Corners

The ASCCT is excited to announce our 3rd Annual Meeting, "Where Chemistry and Biology Meet: AOPs as a Framework for Advancing Toxicology". The meeting will be held November 12, 2014 in the Lister Hill Auditorium, on the National Institutes of Health campus in Bethesda, MD, and will feature a plenary session with Dr Robert Kavlock, Deputy Director for Science in the Office of Research and Development, US EPA, as well as two other speakers to be confirmed. The 1-day meeting will follow the format of previous meetings, with a panel discussion, talks selected from submitted abstracts, a poster session, and social reception. Abstract submission deadline is September 5. Visit the website, http://www.ascctox.org, for more information and instructions for registration and poster submission.

This year members have participated in several compelling webinars in the first half of 2014, including an overview of the cosmetics ingredient structure and toxicity database COSMOS, given by Marc Cronin of Liverpool John Moores University, details of a validation study for the *in vitro* skin irritation assessment of medical device extracts, given by Kelley Coleman of Medtronic, and a discussion of a proposed weight-of-evidence evaluation framework for high throughput endocrine assays, given by Craig Rowlands of Dow Chemical Company.

Forthcoming webinars for the summer and fall include an outline of a cosmetics ingredient TTC database, also as part of the COSMOS project, and an "AOPs 101" seminar. Live webinars are free for members, and members also have access to the recordings of most past webinars on the members-only section of the website. We invite you to learn more about the ASCCT, become a member and help build this new society at http://www.ascctox.org.

Kristie Sullivan
ASCCT Secretary

CAAT*feed*

CAAT-Europe Looks Back on Four Years of Work with its First CEO Mardas Daneshian

Dr Mardas Daneshian has taken up a new challenge outside CAAT-Europe since June 1, 2014. The directors of CAAT-Europe and all collaborators regret very much loosing such a successful, personally pleasant and competent CEO. In parallel they also share enthusiasm and joy with Mardas concerning his new job as senior scientific officer at the IUF – Leibniz Research Institute for Environmental Medicine in Düsseldorf. Besides our congratulations, this is now also an appropriate moment to take a look back and review the achievements of CAAT-Europe since its inauguration. Mardas Daneshian was the founding CEO and had a major role in all activities:

He refined and expanded the existing networks to a number of over 8500 renowned experts and decision makers from governmental and non-governmental organizations, industry, academia and the press. Linked to this achievement, CAAT-Europe's network now allows a differentiated and directed outreach and public relation activity, i.e., contacting experts and decision makers based on their expertise, scientific focus, technological know-how and work area. Among the positive outcomes of the excellent networking and the many interrelations of Mardas with important governmental and

non-governmental (academic and industrial) institutions was the planning of joint activities and co-hosting of workshops in the interest of human-relevant consumer protection and humane safety sciences.

The impressive number of 19 international workshops/think tanks was coordinated by Mardas. They involved renowned experts not only from many European countries, but also from, e.g., USA, Canada, Chile, Japan, Australia and India.

In the period from September 2009 to May 2014, CAAT-Europe released 36 scientific publications, 13 of which were co-authored – often as major contributor – by Dr Daneshian. Altogether 294 experts were involved in the generation of these papers: 118 from academia (e.g., Harvard-Wyss Institute, Johns Hopkins University, Karolinska Institutet, IUF, Imperial College, UC Davis, Brown University); 103 of the co-authors represented industry, e.g., chemical (BASF, CEFIC), pharma (Boehringer-Ingelheim, Roche, Novartis), cosmetics (Beiersdorf, L'Oréal, Unilever, Cosmetics Europe), oil (Shell, ExxonMobile), food (Danone, P&G), pesticides (Syngenta) and important CROs (BSL); 61 co-authors represented governmental institutions (OECD, FDA, US EPA, EC, BfR, ECHA, JRC, EURL ECVAM, UK home office, EFPIA); 12 scientists represented animal welfare organizations or worked on a freelance basis.

Some examples of the larger activities in which Mardas took a vital role are the program for the evaluation of the use of dogs in safety testing, the organization of the t^4 program of transatlantic think tanks for toxicology, the work on a future-oriented roadmap for the development of animal-free toxicity testing, and a large-scale initiative to improve the quality of alternative method data presentations in the scientific literature. These are still important ongoing activities, and there is hope that they will also profit in the future from some input from Mardas.

CAAT Receives Award for Raising Standards for Animal Welfare

Eurogroup for Animals, which has been recognized by the European Parliament and Commission as the leading animal welfare organization in the EU, has awarded CAAT the award Partner Raising Standards for Animal Welfare. In the letter to CAAT director Thomas Hartung, Director Reineke Hameleers wrote, "*Over the years the Center for Alternatives to Animal Testing (CAAT) has in a strong and uncompromising way chosen a pioneering path of investigating into alternatives to animal testing, a choice that has and will positively influence the life of millions of animals*."

The award was presented at an event in Brussels, *Putting Animal Welfare at the Heart of the EU: A Plan to Deliver a Better Future for All Animals in the EU*, held on June 18 and 19.

Marcel Leist, Director of CAAT-Europe, accepted the award on behalf of the organization, saying "I was impressed that there are so many people out there that appreciate what we are doing, and that have a sound understanding of its importance. It is heartening to be part of a large European movement – Act4Animals – that is going to be very important in the coming five-year session of Parliament."

CAAT Director Thomas Hartung expressed his enthusiasm about this recognition in a video address presented to the audience.

CAAT Agency Partners Give Input for Future CAAT Programs

From CAAT Director Thomas Hartung:

After five years of CAAT US under new leadership we are taking a fresh look at our work and our mission.

CAAT has traditionally been an information hub, and it continues to be the premier source of information on alternative methods in the US, with proven value for journalists, policy makers and the general public. We have expanded this to Europe and other parts of the world as well. We have also become a think tank for new approaches in safety sciences, taking advantage of our ability to work outside the regulatory system. We have developed an incredible network of collaborators and we look back on an enormous number of workshops, white papers, and consensus meetings. We also started proof-of-principle research to show the feasibility of some of the scientific innovations we are advocating.

Our next focus is on implementation. We want to assure that we don't just develop beautiful ideas, but that we pave the way for their practical use.

In order to learn how we can serve our agency and governmental partners more efficiently, we held a meeting on June 16 at our offices in Baltimore. The following participants joined the discussion and provided valuable input:

- Tara Barton-Maclaren, Health Canada
- Warren Casey, NIH NIEHS
- David Dix, EPA OSCP
- Suzanne Fitzpatrick, FDA CFSAN
- Joseph Hanig, FDA HHS
- David Jett, NIH NINDS
- Igor Linkov, US Army
- Anna Lowit, EPA HED
- William Mundy, EPA ORD
- Alison Myska, DTRA
- Danilo Tagle, NIH
- Frank Weichold, FDA ORSI

This marked the starting point for a self-evaluation and development of a strategic program, which we will undertake over the course of the next twelve months. We look forward to our friends and supporters joining us as we continue to refine and evolve our work and our mission in support of humane science.

CAAT Hosts Fourth International Conference on Alternatives for Developmental Neurotoxicity (DNT) Testing

CAAT hosted the fourth annual developmental toxicity (DNT) alternatives conference on May 12-14 in Philadelphia, Pennsylvania. With expert speakers from the U.S. and Europe, the seventy participants – including research scientists, regulators, industry representatives, academics, and pediatricians – came together to discuss the development of new, alternative methods for testing chemicals for neurotoxicity, including human cells *in vitro*, computer models and non-mammalian species (zebrafish and *C. elegans*).

CAAT Director Thomas Hartung spoke of the critical need for this research. "Developmental neurotoxicity cannot be effectively studied with rats. If we want to understand the causes of neurodevelopmental disorders, we need a new,

21st century toxicology – a toxicology based upon studying human cells at the molecular level. DNT4 brought together the best minds from around the world to help us better understand whether and how chemicals affect vulnerable, growing nervous systems – so we can better protect public health and address the rise in developmental disorders."

The conference was sponsored by CAAT, the Alternatives Research & Development Foundation (ARDF), Boehringer Ingelheim, CropLife, the Doerenkamp-Zbinden Foundation, the Environmental Protection Agency, the Human Toxicology Project Consortium, The Humane Society of the United States, the Society of Toxicology and the European Commission.

ESTIV-CAAT-IVTIP Pre-Congress Workshop on Industrial and Regulatory Implementation of Non-Animal Integrated Testing Strategies Held June 10, 2014 in The Netherlands

CAAT sponsored a pre-congress workshop to address the industrial and regulatory implementation of integrated testing strategies based on *in silico*, *in chemico* and *in vitro* test methods for the assessment of skin sensitization hazards and potency. The definition and regulatory implementation of ITS was given and examples of advanced strategies available on skin sensitization were presented by speakers from different areas (industry, academia, governmental bodies and NGOs).

CAAT Senior Research Associate Martin Stephens Co-Authors Chapter on the History of the 3Rs in Reducing, Refining and Replacing the Use of Animals in Toxicity Testing

CAAT Senior Research Associate Martin Stephens, along with Nina S. Mak of the Alternatives Research & Development Foundation, has authored a chapter about the history of alternatives titled "From Russell and Burch to 21st Century Toxicology" in the newly released book, *Reducing, Refining and Replacing the Use of Animals in Toxicity Testing* (2014, RSC Publishing). The book describes the ever-expanding "toolbox" of methods available to assess toxicity and explores the complexities associated with adequate validation, and the assessment of test reliability and relevance. It provides an essential reference source for postgraduates, academics, and industrialists working in this rapidly changing area.

CAAT's Paul Locke Calls for an End to Animal Testing for Cosmetics in the U.S.

In an invited editorial in *Scientific American*, CAAT faculty member Paul Locke, along with U.S. Rep. Jim Moran (D-VA), called for a ban on testing cosmetics on animals in the United States. The European Union has already done so, banning animal testing on cosmetic products and ingredients and forbidding marketing cosmetic products and ingredients that were tested on animals. Locke and Moran believe a similar ban in the U.S. is entirely feasible, pointing out that available alternative methods save time, cut costs, and improve predictability.

Locke and Moran urge the passage of the Humane Cosmetics Act (H.R. 4148), which would prohibit animal testing in the U.S. cosmetics industry and would gradually eliminate cosmetics and ingredients tested on animals. They argue that the bill would protect consumers, as only safe products tested with cutting edge technology would enter the market. "American consumers have the right to demand that their cosmetics are safe," the editorial states. "Given rapid scientific advances, there is no reason those products cannot be humane, too."

Recent Publications by CAAT/ CAAT-Europe

Balmer, N. V. and Leist, M. (2014). Epigenetics and transcriptomics to detect adverse drug effects in model systems of human development. *Basic Clin Pharmacol Toxicol 115*, 59-68. http://dx.doi.org/10.1111/bcpt.12203

Balmer, N. V., Klima, S., Rempel, E. et al. (2014). From transient transcriptome responses to disturbed neurodevelopment: role of histone acetylation and methylation as epigenetic switch between reversible and irreversible drug effects. *Arch Toxicol 88*, 1451-1468. http://dx.doi.org/10.1007/s00204-014-1279-6

Grabinger, T., Luks, L., Kostadinova, F. et al. (2014). Ex vivo culture of intestinal crypt organoids as a model system for assessing cell death induction in intestinal epithelial cells and enteropathy. *Cell Death Dis 5*, e1228. http://dx.doi.org/10.1038/cddis.2014.183

Hartung, T. (2014). 3D – A new dimension of in vitro research. *Adv Drug Deliv Rev, Preface Special Issue "Innovative tissue models for in vitro drug development."* 69-70, vi.

Hartung, T. and Stephens, M. (2014). Toxicity Testing in the 21st Century, Approaches to Implementation. In P. Wexler (ed.), *Encyclopedia of Toxicology*. 3rd edition. Elsevier Inc., Academic Press, 673-675.

Hoffmann, S., Stephens, M. and Hartung, T. (2014). Evidence-based Toxicology. In P. Wexler (ed.), *Encyclopedia of Toxicology*. 3rd edition, vol. 2. Elsevier Inc., Academic Press, 565-567. http://dx.doi.org/10.1016/B978-0-12-386454-3.01060-5

Krug, A. K., Gutbier, S., Zhao, L. et al. (2014). Transcriptional and metabolic adaptation of human neurons to the mitochondrial toxicant MPP(+). *Cell Death Dis 5*, e1222. http://dx.doi.org/10.1038/cddis.2014.166

Zimmer, B., Pallocca, G., Dreser, N. et al. (2014). Profiling of drugs and environmental chemicals for functional impairment of neural crest migration in a novel stem cell-based test battery. *Arch Toxicol 88*, 1109-1126. http://dx.doi.org/10.1007/s00204-014-1231-9

ecopa

News from the ECOPA Board

– ECOPA's Secretary Mardas Daneshian (CEO of CAAT-Europe) stepped down in June. President Lisbeth E. Knudsen and the members warmly thank Mardas Daneshian for his great work and wish him an exciting future in his new position at the Leibniz Research Institute for Environmental Medicine in Düsseldorf, Germany.
– Francois Busquet (caat-eu-policy@uni-konstanz.de) has been appointed the new ECOPA Secretary. He did his PhD at the Institute of Toxicology at Merck Serono (Darmstadt, Germany) on the "Development of a new screening assay to identify proteratogenic compounds using Zebrafish *Danio rerio* embryo combined with an exogenous mammalian metabolic activation system (mDarT)". Later, he moved to EURL ECVAM and participated in the coordination and validation of the current OECD TG 236 "Fish Embryo Toxicity Acute Test" until 2012. He is now the EU Policy Coordinator at CAAT-Europe and based in Brussels.
– The ECOPA General Assembly will take place on August 26, 2014 at 18:30 during the upcoming 9th World Congress on Alternatives and Animal Use in the Life Sciences in Prague where revised statutes will be approved.

News from the ECOPA members

NORECOPA

– The Norwegian consensus-platform Norecopa (http://www.norecopa.no) held its annual general meeting and awarded its 3R-prize on June 5. This year's guest speakers were Dr Reyk Horland (Berlin Technical University), who presented the state of the art concerning "humans on a chip", Professor Maarja Kruusmaa (Centre for Biorobotics, Tallinn University of Technology), who explained how work on fish robots helps to improve fish welfare, and Dr John Linnell (Norwegian Institute of Nature Research), who discussed the 3Rs in relation to wildlife research. These presentations (like those from the previous 6 annual meetings) are available on Norecopa's website (http://www.norecopa.no/arsmoter). There were 9 nominees for this year's 3R-prize, which was won by Ioanna and Axel Sandvig, who have implemented all three Rs in their research into regeneration of the central nervous system. An overview of all 9 candidates is available in English at http://norecopa.no/files/Norecopa_3R-prize_2014.pdf
– Norecopa has submitted 5 presentations for the 9th World Congress on Alternatives and Animal Use in the Life Sciences in Prague in August. These cover the role of a national consensus platform in harm-benefit assessment, an update on welfare of fish, decapods and cephalopods, alternatives in veterinary education and updates on two databases of 3R resources produced by Norecopa.
– Norecopa has also given seed money to researchers developing alternatives to batch potency tests on fish in connection with vaccine development and a group working on environmental enrichment for fish in laboratory experiments.
– Norecopa issues a newsletter 8-9 times a year (currently only in Norwegian).

FRANCOPA

– The French platform held its annual general assembly on June 6. NGOs (LFDA & OPAL) presented to the members the upcoming recipients of the 3Rs prizes for 2014.
– Francopa's new secretary is Enrico Mombelli(Enrico.MOMBELLI@ineris.fr), who is replacing Annick Pichard.
– Francopa published its position paper on read-across (in English): http://www.francopa.fr/web/pdf/francopa/read_across_paper.pdf
– Francopa's president Francelyne Marano will chair the session on endocrine disrupters testing at the upcoming workshop (http://www.adebiotech.org/pert/) on July 8 in Paris.
– Francopa will soon host an online forum on the validation of alternative methods.

FICAM

– Vice-president Tuula Heinonen was nominated from Finland as the recipient of the Björn Ekwall Memorial Award (BEM) 2014. The BEM award will be presented to Tuula Heinonen an the 9th World Congress on Alternatives and Animal Use in the Life Sciences in Prague.

SWITZERLAND

– 3R-INFO-BULLETIN 52 June 2014 focuses on *A new in-vitro approach to the study of brain tumours: an alternative to in-vivo experiments in animals* by Dr Olivier Preynat-Seauve. http://www.forschung3r.ch/en/publications/bu52.html

EUSAAT

European Society for Alternatives to Animal Testing

News from EUSAAT

This spring, EUSAAT was officially elected for participation in the **Stakeholder Forum (ESTAF) of the European Centre for the Validation of Alternative Methods** (EURL ECVAM; http://ihcp.jrc.ec.europa.eu/our_labs/eurl-ecvam/scientific-advice-stakeholders-networks/estaf-ecvam-stakeholder-forum). EURL ECVAM is located at the European Commission's Institute for Health and Consumer Protection, Directorate General Joint Research Centre in Ispra, Italy. ESTAF serves as a collaborative platform to comment on draft EURL ECVAM Recommendations following ESAC (ECVAM Scientific Advisory Committee) peer review of validation studies. Thereby, ESTAF representatives provide input on the relevance and applicability of proposed test methods and testing strategies and on strategic and practical aspects of test method development, optimization, validation and use.

Already on June 5 and 6, 2014, EUSAAT, represented by **General Secretary Dr Ursula G. Sauer**, attended the annual ESTAF meeting that was held back-to-back with the meeting of the PARERE networks (PARERE – Preliminary Assessment of Regulatory Relevance; consisting of representatives from the European Commission, Member States, EU regulatory agencies and scientific committees). Overlapping sessions on issues that are of interest to ESTAF and PARERE intended to facilitate dialogue between both networks. Topics addressed in lively discussions at the meeting included:

– A draft EURL ECVAM strategy to avoid, reduce and refine the use of animals in the assessment of acute systemic toxicity;
– A draft EURL ECVAM strategy to avoid, reduce and refine the use of fish in aquatic toxicity and bioconcentration / bioaccumulation testing;
– A draft EURL ECVAM strategy on toxicokinetics in the regulatory testing of chemicals;
– A presentation on recent scientific and political activities related to integrated approaches to testing and assessment (IATA), e.g., an adverse-outcome-pathway-driven IATA for skin sensitization.

Until July 31, ESTAF representatives have the opportunity to submit comments on the draft EURL ECVAM Strategies related to acute systemic toxicity and acute fish toxicity. As Head of Systems Toxicology Unit and EURL ECVAM Dr Maurice Whelan underlined, all members of the societies represented in ESTAF are invited to contribute to the commenting of EURL ECVAM drafts. Therefore all EUSAAT members are cordially invited to contact the EUSAAT General Secretary (ursula.sauer@eusaat.org) if they would like to receive further information on the ESTAF work or EUSAAT representation at the forum, or if they would like to participate in the commenting of EURL ECVAM documents.

Since the publication of the last EUSAAT news in ALTEX, again, members of the Board of EUSAAT, the European 3Rs society, participated in numerous international activities documenting EUSAAT's excellent networking in the global 3Rs community, the wide expertise of our Board Members and their active dedication to promoting the goal to replace, reduce and refine animal testing.

On May 23, 2014, **President Professor Dr Horst Spielmann**, in his position as Animal Welfare Commissioner of the German Federal State of Berlin, published a position paper *Animal experiments are not without alternatives,* in which he also announces establishment of the Berlin-Brandenburg research platform BB3R with integrated graduate education that will strengthen the 3R expertise of the region Berlin-Brandenburg (http://www.bb3r.de/en/index.html). Professor Spielmann and EUSAAT General Secretary Dr Ursula G Sauer have been nominated to the BB3R Scientific Advisory Board.

On March 24-27, 2014, **Vice president Professor Dr Ellen Fritsche** attended the *53rd Annual Meeting of the Society of Toxicology (SOT)* in Phoenix AZ, USA (http://www.toxicology.org/ai/meet/am2014/), where she hosted and chaired a workshop session together with Anna Bal-Price (JRC, Ispra) on 'Application of the Adverse Outcome Pathway (AOP) Concept to Neurotoxicology: A Challenging Approach'. Further, on May 12-14, 2014, she was invited speaker and member of the organizing committee of the *Fourth International Conference on Alternatives for Developmental Neurotoxicity (DNT) Testing* that took place in Philadelphia, PA, USA, and was organized by the Center for Alternatives to Animal Testing (CAAT) of the Johns Hopkins Bloomberg School of Public Health, Baltimore MD, USA, where she presented the latest de-

velopments on molecular mechanisms triggering developmental neurotoxicity.

Further, on June 10-13, 2014, **Vice president Dr Eleonore Haltner-Ukomadu** attended the *European Society of Toxicology In Vitro (ESTIV) International Conference* in Egmond aan Zee, the Netherlands (http://www.estiv2014.org). Finally, on May 26-28, 2014, supporting EUSAAT Board member **Dr Candida Nastrucci** participated at the *Horizons in Human Cells Conference* that was organized by the University of Edinburgh and was hosted by the Royal College of Surgeons in Edinburgh, Scotland (http://www.horizonsinhumancells.org).

Additionally, the final program of the *9th World Congress on Alternatives and Animal Use in the Life Sciences*, that will take place on 24-28 August 2014 in Prague, Czech Republic, is available at http://www.wc9prague.org. Please reserve the date: As supporting society to the WC9, EUSAAT will hold its Annual General Assembly 2014 in the context of the WC9 on Tuesday, August 26, at 7 p.m. EUSAAT members will be formally invited with due notice.

Last, but not least, in June 2014, we redesigned and re-launched our website, http://www.eusaat.org, where we will keep you posted on recent news related to our 3Rs society and are looking forward to providing an information platform for 3Rs activities that our members are keen to share.

Dr Ursula G. Sauer
Secretary General
on behalf of the Board of
EUSAAT – the European 3Rs society

NTP National Toxicology Program
U.S. Department of Health and Human Services

UNITED STATES ICCVAM Advancing Alternatives to Animal Testing

News from NICEATM and ICCVAM

NICEATM cosponsors Workshop on Aquatic Models

Scientists from around the world met May 5-6 at North Carolina State University (NCSU) in Raleigh, NC, to consider the key role small fish and their embryos may play in toxicity testing. NICEATM and NCSU cosponsored the *Collaborative Workshop on Aquatic Models and 21st Century Toxicology*, which drew nearly 150 scientists from the U.S., Canada, Europe, and Asia.

More than 20 scientific talks were given during the two-day workshop. Presentations included descriptions of research studies and results, practical advice on the conduct of toxicity studies using small fish and fish embryos, and use of toxicity data derived from aquatic species in drug development and regulatory compliance.

In the concluding discussion session, workshop participants noted that the suitability of small fish species for toxicity testing, particularly their practical advantages, needs to be brought to the attention of other audiences, including scientists in other disciplines and industry, regulators and the general public. Topics identified for further exploration included the effective application of fish study data for better understanding of chemical safety and integration of fish data with complementary information from other types of toxicity studies. Other data needs included clarification of the relationship between chemical treatment, uptake and metabolism, and the observed effects in fish models.

A summary and full report of the workshop will be developed and posted at http://ntp.niehs.nih.gov/go/41308, along with presentation and poster abstracts.

ICCVAM holds Public Forum

ICCVAM convened a Public Forum on June 25 at the National Institutes of Health in Bethesda, MD. The meeting provided an opportunity for public interaction with representatives of the 15 ICCVAM member agencies.

ICCVAM Co-Chair Dr Anna Lowit and NICEATM Director Dr Warren Casey updated attendees on recent ICCVAM and NICEATM activities, respectively. Committee members from ICCVAM member agencies provided information about their agencies' activities relevant to development and use of alternative test methods. Public comments were also presented by representatives of groups interested in promoting alternative methods or reducing animal use in testing. Presentations and public comments are available at http://ntp.niehs.nih.gov/go/41490.

ICCVAM plans to hold events similar to the June Public Forum annually. Public comments on ICCVAM activities are also welcome at the upcoming meeting of the Scientific Advisory Committee on Alternative Toxicological Methods (SACATM), which meets September 16 at the National Institute of Environmental Health Sciences in Research Triangle Park, NC. Information about the SACATM meeting is available at http://ntp.niehs.nih.gov/go/32822.

NICEATM partners with PCRM to hold Adverse Outcome Pathway Workshop

A workshop organized by NICEATM and the Physicians Committee for Responsible Medicine (PCRM) will explore how scientific progress in adverse outcome pathway concepts can improve regulatory assessment of chemical toxicity. The workshop, *Adverse Outcome Pathways: From Research to Regulation* will be held September 3-5 at the William H. Natcher Conference Center at the National Institutes of Health in Bethesda, MD.

The workshop is open to the public free of charge with attendance limited only by the space available. The plenary sessions of the workshop will be webcast. Individuals who plan to attend in person or view the webcast should register by August 15.

Abstracts for poster presentations will be accepted through July 28. Information on abstract submission and links to registration are available at http://ntp.niehs.nih.gov/go/42374.

NICEATM to support Workshops on Alternatives for Pertussis Vaccine Testing

NICEATM will support an upcoming workshop to consider implementation and regulatory acceptance of *in vitro* alternatives to the murine histamine sensitization test (HIST) for safety testing of acellular pertussis vaccines. The workshop will be convened as a satellite meeting of the Ninth World Congress on Alternatives and Animal Use in the Life Sciences (WC9) in August 2014. Information on this meeting is available on the WC9 website.

NICEATM will also provide support for an international workshop planned for mid-2015 in London, at which data from an ongoing collaborative study of *in vitro* alternatives to this HIST and other recent advances in method development will be reviewed.

NICEATM and ICCVAM activities at the Ninth World Congress

NICEATM scientists will present nine posters and three talks at WC9, which takes place August 24-28 in Prague, Czech Republic. Topics of NICEATM presentations include development of curated reference databases and computational and high-throughput approaches to chemical screening and prediction of toxicity.

ICCVAM committee members from the U.S. Food and Drug Administration will present on photosafety testing and 3Rs considerations in preclinical testing of cellular and gene therapy products.

Information on NICEATM and ICCVAM activities at WC9 is available at http://ntp.niehs.nih.gov/go/41583.

NICEATM requests data on Inhalation Testing Approaches

NICEATM requests available data and information on devices and/or technologies currently used for identifying potential inhalation hazards. Submitted information will be used to assess the state of the science and determine the technical needs for a dynamic nonanimal system to assess the potential toxicity of inhaled chemicals or nanomaterials.

Information submitted could describe activities relevant to the development or validation of alternatives to *in vivo* inhalation toxicity tests currently required by regulatory agencies, or submission of data from nonanimal tests for identifying acute inhalation hazard potential. If available, corresponding *in vivo* data for substances tested in nonanimal assays are also requested, including data from any ethical human or animal studies or accidental human exposures.

Further information on the NICEATM data request is available at http://ntp.niehs.nih.gov/go/41624.

NICEATM publications

- NICEATM scientist Nicole Kleinstreuer, PhD, was the lead author on a recent *Nature Biotechnology* paper describing the use of primary human cell systems to develop bioactivity profiles for 776 chemicals with potential for human exposure.
  Kleinstreuer, N. et al. (2014). Phenotypic screening of the ToxCast chemical library to classify toxic and therapeutic mechanisms. *Nat Biotechnol 32*, 583-591. http://dx.doi.org/10.1038/nbt.2914
- NICEATM scientists contributed to development of an integrated testing strategy based on open-source software that provides probabilistic predictions of skin sensitization potency.
  Pirone, R. et al. (2014). Open-source software implementation of an integrated testing strategy for skin sensitization potency based on a Bayesian network. *ALTEX 31*, 336-340. http://dx.doi.org/10.14573/altex.1401282
- The 2012-2013 ICCVAM Biennial Progress Report will be available in July at http://ntp.niehs.nih.gov/go/iccvam-bien. In keeping with ICCVAM's new focus on member agency priorities, this report highlights ICCVAM member agency research activities supporting toxicology innovation as well as regulatory agency initiatives to promote the 3Rs and provide information about use of *in vitro* methods.