



The future of the COSPAR Planetary Protection Guidelines: Space governance and astrobiology

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Host Institute: The Open University, UK

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Summary:

This project will examine the issue of planetary protection and the way in which the space governance framework can best deal with the challenges facing human exploration of other planets.

Project Highlights:

- Evaluating the role of COSPAR planetary protection guidelines as a tool of space governance;
- Enhancing the way in which laws, guidelines and best practice can effectively protect pristine environments;
- Developing regulations and guidance models to maximise the balance between human exploration and protecting pristine extra-terrestrial environments.

Overview:

Planetary protection is an area that has been the subject of much discussion. Consensus amongst the scientific community has emerged via the Committee for Space Research (COSPAR), which has developed a Planetary Protection policy regarding the

different levels of protection to be afforded to other planets and to any samples returned to Earth.

Despite the prevalence of these guidelines, there have been several occasions where missions have failed to meet the COSPAR standards. Notwithstanding their wide acceptance, they do not have the binding force of international law and there is by no means universally enforced.

This project will evaluate the COSPAR guidelines and pose a number of questions; do they have a place within the future of space governance? Should they be given the force of law as a means of embedding the ethics of planetary protection? The ramifications of a relaxation of the guidelines is not yet known.

Now that exploration of space is being driven by factors other than a race to showcase competing ideologies, there exists an opportunity for dialogue to ensure an orderly and equitable exploration of space. This



Figure 1: NASA Curiosity rover (credit NASA)

project will seek to critically evaluate the way in which COSPAR guidelines can evolve and work within ambitious future projects. The study will aim to model a governance solution that will provide all stakeholders with the flexibility to explore planets other than Earth. It would also ensure that private companies seeking to mine celestial bodies do not sidestep voluntary guidelines in the hunt for profit.

Methodology:

One of the most exciting elements of this project is that you will be free to engage in your own research design and development. The question of the 'governance' of planetary protection rather than a more narrowly drawn 'space law' inquiry means that, while it is expected there will be elements of legal analysis (doctrinal and socio-legal), there will also need to be a broader, thematic examination of the methods of managing the requirements of planetary protection. In essence, you will design and develop a bespoke methodology that best suits the needs of your project.

Training and skills:

The student will receive training in the specific skills required for the project, including research design, methodologies and methods in the social sciences. Training will also be provided for relevant statistical packages should this be needed. You will also engage in any scientific training that you may feel is necessary in order to effectively conduct the project.

The student will benefit from a diverse training programme, ranging from skills that support their PhD studies, e.g., writing skills, time management, presentation skills, research skills and thesis writing, and skills that prepare them for the future after graduation, e.g., CV writing, and networking, including making active contact with to industry and academic partners.

Possible timeline: Year 1 – Perform a literature review and design a coherent methodological approach to evaluate the COSPAR planetary protection guidelines. Conduct doctrinal analysis of current and potential future models of space governance as germane to planetary protection.

Year 2 – Continue with doctrinal analysis of the space governance regarding planetary protection. Engage with a sample of relevant stakeholders to generate data on the differing views on the efficacy of the COSPAR guidelines and future trends. Present initial findings to a national/ international conference

Year 3 – Evaluate and present results to stakeholders. Produce an optimal model of governance for planetary protection. Prepare an international conference/paper and journal article. Write up and submit thesis.

Further reading:

Butler, J. (2006). Unearthly Microbes and the Laws Designed to Resist Them. *Georgia Law Review*, 41, pp.1355-1394.

Milligan, T. & Schwartz, J. (2016) *The Ethics of Space Exploration*, Springer.

Newman, C. (2015). The Undiscovered Country: Establishing an ethical paradigm for space activities in the 21st Century. In: A. Lawton, L. Huberts and Z. van der Wal, ed., *Ethics in Public Policy and Management*, 1st ed. Routledge, pp.299-324.

Robinson, G. (2006). Forward Contamination of Interstitial Space and Celestial Bodies: Risk Reduction, Cultural Objectives and the Law. *ZLW*, 55, pp.380-399.

Viikari, L. (2008). *The environmental element in space law*. Leiden: Martinus Nijhoff Publishers.

Williamson, M. (2006). *Space: The Fragile Frontier*. Reston, VA: American Institute of Aeronautics and Astronautics.

Further details:

Students should have a strong background in law and governance with either a law degree or a degree in a related social science. Crucially, you must have a keen interest in the science and technology underpinning space-exploration.

This studentship is interdisciplinary and the student will be welcomed into AstrobiologyOU in the STEM faculty, and the Citizenship and Governance Strategic Research Area (SRA) in

the Faculties of Business and Law and Art and Social Sciences at the Open University.

Please contact simon.lee@open.ac.uk for further information.

Applications must include:

- a cover letter outlining why the project is of interest and how your skills are well suited to the project;
- an academic CV;
- an application form **and** the Open University application form, downloadable from [here](#);
- contact details of three academic references.

Applications should be sent to STEM-EEES-PhD@open.ac.uk by 5pm on 30th September 2019.

About us:

AstrobiologyOU has recently been awarded a £6.7m ‘Expanding Excellence in England’ award by Research England to grow capacity and capabilities. This will allow us to expand and bring together expertise in technology, international development and governance to address the scientific and governance challenges associated with the advancement of astrobiology and related space exploration missions. As part of this expansion we will be recruiting new PhD students who will span these discipline areas. Each studentship will play an important role in the growth of AstrobiologyOU.

The PhD candidate joining us for this project will be working in a vibrant interdisciplinary environment, alongside PhD students from STEM, Law and Governance, and Social Sciences. They will also be part of the wider OU student community, which is a friendly and supportive cohort, with regular social events organised through groups such as RocSoc, HookeSoc and the OU Club.