

## Instructions for completing the

### Australian Bureau of Statistics

#### SURVEY OF RESEARCH AND EXPERIMENTAL DEVELOPMENT, HIGHER EDUCATION 2010

*Copies of this document and all other information relating to the UQ ABS Survey of R&D collection are available on the web at:*

<http://www.uq.edu.au/research/rid/info-abs-survey>

### 1.0 Background

The Australian Bureau of Statistics (ABS) collects data on research and experimental development (R&D) in surveys of business, higher education, government and private non-profit organisations.

The all-sector aggregates from these surveys are the only comprehensive data on Australia's R&D effort.

They enable the nature and distribution of Australia's R&D activity to be monitored by government policy analysts and advisers to government, businesses and economists. For example, the Department of Education, Employment and Workplace Relations (DEEWR), the Australian Research Council (ARC) and the Department of Innovation, Industry, Science and Resources (DIISR) may use the data as input to policy formulation, the allocation of funds and determining priorities for research.

#### 1.1 Reference period

The reference period is the calendar year from 1 January 2010 to 31 December 2010.

#### 1.2 Submission date

This submission must be completed by your School, Institute or Division and returned before:

**Monday, August 8.**

Submission will be via email to Stephen Colhoun at the Research and Innovation Division:

[imu@research.uq.edu.au](mailto:imu@research.uq.edu.au).

If you are confident that no expenditure that has been attributed to a cost centre from within your unit had any direct or indirect connection with Research or Experimental Development, please contact Stephen Colhoun to register a nil return.

#### 1.3 Scope of the collection

This survey collects data for all research carried out by higher education institutions (and their controlled entities) during 2010. It includes all research for which an institution has responsibility, irrespective of the source of funding. More specifically, it includes research carried out:

- as a participant in unincorporated Cooperative Research Centres (CRCs) (Note: Only the research carried out by this institution should be included); and
- on contract for other legal entities (such as private businesses or incorporated CRCs).

The following R&D activity should be excluded:

- R&D performed by incorporated CRCs (operating within an institution's campus) and R&D carried out by staff of other organisations (on an institution's premises).

## 1.4 Estimates

Careful estimates are acceptable when actual figures are not available.

## 2.0 Definition of Research and Experimental Development (R&D)

This survey conforms to international standards for the collection of R&D statistics formulated by the Organisation for Economic Co-operation and Development (OECD). The OECD defines R&D as:

*Research and experimental development comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.*

Any activity classified as R&D is characterised by *originality*; with *investigation* as a primary objective and the potential to produce results that are sufficiently *general* for a recognisable increase in humanity's stock of knowledge (theoretical and/or practical). Most higher education research work qualifies as R&D.

In addition to the activity of R&D staff, research activity *includes*:

- the provision of professional, technical, administrative or clerical support and/or assistance to staff directly engaged in R&D;
- management of staff who are either directly engaged in R&D or provide professional, technical or clerical support or assistance to those staff;
- activities of students undertaking postgraduate research courses;
- supervision and monitoring of postgraduate research courses;
- supervision of students undertaking postgraduate research courses;
- computer programming, systems work or software maintenance where there are technological uncertainties to be resolved; and
- research work in the social sciences and humanities.

The following specific activities are excluded (except where they primarily support, or are part of, R&D activities):

- preparation for teaching;
- scientific and technical information services;
- engineering and technical services;
- general purpose or routine data collection;
- standardisation and routine testing;
- feasibility studies (except into R&D projects);
- specialised routine medical care, for example routine pathology services;
- commercial, legal and administrative aspects of patenting, copyrighting or licensing activities; and
- routine computer programming, systems work or software maintenance where there are no technological uncertainties to be resolved.

### 3. SUBMISSION INSTRUCTIONS

In an effort to lessen the burden on Schools as much as possible, the Research and Innovation Division has compiled as much data as is centrally available for you. You are simply required to check, amend and complete missing information where necessary.

The data you will need has been prepared for you in a worksheet within a single Excel File that has been emailed to your nominated staff member.

#### 3.1 Collection information

The 2010 data are collected electronically via the collection instrument contained in the file “Your Units Name”\_HERD\_2010.xlsx.

R&D data captured by this survey are:

- direct staff and student inputs (i.e. staff and students performing R&D);
- direct expenditure (i.e. expenses directly attributable to R&D);
- other staff and resources supporting R&D;

Additionally, expenditure on R&D is broken down by:

- type of activity (TOA);
- source of funds;
- field of research (FOR); and
- socio-economic objective (SEO).

Human resource effort devoted to R&D is also broken down by type of staff.

#### 3.2 “Your Units Name”\_HERD\_2010.xlsx

The data in this spreadsheet is based on the 2010 Faculty Summary report on the MIS Reportal, with extra information extracted from Staff Official; Student Scholarships and Research; and Research Projects. In addition, information collected in the recent Finance and Business Services HERDC Finance collection of 2010 data has been utilised where possible (primarily FoR codes collected in that exercise).

The data is organised as follows:

##### 3.2.1 School/Institute/Centre; Opal Unit; and Opal ID

Columns A-C contain the Unit mappings and Opal ids that the reported generic Chartstring is assigned to in MIS Finance Universe. These columns have been shaded a light gold colour and are for reference. You should not need to modify any of the data in these columns.

##### 3.2.2 ChartString; and ChartString Description

Columns D-E contain the generic Chartstring as listed in the MIS Finance Universe and its corresponding description.

Should you need to add rows to list additional FoR or SEO codes (see below) please make sure the Chartstring listed in column D is also added to the new line. This is to ensure that the additional codes are associated with the correct chartstring.

## Notes

Many schools may see a ChartString that doesn't belong to their Opal Unit. These ChartStrings are actually the ChartStrings from the Graduate School. The Graduate School ChartString records the amount of the Scholarship, but the EFTSL of the student is recorded against the School. For this reason, I have broken up the Graduate School ChartString to record against each School where the EFTSL is reported. Only the Research Expenditure is recorded on this line, with the Total Expenditure still reported against the Graduate School. This means the total Research Scholarship Expenditure may be higher than the total of your Total Scholarship Expenditure amounts.

### 3.2.3 Project Details

Columns F-H contain the Project Title, Project Contact and the RM Project Number that is related to the ChartString. The project details are drawn from the Research Projects Universe and mapped to ChartStrings that have the corresponding Research Master Numbers in the Finance Universe.

These columns have been shaded to indicate they should not need changing, but you can add project detail to these columns if desired.

If a ChartString has multiple rows due to having more than one FoR or SEO code (see below) then new project details should only be added to the row which has FoR/SEO Order = 1.

### 3.2.4 All Expenditure

Columns I-M contain the total Capital Works Expenditure; Salary Expenditure; Scholarships Expenditure and Other Expenditure and are for reference only. They include all the Expenditure in the corresponding ChartString for 2010, regardless if the expenditure was on research or not.

This information is not reported in the ABS Survey submission, but it is to be used to determine how much expenditure in that ChartString that can be claimed as research.

If all of the expenditure is research expenditure, then the full amount should be transferred to columns N-R (Research Expenditure). If only a component of the total expenditure is research, then report only that fraction of the total in columns N-R.

### 3.2.5 Research Expenditure

Columns N-Q contain the research Capital Works Expenditure; Salary Expenditure; Scholarships Expenditure and Other Expenditure that will be reported in the ABS Survey submission for 2010. Column R is the Total Research Expenditure and is the sum of columns N-Q.

This represents expenditure on R&D performed by the institution irrespective of the source of funds. In the case of shared grants, only report the expenditure from your institution's share of the grant.

Where possible, research expenditure has been pre-assigned. Any expenditure with a Fund code of 4xx has been deemed to be 100% research expenditure. Any ChartString with a Research Master project id recorded against it has also been made 100% research expenditure. Finally, a Generic Chart String that had Research Only FTE or RHD Scholarships is considered to have Research Salary Expenditure and/or Research Scholarship Expenditure.

Please correct or update missing research expenditure where necessary.

If a ChartString has multiple rows due to having more than one FoR or SEO code (see below) then Research Expenditure for that ChartString should only be added to the row which has FoR/SEO Order = 1.

### 3.2.5.1 Research Capital expenditure

This represents expenditure on the acquisition of new and second hand fixed tangible assets, either on your own account or under a finance lease, with an expected life of greater than one year. Capital expenditure should be reported in full for the period when it took place, rather than on an accrual basis.

All depreciation provisions are to be excluded.

Capital expenditure is categorised as:

- Land, buildings and other structures  
Expenditure on land acquired for R&D (e.g. testing grounds, sites for laboratories and pilot plants), landscaping, site preparation works, buildings (constructed or purchased), fit-out costs for new buildings and major improvements or modifications.  
Repair and maintenance expenditure should be reported in 'Other current expenditure'.
- Other capital expenditure (including vehicles, plant, machinery and equipment)  
Expenditure on office and other equipment (including capitalised computer software licence fees), furnishings, vehicles, plant, machinery and equipment.

Research Capital expenditure related to service units whose *sole or primary function is the support of R&D* (examples of service units include: research laboratories, animal house, research office) should be included as capital expenditure, not overheads.

#### Capital expenditure related to shared facilities

Major capital projects related to shared facilities, should be reported separately (i.e. not as part of a school/department) below the rest of the institution's expenditure in 'Section 1 – Research data' and clearly labelled as 'Shared major capital work'. Then the following approach should be used to determine the actual expenditure on major capital projects related to shared facilities.

If the asset has/will be used for more than one activity (e.g. for teaching and research), only include an estimate of the portion used for R&D. There are a number of ways to estimate a figure for capital costs.

Expenditure can be prorated by comparing:

- use of facility by R&D personnel against total personnel usage;
- floor space in the facility devoted to R&D to total floor space; or
- the proportion of time the facility will be used for R&D against the total time the facility will be used.

For example, the R&D portion of the capital expenditure associated with a new building can be determined by estimating the total number of years the building is expected to be in use (e.g. 20 years); and the number of years the building is expected to be used for R&D (e.g. 2 years). The R&D

portion of the expenditure would be estimated as 2/20, or 10%, of the total expenditure associated with the building.

#### **Notes**

Capital expenditure related to shared facilities should be reported separately and labelled as 'Shared major capital work'. FOR and SEO codes are not required for this item.

#### **3.2.5.1 Research Salary Expenditure**

This includes the wages, salaries and other labour costs for the reported staff effort devoted to R&D. Other labour costs to be included are contributions to superannuation and pension schemes, payroll tax, workers' compensation insurance, payments into long service provision accounts and other salary related expenses.

The labour costs of persons providing indirect services which are not included in the FTE data (such as security and maintenance staff) should be excluded. These expenses should be included in overheads or reported in 'Other current expenses'. Remember to make an allowance for these if calculating the overheads yourself (i.e. you are not using the agreed factor method).

#### **Notes**

If a Research Salary Expenditure cell has a coloured background, then it has either Academic or Other FTE assigned to the ChartString (see below). An appropriate amount of Research Salary Expenditure should be reported here to match the FTE reported. Column AH Average Staff Amount will indicate the ratio of Research Salary Expenditure to FTE. This will indicate if you have too much FTE or not enough.

#### **3.2.5.1 Research Scholarships Expenditure**

Institution expenditure on scholarships (e.g. stipends such as APAs) for postgraduate research degrees.

Postgraduate research student resources comprise the student load whose courses are coded 02 (Doctorate by research) or 03 (Masters by research) on element no. 310 (Course of study type code) as defined in DEEWR's Higher Education Student Collection for the corresponding year. Student load should be reported in equivalent full-time student load (EFTSL) in column AC (see below).

#### **Notes**

If a Research Scholarships Expenditure cell has a coloured background, then it has Student EFTSL assigned to the ChartString (see below). An appropriate amount of Research Scholarships Expenditure should be reported here to match the EFTSL reported. Column AG Average Student Amount will indicate the ratio of Research Scholarship Expenditure to EFTSL. This will indicate if you have too much EFTSL or not enough. Please check section () below to determine what EFTSL is required to be reported.

#### **3.2.5.1 Research Other Expenditure**

This includes all other non-staff expenses including materials, fuels, water, sewerage, rent and hiring expenses, repairs and maintenance, academic services purchased from outside, cleaning services, postage, freight, telephone and any other expenses not reported elsewhere. Exclude payments for patent searches and purchases of technical know-how.

### 3.2.6 FoR and SEO codes

Columns S-W contain the Field of research (FoR) codes and the Socio-Economic Objective (SEO) codes that classifies the research Expenditure.

The % allocated per FOR or SEO code should be expressed in terms of the proportion of that FoR or SEO activity relevance to the total expenditure reported for the research project. More than one SEO or FoR code can be assigned to ChartString by inserting new rows as necessary.

If a new row is added, please ensure that a new FoR/SEO Order number is added to the new row, and that the appropriate ChartString is added in column D.

#### Notes

You can reduce the amount of effort required in this exercise by applying FoR and SEO codes only to the most appropriate ChartString that has research expenditure for your Unit. If those codes are applicable to the entire Unit, I will then apply those codes to all other ChartStrings with research expenditure where you have not already applied FoR or SEO codes directly. For example, if the "xxxxxx-01-101-01" ChartString for your Unit has some research expenditure and you assign FoR and SEO codes to it, I will take those codes and assign them to any other ChartString in your Unit that has research expenditure but no assigned FoR or SEO codes.

#### 3.2.6.1 Field of research (FOR)

The FOR classification enables R&D work to be classified in terms of its research discipline. It describes the nature of the research being performed. A full list of the FoR codes can be found on the Research and Innovation Division website:

<http://www.uq.edu.au/research/rid/era-for-codes>

Projects should be classified to the Group (4 digit) level in a hierarchical manner. When coding an R&D project to FOR(s), the following approach should be used:

1. first determine the Division(s) in which the research is performed, then
2. determine the most relevant Group(s).

Please note that **data coded to a Division (2 digit) level is not acceptable**. If data has not been reported at the Group (4 digit) level, you will be contacted for further information.

#### Notes

When reporting multiple FOR codes (in a column) which relate to a research project (i.e. a single row of expenditure values), the % values allocated MUST sum to 100%.

Where possible, % values should be expressed as whole numbers or with no more than 1 decimal place.

#### 3.2.6.2 Socio-economic objective (SEO)

The SEO classification enables R&D work to be classified in terms of the principal area of expected national benefit. It describes the end purpose of the research being performed. A full list of SEO codes can be found on the Research and Innovation Division website:

<http://www.uq.edu.au/research/rid/seo-4-codes>

Projects should be classified to the Group (4 digit) level in a hierarchical manner. When coding an R&D project to SEO(s), the following approach should be used:

1. first determine the most relevant Sector in which the largest component of the research project/program is being performed; then
2. determine the most relevant Division(s); and then
3. determine the most relevant Group(s).

Please note that **data coded to a Division (2 digit) level is not acceptable**. If data has not been reported at the Group (4 digit) level, you will be contacted for further information.

#### **Use of Expanding Knowledge SEOs**

Projects should only be coded to 'Expanding Knowledge' (SEO Group 9701) when they cannot be coded elsewhere. For example, pure basic research in the medical and health sciences should be coded within the SEO Division of "Health" (92xx) rather than 'Expanding Knowledge' (97xx).

#### **Notes**

When reporting multiple SEO codes (in a column) which relate to a research project (i.e. a single row of expenditure values), the % values allocated **MUST** sum to 100%.

Where possible, % values should be expressed as whole numbers or with no more than 1 decimal place.

### **3.2.7 Type of R&D activity**

Columns X-AA contains the Research and Development Activity codes that are assigned to each ChartString with Research Expenditure. Column AB is the sum of columns X-AA and must total to 100%.

There are four types of R&D activity. Research Expenditure can be classified with more than one type of Activity, provided the total Activity is 100%. The Activity codes are:

- **Pure basic research**  
Experimental and theoretical work undertaken to acquire new knowledge without looking for long term benefits other than the advancement of knowledge.
- **Strategic basic research**  
Experimental and theoretical work undertaken to acquire new knowledge directed into specified broad areas in the expectation of practical discoveries. It provides the broad base of knowledge necessary for the solution of recognised practical problems.
- **Applied research**  
Original work undertaken primarily to acquire new knowledge with a specific application in view. It is undertaken either to determine possible uses for the findings of basic research or to determine new ways of achieving some specific and predetermined objectives.
- **Experimental development**  
Systematic work, using existing knowledge gained from research or practical experience, which is directed to producing new materials, products, devices, policies, behaviours or

outlooks; to installing new processes, systems and services; or to improving substantially those already produced or installed.

If a ChartString has multiple rows due to having more than one FoR or SEO code (see below) then Activity codes should only be added to the row which has FoR/SEO Order = 1.

**Notes:**

To reduce the amount of work involved in this process, if one or more non-project ChartStrings have Research Expenditure, Activity codes can be applied to the most appropriate ChartString and the other ChartString Activities can be left blank. In this situation the Activity codes applied to the main ChartString will be applied to any research ChartString left blank.

### 3.2.8 Student EFTSL

Column AC contains the Postgraduate research student resources (in terms of EFTSL).

Postgraduate research student resources comprise the student load whose courses are coded 02 (Doctorate by research) or 03 (Masters by research) on element no. 310 (Course of study type code) as defined in DEEWR's Higher Education Student Collection for the corresponding year. Student load should be reported in equivalent full-time student load (EFTSL) as defined in the DEEWR Higher Education Student Collection Documentation.

Note that only EFTSL that is paid for by a scholarship should be recorded here and there should be an appropriate amount of Research Scholarship Expenditure to pay for the EFTSL.

If a ChartString has multiple rows due to having more than one FoR or SEO code (see below) then Student EFTSL should only be recorded on the row which has FoR/SEO Order = 1.

**Notes**

If a Student EFTSL cell has a coloured background, then it has Research Scholarships Expenditure amounts assigned to the ChartString (see above). An appropriate amount of Research Scholarships Expenditure should be reported to match the EFTSL reported. Column AG Average Student Amount will indicate the ratio of Research Scholarship Expenditure to EFTSL. This will indicate if you have too much EFTSL or not enough.

### 3.2.8 Staff FTE

Columns AD and AE contains the Human resources devoted to R&D (in terms of FTE).

Human resources devoted to R&D reflect the R&D performed by staff members, where a staff member is defined as a person who performs duties for an institution or one of its controlled entities. A staff member must be **employed and paid** by the institution or one of its controlled entities on a full-time, fractional full-time or casual basis.

Persons working for, but not employed or paid by this institution should be excluded.

Human resources must be recorded in full-time equivalence (FTE). FTE data should represent staff input for the whole calendar year. A person with a full-time work contract has a FTE of 1.0 irrespective of the number of hours the person spends working on the job or at home.

Where staff undertake (or provide support for) R&D in conjunction with other activities, their total FTE needs to be reduced to reflect only the R&D portion of their time. Apportioning should be

irrespective of: whether or not the work was undertaken on the job or at home; and whether the total number of hours was greater or less than the norm.

The percentage of time spent by academic staff on R&D varies widely between institutions and schools/departments. Where it is difficult to estimate R&D effort between teaching and research activities, it is acceptable to assume that staff within a department spend a standard fraction of their working time on R&D. The standard fraction should be based on the average proportion of time spent on R&D by the teaching and research staff in that school/department. 'Research only' staff and postgraduate research students are considered to spend 100% of their time on R&D.

Human resources are to be split and reported in the following categories:

- **Academics**  
Staff engaged in or supporting R&D, who are defined as having an academic classification in the DEEWR Higher Education Staff Collection Documentation.
- **Other staff**  
Staff undertaking technical or other tasks in support of R&D who are not defined as 'Academics'. Their activities may include: preparation for experiments; taking records; preparation of charts and graphs; and coding data. This category includes secretarial and clerical staff working on, or directly associated with, R&D activity.

If a ChartString has multiple rows due to having more than one FoR or SEO code (see below) then Staff FTE should only be recorded on the row which has FoR/SEO Order = 1.

Where possible, FTE has already been assigned where a ChartString indicates Research Salary Expenditure. All Research Only (Level A and Above) and a proportion of Teaching & Research (Level A and Above) has been reported as 'Academic' in this report. Research Only HEW Level appointments have been reported as 'Other'.

Please update or correct as needed.

#### **Notes**

If an Academic or Other FTE cell has a coloured background, then it has Research Salary Expenditure amounts assigned to the ChartString (see above). An appropriate amount of Research Salary Expenditure should be reported to match the total FTE (column AF) reported. Column AH Average Staff Amount will indicate the ratio of Research Salary Expenditure to FTE. This will indicate if you have too much FTE or not enough.

### 3.2.8 Calculated Data Checks

Columns AG-AI have calculated data checks that can be used to verify your data.

- **Average Student Amount**  
This divides the amount of Research Scholarship Expenditure by the EFTSL to determine if the amount per EFTSL being reported is reasonable. If this total is too high or too low, it could indicate the wrong amount of EFTSL or the wrong amount of Research Scholarship Expenditure has been reported.
- **Average Staff Amount**  
This divides the amount of Research Salary Expenditure by the total FTE of staff to determine if the average amount per FTE being reported is reasonable. If this total is too high or too low, it could indicate the wrong amount of FTE or the wrong amount of Research Salary Expenditure has been reported.
- **Research Fraction of Total Expenditure**  
Where Research Expenditure has been reported, this column will generate the ratio of Research Expenditure against Total Expenditure for that ChartString.  
  
In addition, if more Research Expenditure has been reported than Total Expenditure in the ChartString the background colour of the cell will change to flag the error.

## 4.0 Source of Funding

The ABS Research Expenditure Survey also requires that the source of funds is reported for all Research Expenditure. In a change from previous collections, the ABS are requiring less detail on the Source of Funding in our submission, and only a single total for the University needs to be reported.

To reduce the amount of effort required to report your data, I'm am not requiring ChartString level reporting of the Source of Funds. This will instead be calculated in R&ID based on the amount of Research Expenditure that you report (based on the Research Fraction of Total Expenditure).

## 5.0 Contact Details

If you have any questions about this survey, please contact Stephen Colhoun via:

email: [imu@research.uq.edu.au](mailto:imu@research.uq.edu.au)

Phone: 336 53786.

This submission must be completed by your School, Institute or Division and returned before:

**Monday, August 8.**

Please return your completed "Your Units Name"\_HERD\_2010.xlsx via email to Stephen Colhoun at the Research and Innovation Division:

[imu@research.uq.edu.au](mailto:imu@research.uq.edu.au).

If you are confident that no expenditure that has been attributed to a cost centre from within your unit had any direct or indirect connection with Research or Experimental Development, please contact Stephen Colhoun to register a nil return.