People • Science • Regulation

PDA Letter

Volume XLVII • Issue #6 www.pda.org/pdaletter June 2011

Implementing Regulatory Intelligence — An Organizational Program Management Approach

26

The Parenteral Drug Association presents the...

PDA Single Use Systems Workshop

June 22-23, 2011

Hyatt Regency Bethesda | Bethesda, Maryland

Single-use (disposable) technology is a proven alternative solution for the biopharmaceutical industry offering several significant advantages over standard reusable stainless steel systems by reducing cross contamination risk, cleaning and associated cleaning validation, capital investment, lead times and the number of connections to enhance sterility assurance.

If you can attend only one conference this year, PDA's Single Use Systems Workshop is clearly the meeting to be at. And here's why:

- This workshop will be structured around the New Draft PDA Technical Report Document on SUS. The Technical Report will be unique among the competing organizations hosting conferences on SUS showcasing the concepts and themes in the report.
- The SUS Taskforce was strategically designed as a partnership between end users, suppliers, industry enablers (BPSA, engineering companies) and regulators. This unique mix of skills and expertise will showcase a balanced, well vetted, consensus viewpoint that will ensure the educational value of the conference.
- PDA is in a position to enable the conference attendees to have a dialog with the FDA and this is often not possible at other SUS conferences.
- The PDA Taskforce's close relationship with Bio-process Systems Alliance (BPSA) and SUS suppliers offers PDA a unique opportunity to host a Hands-On Technology showcase at the conference. This would be more than the typical conference vendor room. At PDA's Technology Showcase participants will see hands on technology demonstrations for key SUS technologies; bioreactors, connectors, mixing, etc. These showcases will be unique where specific technologies are grouped and suppliers work together to present their technology, not products.

www.pda.org/Singleuse2011

Photos courtesy of Sartorius Stedim Biotech

PDA
Parenteral Drug Association

Save the date for the

2012 PDA ANNUAL MEETING

JW MARRIOTT DESERT RIDGE RESORT • PHOENIX, ARIZONA

April 16-20, 2012

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We look forward to seeing you in 2012!

CONFERENCE APRIL 16-18 | **EXHIBITION** APRIL 16-17 | **COURSES** APRIL 19-20

PDA Letter

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Cover

Cover Art Illustrated by Katja Yount

Departments

News & Notes

People

Science

Regulation

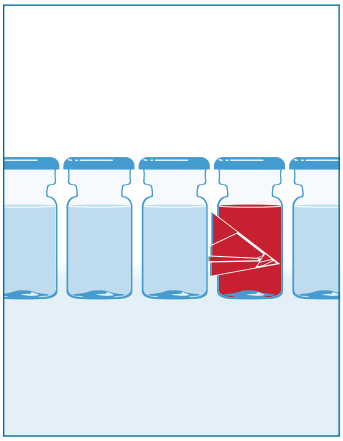
Programs & Meetings — North America

Programs & Meetings — Europe

TRI — Education

Contents

Features



PDA Forms Gene and Cell-Based Therapies Task Force

The PDA Biotechnology Advisory Board has accepted the charter for a new task force on Advanced Therapy Medicinal Products, called the Gene and Cell-Based Therapies Task Force.

Gene and Cell-Based Therapies (GCBTs) concern the manipulation of genes and cells as pharmaceutical products. Increasing scientific knowledge in the fields of genetics and cell biology has led to the rapid development of new innovative therapies, especially for diseases and tissue and organ defects for which traditional therapies and medicinal products are not satisfactory or available. Gene and Cell-Therapy products (known as Advanced Therapy Medicinal Products, ATMPs, in Europe) represent a change of paradigm for 21st century healthcare. They are not only intended to treat diseases through metabolic, immunological and pharmacological action, but may be also designed for repair, regeneration and replacement of missing or damaged tissues.

Skin replacement products and articular chondrocytes for cartilage repair have already been in use for a decade, while the development of many new cell–based therapies (e.g., stem cell-based products) is hampered by particular risks, limitations and challenges related to the characteristics of these cells. The first, and thus far, only licensed ATMP product in the EU is ChondroCelect, used for cartilage repair.

Gene therapy has more recently seen many interesting successes and has overcome many of the concerns regards safety and efficiencyof gene transfer. Today there have been successful trials for Parkinsons Disease and heart failure, and treatments for Retinitis Pigmentosa and Dry Age-related Macular Degeneration, to name just a few.

Upcoming challenges will be to further optimize delivery systems to find the best solution on a case-by-case basis. For example, what is the best approach for gene therapy for muscular dystrophy? Vector choice, injection of the vector by IM or diffusion? Technical solutions to these issues are now being implemented.

Developers of ATMP products are currently struggling with similar problems just as biotech product developers did twenty years ago. Though the new European regulatory framework (Reg. 1394/2007/EC, Dir.2009/120/EC and EMA guidelines) has been established and the U.S. FDA has published a new guidance *(Potency Tests for Cellular and Gene-Therapy Products)*, both developers and regulators are still lacking experience of drug development in this particular field. But, it should be noted that quality development and non-clinical and clinical studies for ATMPs may not be as straight forward as they might be for other pharmaceuticals. It is clear however that expertise and information sharing is needed between all stakeholders in order to ensure a positive outcome for new ATMP products under clinical development.

What is the interest in GCBTs for PDA? These types of pharmaceutical products have a strong science base, but will require careful nurturing, with good interactions between producers and regulators. PDA is very well-placed to encourage the kind of environment which will bring all these components together in the forum of a task force allowing stakeholders to focus on the work plan.

Formation of the Gene and Cell-Based Therapies Task Force comes at the same time PDA is teaming up with the Finnish Medicines Agency (FIMEA) to co-sponsor a workshop on gene and cell-based therapies in Helsinki, Finland in June.

This meeting will serve as the official launching point of the task force's activities. Potential Focus Areas for the task force are:

- Raw materials
- Manufacturing technology, facility requirements, transport and GMPs
- Safety and Quality
- Harmonization (glossary, technical methods and regulations)

Stephen Brown, PhD, Vivalis will chair the task force, which will be organized according to PDA policies and procedures. Members will be solicited and representative of all parts of the Gene and Cell-Based Therapies field, from the basic science (e.g., virology, cell culture, analytical technologies) through to manufacturing; clinical investigators and regulators. There should be an appropriate distribution of members from the innovators, enablers (technologies) and regulatory areas.

Want to join the Gene and Cell-Based Therapies Task Force?

To join the Gene and Cell-Based Therapies Task Force, send a CV, resume or biographical sketch outlining your experience with Gene and Cell-Based Therapies Task Force to **Iris Rice,** rice@pda.org. Iris can be reached at (+1) 301-656-5900, ext. 129 to answer questions. **Stephen Brown,** the task force chair, can be contacted via email at stephenbrown@vivalis.com.

GET AHEAD THE HARD WAY

If you're looking for a continuing education shortcut, you'll have to look somewhere else.

RAPS Online University is the gold standard in continuing education for healthcare products regulatory professionals, but you're going to have to work at it. In fact, RAPS Online University is everything you want in online continuing education. Except easy.

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Neo-Luddite Learns to Embrace Technology

Emily Hough, PDA

I am often teased in the office as being a neo-luddite. It is not that I don't like smart phones and all the other modern IT gizmos; it is that I like the feel of paper and prefer old-fashioned manila folder filing systems. However, that view can be limiting. Paper has its uses, but computerized systems have the ability to lighten workloads and automate processes.

When I heard about the Best Practices in QC Microbiology Process Automation on March 30 with the Capital Area Chapter, I was eager to broaden my horizons and learn more about how a computerized system could be implemented within a QC department and how it could help out with their workload.

Lonza's **Bob Toal** and **Jeremy Tanner** teamed up to discuss the implementation and current status of one such system at the firm's Walkersville plant.

Bob explained that this new paperless system eliminated many challenges facing the QC department resulting directly from the nature of a paper system. Because the QC department receives a lot of information from many sources in different formats, paper records made timely trending very difficult, which affected the department's ability to make good decisions.

The paper system also required the implementation of redundant manual, error-prone steps, Bob said. For example, when a microbiologist needs to take samples in the cleanroom, in many cases they print their paper schedule, autoclave it and then take it into the critical area. It is common practice, Bob explained, to notate what samples were taken on media plates. When the microbiologist is done sampling, they return to the laboratory and must manually reconcile the records. If required documents weren't collected, a deviation would result, requiring even more paperwork.

With all this to consider, Lonza decided to try wireless computer terminals built for cleanrooms that would allow for automated data entry. The software, from MODA™, allows operators to track what they are doing in real time. A key feature is "system guidance," which prevents operators to move on to the next task or record unless all fields are filled out on the current screen.

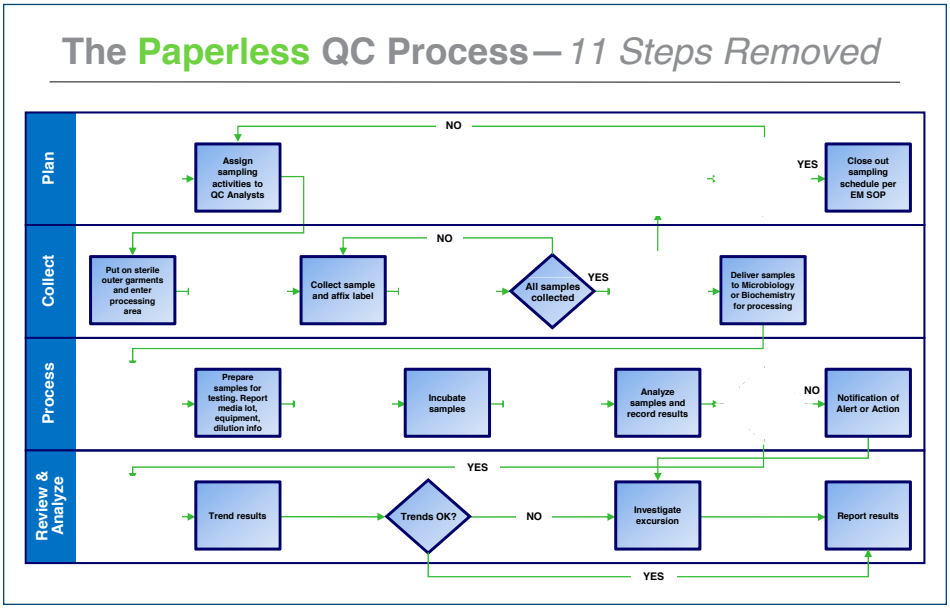
The Walkersville Lonza plant also installed a tablet PC on their sampling cart. It does not have a cooling fan in it, thus, eliminating the possibility of particulates blowing in the air. It is also able to be cleaned with standard sporicides and IPA and can be used in a class 1000 or grade A cleanroom.

The tablet PCs include a barcode reader and barcode scanners to allow scanning/reading at the sampling site. The PCs were set up to allow printing, so barcodes could be printed and placed on the plate immediately at the point of sample.

In his final analysis, Bob said that the firm concluded that implementation of the system would result in a four-hour savings per shift, because manual reconciliation and deviations no longer take place because of missed tests.

Jeremy spoke about the positive benefits of the program citing that the paperless route enabled the Walkersville Lonza location to get rid of paperwork and redundant processes. This in turn freed up the QC department from labor intensive tasks so they could focus on more science-based tasks. It also eliminated many paper errors that were occurring from people performing computer-to-paper tasks. He made it a point to mention that with the computerized system, past information can be looked up with a click of a button rather than searching for a paper record residing in a location that is not easily accessible. So much for my manila folders!

While the paperless system affects the overall process of how QC does their job, the new system must stand up to the electronic records regulations posed by the U.S. FDA. The system must have the ability to show how it handles the retrieval of data, the storage of data, and there must be an audit trail associated with this so it shows when records are changed, what was



Example of how QC sampling can be streamlined through the use of a paperless system, taken from Bob Toal's slides

Top 10 Reasons for Automated Systems

1. Workflow driven per your SOPs identifies what equipment and media to use for that step. Workflow must be configurable so the software can be adapted to your processes.
2. Entirely paperless operation. If you are still on paper for all the steps leading up to getting into the laboratory, you are still open to errors with reconciliation and not as efficient as you can be.
3. 21 CFR Part 11 compliant
4. Support full spectrum of test methods (EM, Utility, and Product)
5. Support disconnected sample collection anywhere in facility—the key requirement in cleanroom areas where continuous wireless connection is not reliable.
6. Device integration in with commonly use equipment in the clean room and laboratory such as air particle counters and water testing devices.
7. Comprehensive reporting with trend analysis. After the data is in the system, what can you do with it? To be able to do those reports showing activity, even low level activity starting to trend in the wrong direction is a big advantage.
8. Visualization. This is a way to show data and spot small problems before they become big problems.
9. Automatic notification for out-of-spec events such as alerts, actions, missed samples.
10. Ability to gracefully handle process exceptions (dropped plates, etc.).

changed, who changed it and why. All of this needs to be matched with electronic signatures to meet the regulations.

There are some challenges with any new system: implementation, learning curves and ability to build the regulation expectations into the system. However, the benefits of the system seem to outweigh the trials a plant goes through when implementing the system.

The presentations opened my eyes about the problems the current redundant paper-based poses to a firm. The current system allows for a greater number of errors and delays. And I understand why anyone would want to upgrade to a computerized system. Maybe I'll be a technophile yet!

PDA Who's Who

Bob Toal, Segment Manager-Informatics, Lonza

Jeremy Tanner, Project Strategist, Informatics, Lonza

2010 Honor Awards Recipients

The PDA Honor Awards are bestowed on members who provide exceptional leadership and service to the Association, and have been awarded at the Annual Meeting since 1958. The 2010 award winners were announced at the *2011 Annual Meeting* in April, and they will be highlighted in each *PDA Letter* until next year's event. We start with the Honorary Membership award.

Honorary Membership

This is PDA's most prestigious award, conferring lifetime membership benefits to the recipient. The award is usually given in recognition of very long service, of a very significant nature, to PDA. The award requires unanimous approval of the PDA Board of Directors and honorary members are not eligible for other awards in the same year.

Nikki Mehringer

A mentor and advisor to board and staff members, Nikki Mehringer has received the honorary membership award for her long-time support of PDA through her time on the Board of Directors and for her tremendous contributions to PDA.

When she was Chair in 2005, Nikki took charge and helped the board make a timely decision in regards to PDA's leadership and initiated the search for a new President. Those close to the matter salute her maturity, objectivity and professionalism and recognize that she managed to bridge the differences and find a viable solution for the organization.

Called "influential," "thoughtful" and a "great leader," she has also been credited with engaging with colleagues at a grassroots level with such topics as visual inspections, quality assurance and quality control.

The Parenteral Drug Association presents...

2011 PDA Visual Inspection Forum & TRI Course

October 3-6, 2011 | Hyatt Regency Bethesda | Bethesda, Maryland

Visual inspection continues to be an important element of the manufacturing process and the quality assurance of injectable products. PDA's *2011 PDA Visual Inspection Forum & TRI Course* will closely examine the latest developments, preparation and use of inspection standards and practical aspects of manual and automated methods along with the regulatory and compendial requirements that govern them.

During the conference, PDA will host an exhibition of leading bio/pharmaceutical companies who will showcase new technologies and trends.

PDA's Training and Research Institute (PDA TRI) will also host the course *An Introduction to Visual Inspection* immediately following the conference on October 5-6.

CONFERENCE October 3-4
EXHIBITION October 3-4
COURSES October 5-6

For details and to register, visit www.pda.org/visual2011

ADVANCED NOTIFICATION
Sign up to receive an email notice when more information is available about this event!
www.pda.org/visualnotice

Volunteer

www.pda.org/spotlight

Keith Bader, Principal Engineer, Hyde Engineering & Consulting

PDA Join Date: 2007

Interesting fact about yourself: Professionally, I am very involved with the science and technology of post-production cleaning processes. My focus for the past few years has been on conducting bench-scale simulations of the cleaning process as well as the use of process analytical technologies for automated cleaning processes.

Why did you join PDA? After attending the annual meeting in 2007, I found PDA to be an extremely science-based organization that provides useful information and research to its membership with the goals of furthering industry. In learning about the organization, I found PDA's goals to be very much in tune with my own inclinations, so it seemed a very natural fit.

Of your PDA volunteer experiences, which have you enjoyed the most? Since 2007, I have worked with several recognized industry experts on the development of a soon to be released technical report addressing steam sterilization of fixed equipment. I have enjoyed the development process and learning the process by which such a document is vetted through the organization to become a technical report. I have also been involved with the Mountain States Chapter as the designee for the maintenance of the local website and in communication with the regional membership. This also has been very enjoyable as I have met very dynamic and interesting people in my area. I think that both the national and the local experiences have been very beneficial, and I am grateful that the PDA has provided these opportunities to me.

How has volunteering in PDA benefited you professionally? The professional contacts I have met through PDA are invaluable when I encounter technical issues in the course of my job for various clients.

Which PDA conference/training course is your favorite? The PDA/FDA Joint Regulatory Conferences and PDA's Annual Meetings are valuable conferences. I always come away from the conferences with valuable information and contacts.

What would you say to somebody considering PDA membership? I would definitely recommend membership as the people, resources and educational opportunities available to the membership can definitely be an asset to motivated professionals.

PDA Southern California Chapter Hosts Inaugural Cruise

Hassana Howe, PDA

On April 28, PDA's Southern California Chapter hosted an inaugural industry summit cruise off the Newport coast in California. The event featured two technical seminars, industry exhibitors and a fabulous networking opportunity with exhibitors and industry colleagues. The topics of the technical seminars included "Perspectives on Dr. Hamburg's 1st 500 days as FDA Commissioner" presented by **Ronald F. Tetzlaff,** PhD, Corporate Vice President, Parexcel Consulting, and "Strategic Planning and Facility Development," presented by **Marcus Webb,** Executive Director, Strategic Planning & Project Management, Advanced BioHealing. The topics were chosen by PDA Southern California Chapter board based on feedback from its members.

The PDA Southern California Chapter is planning to hold this event annually in an effort to build a new form of relationship between the service providers and users. "There is so much more we can accomplish for our companies and for our industry if we manage to close some of the existing gaps in a systematic way. In this case, it was closing the gap of knowledge related to the available resources to help us make better decisions" said **Saeed Tafreshi,** President, Senior Management Consulting/Regulatory Compliance, Intelitec, on behalf of the program committee for this event.

The success of these events can be attributed to the chapter officers, speakers and PDA staff members involved.

If you are a Southern California chapter member and you missed the event, please contact the chapter to learn more about upcoming events, benefits and resources available to you. For more information on the chapter please visit www.pda.org/MainMenuCategory/Chapters/Southern-California.aspx.

PDA would like to give special thanks to the following members of the PDA Southern California Chapter:

President **Saeed Tafreshi,** President, Senior Management Consulting/Regulatory Compliance Intelitec

Membership Chair **John Holmgren,** Manager, Quality Systems/Validation, Pharmaceutical Sciences Allergan

Program Director **Brian Underhill,** General Manager/Principal, BioSPEQ

Treasurer **Bill Nichols**

Website Volunteer **Ruchika Raval,** President, Regulatory, Global Biopharmaceutical Regulations

Program Planning Volunteer **Randy George,** Business Development, Sales, Kyoto America

Program Planning Volunteer **Bonnie Ward,** President and CEO, Quality Compliance Partners

Program Planning Volunteer **Tony Steinberg,** Director of Validation, Validation, Quality Compliance Partners

Program Support Volunteer **Mujtaba Ali,** Director, Quality, Genentech

The success of these events can be attributed to the chapter officers, speakers and PDA staff members involved

Attendees included more than 100 of our local industry senior management, compliance managers, quality assurance personnel, validation specialists, engineers and independent consultants. Special thanks to the 23 exhibitors that supported the show including:

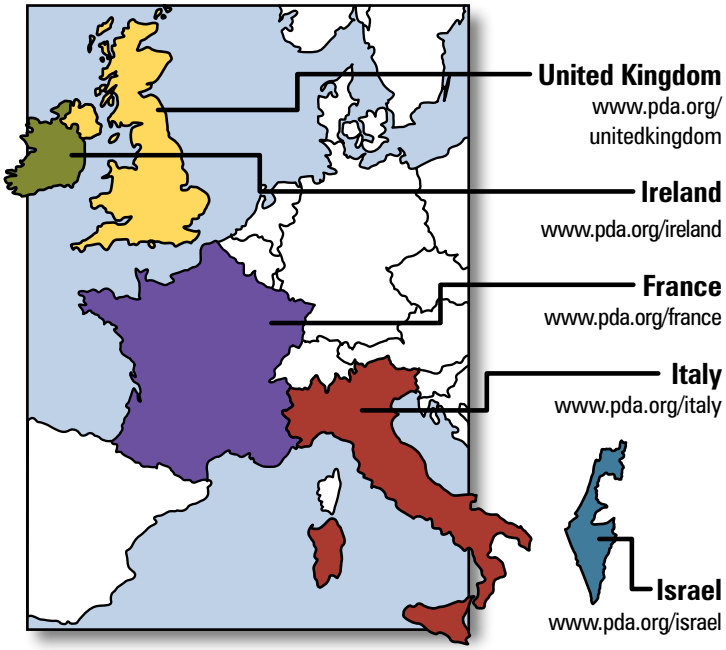
Accugenix, Bausch& Stroebel, BD Industrial Microbiology, Bioscreen Testing Services, BioVigilant Systems, Commissioning Agents, Crossfield Products, DBA-NSF, Doe & Ingalls, Ellab, GxP Manager, Hach, Hovione, Kinetic Systems, Kyoto America, Lonza, Micronova, Particle Measuring Systems, Parenteral Drug Association, SQA Services, Technical Safety Services, Walker Barrier Systems, R2A Architecture

Members of PDA's Southern California Chapter enjoy a cruise off the Calif. Newport Coast

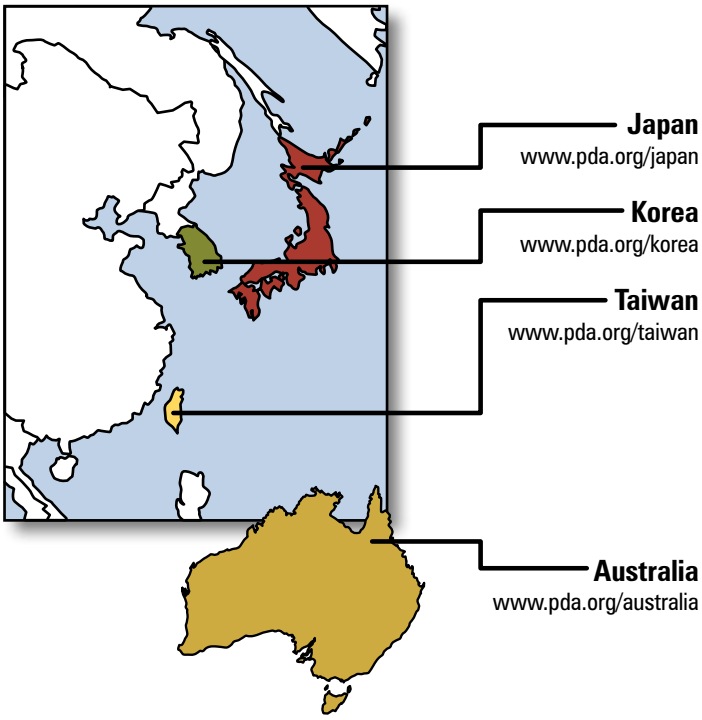
Chapter Contacts

The following are PDA's Chapters, organized by the regions of the world in which they are located. For more information on the Chapters, including their leaders and upcoming events, go to their websites which are listed below.

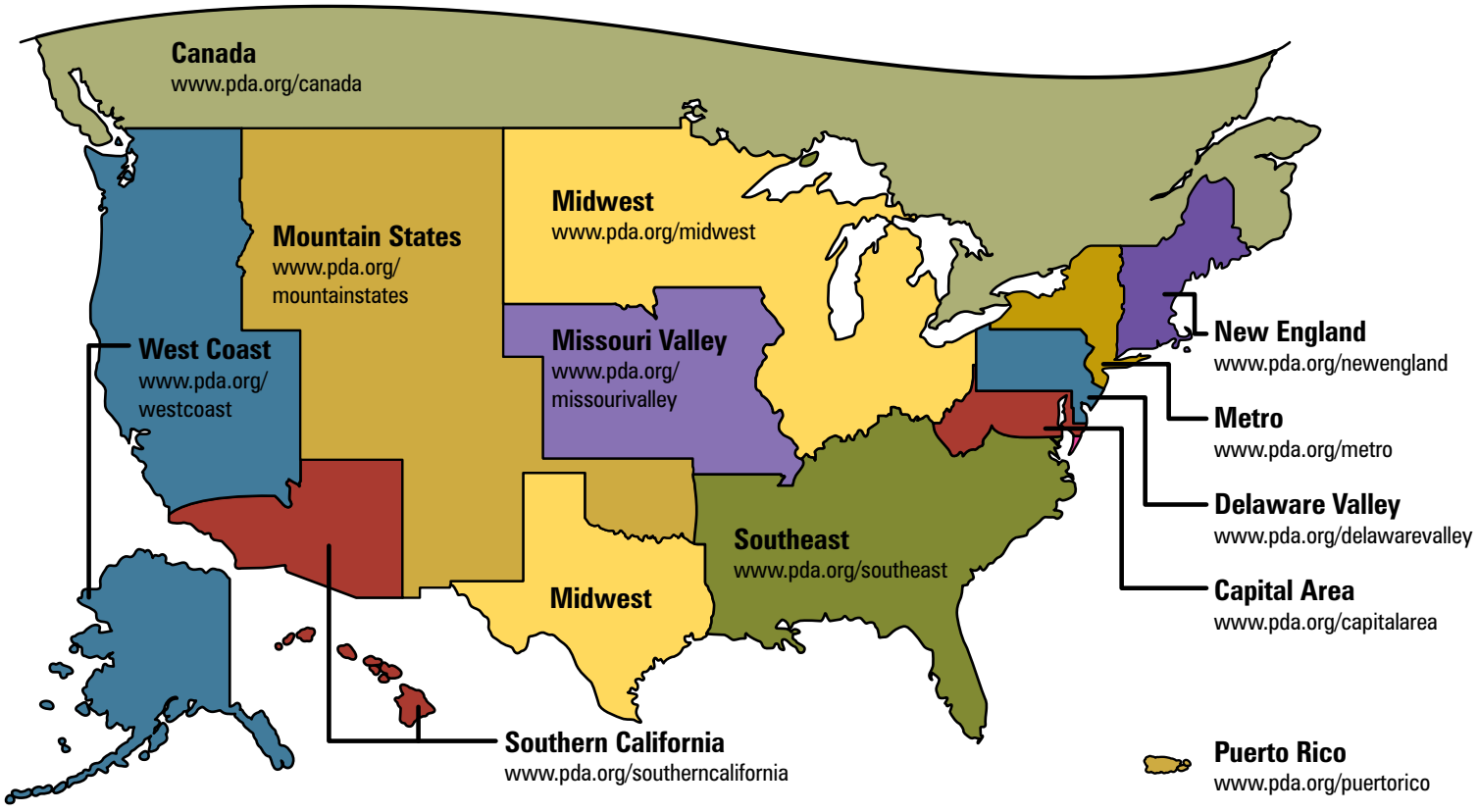
EUROPE



ASIA-PACIFIC



NORTH AMERICA



Faces and Places: 2011 Annual Meeting

Welcome and Opening Plenary Session

(l-r) Maik Jornitz, Sartorius Stedim; Chris Smalley, Merck; M. Lynn Crismon, University of Texas; Janet Walkow, University of Texas; Anders Vinther, Genetech

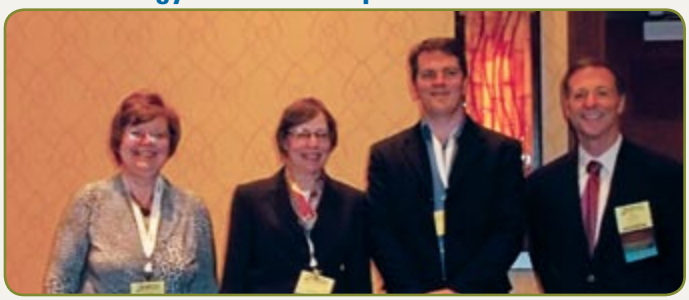
Manufacturing/Process Science: Advances in Single-Use-Systems

(l-r) Georg Roessling, PDA; Pierre Combroux, Bioluz; Jean-Marc Cappia, Sartorius Stedim

Plenary Session 2

(l-r) Chris Smalley, Merck; Thomas Peither,Halfmann Goetsch Peither; Stephan Rönninger, F. Hoffmann-La Roche

Biotechnology Interest Group



(l-r) Jeanne Moldenhauer, Excellent Pharma Consulting; Patricia Hughes, U.S. FDA; Tony Hurley, Genentech; Vince Anicetti, Genentech

The Fundamentals Track

(l-r) Marsha Hardiman, Dendreon; Patricia Gupta, Janssen Supply Chain; Bob Dana, PDA

The Fundamentals Track drew larger than expected audiences

Closing Plenary Session

(l-r) Colonel David Bobb, Wilford Hall Medical Center; Richard Johnson, PDA; Marsha Hardiman, Dendreon; Maik Jornitz, Sartorius Stedim; Tara Gooen, U.S. FDA; Chris Smalley, Merck

Fun & Networking

Book Signings

2011 Chapter Council Meeting Attendees

(l-r); Trevor Swan, PDA; Shelley Preslar, ProPharma Group; Sarvang Mishra, Biogen Idec; Michele Creech, Talecris; Melissa Seymour, Biogen Idec; Suzanne Mecalo, Commissioning Agents; Robert Johnson; Lara Soltis, Texwipe; Peter Noverini, BioVigilant Systems; Hassana Howe, PDA; Art Vellutato, Jr., Veltek Associates; Ano Xidias, PharmOut; José Cotto, Amgen; Jeff Hargroves, ProPharma Group; John Holmgren, Allergan

Faces and Places: 2011 Annual Meeting

Raffle Winners

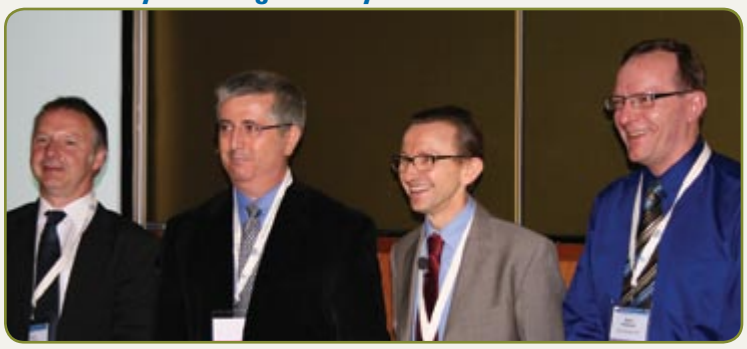
5th Annual Walk/Run & Golf Tournament

Faces and Places: 2011 PDA/EMA

Tuesday Morning Plenary

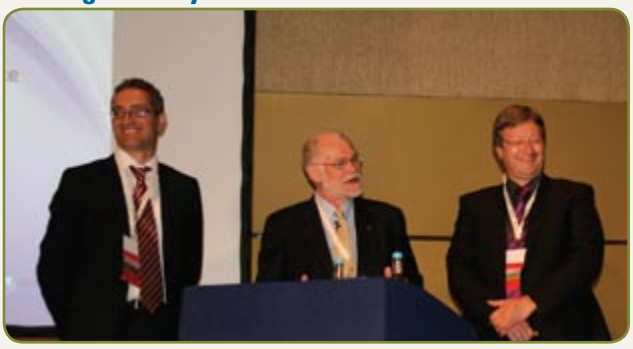
(l-r) Thomas Lönngren, EMA; Emer Cooke, EMA; John-Edward Butler-Ransohoff, Bayer Innovation; Katrin Nodop, EMA; Frank Hallinan, Pfizer; Riccardo Luigetti, EMA

Wednesday Morning Plenary



(l-r) David Cockburn, EMA; Jacques Morénas, AFSSAPS; Jean-Hugues Trouvin, AFSSAPS; Søren Pedersen, NovoNordisk

Closing Plenary



(l-r) Riccardo Luigetti, EMA; Georg Roessling, PDA; Lothar Hartmann, F. Hoffmann-La Roche

Fun & Networking

Please Welcome the Following Industry

Richard Abbott, Becton Dickinson
Stephan Affolter, Ypsomed
Shibata Akio, Hitachi
Hazel Aranha, Catalent
Brent Arbogast, Critical Process Filtration
Susan Ashley, Merck
Jeffrey Barrett, PDA New England Chapter
Rupak Barua, Pfizer
Barbara Bassi, Chiesi Farmaceutici
Martin Baur, Rentschler Biotechnologie
Karoline
Bechtold-Peters
F. Hoffmann- La Roche
Pilar Berlanga-Munoz, Industrias Farmaceuticas Almirall
Joseph Berry, Regeneron Pharmaceutials
Joseph Bifulco, Amgen
Robert Bird, PALL Life Sciences
Mark Blanchard, Millipore
Nurit Blum, Teva
Justin Bourret, Genentech
Robert Boyd, West Pharmaceuticals
Milton Boyer, Oso BioPharmaceuticals
Kevin Breesch, Toxikon
Stephan Brehin, Novartis
Leo Brenman, Bio-Technology General
Helen Broadbent, Covance
Kimberly Brooks, ImClone Systems
John Brown
Chris Bunting, Kinetics
Denis Buzin, GlaxoSmithKline
R. Michael Cain, Tompkins Pharmaceutical
William Campagna, Eli Lilly
Hiep Chau, Genentech
Darryl Cheung, Janssen Biologics
Sarah Ciez, Merck
Mark Coffin, GlaxoSmithKline
Peter Cornelis, Toxikon
Daniela Cutaia, Bracco Imaging
Christian Czerwonka, Abbott
Tommy Davis, West Pharmaceuticals
Scott DeAeth, Genzyme
Valeria Delia, Merck
Gratien Denglos, GlaxoSmithKline
Alain Denis, Sanofi Pasteur
Kevin Derbin, Amcor
Mukesh Desai, Allergan
Andrew Dibble, Isis Pharmaceuticals
Kenneth Dick, Alexza Pharmaceuticals
Kyle Diffenderfer, Merck
Enfeng Ding, Yantai Beifang Pharm
Andreas Dorn, Millipore
Joachim Dudzik, Etifix
David Dugan, DRD Consulting
Csilla-Monika Eszes, GlaxoSmithKline
Theodore Evans, Newry
Ann Fairchild, Dendreon
Alexander Fedotov, Invar
Simone Ferguson, Esbatech
Sinead Flanagan, Bioniche Pharma
Tamara Fletcher, Genentech
Irving Ford, Johnson & Johnson
Jessica Frantz, Bosch Packaging Technology
Blair Fraser, Biologics Consulting
Yasushi Fujioka, Chugai
Nobuharu Fukui, Nippon Kayaku
Silke Gladigau, Merck
Ross Gold, Vanrx Pharmasystems
Shouichi Goto, Hitachi
Michael Gravink, Bayer HealthCare
Tracy Guldan, Novartis
Stefan Hagen, Syntese
Dana Hansen, Bayer Healthcare
Yasuo Haramiishi, CMIC CMO
Martin Hartmann, Vifor
Una Hearty, Pfizer
Walter Henkels, Valsource
Bjoern Henze, West Pharmaceuticals
Richard Herbkersman, Northpoint
Stephanie Herman, Novartis
Hajime Hikata, Nippon Electric Glass Co.,Ltd
Anita Hissem, Optimer Pharmaceuticals
Bodo Holtkamp, Biotest
Carl Huffman, Food and Drug Administration
Gregory Hunter, Food and Drug Administration
Victoria Hutchinson, Bristol-Myers Squibb
Katleen Huyghebaert, Cilag
Kathleen Idason, Cephalon
Kazuya Inagaki, Otsuka Pharmaceutical
Sayaka Ito, Ostuka Pharmaceutical
Florian Jesacher, Sandoz
Kristine Johnson, St. Jude Medical
Colleen Juliano, Nephron Pharmaceuticals
Aziz Kaderbhai, Amcor Specialty Packaging
Shintaro Kamei, Kaketsuken
Daisuke Katsura, Ono Pharmaceutical
Charles Katzer, Auxilium Pharmaceutical
Hiroto Kawada, Ono Pharmaceutical
Siobhan Keane, Vistakon
Andrew Kelly, Parker Domnick Hunter
Kenneth Kim, APP Pharmaceuticals
YoungSik Kim, Celltrion
Anita Kiprovska, United Therapeutics
Hideyuki Kishimoto, Astellas Pharma Tech
Elisabeth Klingsbichel, Fresenius Kabi
Diana Knittel-Pace, Outsource
Kanae Kobarai, Terumo Corporation
Koichi Kobayashi, Astellas Pharma Tech
Zita Kocsis, Teva
Takeshi Kojima, JGC
Mitsuru Kokubu, Takeda Pharmaceutical
Aleksandra Kolenc-Saban, Sanofi Pasteur
Lorraine Kowalczyk, Merck Sharp & Dohme
Erik Kratzer, Celgene
Diana Kronenberg, Sartorius Stedim
Anne Kuhlmann, Vetter Pharma-Fertigung
Julie Kuhn, Cardinal Health
Vincent Laperle, Becton Dickinson

Leaders to the PDA Community

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Don't Let Fear Scare You Out of a New Job

Debra Wheatman

True, the economy is not at its high point, not even close; but that doesn't mean it is all doom and gloom. It just means that perhaps it is time to dig in your heels and take a more realistic approach to your situation.

In my experience, job-seekers who take the statistics to heart and follow the jobless reports too closely set themselves up for psychological torment and a sense of hopelessness. Whether you are unemployed or want to change jobs, don't let fear scare you away. After being turned down for job after job, rejection can really take a toll on your self-esteem. Shut the TV off, stop watching the news about the unemployment numbers and start promoting yourself. Take steps to package yourself as attractively as possible.

If you are unemployed, think of creative ways to use your time and give your résumé an extra punch. Let hiring managers know you haven't been sitting at home licking your wounds. If you are currently employed, these job-search strategies can work for you as well:

- Consider part-time volunteer activities that still allow enough time to mount a strong career-search campaign
- Choose organizations that are relevant and can add value to your experience
- Participate in online courses or undertake a self-study program if you can't afford formal training

Use some of the more proactive strategies to land a job. Don't take the same approach as others by simply applying online to postings. Most jobs are actually never posted on job boards or websites. Instead, decide what jobs you can realistically attain, and go after those. Even if they aren't in your previous salary range, consider swallowing your pride and weighing new alternatives, particularly if you have been unemployed for a while.

- Research employers to target
- Evaluate companies in your geographic region. Jobs may be available that are not advertised
- Make a list and send a well-written, error-free résumé with cover letter via multiple avenues.
- Go back to traditional US Postal mail (a.k.a., snail mail) to get you noticed when email becomes a black hole.

Network, network, network!! Oh, and did I say network?! Use social media resources like LinkedIn, Facebook and Twitter to connect with former coworkers and colleagues. Your connections just might know someone who would be interested in your skills. Participate in discussion groups and add your input. Do whatever it takes to get your name out there and make people aware that you are a potential asset. Adopt an attitude of optimism; let go of fear and move forward. No matter what the current odds, people are getting new jobs every day, and you can be one of them!

Questions about some of the terminology used in this article? Get more information (definitions and links) on key college, career, and job-search terms by going to our Job-Seeker's Glossary of Job-Hunting Terms.

About the Author

Debra Wheatman, CPRW, CPCC is president of Careers Done Write, a premier career-services provider focused on developing highly-personalized career roadmaps for senior leaders and executives across all verticals and industries.

Latest Hot-Job Postings

For a complete list of all job postings, please visit www.pda.org/careers.

Covidien, Raleigh, N.C.
Plant Quality Manager, QA/QC/Compliance

Life Technologies, Grand Island, N.Y.
Engineer II, Manufacturing, Manufacturing/Production

MedImmune, Santa Clara, Calif.
Scientist II/Senior Scientist

Sandoz, Broomfield, Colo.
Manager, Third Party Compliance (Non-Sterile Operations), Manufacturing/Production

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snapshot

Task Force *Corner*

Update on Analytical Methods TF

Emily Hough, PDA

The Analytical Method Validation Task Force, initiated by **Stephan Krause,** has been running since 2007. The Task Force has been charged with focusing on recommendations for chemical and biochemical method validations for the commercial production of biopharmaceutical products. The *PDA Letter* interviewed Krause on what and how the Task Force is doing.

PDA Letter: What do you hope that the Task Force accomplishes by the end of this year? What are some upcoming major projects that the Task Force is working on right now?

Krause: After addressing all regulatory Agency comments from last year for our first draft technical report, a technical report sub-team is now finalizing the last draft chapter in this technical report (Analytical Method Transfer). This section needed a major revision and a better case study. A complete draft technical report is available and the final technical report will be published and available to PDA members and non-members before the end of 2011. We have had the advantage to receive regulatory comments for our technical report last year. Some minor revisions were made to the technical report draft. When considering the length and content of this document (we specifically tried to address many "hot topics"), we now feel confident that our intent to provide a useful, practical guidance document to PDA should fully solidify.

PDA Letter: What are some of the hot topics plaguing this industry in the United States and Europe?

Krause: Our technical report, which was completed in April of this year and will be published later this year, actually includes practical guidance for most of the current hot topics for analytical methods. Many hot and/or difficult-to-do topics, such as understanding all relevant risks, performing risk-based method validation, transfers, and maintenance (validation continuum) as well as performing risk-based method comparability studies (to allow implementation of new methods) are covered. The processes on how to set acceptance criteria and deal with occasional failures is also covered in detail and many practical case studies are provided.

One hot topic not covered in this technical report, however, is how phase-appropriate method validation (and/or qualification) studies can be performed having in mind the current U.S. FDA and EMA regulatory expectations. I think we addressed most other hot topics in our technical report, but we did not address when method validation (and/or qualification) should be performed.

PDA Letter: Wrapping up a technical report in just a year must have taken a special effort by you and your task force. Were there any special methods that were used to keep the task force on task?

Krause: I always prepare and send an agenda in advance and I try to keep everyone focused on the discussion topics. The meeting planning not only helps me to effectively conduct these meetings but it also helps the members to focus on these topics and to stay interested as meetings are typically more effective.

The use of suitable communication media is also very important. For face-to-face meetings, I normally use room screens to share information and work "live" on the technical report. For phone meetings, I prefer to use Webex type meetings. Everyone should be able to review the intended information at the same time. Also, to keep a long-term interest among the members, it is important to lead by example by consistently delivering on promises.

Task Force Members

Chair **Stephan Krause,** PhD, MedImmune

Florence Baudoux, PhD, GlaxoSmithKline Biologicals

Patricia Cash, PhD, MedImmune

Larissa Chirkova, Novozymes

Pierre Douette, PhD, Eurogentec

Marta Germano, Pharming Technologies

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Rashmi Rawat, PhD, CDER/FDA

Michael Rooney, BioTechLogic

Melissa Smith, MJ Quality Solutions

Michael Warncke, PhD, Bayer HealthCare

Earl Zablackis, PhD, Sanofi Pasteur

The *PDA 2011 Analytical Methods Development and Validation Workshop* on *The Complete Method Lifecycle* will be held in the Hyatt Regency in Bethesda, Md. from June 20–21. For more information and to register, visit www.pda.org/analyticalmethods2011

continued at top of page 24

In *Print*

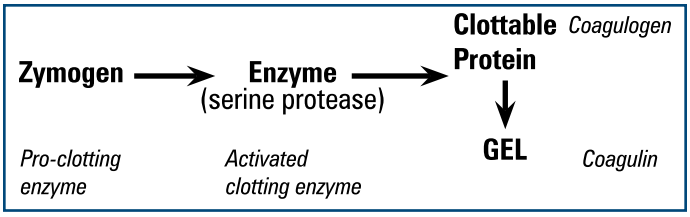
The LAL Clotting Reaction

The following has been excerpted from the chapter, "Understanding Reaction Basics" by Michael E. Dawson, which appears in the PDA/DHI book, The Bacterial Endotoxins Test: A Practical Approach, *edited by Karen Zink McCullough. The book is available at the PDA Bookstore: www.pda.org/bookstore.*

Q. *Does endotoxin initiate the LAL reaction?*

A. Yes, endotoxin initiates the reaction but it does not directly cause the final step (clotting/turbidity/color development) to occur. The reaction can also be initiated by (1→3)-β-Dglucan. A mechanism for the clotting reaction of LAL was first proposed by Levin and Bang who postulated that endotoxin activated a component of the blood of *Limulus* (which they initially termed "pre-gel") and formed a gel-clot. A simple model for the clotting reaction was subsequently proposed (**Figure 2.1**).

Figure 2.1 Early model for activation of the LAL clotting mechanism by endotoxin



After Levin (1979) Current names of components added in italics

This model proved to be essentially correct but the clotting mechanism is actually more complex in two regards. First, it has been clearly demonstrated that activation of clotting enzyme by endotoxin is not direct. Endotoxin activates Factor C, the first in a series of serine protease zymogens, which in turn activates Factor B. Active Factor B then acts on the pro-clotting enzyme, which cleaves the substrate in a classic cascade type of reaction. The intermediate enzymes are important as they amplify the initial signal (the recognition of endotoxin by Factor C) in a process analogous to a chain letter (if unbroken). The cascade reaction is the key to the extraordinary sensitivity of the LAL test. As a practical consequence for the user of LAL reagent, there are multiple reactions that can be affected by interfering factors.

The activated clotting enzyme cleaves a peptide (peptide C, not to be confused with Factor C) from the middle of the substrate, coagulogen (the accepted name for Levin and Bang's pre-gel). The two remaining peptides (A and B, again distinct from the factors with the same designation) remain linked by two sulfide bridges and reconfigure as the clotting protein, coagulin. Particles of coagulin coalesce and, when a sufficient concentration is reached, they coagulate to form a gel. In the gel clot method of the endotoxin test the formation of a firm clot formed in this way indicates a positive test result.

As the reaction progresses, the reaction mixture becomes tur-

continued at bottom of page 24

Journal *POV*

Author Redux: An Opportunity for Our Readers

Govind Rao, PhD, UMBC and Journal Editor

[Editor's Note: The following is from the March/April issue of the *PDA Journal of Pharmaceutical Science and Technology.***]**

Peer reviewed publication is an important component of scientific progress. This journal, like many of its sister publications, has a rigorous peer review procedure. An initial selection of submitted articles is made by the editorial team to decide which ones merit further consideration. The selected papers are then peer reviewed by two to three experts in the field. Typically, most manuscripts come back with extensive suggestions for revision and improvement, and once these are done the manuscript is then accepted for publication.

However, there are occasions where we have fielded questions about a paper's methodology after it is published. In the past, there has been no ready mechanism to readily incorporate reader feedback. We are now proposing to introduce this feature. With our electronic format, it is possible to have reader feedback on papers published in the journal. This can take several forms. One could be comments from readers. Another could be queries to the author(s) that would be posted along with their response or rebuttal.

The intent is to move our unique niche of regulatory science forward faster. This back-and-forth exchange is what makes scientific meetings interesting and interactive. Our hope is to capture that same richness of experience and dialog alongside papers that appear in the journal. We do know that several hundred downloads of articles appearing in the journal take place—what we don't know is what people think of the papers and what sorts of questions or discussions the papers spark. In particular, our association and the journal are at the interface of science and regulation, and facilitating this interaction should allow for a robust and archived discussion to develop.

As always, we welcome any feedback that you may have.

Task Force Corner continued from page 22

About the Expert

Stephan Krause has held leading roles for validation and quality for several biopharmaceutical firms. He is currently MedImmune's subject matter expert for analytical qualification, validation, and transfers and the global specification coordinator for CTMs. Before MedImmune, Stephan was a director of QA and QC operations for CTM manufacturers in California. Stephan has published many articles on quality and validation in industry journals in the US, Europe, and Asia and is PDA's task force leader for Analytical Method Validation and PCMO task force leader for CTM manufacturing.

In Print continued from page 23

bid as coagulin particles are produced and aggregate. In the kinetic turbidimetric method the optical density of the reaction mixture is monitored. There is not a specific wavelength at which the absorption maximum occurs, though absorbance increases as wavelength decreases. Consequently the change in optical density can be measured over a wide range of wavelengths in the visible range and into the ultraviolet. This is in contrast to the chromogenic method (described below), in which peak absorption occurs at 400–405 nm.

Second, the clotting reaction can also be initiated by (1→3)-β-Dglucans.

Q. *Does glucan initiate the reaction in the same way as endotoxin?*

A. No. It initiates the reaction by a different, shorter pathway with the same final two steps.

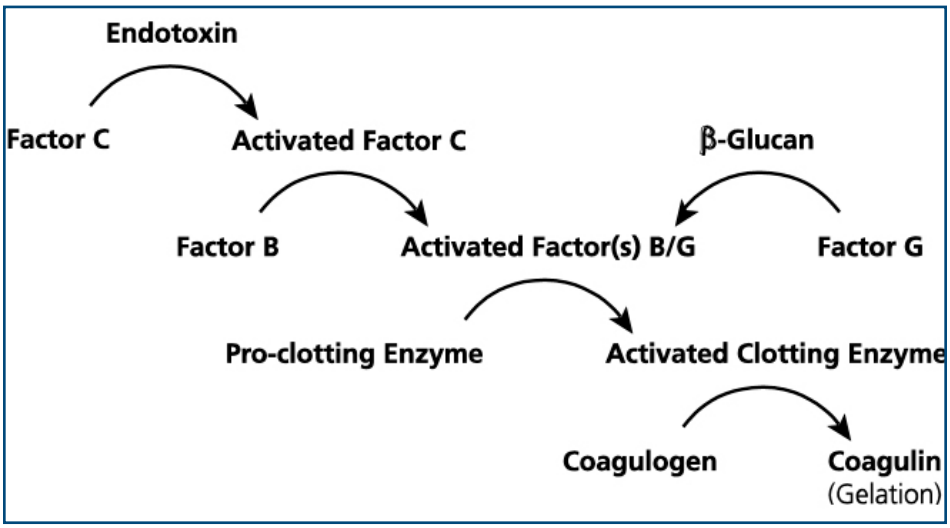
In this second pathway (1→3)-β-D-glucan activates Factor G, which acts directly on the pro-clotting enzyme. Activated clotting enzyme then cleaves coagulogen as described above for the endotoxin pathway. LAL reagent is approximately 10- fold less sensitive to glucan than to endotoxin on a mass basis.

Q. *Why is the LAL reaction less sensitive to (1→3)-β-D-glucans than to endotoxins?*

A. The pathway by which (1→3)-β-D-glucans activate the reaction is one step shorter than that of the endotoxin activation pathway.

The lower sensitivity to glucans may be attributable, at least in part, to the fact that there is one fewer steps in the enzyme cascade in the Factor G pathway initiated by glucans, resulting less amplification of the reaction. The complete pathway is shown in **Figure 2.2.**

Figure 2.2 Clotting mechanism of *Limulus* amebocyte lysate



(After Iwanaga et al., 1985)

In chromogenic LAL reagents a synthetic substrate is added, either in the formulation of the reagent or by the user as the test is performed. The substrate is colorless and consists of a peptide to which a terminal chromogen, para-nitroanilide (*p*NA) is attached. The amino acid sequence of the peptide is recognized and cleaved by the clotting enzyme to release the *p*NA chromophore (now *para*-nitroaniline), producing a yellow colored solution that, unlike the intact chromogen, absorbs light at a wavelength of 405 nm. The cascade with the chromogenic substrate is shown in **Figure 2.3.**

A detailed discussion of the different endotoxin test methods is beyond the scope of this chapter. However, a table summarizing the features of the major methods is given in the Appendix.

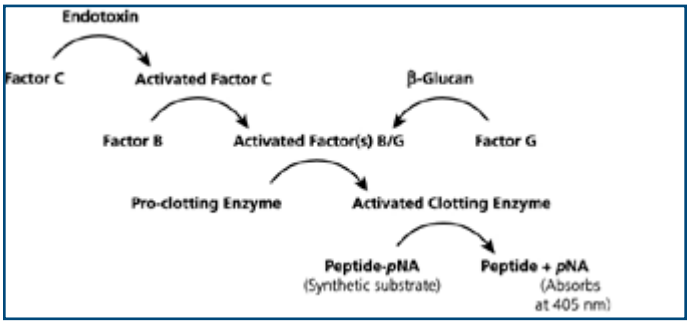
Q. *What are the implications of the clotting reaction for the user of LAL reagent?*

A. There are several, including:

- the extraordinary sensitivity of the LAL test is attributable in large part to the cascade reaction
- as noted above, there are multiple points at which interference with the reaction can occur
- after initiation of the reaction by endotoxin there is a time lag before gelation begins or before optical density increases.

The extraordinary sensitivity of the endotoxin reaction is often not appreciated by users of LAL reagent because the results are commonly given in endotoxin units. One endotoxin unit is equivalent to approximately 0.1 ng of E. coli endotoxin or 0.1 parts per billion. Thus the most sensitive endotoxin tests, with detection limits of 0.001 EU/mL, are

Figure 2.3The chromogenic LAL reaction



(Modified fromTanaka and Iwanaga, 1993)

capable of detecting 0.1 pg/mL, which is 0.1 parts per trillion of endotoxin on a mass basis. The maximum sensitivity (i.e., the limit of detection or LOD) of the gel clot method using a standard one-hour incubation in commercially available reagents is 0.03 or 0.016 EU/mL. For the kinetic turbidimetric method the maximum sensitivity is 0.001 EU/mL, depending upon the test system used. For the currently available chromogenic reagents, maximum sensitivity is 0.001 EU/mL.

The fact that activation of clotting enzyme by endotoxin is not direct has a significant consequence for endotoxin tests conducted using LAL reagent. The product of the initial reaction with endotoxin, which is activated Factor C, does not result in product which is measured, regardless of which test method is being used (with the exception of the recombinant Factor C method, which is discussed below). Measurable product, whether it is a gel clot or turbidity resulting from production of coagulin or liberated *p*-NAin a chromogenic reaction, requires three more steps in the cascade. Consequently, after initiation of the reaction by endotoxin it takes some time for the measurable product to appear. This results in a time lag before gelation begins or before optical density begins to increase in turbidimetric and chromogenic test methods.

Q. *Why is pH important in endotoxin testing?*

A. pH is a critical parameter in enzymatic reactions and the LAL reaction is no exception.

As the LAL reaction consists of a series of enzymatic reactions, one factor having a profound influence on the reaction of LAL reagent with endotoxin (and glucan) is pH. Each of the serine proteases in the LAL cascade has its own pH optimum. Consequently, it is critical that the pH of the reaction mixture of product and LAL reagent be in the range specified in the product insert issued by the manufacturer. The harmonized pharmacopeial endotoxins test chapters require this.

Implementing Regulatory Intelligence – An Organizational Program Management Approach

Winston R. Brown, Baxter

Regulatory Intelligence (RI) is a key enabler for any company to be able to reach an optimized and harmonized state of global compliance.

RI has become a hot topic, and there have been several recent articles and presentations on it recently across a number of professional publications and conferences. In reviewing this information, there does not appear to be a "one size fits all" approach for how companies interpret and approach RI as an initiative for their organizations.

The intent of this article is not to provide a universal implementation approach to RI. Instead, the article is intended to describe one way in which an RI "program" can be interpreted, deployed and sustained, based on my experience.

Among several definitions given for RI, the Drug Information Association (DIA) provides a good place to start. It defines regulatory intelligence as:

The act of gathering and analyzing publicly available regulatory information. This includes communicating the implications of that information, and monitoring the current regulatory environment for opportunities to shape future regulations, guidance, policy, and legislation. ***(1)***

RI means that a proactive regulatory compliance approach is taken by globally monitoring regulations, standards (including compendial), guidelines and industry events. It allows firms to be in front of the change curve instead of working upstream after change becomes a compliance expectation. Compendial changes can often become overlooked or neglected if a due diligence program in not in place, and the lack of harmony among the various pharmacopeias adds complexity to this. While the U.S. Pharmacopeia (USP), European Pharmacopeia (EP) and Japanese Pharmacopeia (JP), have worked much more towards harmonization in recent years, new and emerging markets have established separate compendia, including China, India and Brazil.

Establishing boundaries up front for the RI Program is important to clarifying the scope of work and subsequently the roles and responsibilities of an organization that is regulated. **Figure 1** provides one interpretation of how these boundaries can be provided and communicated within an organization.

Figure 1

The RI		
IS	**IS NOT**	
Regulatory	Business	Competitive
– Analyze publicly available regulatory and compliance information	– Company operations	– Competitor capabilities
– Shape future regulations, guidance, policy and legislation	– Business intelligence systems	– Competitor vulnerabilities
– Monitor the regulatory and compliance environment	– Production and sales data	– Competitor intentions
– Company representation in industry groups and events	– Specific product pipeline data and information	
– Establishing positive regulatory and industry relationships	– Competitor internal operations data	

Note that RI has been depicted separately from Business and Competitive Intelligence. Depending on the organization and regulatory compliance needs, companies may elect to deploy RI in any number of ways that may combine regulatory, business and/or competitive intelligence. There is no right or wrong answer. The most important consideration is what can be demonstrated as the best fit for cultural adaptation in the organization.

In short, the RI Program can be an extension of the quality and regulatory functions and can be leveraged as a program rather than just another task a person performs on a part-time basis. For any program to gain momentum, top management support must be given and be visible to the entire organization.

Figure 2 lists some additional questions an organization might want to consider prior to program deployment.

An RI model can be developed with three phases: knowledge management, integration management and relationship management.

- **Knowledge Management:** Generically, this is monitoring all of the potential information that can impact an organization. This phase entails making information available to those who need to have and understand it, and implementing repositories so that information can be centrally located, easy to find and use, and can be communicated throughout the organization, as appropriate. Timeliness and accuracy of information are

Intelligence on this Article

1) Make Regulatory Intelligence a program, not a job for one individual
2) Incorporate Knowledge Management, Integration Management and Relationship Management
3) Seven elements of RI Program Deployment: Scope, High-Level Strategy Planning, Technology/IT Plan, Communication Plan, Program Organization/Roles & Responsiblities, Harmonization, and Communicating/Re-communicating Scope

Figure 2

Regulatory Intelligence (Quick Pre-Assessment)*	
Key Questions To Ask	
Infrastructure	• How does regulatory compliance information currently get communicated?
	• How many groups are currently performing RI and where / to whom do they report?
	• Are there currently redundant / overlapping activities ongoing for RI?
	• How are local and regional changes tracked and monitored / by whom?
	• How does/would the RI Program(s) link to other organizational programs that may be essential to stakeholders (e.g., Environmental, Health & Safety, Supplier Quality, Purchasing)?
	• Is RI a current organizational priority? How is this demonstrated (e.g., a shared goal aligned to management strategic plans)?
	• How will effectiveness of the RI Program be measured? (e.g., metrics, Key Performance Indicators)
	• How is the current organization structured and how does information flow?
Resources	• If the organization is currently performing RI Activities, how much of a person's time is dedicated to RI during each day?
	• Does the organization currently have subscriptions to Regulations / Guidance Documents / Standards R/G/S databases such as Tarius, IDRAC and Tech Street? Are there subscriptions to databases for compendia?
	• Does the organization have an IT Platform to support group collaboration such as Doodle, Share Point, etc.?
	• What will the expectations of the RI Program? (The organization may desire to only monitor and summarize intelligence information. If the organization desires to go deeper, then integration of intelligence into company policy and procedures may be the next step.)
	• Has an estimate of Full Time Equivalent been performed based on RI Program activities? In other words, do you know how many people it takes based on the expected volume of tasks?
* Questions should ideally be asked or known prior to deployment of an RI Program	

two major elements in this phase.

- **Integration Management:** Once information has been identified, triaged for impact and provided to the appropriate groups within the organization, it must then be integrated. This phase potentially involves additional impact analyses to identify the specific changes that need to be enacted. This phase often involves product and/or process change control. Traceability is crucial during this phase to ensure that the information leaving the RI team's scope of responsibility is integrated in an appropriate, controlled and timely manner.
- **Relationship Management:** This is the "face" of the organization. Information is gathered from a diverse set of resources, internal and external to the organization. Collaboration and meaningful dialogues with regulatory authorities, industry partners and other fundamental stakeholders can help bring additional or new perspective regarding impacts to your organization. Obtaining current industry thinking (measuring the pulse of the industry) through best practice bench marking is important to success.

Figure 3 provides examples of expected outcomes during each phase.

Elements of Successful RI Deployment

When planning for RI Program deployment, there are seven important elements that can lead to successful deployment.

1. Program Scope: The Program Scope must be understood and agreed upon at all levels of management. Sometimes, even in the best organizations, initial efforts and momentum can go awry or are not sustainable because expectations did not meet what was delivered from a stakeholder standpoint. When addressing scope, it is important to establish boundaries of content. Some areas may not be inside the purview of the program, as other functional groups within the organization might be already performing these activities. **Figure 4** displays one example of how visually documenting scope can serve as a useful communication tool for the RI Program.

The focus for the program should be apparent on product lifecycle activities as well as systems. A general way to approach scope would be to identify all of the major activities that go into product discovery, development, advertising and promotion, manufacturing, distribution, and post-marketing surveillance. Each one of these major lifecycle events can then be subdivided into more discrete steps and traced back to Quality System Elements (QSE).

Once all activities have been traced, ➤

In short, the RI Program can be an extension of the quality and regulatory functions

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Figure 3

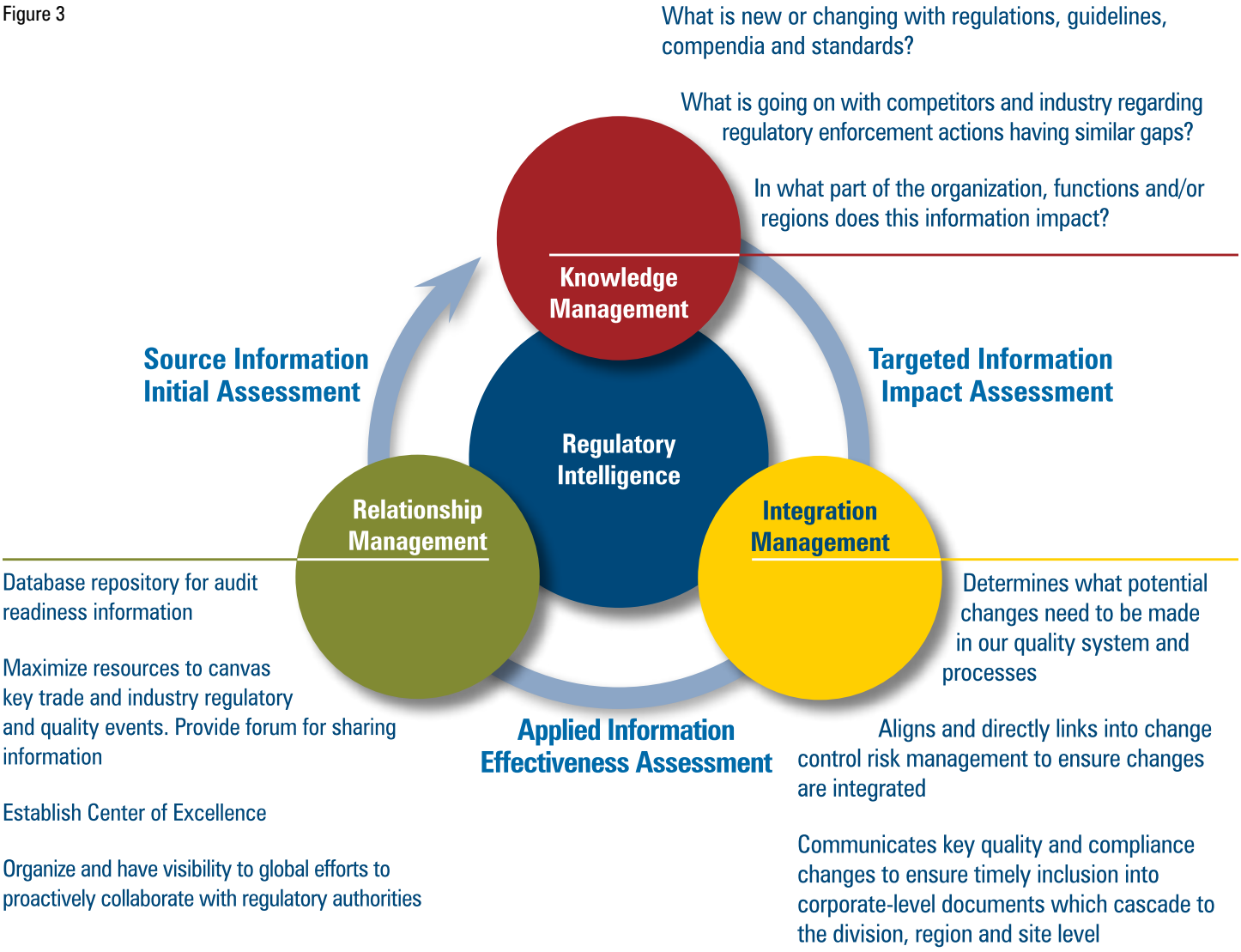
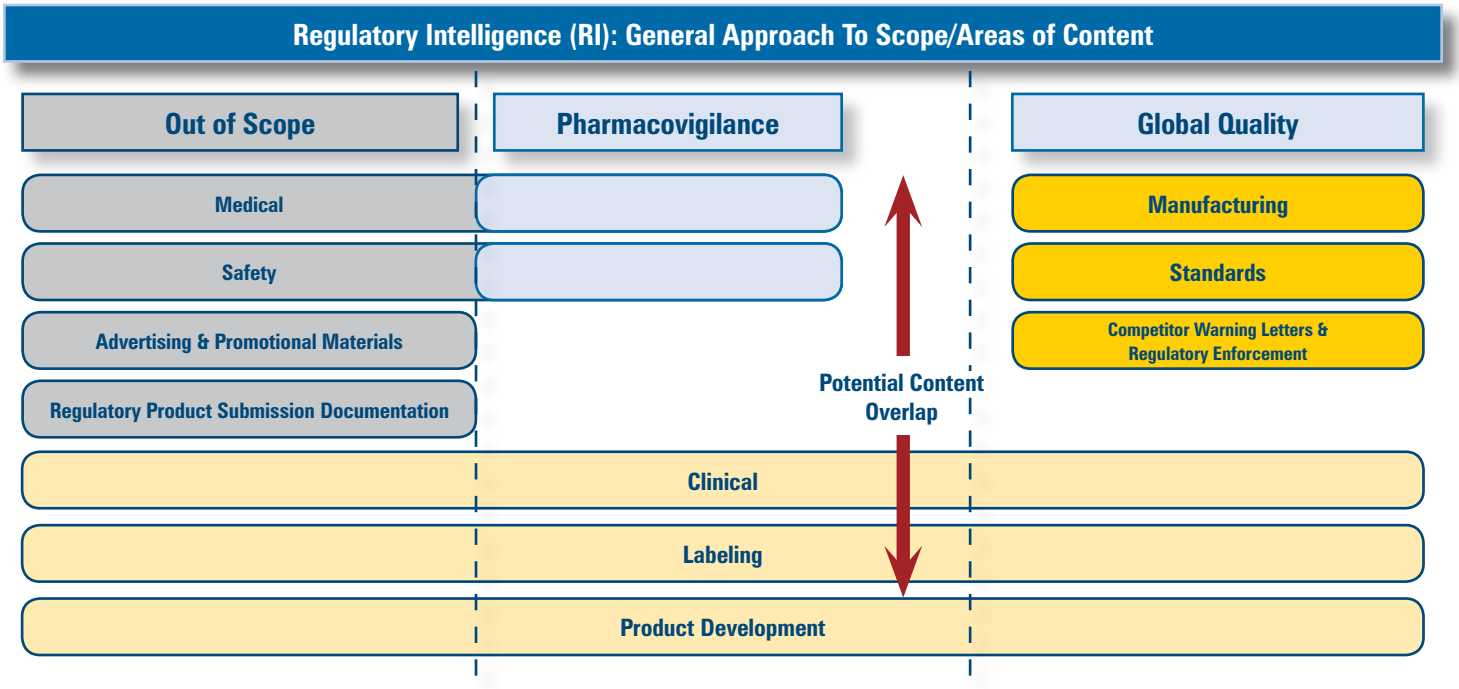


Figure 4



High-level strategy planning gives the program a sense of purpose, vision, mission, branding and goal alignment

it is then up to the organization to decide which groups will monitor intelligence for each of the different elements. This exercise directly leads into defining roles and responsibilities between organizational departments and functions. In my experience, it is preferred to have a centralized RI Program encompassing most, if not all of the elements, but there can be a central program that links into smaller RI efforts, so long as scope is clearly defined. Those areas with potential overlap could span across different functional groups and can be assessed accordingly.

2. High-level Strategy Planning: High-level strategy planning gives the program a sense of purpose, vision, mission, branding and goal alignment. This type of planning ensures that activities are aligned with corporate level goals and objectives, and provides senior management a reason to listen and support the investment needed to sustain the momentum. Common elements needed for this high-level planning could be:

- Organizational profile (This entails knowing what industry and space the organization operates in, knowing the competition and what the strengths and core competencies are of the organization)
- Vision
- Mission
- Short Term Goals (1,3,5 year plan)
- Long Term Goals (> 5 year plan)
- Strengths, Weaknesses, Opportunities and Threats (Specific to the RI Program)
- Define Key Stakeholders
- Communication and Training Plan
- High-level Process Mapping (This should show how information is received, who or what supplies the information, what is done with the information and how it translates to customer outputs)

3. Technology or IT Plan: During implementation, an organization may already have a common technological platform in place to support the RI Program, such as Microsoft SharePoint, Doodle, Port Hole and other technologies.

If the organization does not have a current platform technology that will support the RI Program, options include:

- Purchasing an off-the-shelf system
- Modifying a purchased system
- Using an existing system
- Developing an in-house system

The IT Plan should address a number of considerations prior to committing to a system. Below are some questions that need to be answered:

- What user and functional requirements do we want and need from the system?
- If evaluating the purchase of a license from an IT provider, should there be an enterprise-wide subscription or purchase of individual user rights?
- How will we test system requirements based on design of the system?
- How will the system be validated (if needed)? Who will validate it? What are the costs and timeframes?
- How will the system link into existing company systems?
- How will the system be supported and what is the reputation of the vendor?

4. Communication Plan: Communication Planning generally starts in the aforementioned High-Level Strategy Planning phase. The communication plan is a roadmap to link efforts of the RI Program team to questions and expectations of the stakeholders. **Figure 5** shows an example of a communications plan that could be used during deployment.

This template can be used to conduct communications for the startup of the program and ongoing program team activities.

When the RI Program is being deployed, organization communication meetings and orientation to the program may be a good way to engage stakeholders. Some of the mechanisms that can be used to operate and sustain the program include:

Figure 5

Communication Type	Meeting Owner	Frequency — Day/Date	Time & Time Zone	Location or Teleconference Number	Attendees	Objective(s)
What is the communication about and how will it be presented? (e.g., RI Program Orientation — WebEx)	Who is responsible for conducting the meeting?	Based on the type of communication especially for standing meetings, what is the frequency?	Accommodate for the different time zones in your organization so that you ensure global coverage	A variety of ways can be used to facilitate communication	Who is the targeted audience?	Be clear, concise and upfront about what the objectives are If a lot of information is going to be provided try to keep to no longer than 1–1.5 hours in duration

- **Monthly / Quarterly RI Council Meetings:** The purpose of these meetings is to provide strategic direction of the program. Might include key issue resolution, cascading messages and information, tracking major goal attainment, program metrics review, and team development. Should involve all program participants and regional representatives.
- **Monthly RI Change Control Meetings:** The purpose of these meetings is to review all potential regulations, guidance documents, standards and compendia which will impact the organization, *after* the RI Team has performed initial impact assessment of documentation and mapped out the general impacts to the organization. Frequency of this meeting can change, depending on the current regulatory environment. Should involve major stakeholders, including SOP owners, product champions, R&D and other affected departments.
- **Monthly RI Newsletter:** This can be used to provide an overall general summary of key regulatory compliance changes that impact the organization. Ideally, it is a central, global and holistic view of the regulatory landscape for that particular month or upcoming initiatives to save stakeholders the time of filtering through several resource providers.
- **Weekly / Bi-Weekly RI Team Meetings:** These meetings should focus on tactical goal progress, continuous improvement, cascading messages, review of ongoing and major team activities, and issue resolution and escalation. Should involve RI Program leadership.

5. Program Organization/Roles & Responsibilities: Program organization and appropriate roles and responsibilities can be both a challenge and opportunity for any organization, if a virtual and global team is maintained. One approach that can be used to ensure information is provided to the appropriate contacts is depicted in **Figure 6.**

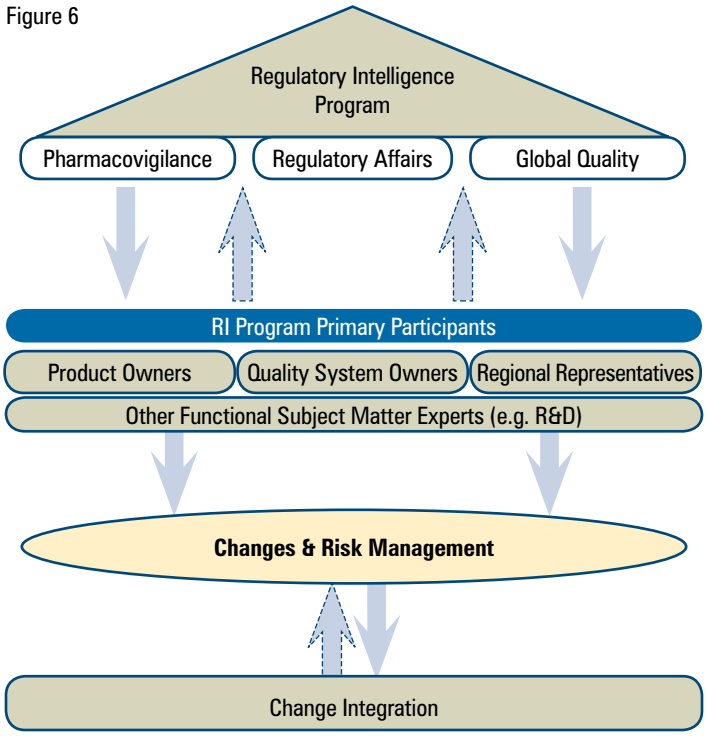
This high-level illustration shows how information flows in both directions, top-to-bottom and bottom-up.

Surveillance information can come from a number of sources, not just the core team. Once information has been identified, it goes through the same process and level of triage, regardless of source. Information can start with the core team based on the initial scope of content area, and is given a coarse screen to determine if there is initial impact to the organization. Once the initial impact has been determined, information can be summarized and given to pre-identified extended team members to determine specific impact to the organization, risk assessment and complexity and criticality of the information. To facilitate this assessment, a structured survey is generated with a series of impact-related questions, and the answers are provided and sent back to the core team. By having an integrated, cross-functional approach the organization can get the information to the most appropriate source in a timely and efficient manner.

Once the raw information or data has been converted into a documented impact assessment, changes are summarized and then provided to a central change control board to review and prioritize. Prioritization can be made based upon risk assessment, the effective date of the regulatory change and other key considerations. The change can then enacted through document change control procedures and communicated in forums such as management review.

Taken in totality, this ensures a closed-loop process where the initial information

Figure 6



What is done?	How will it be done?
– Surveys information – Initial impact assessment – Determines who to involve – Comments to regulatory authorities/trade	– Communication Plan – Clear roles/responsibility – Standard/documented processes
– Determines potential changes needed to quality system – Expertise in technical areas – Risk Assessment	– Focus surveys – Governance council – Program metrics
– Change management – Prioritization	– Risk assessment – Linkage to other systems
– Formal change implementation – Communicates changes – Escalates urgent changes	– Executive/Management Review – Monthly/Quarterly reporting

An organization that places a high importance on quality, value creation, process efficiency and cost effectiveness, should never try position and market its Regulatory Intelligence (RI) Program as the "RI Program (RIP)!"

is surveyed, obtained, assessed, integrated and communicated for traceability.

6. Harmonization: Considering all the different sources of information, RI can appear somewhat daunting. Outside of the many regulatory authorities, there are numerous standards organizations. To organize all of the information coming through the process, it may be useful to take an inventory of all standards and regulations applicable to product families.

To keep the scope simple and focused, phased deployment of the program is a practical approach. One approach can be starting with a finite scope of regulations, guidelines and standards, and then expanding once the momentum has been gained. For example, the RI team might focus first on the regulations in the United States and Europe, including guidelines through the International Conference on Harmonisation. Regional and local RI groups can focus on regulations and guidance appropriate to that particular location. Escalation mechanisms should be built in to the program processes if, for example, there is an identified need for a regional document to be assessed for global implementation.

7. Communicating and Re-Communicating Scope: It is easy to get lost in the details of deploying a major program across an entire organization. Once communicated, it is especially important to remember that not everyone has the same point of reference. Expectations may differ, and it is not always practical or prudent to obtain absolute agreement on what regulatory intelligence means. Again, RI may mean something very different to each organization.

To keep the scope simple and focused, phased deployment of the program is a practical approach

"Semi-flawlessly" Execute the RI Program

Once all the above phases have been considered, it is time to execute the plan for deployment of the program. The old adage suggests "flawless execution," but after years of project management lessons learned, one finds that 100% execution of a plan that captures 80% or greater of the intent, in most cases, is better than 0% execution of a plan that captures 100% of the elements. In other words, do not out-think yourself or spend too much time in a think tank. There are times when careful planning and flawless execution are required, and times when the program should be deployed, gain momentum and continuously improve along the way. Given the realities of the current landscape, doing more with less is fundamental. However, deploying the RI Program effectively, efficiently and in a compliant manner is the true north for customer satisfaction.

In summary, careful planning, effective communication, program procedures, robust technology platforms and establishing organizational linkages are essential to ensuring immediate and sustainable success. It is acceptable to take small steps in the direction of the larger goal, rather than to jump into success measures that are not realistic or attainable. Building the momentum, demonstrating value to the organization and continuous communication should have you well on the way to realized success!

References

1. Definition as per the DIA's Regulatory Intelligence Network Group – a special interest area community

About the Author

Winston R. Brown works for Baxter International and is the Director of Global Quality Compliance. He is currently leading the Baxter Regulatory Intelligence Program. Winston has worked in the healthcare, pharmaceutical and medical device industry for about 20 years. Subsequent to serving in the U.S. Army, he has held positions of increasing responsibility in quality and operations at Johnson & Johnson Consumer Pharmaceuticals, Holopack, USA, Tunnell Consulting and Bausch & Lomb.

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Amgen Strengthens CAPA/Quality Systems in Wake of Glass Failures

Emily Hough and Walter Morris, PDA

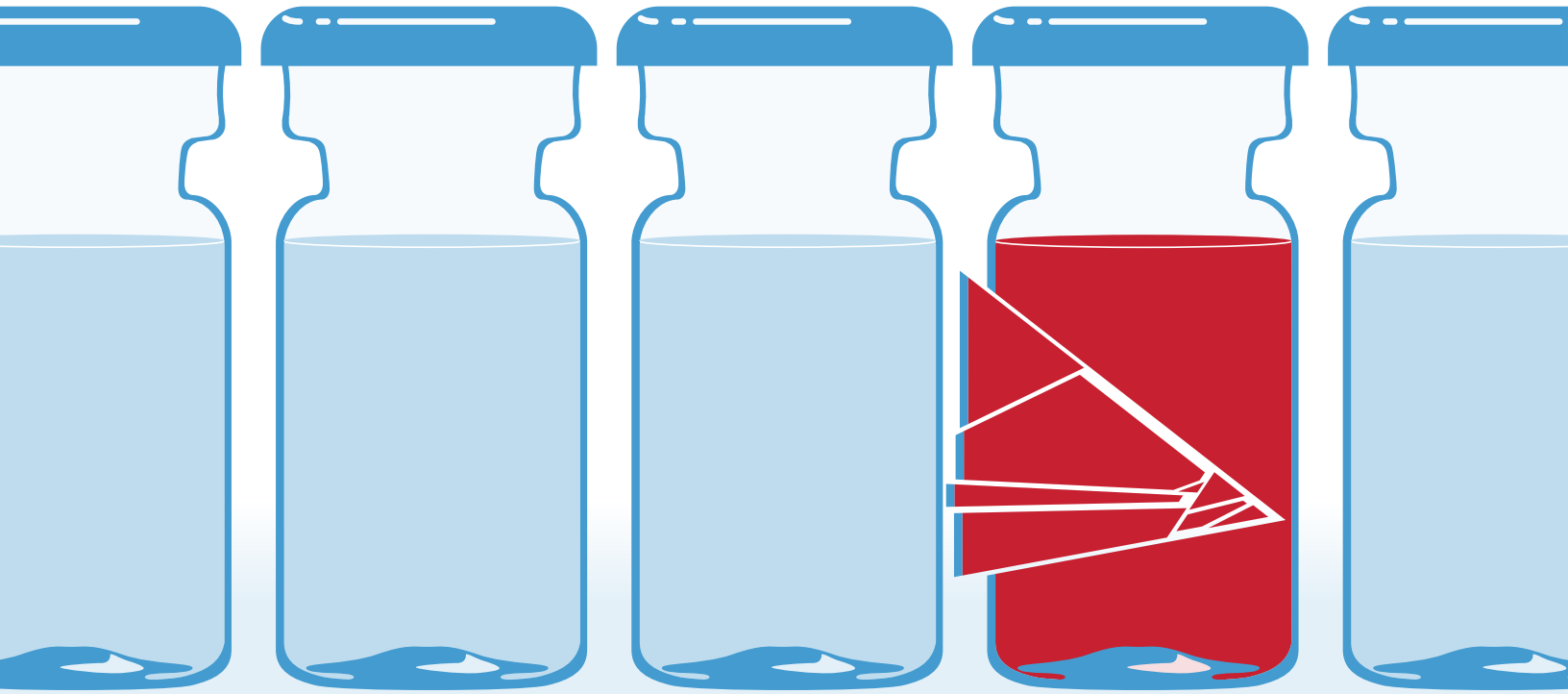

Illustration by Katja Yount

The mark of a strong quality system is one that evolves when things go wrong. Amgen's recent experience with glass breakages shows that the company is committed to having the best possible system for monitoring and improving quality.

The situation began a few years ago when the frequency of syringe breakage during manufacturing suddenly spiked. Subsequently, the number of consumer complaints related to glass breakages began to increase. Though it took some time for the two trends to connect, the firm ultimately tied together all the facts, implemented strong solutions, and improved its CAPA procedures in the process.

Amgen shared its recent experience at the *2010 PDA Workshop on Aseptic Processing, Issues and Approaches,* last November in Bethesda, Md. Amgen's **Bryan Liptzin,** Director of Quality Sciences, presented the case study on behalf of the firm.

What immediately stuck out during Liptzin's talk was how Amgen overcame some internal, cultural challenges and emerged with a stronger quality systems approach to solving such problems. The shortcomings involved the company's CAPAs, which were managed by "discreet groups."

Amgen was able to formulate "a true quality approach/systems approach," as a result of its talks with the Agency, said Liptzin

In the end, Amgen changed its CAPA procedures using strong quality system principles to come to, the firm believes, lasting resolution of the issue and to facilitate faster, more holistic responses to quality problems in the future.

Slowly Developing Quality Situation

The issue of the broken syringes manifested on two fronts.

First, findings of broken glass during the fill operation at one of the firm's facilities began to surface. "People performing this operation noticed the glass in and around the machinery," Liptzin said. This confounded the firm as the supplier of the glass was not changed nor were the specifications for the syringes.

The firm launched an eight-month (approximately) investigation, Liptzin reported. "What it ended up being was a very infrequent, but a slight defect in the syringe dimensions that exceeded the manufacturing capability of the machinery that we were using which led to cracks in the syringe."

An immediate corrective action was to increase the number of manual visual inspections before the defective syringes could make it to the product supply.

Later on, the company employed an automated visual inspection system to increase the detectability of glass defects.

The second manifestation was the significant rise in consumer complaints regarding broken syringes.

The company recognized a problem with its CAPA system, which was ultimately enhanced for better results.

"The CAPA piece was managed by discreet groups," Liptzin explained. "It was not good partnering between operations and quality, and people sort of were going off in different directions trying to chase down the same events." He said that the firm "didn't do a good job of looking across the network."

Amgen initiated cross-functional, cross-site teams for the implementation of preventive actions. "This wasn't done in a vacuum, but applied holistically across everything we are doing." (See box on next page for Liptzin's list of Amgen's functions involved with the CAPAs.)

The company also worked hard with its glass vendor to implement effective corrective actions.

Amgen ultimately worked with the supplier to:

1. Create a new specification for defect based on process tolerance
2. Implement new in-process controls and final inspection methods aligned with updated specification
3. Establish new preventive maintenance
4. Hold weekly and monthly meetings to discuss issues and preventive actions in real time

"The lesson we learned was to get more predictive in our failure mode analysis."

Lessons Shared

While this issue was ongoing, a new fill-finish facility was being constructed. The firm wanted to make sure that the lessons learned from the existing facility was used in the new facility. "Even though the equipment was different, the concepts and issues we were having had bearing on what we were doing, and we wanted to make sure that this team had that information as well."

Liptzin said, in the beginning, Amgen's history of success in making difficult large molecule products made it overconfident in its ability to flawlessly run the relatively easier task of filling the product container.

"What have we learned from all of this? Glass vials and syringes are as important to your product as your product itself," commented Liptzin.

As such, the company undertook two activities to help prevent problems with glass in the future: a "Glass Monitoring Program" and a series of "Glass Handling Initiatives."

The Glass Monitoring Program was set up because not all glass handling risks are completely solvable by process robustness improvements and need mitigation. The program was launched using a combination of four measures:

1. Consistent preventative checks
2. Continuous monitoring
3. Immediate, consistent, effective and efficient remediation of significant events
4. Increase post-detectability

The Glass Handling Initiatives boiled

Article in a Small Vial

- Individual quality systems need to talk to each other to address complex multi factorial issues
- Don't over rely on inspection processes
- Need predictive process capability indicators in addition to lagging indicators (complaints)

Glass Handling Projects Were Initiated

- Performed a holistic look at glass handling processes to identify potential breakage issues that might lead to product impact
- Enhanced a company-wide Quality System related to glass handling

Taken from Bryan Liptzin's slide deck

CAPAs Implemented Globally and Holistically Across Functions and Areas

- Formed cross functional, cross site teams to implement PAs
  - Suppliers
  - Incoming materials
  - Process (Filling / Packaging)
  - Effectiveness monitoring
  - New facility design

Taken from Bryan Liptzin's slide deck

down to two basic activities: 1) a holistic review of glass handling processes throughout manufacturing to identify potential breakage issues that might lead to product impact and 2) enhancement of the company-wide quality system related to glass handling.

The holistic review was conducted by a global team that performed Failure Mode and Effects Analyses (FMEAs) at key manufacturing sites. Risks were identified, mitigation plans developed and CAPA completion documented. Areas of the operation that were impacted by risk mitigations were:

- Warehouse practices
- Equipment standards
- Training
- Glass breakage categorization
- Glass breakage process monitoring

An additional aspect of the holistic review included the establishment of a global primary container network comprised of all site, quality and technical groups. The network allows for continuous monitoring and improvement as it tracks key glass metrics from non-conformances and product complaints. It also identifies and implements best practices for glass handling and quality/process improvements and container standardization.

Liptzin described the enhancement of the quality system for glass handling as "embedding the quality system." This involves:

1. Monitoring primary packaging issues globally and applying lessons learned
2. Establishment of a "governance body" for syringes and vial platform projects and tasks
3. Ensuring companywide communication of tasks and work streams via a "global team."

After going through the glass event, Amgen's ability to critique its own procedures and identify weaknesses in CAPA has resulted in a stronger Quality System approach that could help the company forestall serious problems in the future. Amgen deserves credit for sharing this honest case study publically at the PDA meeting last autumn.

[Editor's Note: Since the PDA workshop last November Bryan Liptzin has left Amgen to work for Novartis Vaccines and Diagnostics as Compliance Head. He can be reached at: bryan.liptzin@Novartis.com.**]**

Modifications To Amgen Processes

- Modified equipment to increase tolerance and assembly capability
- Provided glass handling awareness training at a global level
- Implemented a global Glass Monitoring Program
- Defined vial and syringe process tolerance
- Implemented vision systems to increase detectability of glass defects

Taken from Bryan Liptzin's slide deck

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ICH

Discussion on Genotoxic Impurities to Continue at Cincinnati, Ohio ICH Meeting

At the ICH Regional Public Meeting in Rockville, Md. on May 19, the establishment of the expert working group for Genotoxic Impurities was discussed by ICH M7 topic rapporteur Warren Ku, Head, Integrative Toxicology, Boehringer Ingelheim.

He said that the M7 expert working group will meet in Cincinnati, Ohio, to continue to finalize key priority topic areas.

The group has targeted June 2012 for Step 1. When it is finalized, the M7 guideline will describe the evaluation, qualification and control of impurities in medicines during development and after licensing.

ICH to Finalize Scope of Q3D, Complete Pre-Step 2 Draft Guideline at ICH Meeting

The ICH Q3D, Impurities: Guideline for Metal Impurities, Expert Work Group will meet at the ICH Meeting in Cincinnati, Ohio to finalize the guideline scope, complete and review all metal safety assessments, and complete a pre-step 2 draft guideline document for broader review.

PhRMA representative Mark Schweitzer, PhD, Global Director of Analytical R&D, Abbott Laboratories, said at the ICH Regional Public Meeting, hosted by the U.S. FDA in Rockville, Md. on May 19, that the group is targeting November 2011 as the timeline for reaching Step 2.

ICH Q11 Reaches Step 2

At the ICH Regional Public Meeting on May 19 in Rockville, Md., the U.S. FDA announced that ICH Q11, Development and Manufacture of Drug Substances, has reached step 2. Q11 covers the development and manufacture of drug substances, small and complex molecules as well as Q8, 9 and 10 principles as they apply to APIs.

Jon Clark, Associate Director for Program Policy, Office of Pharmaceutical Science, U.S. FDA, said that Q11 would not be discussed at the next ICH meeting in Cincinnati, Ohio, because the Step 2 documents are open to public comment. He anticipated some discussion of the document at the next ICH meeting in November 2011 in Seville, Spain.

North America

Comments Sought for Biosimilar, Interchangeable Biological Product Application User Fee Program

The U.S. FDA is requesting comments relating to the development of a user fee program for biosimilar and interchangeable biological product applications submitted under the Public Health Service Act.

Specifically, FDA is looking for public input on the identified principles for development of a 351(k) user fee program.

The Agency plans to review the comments submitted, hold meetings with public stakeholders and hold industry stakeholder meetings to develop proposed recommendations for the user fee program for 351(k) applications for fiscal years 2013–2017.

Guidance Released on Summary Bioequivalence Data for Abbreviated New Drug Applications

The U.S. FDA has released a guidance on the submission of summary bioequivalence data for abbreviated new drug applications.

The guidance is intended to assist abbreviated new drug application (ANDA) applicants in complying with the requirements in the final rule on the submission of bioequivalence data that published in the Federal Register in January 2009.

The final rule requires ANDA applicants to submit data from all bioequivalence studies (BE studies) the applicant conducts on a drug product formulation submitted for approval, including both studies that demonstrate and studies that fail to demonstrate that a generic product meets the current bioequivalence criteria. The guidance provides recommendations to applicants planning to include BE studies for submission in ANDAs and is applicable to BE studies conducted during both preapproval and postapproval periods.

Collection of Information Requested on Medical Devices

The U.S. FDA is requesting a collection of information on medical devices in order to facilitate identifying the current location of medical devices and patients possessing those devices (to the extent that patients permit the collection of identifying information).

Manufacturers and FDA (where necessary) use the data to:

1. Expedite the recall of distributed medical devices that are dangerous or defective
2. Facilitate the timely notification of patients or licensed practitioners of the risks associated with the medical device

Respondents for this collection of information are medical device manufacturers, importers, and distributors of ➤

Key Regulatory Dates

Comments Due:

June 27 — U.S. FDA Conducts Periodic Review of Existing Regulations

August 1 — Draft Guidance on Validation Methods and Labeling for Medical Devices

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Co-sponsored by FDA and Supported by EMA

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October 4-6, 2011 | Crystal Gateway Marriott | Arlington, Virginia
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www.pda.org/Q10

Register Before August 12, 2011 - the first registration savings deadline!

PDA, ISPE, the U.S. FDA and EMA have created a special joint conference dedicated to teaching the principles of ICH Q10. This will be a unique opportunity to learn from companies that have implemented a Pharmaceutical Quality System across the product lifecycle according to the ICH Q10 model.

ADVANCED NOTIFICATION: Sign up to receive an email when more information about this conference is available!

While this conference is intended to explain the principles of ICH Q10, it is not a conference that only tells you *what* ICH Q10 says, it is an event where you can learn the practicalities of *how* to implement Q10 based on real-life case studies. The conference will take place in Washington, D.C. and in Brussels drawing on the best industry and regulator contributors on this topic from both the United States and Europe. Moreover, key regulators from these areas will also share their views on the necessity of a Pharmaceutical Quality System.

You need to join us for this conference if you have the responsibility to enhance the quality and availability of medicines around the world in the interest of public health.

www.pda.org/Q10

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tracked implants or tracked devices used outside a device user facility. Distributors include multiple and final distributors, including hospitals

Draft Guidance on Validation Methods and Labeling for Medical Devices Updates 1996 Guidance

A U.S. FDA draft guidance on validation methods and labeling for reprocessing re-useable medical devices has been made available.

An update to the originally published 1996 guidance, the "Processing/Reprocessing Medical Devices in Health Care Settings: Validation Methods and Labeling" draft guidance reflects scientific advances in the technology involved with reprocessing more complex reusable medical devices.

Comments on the draft guidance should be submitted by August 1.

U.S. FDA Conducts Periodic Review of Existing Regulations

The U.S. FDA is conducting a periodic review of existing regulations to determine if they can be made more effective in light of currently public health needs and to take advantage of advances of innovation.

The goal of the review is to help ensure the Agency's regulatory program is more effective and less burdensome in achieving its regulatory objectives. FDA is requesting comment and support data on any of its existing rules that would be good candidates to be modified, streamlined, expanded or repealed.

Comments are due by June 27.

U.S. FDA Seeks Information on Adverse Experience Reporting

The U.S. FDA is collecting information on Adverse Experience Reporting for Licensed Biological Products and General Records.

The Agency is looking for comments relating to FDA's adverse experience reporting for licensed biological products and general records associated with the manufacture and distribution of biological products.

The FDA requires that manufacturers of biological products for human use must keep records of each step in the manufacture and distribution of a product including any recalls. These record keeping requirements serve preventative and remedial purposes by establishing accountability and traceability in the manufacture and distribution of products. It also enables the FDA to perform meaningful inspections.

These records must be kept for no less than 5 years after the records of manufacture have been completed or 6 months after the latest expiration date for the individual product, whichever represents a later date.

Specifically, the Agency is seeking information on:

- Whether the proposed collection of information is necessary for the proper performance of FDA's functions, including whether the information will have practical utility
- The accuracy of FDA's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used
- Ways to enhance the quality, utility, and clarity of the information to be collected
- Ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques when appropriate, and other forms of information technology

U.S. FDA's 2011-2015 Strategic Priorities Available

The U.S. FDA has published a strategic priorities document outlining the goals that will guide the Agency through 2015.

The Strategic Priorities 2011 – 2015: Responding to the Public Health Challenges of the 21st Century, provides a vision of the FDA that includes a modernized field of regulatory science that draws on innovations in science and technology to help ensure the safety and effectiveness of medical products throughout their lifecycles.

FDA will also look to promote strengthening the safety and integrity of the global supply chain and strengthening compliance and enforcement activities to support public health.

Europe

EMA Posts Concept Paper about Revision to Chapter 8 of EC GMP Guide

The European Medicines Agency has posted a concept paper that would revise chapter 8 of the European Commission guide to Good Manufacturing Practice.

The changes would introduce risk-based concepts and provide for more effective investigations and CAPA actions.

The updates, according to the EMA, reflect the need for Quality Risk Management (QRM) Principles during investigations and when making decisions in relation to recalls. It also will update Chapter 8 to clarify when a quality defect/complaint should be reported to the Competent Authority.

Send us your news briefs!

If you follow the Regulatory News in your country or region, send your briefs to hough@pda.org; we might post them online, the PDA Connector and/or in the *PDA Letter.*

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MARK YOUR CALENDAR!

PDA Parenteral Drug Association

The Universe of Pre-filled Syringes and Injection Devices

Device Usability and Compliance

7-11 November 2011 | Congress Center Basel | Basel, Switzerland

This conference gives an update on all aspects of the application of parenteral products covering a broad range of topics. PDA is seeking scientific abstracts for presentations 30 minutes in length or abstracts for posters. The theme of this year`s conference: **Device Usability and Compliance**.

Invited Speakers will present on Technology Trends, Human Factors, Patient Compliance, Cost Benefit Studies and Health Economics.

Topics:

- Factors influencing Selection of Injection Devices
- Advances in Pre-filled Syringe/Injection Device Technologies
- Development and Manufacturing
- Regulatory Trends and Inspection Issues

https://europe.pda.org/Prefilled2011

Roche

SCHOTT glass made of ideas

Follow Analytical Methods Throughout Their Lifecycle

Bethesda, Md. • June 20-21 • www.pda.org/analyticalmethods2011

Earl Zablackis, Sanofi Pasteur

PDA is pleased to host the *2011 Analytical Methods Development & Validation Workshop* on June 20-21 at the Hyatt Regency in Bethesda, Md. The purpose of this workshop is to offer attendees an in-depth view from the beginning-to-the-end of the analytical method lifecycle, development, qualification, validation, transfer and maintenance will be covered.

The workshop will begin with a plenary session that will discuss and educate the audience by mapping out the various stages of the analytical methods lifecycle using the guidance developed by the PDA's Analytical Task Forces as a basis for the presentations.

Featuring a variety of industry speakers knowledgeable on the details of method development and validations, the workshop will include speakers like **Gregory Martin,** PhD, Vice Chair, USP General Chapters Expert Committee who will speak on the details of verification outlined in USP General Information Chapter <1226> as well USP's vision of the method transfer process presented in a USP Stimuli Article. In addition, other featured speakers include **Stephan Krause,** PhD, author of *Validation of Analytical Methods for Biopharmaceuticals: A Guide to Risk-Based Validation and Implementation Strategies* and chair of the workshop planning committee will provide a presentation about mapping out the validation process, and **Rajesh Gupta,** PhD, Deputy Director, Division of Product Quality, CBER, U.S. FDA, will speak about regulatory expectations for method lifecycle and validation.

The workshop will also feature some of the foremost scientists from leading pharmaceutical companies and Task Force contributors including Merck, MedImmune, Sanofi Pasteur and Genentech who will speak on the various aspects involved in method development and validation including:

- Robustness and design of experiments
- Method selection process
- Applying the principle of QbD to analytical methods
- Method qualification

Each one of the main topics will be followed with a case study demonstrating the practical application of the theory presented. The workshop will end with a presentation titled "A Case Study Illustrating the Complete Bioassay Lifecycle" given by **Jonathan Zmuda,** PhD, Scientist II, Analytical Biochemistry, MedImmune. After this case study, the participants will be able to interact with the workshop speakers in a unique hour long *Ask the Experts Panel Discussion.*

If your job encompasses development, validation, compendial verification or simply understanding the details of analytical methods and how they apply to product lifecycle, you need to come to this workshop to hear the most up-to-date discussions and case studies from a renowned panel of experts who are shaping the way in which analytical methods are viewed.

To learn more or to register, visit www.pda.org/analyticalmethods2011.

Hear from PDA's Single Use Systems Task Force at Workshop

Bethesda, Md. • June 22-23 • www.pda.org/singleuse2011

Robert Repetto, Pfizer and Morten Munk, CMC Biologics

The PDA Task Force for single-use systems invites you to attend the Single Use Systems Workshop on June 22-23 at the Hyatt Regency in Bethesda, Md. This Workshop will give attendees an opportunity to meet with the Task Force to discuss their work toward completing a Technical Report on the implementation of single-use systems and will showcase and encourage best practices championed in the upcoming single-use systems technical report. It will also focus on science and risk-based concepts that are flexible and can be applied in many different situations and organizations.

Single-use systems are economical, faster, more reliable, and equally important, it, achieves product quality, ensures patient safety and meets regulatory compliance. The Task Force has taken a consensus approach to identifying just how to make that mantra a reality with single-use systems. One of their key messages for successful single-use system implementation is a transparent partnership between the supplier and the end-user by encouraging an open science and risk-based dialogue during supplier audits and evaluating single-use system supply chains.

Sterilization, supplier qualification, single-use system qualification and extractables and leachables are crucial concerns during implementation of single-use systems, and the Task Force has devoted a significant section of the report to quality and regulatory topics.

The workshop will be organized to highlight this partnership theme demonstrating the values we encourage in the document.

If you are considering or involved in single-use processes and can attend only one meeting this year, the *PDA Single Use Systems Workshop* is clearly the one you should attend.

The Single-Use System Task Force was strategically organized to include end-users, suppliers, industry enablers and

regulators. During the workshop, it will be possible to interact with Task Force members and regulators. This unique mix of skills and expertise provides a balanced, well-vetted, consensus-driven viewpoint that ensures the educational value of the conference.

We would like to thank the Task Force members for their participation in developing the technical report and workshop. The debates and discussions about how best to implement single-use systems have been outstanding. The hard work, creative ideas and dedication this group has demonstrated will make this an event not to miss!

If you would like to learn more about single-use systems, visit www.pda.org/singleuse2011 for more information and to register.

Attend the Pharmaceutical Quality System Conference

Arlington, Va. • October 4-6 • www.pda.org/q10

Co-chairs David Cockburn, EMA and Rick Friedman, U.S. FDA

Are you aware of the total cost of poor quality to your operations? If you are a leader or responsible for the bottom line in a pharmaceutical manufacturing business and want to maintain a competitive quality and business advantage, the *Pharmaceutical Quality System (ICH Q10) Conference* is *the* conference to attend in 2011.

PDA, ISPE, the U.S. FDA and EMA have created a special joint conference dedicated to teaching the principles of ICH Q10. This will be a unique opportunity to learn these principles from companies that have implemented a Pharmaceutical Quality System across the product lifecycle according to the ICH Q10 model. Those companies are reaping the benefits that come from establishing and maintaining a state of control, continual improvement, enhancing regulatory compliance and meeting quality objectives everyday.

While this conference is intended to explain the principles of ICHQ10, it is not a conference that only tells you *what* ICH Q10 says. It is an event where you can learn the practicalities of *how* to implement Q10 based on real-life case studies. It will show you how senior management commitment and involvement is vital. The conference will take place in Washington D.C. and in Brussels drawing on the best industry and regulator contributors on this topic from both the United States and Europe. Moreover, key regulators from these areas will also share their views on the necessity of a Pharmaceutical Quality System.

You should attend this conference if you are a decision-maker at mid level or senior level, or a professional working at site or corporate level in the following areas:

- Quality Assurance
- Manufacturing, Operations and Engineering
- 6-sigma and Quality Risk Management
- Supply chain
- Pharmaceutical Development and CMC
- Regulatory Affairs

Expertise Shared at Micro. Conference Sessions and Courses

Bethesda, Md. • October 17-21 • www.pda.org/2011microbiology

Kim Van Antwerpen, OSO BioPharmaceuticals Manufacturing

PDA's 6th Annual Global Conference on Pharmaceutical Microbiology & TRI Courses will be held on October 17-21 in Bethesda, Md. and will focus on the "Challenges Facing Pharmaceutical Microbiology in the 21st Century." Chaired by **Lynne Ensor,** PhD, Review Microbiologist, CDER, FDA, and **Edward Tidswell,** PhD, Sr. Director, Sterility Assurance, Baxter Healthcare, this year's conference includes information on topics that frequently arise as challenges to pharmaceutical microbiologists in both sterile and non-sterile environments.

Session topics include:

- Risk assessment
- Container closure
- Environmental monitoring
- Preservation
- New technologies
- Objectionable organisms

Keynote addresses from **Daniel Y.C. Fung,** PhD, Professor, Animal Sciences and Industry, Kansas State University, and **Dennis Guilfoyle,** PhD, Pharmaceutical Microbiologist, ORA, U.S. FDA, will provide insight into rapid methods and automation, and defining objectionable organisms, respectively. Monday's afternoon session will be of special interest to multi-dose manufacturers; experts from the U.S. FDA, WHO and industry have been invited to discuss several microbiological issues associated with reconstitution, administration and holding of products. The conference will again include previously popular sessions where attendees can "Ask the Regulators" about agency requirements and discuss "Urban Myths" about pharmaceutical ➤

The Parenteral Drug Association presents...

2011 PDA/FDA Joint Regulatory Conference & TRI Courses

Quality and Compliance in Today's Regulatory Enforcement Environment

Register Before **July 9th** - The First Registration Savings Deadline!

September 19-23, 2011

Renaissance Hotel | Washington, D.C.

The *2011 PDA/FDA Joint Regulatory Conference & TRI Courses* will focus on educating and exploring some of the complicated global quality and regulatory issues currently facing the pharmaceutical industry stakeholders, manufacturers and regulators.

Plenary sessions at this year's conference include:

- **Latest News and Inspection Findings in Biotech**
  - Biotech Pre-Approval Inspection Findings
  - Biotech Inspection Trends
- **Recall Lessons**
  - Broad Challenges in Implementing Recall
  - Hands on Challenges - Regulatory Perspective
  - Hands on Challenges - Industry Perspective
  - Trending
- **Compliance Update**
  - This session will feature the Compliance Directors from the FDA Centers (CBER, CDER, CDRH and CVM), as well as Office of Regulatory Affairs (ORA).
- **Center Initiatives**
  - Hear directly from some of the Agency's leaders with regard to their Center's current and future initiatives. Leaders from CBER, CDER, CDRH, CVM and ORA have confirmed their participation in this important discussion.

The conference will also feature three concurrent track sessions: **Foundations, Innovation and Regulatory Science** and **Quality and Compliance**.

Foundations Track	Innovation and Regulatory Science Track	Quality and Compliance Track
Understand the expectations of the US FDA in today's current environment. Some of the topics in this track include: foreign inspectors, first cycle review and standards.	Explore feature topics such as GMP by lifecycle phase and drug safety.	Discuss good inspection practices from the *FDA* and *PIC/S* as well as an international compliance update. This track will feature speakers from CBER, CDER, CDRH and CVM.

Continue your education by attending one of seven stand-alone courses hosted by the PDA Training and Research Institute (PDA TRI) immediately following the conference on September 22-23.

PDA will also be hosting a post conference workshop: *PDA 2011 Combination Products Workshop* on September 21-22, 2011. Please visit **www.pda.org/2011comboproducts** for more information.

For details and to register, visit www.pda.org/pdafda2011

CONFERENCE September 19-21 | **EXHIBITION** September 19-21 | **COURSES** September 22-23

microbiology with experts in the field. **Radhakrishna Tirumalai,** PhD, Senior Scientist, USP, will moderate a can't miss session on USP Updates.

New this year will be a breakfast session titled "Microbiologist of the Future – Junior Industry Panel Discussion," which will include a panel of up-and-coming industry leaders presenting real life challenges that are faced in each of their laboratories.

Jeanne Moldenhauer, Vice President, Excellent Pharma Consulting, will present a case study on microbiological control challenges of sterile products from an industry and agency perspective. Other sessions will present case studies in regard to environmental monitoring trending, preservative regulation, radiation sterilization, container closure methods and control of raw material bioburden. Two poster sessions will showcase industry-wide participants demonstrating practical application of products and processes where conference participants can talk one-on-one with the poster presenters.

Many other speakers are invited and are looking forward to sharing their knowledge and expertise. Sessions at the conference will highlight areas of concern to the pharmaceutical microbiologist with a focus on case studies to share learning experiences.

The PDA Training and Research Institute will also host four training courses from industry experts from October 20-21 on a myriad of microbiology topics. Courses include:

"Environmental Control and Monitoring for Regulatory Compliance" and "Auditing for Microbiological Aspects of Pharmaceutical and Biopharmaceutical Manufacturing" will be taught by **Frank Kohn,** PhD, President, FSK Associates. In "Environmental Control and Monitoring for Regulatory Compliance," he will teach students about facility design and validation, including personnel flow, equipment flow, baseline monitoring, media fills and quality control. The tracking and trending of the data will be reviewed, and a focus on the "best industry practices" to employ when performing environmental monitoring. Also, U.S. FDA and international standards related to microbiological issues will be covered with an emphasis on how to avoid quality problems.

This year's conference includes information on topics that frequently arise as challenges to pharmaceutical microbiologists

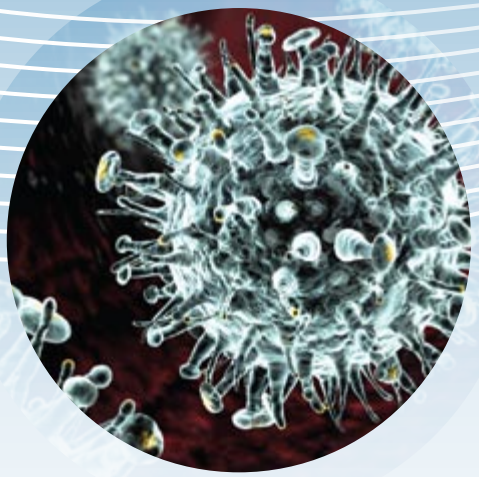
In "Auditing for Microbiological Aspects of Pharmaceutical and Biopharmaceutical Manufacturing," Kohn will focus on the various techniques, tools and methods for auditing manufacturing operations from a microbiological viewpoint. Current FDA and international boards of health GMP regulations will be reviewed.

"Microbiological Issues in Non-Sterile Manufacturing," will be taught by **Barry Friedman,** Consultant, and will discuss various issues in non-sterile manufacturing including setting of specifications, process development, holding times, preservation, cleaning, sanitization and approaches to evaluating recovered organisms.

"Rapid Microbiological Methods: Overview of Technologies, Validation Strategies, Regulatory Opportunity and Return on Investment," taught by **Michael J. Miller,** PhD, President, Microbiology Consultants, will provide a comprehensive review of currently available RMM technologies, validation strategies, applications, regulatory expectations, financial justification models and implementation plans. Taught by one of the industry's leaders in rapid methods, attendees will be immersed in discussions that will provide a meaningful and understandable roadmap for how to evaluate RMMs and employ them in laboratory and manufacturing environments.

The conference and courses are always interactive and exciting and provide a great atmosphere for exchanging information, meeting new people, and catching up with Microbiology industry experts.

We look forward to seeing you at the *PDA's 6th Annual Global Conference on Pharmaceutical Microbiology & TRI Courses!* For information about the meeting, courses and how to register, visit www.pda.org/2011microbiology.



The Parenteral Drug Association Presents...

PDA/FDA Adventitious Viruses and Novel Cell Substrates Conference

November 2-4, 2011

Rockville, Maryland

Be the first to know!

Sign up for the *PDA/FDA Adventitious Viruses and Novel Cell Substrates Conference* Advanced Notice Alert, and be the first to know when information has been published on this event! Simply fill out the form at www.pda.org/adventitiousnotice and you'll automatically receive an e-mail once the website is available.

Register for the Upcoming PDA/FDA Joint Regulatory Conference

Washington, D.C. • September 19-23 • www.pda.org/pdafda2011

Bob Dana, PDA

Washington, D.C. is a city of continual change. One thing that doesn't change in Washington, D.C. in the fall, however, is that it is time for the annual PDA/FDA Joint Regulatory Conference & TRI Courses. This event, now in its 20th year, will be held at the Renaissance Hotel in downtown Washington, D.C. from September 19 to the 23.

This is always one of PDA's most popular offerings, and 2011 promises to be another great year for the event.

Monday September 19

The week kicks off on Monday, September 19 with the opening session of the Conference. This year's theme is *Quality and Compliance in Today's Regulatory Enforcement Environment* and could there be a more topical and timely theme? Worldwide, regulatory activity is a major area of focus for both the industry and the regulatory authorities. In the United States, inspections, U.S. FDA 483 observations and warning letters are on the rise. Globally, there is ongoing interest in the supply chain and the identification and application of appropriate controls to ensure the integrity of starting materials, APIs and finished dosage forms. The International Conference on Harmonisation continues to develop new ICH Guidances which are embraced and applicable in the three ICH regions (Europe, Japan and the United States), with most other major regions and countries also adopting them.

The Program Planning Committee, co-chaired by **Amy Giertych,** Sr. Director, Global RA, Baxter Healthcare and Osobio's **Sue Schniepp,** Vice President, Quality, has put together an outstanding program again this year. Utilizing a mix of joint plenary sessions, as well as focused tracks held concurrently, the conference will include over 20 separate sessions featuring podium presentations with follow up question and answer sessions.

Monday's program continues after the opening plenary with a session on *News and Inspection Findings in the Biotech Area.* The afternoon will feature several concurrent sessions, with FDA and industry presenters including **Ann Marie Montemurro,** Director, Division of Foreign Field Investigations, U.S. FDA; **Betsy Fritschel,** Director, Corporate Quality, Johnson and Johnson; **Patrick Swann,** Pharmacologist, Office of Pharmaceutical Science, CDER, U.S. FDA; and **John O'Connor,** Senior Director, Corporate Inspection, Genentech, addressing topics such as foreign inspections, ICH Q11, good inspection practices and new regulatory initiatives.

The conference will include over 20 separate sessions featuring podium presentations with follow up question and answer sessions

Tuesday, September 20

While speaker confirmations are still ongoing, Tuesday promises to be another interesting day in the plenary and concurrent sessions with topics such as:

- Recall Lessons
- FDA and PIC/S
- GMP by Life Cycle Phase
- Supply Chain

Wednesday, September 21

The Conference concludes on Wednesday morning with what many consider to be the highlight sessions.

The first plenary session will be a compliance update, featuring senior FDA compliance managers providing brief updates and then engaging in a question and answer session with Conference attendees. The following officials will be present at this session:

Mary Anne Malarkey, Director, Office of Compliance and Biologics Quality, CBER

Ilisa Bernstein, Deputy Director, Office of Compliance, CDER

Rick Friedman, Director, Division of Manufacturing & Product Quality, CDER

Steve Silverman, Director, Office of Compliance, CDRH

Neal Bataller, DVM, Director, Division of Compliance, CVM

Immediately following the *Compliance Update* session, senior FDA leadership will provide updates on the various initiatives underway and planned in the various Centers. Panelists are:

Christopher Joneckis, Senior Advisor, CMC Issues, CBER

Janet Woodcock, MD, Director, CDER

Steve Silverman, Director, Office of Compliance, CDRH

Bernadette Dunham, DVM, PhD, Director, CVM

Howard Sklamberg, Director, Office of Enforcement, ORA

Conference attendees won't want to miss either of these two sessions on Wednesday!

Breakfast Sessions

In addition to the plenary and concurrent sessions, there will be nine breakfast sessions on Tuesday and Wednesday featuring topics, such as: FDA 101; Ask the Regulator: CDER Compliance; Biotech Multi-Product Facilities; and Process Validation. These and other breakfast sessions are sure to make getting up early worthwhile!

Interest Groups

PDA's interest groups will also be meeting during the Conference. A total of fifteen Interest Groups will be holding ➤

PDA
Parenteral Drug Association

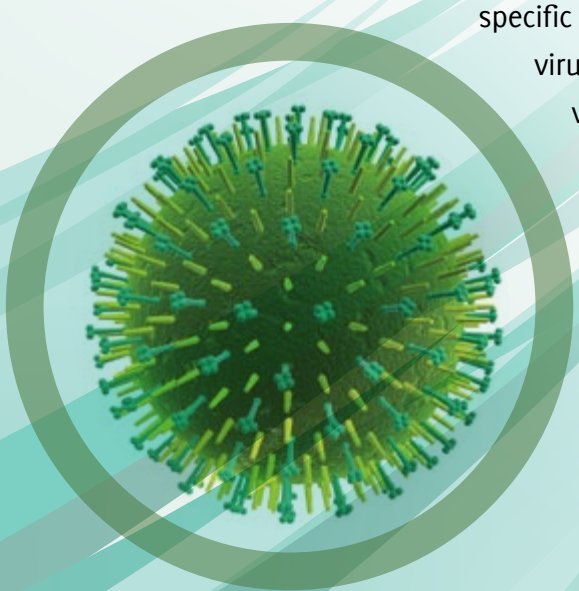
2011 PDA European

Virus & TSE Safety Forum

27-30 June 2011

Barcelona, Spain

The PDA Virus &TSE Safety Forum 2011 is organized in close collaboration with regulatory agencies in Europe and the U.S. It will focus on virus/TSE safety of cell derived or human plasma derived medicinal products. The conference will provide an overview on regulatory expectations, testing strategies (source and raw materials), QbD approach to demonstrate virus removal/inactivation by specific unit operations; a pre-conference workshop will focus on virus filtration methods. Worldwide occurrence of TSEs including vCJD and expected risk mitigation strategies will be discussed in the one day TSE part of the conference. As the previous conferences in this series (2001, 2003, 2005 and 2008), the 2011 event will provide a unique opportunity to exchange data, information and opinions with regulatory authorities.



PRE-CONFERENCE WORKSHOP 27 JUNE

CONFERENCE/EXHIBITION 28-30 JUNE

https://europe.pda.org/VirusTSE2011

meetings at twelve sessions on Monday and Tuesday afternoon. As always, there is no extra cost to attend any of the interest group sessions. They provide a great way to interact with your peers who want to know more about the same things you do, so be sure to attend a couple of these sessions, consistent with your own interests.

The Conference schedule is arranged to ensure attendees will have ample time to visit the Exhibit Hall. More than 50 providers of services and technology to the pharmaceutical and biopharmaceutical industry will have representatives available to discuss their products, services and help meet the particular needs conference participants have.

TRI Courses

The Conference concludes at noon on Wednesday afternoon, but the learning doesn't stop there.

On Thursday and Friday, PDA's Training and Research Institute will be hosting a series of seven quality- and regulatory-focused courses to further expand your knowledge. Topics covered will be on:

- Preparing for regulatory inspections from FDA and EMA
- Conducting and documenting OOS Investigations
- Effective investigations and corrective actions
- GMPs for Manufacturers of Sterile and/or Biotechnology Products
- Role of the Quality Professional in the 21st Century
- Active Pharmaceutical Ingredients - Manufacture & Validation
- Quality by Design for Biopharmaceuticals: Concepts and Implementation

These courses focus on bringing you the practical knowledge you need to address current regulatory expectations. Don't miss the opportunity to combine participation in one or two of these courses with your Conference attendance and save on travel costs at the same time.

All of this takes place in the heart of Washington, D.C., just steps from the Verizon Center in Chinatown. Don't miss the opportunity to be part of this experience. On behalf of the Program Committee, I look forward to seeing you there. For more information on the *2011 PDA/FDA Joint Regulatory Conference and Training Courses,* visit www.pda.org/pdafda2011.

Development of Combo Products Discussed at Workshop

Washington, D.C. • September 21-22 • www.pda.org/2011comboproducts

Co-chair Lisa Hornback, Hornback Consulting

Don't miss your chance to attend the one PDA workshop dedicated entirely to the lifecycle design validation for combination products; attend the *2010 PDA Combination Products Workshop* September 21-22, 2011 in Washington, D.C.

The workshop will provide a forum for discussion, review and interpretation of regulations, guidance and standards applicable in the United States and in Europe regarding the evaluation of usability as it relates to combination product design. It will include case studies and presentations by companies currently developing and managing the lifecycles of combination products and will offer networking opportunities which will create an environment that stimulates discussion.

The workshop planning committee is working diligently to coordinate this workshop on design topics that will benefit you and your organization as you navigate the unique requirements of combination product development.

The workshop planning committee is working diligently to coordinate this workshop on design topics that will benefit you

PDA has lined up an impressive roster of industry experts, as well as U.S. FDA representatives who will discuss the Agency's position on combination products and answer any of your questions.

You can register and review the workshop schedule at www.pda.org/2011combo products.

We look forward to seeing you in September at this unique event on matters important to development, manufacturing, quality assurance and regulatory activities for combination products.

The Parenteral Drug Association presents...

PDA 2011 Analytical Methods Development & Validation Workshop

The Complete Method Life Cycle

June 20-21, 2011 | Hyatt Regency Bethesda | Bethesda, Maryland

PDA 2011 Analytical Methods Development and Validation Workshop will bring together all levels of industry professionals to network and benefit from a program that will provide an update on recent regulatory expectations when developing and validating analytical methods. The workshop will provide participants with a comprehensive review of the laboratory and documentation standards expected during the development, qualification, and validation of analytical methods. Case studies will also be discussed.

Here's a look at some of the sessions and speakers at this year's meeting:

- **The Methods Life Cycle – The Overview**
  - Mapping Out the Development and Qualification, **Earl Zablackis**, PhD, Director Analytical Methods Validation, US Analytical Sciences & Assay Development, *Sanofi Pasteur*
  - Mapping Out the Validation Process, **Stephan Krause**, PhD, Principal Scientist, Development, *MedImmune, LLC.*
- **Method Development: Robustness and D.O.E**
  - Method Selection Process, **Philip Ramsey**, Director, QC/AD, *SAIC-Frederick, Inc.*
- **Method Development: Applying Principles of QbD for Analytical Methods**
  - Principles of a QbD, **Anu Bansal**, Senior Scientist, Analytical Development, *Genentech, Inc.*
- **Qualifications and Compendial Methods Verifications**
  - Method Qualification Process and Models, **Melissa Smith**, Senior Consultant, Quality and Analytical, *MJ Quality Solutions*
  - USP Visions of Verification of Compendial Methods: USP ‹1226›, **Gregory Martin**, Vice Chair, USP General Chapters Expert Committee, *U.S. Pharmacopeia*
- **Reference Standards and Method Transfers**
  - Analytical Reference Standard Lifecycle: Modern Preparation Technology, **Dorian Zoumplis**, Associate Scientist II, Development, *MedImmune, LLC.*
- **Method Validation: Validation Strategies and Acceptance Criteria**
  - Regulatory Expectations for Method Life Cycle and Validation, **Rajesh Gupta**, PhD, Deputy Director of the Division of Product Quality, CBER, *FDA*
- **Post-Qualification and Post-Validation Activities**
  - Maintenance of Qualification Status, **Dwayne Neal**, Assay Validation Manager, Quality Control, VRC/VPP, *SAIC-Frederick, Inc.*
  - Replacement of Old Assay with New Ones for Legacy Products, **Robert D. Sitrin**, PhD, Executive Director, VMSC-Bioanalytics, Merck Manufacturing Division, *Merck Sharp and Dohme Corporation*
- **Complete Life Cycle Case Study**
  - Analytical Methods Development & Validation – A Case Study Illustrating the Complete Bioassay Lifecycle, **Jonathan Zmuda**, PhD, Scientist II, Analytical Biochemistry, *MedImmune, LLC.*

www.pda.org/analyticalmethods2011

CONFERENCE June 20-21 **EXHIBITION** June 20-21

All Angles of Packaging Science Covered at Berlin Workshop

Thomas Schoenknecht, PhD, Schott

Over 120 experts gathered at PDA's first Parenteral Packaging Conference in Berlin, Germany on March 22-23 to discuss the latest trends in science, engineering and regulation for drug delivery and packaging components. They were joined by fifteen exhibitors who displayed products during the breaks in support of the rapidly changing parenteral packaging landscape.

Dima Al-Hadithi, Senior Pharmaceutical Assessor, MHRA, and **Mikaela Simianu,** PhD, Research Advisor, Manufacturing Science and Technology, Eli Lilly, opened the conference by discussing the misconceptions regulators have faced during inspections and the challenges and quality issues with container closure systems that the industry has been experiencing in the marketplace.

Diane Paskiet, Associate Director, Scientific Affairs, Marketing, West Pharmaceuticals, reviewed challenges posed by extractables and leachables, another topic of importance in parenteral manufacturing.

The remainder of the conference was divided into two tracks featuring experts from the pharmaceutical industry and analytical research organizations. These sessions informed the audience about the basic design of extractable and leachable studies, container-product compatibility, and the safety assessment of disposable/single-use systems in biopharmaceutical production.

The capabilities and limits of glass as a parenteral packaging material was another topic discussed. Recent cases of delamination of glass, fracture analysis and mechanical properties of glass, such as scratch sensitivity and breakability, were described in great detail by **Roger Asselta,** Vice President, Technical Affairs, Genesis Technical Advisors and **Florian Maurer,** PhD, Associate Scientist, R&D Schott. A new technology approach to visualize and measure stress in glass was presented by **Henning Katte,** Managing Director, CEO, Ilis. His presentation generated a lot of discussion about the utilization of related technologies.

Gustav-Adolf Nesemann, Head, Marketing & Sales, Bausch & Stroebel Maschinenfabrik added his perspective of smooth glass handling in the filling and packaging operation, and also informed the attendees about technical solutions available and under development in the pharmaceutical machine industry. He apprised the audience about a change in the paradigm for machine requirements, stating that speed and throughput are not the sole key requirement anymore. Smooth handling is gaining substantially higher importance for existing and new machine concepts.

The capabilities and limits of glass as a parenteral packaging material was another topic that was discussed

Paolo Golfetto, R&D Manager, Glass Division, Nuova Ompi, gave insights about new challenges the pharmaceutical industry was facing and transferring to the glass industry. He said that the glass industry was working hard to improve the quality of containers and align it to the requirements of the current regulatory landscape.

Plastic-based drug delivery units and their capabilities and limitations were also presented. **Stefan Köhler,** Director of Manufacturing, Sterile and Aseptic Technology, AstraZeneca, spoke about the benefits of blow-fill seal containers, and **Nicolas Brandes,** PhD, Product Manager, Marketing, West Pharmaceuticals, spoke about the probability of plastics being based on cyclic olefin polymer materials.

The capabilities of plastic materials in solving primary packing issues were discussed in presentations by **Jochen Heinz,** Manager, Transcoject and **Glenn Sved-**

Georg Rössling, PDA, (far right) talks to attendees during the Parenteral Packaging Conference

Report From The **2011 PDA Parenteral Packaging Conference**

berg, Managing Director, Nolato Cerbo. Both presentations gave detailed technical information about the physical properties of specific plastic compositions in comparison to glass.

The closing plenary session featured **Ingrid Markovic,** PhD, Expert Review Scientist, CDER, U.S. FDA, who gave an overview of the regulatory expectations on container closure systems in drug product contact materials. She showed several case studies for all kinds of parenteral packaging materials, highlighting issues resulting in 483 letters and implemented CAPA.

Joerg Zuercher, PhD, Scientist, Application System Development, Bayer HealthCare, and **Thomas Schoenknecht,** PhD, Director, Global Key Account Management, Schott, gave overviews of product lifecycle measures in drug delivery and insights into future drug delivery systems and their functions. **Georg Roessling,** PhD, Vice President, PDA, thanked the speakers and participants, and before closing the meeting, he invited all interested parties to next year's event, which is expected to take place again in Berlin.

The conference was followed by a Prefilled Syringe Interest Group Meeting the next day. It featured highlights of all glass handling discussions that occurred at the parenteral packaging conference.

All participants were impressed with the high quality content of the presentations and the global overview of the parenteral packaging issues provided in this conference.

The *PDA Letter* and PDA's website will inform you about the next parenteral packaging meeting, so stay tuned!

Still Time to Take Part in the PDA/EMA Conference

Couldn't make it to May's *PDA/EMA 2011Conference?* Or attended, but missed an important plenary session?

For the first time, PDA is now allowing those who are interested an opportunity to purchase recordings of all plenary sessions from the PDA/EMA conference.

Session recordings will provide those who could not personally attend the conference a chance to take part in the lectures and allows the people who did come the chance to hear sessions that they missed.

If you are interested or would like more information, please email or call Antje Petzhold at petzhold@pda.org or + 49-33056-2377-10.

Do You Have Time *Not* to Train?

James Wamsley, PDA

Many of us have experienced increasing demands on our time, both in our personal and professional lives. In thinking about that, I found myself pondering the value of time. Time is one of the resources we all have available to us; money is another. In making decisions about how to spend the time and money we have available to us, we need to look the present and future value of both.

The companies we work for are facing the same problem. In response to that, as they consider the value of money and time, many have cut back on the money they spend on outside training. What does it cost to send an employee to three days of laboratory training at TRI?

- Registration fee: $3,795
- Airline tickets: $500
- 3 night hotel stay: $600
- Meals: $300
- Ancillary expense: $200
- Total: $5,395
- Time out of the office: 4 days

So, I know what you're thinking. In addition to the costs of attending the training, the employee will be out of the office for about four days and will spend a day or two getting caught up upon return to the office. Saving the time and money *now* may seem like a good choice.

However, what may appear as a stretch of budget to train an employee now has the potential to save companies time and money in the future.

What if we look at it from another perspective?

What is the cost to *not* train someone? Do you know what it would cost you for a personnel or environmental excursion? What about cross-contamination in your product vessels? FDA-483? Sterility test failure? Media fill failure?!

How much time does it take to investigate these situations? How much do you lose by holding an entire lot in quarantine until the investigation is completed and a root cause is found? What would it cost to scrap the entire lot?

No matter what your product, or how much you spend on salaries, my guess is any of these situations would cost you more than $5,395 and a few days of lost productivity. For some of you, these situations could cost you hundreds of thousands, even millions of dollars!

Taking a single training course could prevent one or more of these issues. By sending someone to training, you're making a twofold investment in your employees and your company. A few days away from the office could save your company money and save your employees valuable time. Training courses don't only teach someone how not to do things. Students come away from courses with more knowledge, skills and a perspective they may not have had before. They will learn ways to improve upon procedures and processes that are already in place. They can apply what they learned to your facility and make improvements where they are necessary. If they streamline just one procedure, or improve the efficiency or yield in your fermentation process, or save WFI in your CIP program, then the investment made is worth it. By saving time and increasing efficiency, you can increase the productivity of your company and, in turn, increase revenue. I think that's a good return on investment.

You didn't cut your training budget because you think your employees don't need it. It was purely a fiscal decision. I'm sure you've thought of all or a lot of what I've mentioned above, but is it time to reevaluate your decision?

PDA's Training and Research Institute offers a wide variety of courses, covering aseptic processing, biotechnology, environmental monitoring, filtration, microbiology, quality/regulatory affairs, training, and validation.

We offer lecture and laboratory courses in Bethesda, Md. and lecture courses with all of our signature conferences, and many of the focus meetings. We also offer in-house training that can save you time and money by having several employees trained at the same time, at your facility. Do you have the time not to train?

Take Advantage of TRI Training

For more information on PDA TRI's courses or how we can provide in-house training, please visit www.pdatraining.org.

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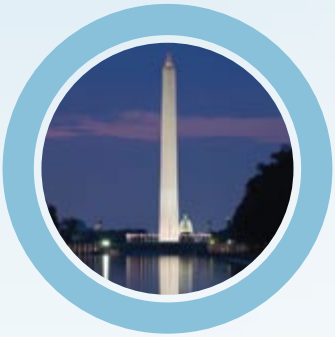
July 11-12, 2011 | Bethesda, Maryland | www.pdatraining.org/biotechnologyoverview

Risk Management Series (Special pricing applies - call +1 (301) 656-5900, ext. 151 for details)
July 25-26, 2011 | Bethesda, Maryland | www.pdatraining.org/riskmanagement
- A Risk Based Approach to Technology Transfer (July 25)
- Practical Applications of Risk Management – *New Course* (June 26)

August 2011

Basic Microbiology for Aseptic Processes
August 1-5, 2011 | Bethesda, Maryland | www.pdatraining.org/basicmicro

SOLD OUT! **2011 Aseptic Processing Training Program - Session 4**
August 22-26 (Week 2: September 12-16, 2011) | Bethesda, Maryland
www.pdatraining.org/aseptic
Seats are still available in session 5! (October 10-14, 2011 and November 14-18, 2011)



September 2011

Process Validation for Pharmaceuticals - Current and Future Trends
September 1, 2011 | Bethesda, Maryland | www.pdatraining.org/processvalidation

Hosted in conjunction with the *2011 PDA/FDA Joint Regulatory Conference & TRI Courses*
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Laboratory Courses

The PDA Training and Research Institute is accredited by the Accreditation Council for Pharmacy Education (ACPE) as a provider of continuing pharmacy education.

For more information on these and other upcoming PDA TRI courses please visit **www.pdatraining.org**

Editor's Message

The Value of Good Intelligence

Once again, it amazes me how an article planned months ago for the Letter is timed perfectly with unrelated and unforeseen events around the world. Undoubtedly, all of our readers are aware of the U.S. Navy Seals' recent mission in Pakistan to end the hunt for terrorist Osama Bin Laden. Over the month since the heroic event took place, the 24-hour news services have dissected almost every detail of the mission, and one of the clear messages coming out of it all is the importance of strong and accurate intelligence. Without it, the mission wouldn't have succeeded, and the hunt would still be underway. The collection of intelligence allowed the special forces to carefully plan, revise, replan, and finally orchestrate a mission that was executed nearly flawlessly. That is what good intelligence allows, and that is why it is so valuable.

While Regulatory Intelligence (RI) doesn't bear the same romance as that being done in Langley, Va., it is vital to our industry. New regulations, guidances and pharmacopeial standards have real impact on the important jobs conducted day-to-day by PDA members and our readers. **Winston Brown's** detailed report on how to initiate and manage an RI program provides great insight for companies unsure of what RI is and/or how to execute it. Winston's piece is a little longer than recent feature articles, but we found it to be a quick read nonetheless. The detail is such that one could take this back and start an RI project almost immediately. To make your intelligence efforts easier, I just learned that the *USP Pharmacopeial Forum* is now available for free online—what a great way to keep up with compendial matters in the United States.

Our second article is also timely in that PDA just hosted a two-day workshop with the U.S. FDA on glass vials. This well-attended event addressed primarily the issue of glass delamination and the solutions companies like Amgen and glass vendors are devising. The article, written by me and assistant editor **Emily Hough,** is a recap of a presentation by an Amgen employee last November at the PDA Parenterals meeting. It does not go into a lot of detail about the problems with the glass supplies, but rather, it takes a look at how Amgen's quality and CAPA systems were strengthened in the wake of the problems. It is always refreshing to hear a big pharma company take ownership for problems and discuss the details of how to improve following them.

PDA staff traveled to several chapter events recently. Self-proclaimed "neo-luddite" Emily Hough writes in "Tales from the Trail" about how QC microbiology automation can improve processes and save time. **Hassana Howe,** a tech aficionado and PDA's resident iPhone and iPad expert, took some time to join the Southern California Chapter in sending text messages from a boat off the California Newport Coast.

Another highlight is the beginning of our coverage of the 2010 Honor Award Winners, which will conclude with the March 2012 edition. We start this month with the Honorary Membership, awarded to **Nikki Mehringer,** past everything at PDA, who was the Chair of the Association when I first began. I might be biased, but I applaud Nikki's eye for good people! Seriously, Nikki was always a pleasure to work with and also knew how to make the work fun.

Correction

In "PDA Provides General Comments on Ch. 5 of the EU GMP Guide" (April 2011, p. 30) and "PDA Concerned Over Scope of Ch. 7 EU GMP Guide" (April 2011, p. 32), Scott Self's affiliation was erroneously listed as Aptuit. Scott, in fact, works for Takeda Global Research & Development.

PDA Letter

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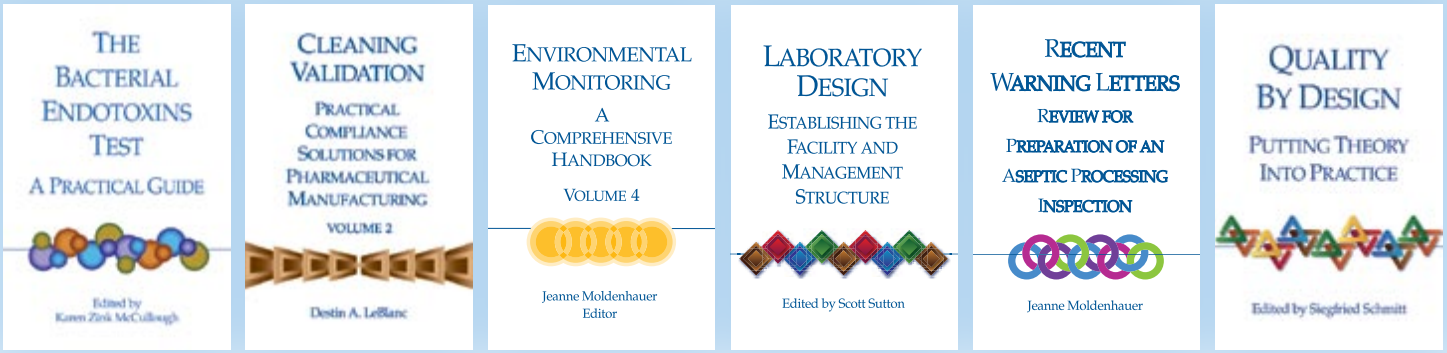

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