND Students	68.5%	31.5%	100.0%	36.6%	63.4%	100.0%	25.5%	74.5%	100.0%
Masters Students	54	9	63	2	9	11	5	4	9
Masters Students	85.7%	14.3%	100.0%	18.2%	81.8%	100.0%	55.6%	44.4%	100.0%
Research Assistants	18	4	22	0	7	7	0	2	2
Research Assistants	81.8%	18.2%	100.0%	0.0%	100.0%	100.0%	0.0%	100.0%	100.0%
Technicians	4	0	4	1	1	2	1	1	2
lechnicians	100.0%	0.0%	100.0%	50.0%	50.0%	100.0%	50.0%	50.0%	100.0%
T. (.)	202	69	271	48	87	135	36	93	129
Total	74.5%	25.5%	100.0%	35.6%	64.4%	100.0%	27.9%	72.1%	100.0%

 Table 3.8: Team Members Qualifications Awarded in 2011

	Irish	EU (Non-Irish)	Non-EU	Total
Masters Students	132	14	12	158
PhD Students	210	84	94	388
Total	342	98	106	546

## Academic Outputs

 Table 4.1a: Publication Output by Publication Type - Active Awards in 2011

				Publica	ations attribu	ited to SFI by	Award					
	СР	CSET	МІ	PI	PIYRA	RFP	RP	SIRG	SRC	US Irl	Total from SFI Funding	Publications funded from Other Funding Sources
Refereed/Original Articles	54	241	91	598	31	196	2	35	278	7	1533	1448
Refereed Reviews	4	52	1	101	2	14	0	1	45	1	221	197
Books	1	4	1	8	0	1	0	3	9	0	27	19
Book Chapters	9	55	4	30	1	17	0	1	29	1	147	106
Peer-Reviewed Conference/ Meeting Proceedings/ Papers	37	341	34	265	5	137	0	16	270	1	1106	583
Edited Conference/ Meeting Proceedings	6	130	14	73	1	56	0	2	35	0	317	36
Total Research Outputs	111	823	145	1075	40	421	2	58	666	10	3351	2389

 Table 4.1b: Publication Output - Active Awards in 2011

				Publica	tions attribu	uted to SFI by	Award					
	СР	CSET	МІ	PI	PIYRA	RFP	RP	SIRG	SRC	US Irl	Total from SFI Funding	Other Funding Sources
Outputs with a non-Irish Co-Author	24	222	51	412	16	148	1	13	158	5	1050	858
Outputs available in Open Access Repositories	15	465	51	414	18	157	2	9	220	5	1356	652
SFI Accredited Outputs	66	627	139	861	28	296	2	32	526	6	2583	665
Total Research Outputs	111	823	145	1075	40	421	2	58	666	10	3351	2389

 Table 4.2a: Publication Output by Publication Type - Inactive Awards in 2011

	MI	PI	PICA	PIYRA	RFP	RP	SRC	Total from SFI Funding
Refereed Original Articles	3	131	12	15	287	4	28	480
Refereed Review Articles	0	7	3	1	17	0	2	30
Books (Authored/Edited)	0	2	0	0	1	0	0	3
Book Chapters	0	5	2	0	9	0	0	16
Refereed Conference/Meeting Papers	0	34	6	12	101	2	13	168
Edited Conference/Meeting Papers	0	8	0	0	8	0	0	16
Total Research Outputs	3	187	23	28	423	6	43	713

**Table 4.2b:** Publication Output - Inactive Awards in 2011

	МІ	PI	PICA	PIYRA	RFP	RP	SRC	Total from SFI Funding
Outputs with a non-Irish Co-Author	3	59	7	6	190	4	8	277
Outputs available in Open Access Repositories	3	90	5	13	157	4	9	281
SFI Accredited Outputs	2	154	21	26	328	6	34	571
Total Research Outputs	3	187	23	28	423	6	43	713

 Table 4.3: Publication Output by HEI - Active Awards in 2011

	Refereed Original Articles	Refereed Review Articles	Books (Authored/ Edited)	Book Chapters	Refereed Conference/ Meeting Papers	Edited Conference/ Meeting Papers	Total by HEI
Athlone Institute of Technology	4	0	0	2	4	0	10
Cork Institute of Technology	11	0	0	1	0	0	12
Dublin City University	274	19	9	23	157	189	671
Dublin Institute for Advanced Studies	17	0	0	3	12	2	34
Dublin Institute of Technology	30	0	0	1	17	1	49
Dundalk Institute of Technology	6	2	1	2	16	0	27
Institute of Technology, Carlow	1	1	0	1	1	0	4
Institute of Technology, Tallaght	6	1	0	0	5	0	12
National University of Ireland, Galway	245	56	5	43	255	33	637
National University of Ireland, Maynooth	111	9	1	15	84	3	223
Queen's University Belfast	7	0	0	1	11	0	19
Royal College of Surgeons in Ireland	103	19	1	9	44	6	182
Sligo Institute of Technology	1	0	0	0	0	1	2
Teagasc	8	1	0	1	0	0	10
Trinity College Dublin	667	129	5	30	171	32	1034
Tyndall National Institute	146	4	1	4	138	6	299
University College Cork	334	116	5	24	101	18	598
University College Dublin	768	57	7	63	485	36	1416
University of Limerick	213	3	8	28	142	24	418
University of Ulster	13	1	1	1	11	0	27
Waterford Institute of Technology	16	0	2	1	35	2	56
Total Publication Output	2981	418	46	253	1689	353	5740

## Pre-Commercial Outputs<sup>11</sup>

**Table 5.1:** Summary of Pre-Commercial Outputs in 2011 (Active Awards)

	Total
Invention Disclosures	160
Patents Filed	72
Patents Awarded	25
Standards Contributed to	21
Spin Outs Reported	9
Licensed Technologies	38

**Table 5.1a:** Summary of Pre-Commercial Outputs in 2011 (All Awards, Active and Inactive)

	Total
Invention Disclosures	170
Patents Filed	79
Patents Awarded	27
Standards Contributed to	21
Spin Outs Reported	10
Licensed Technologies	39

 Table 5.2: Summary of Pre-Commercial Outputs by HEI - Active Awards in 2011

	Invention Disclosures	Patents Filed	Patents Awarded	Standards Contributed to
Dublin City University	29	5	0	0
Dublin Institute of Technology	2	0	0	2
Dundalk Institute of Technology	0	0	0	3
National University of Ireland, Galway	23	5	0	5
National University of Ireland, Maynooth	2	2	1	0
Royal College of Surgeons in Ireland	5	8	2	0
Trinity College Dublin	23	11	3	1
Tyndall National Institute	12	6	2	0
University College Cork	20	7	1	2
University College Dublin	35	21	6	2
University of Limerick	4	2	9	6
University of Ulster	4	4	1	0
Waterford Institute of Technology	1	1	0	0
Total	160	72	25	21

 Table 5.3: Non-Award Specific Pre-Commercial Outputs by HEI - Active Awards in 2011

	Total Licensed Technologies	Total Spin Outs Reported
Cork Institute of Technology	1	0
Dublin City University	7	2
Dublin Institute of Technology	2	0
National University of Ireland, Galway	6	2
Royal College of Surgeons in Ireland	3	0
Trinity College Dublin	5	2
Tyndall National Institute	4	1
University College Cork	3	0
University College Dublin	6	2
University of Limerick	1	0
Total	38	9

<sup>11.</sup> Although Invention Disclosures, Patents, Spin Outs and Licenses are reported here as arising from SFI - funded research, it is important to stress that SFI does not produce these outputs directly. These are the product of the research and commercialisation ecosystem and are dependent upon Enterprise Ireland (EI), the HEI Technology Transfer Offices (TTOs) and other stakeholders.

**Table 5.4:** Invention Disclosures arising from SFI Funding - by HEI and Award Type - Active Awards in 2011

	СР	CSET	MI	PI	PIYRA	RFP	SIRG	SRC	US Irl	Total by HEI
University College Dublin	0	12	1	9	0	4	3	6	0	35
University College Cork	1	4	0	7	0	5	2	1	0	20
Trinity College Dublin	0	7	0	13	1	1	0	1	0	23
Tyndall National Institute	0	0	0	7	0	1	0	4	0	12
National University of Ireland, Galway	0	12	0	2	0	1	0	8	0	23
Dublin City University	0	24	0	1	0	0	0	4	0	29
University of Limerick	1	0	0	1	0	2	0	0	0	4
Royal College of Surgeons in Ireland	0	0	0	4	0	1	0	0	0	5
National University of Ireland, Maynooth	0	0	0	2	0	0	0	0	0	2
Waterford Institute of Technology	0	0	0	0	0	0	0	1	0	1
University of Ulster	4	0	0	0	0	0	0	0	0	4
Dublin Institute of Technology	0	0	0	0	0	0	0	0	2	2
Total by Award	6	59	1	46	1	15	5	25	2	160

**Table 5.5:** Number of Patents Filed arising from SFI Funding in 2011 - by HEI and Award Type - Active Awards in 2011

	СР	CSET	MI	PI	RFP	RP	SIRG	SRC	Total by HEI
Dublin City University	0	3	0	0	0	0	0	2	5
National University of Ireland, Galway	0	0	0	2	0	0	0	3	5
National University of Ireland, Maynooth	0	0	0	1	0	0	0	1	2
Royal College of Surgeons in Ireland	0	0	0	5	3	0	0	0	8
Trinity College Dublin	0	2	0	6	2	0	0	1	11
Tyndall National Institute	0	0	0	3	0	0	0	3	6
University College Cork	0	1	0	6	0	0	0	0	7
University College Dublin	0	5	1	7	2	1	3	2	21
University of Limerick	0	0	0	1	1	0	0	0	2
University of Ulster	4	0	0	0	0	0	0	0	4
Waterford Institute of Technology	0	0	0	0	0	0	0	1	1
Total by Award	4	11	1	31	8	1	3	13	72

**Table 5.6:** Number of Awarded Patents arising from SFI Funding in 2011 - by HEI and Award Type - Active Awards in 2011

	СР	CSET	MI	PI	RFP	SRC	Total by HEI
National University of Ireland, Maynooth	0	0	0	1	0	0	1
Royal College of Surgeons in Ireland	0	0	0	0	2	0	2
Trinity College Dublin	0	0	0	3	0	0	3
Tyndall National Institute	0	0	0	1	0	1	2
University College Cork	0	0	0	1	0	0	1
University College Dublin	0	1	1	4	0	0	6
University of Limerick	1	8	0	0	0	0	9
University of Ulster	1	0	0	0	0	0	1
Total by Award	2	9	1	10	2	1	25

## Industry-Research Collaborations

 Table 6.1: Industry-Research Collaborations by Company Type - Active Awards in 2011

	Total Collaborations	Companies
Multinational Corporation (MNC)	515	246
SME	424	337
Government Departments or Semi-State Bodies	73	38
Private Foundations/Charities/ Non Government Organisations (NGO)	23	21
Total by Award	1035	642

 Table 6.2: Industry-Research Collaborations by Award Type - Active Awards in 2011

	Multinational Corporation (MNC)	SME	Government Departments or Semi-State Bodies	Private Foundations/ Charities/ Non Government Organisations (NGO)	Total by Award Type
CSET	137	149	14	9	309
PI	161	106	17	2	286
SRC	112	84	13	4	213
RFP	44	32	6	5	87
СР	30	25	16	3	74
MI	12	10	4	0	26
SIRG	7	7	1	0	15
PIYRA	8	2	0	0	10
RP	4	3	1	0	8
US Irl	0	4	1	0	5
PICA	0	2	0	0	2
Total	515	424	73	23	1035

**Table 6.3:** Industry-Research Collaborations in 2011 with Legal Agreements

	Legal Agreement in place			
	Total Collaborations	Companies		
Multinational Corporation (MNC)	294	135		
SME	252	192		
Government Departments or Semi-State Bodies	28	16		
Private Foundations/Charities/ Non Government Organisations (NGO)	8	6		
Total	582	349		

 Table 6.4: Breakdown of Primary Objectives of Industry-Research Collaborations - Active Awards in 2011

	Primary Objective		Secondary	Objective	Additional Objective	
	Total	% of Total	Total	% of Total	Total	% of Total
Collaborative research <sup>12</sup>	563	51.4%	112	10.2%	44	4.0%
Sharing of knowledge, material, equipment, software or data	159	14.5%	391	35.7%	142	13.0%
Contract/Sponsored Research13	131	11.9%	41	3.7%	26	2.4%
Other	95	8.7%	127	11.6%	127	11.6%
Building networks and relationships	75	6.8%	195	17.8%	384	35.0%
Company sponsored postgraduate studentships	55	5.0%	46	4.2%	19	1.7%
Exchanges of personnel	14	1.3%	64	5.8%	50	4.6%
None specified	4	0.4%	120	10.9%	304	27.7%
Total	1096	100.0%	1096	100.0%	1096	100.0%

**Table 6.5:** 2011-2010 Comparison of Industry-Research Collaborations (Active Awards)

	Collaborations 2011	Collaborations 2010	% Change	Companies 2011	Companies 2010	% Change
Multinational Corporation (MNC)	515	450	+14%	246	237	+4%
SME	424	335	+27%	337	245	+38%
Government Departments or Semi-State Bodies	73	55	+33%	38	28	+36%
Private Foundations/Charities/ Non Government Organisations (NGO)	23	27	-15%	21	24	-13%
Total by Award	1035	867	+19%	642	534	+20%

<sup>12.</sup> Where the goals are jointly defined and all partners equally contribute. 13. Where the relationship is essentially that of customer and contractor.

### Academic - Academic Collaborations

 Table 7.1: Academic Collaborations in 2011 by Region (Active Awards)

Ireland	672	26.0%
EU (non-Irish)	1128	43.7%
Non-EU	781	30.3%
Total	2581	100.0%

 Table 7.2: Academic Collaborations in 2011 by Award Type (Active Awards)

PI	918	35.6%
RFP	666	25.8%
CSET	365	14.1%
SRC	233	9.0%
СР	98	3.8%
MI	93	3.6%
PIYRA	89	3.4%
SIRG	49	1.9%
RP	34	1.3%
US Irl	24	0.9%
PICA	12	0.5%
Total	2581	100.0%

**Table 7.3:** Academic Collaborations in 2011 by Award Type and Region (Active Awards)

	lri	sh	EU Non-Irish		Non-EU		Total
PI	233	25.4%	383	41.7%	302	32.9%	918
RFP	175	26.3%	306	45.9%	185	27.8%	666
CSET	87	23.8%	173	47.4%	105	28.8%	365
SRC	73	31.3%	86	36.9%	74	31.8%	233
СР	29	29.6%	44	44.9%	25	25.5%	98
MI	23	24.7%	40	43.0%	30	32.3%	93
PIYRA	27	30.3%	32	36.0%	30	33.7%	89
SIRG	12	24.5%	32	65.3%	5	10.2%	49
RP	11	32.4%	15	44.1%	8	23.5%	34
US Irl	1	4.2%	11	45.8%	12	50.0%	24
PICA	1	8.3%	6	50.0%	5	41.7%	12
Total	672	26.0%	1128	43.7%	781	30.3%	2581

 Table 7.4: Academic Collaborations in 2011 by Objective (Active Awards)

	Collaborations	% of Collaborations with this Objective
Joint Research/Publication	2540	99.6%
Access to/provision of material, equipment, software, data	1463	57.4%
Training and Career & Professional Development (CPD)	654	25.7%
Licence development	173	6.8%
Start-up development	27	1.1%
Building networks & relationships	10	0.4%
Other	8	0.3%

## **External Funding**

**Table 8.1:** Amount of non-SFI Funding secured by SFI Funded Researchers in 2011 (By Source, amounts in €s)<sup>14</sup>

	External Funding Leverage €
EU	56,203,077
Enterprise Ireland	20,166,029
HEA	18,995,365
Private Enterprise	16,572,804
IRCSET	8,537,973
Charity/Non-Profit Organisation (Irish)	8,511,685
HRB	7,839,278
Other Irish Government Source	3,153,911
Other International Government Source	3,132,193
Wellcome Trust	2,821,960
Department of Agriculture Fisheries and Food	1,805,780
Charity/Non-Profit Organisation (International)	1,420,932
EPA	1,380,350
Other International Interest Organisation	1,358,380
NIH	1,274,198
Other Source	853,709
Teagasc	714,100
NSF	617,500
DCENR	614,010
Marine Institute	40,000
Total	156,013,234

Active Awards in 2011

**Table 8.2:** Amount of External Funding secured by SFI Funded Researchers in 2011 by Irish Exchequer vs. Non-Irish Exchequer and National vs. International Funding Sources (amounts in €s)<sup>15</sup>

	lrish Exchequer	Non-Irish Exchequer	National	International
EU	-	56,203,077	-	56,203,077
Enterprise Ireland	20,166,029	-	20,166,029	-
HEA	18,995,365	-	18,995,365	-
Private Enterprise	-	16,572,804	-	-
IRCSET	8,537,973	-	8,537,973	-
Charity/Non-Profit Organisation (Irish)	-	8,511,685	8,511,685	-
HRB	7,839,278	-	7,839,278	-
Other Irish Government Source	3,153,911	-	3,153,911	-
Other International Government Source	-	3,132,193	-	3,132,193
Wellcome Trust	-	2,821,960	-	2,821,960
Department of Agriculture Fisheries and Food	1,805,780	-	1,805,780	-
Charity/Non-Profit Organisation (International)	-	1,420,932	-	1,420,932
EPA	1,380,350	-	1,380,350	-
Other International Interest Organisation	-	1,358,380	-	1,358,380
NIH	-	1,274,198	-	1,274,198
Other Source	-	853,709	-	-
Teagasc	714,100	-	714,100	-
NSF	-	617,500	-	617,500
DCENR	614,010	-	614,010	-
Marine Institute	40,000	-	40,000	-
Total by Source	63,246,796	92,766,438	71,758,481	66,828,240
% of Total Amount	41%	59%	52%	48%
Total Amount	156,01	3,234	138,58	36,721

Active Awards in 2011

<sup>14.</sup> Acronyms for these sources of funding are explained in Appendix B.

<sup>15.</sup> This figure is lower than the total as not all funding can be described as national or international for example, private funding or funding from "other sources".

## Other

**Table 9.1:** Involvement in Outreach Programmes in 2011 by HEI

	Engaged in Public Outreach Programmes for the Promotion of Science in 2011		
	Yes	No	Total
University College Dublin	68	42	110
Trinity College Dublin	71	39	110
National University of Ireland, Galway	43	9	52
University College Cork	31	18	49
Dublin City University	18	11	29
National University of Ireland, Maynooth	20	7	27
Tyndall National Institute	15	7	22
University of Limerick	11	9	20
Royal College of Surgeons in Ireland	14	2	16
Dublin Institute of Technology	6	3	9
Dublin Institute for Advanced Studies	4	2	6
Waterford Institute of Technology	0	3	3
Teagasc	2	1	3
Institute of Technology, Tallaght	2	1	3
Dundalk Institute of Technology	1	1	2
University of Ulster	1	0	1
Queen's University Belfast	1	0	1
Cork Institute of Technology	1	0	1
Athlone Institute of Technology	1	0	1
Total	310	155	465

Active Awards in 2011

 Table 9.2: Attendance at International Events by HEI in 2011

	Yes	No	Total
Athlone Institute of Technology	0	1	1
Cork Institute of Technology	1	1	2
Dublin City University	26	10	36
Dublin Institute for Advanced Studies	6	1	7
Dublin Institute of Technology	6	3	9
Dundalk Institute of Technology	1	1	2
Institute of Technology, Carlow	0	0	0
Institute of Technology, Tallaght	1	2	3
National University of Ireland, Galway	47	19	66
National University of Ireland, Maynooth	21	10	31
Teagasc	2	1	3
Queen's University Belfast	1	0	1
Royal College of Surgeons in Ireland	19	4	23
Trinity College Dublin	107	35	142
Tyndall National Institute	21	5	26
University College Cork	43	16	59
University College Dublin	96	28	124
University of Limerick	17	7	24
University of Ulster	1	0	1
Waterford Institute of Technology	2	1	3
Total	418	145	563

Active Awards in 2011

 Table 9.3: Breakdown of Location and Member Roles at International Events in 2011

	Ireland	EU (excl Ireland)	Outside EU	Total
Host	134	40	37	211
Programme Committee Member	118	177	120	415
Invited Speaker	395	706	487	1588
Oral Presentation of a Paper	360	690	410	1460
Poster Presented	545	571	320	1436
Meeting Participant	213	220	99	532
Total	1765	2404	1473	5642

Active Awards in 2011

## Appendix A: List of Companies<sup>16</sup> Collaborating with SFI Researchers

**Companies** 

ABB

Abbott

Abem Instrument AB

Abtran Ltd

Acciona Infraestructuras S.A.

Achira

**ACRA Control** 

Actelion Pharma

**Action Point** 

Adama Innovation

Adaptive HVM Ltd

Adidas Adnagen

Advanced Accelerator Apps

Aerogen Ltd

AeroSurgical Ltd

AFchempharm

Agennix

Analytic Graphics Inc.

**Agile Sciences** 

Agilent Technologies

Airbus SAS

Airtricity

Aixtron

Ajinomoto Inc.

Akyuz Plastik A.S.

Alcatel-Lucent

Alcatel-Lucent Bell Labs

Alchemy Software Development Ltd Alcon Laboratories Ireland Ltd

Alere International

Alimentary Health Ltd

Allergan Inc.

Allied Irish Beef Processors

Almac Group Ltd

Alnac Diagnostics Alstom

Amdocs ChangingWorlds

Amgen

Anachem Ltd

Analog Devices Inc.

Andor Technology Plc

Anti Cancer Inc.

APEnvEcon

Apple Computers

Applied Materials

**Appsie** 

Aguafact International Services Ltd

Aquamarine

**Arch Therapeutics** 

Argutus Medical Ltd

Ark Therapeutics Group Plc

Armac Systems

Arup

AstraZeneca

Asylum Research Ltd

AT&T

ATOS

Audit Diagnostics Aughinish Aluminia AustriaMicrosystems Autodesk Research

Axellis Ltd

Axion Consulting

B9 Energy Group
Bank of Ireland Group

Bausch & Lomb Inc.

Baxter Medical Corporation

Bayer Group

BD Biosciences Europe

Becton Dickinson Inc.

Beemway Beiersdorf

BenchBio Ltd BHP-Billiton

BiancaMed

Big River Streaming

Bimeda Ltd

Bio Business

BioCEP

Biofocus DPI Ltd

BiolineRX BioMerieux

Biomining Inc Biospark Biosurfit S.A.

Biotrin International Ltd Boehringer Ingelheim Bofinn Diagnostics

Boliden Tara Mines Ltd

Boston Scientific Corporation

Brandon Products Ltd

Briglec Ltd

Bristol Myers Squibb

British Energy British Telecom (BT)

Bruker Advanced Supercon GmbH

Calicojack

Caliper LifeSciences Inc.

Carbery

Carbon Decisions

Carefusion Corporation

Carton Brothers

Cayman Chemical Company

Cellix Ltd

Cellology

Celtic Catalysts Ltd

Celtrak Ltd

CFRAM Research Ltd

Charles Rivers Laboratories

Christian Hansen

Chromotek

CIP Technologies

Cisco Systems Inc. Citco Group Ltd

Citigroup Inc.
Clarochem Ireland

ClearSight Ltd Clerici-Sacco Group

Coca Cola

**CODEX Discovery** 

Cognex

CognoPlus Ltd Collplant Ltd Connexios

Consorzio Treesse

Copeland Ltd

Covidien

CR Entertainment

Cray Inc. CreditExpo

Cree

Creganna

Crescent Diagnostics
Critech Research

Critical Path

Cross VetPharm CSEM S.A.

CSK

CVD Technologies Ltd

Cylon Controls

Cynar Plc

Cyntelix Corporation Ltd

Danone

Danubia Nanotech

Datafusion DataHug DataKraft

De Puy Inc.

DeBeers Group

Decawave Dell

Deloitte & Touche

<sup>16.</sup> These companies are reported to be collaborating with SFI researchers.

Denator AB Evergreen Engineering Hemcon Medical Technologies Inc Jam Media Ltd Movidius Depfa Bank Plc Henkel Ireland Ltd. Janssen Pharmaceutical Ltd. Moving Media EverSeen Ltd Deutsche Telekom **EXFO** Hewlett-Packard (HP) JBA Goup MP Biomedicals LLC Devro Ltd Heystaks Johnson and Johnson Mylan Institutional Inc. Ezetop Diageo Histogen Inc. K Systems Mytec Gmbh Ezose HMH (Houghton Mifflin Harcourt) Diagnostica Stago FairView Analytics Ltd Kanichi Nanosight Diamond Detectors Ltd Holfeld Plastic Ltd Kedco Ltd National Digital Research Centre Ltd Falk Dionex UK Ltd FEI Electron Microscopes Honeywell Turbo Technologies Kepak Natural Motion Disnev Ferfics Ltd Hospira Inc. Kildare Chilling NaviExpert SP. Z.O.O. DMC medical Fiat Research ScPA Hovione Kugler Maag Navteg Europe BA DNP **HSG Zander GMBH** FibroGen Inc. **Neat Sciences** Lake Region Manufacturing Inc. DreamTec Fidelity Investments (FISC) Huawei Technology Co. Ltd Lam Research NeoSurgical Dresser Rand Fineos Human Genome Science Inc. Landtech Soils Ltd Nestle DriveRite Fintrax Group LefScienceHub **Hummingbird Scientific** Netwatch **Dualsystems** Firecomms Huntsman Lexas Research Ltd NeuroSkv **FADS** Forschungzentrum Julich GmbH Life Technologies IBM Nikon Europe Eblana Photonics Ltd France Telecom IdentiGEN Ltd Light Stream Animation Nokia Siemens Networks Fboroil Udmartia Inc. FrieslandCampina Idiro Logscreen Norkom Technologies eDag Pty Ltd Fugro-BKS Imagine Eyes Luxcel Biosciences Ltd Nortel Networks Corporation Eircom iMobile M/A COM **Fujitsu** Noscira **Eire Composites** Full Flight Technology Impedans Ltd MagSense Life Sciences Inc. **Novartis** Elan Pharmaceuticals (Ireland) **G** Telemetry Inagh Valley Trust R&D Enterprise Ltd Mainstream Renewable Power Nowcasting International G F M Team Solutions Gdbr Infineon Mandat International NTF SA Elastin Specialties Inc. Eli Lilly S.A. (Ireland) Gaelectric Developments Ltd Innocoll Marigot Ltd Nuiira EMC (Ireland) Ltd Gasera Ltd Innolume Inc Marvell NXP GF Healthcare **Emerson Process Managment** Innova S.p.A Mason Technologies Occam Asset Management EnBio Ltd Gemalto (eGO) Innovalia Maxwell Technologies Ocean Energy Ltd Enfer Scientific Ltd Genzyme Corporation Integra Life Sciences mBio Diagnostics Oceanlinx **Enzolve Technologies Ltd** Gerbera Ltd Intel Corporation Medtronic **OFS Denmark** OncoMark Ltd Epic Digital Media **GFM Systems** Intelligent Data Systems Inc. Meiji Epichem Pty Ltd Glantreo Intercept Pharma Inc. Mendel Biotechnology Inc. Openlink Software (USA) Ltd **EPPRA SAS** Glas-seal Ltd Merck Group Intermune **Opsona Therapeutics** Equateg GlaxoSmithKline Intune Networks Metal Fabrication Ltd. **Organis Spintronics** Equinome Ltd Glebe Scientific Ltd. InvestorFirst MetaOme Ortho Clinical Diagnostics Ericsson Glen Dimplex Ltd Microsoft Corporation lpsen Ovagen Erigal G-Media Irish Cattle Breeding Federation Midatech Ltd Oxford Metrics Group Erin Energy Ltd Grant Galvin (entrepreneur) Irish Response Millipore PaddyPower Groupe Archimen Active 3D MITRE eSpatial Itasca Consulting Group Inc. Paraytech **Eudaemon Consulting Ltd** Halcyon Solutions iTraffic Molecular Devices Parexel International UK J&J Vistakon Mostostal Warszawa PAS Technologies Ireland Ltd Europlex Heinz

Pavement Management

Services Ltd

PepsiCo Ireland

Pfizer

Pharmatrin Ltd

Pheonix Ltd Philips Group

PicoMetrics Inc Pilkington Glass (UK)

Pioneer Investments

Piper Systems Ltd Plasmedica Ltd

Plentex Ltd (Blue Sundial Algae

Project)
PocketKings
Polecat Ltd

Polyplus Transfection

Profactor Progenik

Prognosys Biosciences Inc.

Prospect 23
Protagen
Protneteomix

Proxy Biomedical Ltd

Qiagen GmbH OinetiO

Quintiles Racktivity

Radisens Ltd

RealTime Technologies

Recitell Ltd RedBoxDirect Ltd

Renault Group Renishaw Ltd

ReResearch Ltd Resource Kraft Ltd

Ricerca sul Sistema Energetico

(RSE)

Rio Tinto Minerals

Roche Group

Rolls-Royce Group Rovsing Ireland Ltd

Royal DSM NV

S3 Group

Saab Combitech Systems AB

SAES Getters S.p.A. Sanofi-Aventis SAP AG

Saudi Aramco

Scandinavian Homes Ltd

Schering-Plough

SDL Enterprise Technology

(Ireland)

Seagate Technologies LLC
Selective Antibodies Ltd

Senexis Seniormind Sensinode SensL

Sentry Wireless

Seroba-Kernel Life Sciences

Servier Laboratories

Sheeran Ltd

Shimadzu Corporation

Shupon Siemens AG

Sigma Aldrich Corporation

Sigmoid Pharma Skyware Global

Slattery Communications SLR Consulting Ltd

Smartex

Smith & Nephew

Snap-On Inc SOCOWAVE Softedge Systems Software Mind

Solae

Solaprint Ltd

Solexpers AG

Solvay SONI Ltd SpeechStorm

Spokesoft Technologies Ltd

SpongeIT
Sports Index
SQW Energy Scotland

SSE Renewables
St Gobain Glass

ST Microelectronics Stat Sports

Statistical Solutions Cork

Stiefel GSK

Storm Technology Ltd Stranger Testing Services Ltd

Summit

Sygnature Chemical Services Ltd

Symantec Corporation
Synopsys International Ltd

T2M

Taiho Pharmaceutical Co Ltd

Tango Telecom SA

Superlum Ireland

TBC Inc. Technicolor

Technology From Ideas Ltd

Telabs
Telefonica R&D
Tell Lab
Temis
Tenesol SA

Teva Pharmaceuticals Ireland

Thales Group

The Walt Disney Company
ThermoFisher Scientific
Theta Chemicals

TiGenix Inc. (Orthomimetics)

Tmtfactory

Toray Industries Inc

Transver GmbH

Traslan

Trinity Biotech Trinity Horne Triveritas Ltd Tullow Oil Plc

United Technologies Corporation Unternehmensberatung Biogas

Unum Valio Veolia Veryan Ltd VI Systems Viridian Group Vistakon Ireland VistaTEC

Vitalograph (Ireland) Ltd

Vitesse

Vivasure Medical Ltd Waters Corporation

Weedle

Western Digital

Willis Plumbing and Heating

Wirelite Sensors Ltd

WIS

Xilinx Research Labs

Zamano Zeus Inc. Ziel Zignals

#### Government Departments or Semi-State Bodies

BBC

Bord Gáis

Bord na Mona

BreastCheck

Centre Scientifique et Technique du Bâtiment

Coillte

Commission for Energy Regulation (CER)

Competence Centre For Biorefining and Bioenergy

Deutsche Welle

**Dublin City Council** 

EirGrid

Electricity Supply Board (ESB)

Environmental Systems Research Institute, (ESRI)

Environmental Protection Agency (EPA)

European Investment Bank

European Space Agency

Health Service Executive (HSE)

INRIA Inventeurs du Monde Numerique

Irish Navy / Department of Defence

Met Éireann

National Institute for Bioprocess Research & Training (NIBRT)

National Institute of Standards & Technology (NIST)

National Oceanic and Atmospheric Administration (NOAA)

National Roads Authority (NRA)

Netherlands Institute for Sound and Vision (NISV)

Northern Ireland Electricity

Teagasc

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

Carers Ireland

Centre d'Immunologie Pierre Fabre

Centre for Inclusive Technology

Crosscare

**DEBRA** Ireland

Electric Power Research Institute (EPRI)

European Ocean Energy Association

European Research Consortium for Informatics and Mathematics (ERCIM)

Fondazione Bruno Kessler (FBK)

Fraunhofer Institute

**Fundacion Labein** 

Incubaid

Information Retrieval Facility

Irish Hockey Association

National Cattle Breeding Centre (NCBC)

National Museum of Ireland

Pat Falvey Foundation

Scottish Association for Marine Science

Tennis Ireland

Utility Wind Integration Group (UWIG)

VTT Finland

WiSen - Wireless Sensors Enterprise Led Network

## **Appendix B: Glossary**

СР	SFI Charles Parsons Energy Research Award
CSET	SFI Centres for Science, Engineering and Technology
DCENR	Department of Communications, Energy and Natural Resources
DJEI	Department of Jobs, Enterprise and Innovation
El	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
МІ	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 Cluster
SSTI	Strategy for Science, Technology & Innovation 2006 - 2013
US Irl	US Ireland R&D Partnership Programme

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