These pages show two examples of typical abstracts from honours theses. Notice that the stages of the abstracts have been labelled, so that you can see the function of each sentence or part-sentence. You can also see that there are differences in the type of information that is included in each abstract, as well as differences in level of detail.

Sample 1: Genetic Mechanisms and Dissemination of Antibiotic Resistance

Abstract

(Background statement) The spread of antibiotic resistance is aided by mobile elements such as transposons and conjugative plasmids. (Narrowing statement) Recently, integrons have been recognised as genetic elements that have the capacity to contribute to the spread of resistance. (Elaboration of narrowing) (statement) Integrons constitute an efficient means of capturing gene cassettes and allow expression of encoded resistance. (Aims) The aims of this study were to screen clinical isolates for integrons, characterise gene cassettes and extended spectrum b-lactamase (ESBL) genes. (Extended aim) Subsequent to this, genetic linkage between ESBL genes and gentamicin resistance was investigated. (Results) In this study, 41% of multiple antibiotic resistant bacteria and 79% of extended-spectrum b-lactamase producing organisms were found to carry either one or two integrons, as detected by PCR. (Results) A novel gene cassette contained within an integron was identified from Stenotrophomonas maltophilia, encoding a protein that belongs to the small multidrug resistance (SMR) family of transporters. (Results) pLJ1, a transferable plasmid that was present in 86% of the extended-spectrum b-lactamase producing collection, was found to harbour an integron carrying aadB, a gene cassette for gentamicin, kanamycin and tobramycin resistance and a blaSHV-12 gene for third generation cephalosporin resistance. (Justification of results) The presence of this plasmid accounts for the gentamicin resistance phenotype that is often associated with organisms displaying an extended-spectrum b-lactamase phenotype.

(Jones 2004, p.9)

Sample 2: Permeable Treatment Walls

Abstract

(Background statement) A review of groundwater remediation in use today shows that new techniques are required that solve the problems of pump and treat, containment and in-situ treatment. (Narrowing statement) One such technique is the method that involves the use of permeable treatment walls. (Elaboration) These methods use a reactive medium such as iron to remediate contaminated groundwater. (Aim*) Several methods of implementing this remediation strategy have been described. (Elaboration of aim) These methods include injection and trenching. (Specific focus of aim) The use of a funnel and gate system via a trench has been examined in detail (Methods) using a groundwater modelling option of the FLAC program. (Methods) The modelling involved an analysis of the effect of changing the lengths of the walls and gate, varying the permeability, and varying the number of gates. (Results) The results showed that increasing the wall length, gate length and permeability increases the
size of the plume captured. (Key result) An important factor in designing the walls is the residence time of the water in the gate or the contact time of the contaminant with the reactive media. (Evaluation of results) A sensitivity analysis has been conducted that shows that increasing the size of the capture zone decreases the residence time (Limitations) which will limit the design. (Future applications and research) The results of the modelling and sensitivity analysis are presented such that they can be used as an aid to the design of permeable treatment walls.

(Dasey G. 1996 p.i)

* This is the aim of the research, but it is not very clearly stated. It might be better if the aim was made more explicit.

Sample 3: The Effects of Flouride on the Reproduction of Three Native Australian Plant Species

Note: This abstract is referred to as an Executive Summary (original 2 pages)

(Background statement) No other form of environmental pollution has had as widespread detrimental effect on the growth and reproductive capacity of plants as air pollution. (Narrowing statement) Fluorides have long been recognized as highly toxic and research has shown that they are the most phytotoxic of all air pollutants. (Elaboration of narrowing statement) One of the most subtle impacts of fluoride on plant development is on their reproductive processes... There has been very little work directed towards forest trees, and especially native Australian species. (Broad purpose of study) An understanding of the effects of fluoride on the reproductive processes of plant species within a forest community may help predict changes within the community following an increase in atmospheric fluoride arising from industrial sources.

(Narrowing of purpose of study) This study investigates the effects of increased atmospheric fluoride emissions from an aluminium smelter, on the reproductive processes of three native species, Banksia aemula, Bossiaea heterophylla and Actinotus helianthi. Elaboration of purpose Attention has also been paid to the soil seed reserve as an important resource for the replacement of adult plants within the community.

(Results) For Banksia aemula the study found that the reproduction of this fluoride-sensitive species may be affected in the close vicinity of the smelter... For the two ground layer species the study found that the fluoride may be affecting the Bossiaea heterophylla but having no discernible or very little effect on the Actinotus helianthi.**

(Significance of results 1) The implications of these results for the forest community are that sensitive native species such as the long-lived Banksia aemula and Bossiaea heterophylla will be removed from the plant community close to the smelter. This will reduce the resources they provide to the existing ecosystem but will, however, free more resources for the more resistant opportunist species such as Actinotus helianthi as well as the many introduced species. (Significance of results 2) The soil seed reserve study indicated that the seed reserve was very small in all areas. This would have several negative impacts on the natural regeneration of the area in the event of the closure of the smelter...

(Future research) Further research is recommended to assess the biochemical pathways for both the vegetative and reproductive processes and the mechanisms of the pollination of this important species... This may need to be repeated at certain intervals to monitor any further changes that may result from the higher fluoride emissions of the new expansion.

Exercise for sample 3

The abstract (executive summary) above has been summarised to focus on key stages. Some of the omitted text is reproduced below. Can you identify the stages?

1. The effects of the fluoride for the forest species were assessed by measuring several reproductive and associated characteristics of the plants found within forest areas along a fluoride gradient.
2. Bossiaea heterophylla shows more visible signs of fluoride stress close to the smelter. Insect damage to the Bossiaea heterophylla seed pods were observed in the background sites but not in the high fluoride sites indicating that the fluoride may be having an effect on the seed predators close to the smelter.

3. This study looked at the difference in visible structures associated with reproduction. Leaves of the Banksia aemula trees growing close to the smelter have accumulated large concentrations of foliar fluoride. Whether this is affecting the physiology and biochemical processes of the plant (which in turn may indirectly affect the reproduction potential of the plants) or the increased fluoride in the atmosphere is directly affecting the reproduction mechanisms is difficult to ascertain from this study.