Editorial

The 2012 Lush Prize Awards

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The Lush Prize awards represent a collaboration between Lush Cosmetics and Ethical Consumer Research Association (Ethical Consumer). Lush is a campaigning manufacturer and retailer of fresh handmade cosmetics, with shops in 49 countries. The Ethical Consumer is a UK-based research and consultancy co-operative, focused on working with companies and consumers around effective ethical choices.

The awards were the brainchild of Mark Constantine, founder of Lush Cosmetics. They were borne out of his frustration in feeling that, despite spending years campaigning against animal testing, with the introduction of the REACH legislation[1] — which requires chemical manufacturers to further safety test raw materials and leading to increased animal testing — rather than progress being made, things were actually moving in the wrong direction. Feeling demoralised, hitting his 60th birthday, and worrying that he would not see change in his lifetime, Mark set about thinking of how Lush could use its influence as a company to best make an impact in the area in some way.

At Ethical Consumer, another idea — that of creating a fund which other companies opposed to animal testing could contribute to, specifically to provide funding for scientists to look at the issue of animal testing of cosmetics — had already been given careful scrutiny. So when Mark approached Ethical Consumer with the suggestion of creating some kind of prize instead, to encourage scientists to focus on making breakthroughs in the area of toxicity testing, we were already qualified and keen to take a look. After some further research and thought, the Lush Prize was born — and both Lush and Ethical Consumer have never looked back.

The Lush Prize is managed on a day-to-day basis by Ethical Consumer in Manchester, and is overseen by a five-person committee, the Lush Prize Team, comprising Karl Bygrave, Hilary Jones and Tamsin Omond (all from Lush), and Katy Brown and Rob Harrison (both from Ethical Consumer).

About the Prize

The Lush Prize consists of a £250,000 annual fund — the biggest prize fund in the non-animal testing sector — and rewards efforts from anywhere in the world, to reflect the international nature of the issue. The prizes are presented at an annual award ceremony in London.

The Lush Prize combines an invitation for open public nominations with a series of Background Papers, which review annual progress in each category, in order to develop a reputation for identifying genuine excellence in the sector each year. A panel of independent judges, including research scientists, campaigners, politicians, and members of the public, select winners from a short-list compiled by the Lush Prize Team. The 2012 Lush Prize judging panel is featured in this special issue.

How the Prize hopes to make an impact

In the 1980s and 1990s, successful popular campaigns across Northern Europe led to the prohibition by regulators of some types of product and ingredient safety testing on animals. Many companies also adopted public policies against animal testing. Unfortunately, however, the total elimination of animal tests has proved difficult to carry out in practice. There are five main reasons for this:

— global markets mean that testing banned in one country may be required in other regions of the world;

— environmental regulations that require the testing of older ingredients have created new pressures;

— while most people now agree that non-animal safety testing is preferable, from both an animal welfare and scientific perspective, the emergence of alternative non-animal tests is not sufficiently fast to replace existing animal-based methods;

— where alternative non-animal tests are emerging, the process of obtaining regulatory acceptance of the tests is always cumbersome and very slow; and

— even where alternative non-animal tests are proven to be effective, they might not be used, if they are not mandatory or if toxicologists are unaware of them.

In other words, the problem is a complex one. The Lush Prize has been designed with this complexity in mind, in order to tackle different obstacles to progress by providing resources to projects addressing different problems. The Science Prize and Young Researcher Prize are designed to advance research into alternative non-animal tests. The Training Prize is designed to resource projects involving the training of scientists or regulators in the use of existing non-animal methods. The Public Awareness and Lobbying Prizes are designed to keep up the pressure to push through the non-animal testing legislation required to make sure that the potential for progress in this area, through advances made in 21st Century Toxicology, is maximised.

The Lush Prize also intends to focus pressure on toxicity testing for consumer products and ingredients, in a way that complements the many projects which are already addressing the use of animals in medical testing. Many current regulations and prizes are directed toward the broader idea of the Three Rs of *reduction*, *refinement*, and *replacement* of the use of animals in experiments, as first put forward in 1959 by Russell and Burch.[2] The Lush Prize, as a project driven by animal ethics awareness, seeks only to support projects working on the complete *replacement* of animal tests.

The Prize Categories

The Science Prize

When awarding the Science Prize, Lush has chosen to focus on the extent to which the winning research has contributed to the concept of 21st Century Toxicology, which it considers to be the specific area of non-animal testing research that holds out the most hope for a future free of animal testing.

21st Century Toxicology

21st Century Toxicology is a new approach to safety testing, which is exciting regulators, toxicologists, campaigners and companies around the world. It has become possible because of 21st century advances in biology, genetics, computer science and robotics, and it involves a radical move away from studying traditional endpoints in animal tests toward a completely new framework based on understanding toxicity pathways within human cells and tissues. As these molecular pathways are elucidated for different groups of chemicals and different toxic effects, computer technology helps to identify the key steps that can then be used to design non-animal safety tests.

This transformation in toxicology has been unfolding since the publication of the US National Research Council's 2007 report, *Toxicity Testing in the 21st Century: A Vision and a Strategy*.[3] The new strategy offers many advantages over traditional animal testing, including: increased speed, human relevance and cost-effectiveness; a better understanding of the causes of toxicity; the prediction of human variability and effects at different life stages (e.g. infants, children, adults); easier testing of chemical mixtures; and a significant contribution to the *replacement* of animal testing, which causes suffering to many thousands of animals every year.

The Black Box Prize

In any year where there is a major breakthrough in the area of 21st Century Toxicology, a Black Box Prize, equivalent to the entire annual award fund of £250,000, will be presented to the individual or team responsible.

It is called the Black Box Prize because traditional product safety testing, relying on animal tests, explains little about whether and how chemicals cause adverse health effects in humans — i.e. it treats the issue as a 'black box'. Lush wants to help open the box and improve the science of safety testing.

The aim of the Black Box Prize is to stimulate research and training focused on human toxicity pathways worldwide, with the accompanying development of human biology-based assays and of the computational tools (e.g. systems biology approaches, physiologically-based pharmacokinetic models, and *in vitro–in vivo* extrapolation techniques) needed to replace the use of animals in toxicology testing.

Research is eligible for the Black Box Prize, if it fully elucidates and describes a human toxicity pathway, with experimental evidence to demonstrate all the links from the first interaction with a chemical molecule to the full effects at the cellular level. The research should have been completed and published within three years prior to the annual award.

The Training Prize

This prize is awarded for efforts in the training and education of researchers in non-animal methods. Recognition of the training providers in this area is important, simply because many scientists and regulators concerned with chemical testing are not aware of the full range of non-animal methods available, or are not trained in their use. Establishing training programmes around the world makes a huge difference to progress.

The Lobbying Prize

This prize recognises active lobbying for policy interventions promoting the use of alternatives. Scientific innovation needs to go hand-in-hand with policy change, to ensure that end-users of new testing approaches (both industry and regulator) are receptive and responsive to the new methods. Such a change requires a multifaceted, global approach, including science-based lobbying at a national or international level, in order to:

— entrench non-animal testing methods in national, EU or OECD test guidelines and programmes;
— revise existing guidelines to reflect best practices, including the removal of animal tests; and
— achieve a mandatory requirement for non-animal testing in legislation, regulatory policies, testing guidance, etc.

The Public Awareness Prize

Despite years of campaigning, animal testing has yet to be consigned to the history books where it belongs. However, partial legislative victories have led to the common misconception that animal testing, especially for cosmetics, no longer takes place. Therefore, it is vital that the public are reminded that this cruel and unscientific practice does continue in many areas of the world. Support is essential for public awareness activities to ensure that this issue remains high on the political agenda.

The Young Researcher Prize

Because toxicology has for so long been centred on animal testing, many scientists with concerns about the use of animals are deterred from becoming toxicologists. Those who do enter the field can find that access to funding for working on non-animal tests can be a barrier. We want to change this and encourage young scientists to develop a career in toxicology without harming animals, by offering bursaries to allow them to advance in this area.

The *ATLA* Special Issue

To promote efforts in academic research to develop and validate replacement alternatives for use in toxicology testing, Lush and Ethical Consumer have joined forces with FRAME and *ATLA* to publish this Special Issue. It features articles from the winners of the 2012 Lush Prize awards across all categories, as well as from the judges of the prize categories. The winners of the 2012 prizes were:

— *Science Prize*: Institute for Health and Consumer Protection — Joint Research Centre, Italy (£50,000), for their work on toxicity pathways in hepatoxicology and developmental toxicology.
— *Training Prize*: Institute for In Vitro Sciences, USA (£25,000), for their vital work worldwide, in training researchers in the use of non-animal methods; and InterNICHE, UK (£25,000), for their work in training in former Soviet states, South America and Africa.
— *Lobbying Prize*: Humane Society International, USA (£40,000), for their work on removing animal tests from the EU's non-food pesticide regulations; Federation of Indian Animal Protection Organisations (FIAPO), India (£5,000), for their research and lobbying on animal testing in India; and People for the Ethical Treatment of Animals (PETA), India (£5,000), for their work with Indian regulators on a cosmetics testing ban.
— *Public Awareness Prize*: Japan Anti-Vivisection Association, Japan (£30,000), for their successful campaign to persuade Shiseido to abandon animal testing; Decipher Films, Canada (£10,000), for their feature film, *Maximum Tolerated Dose*, on animal testing; and VITA Animal Rights Centre, Russia (£10,000), for their work on awareness raising with the Russian media.
— *Young Researcher Prize*: Elizabeth Woehrling, UK (£12,500), for her work on the development of a new *in vitro* test for neurotoxicity; Felix Rivera-Mariani, USA (£12,500), for his work on expanding an existing non-animal test into new areas; Chiara Scanarotti, Italy (£12,500), for her work on skin sensitisation and chemical mixtures; and Line Mathiesen, Denmark (£12,500), for her work on studying the impact of toxics on placental tissue.

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References

[1]European Commission (2006). *Regulation (EC) No 1907/2006* of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending *Directive 1999/45/EC* and repealing *Council Regulation (EEC) No 793/93* and *Commission Regulation (EC) No 1488/94* as well as *Council Directive 76/769/EEC* and *Commission Directives 91/155/EEC*, *93/67/EEC*, *93/105/EC* and *2000/21/EC*. *Official Journal of the European Union* **L396**, 30.12.2006, 1–849.

[2]Russell, W.M.S. & Burch, R.L. (1959). *The Principles of Humane Experimental Technique*, 238pp. London, UK: Methuen.

[3]US National Research Council Committee on Toxicity Testing and Assessment of Environmental Agents (2007). *Toxicity Testing for the 21st Century: A Vision and a Strategy*, 216pp. Washington DC, USA: National Academies Press. Available at: http://www.nap.edu/openbook.php?record_id=11970 (Accessed 16. 12.13).