

**Table 8-5**  
**Business enterprise research and development personnel — By field of science or technology**

	2012 <sup>r</sup>	2013 <sup>p</sup>
	number	
<b>Total</b>	<b>139,462</b> <sup>A</sup>	<b>132,331</b> <sup>A</sup>
<b>Natural and formal sciences</b>	<b>16,559</b> <sup>A</sup>	<b>14,480</b> <sup>A</sup>
<b>Mathematics</b>	<b>532</b> <sup>A</sup>	<b>457</b> <sup>A</sup>
Computer and information sciences	9,462 <sup>A</sup>	7,584 <sup>A</sup>
Physical sciences	1,131 <sup>A</sup>	1,261 <sup>A</sup>
Chemical sciences	2,639 <sup>A</sup>	2,466 <sup>A</sup>
Earth and related environmental sciences	1,159 <sup>B</sup>	1,231 <sup>A</sup>
Biological sciences	1,543 <sup>A</sup>	1,388 <sup>A</sup>
Other natural sciences	93 <sup>A</sup>	92 <sup>A</sup>
<b>Engineering and technology</b>	<b>108,767</b> <sup>A</sup>	<b>103,555</b> <sup>A</sup>
Civil engineering	1,355 <sup>A</sup>	1,008 <sup>A</sup>
Software engineering	30,282 <sup>A</sup>	29,011 <sup>A</sup>
Electrical engineering, electronic engineering and information technology	29,101 <sup>A</sup>	27,459 <sup>A</sup>
Mechanical engineering	22,375 <sup>A</sup>	17,884 <sup>A</sup>
Chemical engineering	2,749 <sup>A</sup>	2,722 <sup>A</sup>
Materials engineering	7,053 <sup>A</sup>	5,902 <sup>A</sup>
Medical engineering	756 <sup>A</sup>	719 <sup>A</sup>
Environmental engineering	2,409 <sup>A</sup>	2,375 <sup>A</sup>
Environmental biotechnology	176 <sup>B</sup>	161 <sup>A</sup>
Industrial biotechnology	703 <sup>B</sup>	359 <sup>A</sup>
Nano-technology	147 <sup>A</sup>	122 <sup>A</sup>
Other engineering and technologies	11,662 <sup>A</sup>	15,834 <sup>A</sup>
<b>Medical and health sciences</b>	<b>11,039</b> <sup>A</sup>	<b>11,000</b> <sup>A</sup>
Basic medicine	3,524 <sup>A</sup>	3,650 <sup>A</sup>
Clinical medicine	1,987 <sup>A</sup>	1,666 <sup>A</sup>
Health sciences	979 <sup>B</sup>	1,079 <sup>A</sup>
Medical biotechnology	2,208 <sup>A</sup>	2,296 <sup>A</sup>
Other medical sciences	2,341 <sup>A</sup>	2,308 <sup>A</sup>
<b>Agricultural sciences</b>	<b>3,097</b> <sup>A</sup>	<b>3,297</b> <sup>A</sup>
Agriculture, forestry, and fisheries	1,609 <sup>A</sup>	2,085 <sup>A</sup>
Animal and dairy science	549 <sup>A</sup>	452 <sup>A</sup>
Veterinary science	78 <sup>C</sup>	81 <sup>A</sup>
Agricultural biotechnology	467 <sup>A</sup>	395 <sup>A</sup>
Other agricultural sciences	394 <sup>A</sup>	284 <sup>A</sup>

**Note(s):** Components may not add to totals due to rounding. Personnel counts are reported as full-time equivalent.