SECTION A

1. Name of student:	Mark Ferrigan
2. Institution where enrolled for degree:	Peninsula Medical School
3. Department and address where Vacation Scholarship was held:	Anaesthesia Research, N31 ITTC Building, Tamar Science Park, Plymouth
4. Telephone number:	
5 Current Email address	
6. Title of project:	Intrathecal stability of clinical admixtures of morphine, bupivicaine, clonidine and baclofen
7. Period for which support was provided: (state in weeks)	6 weeks
9. Name of project supervisor:	Dr Melanie Priston
10. Email address of project supervisor	mel.priston@phnt.swest.nhs.uk

SECTION B (to be completed by student)

State what you feel have been your main achievements during the tenure of the grant. This may include scientific achievements and transferable skills gained. For example time management. (300 words)

Appreciation and familiarity with the following: drug stability study design; the uses and limitations of mass spectrometry; excel spreadsheet software; laboratory finance and running, bench techniques (preparation of drug admixtures), sterile preparation of admixtures, procedures for handling controlled drugs, management of the pharmacy of a large hospital.

SECTION C (to be completed by student)

CAREER PLANS

a. What are your career plans for the future and do you plan to stay in research? (300 words)

I am considering a career in intensive care. I also want to be actively involved in research throughout my career as a doctor.

b. How do you anticipate this award will affect your future career? (300 words)

This experience has given me a very valuable insight into the practicalities of organising and carrying out a research project. It has also given me an appreciation of the painstaking work that lies behind the drug prescriptions written in clinical practice. I am sure that it will also provide a very positive element in my curriculum vitae.

SECTION D (to be completed by student)

a) Please give a description of the research undertaken (*up to 1400 words*).

Please summarise the main aims of your original research proposal and to what extent you have been able to achieve them. If you have diverged from the original plan, please explain why this was necessary.

The purpose of this study was to determine the long term (3 month) stability of 8 intrathecal drug admixtures currently used clinically. The admixtures studied were:

1) Morphine sulphate (40 mg / ml) 3.75 ml + clonidine (1000μg) 0.5 ml + bupivicaine (3%) 13.75 ml
2) Morphine sulphate (40 mg / ml) 4.5 ml + clonidine (6500 μg) 3.25 ml + bupivicaine (3%) 10.25 ml
3) Morphine sulphate (40 mg / ml) 4.5 ml + clonidine (3000 μg) 1.5 ml + bupivicaine (3%) 12 ml
4) Morphine sulphate (40 mg / ml) 4.5 ml + bupivicaine (3%) 14.5 ml
5) Morphine sulphate (40 mg / ml) 4.5 ml + bupivicaine (3%) 6.5 ml + NaCl (0.9%) 7 ml
6) Morphine sulphate (40 mg / ml) 4.5 ml + baclofen (2000 μg) 1 ml + bupivicaine (3%) 12.5 ml
7) Morphine sulphate (40 mg / ml) 5.0 ml + clonidine (1000 μg) 0.5 ml + NaCl (0.9%) 14.4 ml
8) Morphine sulphate (40 mg / ml) 12.25 ml + bupivicaine (3%) 22.75 ml

Admixtures were checked at regular intervals over the 6 weeks I was involved with the project (and thereafter for a further 6 weeks). The preparations were inspected for any colour changes, precipitation, pH changes and then analysed for drug concentration using liquid chromatography/mass spectrometry.

b) Please provide a lay summary of the discoveries, achievements and implications of this work (no more than 350 words)

Please note that we may wish to extract this text for publication on our website or release into the public domain.

The project at this stage is incomplete as the stability study continued beyond the end of the studentship. In addition, certain methodological difficulties caused problems with drug concentration determination; in particular the over one hundred-fold differences in drug concentrations in the admixtures caused difficulties with the bupivacaine quantitation. All samples have been frozen for bupivacaine re-analysis using an alternative technique.

Once complete, it is envisaged that the work will have a direct bearing on improving the safety of current clinical prescribing practices for intrathecal admixtures.

SECTION E (to be completed by student/project supervisor)

Please list publications arising as a result of the project, published, in press or in preparation.

Data to be submitted for presentation at the spring ARS meeting

Please confirm that the Anaesthetic Research Society's contribution to the funding of the research has been suitably acknowledged in these publications.

SECTION F (to be completed by student/project supervisor)

Has this research led, or is it likely to lead, to patentable or otherwise commercially exploitable results?

No

If so, please give full details and describe the steps which have been taken to facilitate exploitation.

Signature of student: Date:

Name of student Mark Ferrigan