

## Advance Notice of Funding Opportunity

### Reviews of Health Research that Identify Opportunities to Focus on Disease Pathways and Human Biology-Based Research Modalities

Health research aims to discover the causes of human illness and to prevent or treat them, but the returns on today's investment in health research are becoming harder to see. The average time and cost to develop a drug continue to escalate, yet fewer new medicines reach the market. A key reason is the inability of animal models to sufficiently reflect human diseases, leading to failures in translation and late stage attrition. The problem is recognised by researchers, pharmaceutical companies and regulatory authorities, inspiring the Innovative Medicines Initiative in Europe, the Critical Path Initiative in the United States, and other similar efforts to overcome scientific bottlenecks, improve success and reduce costs, time-to-market, and overall waste associated with current drug attrition rates.

**Humane Society International (HSI) will soon be offering grants to credentialed scientists to prepare in-depth reviews including proposals for future research 'roadmaps' for three human disease areas, to be published in peer-reviewed journals.**

The reviews will critically evaluate the contributions and limitations of animal-based models of human diseases, and identify opportunities for progress through the application of 21<sup>st</sup>-century paradigms, including understanding disease pathways using the growing toolbox of human biology-based models and technologies.

Applicants will have a scientific PhD (or equivalent) and current or recent research experience in the academic, private or public sectors, as well as publications relevant to the disease area they propose to address. HSI has already published a critical review of asthma research<sup>1</sup> and reviews on Alzheimer's and Parkinson's diseases and motor neuron disease are in preparation.

HSI is now interested in further disease areas where the current research paradigm can be critically reviewed on a scientific basis and where a draft 'roadmap' can be envisaged using mainly contemporary human-specific models and technologies. With the aid of systems biology, disease pathways and networks can increasingly be researched by means of advanced clinical and *ex vivo* studies and sophisticated *in vitro* models using human cells (including induced pluripotent stem cells).

For these 21<sup>st</sup>-century techniques to achieve their full potential, HSI believes that a new paradigm will be needed in medical research and drug discovery: one that is less dependent on animal models, conceptually and in practice. A similar transition is already well underway in chemical toxicology<sup>2</sup>.

**Three grants of up to US\$10,000** (or equivalent) will be payable to the successful applicants for writing and publishing each review. Further grants will be available for disseminating the work at scientific conferences and workshops.

**In early September 2013, HSI will circulate a Request for Proposals** relating to this project (closing date for applications will be mid-October).

For further information contact Dr Gill Langley at [glangley@hsi.org](mailto:glangley@hsi.org).

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<sup>1</sup> Buckland GL. Harnessing opportunities in non-animal asthma research for a 21st-century science. *Drug Discovery Today*. 2011; 16(21-22):914-27.

<sup>2</sup> Stephens M, Barrow C, Andersen M, Boekelheide K, Carmichael P, Holsapple M. Accelerating the development of 21st century toxicology: Outcome of a Human Toxicology Project Consortium workshop. *Toxicol Sci*. 2012; 125(2):327-34.