

1. **ACERA Project No.:** 06 / 02
2. **Project Title:** Evaluating frameworks for dealing with low probability – high consequence events
3. **Theme:** Risk analysis
4. **Rationale:** Rare, extreme events preoccupy most risk analysts. By their very nature, data is scarce and causal mechanisms are sometimes very difficult to model. Relevant methods (extreme value theory and probability bounds analysis) exist in mathematics that are useful in estimating bounds on the probabilities of extreme events. The methods aim to integrate expert opinion with small data sets, as is typically necessary for assessing the risk of catastrophes. The project will review these and related methods currently used in operational risk evaluations in business. It will use a case study in each of biosecurity and bank operational risk to assess the usefulness of the methods in real applications.
5. **Outputs:** The project will produce a report that reviews extreme value theory and related techniques, evaluates the utility of these methods for circumstances relevant to biosecurity risk analysis and other DAFF operations, and describes, with examples, how these methods can be applied in real cases of the evaluation of catastrophic risks.
6. **Time frame:** Commencing: *June 2006*, Finishing: *January 2007*

7. Project Leader(s):

Title	Name	Organisation
A/Prof.	James Franklin	UNSW
Dr	Scott Sisson	UNSW
Dr	Eugene Dubossarsky	Ernst & Young
Dr	Venta Terauds	UNSW

8. Resources

	06/07	07/08	08/09
<i>Salaries and stipends</i>	29,400		
<i>Travel</i>	600		
<i>Operating and capital</i>	3,000		
Project Total	\$33,000		

9. **End Users:** AQIS, BA, PIAPH, AusBioSec, AHA, PHA