



# Application for Initial Support in 1991

When completing this form you must refer to the 'Advice and Instructions to Applicants' document.  
Do not attach any papers to the front of this form. Applications must be typed.  
Applications are to be lodged with the:

**Director, Research Grants Section  
Research Policy and Grants Branch  
Department of Employment, Education and Training  
GPO Box 9880  
CANBERRA ACT 2601**

Office use only

File number

The closing date for applications is 1 March 1990.

## 1 a. Institution to administer grant

University of Wollongong

## b. Academic Organisation Unit (institution to complete)

## 2. Project title

Provide a project title that is clear, brief, precise and informative to workers outside your field.  
(Up to four lines; do not hyphenate words at the end of the line.)

Scientific controversy and  
public decision-making

Maximum of 38 characters per line

## 3 a. Total funds requested in this application. (Whole dollars only)

1991

34,823

1992

39,760

1993

## See Instructions for codes

b. Category

71314

Priority area

## 4. Chief Investigator(s) - see instructions

a. Title, initials and surname (eg. Prof, A/Prof, Dr)	1.	2.	3.
	Dr E. Richards	Dr B. Martin	Dr P. Scott
b. Full address	Department of Science and Technology Studies, University of Wollongong, PO Box 1144, Wollongong NSW 2500 Telephone: (042)270627 Fax: (042)270477	Department of Science and Technology Studies, University of Wollongong, PO Box 1144, Wollongong NSW 2500 Telephone: (042)270763 Fax: (042)270477	Faculty of Informatics, U of Wollongong, PO Box 1144, Wollongong NSW 2500 Telephone: (042)270606 Fax: (042)270477
c. Appointment held	Senior Lecturer	Lecturer	Lecturer
d. Name of Dept/School/Other (please indicate which)	Department of Science and Technology Studies	Department of Science and Technology Studies	Faculty of Informatics
e. Year of birth	1941	1947	1945
f. Highest academic qualification (indicate conferring institution and date)	PhD, UNSW, 1976	PhD, Sydney, 1976	PhD, Wollongong, 1987
g. Sex (please tick box)	Female <input checked="" type="checkbox"/> Male <input type="checkbox"/>	Female <input type="checkbox"/> Male <input checked="" type="checkbox"/>	Female <input checked="" type="checkbox"/> Male <input type="checkbox"/>
h. Average working days per month to be devoted to the project	3	3	3

## 5. Support

Please tick if applying for support for this project in 1991 from NH & MRC ☐ NERDDC ☐ Other ☐  
If you have ticked one of these boxes, in Section 17 state the project title and the amount requested.

## 6. Work experiments

Does the work proposed involve human experimentation? Yes ☐ No ☒  
Does the work proposed involve animal experimentation? Yes ☐ No ☒  
Does the work proposed involve experiments in which there is preparation or use of recombinant nucleic acids constructed *in vitro* from sources which do not ordinarily recombine genetic information? Yes ☐ No ☒

## 7. Interviews

Will you be available for interview if required? (See instructions for dates) Yes ☒ No ☐ Uncertain ☐  
Note: An interview may be used in the assessment of a proposal. It does not indicate the progress or likelihood of success of the proposal.

**8. Chief Investigator information**

For each Chief Investigator detail the following:

<b>a.</b> Indicate any anticipated period of absence from institution during the course of the project including OSP.			
<b>1.</b>		<b>2.</b>	<b>3.</b>
		Overseas study programme, March-April 1991	
<b>b.</b> What other major research programs are being undertaken or supervised by the Chief Investigator(s)?			
<b>1.</b>		<b>2.</b>	<b>3.</b>
Social history of evolutionary biology		Social defence and technology policy; social assessment of road transport informatics	Social assessment of road transport informatics
Average days per month spent on these programs		Average days per month spent on these programs	Average days per month spent on these programs
7		7	7

**Other Participants****9.** Provide details of the Associate Investigators

- List:
- name
  - organisation
  - highest qualification
  - date conferred
  - conferring institution
  - involvement in the project (average days/month).

Certification required, see Section 20

**10.** What technical and other staff (other than those requested) will be available to assist with this project?  
Indicate the involvement in the project (average days/month).**11.** Was this project funded as a small grant last year?  
If yes, please attach previous assessments, if any.Yes ☐No ☒**12.** Will there be any research or honours students working on the project? Yes ☒ No ☐

If yes, state the number in each case.

One PhD student, working on the IUD controversy in a way related to the project

**13. Commencement/Completion date of project**

Has the project started?

Yes ☒No ☐

If no, when will it start?

/ /

How long will you need ARC support?

2 years

How long will this project take?

3 years

**14. Budget information**

Refer to the document 'Advice and Instructions to Applicants' for the completion of the budget information below.

**3.**

Office use only - File number

Cat. code:

Detailed budget items	Priority	Amount requested			Office use only
		1991	1992	1993	
<u>Personnel</u> Research associate first year, \$27,953 + 21% second year, \$28,727 + 21%	A	33,823	34,760		
<u>Travel</u> One off-peak return air fare to France + 10% for inflation, \$2600 Accommodation, food and local travel, 10 days at \$140 per day, \$1400	B		4,000		
<u>Other</u> Computer searches, postage, photocopying	C	1000	1000		
<b>Total</b>		34,823	39,760		

**Financial Summary**

Support requested	Personnel \$	Equipment \$	Maintenance \$	Travel \$	Vessel \$	Other \$	Total \$
1991	33,823					1000	34,823
1992	34,760			4000		1000	39,760
1993							

**Office use only**

Surname of 1st Chief Investigator

Richards

Administering institution

University of Wollongong

## 15. Key symbols

Cat. code:

Give up to six key symbols to describe the subject area of proposal.  
(maximum 6 characters per key symbol)

B I G A I B

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## 16. Summary of project

In the space provided below, write a summary in no more than seven lines, of why this project is of significance. This summary should be written in a style understandable to the intelligent reader. Use underlining, capital letters and any other emphasis only where required by convention eg. underline species names.

The investigators have developed a set of hypotheses about the nature of public controversies involving vigorous conflicts over scientific knowledge, drawing on their previous studies. Focussed investigation of three further controversies -- over the 'abortion pill', pesticides, and artificial intelligence -- will be used to test these hypotheses. A range of models of social decision-making will be used to assess the implications of the findings for science policy-making.

## Total support

17. List separately the support received, requested or to be requested **for this project** from your own organisation and all other sources.

Name of organisation	1988 \$	1989 \$	1990 \$	Requested 1991
U. Wollongong, Life sciences research programme grant (ER, BM, PS)		2500		
U. Wollongong, Research programme grant (ER, BM, PS)			10,000 (requested)	

18. List separately the support received or requested for **all other projects** from whatever the funding source. Continue on a separate sheet if necessary.

Name of organisation and title of project	1988 \$	1989 \$	1990 \$	Requested 1991
Wellcome Trust, UK, History of medicine (ER)			1500	
U of Wollongong, Life sciences research programme grant (ER, BM, PS)		4500		
U of Wollongong, Social history of biology (ER)	2000			
ARC, Road transport informatics (PS, BM)				9830
ARGS, Technological vulnerability (BM)	10,000			
U of Wollongong, Electromagnetic pulse (BM)	1300			
U of Wollongong, Australian Animal Health Laboratory (PS)	6000			
U of Wollongong, Evolutionary biology (ER)			1400 (requested)	
U of Wollongong, Road transport informatics (PS, BM)			7700 (requested)	

19. Average number of working days per month to be devoted to all projects to be undertaken in 1991 (include this project).

1st Chief Investigator 10 days

2nd Chief Investigator 10 days

3rd Chief investigator 10 days

Surname of 1st Chief Investigator  
Richards

Administering institution  
University of Wollongong

**20. Certification - to be signed by all applicants**



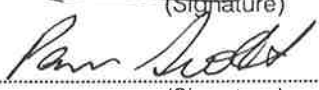
I/We certify that all the details on this form are correct.

I/We understand and agree that:

- research which involves human or animal experimentation must be carried out in accordance with the guidelines laid down in the NH & MRC code of practice;
- research which involves the use of recombinant nucleic acids constructed *in vitro* from sources which do not ordinarily recombine genetic information must be carried out in accordance with the guidelines laid down by the Recombinant DNA Monitoring Committee;
- research which involves the use of ionising radiation must have the risks involved assessed by a recognised Ethics, Safety or Bio-safety Committee, personnel must be trained and hold a current licence, and;
- a certificate of compliance with the appropriate guidelines must be received by the Committee from a recognised Ethics, Safety or Bio-safety Committee before payment of any proposed grant can be made.

I/We declare that all persons listed as Associate Investigators have agreed to take part in the proposed research.


**Signature of Chief Investigators**

1.		12 / 2 / 90
	(Signature)	(Date)
2.		12 / 2 / 90
	(Signature)	(Date)
3.		12 / 2 / 90
	(Signature)	(Date)

**Certification by Head of Department**

- I certify that the project can be accommodated within the general facilities in my Department, that sufficient working and office space is available for any proposed additional staff. I am prepared to have the project carried out in my Department under the circumstances set out by the applicant;
- I have noted the amount of time which the investigators will be devoting to the project and certify that it is appropriate to existing workloads.

Note: A confidential statement may be forwarded to the Committee if thought advisable. Refer to the 'Advice and Instructions to Applicants'.

	12 / 2 / 1990
(Signature)	(Date)

**Certification by Head (or Nominee) of Organisation/Institution**

- I certify that the project is acceptable to the organisation under the terms and conditions set out in the 'Conditions of Award' and 'Advice and Instructions to Applicants' and that salaries quoted for personnel are in accordance with practice at this organisation;
- I certify that this project is not a specific component of this organisation's budget;

.....	.....	.....
(Signature)	(Designation)	(Date)

**Note: All certificates must be signed.**

## 21. Aims, research plan, justification of budget, and publications

- To answer this question fully refer to the document 'Advice and Instructions to Applicants' so that you can cover the points specifically made in it, especially in relation to policy and priority information and in detailed justification of the budget proposal.
- Your explanation should be comprehensive but brief.
- **The council has ruled that no more than 12 pages including this form (but excluding relevant publications), will be considered in the assessment process. For proposals over \$100,000 or with more than 2 Chief Investigators, the page limit is 15. Pages in excess will be discarded.**
- Use the following headings to detail your answer:
  - Aims and significance
  - Research plan, methods and techniques
  - Progress Report (see Appendix C of the 'Advice and Instructions to Applicants')
  - Justification of Budget
  - Timetable
  - Publications - you should list all your refereed publications for the last 5 years. Use asterisks to identify publications relevant to this project.
- Where the cooperation or assistance of another body is needed for the project to be successful, the council must be provided with appropriate details.

### Aims and significance

#### In summary, the aims of the project are:

- to test hypotheses about the role of scientific knowledge claims in public controversies;
- to spell out the implications of verified hypotheses for science policy-making.

The central and increasingly contentious role of science and technology in modern society has given rise to numerous scientific and public controversies over scientific knowledge. Such controversies often have profound social, political and economic implications (e.g., the status of scientific claims about the 'greenhouse effect' are crucial in planning for Australia's future), and they have provoked major difficulties for informed decision-making and policy implementation. This project aims to develop an integrated and coherent approach to the analysis of such conflicts, and to address the social and policy implications of this research. It offers a unique opportunity for collaborative research in this socially significant area by a group of experienced researchers who bring to the project a number of independent in-depth analyses of a range of controversies.

1. Dr Richards has studied the debate over the efficacy of vitamin C in the treatment of cancer in the United States, Britain and Australia, comparing its evaluation with that of conventional cancer treatments, and examining the alleged finality of results from randomised controlled double-blind clinical trials and the role of the power of the medical profession and the alternative health movement in therapeutic evaluation. She has applied this analysis to the social implementation of medical therapies and technologies (see publications).

2. Dr Martin has studied the controversy over the fluoridation of public water supplies to prevent tooth decay, examining the knowledge claims deployed by proponents and opponents and the role of the power of the dental profession. This debate has been perhaps the most vociferously contested public health issue in recent decades in English-speaking countries, mobilising enormous passions and requiring continual involvement by government bodies. Dr Martin also has carried out a detailed study of the controversy over nuclear winter and the connection of scientific claims to military policy (see publications).

3. Dr Scott has studied the policy struggles and public debate over the Australian Animal Health Laboratory and the proposal to import live foot-and-mouth disease virus. The value of this major economic investment in Australian science has been

contested by critics and thrown into doubt by the policy-making process itself (see publications).

It is our intention to employ a comparative approach to the meta-analysis of these previously analysed controversies, and to extend this comparative analysis to other selected detailed controversy case studies, with a view to developing and testing a comprehensive policy-relevant model of controversy analysis.

Recent work in the sociology of scientific knowledge has undermined the standard view of such controversies, i.e., that science provides the 'facts' and that it is their evaluation from divergent value and ideological perspectives that results in contrary interpretations. According to the new 'social constructivist' approach (which is supported by an abundant and growing empirical literature, our own work included), scientific 'facts' cannot be dissociated from the vested interests and social objectives which they embody. It follows from this that we cannot arrive at a coherent understanding of scientific and technical disputes without recognizing the role of such interests and objectives in the construction of scientific and technical knowledge. Such controversies must therefore be treated as inherently social and political processes, where there are *no* impartial experts.<sup>1</sup> According to this revised view, the scientific expert must be seen as a necessarily 'partisan participant' in a political debate, not as an apolitical arbiter of scientific or technical truth, and this implies a radical review of the expert's role in scientific and technical decision making. It also opens the way to a more active and acknowledged evaluative role for non-experts, for the public at large, in the processes of assessment and decision-making.<sup>2</sup>

This revised approach to controversy analysis has obvious and profound implications for the social implementation of science and technology. It also meshes with the growing public perception of the limitations of experts and expert knowledge in resolving issues of public controversy and with the increasing demand for greater public involvement in the decision-and policy-making processes.<sup>3</sup> However, to date, there has been little attempt in the literature to apply the social constructivist approach to policy. In large part, this is because of the exclusive focus of most constructivists on micro-level action and interaction between actors and groups within the scientific community, and their characteristic avoidance of the roles of wider power structures in the shaping and 'closure' of scientific and technical controversies.<sup>4</sup> Our studies have the special value of critically engaging both with the 'inside' disputed scientific or technical knowledge and with the 'outside' politics of competing interest groups, of integrating the investigation of both science and politics. This integrated approach, we argue, is crucial to the application of controversy analysis to realistic policy-making and regulatory intervention. There is a need to build upon such studies with detailed reconstructions of selected controversies which extend the social constructivist analysis from the microsociological to the larger structural levels. These controversies have been selected on the basis of their topic, locale, style, and policy relevance, so as to give as broad an empirical basis as possible to the project (see below). As the

<sup>1</sup> See for instance, H. M. Collins (ed.), 'Knowledge and Controversy: Studies of Modern Natural Science', *Social Studies of Science*, 11 (1981), 3-158; idem, *Changing Order* (London: Sage, 1985); R. Albury, *The Politics of Objectivity* (Geelong, Vic.: Deakin University Press, 1983); A. R. Pickering, *Constructing Quarks: A Sociological History of Particle Physics* (Edinburgh: Edinburgh University Press, 1984); T. Pinch, *Confronting Nature: The Sociology of Solar-Neutrino Detection* (Dordrecht: Reidel, 1986);

<sup>2</sup> See E. Richards, 'The Politics of Therapeutic Evaluation: The Vitamin C and Cancer Controversy', *Social Studies of Science*, 18 (1988), 653-701.

<sup>3</sup> See H. Tristram Engelhardt and A. L. Caplan (eds.), *Scientific Controversies* (Cambridge: Cambridge University Press, 1987); A. Mazur, *The Dynamics of Technical Controversy* (Washington, DC: Communications Press, 1981); D. Nelkin (ed.), *Controversy: Politics of Technical Decision* (Beverly Hills: Sage, 1979).

<sup>4</sup> For a critique of the analytical underdetermination of micro-sociological accounts of scientific and technical knowledge, see B. Martin, 'Analyzing the Fluoridation Controversy: Resources and Structures', *Social Studies of Science*, 18 (1988), 331-63; S. Russell, 'The Social Construction of Artefacts: A Response to Pinch and Bijker', *Social Studies of Science*, 16 (1986), 331-46.

results of the analyses become available, they will be systematically incorporated into the ongoing meta-analysis of our previously-analysed controversies.

Preliminary comparative analysis of these prior studies reveals a number of common features. If these were to be substantiated, they would have wide implications for science policy dealing with contested scientific knowledge claims. We propose to test these hypotheses by seeing whether they can be sustained within the contexts of other controversies which are distinctly different in topic, locale, or style. These tentative hypotheses and the methods of testing them are as follows.

1. The status of individuals who make claims about scientific knowledge are crucial resources in scientific controversies.

**Test** Locate instances where the personal authority of the 'expert' is given precedence over the detailed technical merits of the disputed knowledge; look for attacks on the personal credibility of individuals in the course of debates, in articles and in circulation of dossiers and other damaging information, instead of or in addition to criticisms of the arguments raised by these individuals.

2. There is no scientific experiment or evidence which is treated as definitive by all parties to a scientific controversy.

**Test** Determine the experiments and evidence considered definitive by each side in the controversies under analysis, and then study the criticisms of these by the opposing parties.

3. The party to the controversy with the greatest institutional connections (government, industry, professions) will discourage or avoid discussion of conflicting scientific knowledge claims in public forums.

**Test** Determine the key forums for public discussion (e.g. newspapers, public debates, journals), and look for participation by the party with greatest institutional connections in presentations including both sides. Also, examine recommendations concerning participation in open debates with opponents.

4. Partisans will prefer a method of resolving the controversy which gives them an advantage. In particular, public participation will be recruited by experts only when this participation can be used as a resource in pushing the case for their side.

**Test** Look at the methods preferred by partisans for resolving the conflict and, in particular, when and how public involvement is fostered or discouraged by the conflicting parties to the dispute.

5. Analysts of controversies will be recruited by the party to the controversy that can most easily use their work to undermine the credibility and claims of the other side.

**Test** Examine the use of social science studies in controversies: reference to such studies in partisan literature, invitations to give talks, partisan positions adopted by social scientists.

6. Closure of controversies is not brought about solely by a definitive set of experiments, evidence, etc.; social and political constraints exerted by the adjudicating community are crucial.

**Test** Examine the processes of controversy closure, and look for instances where experiment, evidence, etc. are sufficient to explain closure without need to invoke relevant social and political explanations of such closures.

Following preliminary investigations, we have identified three topical controversies for detailed and rigorous examination of the kind above specified. These are all relevant to perceived national social and economic concerns, have important policy implications, lie within our areas of competence, but have significantly different professional, institutional, economic and social interests from those already examined.

1. The pesticide debate with special reference to the Australian meat industry. The long-standing dispute over pesticides is useful for our purposes because it highlights the role of corporate power in contests over scientific knowledge and policy-making. There is a large literature on pesticides (a portion of which we have already collected). As a particular focus, the controversy over pesticides in Australian meat exports will be useful for obtaining local case material, including interviews.
2. Artificial intelligence, in particular the debate over whether human intelligence can ever be truly simulated by computers. This dispute brings in a range of dimensions not covered by our previous studies, including the meaning of being human and the nature of (intellectual) work. Studying this controversy will be aided by Dr Martin and Dr Scott's concurrent studies of theories for analysing information technology.
3. The controversy over RU-486, the abortion pill. This dispute has the advantages for our project of introducing a necessary gender dimension, of dealing with a highly socially-sensitive issue with important religious, ethical and policy implications, of empirically extending the previously analysed medical controversy over vitamin C, and of being centred in a European country (France) where the political structure is significantly different from the English-speaking countries where the controversies we have already studied have taken place.

### Research plan and timetable

The bulk of the project is the detailed study of the controversies identified above in order to test the hypotheses. From our experience, we consider that the *minimum* time for obtaining and assessing the evidence on any given controversy is six months. Accordingly, we have set aside 18 of the 24 months time for a research associate for investigating the three nominated controversies, allowing the remaining 6 months for collecting, classifying and assessing material on methods of decision-making in science policy.

For each of the three controversies selected, references will be obtained by computer searches, primary sources available in the public domain will be obtained, and key participants will be written to in order to obtain documents and comments. Once the material is obtained, it will be closely studied, focussing especially on data relating to the hypotheses. The research associate should be able to take some initiative in carrying out the search and studying the materials; the chief investigators will be involved in guiding the search, formulating questions when querying partisans by mail or in person, guiding the study of the materials, and assessing the crucial documents.

The breakdown in time for the study of each controversy is as follows:

- Comprehensive collection of source material in the public domain through computer searches, surveying key journals and bibliographic cross-referencing. Part of this will involve selection of the most relevant materials for careful study in the later stages. Time: 1 month.
- Correspondence with key participants in the controversy. In our experience, this can be a much lengthier process than usually imagined, especially when there are prolific correspondents who gradually provide more and more material. Correspondence (supplemented by telephone discussions within Australia) is extremely valuable in obtaining material otherwise inaccessible. Time: 1 month.
- Content analysis of controversy documents. This is the hypothesis-testing core of the project. For each of the hypotheses, the chief investigators will draw up a 'document assessment guide'. For example, for hypothesis 1, the guide will list items such as methods for the exercise of authority and for attacks on the credibility of individuals. We estimate that at least 120 major items will need to be analysed using these guides. This will include a wide range of materials, from books and scholarly papers to newspaper stories and correspondence. We assume an average of 3 hours for analysing each major item. Time: 3 months.
- Collation of content analyses. The results of the above analyses must be combined to obtain an overall assessment of the validity of the hypotheses. Time: 1 month.

During the second year of the project (after collection of written source material), one of the chief investigators will visit the key partisans in France on the controversy over RU-486. Those leading partisans resident in Australia will be interviewed in person or by phone. In our experience, interviews with key partisans is essential for obtaining a firm grasp of the dynamics of controversies.

The remaining 6 months of work for the research associate will be taken up in collecting, classifying and assessing a range of models of social and political decision-making, such as top-down decision-making (synoptic rationality), incremental methods or 'muddling through', the 'science court', and 'policy juries'. The breakdown in time for this part of the project is as follows:

- Collection of materials on different models for decision-making. Time: 1.5 months.
- Correspondence with leading theoreticians to obtain current materials and supplementary information: 0.5 month.
- Analysis of the decision-making models as classified by the chief investigators, following a protocol formulated by the chief investigators. The main task here is to assess whether each model is able to incorporate or accommodate the implications of all the hypotheses that have been confirmed by the analysis of controversies. This assessment will take place by specification of the key characteristics of each model of decision-making (each cross-referenced to relevant discussions in the literature collected and examined) and testing each confirmed hypothesis against each key characteristic. This process will be a delicate one, requiring considerable supervision by the chief investigators. Time: 4 months.

The chief investigators (in collaboration with the research associate, as appropriate) will then write up the findings. Some of this work will take place after completion of the research associate's formal work.

We do not set out a formal timetable for the study of the controversies in a particular sequence, as it will certainly be more efficient for the literature searches and correspondence components for the different controversies to take place in an overlapping fashion at the beginning of the research associate's time. Indeed, we expect collection of new material to take place throughout the project, as has been our experience in previous studies. It is worthwhile reiterating that our estimate of the time required for each controversy is a minimum figure. We feel that the time specified for the research associate, plus our own, should be just sufficient for testing the hypotheses and spelling out the implications for science policy.

### **Justification of budget**

The largest item in the budget is the salary for a research associate for two years. This level of appointment is necessary to obtain a person able to digest complex information about controversies and to assess its relevance to the hypotheses. This process involves understanding the interactive politics of power and scientific knowledge claims, and would likely be beyond the ability or experience of a research assistant. The requirement for two years salary derives from the minimum of six months to study each controversy, plus a survey and assessment of models of science and technology policy-making: a detailed breakdown of how this time is taken up is given in the research plan above.

The travel component is dominated by one trip to France for one chief investigator to undertake interviews on the RU-486 controversy; this is essential for the contrast between the dynamics of controversies in English-speaking and European social systems is to be probed. The amount requested is sufficient to cover economy fares (\$2600) and modest expenses (accommodation, food, local travel) for 10 days (\$1400). We expect to undertake interviews within Australia for the other two controversies; no claim for support is made for this, as we expect to be able to carry out these interviews during trips made for other research purposes.

The remainder specified is for computer searches, postage and photocopying, for collecting the large amount of material about each controversy.

## Publications, 1986-

### Controversy studies

- \* Evelleen Richards, 'Vitamin C suffers a dose of politics', *New Scientist*, Vol. 109, 1986, pp. 46-49.
- \* Evelleen Richards, 'The politics of therapeutic evaluation: vitamin C and cancer', *Social Studies of Science*, Vol. 18, 1988, pp. 653-701.
- \* Brian Martin, 'Science policy: dissent and its difficulties', *Philosophy and Social Action*, Vol. 12, No. 1, January-March 1986, pp. 5-23.
- \* Brian Martin, 'Agent Orange: the new controversy', *Australian Society*, Vol. 5, No. 11, November 1986, pp. 25-26.
- \* Brian Martin, 'Coherency of viewpoints among fluoridation partisans', *Metascience*, Vol. 6, No. 1, 1988, pp. 2-19.
- \* Brian Martin, 'Analyzing the fluoridation controversy: resources and structures', *Social Studies of Science*, Vol. 18, May 1988, pp. 331-363.
- \* Brian Martin, 'Nuclear winter: science and politics', *Science and Public Policy*, October 1988, Vol. 15, No. 5, October 1988, pp. 321-334.
- \* Gabriele Bammer and Brian Martin, 'The arguments about RSI: an examination', *Community Health Studies*, Vol. 12, No. 3, 1988, pp. 348-358.
- \* Brian Martin, 'The sociology of the fluoridation controversy: a re-examination', *Sociological Quarterly*, Vol. 30, No. 1, 1989, pp. 59-76.
- \* Brian Martin, 'Fluoridation: the left behind?', *Arena*, No. 89, 1989, pp. 32-38.
- \* Pam Scott, 'Dealing with dissent: on the treatment of opposition to the Australian Animal Health Laboratory and the importation of live FMD virus', *Search*, Vol. 19, No.1, Jan/Feb 1988, pp. 6-9.
- \* Pam Scott, 'Row over animal health laboratory to drag on', *NSW Farmer*, Vol 2, No 3, April 1988, p.21.
- \* Pam Scott, 'The social shaping of a laboratory: the establishment of the Australian Animal Health Laboratory', *Prometheus*, Vol 6, No.2, December 1988, pp. 249-262.
- \* Pam Scott, 'AAHL: a regional role?' *AVA News*, No. 10, November 1988, pp. 7-8.
- \* Pam Scott, 'Culling technological white elephants: lessons from the Australian Animal Health Laboratory', *Science and Public Policy*, February 1989, pp. 47-51.

### In press and submitted

- \* Evelleen Richards, *Vitamin C and Cancer: Medicine or Politics?* (London: Macmillan, in press).
- \* Brian Martin, *Scientific Knowledge in Controversy: The Social Dynamics of the Fluoridation Debate* (Albany: State University of New York Press, in press).
- \* Pam Scott, 'Levers and counterweights: a laboratory that failed to raise the world', submitted to *Social Studies of Science*.

### In preparation (draft available)

- \* Pam Scott, Evelleen Richards and Brian Martin, 'Captives of controversy: the myth of the neutral social researcher in contemporary scientific controversies', planned for submission by June 1990 to *Science, Technology, & Human Values*.

### Other publications

- Evelleen Richards, 'A question of property rights: Richard Owen's evolutionism reassessed', *British Journal for the History of Science*, Vol. 20, 1987, pp. 129-172.
- Evelleen Richards, 'The "moral anatomy" of Robert Knox: the interplay between biological and social thought in Victorian scientific naturalism', *Journal of the History of Biology*, Vol. 22, 1989, pp. 373-436.
- Evelleen Richards, 'Huxley and woman's place in science: the "woman question" and the control of Victorian anthropology', in James Moore (ed.), *History, Humanity and Evolution* (Cambridge: Cambridge University Press, 1989), pp. 253-284.
- Evelleen Richards, 'Metaphorical mystifications: the Romantic gestation of nature in British biology', in Andrew Cunningham and Nick Jardine (eds.), *Romanticism and the Sciences* (Cambridge: Cambridge University Press, 1990), pp. 130-143.
- Brian Martin and Evelleen Richards, 'Introducing women in science', *Philosophy and Social Action*, Vol. 14, No. 2, April-June 1988, pp. 3-6.
- Evelleen Richards and John Schuster, 'The feminine method as myth and accounting resource: a challenge to gender studies and the social studies of science', *Social Studies of Science*, Vol. 19, No. 4, 1989, pp. 697-720.

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## 22. Applicant - arranged Assessors

Provide details of the two persons from whom you have sought an assessment of this project.

### Applicant

Surname of 1st chief investigator <b>Richards</b>	Institution <b>University of Wollongong</b>
Project title <b>Scientific controversy and public decision-making</b>	

### Nominee 1

Surname <b>Albury</b>	Initial <b>R</b>	Title <b>Prof</b>
Postal address <b>School of Science and Technology Studies</b>		
<b>University of NSW, PO Box 1,</b>		
<b>Kensington NSW</b>		
		Postcode <b>2033</b>
Reason for nomination <b>Author of central Australian book in area</b>		

### Nominee 2

Surname <b>Lowe</b>	Initial <b>I</b>	Title <b>A/prof</b>
Postal address <b>Science Policy Research Centre</b>		
<b>Griffith University</b>		
<b>Nathan Q</b>		
		Postcode <b>4111</b>
Reason for nomination <b>Leading researcher on science policy</b>		

**Where you do not want the council to use a particular assessor(s), nominate the person(s) and provide a brief outline of the reason.**

Surname	Initials	Title
Reason		

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