




Message from the President

By Hans Raabe, IVAM President

2014-2015 IVAM OFFICERS

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Hans Raabe

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Sridhar Jaligama

This has been quite a year for the field of *in vitro* and computational toxicology; and I've been very pleased to bear witness to the many advances in emerging and maturing technologies, and the adoption of *in vitro* and alternative techniques for regulatory safety testing as well as product research and development. Perhaps some of the more monumental advances that have impressed me this year are the technical advancements in the application of dynamic microfluidics technologies to greatly enhance the functionality of various *in vitro* organ system models, as well as the increasing momentum seen in the adoption of *in vitro* methods internationally as witnessed by the acceptance of data from select valid non-animal test methods for simple cosmetics products in China this summer. The World Congress on Alternatives and Animal Use in the Life Sciences held in Prague this summer highlighted many of these advances, and many colleagues commented that this year's congress was perhaps the best yet!

In fact, inspired by the organ-on-a chip techniques presented at the World Congress, I'm very pleased to announce that the Technical Webinar series proposed by the IVAM executive committee came to fruition this year with a webinar entitled **Human Organs-on-Chips as Replacements for Animal Testing** held December 5th, 2014 and presented by IVAM's Past President Suzanne Fitzpatrick of the FDA, and Andries van der Meer of the Wyss Institute. I hope the webinar was as inspiring to you as it was for us. I look forward to challenging you, the IVAM membership, to propose other topics for presentation in future IVAM webinars - you can readily submit your ideas to any of the IVAM executive committee members for consideration.

I would certainly like to thank the entire IVAM executive committee for their contributions and leadership. The IVAM EC is comprised of the most diverse representation that we have seen in some time, and each of the committee members have contributed well bringing their perspectives from the US regulatory communities, from the research and education-focused academic communities, from industry representation, and from the animal welfare community, to bear. As we move forward as an organization, I feel maintaining this balance of representation is critical to the future success and sustainability of the specialty section. Accordingly, I encourage you to consider involvement on the executive committee. To this end, nominations can be submitted as detailed on page 8 of this newsletter.

(continued on page 10)

The *In Vitro* and Alternative Methods Specialty Section

The *In Vitro* and Alternative Methods Specialty Section was founded in 1994 and consists of members who have expertise or special interest in the application of *in vitro* techniques to address problems of cellular toxicity, with a special emphasis on product safety evaluation.

Mission Statement and Objectives

“Promote the reduction and humane use of animals in toxicology research by encouragement of the development and validation of effective *in vitro* and alternative methods or models”

- Encourage widespread use of *in vitro* and alternative methods to reduce, refine and replace animal testing in toxicology
- Increase effectiveness of *in vitro* and alternative methods through emphasis on predictability and validation
- Inform and encourage growth of *in vitro* and alternative methods through programs and educational activities on current and new developments
- Serve as a resource to the Society of Toxicology and its members pertaining to all aspects of *in vitro* and alternative methods



Message from the Vice President

By Jack Fowle, IVAM Vice President

Hope and Pride

I look to assuming the duties of President of SOT's In Vitro and Alternative Methods Specialty Group (IVAM) this spring with hope, pride and honor. I'm so proud of IVAM and how it's grown, what it's members have achieved and of the vision and leadership of its past and present officers. These efforts are now paying off in a number of different ways in terms of advancing science and through better understanding of toxicology pathways, and through more realistic ways to assess toxic insults to humans as well as other species of interest (e.g. OECD's development of adverse outcome pathways and integrated approaches to testing and assessment). It is also beginning to pay off in terms of the adoption of *in vitro* and alternative methods as more efficient and informative ways to inform decision makers (e.g., EPA's adoption of alternative approaches in their antimicrobial cleaning products testing program and also the proposal to use ToxCast data for the Endocrine Disruption Screening Program). I picked these just to name a few efforts currently in play, and it is clear that a variety of other *in vitro* and alternative approaches will come on line in the near future in government (e.g., EPA, FDA), industry and academia as evidenced by investments in such things as the "Human on a Chip" project by DARPA and many, many other activities too numerous to name here.

(Vice President message continued)

Anxiety

I also look to assuming the duties of President of SOT's In Vitro and Alternative Methods Specialty Group (IVAM) this spring with anxiety stemming from the short amount of time I'll serve as IVAM president, and the fear that I may not know what IVAM members really want to get out of our specialty section. I wonder whether we are really meeting our members' needs? Don't get me wrong. I'm not saying that there is a problem it's simply a matter that I don't really know. For instance, when I look at our roster I see many of the people and many of the disciplines that I would expect to see in IVAM. However, it also seems to me that some of the disciplines and a number of key people in the area are not on our IVAM roster. It seems to me that despite the addition of "alternative methods" to the original name of our specialty section, which was the "In Vitro Specialty Section", that our members tend to focus on the more traditional in vitro approaches and I wonder why haven't we attracted more of those in the newly emerging alternatives areas? Is it that they don't know us? Is it that we aren't meeting their needs? Is it that they have other more pressing matters to address? Is it the money? Are there some other reasons or combinations of reasons why there's not more engagement from this sector and even from those engaged in the more traditional in vitro sector for that matter?

Request for Help

I'd like to hear from you about these matters before I assume the duties of President. I'd especially like to hear from you about whether you are getting what you want to get out of IVAM, and what you'd like to get if we are not now meeting your needs and doing all we can to fulfill IVAM's objectives which are to:

- Encourage widespread use of *in vitro* and alternative methods to reduce, refine and replace animal testing in toxicology.
- Increase effectiveness of *in vitro* and alternative methods through emphasis on predictability and validation.
- Inform and encourage growth of *in vitro* and alternative methods through programs and educational activities on current and new developments.
- Serve as a resource to the Society of Toxicology and its members pertaining to all aspects of *in vitro* and alternative methods.

I'd also like to hear your thoughts about how to reach out to engage others.

- What do you recommend be done to engage more of those working in the traditional in vitro fields of expertise?
- What do you recommend be done to more supplement our expertise by engaging more of those interested in the fields associated with other newly emerging alternative approaches?
- Very importantly I'd like to hear what do you recommend be done to ensure that we meet the needs of our members?

I know that you are very busy and have many demands on your time, but if you have thoughts about what you'd most like to get out of IVAM and have a moment to put your thoughts together, I'd really appreciate hearing from you. I promise that I will carefully read your inputs and suggestions and that the IVAM leadership will consider them as we move to the future. I can be reached at jackfowle@aol.com or by phone at (919) 942-2810 (o) or (919) 360-8280 (c).

Thanks!

Jack Fowle

Student/Post Doc Awards

Every year IVAM SS recognizes outstanding student and postdoctoral scientists for their work in the field of *In Vitro* Toxicology with the **In Vitro and Alternative Methods SS Student Award**. Awards are based on the scientific merit of the submitted abstract.

REQUIREMENTS:

1. Open to graduate students and postdoctoral scientists
2. Submitted abstract to the SOT Annual Meeting must be accompanied by letter of support from advisor.
3. Applicants must be present at IVAM Lunch reception at the SOT Annual Meeting to receive the award or the award will be forfeit
4. It is strongly suggested that applicants be current members of IVAM

The winners receive awards of up to \$500 that will be presented at the IVAM Lunch reception at the SOT 54th Annual Meeting and Tox Expo in San Diego, California.

The deadline for the upcoming 2015 awards is **January 23, 2015**.

For information, go to <http://www.toxicology.org/ISOT/SS/ivss/awards.asp>

Please send abstracts and letters to IVAM President, Mr. Hans Raabe ([email to Hans Raabe](#))

MB Research supports annually the **In Vitro and Alternative Methods SS MB Research Award for Distinction in Practical In Vitro and Alternative Toxicology Methods**. This award recognizes the outstanding abstract by a postdoctoral scholar in the field of *in vitro* or alternative methods toxicology. This award is meant to focus on the practical aspects of in vitro or alternative methods rather than basic research or mechanism-based research.

REQUIREMENTS:

1. Open to postdoctoral scientists
2. Submitted abstract to the SOT Annual Meeting must be accompanied by letter of support from advisor.
3. Applicants must be present at IVAM Lunch reception at the SOT Annual Meeting to receive the award or the award will be forfeit

The winner receives \$500 that will be presented at the IVAM Lunch reception at the SOT 54th Annual Meeting and Tox Expo in San Diego, California.

The deadline for the upcoming 2014 award is **January 1, 2015**.

For information, go to <http://www.toxicology.org/ISOT/SS/ivss/awards.asp>

Please send abstracts and letters to Dr. George DeGeorge at [MB Research](#).



2014 Award Winners

The IVAM Specialty Section was pleased to recognize the achievements of our student award winners at the 2014 National Meeting in Phoenix, Arizona. Three awards were given this year, a 1st place postdoctoral award and 1st and 2nd place student awards. Each award winner received an award letter at the IVAM business meeting and luncheon, a monetary award and Student/Postdoc membership for 2014/2015 (Initial SOT membership application required). Congratulations to all.

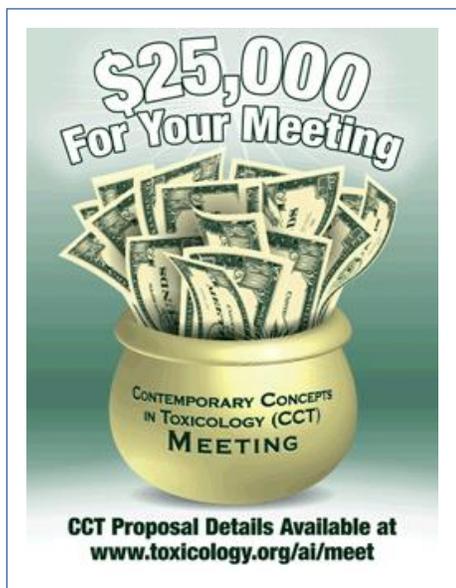
1st Place Student— Christen Grabinski, Case Western Reserve University, “Design and Validation of Nanomaterial Aerosol Exposure Techniques for *In Vitro* Toxicology” (\$400 award)

2nd Place Student— Ashley Maiuri, Michigan State University, “NSAIDs Synergize with Inflammatory Cytokines to Kill Hepatocytes: Implications in Idiosyncratic Reactions” (\$200 award)

Postdoc Winner— David Pamies, Johns Hopkins University, “Characterization of a Brain Microphysiological System for Studying Gene/Environment Interactions” (\$500)

MB Student Research Award Winner - We are also proud to announce **David Pamies** as the winner of the MB Student Research Award. The award was presented by George DeGeorge, PhD, Director and Chief Scientific Officer at MB Research Labs.

SOT CCT Meetings Eligible for Seed Money and Profit Sharing



SOT Sponsors two types of meetings outside of the SOT Annual Meeting: Contemporary Concepts in Toxicology (CCT) and Non-SOT meetings. CCT meetings are one- to two-day focused, open registration, scientific meetings in contemporary and rapidly progressing areas of toxicological sciences. Non-SOT meetings are sponsored by other not-for-profit organizations and SOT will either endorse or provide sponsorship money to toxicology-related meetings.

The Society will underwrite all the liabilities of the CCT meeting with the expectation that the meeting will at least break even financially. The goal of providing \$25,000 seed funds is to stimulate the creation of CCT meeting proposals.

For more information about CCT meetings, please visit the [SOT Web site](#)

NEW and DRAFT OECD Test Guidelines for Skin Sensitization, Skin Irritation / Corrosion and Eye Irritation / Corrosion

by Amy Clippinger, VP Elect

Skin Sensitization

Draft TG: *In Vitro* Skin Sensitization: human Cell Line Activation Test (h-CLAT)

<http://www.oecd.org/chemicalsafety/testing/Draft-new-Test-Guideline-Skin-Sensitisation-h-CLAT-July-2014.pdf>

Draft TG: *In chemico* Skin Sensitization: Direct Peptide Reactivity Assay (DPRA)

http://www.oecd.org/chemicalsafety/testing/Draft_DPRA_TG_final_15May2014.pdf

Draft TG: *In vitro* Skin Sensitization: ARE-Nrf2 Luciferase Test Method

http://www.oecd.org/chemicalsafety/testing/Draft_Keratinosens_TG_16May_final.pdf

Skin Irritation / Corrosion

No. 203: New Guidance Document on an Integrated Approach to Testing and Assessment (IATA) for Skin Corrosion and Irritation

[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono\(2014\)19&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2014)19&doclanguage=en)

Revised TG 431 (26 Sep 2014): *In Vitro* Skin Corrosion: Reconstructed Human Epidermis (RhE) Test Method

http://www.oecd-ilibrary.org/environment/test-no-431-in-vitro-skin-corrosion-reconstructed-human-epidermis-rhe-test-method_9789264224193-en

Revised TG 430 (26 Jul 2013): Transcutaneous Electrical Resistance Test Method (TER)

http://www.oecd-ilibrary.org/environment/test-no-430-in-vitro-skin-corrosion-transcutaneous-electrical-resistance-test-method-ter_9789264203808-en

Revised TG 439 (26 Jul 2013): *In Vitro* Skin Irritation: Reconstructed Human Epidermis (RhE) Test Method

http://www.oecd-ilibrary.org/environment/test-no-439-in-vitro-skin-irritation-reconstructed-human-epidermis-test-method_9789264203884-en

Eye Irritation / Corrosion

Draft TG: Reconstructed Human Cornea-like Epithelium (RhCE) Test Method for Identifying Chemicals Not Requiring Classification and Labelling for Eye Irritation or Serious Eye Damage

<http://www.oecd.org/chemicalsafety/testing/RhCE-Test-Method-for-Identifying-Chemicals-Not-Requiring%20Classification-Labelling-for-Eye-Irritation-Draft-New-TG-2014-07-25.pdf>

Draft TG: Short Time Exposure *in vitro* Test Method for Identifying i) Chemicals Inducing Serious Eye Damage and ii) Chemicals Not Requiring Classification for Eye Irritation or Serious Eye Damage

<http://www.oecd.org/chemicalsafety/testing/Draft-Test-Guideline-Short-time-Exposure-Test-Method-Review-Comments-June-2014.pdf>

Revised TG 437 (26 Jul 2013): Bovine Corneal Opacity and Permeability Test Method for Identifying i) Chemicals Inducing Serious Eye Damage and ii) Chemicals Not Requiring Classification for Eye Irritation or Serious Eye Damage

http://www.oecd-ilibrary.org/environment/test-no-437-bovine-corneal-opacity-and-permeability-test-method-for-identifying-i-chemicals-inducing-serious-eye-damage-and-ii-chemicals-not-requiring-classification-for-eye-irritation-or-serious-eye-damage_9789264203846-en

Revised TG 438 (26 Jul 2013): Isolated Chicken Eye Test Method for Identifying i) Chemicals Inducing Serious Eye Damage and ii) Chemicals Not Requiring Classification for Eye Irritation or Serious Eye Damage

http://www.oecd-ilibrary.org/environment/test-no-438-isolated-chicken-eye-test-method-for-identifying-i-chemicals-inducing-serious-eye-damage-and-ii-chemicals-not-requiring-classification-for-eye-irritation-or-serious-eye-damage_9789264203860-en

Call for Nominations of Executive Committee Officers

Nominations for new Executive Committee Officers are now being accepted for 2015:

VICE PRESIDENT-ELECT - Elected annually and serves for four years (one year terms as Vice President Elect, Vice President, President and Past President),

COUNCILOR - One councilor is elected annually and will serve a term of two years,

VICE-STUDENT REPRESENTATIVE - Elected annually and serves for two years (one year as Vice Student Representative and one year as Student Representative),

POSTDOC/FELLOW REPRESENTATIVE - Elected annually and serve for a one year term.

All candidates must be members of IVAM and candidates for the VP-Elect and Councilor positions must be full or associate members of SOT.

Support your IVAM by nominating a colleague whom you think may be able to serve our needs and goals as an officer of the IVAM SS or nominate yourself. Nominations will be collected and a ballot will be sent to IVAM members. Newly elected officers will be announced at the annual IVAM luncheon meeting Wednesday March 25, 2015 at the SOT 54th Annual Meeting and Tox Expo in San Diego, California, and will take office on May 1, 2015.

Please send your nominations by December 18, 2014 as a BioSketch to **Hans Raabe, Chair, Nomination Committee** at hraabe@iivs.org

SAMPLE BIOSKETCH (180 words or less - subject to editing if longer)

This is a guideline for your bio - revise at your discretion.

[Name, including degrees and affiliations]

Dr. [Name] is a [Current position] at [Place of employment]. S/He received her/his doctorate in [Field] from [University] in [Year] and was a postdoctoral fellow at [Institution] from [Years, i.e. 1983-1986]. S/He studied [Major area of study]. In [Year], Dr. [Name] joined the [Workplace/organization] where her/his research interests continued in [Area of research interests]. S/He has served on the [Study sections, Panels, etc.] at the [Organization, i.e. NIH, EPA, etc.]. Dr. [Name] is author/co-author of [Number] [Publications including peer-reviewed articles and/or book chapters, etc.] and is currently on the [Committee] of [Organization or other enterprise]. S/He has been a member of the SOT since [Year] and has served the SOT in the following capacities: [Offices/positions held].

Students just modify accordingly as to your experience and plans to receive a doctorate.

Calling All Students!

Students are essential to the maintenance and growth of the IVAM SS. Many student members of SOT do not realize that their SOT membership entitles them to a free specialty section membership. The Executive Committee encourages students to join IVAM and participate as an officer and/or submission of an abstract for the Student/Postdoc Awards. The students of today will be tomorrow's leaders of toxicology organizations and laboratories. We hope that students by participating in IVAM will form a lasting bond with our organization as has been the case for many of the leaders of IVAM.



Be a Part of Your IVAM - Call for Committee Members

In the past, IVAM has primarily functioned through the efforts of the Executive Committee. The current Executive Committee would like to encourage greater participation from the membership at large. Members are being asked to serve IVAM SS by considering participation on one or more of following committees:

Nominations Committee: Hans Raabe, Chair

Obtains Nominations for Executive Committee Officers and Submits Nominations to SOT for a ballot.

Program Committee: Jack Fowle, Chair

Solicits proposals for symposium, CE courses and workshops for the Annual Meeting, sets up mechanism to review proposals for sponsorship and endorsement of IVAM and considers new ideas for additional programs outside of the SOT Annual meeting.

Awards Committee: Amy Clippinger, Chair

Solicits applications for the IVAM SS Student Award, set up mechanism to review the abstracts, assists MB in review of applicants for the MB Award, and considers new ideas and sources of funding for additional future awards.

Communications Committee: Haitian Lu, Chair

Ensures that the website is current, assists the secretary-treasurer with communication to IVAM SS, SOT and other organizations, assists members with ToXchange and prepares and issues the IVAM SS Newsletter.

Membership Committee: Suzie Fitzpatrick, Chair

Prepare membership statistics for the secretary/treasurer to include in the annual report and elsewhere, monitors membership levels and encourages all interested toxicologists, including student and postdoctoral scientists to join IVAM SS and to renew membership.

Membership Statistics (as of November 2014)

By Abigail Jacobs, IVAM Secretary / Treasurer

Year	Full	Associate	Student / Post Doc	Total
2014	293	71	48 / 35	447
2013	255	52	37 / 22	366
2012	247	40	35 / 18	340
2011	216	42	20 / 14	291
2010	196	43	37 / 2	247
2009	149	38	32 / 6	225
2008	125	30	21 / 2	180
2007	107	26	24	157
2006	90	22	16	128
2005	100	25	21	146

As of November 2014, IVAM has a total of 447 members, which is up from 366 members (August 2013). More toxicologists are discovering the uses of *in vitro* methods to quickly and cost-effectively evaluate the potential benefits of the newly developed technologies. Each member can actively participate in the growth of the IVAM by increasing awareness of the mission and objectives of the IVAM SS to colleagues and students. In particular, jointly, we can concentrate our efforts toward recruiting student and post-doctoral representation, both of which represent the future of *in vitro* methods.

Colgate-Palmolive Award for Student Research Training in Alternative Methods

The purpose of the Colgate-Palmolive Award for Student Research Training in Alternative Methods is to enhance graduate student research training using *in vitro* methods or alternative techniques to reduce, replace or refine use of animals in toxicological research.

The training may include, but is not limited to, use of *in vitro* and *ex vivo* procedures, non-mammalian animal models, computer modeling, and structure-activity relationships. Graduate students may propose to develop expertise in relevant methodologies 1) at a laboratory away from their home institution, 2) at a laboratory at their home institution that would not be available to them otherwise, or 3) at approved workshops, symposia or continuing education programs where hands-on training will be received.

The training should help toxicology graduate students enhance their thesis or dissertation research. The overall goal is to support the replacement, reduction, or refinement of currently used animal models in toxicology research and testing. The proposal will include a budget of up to \$3,750 to defray travel, per diem, training expenses, and research costs.

Follow link to review criteria and apply: [Colgate-Palmolive Student Research Award](#)

Important Dates to Remember

EVENT	DEADLINE
SOT "Late-Breaking" Abstract Submission	Dec 5, 2014 to Jan 12, 2015
SOT Awards and Sponsored Awards Applications	Oct 9, 2014
SOT Membership Renewal	Dec 15, 2014
IVAM SS Executive Officer Nominations to SOT	Dec 31, 2014
MB Research Award Applications	Jan 1, 2015
IVAM SS Student Awards Applications	Jan 23, 2015
SOT Annual Meeting Early Bird Registration	Jan 31, 2015
SOT Annual Meeting Standard Registration	Feb 28, 2015
SOT Annual Meeting in San Diego, California	Mar 22-26, 2015
IVAM Lunch Reception & Business Meeting at SOT Annual Meeting	Mar 23, 2015
Symposium, CE Course and Workshop Proposal Submission to SOT	Apr 30, 2015

(President's Message, *continued from page 1*)

As we look back at our collective past history, we can certainly say we have come a long way in bringing *in vitro* methods into the mainstream; but perhaps what is most striking to me is that this past year I feel there has been such a notable and refreshing change in the perception of what *in vitro*, *ex vivo*, and *in silico* methods present. Specifically, it appears to me that *in vitro* test methods using highly functional relevant human cell-based models are now being perceived by a growing community as the relevant methods of choice for predicting biological events in humans, and that an appropriate suite of these *in vitro* tools will more likely provide us insight into these human biological events than animal-based systems. This change in perception is certainly exciting, but we must always be vigilant to determine the relevance of any models we propose to predict human biological events so that we don't over-interpret the data obtained from these models. Perhaps this is one of the key lessons we have come to understand as we have sought to replace one model system with another. To this end I thank you, the members of the In Vitro and Alternative Methods specialty section, for your diligent efforts to make these changes possible!

Lastly, as I close this missive, I wonder if indeed we begin to reconsider what the term "alternatives" should represent. From my personal perspective, I rarely consider *in vitro* tools to be alternatives to animal testing, but rather, I propose these tools to simply be the models of choice to elucidate the human events under investigation. As we have greatly improved the technologies behind the *in vitro* and *in silico* models and have expanded our understanding of these models, we have in many cases found evidence that many of the human-cell based methods were perhaps the only reasonable approach to predicting a human biological outcome. It thus seems rather odd to me to relegate these technologies to "alternative" model status, as if the animal model was the standard. Just a thought!

Looking forward to seeing all of you in San Diego, yours, Hans Raabe