



Catastrophic Risk and Security

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Objectives for the control of planetary emergencies

Using the science of complex networks

1. A continuation of knowledge gained from years of WFS meetings and synergies between the PMPs
2. External partnerships introduced in this project will expand WFS analytic capability and create global thought leadership which will be a successful outcome

Impacts

1. We must consider that there are planetary costs if the core components of the submitted research proposal are not carried out
2. There are key points within the presentations supporting this proposal which underscore the costs of not doing the research on control of planetary emergencies

Impacts

3. The research has an expanded focus across all the work being designed for planetary emergencies so that generic principles may be applied in an integrated approach which removes the separation between the sciences researching planetary emergencies.
4. This will strengthen the outputs of other WFS projects by the PMPs
5. The costs of not doing this are inefficiency and a limitation on research breakthroughs.

Value of a breakthrough in this research

1. Breakthrough concepts in complex systems work already show some promise for this work
 - Design of system of systems as controls to manage complex emergencies
2. Novel developments are needed to visualise for control of systems in unknown, uncertain environments.

Immediate practical contributions from this proposal

1. The administration of cities as complex systems for resilience in uncertain environments
2. Adaptation to fast changing environments where systems operations may require proactive and offensive design
3. New pathways for sustainability for energy distribution under chaotic or hostile environments

Immediate practical contributions from this proposal

4. Breakthroughs in countering terrorist /cult influences on the human brain and brain stimulus pathways
5. Dynamic evolution by the proposed Centre for visualisation of emerging conflicts threatening
 - Nuclear
 - biological
 - chemical
 - radiological effectsthat cause conditions unsustainable for growth or perseverance of human life.



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