MORNING CONTINUING EDUCATION COURSES
7:30 AM–8:00 AM—Continental Breakfast (for morning course participants)
Buffet for morning courses will be located outside the course rooms in the foyer.

8:00 AM–12:00 Noon Courses in Session
AM1—Improving Human Translation of Safety Pharmacology Models: Practical Applications of Advanced Tissue and Organ Engineering
Room 150
AM2—Safety Pharmacology Endpoints in Toxicology Studies
Room 159

LUNCHTIME MINI COURSE
12:30 PM–1:30 PM Courses in Session
Boxed lunches will be available for registrants in this course room at 12:15 pm.
L1—Safety Pharmacology Case Studies: From Discovery to the Clinics
Room 150

2:00 PM–3:00 PM Poster Installation Exhibit Hall F

AFTERNOON CONTINUING EDUCATION COURSES
1:00 PM–2:00 PM—Boxed Lunch (for afternoon course participants)
Boxed lunches for afternoon courses will be located outside the course rooms in the foyer.

2:00 PM–6:00 PM Courses in Session
PM1—Advanced Topics in Respiratory Safety Pharmacology
Room 150
PM3—Gastrointestinal Safety Pharmacology: From Preclinical to Clinical
Room 157
PM4—SAFETY Biomarkers—What Every Safety Pharmacologist Should Know!
Room 154

6:00 PM–7:30 PM Welcome Reception and Exhibition Opening Exhibit Hall F

TUESDAY, OCTOBER 2
8:15 AM–8:30 AM Welcome and Announcements Room 150–152
8:30 AM–9:30 AM Plenary Keynote: Drug Development from a Medical Oncologist’s Perspective Room 150–152
9:30 AM–10:00 AM Break Exhibit Hall F
10:00 AM–12:00 Noon Morning Track Sessions
A: Oncology Therapies
B: Abuse Liability
Room 150–152
Room 158–159
12:00 Noon–2:30 PM Lunch Break, Exhibits, and Poster Presentations All Posters Present Exhibit Hall F
1:00 PM–2:00 PM Sponsored Presentations See page 43
2:30 PM–3:30 PM Oral Communications 4–6
Invited Oral Communications Session 4: Stem Cell
Invited Oral Communications Session 5: In Vitro Cardiovascular
Invited Oral Communications Session 6: Modelling/Predictivity/Translation
Room 157
Room 154
Room 152
3:30 PM–4:00 PM Break Exhibit Hall F
4:00 PM–6:00 PM Afternoon Track Sessions
A: Animal Models
B: The Growing Role of Safety Pharmacology
Room 150–151
Room 158–159

WEDNESDAY, OCTOBER 3
7:00 AM–8:30 AM Strategic Partnership Meeting Room 156
8:30 AM–9:30 AM Plenary—Oncology Session Follow Up (ICH S7, S9, and CV Studies)
Room 150–151
9:30 AM–10:00 AM SPS Annual Business Meeting Room 150–151
10:00 AM–10:30 AM Break Exhibit Hall F
10:30 AM–12:30 PM Morning Track Sessions
A: Diabetes
B: Tox21 and In Vitro Models: Advancing New Approaches for Hazard Identification and Risk Assessment
Room 150–151
Room 158–159
12:30 PM–2:30 PM Lunch Break, Exhibits, and Poster Presentations All Posters Present Exhibit Hall F
1:00 PM–2:00 PM Sponsored Presentations See page 43
2:30 PM–3:30 PM Oral Communications 4–6
Invited Oral Communications Session 4: Stem Cell
Invited Oral Communications Session 5: In Vitro Cardiovascular
Invited Oral Communications Session 6: Modelling/Predictivity/Translation
Room 157
Room 154
Room 152
3:30 PM–4:00 PM Break Exhibit Hall F
4:00 PM–6:00 PM Afternoon Track Sessions
A: Animal Models
B: The Growing Role of Safety Pharmacology
Room 150–151
Room 158–159

THURSDAY, OCTOBER 4
8:30 AM–12:00 Noon Poster Removal Exhibit Hall F
8:30 AM–10:30 AM Plenary—Combined Safety Pharmacology and Toxicology Studies Room 150–151
10:30 AM–10:45 AM Break Exhibit Hall F Foyer
10:45 AM–11:00 AM Junior and Student Travel Awards Presentation Room 150–151
11:00 AM–12:00 Noon Distinguished Service Award Presentation: The Usefulness of Nonhuman Primates (NHP) in Safety Pharmacology Room 150–151
12:00 Noon–12:30 PM President’s Summary of Issues, Recommendations, and Debates Room 150–151
12:30 PM SPS 12th Annual Meeting Adjourns

SPS 12th Annual Meeting Overview
(Tuesday continued)
# Annual Meeting Events

- **Academic and Student Welcome Meeting** .......................................................... 8
- **Annual Business Meeting** ................................................................................ 8
- **Awards Ceremony and DSA Lecture** ................................................................. 8
- **Continuing Education Courses** ........................................................................ 8
- **Exhibition** ........................................................................................................... 8
- **Poster Presentations** ........................................................................................ 9
  - Poster Installation, Poster Removal, Poster Presentations, Poster Contest, and Oral Communications
- **Scientific Sessions** ............................................................................................... 9
- **Strategic Partnership Meeting** ........................................................................... 9
- **Welcome Reception and Exhibition Opening** ................................................... 9

# General Information

- **Accessibility for Persons with Disabilities** ......................................................... 10
- **Attire** .................................................................................................................. 10
- **Badges** ............................................................................................................... 10
- **Certificates of Attendance** .................................................................................. 10
- **Climate** ............................................................................................................... 10
- **Hotel** ................................................................................................................... 10
- **Internet Access** .................................................................................................. 10
- **Lost and Found** ................................................................................................... 10
- **Online Meeting Materials** .................................................................................... 10
- **Photography/Recording Policy** .......................................................................... 10
- **Registration Desk Hours** ..................................................................................... 10
- **Security and Safety** ............................................................................................ 11
- **Speaker Ready Room** ......................................................................................... 11
- **Sponsored Presentations** .................................................................................... 11
- **The Hyatt Regency Phoenix Map** ....................................................................... 12
- **The Phoenix Convention Center Map** ................................................................. 13

# CE Courses

- **Continuing Education Courses** ........................................................................ 14

# Program

- **Scientific Sessions and Other Events** ............................................................... 17

---

This is a QR (Quick Response) code. Download a QR reader app on your smartphone or tablet and scan for easy access to up-to-date Annual Meeting information.

# Posters

- **Poster Presentations** ........................................................................................ 23
- **Poster Presentation Floor Plan** ......................................................................... 24
- **Poster Index by Poster Number** ........................................................................ 25
- **Presenting Author Index** .................................................................................... 39

# Sponsored Presentations

- **Sponsored Presentation Descriptions** ................................................................. 43

# Exhibitor Directory

- **Exhibitor Listing by Company Name** ................................................................. 44
- **Exhibitor Listing by Booth Number** ................................................................. 45
- **2012 Exhibit Hall Map** ....................................................................................... 46
- **Exhibit Hours** ..................................................................................................... 47
- **Exhibitor Directory** ............................................................................................ 47

# Looking Ahead

- **2013 Annual Meeting** ......................................................................................... 68

# Sponsorship

- **Society Sponsors** ............................................................................................... Back Cover

---

All text and graphics are copyright © 2012 by the Safety Pharmacology Society unless noted. Some Phoenix photos are courtesy of the photographs are courtesy of the Greater Phoenix Convention and Visitors Bureau unless otherwise noted. Some photographed by Jill Richards.
Become a Member of the Safety Pharmacology Society (SPS)

Safety pharmacology is a relatively newly defined scientific discipline and is of great interest to those involved with the discovery and development of new pharmaceuticals. The scientific foundations of safety pharmacology are based on the integration of pharmacology, physiology, and toxicology. SPS members represent the pharmaceutical industry, as well as academia, government, contract research organizations, service industries, consulting agencies, and private organizations world-wide. The benefits of joining SPS include:

Communication and Networking
As a member, you are associated with experienced and knowledgeable scientists, providers, and regulators active in the field of safety pharmacology. Fellow members are available for discussions on safety pharmacology issues, such as study designs and data interpretation.

Get Involved!
Safety pharmacology is still a rapidly developing area which is also reflected by the growth of the Society. SPS is still of a size which allows you multiple opportunities to become involved in the field by volunteering your time and enthusiasm. The Society has a wide variety of committee activities to meet all member volunteer needs and skills.

Education
Continuing Education courses are given in conjunction with the Safety Pharmacology Society Annual Meeting, as well as in satellite meetings throughout the year. CE courses include a comprehensive introduction to safety pharmacology for the “newcomer,” as well as advanced courses that challenge even the experienced safety pharmacologist. Webinars on relevant topics and online CE courses are also available.

Employment Opportunities
The SPS provides a forum for advertising employment opportunities and for investigating new positions. This is available both by posting at the Annual Meeting, as well as on the SPS website (SPS Careers link). Being able to meet and even interview potential new employees/employers is a benefit for members attending the Annual Meeting.

Recognition via Awards
Several opportunities for students and junior scientists to win awards including travel awards exists. For senior scientists, the opportunity exists to have their abstract selected for a fifteen-minute oral presentation at the Annual Meeting. The Distinguished Service Awards honor colleagues who have committed their efforts to forwarding safety pharmacology.

SavingS
Becoming a member of SPS includes discounted registration at the SPS Annual Meeting, at Continuing Education courses and Satellite Meetings and Workshops. Gain access to the Journal of Pharmacological and Toxicology Methods, in ScienceDirect, the Elsevier publication database. Your membership dues are more than compensated with these discounts.

Travel—New Places and New Friends
Each year there is a new venue for the Annual Meeting. Currently, we alternate between North America and Europe. This gives members the opportunity to travel and enjoy new cultures and international networking opportunities.

Vendor and CRO Contacts
Work done by safety pharmacologists are supported by dedicated vendors and contract research organizations. Members of SPS involved in this business segment also attend the SPS Annual Meeting and participate in the SPS Annual Meeting Exhibition. Furthermore, vendors sponsor safety pharmacology-related mini-symposiums to assist in the sharing of cutting-edge technology.

Website/SPShare—A Secure, Collaborative Network
SPShare is a secure collaborative network available to members for sharing information and the latest professional developments, professional networking, and much more. Easily access in real-time member profile information, educational documents, and the latest news about Society activities.

Membership Fees:
Full Membership ......................................................................$100
Retired Membership ................................................................$50
Student Membership ...............................................................$50

The easy online membership application takes approximately five minutes to complete. Visit www.safetypharmacology.org (select Invitation to Join SPS) for the application.
Dear Colleagues,

The Officers and Board of Directors welcome you to the 12th Annual Meeting of the Safety Pharmacology Society!

The SPS mission is to support the exchange of scientific information, education, and innovation in the field of safety pharmacology. The 2012 Scientific Program features a diverse range of scientific sessions organized into two theme tracks and covering issues specific to important therapeutic areas, new regulatory developments, and new technologies so that attendees can stay abreast of new content and developments in all areas of safety pharmacology. The 2012 meeting also offers a broad Continuing Education program both on an introductory level as well as advanced courses for the expert.

In an effort to support the development of new safety pharmacologists, SPS is pleased to offer Junior Investigator Travel Awards and Student Travel Awards to deserving recipients from around the world. In addition, twenty-four poster abstracts have been selected for short oral presentations at the meeting.

The beautiful city of Phoenix provides the perfect backdrop for this dynamic meeting. The gateway to the Grand Canyon, Phoenix is rich in history, amazing landscapes, art and culture, and there is truly something for everyone to enjoy. We hope that you will enjoy the magnificent scenery, activities, and sightseeing opportunities in your free time.

We thank you for joining us in Phoenix for our 12th Annual Meeting. If you have not yet joined the Society, we cordially invite you to become a member, get involved in our ongoing activities, and reap the many benefits of membership.

Be sure to mark your calendar for the 13th Annual Meeting in Rotterdam, The Netherlands, September 16–19, 2013!

Sincerely,

Hugo M. Vargas, PhD
President 2012
Roger D. Porsolt's contributions to safety pharmacology are long-standing and multifaceted. He is a founding member of the Safety Pharmacology Society, an adjunct professor of pharmacology at the University of Texas Health Science Center in San Antonio, and president of Porsolt. Roger received his Master's degree (first class honors) in experimental psychology from the University of Auckland, New Zealand in 1965 and continued his studies at Birkbeck College at the University of London, United Kingdom obtaining a PhD in psychopharmacology in 1973. He worked for many years in the pharmaceutical industry first at Sandoz (now Novartis) in Basel and then in Paris at Delalande and Synthélabo (both now Sanofi). During Roger's time in industry, his research focused on animal models of depression, anxiety, psychosis, and Alzheimer's disease. One of his major scientific contributions was developing the behavioral despair test, which has since become a standard in the preclinical evaluation of antidepressants and also known as the Porsolt test. In 1985, Roger helped start a newly established contract research company, ITEM-Labo, and in 1999, he acquired the company which is now called Porsolt. Being one of the earliest CROs specializing in animal pharmacology, Roger helped shape the field of modern safety pharmacology. He has published numerous papers and book chapters, not only on CNS safety pharmacology and ICH S7A, but also on more general aspects of drug safety evaluation including drug abuse-dependence-liability and arrhythmogenic risk. Roger is a long-standing supporter of SPS, in particular providing the program bags for every annual meeting. He helped teach and organize various Continuing Education courses in both Mannheim and San Diego. Roger continues to advocate for safety pharmacology, including participation in a variety of educational programs at the IUPHAR in Beijing.

Please be sure to attend Dr. Porsolt's presentation, “The Usefulness of Nonhuman Primates (NHP) in Safety Pharmacology” on Thursday, October 4 at 10:30 am in Room 150–151.

Junior Investigator Travel Award

Pamela Gerenser  
*Merck & Co., Inc.*

Daniel Johnson  
*Bio Plus Safety Pharmacology*

Zemmie Pollock  
*Lovelace Respiratory Research Institute*

Kate Harris  
*GlaxoSmithKline*

Vudhiporn Limprasutr  
*Chulalongkorn University*

John Ross  
*Battelle Memorial Institute*

Up to six (6) Junior Investigator Travel Awards are granted annually with consideration given to select awardees from diverse geographies.

Student Travel Award

Md. Ariful Haque Mollik  
*Peoples Integrated Alliance Biotech Concern*

Anup Raj Upreti  
*Maharajgunj Medical Campus, Institute of Medicine, Tribhuvan University*

Up to two (2) Student Travel Awards are granted annually with consideration given to select awardees from diverse geographies.
SPS 2012 Board of Directors

PRESIDENT
Hugo M. Vargas
Amgen, Inc.

VICE PRESIDENT
Derek J. Leishman
Eli Lilly & Co.

VICE PRESIDENT-ELECT
Jean-Pierre Valentin
AstraZeneca Pharmaceuticals

SECRETARY
Brian Roche
Battelle Memorial Institute

TREASURER
Michael Pugsley
Johnson & Johnson Pharmaceuticals R&D

SECRETARY-ELECT
William S. Redfern
AstraZeneca Pharmaceuticals

PAST PRESIDENT
Mary Jeanne Kallman
Covance, Inc.

BOARD MEMBERS
Simon Authier
Marc Bailie
Russell Bialecki
Alfred Botchway
Mark Holbrook
John Koerner
Nick McMahon
Scott Mittelstadt

Executive Director
Clarissa R. Wilson
The success of the Safety Pharmacology Society is dependant on the dedication and commitment of member volunteers. The Society would like to recognize the following members for their service on SPS committees.

### Abstract Review Committee

CHAIR: Jean Pierre Valentin  
CO-CHAIR: Helen Prior  
MEMBERS: Claudio Arrigoni, Anthony Bahinski, Kristy D. Bruse, David Cameron Bunton, Khuram Chaudhary, Yi Cui, Eric Delp, Abdel-Ilah El Amrani, Michael Engwall, Ashakaly Esmail, Guillaume Froget, Ursula A. Germann, John Gibson, Andrea Greiter Wilke, Jean-Michel Guillou, Liang Guo, Steve Hachtman, Craig R. Hassler, Gregory Thomas Knipp, Michael Markert, Stéphane Milano, Pierre Morissette, Tomas Mow, Malar Pannirselvam, Yusheng Qu, Sian L. Ratcliffe, Eric I. Rossman, Martin J. Sanders, Frederick J. Sannajust, Silke Schwengberg, Hong Shi, Arun Sridhar, Dale W. Stevens, Marcello Tontodonati, Martin Traebert, Derek J. Leishman (Program Committee Liaison)

### Academic Outreach Committee

CHAIR: Carrie G. Markgraf  
MEMBERS: Robert J. Austin-LaFrance, Ursula A. Germann, Kim Henderson

### Additional Meetings Committee

CHAIR: Derek J. Leishman  
MEMBERS: Anthony Bahinski, Ashakaly Esmail, Steve Hachtman, Angela C. Jenkins, Bruce Morimoto

### Continuing Education (CE) Committee

CHAIR: Angela C. Jenkins  
CO-CHAIR: Jay Gizzi  
MEMBERS: Robert J. Austin-LaFrance, Anthony Bahinski, Brandon Borders, Keri E. Cannon, Mark Deurinck, Liang Guo, Steve Hachtman, David Johnson, Lewis B. Kinter, Stéphane Milano, Scott Mittelstadt, Bruce Morimoto, Tomas Mow, Mark A. Osinski, Greet Teuns, Marcello Tontodonati

### Distinguished Service Award (DSA) Committee

CHAIR: Jo Anne Saye, PhD, Co-Chair (2012–2013)  
CO-CHAIR: Lewis B. Kinter, Co-Chair (2012–2013)  
MEMBERS: Ursula A. Germann, Mary Jeanne Kallman, Arun Sridhar
International Strategic Partnerships
CHAIR: Mark Holbrook
MEMBERS: Alan S. Bass, Derek J. Leishman, Hugo M. Vargas

Junior and Student Travel Award (JSTA) Committee
CHAIR: Maria Isabel Roman
CO-CHAIR: Paul C. Harrison
MEMBERS: Anthony Bahinski, Kristy D. Bruse, Khuram Chaudhary, Yi Cui, Heidi Long, Michael Markert, Malar Pannirselvam, Eric I. Rossman, Hong Shi, Arun Sridhar

Nominating Committee
CHAIR: Kristy D. Bruse
MEMBERS: Tiffini Brabham, Ann-Christin Ericson, Steve Hachtman, Mike Hawk

Program Committee 2012
CHAIR: Derek J. Leishman

Website Committee
CHAIR: Kristy D. Bruse
MEMBERS: Dale W. Stevens
Annual Meeting Events

Academic and Student Welcome Meeting

All students and academics are invited to attend the Academic and Student Welcome meeting on Wednesday, October 3 at 12:30 pm in Room 156. Please visit the lunch buffet in the Exhibit Hall and bring your lunch to Room 156 to meet with SPS President, Dr. Hugo M. Vargas, and the Academic Outreach Committee. After lunch, students are then invited to participate in the Poster Session from 12:30 pm–2:30 pm, visit with exhibitors, attend the oral communications from 2:30 pm–3:30 pm, attend scientific sessions of your choice from 4:00 pm–6:00 pm, and return to the Exhibit Hall for the extended poster presentations time from 6:00 pm–7:30 pm.

Annual Business Meeting

Room 150–151

Wednesday, October 3
9:30 AM–10:00 AM

A brief summary of the Society’s activities over the past year and the goals for the coming year will be presented. The Society’s 2013 Officers will be recognized and the incoming members of the Board will be announced. The ceremonial “passing of the gavel” for 2013 will take place.

Awards Ceremony and DSA Lecture

Room 150–151

Thursday, October 4
10:45 AM–12:00 Noon

Awards recipients will be recognized for the following SPS Awards: Junior Investigator Travel Award; Junior Investigator Poster Contest; Student Travel Award; and the Distinguished Service Award (DSA). The 2012 DSA Lecture will be given by this year’s award recipient, Roger D. Porsolt, PhD, from 11:00 am–12:00 noon.

Continuing Education Courses

All Continuing Education courses will be held on Monday, October 1. Attendees will receive a certificate of attendance for participation at the end of each course. If you wish to participate in a CE course but have not yet registered, please visit the Registration Desk in the South Lobby to register. See page 14 for course descriptions.

Morning Courses: AM1 to AM2

Morning courses include a continental breakfast and refreshments during the break (for AM CE course attendees only).

7:30 AM–8:00 AM—Continental Breakfast
(for morning course participants)
Buffet for morning courses will be located outside the course rooms in the foyer.

8:00 AM–12:00 Noon—Courses in Session
AM1—Improving Human Translation of Safety Pharmacology Models: Practical Applications of Advanced Tissue and Organ Engineering
Room 150

AM2—Safety Pharmacology Endpoints in Toxicology Studies
Room 159

Lunchtime Mini Course: L1

12:30 PM–1:30 PM—Course in Session
L1—Safety Pharmacology Case Studies: From Discovery to the Clinics
Room 150

Boxed lunches will be available for registrants in this course room at 12:15 pm.

Afternoon Courses: PM1, PM3, and PM4

Afternoon courses include a boxed lunch and refreshments during the break (for PM CE course attendees only).

1:00 PM–2:00 PM—Boxed Lunch
(for afternoon course participants)
Boxed lunches for afternoon courses will be located outside the course rooms in the foyer.

2:00 PM–6:00 PM—Courses in Session
PM1—Advanced Topics in Respiratory Safety Pharmacology
Room 150

PM3—Gastrointestinal Safety Pharmacology: From Preclinical to Clinical
Room 157

PM4—SAFETY Biomarkers—What Every Safety Pharmacologist Should Know!
Room 154

Exhibition

Exhibit Hall F

Exhibits are open to all registered attendees. Refreshment breaks and lunch will be available in the Exhibit Hall, Tuesday through Wednesday.

Exhibit Hours

Monday, October 1 .................................................. 6:00 PM–7:30 PM
Tuesday, October 2 ................................................ 9:00 AM–5:00 PM
Wednesday, October 3 ........................................... 9:00 AM–4:00 PM
and 6:00 PM–7:30 PM

Exhibitors please note:
Installation Times

Monday, October 1 .................................................. 9:00 AM–3:00 PM

Exhibitors must complete their installation by 3:00 pm to allow time for the Welcome Reception setup.
Dismantle Times
Wednesday, October 3 ............................................. 7:30 PM–9:00 PM
Thursday, October 4 ............................................. 8:30 AM–12:00 Noon

Exhibitors must vacate the Exhibit Hall by 12:00 noon on Thursday, October 4.

Poster Presentations

Exhibit Hall F

Poster Installation
Monday, October 1 ............................................. 2:00 PM–3:00 PM

Poster Removal
Wednesday, October 3 ............................................. 7:30 PM–9:00 PM
Thursday, October 4 ............................................. 8:30 AM–12:00 Noon

Posters not claimed by 12:00 noon on Thursday, October 4, will be discarded.

Poster Presentations
All posters will remain on display from Monday through Wednesday evening in one poster session.

Note to Presenters: Please plan to attend your poster during the following times:

Tuesday, October 2
12:00 Noon–2:00 PM ............................................. All Posters Present
1:00 PM–2:00 PM ............................................. Poster Judging
(all posters who entered the Junior Investigator Poster Contest must be present at their poster during this time)

Wednesday, October 3
12:30 PM–2:30 PM ............................................. All Posters Present
6:00 PM–7:30 PM ............................................. Final Poster Presentations Session, All Posters Present

Poster Contest
Individuals who submitted abstracts for the Junior Investigator Poster Contest, are required to present their posters on Tuesday, October 2 from 1:00 pm–2:00 pm during judging.

Poster Contest recipients will be announced during the Awards Ceremony on Thursday, October 4.

Oral Communications
The Abstract Committee has reviewed the submitted abstracts and selected several for oral communications to take place on Tuesday, October 2 from 2:00 pm–3:00 pm and Wednesday, October 3 from 2:30 pm–3:30 pm. Please refer to the scientific program on pages 17–22 for presentation titles.

Scientific Sessions
The 2012 scientific program features a diverse range of scientific sessions organized into two thematic tracks and covering issues specific to important therapeutic areas, new regulatory developments and new technologies so that attendees can stay abreast of new content and developments in all areas of safety pharmacology. Sessions take place in the following rooms: 150–151 and 158–159 (see map on page 13). Please see the daily schedule for session details.

Strategic Partnership Meeting

Room 156
Wednesday, October 3
7:00 AM–8:30 AM

All international attendees are invited to attend this meeting to share latest developments in their regions, local society activities, and opportunities for partnership with sister societies. Continental breakfast will be served.

Welcome Reception and Exhibition Opening

Exhibit Hall F
Monday, October 1
6:00 PM–7:30 PM

Admission to the Welcome Reception is included in the registration fee for attendees and exhibitors. Refreshments will be available from 6:00 pm–7:00 pm. Exhibits will remain open until 7:30 pm. Renew old friendships and make new acquaintances during the Welcome Reception.

Win Big!

Prizes include*:
Apple iPad
Bose Noise Cancelling Headphones
Jambox Wireless Speakers
Visa Gift Card

See pages 41–42 for details!

*A Treasure Hunt Map showing participating exhibitors is included in your Registration Packet. You must have a stamp from each participating exhibitor to be entered in the prize drawing!

*Prizes subject to change
Accessibility for Persons with Disabilities

The Phoenix Convention Center is accessible for individuals with special mobility needs. If you require more information about access, please contact Laura Helm at SPS Headquarters: 703.547.0874 or email: lhelm@safetypharmacology.org.

Attire

The attire for the SPS Annual Meeting is casual. We encourage you to bring comfortable clothing and shoes. A sweater or light jacket may be needed for the air-conditioned meeting rooms.

Badges

During the Annual Meeting, badges must be worn at all times while in the Phoenix Convention Center. For security purposes, please remove your badge when leaving the Center. If you misplace your badge please visit the Registration Desk during registration hours for a replacement.

Certificates of Attendance

Certificates of attendance will be available in your registration packet at the Registration Desk located in the South Lobby.

Online Meeting Materials

Download Abstracts and the Attendee List from SPS Website

In an effort to reduce our environmental footprint, Poster Abstracts and other meeting materials are accessible online. The Poster Index is available on page 25 for you to navigate the Poster Presentations.

The following information is available online:

- Program and Exhibitor Directory
- Speaker Presentations, Speaker Index, and Speaker Abstracts
- Poster Abstracts and Poster Presentations
- Attendee List
- CE and Session Evaluations

We encourage you to download the electronic files to your computer, smartphone, or PDA. Please visit www.safetypharmacology.org/am2012/materials.asp.

Registration Desk Hours

South Lobby

<table>
<thead>
<tr>
<th>Day</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, October 1</td>
<td>7:00 AM–6:00 PM</td>
</tr>
<tr>
<td>Tuesday, October 2</td>
<td>7:30 AM–5:30 PM</td>
</tr>
<tr>
<td>Wednesday, October 3</td>
<td>7:30 AM–6:30 PM</td>
</tr>
<tr>
<td>Thursday, October 4</td>
<td>7:30 AM–1:00 PM</td>
</tr>
</tbody>
</table>

Climate

The average high for October in Phoenix is 86°F, and the average low is 57°F.

Hotel

Please visit the Front Desk of your hotel for all hotel-related questions.

Hyatt Regency Phoenix
122 North Second Street
Phoenix, Arizona 85004 United States
Tel: 602.252.1234

Internet Access

Attendees may purchase “Instant Internet” for $12.95 for 24 hours per device by utilizing your current web browser (Internet Explorer, Mozilla Firefox), you will then select Instant Internet and follow the prompts to set up your account. This connection is valid for access in meeting rooms, lobbies, and common areas. Complimentary Wi-Fi is available in the lobby of the south building.

Lost and Found

Lost and found articles may be taken to the SPS Registration Desk. Any items left at the SPS Registration Desk after 1:00 pm on Thursday, October 4 will be turned over to the Phoenix Convention Center.

Photography/Recording Policy

Photography and/or recording of scientific presentations and poster presentations in any manner is prohibited without the specific consent of SPS and the presenter(s)/author(s). Session chairs are asked to strictly enforce this policy, and individuals who do not comply will be asked to leave the session. In addition, cameras, and recording devices are prohibited in the Exhibit Hall. If you have any questions regarding this policy, please visit the SPS Registration Desk.
Security and Safety

SPS provides security personnel at the Phoenix Convention Center. If you have any security concerns, please contact SPS staff at the Registration Desk near the entrance.

Given the nature of our conference there is always a possibility of demonstrators. Demonstrations can range from verbal confrontations to protests. We recommend the following procedures in the event of demonstrations:

- Have your name badge available upon entering the Phoenix Convention Center and wear it in the Phoenix Convention Center at all times. When leaving the facility, remove it, so as to blend with other people.
- If you see a demonstration or protest beginning, please contact any member of the SPS Annual Meeting staff and they will initiate a SPS response. If you see actions that appear threatening, notify the nearest security personnel.
- Do not engage, defend either side, or subdue person(s) in any type of disturbance. Demonstrators are usually trying to attract media attention, don't help them.
- SPS representatives will respond to media inquiries. Do not participate in interviews or other media responses.

Travel Safety Tips:
Walk “smart” when you leave the Phoenix Convention Center.

- Don’t answer the door in a hotel room without verifying who it is. If a person claims to be an employee, call the Front Desk and ask if someone from their staff is supposed to have access to your room and for what purpose.
- Know your destination and the best way to reach it.
- Travel along sidewalks in lighted areas at night, and don’t walk alone.
- Establish a “buddy” system with another attendee to walk to and from the Phoenix Convention Center.
- Share schedules and check on each other periodically.
- Build your awareness of unknown surroundings by reviewing local information.
- Laptop computers, electronic tablets, and smart phones are attractive, easy targets for thieves. Be sure your equipment is kept in a secure place.
- Jackets with pockets provide a convenient alternative to reduce the chance for lost or stolen handbags.

Speaker Ready Room

Room 155

The Speaker Ready Room is available for speakers to upload and test their presentations during the following times:

- Sunday, September 30: 3:00 PM–5:00 PM
- Monday, October 1: 7:00 AM–6:00 PM
- Tuesday, October 2: 7:30 AM–5:30 PM
- Wednesday, October 3: 7:30 AM–5:30 PM
- Thursday, October 4: 7:30 AM–1:00 PM

Sponsored Presentations

Each year SPS invites all exhibitors and annual meeting sponsors to host sponsored presentations during the meeting. For a complete list of 2012 Sponsored Presentations please see page 43. Sponsored presentations are promoted on the SPS website, via email blasts to registrants, and in the Program and Exhibitor Directory.

While they are not a part of the official SPS scientific program, sponsored presentations are permitted by the Society.
The Hyatt Regency Phoenix Map

First Floor

Second Floor
The Phoenix Convention Center Map

CE Courses, Scientific Sessions, Exhibit Hall, Meetings, and Posters
## Monday, October 1

### Morning Continuing Education Courses

Morning courses include a continental breakfast and refreshments during the break (for AM CE course attendees only).

**7:30 AM—8:00 AM**—Continental Breakfast  
(for morning course participants)  
Buffet for morning courses will be located outside the course rooms in the foyer.

Please refer to your course book for further details and presentation handouts.

### AM1: Improving Human Translation of Safety Pharmacology Models: Practical Applications of Advanced Tissue and Organ Engineering

**8:00 AM—12:00 Noon**

**Room 150**

**Co-Chairs:** Blake D. Anson, PhD, Cellular Dynamics International, Inc., Madison, WI, United States, and Anthony Bahinski, PhD, MBA, FAHA, Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA, United States

This intermediate-level course is intended for individuals with previous knowledge of traditional safety pharmacology studies and who are interested in learning about cutting-edge and newly developing in vitro models. Recent advances in cellular models, including stem cell-derived tissue cells, three-dimensional models, and micro-organ generation, have made it possible to address relevant safety pharmacology and toxicology endpoints utilizing human-based in vitro techniques. The lectures in this course will include overviews of various in vitro models and how they may be applied to cardiovascular, respiratory, and neuronal safety endpoints. Active participation from attendees is highly encouraged.

**8:00 AM—8:20 AM**  
Opening Remarks: Safety Pharmacology and the Need for Better Predictive Assays  
Anthony Bahinski, PhD, MBA, FAHA, Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA, United States

**8:20 AM—9:05 AM**  
Human Stem-Cell Technologies: Incorporating Human Tissue Cells into Safety Pharmacology and Toxicity Assessments  
Blake D. Anson, PhD, Cellular Dynamics International, Inc., Madison, WI, United States

**9:05 AM—9:50 AM**  
Engineering Approaches for Building In Vitro and In Vivo Liver Models  
Salman R. Khetani, PhD, FSB, School of Biomedical Engineering Colorado State University, Fort Collins, CO, United States

**9:50 AM—10:10 AM**  
Break

**10:10 AM—10:55 AM**  
In Vitro Neuronal Models  
TBD

### AM2: Safety Pharmacology Endpoints in Toxicology Studies

**8:00 AM—12:00 Noon**

**Room 159**

**Co-Chairs:** Scott R. Tiesma, Data Sciences International, St. Paul, MN, United States, and Robert Austin LaFrance, Pfizer, Inc., Groton, CT, United States

Stand-alone safety pharmacology studies are typically conducted by exposing subjects to a single administration of a test article at multiple dose levels. Such dedicated studies provide invaluable information to assess potential risk to vital organ systems of participants in first-in-human studies. Integration of safety pharmacology assessments into repeat-dose toxicity studies enables evaluation of functional changes following the administration of multiple doses. Such an evaluation may provide for a more robust safety evaluation—better predicting potential risk in later clinical trials where exposure to the test article is of longer duration. The course will focus on considerations when combining studies, examples of successful integrations for new chemical and biological entities, and conclude with a preview of the forthcoming safety pharmacology recommendations on this topic.

**8:00 AM—8:10 AM**  
Opening  
Frederick J. Sannajust, Pharm., PhD, Prof., 3P-CA Consulting Services, Inc., Pleasanton, CA, United States

**8:10 AM—8:40 AM**  
Considerations When Combining Studies  
Mike Foley, DVM, PhD, Covance Laboratories, Madison, WI, United States and Robert A. Kaiser, PhD, DABT, Charles River, Reno, NV, United States

**8:40 AM—9:30 AM**  
Case Study: Functional Endpoints in Repeat-Dose Toxicology Studies on Conventional NCEs  
William S. Redfern, PhD, FSB, AstraZeneca, Macclesfield, London, United Kingdom

**9:30 AM—9:45 AM**  
Q&A with Previous Presenter  
Break

**9:45 AM—10:00 AM**  
Case Study: Large Molecule Safety Pharmacology: Collecting JET ECGs from the NHP in a Repeat-Dose Toxicology Study—Specific Issues Related to Large Molecules  
Michael Enyawall, DVM, PhD, Amgen Inc., Thousand Oaks, CA, United States

**10:00 AM—10:50 AM**  
Q&A with Previous Presenter  
Case Study: Large Molecule Safety Pharmacology: Collecting JET ECGs from the NHP in a Repeat-Dose Toxicology Study—Blood Pressure Data Collection in Toxicology Settings  
Stephen C. Foote, PhD, Pfizer Global R&D, Groton, CT, United States

**10:50 AM—11:05 AM**  
Q&A with Previous Presenter

**11:05 AM—11:35 AM**  
Case Study: Large Molecule Safety Pharmacology: Collecting JET ECGs from the NHP in a Repeat-Dose Toxicology Study—Blood Pressure Data Collection in Toxicology Settings  
Stephen C. Foote, PhD, Pfizer Global R&D, Groton, CT, United States

**11:40 AM—12:00 Noon**  
Q&A Panel Discussion with the Speakers

**10:55 AM—11:40 AM**  
Organs-on-Chips As Potential Alternatives to Animal Models for Safety and Efficacy Testing  
Anthony Bahinski, PhD, MBA, FAHA, Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA, United States
Lunchtime Mini Course

**L1: Safety Pharmacology Case Studies: From Discovery to the Clinics**

12:30 PM–1:30 PM

**Room 150**

Chair: Mark Deurinck, DVM, DABT, ERT, Novartis Pharma, Basel, Switzerland

Boxed lunches will be available for registrants in this course room at 12:15 pm.

In this course, three case studies will be presented by renowned safety pharmacology experts from industry. Each case study will consist of a 15-minute presentation followed by a 5-min Q&A. The case studies will consist of the cardiovascular, body temperature and central nervous systems and will address studies conducted, issues/risks and risk mitigation in discovery, preclinical and/or clinical development of large and small molecules.

The informal atmosphere of this course promotes close and interactive interactions between the experts and the attendees allowing for deeper insights in how safety pharmacology liabilities are tackled in the process of drug development at different companies.

12:30 PM–12:50 PM

One CNS Compound in Two Species: Challenges for QT Correction

Andrea Greiter Wilke, DVM, PhD, F. Hoffmann-La Roche, Ltd., Basel, Switzerland

12:50 PM–1:10 PM

Clinical Translation and Risk Management of a Preclinical Body Temperature Signal

Sian L. Ratcliffe, PhD, Pfizer, Groton, CT, United States

1:10 PM–1:30 PM

Off-target Platelet Activation in Cynomolgus Monkeys: Unique Effect of a Therapeutic Monoclonal Antibody

Hugo M. Vargas, PhD, Amgen Inc., Thousand Oaks, CA, United States

---

Afternoon Continuing Education Courses

Afternoon courses include a boxed lunch and refreshments during the break (for PM CE course attendees only).

1:00 PM–2:00 PM—Boxed Lunch

(for afternoon course participants)

Boxed lunches for afternoon courses will be located outside the course rooms in the foyer.

---

### PM1: Advanced Topics in Respiratory Safety Pharmacology

**2:00 PM–6:00 PM**

**Room 150**

Chair: Dennis J. Murphy, PhD, DABT, GlaxoSmithKline Pharmaceuticals, King of Prussia, PA, United States

The course will cover three topics important to the area of respiratory safety pharmacology. The first topic involves the ICH S7A document as it relates to respiratory function assessment in safety pharmacology. Endpoints recommended in the document will be critically evaluated both for their value in detecting respiratory dysfunction and their relevance to known drug-induced respiratory dysfunctions in humans. Alternative endpoints and a strategy for assessing drug-induced respiratory dysfunction will also be presented. The second topic will cover sleep disordered breathing. This is an emerging area of concern in human pulmonary medicine and has implications for how drug-induced effects on respiratory function should be evaluated. The presentation will provide an overview of sleep disordered breathing, including both the mechanism of action and the associated pathologies. Its prevalence and etiology will be discussed as well as the animal models used to investigate the phenomenon. In addition, the role of sleep state in the control of breathing will be examined with specific emphasis on alterations in the control of respiratory rhythm generation and reflex control of respiratory function. The implications of these data will be discussed in relation to respiratory safety pharmacology assessment of drug effects and the possible role of sleep state on such studies. The third topic will cover respiratory dysfunctions associated with inhaled drugs. This is an important topic since the lung is becoming an important route of drug delivery and the respiratory system is often the primary target of injury associated with inhaled drugs. An overview of the known pathologies commonly associated with inhaled pharmaceuticals as well as study designs and methodologies for assessing respiratory dysfunction during and following drug inhalation will be presented. Respiratory function endpoints that would be most appropriate for detecting changes associated with lung injury and airway obstruction or irritation will also be discussed.

2:00 PM–2:50 PM

Critical Evaluation of ICH S7A—Are We Measuring the Correct Endpoints for Assessing Drug-Induced Respiratory Dysfunction?

Dennis J. Murphy, PhD, DABT, GlaxoSmithKline Pharmaceuticals, King of Prussia, PA, United States

2:50 PM–3:40 PM

Respiratory Function During Sleep: Potential for Unique Drug Effects

Aidan Curran, PhD, Huntingdon Life Sciences, East Millstone, NJ, United States

3:40 PM–4:10 PM

Break
2:00 PM–6:00 PM

**PM3: Gastrointestinal Safety Pharmacology: From Preclinical to Clinical**

**Room 157**

Co-Chairs: Scott Mittelstadt, PhD, Abbott Laboratories, Abbott Park, IL, United States, and Mark A. Osinski, PhD, Covance Laboratories Inc., Madison, WI, United States

Gastrointestinal (GI) responses to drugs, such as diarrhea, constipation, and emesis are some of the most frequently reported adverse effects in the clinical development of new chemical entities. Despite the frequency of these effects, they are not considered life threatening and preclinical assessment of the GI system is not required by regulatory agencies prior to first-in-human studies. Therefore, pharmaceutical scientists need to assess the importance and the type of preclinical GI assays to be conducted within their own companies. This course will focus on the basic physiology of gastric emptying, intestinal transit, absorption/secretion, and emesis. We will also discuss advantages and disadvantages of different preclinical GI models. Finally, the course will discuss potential strategies that companies can implement to reduce the risk for unexpected clinical effects on the gastrointestinal system.

2:00 PM–2:15 PM

**Introduction**
Scott Mittelstadt, PhD, Abbott Laboratories, Abbott Park, IL, United States

2:15 PM–3:00 PM

**Upper Gastrointestinal Dysmotility: Preclinical Models to Assess Novel Therapeutic Approaches**
Beverley Greenwood-Van Meerveld, PhD, FACG, AGAF, The University of Oklahoma Health Sciences Center, Oklahoma City, OK, United States

3:00 PM–3:15 PM

**Discussion**

3:15 PM–4:00 PM

**Assessing Emetic Liability: Making Use of a Broader Range of Models and Approaches**
Nathalie Percie du Sert, PhD, Experimental Design, NC3Rs, London, United Kingdom

4:00 PM–4:15 PM

**Discussion**

4:15 PM–4:45 PM

**Break**

4:45 PM–5:30 PM

**Preclinical Gastrointestinal Assays: Practical Application and Clinical Translation**
Scott Mittelstadt, PhD, Abbott Laboratories, Abbott Park, IL, United States

5:30 PM–6:00 PM

**Discussion**

2:00 PM–6:00 PM

**PM4: SAFETY Biomarkers—What Every Safety Pharmacologist Should Know!**

**Room 154**

Co-Chairs: Lewis B. Kinter, PhD, DABT, AstraZeneca, Wilmington, PA, United States, and David K. Johnson, DVM, DACLAM, Cascades Biosciences Consultants, Inc., Sisters, OR, United States

SAFETY Biomarkers: What Every Safety Pharmacologist Should Know is an introduction to safety biomarker science and applications in nonclinical safety studies, with emphasis upon the ICH S10 Safety Pharmacology Core Battery Organ Systems. Faculty will address the origins, science, current status and regulatory expectations for safety biomarkers used in nonclinical and clinical settings, and include considerations for using traditional safety pharmacology endpoints as biomarkers, and inclusion of new biomarkers as safety pharmacology endpoints. Current status of safety biomarkers for drug-induced injury of cardiac/cardiovascular, CNS/neuromuscular, and renal systems will be presented.

2:00 PM–2:05 PM

**Introduction**
David K. Johnson, DVM, DACLAM, Cascades Biosciences Consultants, Inc., Sisters, OR, United States

2:05 PM–2:55 PM

**Biomarkers of Cardiovascular Stress**
Pamela Gayheart-Walsten, PhD, Xenometrics, Stilwell, KS, United States

2:55 PM–3:45 PM

**Next Generation Kidney Injury Biomarkers**
Lewis B. Kinter, PhD, DABT, AstraZeneca, Wilmington, PA, United States, and Matthew Wagoner, PhD, AstraZeneca Pharmaceuticals, Waltham, MA, United States

3:45 PM–4:15 PM

**Break**

4:15 PM–5:05 PM

**Functional Biomarkers of Drug-Induced CNS Adverse Effects**
Carlos Fonck, PhD, AstraZeneca Pharmaceuticals, Waltham, MA, United States

5:05 PM–5:55 PM

**Novel Fluid-Based Biomarkers of Neurotoxicity**
Andreas Jeromin, PhD, Banyan Biomarkers, Inc., Alachua, FL, United States

5:55 PM–6:00 PM

**Concluding Remarks**
Lewis B. Kinter, PhD, DABT, AstraZeneca Pharmaceuticals, Wilmington, PA, United States

6:00 PM–7:30 PM

**Welcome Reception and Exhibition Opening**
Exhibit Hall F
Scientific Sessions and Other Events

Tuesday, October 2

Welcome and Announcements
8:15 AM–8:30 AM
Room 150–152
Hugo M. Vargas, PhD, President of the Safety Pharmacology Society

Plenary Keynote
8:30 AM–9:30 AM
Room 150–152
Drug Development from a Medical Oncologist’s Perspective
Glen J. Weiss, MD, TGen-The Translational Genomics Research Institute; Director, Thoracic Oncology, Virginia G. Piper Cancer Center Clinical Trials Program at Scottsdale Healthcare; Chief Medical Officer, CRAB Clinical Trials Consortium, Scottsdale, AZ, United States
Development of oncology drug for clinical use to ultimate US FDA approval is a complex process. This presentation will describe the role of a medical oncologist within drug development at a large Phase I oncology practice, including study design, endpoints, and integration of drug safety information accumulated prior to or during a Phase I study.

Break—Exhibit Hall
9:30 AM–10:00 AM
Exhibit Hall F

Track A: Oncology Therapies
10:00 AM–12:00 Noon
Room 150–152
Chair: Michael Engwall, DVM, PhD, Amgen Inc., Thousand Oaks, CA, United States
This session will focus on the effects, which may be on-target or on a closely-related target, but affect in particular the CV system. Oncology compounds are rich in this “undesirable” pharmacology, but owing to the perceived benefit these compounds often progress to man. A key question for this session is whether there is balance between risk and benefit, and is it the correct balance? Is there more we could and should do?

10:00 AM–10:40 AM
Preclinical Safety Signals in Key Organ Systems in Early-Phase Oncology Programs: Integration for Testing in Early-Phase Studies
Gregory Friberg, MD, Amgen Inc., Thousand Oaks, CA, United States

10:40 AM–11:20 AM
Safety Pharmacology Strategies to Support Oncology Development Programs
Hugo M. Vargas, PhD, Amgen Inc., Thousand Oaks, CA, United States

11:20 AM–12:00 Noon
Early-Target De-Risking Strategies for Oncology Small Molecule Drugs
Eileen Blasi, Pfizer, Inc., San Diego, CA, United States

Track B: Abuse Liability
10:00 AM–12:00 Noon
Room 158–159
Co-Chairs: Mary Jeanne Kallman, PhD, Covance Laboratories, Inc., Greenfield, IN, United States, and Franz J. Hock, DSc, CorDynamics, Dieburg, Germany
This topic has been discussed in many venues, however a flow scheme is emerging from discussions with regulators. This flow scheme could be perceived as requiring extensive testing. This session will examine a minimalist approach, the gold standard, and discuss as to when studies should be undertaken.

10:00 AM–10:30 AM
Flow Schema for Abuse Liability Assessment of New Pharmaceuticals: Overview of a Joint US FDA-Industry Meeting
Carrie G. Markgraf, MD, PhD, Merck Research Laboratories, Kenilworth, NJ, United States

10:30 AM–11:00 AM
Is Locomotor Activity a Sufficient Assessment for Determining Abuse Liability?
Charles P. France, PhD, University of Texas Health Science Center at San Antonio, San Antonio, TX, United States

11:00 AM–11:30 AM
Self-Administration the Necessary Gold Standard
Mary Jeanne Kallman, PhD, Covance Laboratories, Inc., Greenfield, IN, United States

11:30 AM–12:00 Noon
Panel Discussion: What Is a CNS-Active Drug and When to Test for Abuse Liability?
Michael Klein, PhD, CDER, US FDA, OCD, Silver Spring, MD, United States

Lunch Break, Exhibits, and Poster Presentations
12:00 Noon–2:00 PM
Exhibit Hall F
All Posters Present.

Poster Judging
1:00 PM–2:00 PM
Exhibit Hall F

Oral Communications 1–3
2:00 PM–3:00 PM
Room 150–152
Co-Chairs: Martin Traebert, PhD, Novartis Pharma AG, Basel, Switzerland, and Frederick Sannajust, PharmD, PhD, Prof., 3P-CA Consulting Services, Inc., Pleasanton, CA, United States

2:00 PM–2:15 PM
Epileptic Seizures Characterization and Automated Detection in Telemetered Nonhuman Primates
Assad Aslam, et al.
## Tuesday, October 2 continued

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:15 PM–2:30 PM</td>
<td>Rat Spontaneous Motor Activity, a Sensitive First-Tier Screen of CNS Safety for Early-Drug Discovery</td>
<td>Donald Hodges, et al.</td>
</tr>
<tr>
<td>2:30 PM–2:45 PM</td>
<td>The Potential Value of an In Vitro Hippocampal Brain Slice Assay for the Pred clinical Assessment of Seizure Liability of Anti-Infective Drugs</td>
<td>Carlos Fonck, et al.</td>
</tr>
<tr>
<td>2:45 PM–3:00 PM</td>
<td>Age-Related Hearing Loss in the C57BL/6N Mouse: Time-Course Analysis of Auditory Function with Implications for Auditory Safety Study Design</td>
<td>Matthew Abernathy, et al.</td>
</tr>
<tr>
<td>2:00 PM–3:00 PM</td>
<td>Load-Dependence of the QA-Interval: Responses to Sodium Nitroprusside in Awake Dogs Instrumented for Left-Ventricular Pressure-Volume Analyses</td>
<td>Carlos del Rio, et al.</td>
</tr>
<tr>
<td>2:30 PM–2:45 PM</td>
<td>Negative Electromechanical Windows Are Required for Drug-Induced Torsades de Pointes in the Anesthetized Guinea Pig</td>
<td>Daniel Johnson, et al.</td>
</tr>
<tr>
<td>2:45 PM–3:00 PM</td>
<td>Predictive Value of the Anesthetized Guinea Pig Model to Conscious Animal Models and Humans</td>
<td>Pierre Morissette, et al.</td>
</tr>
<tr>
<td>2:00 PM–3:00 PM</td>
<td>Measurement of Short-Circuit Current in the Rat Inner Medullary Collecting Duct for Evaluation of Plasma Expansion</td>
<td>Tadashi Tsubouchi, et al.</td>
</tr>
<tr>
<td>2:30 PM–2:45 PM</td>
<td>Tyrosine Kinase Inhibition and Effects on Hemodynamics, Tissue Mineralization, and Renal Phosphate Regulation</td>
<td>Eileen Blasi, et al.</td>
</tr>
<tr>
<td>2:45 PM–3:00 PM</td>
<td>Deleterious Effects of Gentamicin and Cisplatin on Renal Function in Rats and Early Detection of Drug-Induced Kidney Injury using Biomarkers</td>
<td>Eric Delpy, et al.</td>
</tr>
</tbody>
</table>

### Afternoon Sessions

#### Track A: Assessment of Cardiac Function

**Room 150–152**

Co-Chairs: Bradley Main, Data Sciences International, St. Paul, MN, United States, and Craig R. Hassler, PhD, Battelle Memorial Institute, Columbus, OH, United States

This session will examine the history and future of cardiac function assessment. The topics of discussion will cover LVP, or no LVP in GLP studies, and echocardiography in GLP tox studies. Assessment of cardiac function can be based on experience with the target and its known biology, testing in cells, testing in vitro tissues, in vivo in GLP, or non-GLP studies.

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 PM–4:00 PM</td>
<td>History of LVP and Contractility Indicator: How Did We Get Here?</td>
<td>R. Dustan Sarazan, DVM, PhD, Data Sciences International, St. Paul, MN, United States</td>
</tr>
<tr>
<td>4:00 PM–4:30 PM</td>
<td>What Is the Current State and Future State of Imaging for Measuring Contractility?</td>
<td>Jonathan Heyen, PhD, Pfizer Global Research &amp; Development, San Diego, CA, United States</td>
</tr>
<tr>
<td>4:30 PM–5:00 PM</td>
<td>What Is the Structure/Function Relationship? What Do We Know? What Would We Like to Know?</td>
<td>Brian R. Berridge, DVM, PhD, DACVP, GlaxoSmithKline, Research Triangle Park, NC, United States</td>
</tr>
<tr>
<td>5:00 PM–5:30 PM</td>
<td>Clinical Perspective: How Are We Doing from a Clinician's Point of View?</td>
<td>Steven E. Lipsitz, MD, University of Miami Miller School of Medicine, Miami, FL, United States</td>
</tr>
</tbody>
</table>

#### Track B: Testing for Withdrawal Effects of Novel Drugs

**Room 158–159**

Co-Chairs: Jennie L. Walgren, PhD, Eli Lilly and Company, Indianapolis, IN, United States, and Andy Mead, DPhil, Pfizer Inc., Groton, CT, United States

The presence of withdrawal effects following the cessation of dosing is considered both a potential safety issue in itself, as well as a contributing factor to the propensity for abuse of the drug. A recent draft outline from members of the Controlled Substances Staff at US FDA suggested that an assessment of physical dependence and withdrawal should

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30 PM–2:45 PM</td>
<td>Tyrosine Kinase Inhibition and Effects on Hemodynamics, Tissue Mineralization, and Renal Phosphate Regulation</td>
<td>Eileen Blasi, et al.</td>
</tr>
</tbody>
</table>
be provided for all NCE’s, regardless of CNS activity. However, there is relatively little guidance or consensus on what such assessments should include, or how such studies are most appropriately designed. The aim of this symposium is to address some of the key questions in this field, including outlining current expectations and understanding the difference between physical dependence and withdrawal. In addition, a review of how best to study withdrawal effects will be included for both preclinical and clinical studies.

3:30 PM–4:00 PM Introduction to Physical Dependence and Withdrawal
Carrie G. Markgraf, MD, PhD, Merck Research Laboratories, Kenilworth, NJ, United States

4:00 PM–4:30 PM Current Practice, Study Design Considerations, and Thoughts on “Best Practice” for Nonclinical Physical Dependence/Withdrawal
Thomas J. Hudzik, PhD, Abbott, Abbott Park, IL, United States

4:30 PM–5:00 PM The Clinical Assessment of Withdrawal
Sian L. Ratcliffe, PhD, Pfizer Inc., Groton, CT, United States

5:00 PM–5:30 PM Panel Discussion: Best Practice in Physical Dependence/Withdrawal Assessments
Jennie L. Walgren, PhD, Eli Lilly and Company, Indianapolis, IN, United States, Andy Mead, DPhil., Pfizer Inc., Groton, CT, United States, Carrie G. Markgraf, MD, PhD, Merck Research Laboratories, Kenilworth, NJ, United States, Thomas J. Hudzik, PhD, Abbott, Abbott Park, IL, United States, and Sian L. Ratcliffe, PhD, Pfizer Inc., Groton, CT, United States

Wednesday, October 3

Strategic Partnership Meeting
7:00 AM–8:30 AM
Room 156
All international attendees are invited to attend this meeting to share latest developments in their regions, local society activities, and opportunities for partnership with sister societies. Continental breakfast will be served.

Morning Sessions

Plenary—Oncology Session Follow Up (ICH S7, S9, and CV Studies)
8:30 AM–9:30 AM
Room 150–151

8:30 AM–8:35 AM
Introduction
One Perspective on Cardiovascular Safety Risk of Anticancer Drugs: An NCI Experience
Myrtle A. Davis, DVM, PhD, The National Cancer Institute, National Institutes of Health, Rockville, MD, United States

9:05 AM–9:20 AM
Panel Discussion: Issues of Safety Pharmacology Testing for Novel Oncology Agents

9:20 AM–9:30 AM
Q&A

SPS Annual Business Meeting
9:30 AM–10:00 AM
Room 150–151

Break—Exhibit Hall
10:00 AM–10:30 AM
Exhibit Hall F

Track A: Diabetes
10:30 AM–12:30 PM
Room 150–151
Chair: Derek J. Leishman, PhD, Lilly Research Laboratories, Indianapolis, IN, United States

Much like emerging experience in oncology, diabetes and obesity are therapeutic areas where cardiovascular on-target effects can be expected. In contrast to oncology the tolerance for such effects is perceived as low. An extensive and expensive human cardiovascular system is often required for new therapies for these indications. This session will discuss the cardiovascular biology of targets related to diabetes and obesity illustrating the links between these endocrine and metabolic systems with the cardiovascular system. This will lead in to a discussion on how best to characterize the cardiovascular effects and their potential translation to patients.

10:30 AM–11:00 AM
Pluripotent Roles for Neuropeptides in Metabolic and Cardiovascular Regulation—Implications for Therapeutic Design
Alastair V. Ferguson, PhD, Queen’s University School of Medicine, ON, Canada

11:00 AM–11:30 AM
Cardiovascular Biology of the Leptin System—Safety Implications
Alexandre de Silva, PhD, University of Mississippi, Jackson, MS, United States

11:30 AM–12:00 Noon
Cardiovascular Pharmacology of Incretins
John Ussher, PhD, Samuel Lunenfeld Research Institute at Mount Sinai Hospital, Toronto, ON, Canada

12:00 Noon–12:30 PM
Panel Discussion: Assessing Cardiovascular Risk for Diabetes—Implications of On-Target Cardiovascular Effects

Track B: Tox21 and In Vitro Models: Advancing New Approaches for Hazard Identification and Risk Assessment
10:30 AM–12:30 PM
Room 158–159
Chair: Anthony Bahinski, PhD, MBA, FAHA, Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA, United States
Tox21 is a collaboration among multiple federal Agencies, working together to develop, validate and translate innovative, high-throughput screening (HTS) and in vitro testing methods to characterize key steps in toxicity pathways. The goals of the “Tox21 Community” are to investigate the use of these new tools to prioritize compounds for further indepth toxicological evaluation, identify mechanisms of action for further investigation, and develop predictive models for in vivo biological response. This session will provide perspective on ongoing efforts to improve hazard identification and risk assessment with emphasis on development of novel in vitro assays and applications of such methods and strategies to drive better risk assessment decisions.

10:30 AM–11:00 AM Implementing the Vision of Toxicity Testing for the 21st Century
Thomas Hartung, MD, PhD, Center for Alternatives to Animal Testing (CAAT), Doerenkamp-Zbinden, Evidence-Based Toxicology, The Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

11:00 AM–11:30 AM Improving Efficacy and Toxicity Assessment: NCATS and Tox21
David L. Gerhold, PhD, National Institutes of Health, Rockville, MD, United States

11:30 AM–12:00 Noon Microscale Engineering of Tissue Models for Compound Screening
Salman R. Khetani, PhD, Department of Mechanical Engineering, School of Engineering, Colorado State University, Fort Collins, CO, United States

12:00 Noon–12:30 PM Q&A with the Audience

Lunch Break, Exhibits, and Poster Presentations
12:30 PM–2:30 PM
Exhibit Hall F
All Posters Present.

Invited Oral Communications Session 4: Stem Cell
2:30 PM–3:30 PM
Room 157
Chair: Anthony Bahinski, PhD, MBA, FAHA, Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA, United States

2:30 PM–2:45 PM Pluripotent Stem Cell-Derived Cardiomyocytes: Modeling Hypertrophy in a Dish
Daniella Steel, et al.

2:45 PM–3:00 PM Drug-Induced Functional Cardiotoxicity Screening with the xCelligence System: Effects of Reference Compounds in Human iPSC- versus Mouse eSC-Derived Cardiomyocytes
Herbert Himmel, et al.

Invited Oral Communications Session 5: In Vitro Cardiovascular
2:30 PM–3:30 PM
Room 154
Co-Chairs: Martin Traebert, PhD, Novartis Pharma AG, Basel, Switzerland, and Abdel-Illah El Amrani, PhD, CiToxLAB, Evreux Cedex, France

2:30 PM–2:45 PM A New Noninvasive Biomarker-Index of Cardiac Wavelength (λ) Plays an Important Role in Drug-Induced Cardiac Arrhythmias: Beyond QT-Prolongation and Torsades de Points (TdPs)
Hua Rong Lu, et al.

2:45 PM–3:00 PM Differentiating Electrophysiological Effects and Cardiac Safety of Drugs Based on In Vitro Electrocardiogram: A Blinded Validation
Gan-Xin Yan, et al.

3:00 PM–3:15 PM Use of an In Vitro Contractility Assay to Explore Cardiac Contractility Changes Observed in an In Vivo Cardiovascular Study
Sunny Z. Sun, et al.

3:15 PM–3:30 PM Contractility Measurements in Rat Heart: Comparison of Isolated Myocytes and Langendorff-Perfused Whole Heart
BaoXi Gao, et al.

Invited Oral Communications Session 6: Modelling/Predictivity/Translation
2:30 PM–3:30 PM
Room 152
Co-Chairs: Sian L. Ratcliffe, PhD, Pfizer, Inc., Groton, CT, United States, and Guillaume Froget, PhD, Porsolt, Boulogne-Billancourt, France

2:30 PM–2:45 PM Models Based on Multiple Ion Channel Effects More Predictive of Cardiac Risk
James Kramer, et al.

2:45 PM–3:00 PM Evaluation of Computational Modelling As a Preclinical Proarrhythmic Safety Assay
Gary Mirams, et al.
**Wednesday, October 3 continued**

3:00 PM–3:15 PM  
Itraconazole Induces Cardiac Dysfunction—Translation of Safety Pharmacology Data to Humans  
Kathy Derakhchan, et al.

3:15 PM–3:30 PM  
A Translational Assessment of Preclinical versus Clinical Tools for Cardiac Contractility Measurement: Comparison of LV dP/dt max with Echocardiography in Telemetry-Implanted Beagle Dogs  
Frank Cools, et al.

**Break—Exhibit Hall**

3:30 PM–4:00 PM  
Exhibit Hall F

**Afternoon Sessions**

**Track A: Animal Models**

4:00 PM–6:00 PM  
Room 150–151  
Co-Chairs: Herbert Barthlow, AstraZeneca Pharmaceuticals, Wilmington, DE, United States; Eric Martel, PhD, CERB, Baugy, France; and Craig R. Hassler, PhD, Battelle Memorial Institute, Columbus, OH, United States

In a context of constant need to go beyond core battery safety pharmacology experiments in healthy animals and improve drug de-risking prior to clinical development, this session will discuss whether added value could be gained from studies undertaken in disease animal models. This session is not intended to debate the pros and cons of this issue, but to describe a wide range of cases of how the use of disease models can add to our understanding of disease therapies. The presentations will describe: the evolution of the animal models in infectious disease research, the simultaneous multivariate PK/PD analysis in disease animals, the management of specific challenges in cardiovascular safety assessment of biologics, and conclude with a focus on models for efficacy assessment of products targeting infectious diseases under the Animal Rule.

4:00 PM–4:30 PM  
Evolutionary Aspects of Animal Model Use in Infectious Disease Research  
Stefan Niewiesk, DVM, PhD, DECLAM, The Ohio State University, Columbus, OH, United States

4:30 PM–5:00 PM  
Cardiovascular Safety of Biologics: Challenges and Opportunities  
Rakesh Dixit, PhD, DABT, MedImmune Inc., Gaithersburg, MD, United States

5:00 PM–5:30 PM  
Animal Models to Evaluate Product Efficacy for Infectious Diseases under the Animal Rule  
Carol L. Sabourin, PhD, Battelle Memorial Institute, Columbus, OH, United States

5:30 PM–6:00 PM  
Q&A with the Audience

**Track B: The Growing Role of Safety Pharmacology**

4:00 PM–6:00 PM  
Room 158–159  
Co-Chairs: Ursula A. Germann, PhD, Vertex Pharmaceuticals, Cambridge, MA, United States, and Jeffrey W. Richig, DVM, Anilab LLC, Princeton, NJ, United States

This session aims to cover the history, the current state of safety pharmacology, and the future of safety pharmacology. Presentations will be made by the top-ranked three principles in the Safety Pharmacology Society: the current President, Vice President, and Vice President-elect. The speakers will reinforce the breadth of necessary experience and the impact of safety pharmacology in preclinical evaluation for the discovery and development of novel therapeutic agents that deliver patient benefit. The presentations will be followed by an audience participation session with the panel of speakers. This is expected to be a lively and informative discussion.

4:00 PM–4:30 PM  
The Intentional versus Accidental Safety Pharmacologist: Fostering the Next Generation  
Hugo M. Vargas, PhD, Amgen Inc., Thousand Oaks, CA, United States

4:30 PM–5:00 PM  
The Value of Intelligent Early Safety Pharmacology Intervention  
Derek J. Leishman, PhD, Lilly Research Laboratories, Indianapolis, IN, United States

5:00 PM–5:30 PM  
Successes, Threats, Challenges, and Opportunities of Early Discovery Safety Pharmacology: Learning from the Past  
Jean-Pierre Valentin, PhD, AstraZeneca, Macclesfield, Cheshire, United Kingdom

5:30 PM–6:00 PM  
Q&A with the Audience

**Final Poster Presentations Session**

6:00 PM–7:30 PM  
Exhibit Hall F

All Posters Present.

**Poster Removal**

7:30 PM–9:00 PM  
Exhibit Hall F
### Thursday, October 4

#### Poster Removal

8:30 AM–12:00 Noon

Exhibit Hall F

#### Morning Sessions

**Plenary—Combined Safety Pharmacology and Toxicology Studies**

8:30 AM–10:30 AM

Room 150–151

Co-Chairs: Robert A. Kaiser, PhD, DABT, Charles River Laboratories, Reno, NV, United States, Mark A. Osinski, PhD, Covance Laboratories, Madison, WI, United States, Frederick J. Sannajust, PharmD, PhD, 3P-CA Consulting Services, Inc., Pleasanton, CA, United States, and Scott R. Tiesma, Data Sciences International, St. Paul, MN, United States

Combining safety pharmacology and toxicology endpoints into a single study offers the opportunity for advantages and mistakes. This session will present perspectives on this from small molecule, large molecule, and regulatory viewpoints. The session will conclude with scientific recommendations for approaching combined studies based upon both the current state-of-the-art and opportunities for improvement. An update on a Safety Pharmacology Society whitepaper for this topic will also be provided.

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 8:30 AM–8:55 AM | Functional Cardiovascular, CNS, and Respiratory Endpoints in Repeat-Dose Toxicity Studies: Advantages and Pitfalls  
William S. Redfern, PhD, FSB, AstraZeneca, London, United Kingdom |
| 8:55 AM–9:20 AM | Lessons Learned When Integrating Studies for the Development of a Biologic  
Michael Engwall, DVM, PhD, Amgen Inc., Thousand Oaks, CA, United States |
| 9:20 AM–9:45 AM | A Regulatory Perspective on Functional Endpoints in Repeat-Dose Studies  
Donald Jensen, DVM, MS, US FDA, Silver Spring, MD, United States |
| 9:45 AM–10:10 AM | Scientific Recommendations for Hemodynamic Endpoints in Repeat-Dose Studies  
Henry Holzgrefe, BA, Charles River Laboratories, Reno, NV, United States |
| 10:10 AM–10:30 AM | Open Forum for Q&A |
Online Meeting Materials

Download Abstracts and the Attendee List from SPS Website

In an effort to reduce our environmental footprint, Poster Abstracts and other meeting materials are accessible online. The Poster Index is available on page 25 for you to navigate the Poster Presentations.

The following information is available online:

- Program and Exhibitor Directory
- Speaker Presentations, Speaker Index, and Speaker Abstracts
- Poster Abstracts and Poster Presentations
- Attendee List
- CE and Session Evaluations

We encourage you to download the electronic files to your computer, smart phone, or PDA. Please visit www.safetypharmacology.org/am2012/materials.asp.

This is a QR (Quick Response) code. Download a QR reader app on your smart phone or tablet and scan for easy access to up-to-date Annual Meeting information.

Poster Presentations

Exhibit Hall F

Poster Installation
Monday, October 1 2:00 PM–3:00 PM

Poster Removal
Wednesday, October 3 7:30 PM–9:00 PM
Thursday, October 4 8:30 AM–12:00 Noon

Posters not claimed by 12:00 noon on Thursday, October 4, will be discarded.

Poster Presentations

All posters will remain on display from Monday through Wednesday evening in one poster session.

Note to Presenters: Please plan to attend your poster during the following times:

Tuesday, October 2
12:00 Noon–2:00 PM All Posters Present
1:00 PM–2:00 PM Poster Judging
(all posters who entered the Junior Investigator Poster Contest must be present at their poster during this time)

Wednesday, October 3
12:30 PM–2:30 PM All Posters Present
6:00 PM–7:30 PM Final Poster Presentations Session, All Posters Present

Poster Contest

Individuals who submitted abstracts for the Junior Investigator Poster Contest, are required to present their posters on Tuesday, October 2 from 1:00 pm–2:00 pm during judging.

Poster Contest recipients will be announced during the Awards Ceremony on Thursday, October 4.

SPS Treasure Hunt

Win Big!

Prizes include*:

Apple iPad
Bose Noise Cancelling Headphones
Jambox Wireless Speakers
Visa Gift Card

See pages 41–42 for details!

A Treasure Hunt Map showing participating exhibitors is included in your Registration Packet. You must have a stamp from each participating exhibitor to be entered in the prize drawing!

*Prizes subject to change
Photography/Recording Policy and Protocols for Attendees

Out of courtesy for the scientific presenters and exhibitors, we appreciate your compliance with the following policies:

- Cell phones and other electronic devices should be set on mute.
- Cameras and recording devices are prohibited in the Exhibit Hall.
- Children under the age of 15 are prohibited from accessing the Exhibit Hall at any time.

If you have any questions regarding these policies, please contact the SPS Headquarters staff at the Registration Desk.
<table>
<thead>
<tr>
<th>Poster Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Negative Electromechanical Windows Are Required for Drug-Induced Torsades de Pointes in the Anaesthetized Guinea Pig</td>
<td>Daniel Johnson1, Johan Lissens1, Pieter-Jan Guns1, 1Bio Plus Safety Pharmacology, Mol, Belgium</td>
</tr>
<tr>
<td>002</td>
<td>Assessment of Drug-Induced Effects on Cardiovascular Function in Pentobarbital Anaesthetized Guinea Pigs</td>
<td>Daniel Johnson1, Rob Geys1, Johan Lissens1, Pieter-Jan Guns1, 1Bio Plus Safety Pharmacology, Mol, Belgium</td>
</tr>
<tr>
<td>003</td>
<td>Comparison of Invasive and Noninvasive Blood Pressure Measurements in the Anaesthetized Beagle Dog</td>
<td>Weston Sutherland1, Kathy Derakhchan1, Ray Chui1, Hugo M. Vargas1, 1Amgen Inc., Thousand Oaks, CA, United States</td>
</tr>
<tr>
<td>004</td>
<td>Bimodel Inotropic Response of dl-Sotalol: Cardiovascular Evaluation via Pressure-Volume Analysis in Isoflurane-Anesthetized Beagle Dogs</td>
<td>Tomonichi Ishizaka10, Yukie Ueyama1, Adriana Pedraza-Toscano1, Pam Kloepfer1, Carlos del Rio1, Robert Hamlin10, 1Department of Veterinary Biosciences, The Ohio State University, Columbus, OH, United States, 2Medicinal Safety Research Laboratories, Daiichi Sankyo Co., Ltd., Fukuroi, Shizuoka, Japan, 3QTest Labs, Columbus, OH, United States</td>
</tr>
<tr>
<td>005</td>
<td>I&lt;sub&gt;G&lt;/sub&gt; Inhibition-Induced QTc Prolongation during Hypo- and Hyperthermia in Anesthetized Guinea Pigs</td>
<td>Vijay Urmaliya1, Jan Verrelst1, Hanne Daems1, Brigitte Loenders1, Ard Teisman1, David J. Gallacher1, 1Center for Cardiovascular Safety Research &amp; Mechanistic Pharmacology, Janssen Research &amp; Development, Janssen Pharmaceutica N.V., Beerse, Belgium</td>
</tr>
<tr>
<td>006</td>
<td>Assessment of Electromechanical Window in the Anaesthetized Rabbit Models of Short QT and Long QT Syndromes</td>
<td>Vudhiporn Limprasutr1, Nakkawee Saengkrob1, Pradana Meedech1, Anusak Kijtawornrat1, 1Chulalongkorn University, Bangkok, Thailand</td>
</tr>
<tr>
<td>007</td>
<td>Use of an Anaesthetized Guinea Pig to Identify Proarrhythmic, Inotropic, and Lusitropic Liabilities of Test Articles in Safety Pharmacology Study</td>
<td>Anusak Kijtawornrat1, Yukie Ueyama1, Carlos del Rio1, Suwanakiet Sawangkoon1, Chollada Buranakul1, Narongsak Chaiyabutr1, Robert L. Hamlin10, 1Department of Veterinary Physiology, Faculty of Veterinary Science, Chulalongkorn University, Bangkok, Thailand, 2QTest Labs, LLC., Columbus, OH, United States, 3Department of Veterinary Biosciences, The Ohio State University, Columbus, OH, United States</td>
</tr>
<tr>
<td>008</td>
<td>Safety Pharmacology CNS Tests with Two Different Wistar Rat Strains</td>
<td>Herbert Himmel1, Nebojsa Sedlak1, Veronika Stump1, 1Bayer Pharma AG, Wuppertal, Germany</td>
</tr>
<tr>
<td>009</td>
<td>CNS Effects Detection in Rat: Improved by Use of the Electrocoorticogram</td>
<td>Pascal Champeroux1, Anne Maurin1, Emmanuel Bracq1, Eric Martel1, Serge Richard1, 1CERB, Baugy, France</td>
</tr>
<tr>
<td>010</td>
<td>The Effects of Morphine on Nociception and Operant Responding in the Rhesus Monkey for Efficacy and Safety Predictions</td>
<td>Christopher Cruz1, Isabelle Hubert1, Toni Wolinsky1, Martine Lemaire1, David Virley12, 1Porsolt Inc., San Antonio, TX, United States, 2Porsolt SAS, Le Genest-Saint-Ise, France</td>
</tr>
<tr>
<td>011</td>
<td>Effect of Lamotrigine, Levetiracetam, and Topiramate on Neurobehavioral Parameters and Oxidative Stress in Comparison with Valproate in Rats</td>
<td>Sudhir Chandra Sarangi1, Ashish Kumar Kakkar1, Yogendra Kumar Gupta1, 1Department of Pharmacology, All India Institute of Medical Sciences, New Delhi, India</td>
</tr>
<tr>
<td>012</td>
<td>Rat Spontaneous Motor Activity, a Sensitive First-Tier Screen of CNS Safety for Early-Drug Discovery</td>
<td>Donald Hodges1, Ursula Germann1, 1Vertex Pharmaceuticals Incorporated, Cambridge, MA, United States</td>
</tr>
</tbody>
</table>
013 Refinement of the PTZ Infusion Seizure Test in the Rat by Evaluation of Plasma Concentrations of PTZ and Test Compound

Eric Delpy1, Delphine Parachou1, Anthony Deal1, Massimo Fonsi2, Chiara Carla Rospo1, Ludovicus Staehens1, Annie Delaunois2, Christophe Drieu La Rochelle1, Biotrial Pharmacology, Nonclinical Pharmacology Department, Rennes, France, 2UCB Pharma, Nonclinical Development Department, Braine l’Alleud, Belgium

014 Characterization of a Rat and Mouse Formalin Model of Spontaneous Nociceptive Behaviors

Giuseppina Iacono1, Kevin Norton1, Charles River Laboratories, Senneville, QC, Canada

015 Method Validation of Functional Observational Battery Assessment in Rodents and Nonhuman Primates

Yujuan Li1, Na Niu1, Qing Cai1, Pharmaron, Inc., Beijing, China

016 Characterization of Neurobehavioral Changes following Mild Traumatic Brain Injury in Male Sprague-Dawley Rats

Kristy D. Bruse1,2, Yung Sung Cheng1, Hammad Irshad1, Michael Weisend2, Andrew Mayer2, Lovelace Respiratory Research Institute, Albuquerque, NM, United States, 2Mind Research Network, Albuquerque, NM, United States

017 EPS Liability in the Cynomolgus Monkey: Effects of Acute Haloperidol and Olanzapine Administration in Drug Naive Animals

Eric Hayes1, Isabelle Hubert1, Ria Oktarina1, Nengah Budiarsa1, Diah Iskandriati1, David Pushett1, David Virley1, Poroslt Inc, San Antonio, Texas, United States, 2PT Bimana Indomedical, Bogor, West Java, Indonesia

018 Sensitivity, Specificity, and Utility of Locomotor Activity Data Generated with the Kinder Motor Monitor System in Neurotoxicity Safety Assessment

Jacqueline Wallisser1, Christopher Elders1, Britney Epping1, Hiya Banerjee1, Christopher Douglas1, Mark Osinski1, Covance Laboratories, Madison, WI, United States

019 Withdrawn

020 Quantification of Cardioactive Drug Effects Using xCELLigence RTCA Cardio and Human Stem Cell-Derived Cardiomyocytes

Andrew Bruening-Wright1, Carlos Obejero-Paz1, Marina Kojukhova1, Arthur Brown1, ChanTest Corporation, Cleveland, OH, United States

021 Analysis of Mechanism of Chronic Probucol Effects on the Slow Component of the Delayed-Rectifier Potassium Current in CHO Cells Transfected with KCNQ1 and KCNE1

Tomohiko Taniguchi1,2, Taro Hihara1,2, Norimasa Miyamoto1,2, Mai Uesugi1,2, Takashi Yoshinaga1, Kohei Sawada1,2, Eisai Co., Ltd., Tsukuba, Japan, 2University of Tsukuba, Tsukuba, Japan

022 Evaluation of Ion Channel Trafficking in Human Stem Cell-Derived Cardiomyocytes for Cardiotoxicity Screening

Yasuyuki Abe1, Tomoko Sakakura1, Kiyoshi Takasuna1, Atsushi Sanbuissu1, Fumimasa Nomura1, Tomoya Hamada1, Tomoyuki Kaneko1, Kenji Yasuda2, Daiichi Sankyo Co., Ltd., Tokyo, Japan, 2Tokyo Medical and Dental University, Tokyo, Japan

023 In Vitro Pharmacology and Safety Testing Using Human iPSC-Derived Cor.4U Cardiomyocytes

Ralf Kettenhofen1, Kristina Tressart1, Eugen Kolossov1, Simon Hebeisen2, Evelyn Jaehne1, Andreas Ehlich1, Silke Schwengberg1, Heribert Bohlen1, Axigenesis AG, Koeln, Germany, 2bSYS GmbH, Witterswil, Switzerland

024 Pluripotent Stem Cell-Derived Cardiomyocytes: Modeling Hypertrophy in a Dish

Daniella Steel1, Kerstin Dahlenborg1, Sofie Andersson1, Peter Sartipy1, Collectis Stem Cells/Cellartis AB, Gothenburg, Sweden

025 Self Administration of “Weak” Reinforcers in the Rat

Nawshaba Nawreen1, Cheryl Tyszkievicz1, Dewi Roberts1, Dale Parker1,2, Andy Mead1, Pfizer, Inc., Groton, CT, United States, 2Pfizer, Inc., Sandwich, United Kingdom

026 Use of the Beam Walking and Drug Discrimination Models for Determining Intrinsic Efficacy and Selectivity of Subtype Selective GABA-A Ligands in Rodents

Cathleen Hsu1, Richard Newman1, Suzanne Shires1, Karen Tse1, Amy Warr1, Andy Mead1, Pfizer Global R&D, Groton, CT, United States
<table>
<thead>
<tr>
<th>Poster</th>
<th>Abstract Title and Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>027</td>
<td>Establishing the EEG Sleep Profile of Cocaine Withdrawal in Sprague-Dawley rats</td>
</tr>
<tr>
<td></td>
<td>Amy Rosado¹, Andy Mead², Jamie Da Silva³, Pfizer Inc., Global Safety Pharmacology DSRD, Groton, CT, United States</td>
</tr>
<tr>
<td>028</td>
<td>Systematic Review and Meta-Analysis of the Self-Administration of Opioids in Rats and Nonhuman Primates to Provide Evidence for the Choice of Species in Models of Abuse Potential</td>
</tr>
<tr>
<td></td>
<td>Nathalie Percie du Sert¹, Kathryn Chapman¹, NC3Rs, London, United Kingdom</td>
</tr>
<tr>
<td>029</td>
<td>Morphine Drug Discrimination Testing and Substitution Assessments in Adult Male Sprague-Dawley Rats</td>
</tr>
<tr>
<td></td>
<td>Jonathan Toot¹, Michelle Hackman¹, Timothy Pringle¹, Melissa Beck¹, Philip Atkinson¹, Donald Stump¹, WIL Research, Ashland, OH, United States</td>
</tr>
<tr>
<td>030</td>
<td>Cellular Assays for Monitoring Cardiomyocyte Electrophysiology</td>
</tr>
<tr>
<td></td>
<td>S. Braam¹, K. Langenberg¹, J. Rohrbacher¹, R. C. Grandela¹, C. L. Mummery¹, R. Towart¹, M. Cik¹, A. Diels¹, H. R. Lu¹, D. J. Gallacher¹, Pluriomics BV, Leiden, The Netherlands, Department of Anatomy and Embryology, Leiden University Medical Centre, Leiden, The Netherlands, Center of Excellence for Cardiovascular Safety Research &amp; Mechanistic Pharmacology, Janssen Pharmaceutica NV, Beerse, Belgium</td>
</tr>
<tr>
<td>031</td>
<td>Drug-Induced Functional Cardiotoxicity Screening with the xCelligence System: Effects of Reference Compounds in Human iPSC- versus Mouse eSC-Derived Cardiomyocytes</td>
</tr>
<tr>
<td></td>
<td>Herbert Himmel¹, Susanne Herbold¹, Bayer Pharma AG, Wuppertal, Germany</td>
</tr>
<tr>
<td>032</td>
<td>Assessment of hERG Channel Function Using Induced Pluripotent Stem Cell (iPS)-Derived Cardiomyocytes</td>
</tr>
<tr>
<td></td>
<td>Xiaoyu Zhang¹, Wei Ouyang¹, Biao Xi¹, Xiaobo Wang¹, Xiao Xu¹, Yama Abassi¹, Acea Biosciences, San Diego, CA, United States</td>
</tr>
<tr>
<td>033</td>
<td>Influence of Temperature on Sensitivity of the hERG Channel Assay</td>
</tr>
<tr>
<td></td>
<td>Sonia Goinneau¹, Christophe Legrand¹, Marion Maujeul¹, Guillaume Froget¹, Poros SAS, Le Genest-Saint-Isle, France</td>
</tr>
<tr>
<td>034</td>
<td>Models Based on Multiple Ion Channel Effects More Predictive of Cardiac Risk</td>
</tr>
<tr>
<td></td>
<td>James Kramer¹, Glenn Myatt¹, Carlos Obejero-Paz¹, Andrew Bruening-Wright¹, Yuri Kurychev¹, Arthur Brown¹, ChanTest Corporation, Cleveland, OH, United States</td>
</tr>
<tr>
<td>035</td>
<td>Arrhythmic Effects of Chronic Pentamidine Treatment on Human Cardiac Stem Cell Electrophysiology</td>
</tr>
<tr>
<td></td>
<td>Randy Numann¹, Yimei Yue¹, John Ken Gibson¹, Ionic Transport Assays, Inc, Saint Louis, MO, United States</td>
</tr>
<tr>
<td>036</td>
<td>Pharmacological Characterization of Spontaneously Contracting Cardiomyocyte Clusters from Fish Larvae</td>
</tr>
<tr>
<td></td>
<td>Matthias Brandenburger¹, Julia Mehnert¹, Bianka Grunow¹, Fraunhofer Research Institution for Marine Biotechnology EMB, Lübeck, Germany</td>
</tr>
<tr>
<td>037</td>
<td>ES and iPS Cell-Derived Cardiomyocytes in Cardiovascular Drug Discovery, Safety Pharmacology, and As Disease Models in Cardiac Drug Development</td>
</tr>
<tr>
<td></td>
<td>Thomas Meyer¹, Udo Kraushaar², Elke Guenther², Multi Channel Systems MCs GmbH, Reutlingen, Germany, Natural and Medical Sciences Institute (NMI), Tübingen University, Reutlingen, Germany</td>
</tr>
<tr>
<td>038</td>
<td>Withdrawn</td>
</tr>
<tr>
<td>039</td>
<td>Withdrawn</td>
</tr>
<tr>
<td>040</td>
<td>Effects of Different Vehicles/Flow Rates on Blood Pressure and Heart Rate in Continuous Infusion Studies in Rats</td>
</tr>
<tr>
<td></td>
<td>Isabella Martin¹, Sabine Ruppert¹, Uta Wirtzner¹, Michael Hoffmann¹, Bayer Pharma AG, Wuppertal, Germany</td>
</tr>
<tr>
<td>041</td>
<td>Impact of Noise on ECG Interval Measurement in Nonhuman Primates</td>
</tr>
<tr>
<td></td>
<td>Marina Brockway¹, Mutsumi Miyamoto¹, Brian Brockway¹, VivaQuant, St. Paul, MN, United States, Huntingdon Life Sciences, East Millstone, NJ, United States</td>
</tr>
<tr>
<td>042</td>
<td>Miniaturized Cellular Assay for Toxicity Studies Using Human Tissue-Derived iPS (Induced Pluripotent Stem) Cardiomyocytes</td>
</tr>
<tr>
<td></td>
<td>John Wang¹, Namyoung Kim¹, Gail Lachs¹, Curiox Biosystems, San Carlos, CA, United States</td>
</tr>
<tr>
<td>043</td>
<td>Itraconazole Induces Cardiac Dysfunction—Translation of Safety Pharmacology Data to Humans</td>
</tr>
<tr>
<td></td>
<td>Kathy Derakhchan¹, Yusheng Qu¹, Weston Sutherland¹, Mei Fang¹, Bao Xi Gao¹, Ray W. Chui¹, Hugo M. Vargas¹, Toxicology Sciences, Amgen Inc., Thousand Oaks, CA, United States</td>
</tr>
<tr>
<td>Poster Abstract Title and Author</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>§ 044 Predictive Value of the Anesthetized Guinea Pig Model to Conscious Animal Models and Humans</td>
<td></td>
</tr>
<tr>
<td>Pierre Morissette1, Masahiro Nishida1, Elena Trepakova1, Jeffrey J. Travis1, Gloria Zingaro1, Pamela Gerenser1, Alysia Chaves1, Kimberly Hoagland1, Gregory Friedrichs1, Joseph Salada1, 'Merck &amp; Co., Inc., West Point, PA, United States, 2Asahi Kasei Pharma, Izunokuni-shi, Shizuoka, Japan</td>
<td></td>
</tr>
<tr>
<td>* 045 Translation of Hemodynamic Effects between Anesthetized Guinea Pig and Conscious Rat Models</td>
<td></td>
</tr>
<tr>
<td>Pamela Gerenser1, Gloria Zingaro1, Jeffrey Travis1, Kimberly Hoagland1, Alysia Chaves1, Gregory Friedrichs1, Pierre Morissette1, 'Merck &amp; Co., Inc., West Point, PA, United States</td>
<td></td>
</tr>
<tr>
<td>046 Characterization of Strain Echocardiography in the Rat</td>
<td></td>
</tr>
<tr>
<td>Jonathan Heyen1, Michelle Hemkens1, Eileen Blasi1, Stephen Buttars2, Benjamin Deeley2, Catherine Theodoropoulis2, Paul Butler1, 'Pfizer Global Safety Pharmacology, San Diego, CA, United States, 2Visualsonics Inc, Toronto, ON, Canada</td>
<td></td>
</tr>
<tr>
<td>047 A Method for Long-Term Evaluation of Exercise Stress in Primates</td>
<td></td>
</tr>
<tr>
<td>Craig R. Hassler1, Paul Feder1, Thomas Vinci1, Robert Hamlin1, Battelle Memorial Institute, Columbus, OH, United States, 2The Ohio State University, Columbus, OH, United States</td>
<td></td>
</tr>
<tr>
<td>048 The Use of Both Anaesthetised and Telemetered Conscious Guinea Pigs in Early Safety Pharmacology: A Case Study with Sunitinib</td>
<td></td>
</tr>
<tr>
<td>Eric Delpuy1, Myriam Garreau1, Fabrice Infantii1, Mathilde Loiseau1, Christophe Drieu La Rochelle1, 'Biotrial Pharmacology, Rennes, France</td>
<td></td>
</tr>
<tr>
<td>049 Simultaneous Recording of ECG Parameters Using Implanted Telemetry (IT) and Jacketed External Telemetry (JET) in Conscious, Nonrestrained Monkeys</td>
<td></td>
</tr>
<tr>
<td>Abdel-lah El Amrani1, Julie Maucotel1, Francine El Amirani1, Stéphane Loriot1, Jean-Jacques Legrand1, Roy Forster1, 'CiToxLAB France, Evreux cedex, France</td>
<td></td>
</tr>
<tr>
<td>050 Beat-to-Beat Cardiac-Output Assessment in a Canine Model of Controlled Hemorrhagic Shock: Impedance Cardiography versus Conductance-Based Left- Ventricular Volumes</td>
<td></td>
</tr>
<tr>
<td>Carlos del Rio1, Yukie Ueyama1, Pamela Kloepfer1, Bradley Youngblood1, Adriana Pedraza-Toscano1,2, Pedro Vargas-Pinto1,2, William Muir1, Robert Hamlin1,2, 'QTest Labs, Columbus, OH, United States, 2The Ohio State University, Columbus, OH, United States</td>
<td></td>
</tr>
<tr>
<td>§ 051 Load-Dependence of the QA-Interval: Responses to Sodium Nitroprusside in Awake Dogs Instrumented for Left-Ventricular Pressure-Volume Analyses</td>
<td></td>
</tr>
<tr>
<td>Carlos del Rio1, Bradley Youngblood1, Pamela Kloepfer1, Yukie Ueyama1, Adriana Pedraza-Toscano1,2, Pedro Vargas-Pinto1,2, Jay Schmidt1, Jeff Wallery1, Tomomichi Ishizaka1,2, Robert Hamlin1,2, 'QTest Labs, Columbus, OH, United States, 2The Ohio State University, Columbus, OH, United States, 3Daiichi Sankyo Co, Fukoroi, Shizuoka, Japan</td>
<td></td>
</tr>
<tr>
<td>≈ 052 Utilization of Cucumis melo L. As a Source of Reduces Serum Sialic Acid in Type 2 Diabetes Mellitus for Delay the Process of Atherosclerosis</td>
<td></td>
</tr>
<tr>
<td>Md. Ariful Haque Mollik1,2, 'Peoples Integrated Alliance, Mirpur, Dhaka, Bangladesh, 2BIOTEC Concern, Mirpur, Dhaka, Bangladesh</td>
<td></td>
</tr>
<tr>
<td>053 Pitfalls in Translational Science: Which Events Should Be Predicted? Those Observed in Conventional Phase 1 Design or in a Thorough QT Design?</td>
<td></td>
</tr>
<tr>
<td>Karel Van Ammel1, Ard Teisman1, David Gallagher1, 'Janssen Pharmaceutical Companies, Beerse, Belgium</td>
<td></td>
</tr>
<tr>
<td>§ 054 A Translational Assessment of Preclinical versus Clinical Tools for Cardiac Contractility Measurement: Comparison of LV dP/dt max with Echocardiography in Telemetry Implanted Beagle Dogs</td>
<td></td>
</tr>
<tr>
<td>Frank Cools1, Deborah Dhuyvetter1, Annik Vanlommel1, Sigrid Janssens1, Herman Borghys1, David J. Gallagher1, 'Janssen, Beerse, Belgium</td>
<td></td>
</tr>
<tr>
<td>055 Relevance of the Anesthetized Guinea Pig Model to Predict for Human Effects in Drug Cardiovascular Safety Screening</td>
<td></td>
</tr>
<tr>
<td>Vijay Urmaliya1, Brigitte Loenders1, Ard Teisman1, David J. Gallagher1, 'Center of Excellence for Cardiovascular Safety Research &amp; Mechanistic Pharmacology, Janssen R&amp;D, Janssen Pharmaceutica N.V., Beerse, Belgium</td>
<td></td>
</tr>
<tr>
<td>Poster</td>
<td>Abstract Title and Author</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------</td>
</tr>
</tbody>
</table>
| 056   | **Assessment of Clinical Proarrhythmic Risks of Bepridil, Verapamil and Tolterodine Using the Chronic Atrioventricular Block Monkey Model**  
Takashi Hayashi\(^1\), Setsuko Matsumoto\(^1\), Yasue Sakaguchi\(^1\), Kengo Sakamoto\(^1\), Hiroshi Morikawa\(^1\), Shin-ichi Sato\(^1\), Toshiyasu Hombo\(^1\), Atsushi Sugiyama\(^1\), Ina Research Inc., Ina, Nagano, Japan, Department of Pharmacology, School of Medicine, Faculty of Medicine, Toho University, Tokyo, Japan |
| 057   | **A Robust and Reliable Ex Vivo Method for Assessing Cardiac Repolarization Using “Living” Human Hearts**  
Jack Reynolds\(^1\), Andrea Ghetti\(^1\), Paul Miller\(^1\), AnaBios Corporation, San Diego, CA, United States |
| 058   | **Dofetilide Increases Load-Independent Indices of Contractility in Closed-Chest Anesthetized Guinea Pigs**  
Yukie Ueyama\(^1\), Carlos del Rio\(^2\), Robert Hamlin\(^1\), QTest Labs, Columbus, OH, United States, The Ohio State University, Columbus, OH, United States |
| 059   | **Proof of Concept Collaborative Study: Evaluation of the Cold-Pressor Response in Telemetered Dogs and Nonhuman Primates**  
Matthew Coffee\(^1\), Carlos del Rio\(^2\), Ken Kearney\(^1\), John Yohe\(^1\), Yukie Ueyama\(^2\), Tomomichi Ishizaka\(^2\), Phil Atterson\(^1\), Robert Hamlin\(^2\), WIL Research, Ashland, OH, United States, QTest Labs, Columbus, OH, United States, The Ohio State University, Columbus, OH, United States, Daiichi Sankyo Co, Fukuroi, Shizuoka, Japan |
| 060   | Withdrawn |
| 061   | Withdrawn |
| 062   | **Assessment of Radio Telemetry Signal Quality during Blood Sampling from the Arterial or Venous Circulation in Nonhuman Primates**  
Monica Metea\(^1\), Robert Gill\(^1\), Alex Wakefield\(^1\), Holly McPherson\(^1\), Mike Piontek\(^1\), Derek Best\(^1\), Kenneth Gould\(^1\), Covance, Greenfield, IN, United States |
| 063   | **Comparison of Epicardial and Jacketed External ECG Waveforms for the Detection of QT and QTc Interval Changes**  
Stephen Wilson\(^1\), Stephen Tichenor\(^1\), Henry Holzgrefe\(^1\), Charles River Laboratories, Reno, NV, United States |
| 064   | **Low Success Rate for Monocrotaline-Induced Pulmonary Arterial Hypertension in Adult Female Nonhuman Primates**  
Zemmie Pollock\(^1\), Kristy D. Bruse\(^1\), Lovelace Respiratory Research Institute, Albuquerque, NM, United States |
| 065   | **Suppressive Effect of Sulphadimidine on Expression of Major Histocompatibility Complex (MHC) in Broiler Chicken**  
Marwan Draid\(^1\), Abubakr El-Mahmoudy\(^1\), Tripoli University, Tripoli, Libya, Benha University, Moshtohor, Egypt |
| 066   | **Miniaturized Cellular Assay for Toxicity Studies Using Human Tissue-Derived iPS (Induced Pluripotent Stem) Hepatocytes**  
John Wang\(^1\), Namyoung Kim\(^1\), Gail Lachs\(^1\), Curiox Biosystems, San Carlos, CA, United States |
| 067   | **The Determination of Epigenetic Target Specificity and Identification of Epigenetics-Related In Vivo Adverse Drug Reactions**  
Annie Otto-Bruc\(^1\), Boryeu Mao\(^1\), Jacques C. Migeon\(^1\), Fabien Tillier\(^1\), Benoit Fouchaq\(^2\), CEREP Inc, Redmond, WA, United States, CEREP SA, Celle L’Evescault, France |
| 068   | **Incidence, Category, Severity, Avoidability, Extension of Hospital Stay and Costs of Drug Related Adverse Effects among Kashmiri Population at a Tertiary Care Hospital**  
M. Ishaq Geer\(^1\), Parvaiz A. Koul\(^1\), Shafaqa A. Tanki\(^1\), M.Y. Shah\(^1\), Department of Pharmaceutical Sciences, University of Kashmir, Srinagar, J&K, India, Department of Internal Medicine, Sher-i-Kashmir Institute of Medical Sciences, Srinagar, J&K, India, Department of Pharmacology, MM Institute of Medical Science and Research, Mullana, Ambala, India |
<table>
<thead>
<tr>
<th>Poster</th>
<th>Abstract Title and Author</th>
</tr>
</thead>
</table>
| § 069  | Tyrosine Kinase Inhibition and Effects on Hemodynamics, Tissue Mineralization, and Renal Phosphate Regulation  
Eileen Blasi¹, Gina Yanochko¹, Joseph Jamieson¹, Jeffrey May¹, Jonathan Heyen¹, Allison Vitsky¹, Aileen McHarg¹, ¹Pfizer, Inc, San Diego, CA, United States |
| = 070  | Study on Types of Adverse Drug Reactions after Intake of Medication against Filariasis (Under Mass Drug Administration Program)  
Anup Raj Upreti¹, ¹Maharajgunj Medical Campus, Institute of Medicine, Tribhuvan University, Kathmandu, Nepal |
| 071    | Evaluation of Drug-Drug Interactions of Selected Antiretroviral Drugs with Gliclazide in Animal Models  
Mastan Shaik¹,3, Eswar Kumar Kilari¹,2, Jawaharlal Nehru Technological University, Hyderabad, Andhra Pradesh, India, ²Andhra University College of Pharmaceutical Sciences, Visakhapatnam, Andhra Pradesh, India, ³Cytel, Hyderabad, Andhra Pradesh, India |
| 072    | Optimisation of an Integrated Approach for Cardiac Safety Profiling of Novel Compounds  
Nicola Fasdelli¹, Luciano Cunego¹, David Philip¹, Simone Bertani¹, Angelo Giacometti¹, Nicoletta Garbati¹, Elisa Ballini¹, Cristiano Griffante¹, Laura Aldegheri¹, Marcelo Rosato Siri¹, Philip Gerrard¹, Mauro Corsi¹, Caterina Virginió¹, ¹Aptuit, Verona, Italy |
| 073    | Optimisation of an Integrated Strategy to Assess Convulsion/Seizure Risk of Novel Compounds  
Caterina Virginió¹, Annarosa Ugolini¹, Marcelo Rosato Siri¹, Nicola Fasdelli¹, Alessia Guidi¹, Chiara Rostello¹, Alessandro Poffe¹, Philip Gerrard¹, Mauro Corsi¹, Maria Pilla¹, ¹Aptuit, Medicines Research Centre, Verona, Italy |
| § 074  | Evaluation of Computational Modelling As a Preclinical Proarrhythmic Safety Assay  
Gary Mirams¹, Kylie Beattie¹, Yi Cui¹, Nick McMahon¹, ¹University of Oxford, Oxford, Oxon, United Kingdom, ²GloSoSmithKline R&D, Ware, Herts, United Kingdom |
| 075    | Use of a Guinea Pig Langendorff-Perfused Heart Model for Assessing Translation of Cardiac Sodium Channel Block and QRS Widening in Dogs  
David S. Ramirez¹,2, Stephen Jenkinson¹,2, Jason Cordes¹, Amy Rosado¹, Jill Steidl-Nichols¹, Bernard Fermini¹, ¹Pfizer Inc., Groton, CT, United States, ²Pfizer Inc., La Jolla, CA, United States |
| § 076  | Use of an In Vitro Contractility Assay to Explore Cardiac Contractility Changes Observed in an In Vivo Cardiovascular Study  
Sunny Z. Sun¹, Peter Harris¹, Declan Flynn¹, Jill Steidl-Nichols¹, Bernard Fermini¹, ¹Pfizer Inc., Groton, CT, United States |
| * 077  | Comparison of Electrophysiological Data from Human-Induced Pluripotent Stem Cell-Derived Cardiomyocytes (iPSC-CMs) to Current Preclinical Safety Assays: An Integrated GSK Experience  
Kate Harris¹, Arun Sridhar¹, ¹GloSoSmithKline, Ware, Hertfordshire, United Kingdom |
| 078    | An In Vitro Assay for Assessing Cardiac Contractility Using hiPSC-Derived Cardiomyocytes and Cellular Impedance Measurement  
Minxue Huang¹, George Thalody¹, Hong Shi¹, Paul Levesque¹, ¹Bristol-Myers Squibb, Pennington, NJ, United States |
| 079    | Applications of Transgenic Animals in Safety Pharmacology  
Will S Redfern¹, Alison Easter¹, Lorna C. Ewart¹, Russell Bialecki¹, Jean-Pierre Valentin¹, ¹AstraZeneca, Macclesfield, Cheshire, United Kingdom, ²AstraZeneca, Waltham, MA, United States |
| 080    | Analysis of Three Different Baseline Selection Methods in a Standard Latin-Square Cardiovascular Study Design  
Matt Coffee¹, Phil Atterson¹, Kate Voss¹, John Yohe¹, Tom Vidmar¹, ¹WIL Research, Ashland, OH, United States, ²BioSTAT Consultants, Inc., Portage, MI, United States |
| § 082  | Differentiating Electrophysiological Effects and Cardiac Safety of Drugs Based on In Vitro Electrocardiogram: A Blinded Validation  
Tengxian Liu¹, Martin Traebert¹, Haisong Ju¹, Willi Suter¹, Donglin Guo¹, Peter Hoffmann¹, Peter Kowey¹, Gan-Xin Yan¹, ¹Lankenau Institute for Medical Research, Wynnewood, PA, United States, ²Norvartis Institute of Biomedical Research, Basel, Switzerland, ³Norvartis Institute of Biomedical Research, East Hanover, NJ, United States |
| § 083  | A New Noninvasive Biomarker-Index of Cardiac Wavelength (λ) Plays an Important Role in Drug-Induced Cardiac Arrhythmias: Beyond QT-Prolongation and Torsades de Pointes (TdPs)  
Hua Rong Lu¹, Gan-Xin Yan¹, David J. Gallagher¹, ¹NJN, Beerse, Belgium |
084 Integration of Multiple Cardiac Parameters to Predict Drug-Induced Cardiac Toxicity
Kim Henderson¹, Brandon Borders¹, John Ross¹, Theresa Huwar¹, Amir Jalil², Brian Roche¹, ¹Battelle, Columbus, OH, United States, ²The Ohio State University, Columbus, OH, United States

085 The Human iPSC-Cardiomyocyte Arrhythmic Risk (hCAR) Assessment Model to Improve Drug Cardiac Safety Evaluation
Liang Guo¹, Luke Coyle¹, Rory Abrams¹, Cheryl Heidelberger¹, Thomas Singer¹, Thomas Weiser¹, Eric Chiao¹, Ray Kemper¹, Kyle Kolaja¹, ¹Early & Investigative Safety, Non-Clinical Safety, Hoffmann-La Roche Inc., Nutley, NJ, United States

086 Withdrawn

087 Contractile Behaviours of Human-Induced Pluripotent Stem Cell-Derived Cardiomyocyte Monolayers Evaluated with an Image-Based Analysis Using Motion Vector Prediction Technique: A Comparison with Extracellular Electrophysiology
Tomohiro Hayakawa¹, Takeshi Kunihiro¹, Tomoko Ando², Hatsume Un¹, Seiji Kobayashi¹, Eriko Matsui¹, Hiroaki Yada¹, Junko Kurokawa¹, Tetsushi Furukawa¹, ¹Sony Corporation, Tokyo, Japan, ²Department of Bio-informational Pharmacology, Medical Research Institute, Tokyo Medical and Dental University, Tokyo, Japan

088 Toward Quasi-In Vivo from In Vitro Assay (I): On-Chip Cardiomyocyte Network Screening Assay for Predictive Cardiotoxicity
Kenji Yasuda¹, Fumimasa Nomura¹, Tomoyo Hamada¹, Tomoyuki Kaneko¹, Yasuyuki Abe², Tomoko Sakakura², Kiyoshi Takasuna², Atsushi Sanbuisho², ¹Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan, ²Medicinal Safety Research Laboratories, Daiichi Sankyo Co., Ltd., Tokyo, Japan

089 Toward Quasi-In Vivo from In Vitro Assay (II): Development of On-Chip Predictive Cardiotoxicity Assay for Cardiac Contraction Fluctuation Measurement Using Dual Recording of Electrical Field Potential and Optical Image Analysis
Tomoyuki Kaneko¹, Fumimasa Nomura¹, Tomoyo Hamada¹, Akihiro Hattori¹, Kenji Yasuda¹, ¹Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan

090 Toward Quasi-In Vivo from In Vitro Assay (III): Evaluation of Temporal Field Potential Duration Fluctuation and Spatial Conduction Velocity Fluctuation of Cardiomyocyte Network for In Vitro Predictive Cardiotoxicity Measurement
Tomoyo Hamada¹, Fumimasa Nomura¹, Tomoyuki Kaneko¹, Hideo Takamori¹,², Yasuyuki Abe¹,², Tomoko Sakakura¹,², Kiyoshi Takasuna¹,², Atsushi Sanbuisho¹,², Kenji Yasuda¹, ¹Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan, ²Medicinal Safety Research Laboratories, Daiichi Sankyo Co., Ltd., Tokyo, Japan

091 Toward Quasi-In Vivo from In Vitro Assay (IV): Quasi-Electrocardiogram Measurement for Direct Prediction of TdP Occurrence Using Ring-Shaped Cardiomyocyte Network with Ring Electrode Array
Fumimasa Nomura¹, Tomoyuki Kaneko¹, Tomoyo Hamada¹, Kenji Yasuda¹, ¹Tokyo Medical & Dental University, Tokyo, Japan

092 Toward Quasi-In Vivo from In Vitro Assay (V): Noninvasive Precise Purification of Ventricular Cells from Mixture of Differentiated Human Stem Cell-Derived Cardiomyocytes Using Spot Digestion of Double Alginate Layers on a Multielectrode Array Chip
Hideyuki Terazono¹, Hyonchol Kim¹, Fumimasa Nomura¹, Tomoyuki Kaneko¹, Tomoyo Hamada¹, Kenji Yasuda¹, ¹Tokyo Medical & Dental University, Tokyo, Japan

093 Development of a 3D-Microtissue Model for Testing Cardiotoxicity Based on Human-Induced Pluripotent Stem Cells
Christian Zuppinger¹, Wolfgang Moritz², Jens Kelm³, Jan Lichtenberg³, ¹University Hospital Bern, Department of Cardiology, Bern, Switzerland, ²InSphero AG, Zurich, Switzerland

094 Simulated Metabolism in the Langendorff: Determining and Characterizing Novel Dose Solutions for 5-fluorouracil and Doxorubicin
John Ross¹, Kim Henderson¹, Brandon Borders¹, Peter Hong¹, Brian Roche¹, ¹Battelle Memorial Institute, Columbus, OH, United States
<table>
<thead>
<tr>
<th>Poster Abstract Title and Author</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>095</strong> Characterization of Nonhuman Primate Aorta as an In Vitro Model for Measuring Vasoconstriction and Vasorelaxation: Comparison to Rat</td>
</tr>
<tr>
<td>Lisa Nottebaum1, Asser Bassyouni1, Michelle Hemkens1, Stephen Jenkinson1, Paul Butler1, 'Global Safety Pharmacology, Pfizer Inc., La Jolla, CA, United States</td>
</tr>
<tr>
<td><strong>096</strong> Contractility Measurements in Rat Heart: Comparison of Isolated Myocytes and Langendorff-Perfused Whole Heart</td>
</tr>
<tr>
<td>BaoXi Gao1, Yusheng Qu1, Mei Fang1, Hugo M. Vargas1, 'Safety and Exploratory Pharmacology, Toxicological Sciences, Amgen Inc., Thousand Oaks, CA, United States</td>
</tr>
<tr>
<td><strong>097</strong> Myocardial Injury Associated with Salbutamol Administration under Ischaemic Myocardial Stress Conditions Is Associated with Altered microRNA Expression</td>
</tr>
<tr>
<td>Aaron Nagra1, Hardip Sandhu1, Humma Naz1, Helen Maddock1, Aftab Hussain1, 'Coventry University, Coventry, United Kingdom</td>
</tr>
<tr>
<td><strong>098</strong> MiRNA Expression Profile of Imatinib Mycelate-Induced Cardiotoxicity</td>
</tr>
<tr>
<td>Mayel Gharanei1, Hardip Sandhu1, Saadia Iqbal1, Kimia Hussein1, Dhay Al-Mafrachi1, Aftab Hussain1, Helen Maddock1, 'Coventry University, Coventry, United Kingdom</td>
</tr>
<tr>
<td><strong>099</strong> Human Stem Cell-Derived Cardiac Myocytes As a Model for Identifying Cardiac Risk: Comparison with Isolated Rabbit Heart</td>
</tr>
<tr>
<td>Yusheng Qu Qu1, BaoXi Gao1, Mei Fang1, Hugo M. Vargas1, 'Amgen Inc, Thousand Oaks, CA, United States</td>
</tr>
<tr>
<td><strong>100</strong> Uniform Spheres of Human Pluripotent Stem Cell-Derived Cardiomyocytes for Extended In Vitro Safety Pharmacology and Phenotypic Assays</td>
</tr>
<tr>
<td>Daniella Steel1, Kerstin Dahlenborg1, Peter Sartipy1, 'Cellxcelli Stem Cells/Cellartis AB, Gothenburg, Sweden</td>
</tr>
<tr>
<td><strong>101</strong> Time-Dependent Effects of Doxorubicin on LVP and ECG Parameters in Guinea Pig Langendorff Perfused Isolated Hearts</td>
</tr>
<tr>
<td>Joffrey Ducroq1, Hélène Didier1, Céline Salvetat1, Marie Le Grand1, 'PhysioStim, Lautrec, France</td>
</tr>
<tr>
<td><strong>102</strong> Concentration-Dependent Effects of Sunitinib on LVP and ECG Parameters in Guinea Pig Langendorff Perfused Isolated Hearts</td>
</tr>
<tr>
<td>Joffrey Ducroq1, Hélène Didier1, Céline Salvetat1, Marie Le Grand1, 'PhysioStim, Lautrec, France</td>
</tr>
<tr>
<td><strong>103</strong> Comparison of the Effects of Verapamil on LVP and ECG Parameters between Guinea Pig and Rat Langendorff Perfused Isolated Hearts</td>
</tr>
<tr>
<td>Joffrey Ducroq1, Hélène Didier1, Céline Salvetat1, Marie Le Grand1, 'PhysioStim, Lautrec, France</td>
</tr>
<tr>
<td><strong>104</strong> Protein Biomarkers of Drug-Induced Cardiotoxicity in the Isolated Heart: Building a Multiscale Approach</td>
</tr>
<tr>
<td>Brandon Borders1, Brian Roche1, John Ross1, Tom Vinci1, Brandon Wood1, Theresa Huwar1, Kim Henderson1, 'Battelle Memorial Institute, Columbus, OH, United States</td>
</tr>
<tr>
<td><strong>105</strong> The Utility of the Isolated Weanling Pig Hearts As a Model for Drug Safety Evaluation</td>
</tr>
<tr>
<td>Anusak Kijtawornrat1, Suwanakiet Sawangkoon1, Siripen Komolvanich1, Chollada Buranakarl1, Robert Hamlin2,3, 'Department of Veterinary Physiology, Faculty of Veterinary Science, Chulalongkorn University, Bangkok, Thailand, 2Department of Veterinary Biosciences, The Ohio State University, Columbus, OH, United States, 3QTest Labs, LLC., Columbus, OH, United States</td>
</tr>
<tr>
<td><strong>106</strong> Cardio-Oncology: Anticancer Therapy Alters Cardiac Energetics; Potential Insight in to Cardiac Injury</td>
</tr>
<tr>
<td>Brian Roche1,2, Brandon Borders1,2, John Ross1,2, Amir Jalil3,4, Kim Henderson1,2, 'Battelle Memorial Institute, Columbus, OH, United States, 1The Ohio State University, Wright Center of Innovation in Biomedical Imaging, Columbus, OH, United States, 2Battelle Drug Discovery Science and CoLaborative, Columbus, OH, United States</td>
</tr>
<tr>
<td><strong>107</strong> Integration of Functional and Biochemical Biomarkers for Verapamil-Induced Cardiac Dysfunction</td>
</tr>
<tr>
<td>Brian Roche1,2, William Cramb1,2, Brandon Borders1,2, John Ross1,2, Brandon Wood1,2, Amir Jalil3,4, Kim Henderson1,2, 'Battelle Memorial Institute, Columbus, OH, United States, 1Zenas Technologies, Metairie, LA, United States, 2The Ohio State University, Wright Center of Innovation in Biomedical Imaging, Columbus, OH, United States, 3Battelle Drug Discovery Science and CoLaborative, Columbus, OH, United States</td>
</tr>
<tr>
<td>Poster</td>
</tr>
<tr>
<td>--------</td>
</tr>
</tbody>
</table>
| 120    | ECG Sensitivity Evaluation of d,l-Sotalol and Moxifloxacin in Telemetry Implanted Beagles Using an IV Solid Tip ECG Lead Configuration  
Andrea Z. Mitchell1, Andrew J. Bills1, John J. Kremer1, C. Michael Foley1, Mark A. Osinski1, Covance Laboratories Inc., Madison, WI, United States |
| 121    | Evaluation of Intravenous (IV) Solid Tip ECG Lead Placement in Telemetry Implanted Beagles  
Andrew J. Bills1, Andrea Z. Mitchell1, Michael Taschwer1, C. Michael Foley1, John J. Kremer1, Gary T. Wittwer1, Anna M. Williams1, Mark A. Osinski1, Covance Laboratories Inc., Madison, WI, United States |
| 122    | Comparison of Heart Rate and Blood Pressure Values in Conscious Monkeys Using Two Recording Methods: Telemetry and Blood Pressure Cuff  
Ty Speece1, Marc Roush1, Pamela Gayheart-Walsten1, Sandra Love1, Deven Dandekar1, Alfred Botchway1, Xenometrics, Stilwell, KS, United States |
| 123    | Assessment of Sympatholytic Properties from Short-Term Heart Rate Variability Analysis in Cynomolgus Monkeys  
Pascal Champeroux1, Eric Martel1, Anne Maurin1, Serge Richard1, CERB, Baugy, France |
| 124    | Comparative Arrhythmia Evaluation in Jacketed Nonhuman Primates (NHP) with Surgical Implants  
Roy W Chui1, Kathy Derakhchan1, Thomas Bennet1, Matthew W Miller1, Hugo M Vargas1, Amgen Inc., Thousand Oaks, CA, United States, Noesys Data, Cary, NC, United States |
| 125    | Comparison of Telemetry-Derived Epicardial and Intravascular Electrocardiogram Signal Characteristics in Beagle Dogs  
Theodore Baird1, Kyle O’Donohue1, Tara Posthumus1, Michael Eliel1, David Gauvin1, Jill Dalton1, MPI Research, Mattawan, MI, United States |
| 126    | Comparison of Telemetry-Derived Epicardial and Intravascular Electrocardiogram Signal Characteristics in Cynomolgus Monkeys  
Theodore Baird1, Kyle O’Donohue1, Scott Ward1, Michael Eliel1, Jill Dalton1, David Gauvin1, MPI Research, Mattawan, MI, United States |
| 127    | Effect of Chair-Restraint on Cardiac Troponin Levels in Nonhuman Primates  
Robert Barnes1, Peter Harris1, Todd Wisialowski1, Dingzhou Li1, William Reagan1, Sandra Summers1, Jill Steidl-Nichols1, Pfizer Inc., Groton, CT, United States |
| 128    | Evidence of Reverse Rate-Dependent Prolongation of QT/QTc with Moxifloxacin in Conscious Telemetered Nonhuman Primates  
Todd Wisialowski1, Robert Barnes1, Jason Cordes1, William Gorczyca1, Peter Harris1, Jill Steidl-Nichols1, Global Safety Pharmacology, Pfizer Worldwide R&D, Groton, CT, United States |
| 129    | Development of a Nonclinical Tool for Generating Dynamic QT Beta-to-Beat Cloud Data  
Michael Gill1, Geoff Lewen1, Lewis Buchanan1, William Warner1, Paul Levesque1, Bristol-Myers Squibb, Princeton, NJ, United States, Bristol-Myers Squibb, Hopewell, NJ, United States |
| 130    | Hemodynamic Data Analysis—How Much Is Enough?  
Christopher Douglas1, Hilton Jones1, Fan Cheung1, Mark Osinski1, Covance Laboratories Inc., Madison, WI, United States |
| 131    | Long-Term Performance Evaluation of Intravascular Biopotential Leads in Telemetered Freely Moving Cynomolgus Monkeys  
Alexis Ascah1, Roy Forster1, Eric Troncy1, Mylene Pouliot1, Simon Authier1-2, CiToxLAB, Laval, QC, Canada, Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada |
| 132    | A New Microchip Implant for Continuous Body Temperature Recording in the Rat  
Elisabeth Patterson1, Julie Latour1, Florence Lozano1, Olivier Perrault1, Anna Ponchet-Lac1, Florence Pradier1, Mohamed Lemallam1, Magali Fric-Bordat1, Jean-Pierre Martinolle1, Ludmilla Mazelin-Winum1, Sanofi R&D, Montpellier, France |
### Poster Abstract Title and Author

#### 133 The Potential Value of an In Vitro Hippocampal Brain Slice Assay for the Preclinical Assessment of Seizure Liability of Anti-Infective Drugs

*Alison Easter¹, Russell Bialecki², ¹AstraZeneca, Waltham, MA, United States*

#### 134 Auditory Evoked Potentials: A Feasibility Study in Telemetered Cynomolgus Monkeys

*Simon Authier¹,², Mylene Pouliot¹, Eric Schaeffer¹, Sivaraao Digavalli¹, Roy Forster¹, Alexis Ascah¹, Eric Troncy², Michael Weed¹, ¹CIToxLAB North America, Laval, QC, Canada, ²Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada, ³Bristol-Myers Squibb, Wallingford, CT, United States*

#### 135 Pain Assessment in Monosodium Iodoacetate (MIA)-Induced Osteoarthritis (OA) Model

*Rana Samadfar¹, Luc Chouinard¹, Kevin Norton¹, Susan Smith¹, ¹Charles River Laboratories, Montreal, QC, Canada*

#### 136 Attenuation of Tactile Allodynia in a Rat Model of Neuropathic Pain

*Giuseppina Iacono¹, Kevin Norton¹, ¹Charles River Laboratories, Montreal, QC, Canada*

#### 137 Early-Iron Deficiency and Attentinal Deficits from Basic Science to Treatment

*Wael Mohamed¹, ¹Menoufiya Medical School, Menoufiya, Egypt*

#### 138 Acute Anesthetized Measurements of Right Ventricular and Pulmonary Artery Pressure in a Rat Model of Pulmonary Artery Hypertension

*Dezhi Xing¹, Rodney Smith¹, James Hennan¹, Paul Levesque¹, ¹Bristol-Myers Squibb, Pennington, NJ, United States*

#### 139 Citrate Infusion Produces Ionic Hypocalcemia, Hypomagnesemia, and Associated Cardiovascular Changes in the Sling-Restrained Beagle Dog—A PK/PD Analysis

*Laura Ringer¹, William Gorczyca¹, Jill Steidl-Nichols¹, Declan Flynn¹, ¹Pfizer Worldwide R&D, Groton, CT, United States*

#### 140 What Do Biphasic P Waves in the Surface Electrocardiogram Mean?

*Pedro Vargas-Pinto¹,², Adriana Pedraza-Toscano¹, Robert Hamlin¹,², Cynthia Carnes¹, ¹The Ohio State University, Columbus, OH, United States, ²QTest Labs, Columbus, OH, United States*

#### 141 Electrocardiographic Effects of Escalating Doses of Cilobradine, Cisapride, and Dofetilide in Anesthetized Cats: A New Model for Torsadogeneity

*Adriana Pedraza-Toscano¹,², Pedro Vargas-Pinto¹,², Anusak Kijtawornrat²,³, Robert Hamlin¹, ¹QTest Labs, Columbus, OH, United States, ²The Ohio State University, Columbus, OH, United States, ³Chulalongkorn University, Bangkok, Thailand*

#### 142 Use of Mice in Cardiovascular Safety

*Michele Hemkens¹, Eileen Blasi¹, Jonathan Heyen¹, Paul Butler¹, ¹Pfizer Inc., La Jolla, CA, United States*

#### 143 Evaluation of Load-Independent Intratrop in Conscious Sheep Instrumented an Axial Flow Left Ventricular Assist Device (LVAD): The Triple-Product versus the End-Diastolic Pressure Relationship

*Pamela Kloepper¹,², Carlos Del Rio¹,², Brad Youngblood¹,², Yukie Ueyama¹,², Patrick McConnell¹, ¹Cardiothoracic Surgery, Nationwide Children's Hospital, Columbus, OH, United States, ²QTest Labs, Columbus, OH, United States*

#### 144 Withdrawn

#### 145 Temporal Profile of Lipopolysaccharide-Induced Airway Inflammation in Rats

*Rommel Matheson¹, Kevin Norton¹, ¹Charles River Laboratories, Senneville, QC, Canada*

#### 146 Temporal Profile of Ovalbumin-Induced Airway Inflammation in the Brown Norway Rat

*Rommel Matheson¹, Kevin Norton¹, ¹Charles River Laboratories, Senneville, QC, Canada*

#### 147 Evaluation of Respiratory Function in Conscious, Nonrestrained Cynomolgus Monkey Using Respiratory Inductive Plethysmography

*Julie Maucotel¹, Francine El Amrani¹, Stéphane Loriot¹, Abdel-Illah El Amrani¹, Roy Forster¹, Jean-Jacques Legrand¹, ¹CIToxLAB France, Evreux cedex, France*
148 Analysis of Concordance of Nonclinical Rodent Respiratory Function Measurements to Phase I Trial Outcome Using the Animal Model Framework
Lorna Ewart¹, Hamid Amouzadeh², Mike Aylott⁴, Pierre Jordaan³, Derek Leishman⁷, Kathrin Locher⁵, Andy Mead⁸, Dennis Murphy¹, Jon Scatthard¹, Jean-Pierre Valentin¹, ¹AstraZeneca, Macclesfield, Cheshire, United Kingdom, ²Amgen Inc., Thousand Oaks, CA, United States, ³GlaxoSmithKline, King of Prussia, PA, United States, ⁴GlaxoSmithKline Harlow, Essex, United Kingdom, ⁵Novartis, Basel, Switzerland, ⁶NC3Rs, London, United Kingdom, ⁷Eli Lilly, Indianapolis, IN, United States, ⁸Pfizer Inc., Groton, CT, United States, ⁹Pfizer Inc., Sandwich, Kent, United Kingdom

149 Acute Pulmonary Artery Hypertension in Closed-Chest Anesthetized Rats and the Sustained Pulmonary Artery Vaso-Relaxation following Treatment with a Novel Vasoactive Intestinal Peptide
B.L. Youngblood¹, C.L. del Rio¹, S.T. Yeh¹, L. Georgopoulos², S. Arnold³, R.L. Hamlin¹, ¹QTest Labs, Columbus, OH, United States, ²PhaseBio Pharmaceuticals, Inc., Malvern, PA, United States

150 A Pharmacological Assessment of Opioid-Induced Respiratory Depression and Potential Antagonism by Naltrexone
Giuseppina Iacono¹, Rosonald Bell², Kevin Norton¹, ¹Charles River Laboratories, Preclinical Services, Montreal, QC, Canada, ²Pfizer Inc., Groton, CT, United States

151 Evaluation of Respiratory Historical Control Data and Applications of Methods beyond Standard Safety Pharmacology
Kenneth Kearney¹, Joe Strassell³, Philip Atterson¹, ¹WIL Research, Ashland, OH, United States

152 Ovalbumin-Sensitized Guinea Pig Cough Model Effective in Assessing Safety for Aerosolized Chemicals
Zemmie Pollock¹, Jianguo Zhuang¹, Cancan Zhang¹, Fadi Xu¹, Kristy D. Bruse¹, ¹Lovelace Respiratory Research Institute, Albuquerque, NM, United States

153 Comparison of Thoracic Impedance Pneumography and Inductive Plethysmography in the Assessment of Respiratory Function
Stephen Wilson¹, Robert Kaiser¹, Henry Holzgrefe¹, ¹Charles River Laboratories, Reno, NV, United States

154 Effect of Tethered Jackets and Cage Size on Food Intake in Sprague-Dawley Rats
Kristin Koehl¹, Emily Nolan¹, Sarah Marsh¹, Erica Goodwin¹, Teresa Krieger-Burke¹, Marc Baille¹, ¹MSU In Vivo Facility, Michigan State University, East Lansing, MI, United States

155 Studies on the Effect of Antidiabetic Drugs on Collagen and Its Metabolites
Dhanalekshmi UM¹, Neelakanta Reddy P¹, ¹Central Leather Research Institute, Chennai, Tamil Nadu, India

156 Evaluation of Bile Duct Ligation-Induced Portal Vein Hypertension in Telemetered Rats
Philippe Guillaume¹, David Virley², Sylvie Bézivin², Sonia Rompion¹, Guillaume Froget¹, ¹Porsof, La Genest-Saint-Ise, France

157 Use of Combined Telemetry and Plethysmography in the Conscious Rat in Assessment of Cardio-Respiratory Function
Sonia Rompion¹, Eric Hayes¹, Emmanuelle Gascoing¹, Marion Maujeul¹, Mickaël Lepage¹, Guillaume Froget¹, ¹Porsof, Le Genest Saint-Ise, France

158 A Case Study to Illustrate a Potential Challenge for Preclinical Hypotension Risk Assessment by Cardiovascular Telemetry in Conscious, Normotensive Rats in Advance of Definitive Large Animal Telemetry Studies
Malar Pannirselvam¹, Donald Hodges¹, Joseph Prezioso¹, Doris Damian¹, Kirk Tanner¹, Hong Gao¹, Francoise Berlioz-Seux¹, Ursula Germann¹, ¹Vertex Pharmaceuticals Incorporated, Cambridge, MA, United States

159 Evaluation of a Heart Rate Correction for Rat Contractility Measurements
Michael Engwall¹, Kathy Derakhchan¹, Hugo M. Vargas¹, ¹Amgen Inc., Thousand Oaks, CA, United States

160 Electromyographic Telemetry Monitoring of SNN101959, a Targeted Secretion Inhibitor (TSI) in the Sprague-Dawley Rat
Stéphane Milano¹, Christophe Bory¹, Celine Dupuis¹, Estelle Chalencon¹, Richard Jones², Alberto Martinez², ¹Ricerca Biosciences SAS, Lyon, France, ²Syntaxin LTD, Abingdon, United Kingdom
<table>
<thead>
<tr>
<th>Poster</th>
<th>Abstract Title and Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>161</td>
<td>Reducing Animal Use by Refining Experimental Paradigms and Colony Management in a Conscious Rat Telemetry Model</td>
</tr>
<tr>
<td></td>
<td>Ivy Garfinkel¹, Martha Hasbun-Manning¹, Jude Ferraro¹, Patrick Fanelli², Pamela Gerenser¹, Min Deng¹, Lisa Fitzgerald¹, Gregory Friedricks¹, Joseph Salata¹, Chao-Min Hoe¹, Kimberly Hoagland¹, ¹Merck &amp; Co., Inc., West Point, PA, United States</td>
</tr>
<tr>
<td>162</td>
<td>Effects of Selective versus Nonselective Alpha Adrenergic Receptor Blockade on Cardiovascular Parameters, Body Temperature and Sympathetic Tone in Rats</td>
</tr>
<tr>
<td></td>
<td>Siddhartha Bhatt¹, Laura Ringer¹, Todd Wisiolowski¹, Jill Steidl-Nichols¹, Declan Flynn¹, ¹Global Safety Pharmacology, Pfizer Worldwide R&amp;D, Groton, CT, United States</td>
</tr>
<tr>
<td>163</td>
<td>Target Related or Off-Target Cardiovascular Liabilities of Receptor X Agonists in Telemetrized Rats and Knockout Mice</td>
</tr>
<tr>
<td></td>
<td>Julia Li¹, George Thalody¹, Oliver Flint¹, Paul Levesque¹, James Hennan¹, ¹Bristol-Myers Squibb, Pennington, NJ, United States</td>
</tr>
<tr>
<td>164</td>
<td>Simultaneous Recording of Action Potentials and Calcium Transients from Stem Cell-Derived Cardiomyocytes: Applications for Cardiotoxicity Testing</td>
</tr>
<tr>
<td></td>
<td>Ross Whittaker¹, Fabio Cerignoli¹, Randall Ingermansson¹, Rob Towart¹, David J. Gallacher¹, Mark Mercola¹, Jeffrey Price¹, ¹Vala Sciences Inc., San Diego, CA, United States, ²Muscle Development and Regeneration Program, Sanford-Burnham Medical Research Institute, La Jolla, CA, United States, ³Center of Excellence for Cardiovascular Safety Research and Mechanistic Pharmacology, Jansen Pharmaceutica NV, Beersel, Belgium, ⁴Quantitative Microscopy Laboratory, Sanford-Burnham Medical Research Institute, La Jolla, CA, United States</td>
</tr>
<tr>
<td>165</td>
<td>Detection of Complex Mechanisms of Drug Action for Vardenafil Using Stem Cell-Derived Human Cardiomyocytes</td>
</tr>
<tr>
<td></td>
<td>Carlos Obejero-Paz¹, Andrew Bruening-Wright¹, Shengde Peng¹, Alina O’Connell¹, Zhixiong Lu¹, Weimin Pei¹, Tianen Yang¹, James Kramer¹, Yuri Kuryshov¹, Arthur Brown¹, ¹ChanTest Corporation, Cleveland, OH, United States</td>
</tr>
<tr>
<td>166</td>
<td>Development of a High-Throughput Functional Cell Based L-Type Calcium Channel Assay</td>
</tr>
<tr>
<td></td>
<td>Stephen Jenkinson¹, Asser Bassouni¹, Michelle Hemkens¹, Sunny Sun¹, Sung Kim¹, Bernard Femini¹, Paul Butler¹, ¹Global Safety Pharmacology, Pfizer Worldwide R&amp;D, La Jolla, CA, United States</td>
</tr>
<tr>
<td>167</td>
<td>Validation of a Patch-Clamp Assay on Human Cardiac Sodium Channels Using QPatch 16 Automated System: Detection of State-Dependence, Use-Dependence, and Current Enhancement</td>
</tr>
<tr>
<td></td>
<td>Aurore Colomar¹, Simon Hebeisen¹, ¹UCB Pharma, Braine l’Alleud, Belgium, ²B’SYS, Witterswil, Switzerland</td>
</tr>
<tr>
<td>168</td>
<td>Translation of L-Type Calcium Channel Block: From In Vitro Assays to In Vivo Models</td>
</tr>
<tr>
<td></td>
<td>Sunny Z. Sun¹, David Ramirez², William P. Gorczyca¹, Stephen C. Foote¹, Michelle D. Hemkens¹, Asser Bassouni¹, Stephen Jenkinson¹, ²Todd A. Wisiolowski¹, ¹Pfizer Worldwide R&amp;D, Groton, CT, United States, ²Pfizer Worldwide R&amp;D, San Diego, CA, United States</td>
</tr>
<tr>
<td>169</td>
<td>Measurement of Short-Circuit Current in the Rat Inner Medullary Collecting Duct for Evaluation of Plasma Expansion</td>
</tr>
<tr>
<td></td>
<td>Tadashi Tsubouchi¹, Kaori Kunito¹, Yasufumi Ibuchi¹, Shinji Tsujimoto¹, Yoshihide Kii¹, Takeshi Kunimatsu¹, Terumasa Mino¹, ¹Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan</td>
</tr>
<tr>
<td>170</td>
<td>New Vista into Delayed Emesis Research: Computerized Detection of Emetic Response in the Ferret Monitored by Telemetry</td>
</tr>
<tr>
<td></td>
<td>Sonia Goinеau¹, Toni Wolinsky¹, Sonia Rompion¹, Jean-Gérard Napoléoni¹, Laurence Barrais¹, Philippe Guillaume¹, Guillaume Froget¹, ¹PorSolt SAS, Le Genest-Saint-Ise, France, ²emka Technologies, Paris, France</td>
</tr>
<tr>
<td>171</td>
<td>The Voltage Membrane of Chinese Hamster Ovary Cells As a Cellular Tool for Predicting Side-Effects of Antimicrobial Agents on Mammalian Cells</td>
</tr>
<tr>
<td></td>
<td>Christophe Boixel¹, Jean-Pierre Martinolle¹, ¹Sanofi, Montpellier, Languedoc Roussillon, France</td>
</tr>
<tr>
<td>172</td>
<td>Age-Related Hearing Loss in the C57BL/6N Mouse: Time-Course Analysis of Auditory Function with Implications for Auditory Safety Study Design</td>
</tr>
<tr>
<td></td>
<td>Matthew Abernathy¹, Rachel Tapp¹, Joshua Yoder¹, Andrea Koch¹, Carolyn Hedke¹, David Gauvin¹, Theodore Baird¹, ¹MPI Research, Mattawan, MI, United States, ²Western Michigan University, Kalamazoo, MI, United States</td>
</tr>
</tbody>
</table>
173 Influence of Collection Site on Cochlear Perilymph Sample Volume
Matthew Abernathy1,2, Rachel Tapp1, Joshua Yoder1, David Gauvin1, Theodore Baird1, 1MPI Research, Mattawan, MI, United States,
2Western Michigan University, Mattawan, MI, United States

174 Characterization of db/db Mice for Efficacy/Safety Pharmacology Assessment of Antidiabetic Drugs
Clarisse Duval1, Martine Lemaire1, Philippe Guillaume1, Daniel Provost1, Guillaume Froget1, 1Porsolt, Le Genest-Saint-Isle, France

175 An Evaluation of Acute Toxicity Using the Phototactic Behaviour of Daphnia Magna
Justin Choi1, Rosa Park1, Edward Kang1, Solomon Oak1, Howard Yim1, Mark Chung1, Hye Sung Kim1, Sung Hoon Choo1, Jongbin Lee1,
Andy Suh1, 1Prafys Research Laboratory, Englewood Cliffs, NJ, United States

176 Investigating an Invertebrate Model in Safety Pharmacology Using the Heartbeat of Daphnia Magna
Solomon Oak1, Rosa Park1, Mark Chung1, Justin Choi1, Edward Kang1, Joseph Yang1, Daniel Hong1, Jamie Han1, Nuri Ra1, Hye Sung
Kim1, Sung Hoon Choo1, Jongbin Lee1, Andy Suh1, 1Prafys Research Laboratory, Englewood Cliffs, NJ, United States

177 Effect of Artimisinin Compound in Experimentally-Induced Colon Carcinogenesis
Bikash Medhi1, 1PGIMER, Chandigarh, India

178 Deleterious Effects of Gentamicin and Cisplatin on Renal Function in Rats and Early Detection of Drug-Induced
Kidney Injury using Biomarkers
Eric Delpy1, Marine Habault1, Catherine Le Quement1, Christophe Drieu La Rochelle1, 1Biotrial Pharmacology, Rennes, France

179 Correlation and Dissociation of Measures of Chemotherapy-Induced Peripheral Neurotoxicity in Male Sprague-
Dawley Rats Intravenously Administered Taxol® or Abraxane®
Mario Saro1, Kenneth Firman1, Mona Litwak1,2, Joseph Arezzo1,2, Mary Jeanne Kallman1, 1Covance Laboratories, Inc., Greenfield, IN,
United States, 2Albert Einstein College of Medicine of Yeshiva University, Bronx, NY, United States

180 Routine Production and Applications of Human Pluripotent Stem Cell-Derived Hepatocyte-Like Cells
Petter Björquist1, Kristina Runeberg1, Daniella Steel1, Barbara Kuppers-Munther1, Josefin Edsberg1, 1Cellectis Stem Cells,
Gothenburg, Sweden
## Presenting Author Index

<table>
<thead>
<tr>
<th>Abstract Author</th>
<th>Poster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abernathy, Matthew</td>
<td>172, 173</td>
</tr>
<tr>
<td>Abe, Yasuyuki</td>
<td>022</td>
</tr>
<tr>
<td>Ascah, Alexis</td>
<td>131</td>
</tr>
<tr>
<td>Atterson, Philip</td>
<td>029</td>
</tr>
<tr>
<td>Authier, Simon</td>
<td>108, 134</td>
</tr>
<tr>
<td>Baird, Theodore</td>
<td>125, 126</td>
</tr>
<tr>
<td>Barnes, Robert</td>
<td>127</td>
</tr>
<tr>
<td>Bennett, Thomas</td>
<td>117</td>
</tr>
<tr>
<td>Bhatt, Siddhartha</td>
<td>162</td>
</tr>
<tr>
<td>Bills, Andrew J</td>
<td>121</td>
</tr>
<tr>
<td>Blasi, Eileen</td>
<td>069</td>
</tr>
<tr>
<td>Boixel, Christophe</td>
<td>171</td>
</tr>
<tr>
<td>Borders, Brandon</td>
<td>104</td>
</tr>
<tr>
<td>Brandenburger, Matthias</td>
<td>036</td>
</tr>
<tr>
<td>Brockway, Marina</td>
<td>041</td>
</tr>
<tr>
<td>Bruening-Wright, Andrew</td>
<td>020</td>
</tr>
<tr>
<td>Bruse, Kristy</td>
<td>016</td>
</tr>
<tr>
<td>Buchanan, Lewis</td>
<td>109</td>
</tr>
<tr>
<td>Cai, Qing</td>
<td>015</td>
</tr>
<tr>
<td>Champeroux, Pascal</td>
<td>009, 123</td>
</tr>
<tr>
<td>Chui, Ray W</td>
<td>124</td>
</tr>
<tr>
<td>Coffee, Matt</td>
<td>080</td>
</tr>
<tr>
<td>Colomar, Aurore</td>
<td>167</td>
</tr>
<tr>
<td>Cools, Frank</td>
<td>054</td>
</tr>
<tr>
<td>Cruz, Christopher</td>
<td>010</td>
</tr>
<tr>
<td>Dalton, Jill</td>
<td>115, 116</td>
</tr>
<tr>
<td>Delpy, Eric</td>
<td>013, 048, 178</td>
</tr>
<tr>
<td>del Rio, Carlos</td>
<td>050, 051</td>
</tr>
<tr>
<td>Derakhchon, Kathy</td>
<td>043</td>
</tr>
<tr>
<td>Douglas, Christopher</td>
<td>130</td>
</tr>
<tr>
<td>Draid, Marwan</td>
<td>065</td>
</tr>
<tr>
<td>Ducroq, Joffrey</td>
<td>101, 102, 103</td>
</tr>
<tr>
<td>Easter, Alison</td>
<td>133</td>
</tr>
<tr>
<td>El Amrani, Abdel-Illah</td>
<td>049, 147</td>
</tr>
<tr>
<td>Engwall, Michael</td>
<td>110, 159</td>
</tr>
<tr>
<td>Fasdelli, Nicola</td>
<td>072</td>
</tr>
<tr>
<td>Fitzgerald, Lisa</td>
<td>119</td>
</tr>
<tr>
<td>Froget, Guillaume</td>
<td>033</td>
</tr>
<tr>
<td>Gao, BaoXi</td>
<td>096</td>
</tr>
<tr>
<td>Garfinkel, Ivy</td>
<td>161</td>
</tr>
<tr>
<td>Geer, M. Ishaq</td>
<td>068</td>
</tr>
<tr>
<td>Gerenser, Pamela</td>
<td>045</td>
</tr>
<tr>
<td>Germann, Ursula</td>
<td>158</td>
</tr>
<tr>
<td>Gill, Michael</td>
<td>129</td>
</tr>
<tr>
<td>Guo, Liang</td>
<td>085</td>
</tr>
<tr>
<td>Guth, Brian</td>
<td>111</td>
</tr>
<tr>
<td>Hamada, Tomoyo</td>
<td>090</td>
</tr>
<tr>
<td>Hamlin, Robert</td>
<td>059</td>
</tr>
<tr>
<td>Harris, Kate</td>
<td>077</td>
</tr>
<tr>
<td>Harris, Peter</td>
<td>118</td>
</tr>
<tr>
<td>Hassler, Craig</td>
<td>047</td>
</tr>
<tr>
<td>Hayakawa, Tomohiro</td>
<td>087</td>
</tr>
<tr>
<td>Hayashi, Takashi</td>
<td>056</td>
</tr>
<tr>
<td>Hayes, Eric</td>
<td>017, 157</td>
</tr>
<tr>
<td>Hemkens, Michelle</td>
<td>142</td>
</tr>
<tr>
<td>Henderson, Kim</td>
<td>084</td>
</tr>
<tr>
<td>Hess, Dietmar</td>
<td>081</td>
</tr>
<tr>
<td>Heyen, Jonathan</td>
<td>046</td>
</tr>
<tr>
<td>Himmel, Herbert</td>
<td>008, 031</td>
</tr>
<tr>
<td>Hodges, Donald</td>
<td>012</td>
</tr>
<tr>
<td>Hoffmann, Michael</td>
<td>040</td>
</tr>
<tr>
<td>Holdsworth, David</td>
<td>114</td>
</tr>
<tr>
<td>Hsu, Cathleen</td>
<td>026</td>
</tr>
<tr>
<td>Huang, Minxue</td>
<td>078</td>
</tr>
<tr>
<td>Iacono, Giuseppina</td>
<td>136, 150</td>
</tr>
<tr>
<td>Ishizaka, Tomomichi</td>
<td>004</td>
</tr>
<tr>
<td>Jenkinsson, Stephen</td>
<td>166</td>
</tr>
<tr>
<td>Johnson, Daniel</td>
<td>001, 002</td>
</tr>
<tr>
<td>Kaneko, Tomoyuki</td>
<td>089</td>
</tr>
<tr>
<td>Kearney, Kenneth</td>
<td>151</td>
</tr>
<tr>
<td>Kijtawornrat, Anusak</td>
<td>007, 105</td>
</tr>
<tr>
<td>Kloepfer, Pamela</td>
<td>143</td>
</tr>
<tr>
<td>Abstract Author</td>
<td>Poster</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Koehl, Kristin</td>
<td>154</td>
</tr>
<tr>
<td>Kramer, James</td>
<td>034</td>
</tr>
<tr>
<td>Lee, Jongbin</td>
<td>175, 176</td>
</tr>
<tr>
<td>Lemaire, Martine</td>
<td>174</td>
</tr>
<tr>
<td>Lichtenberg, Jan</td>
<td>093</td>
</tr>
<tr>
<td>Li, Julia</td>
<td>163</td>
</tr>
<tr>
<td>Limprasut, Vudhiporn</td>
<td>006</td>
</tr>
<tr>
<td>Liu, Tengxian</td>
<td>082</td>
</tr>
<tr>
<td>Lu, Hua Rong</td>
<td>083</td>
</tr>
<tr>
<td>Maddock, Helen</td>
<td>097, 098</td>
</tr>
<tr>
<td>Mazelin-Winum, Ludmilla</td>
<td>132</td>
</tr>
<tr>
<td>Mead, Andy</td>
<td>148</td>
</tr>
<tr>
<td>Medhi, Bikash</td>
<td>177</td>
</tr>
<tr>
<td>Metea, Monica</td>
<td>062</td>
</tr>
<tr>
<td>Meyer, Thomas</td>
<td>037</td>
</tr>
<tr>
<td>Milano, Stéphane</td>
<td>112, 113, 160</td>
</tr>
<tr>
<td>Mirams, Gary</td>
<td>074</td>
</tr>
<tr>
<td>Mitchell, Andrea Z</td>
<td>120</td>
</tr>
<tr>
<td>Mohamed, Wael</td>
<td>137</td>
</tr>
<tr>
<td>Mollik, Md. Ariful Haque</td>
<td>052</td>
</tr>
<tr>
<td>Morissette, Pierre</td>
<td>044</td>
</tr>
<tr>
<td>Nomura, Fumimasa</td>
<td>091</td>
</tr>
<tr>
<td>Norton, Kevin</td>
<td>014, 135, 145, 146</td>
</tr>
<tr>
<td>Nottebaum, Lisa</td>
<td>095</td>
</tr>
<tr>
<td>Numann, Randy</td>
<td>035</td>
</tr>
<tr>
<td>Obejero-Paz, Carlos</td>
<td>165</td>
</tr>
<tr>
<td>Otto-Bruc, Annie</td>
<td>067</td>
</tr>
<tr>
<td>Pedraza-Toscano, Adriana</td>
<td>141</td>
</tr>
<tr>
<td>Percie du Sert, Nathalie</td>
<td>028</td>
</tr>
<tr>
<td>Pollock, Zemmie</td>
<td>064, 152</td>
</tr>
<tr>
<td>Qu, Yusheng Qu</td>
<td>099</td>
</tr>
<tr>
<td>Ramirez, David S</td>
<td>075</td>
</tr>
<tr>
<td>Redfern, William S</td>
<td>079</td>
</tr>
<tr>
<td>Reynolds, Jack</td>
<td>057</td>
</tr>
<tr>
<td>Ringer, Laura</td>
<td>139</td>
</tr>
<tr>
<td>Roche, Brian</td>
<td>106, 107</td>
</tr>
<tr>
<td>Rosado, Amy</td>
<td>027</td>
</tr>
<tr>
<td>Ross, John</td>
<td>094</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Abstract Author</th>
<th>Poster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runeberg, Kristina</td>
<td>180</td>
</tr>
<tr>
<td>Sarangi, Sudhir Chandra</td>
<td>011</td>
</tr>
<tr>
<td>Schwengberg, Silke</td>
<td>023</td>
</tr>
<tr>
<td>Sgro, Mario</td>
<td>179</td>
</tr>
<tr>
<td>Shaik, Mastan</td>
<td>071</td>
</tr>
<tr>
<td>Speece, Ty</td>
<td>122</td>
</tr>
<tr>
<td>Steel, Daniella</td>
<td>024, 100</td>
</tr>
<tr>
<td>Sun, Sunny Z</td>
<td>076, 168</td>
</tr>
<tr>
<td>Sutherland, Weston</td>
<td>003</td>
</tr>
<tr>
<td>Taniguchi, Tomohiko</td>
<td>021</td>
</tr>
<tr>
<td>Terazono, Hideyuki</td>
<td>092</td>
</tr>
<tr>
<td>Towart, R</td>
<td>030</td>
</tr>
<tr>
<td>Tsubouchi, Tadashi</td>
<td>169</td>
</tr>
<tr>
<td>Tyszkiwicz, Cheryl</td>
<td>025</td>
</tr>
<tr>
<td>Ueyama, Yukie</td>
<td>058</td>
</tr>
<tr>
<td>UM, Dhanalekshmi</td>
<td>155</td>
</tr>
<tr>
<td>Upreti, Anup Raj</td>
<td>070</td>
</tr>
<tr>
<td>Urmaliya, Vijay</td>
<td>005, 055</td>
</tr>
<tr>
<td>Van Ammel, Karel</td>
<td>053</td>
</tr>
<tr>
<td>Vargas-Pinto, Pedro</td>
<td>140</td>
</tr>
<tr>
<td>Virginio, Caterina</td>
<td>073</td>
</tr>
<tr>
<td>Virley, David</td>
<td>156</td>
</tr>
<tr>
<td>Walisser, Jacqueline</td>
<td>018</td>
</tr>
<tr>
<td>Wang, John</td>
<td>042, 066</td>
</tr>
<tr>
<td>Whittaker, Ross</td>
<td>164</td>
</tr>
<tr>
<td>Wilson, Stephen</td>
<td>063, 153</td>
</tr>
<tr>
<td>Wisialowski, Todd</td>
<td>128</td>
</tr>
<tr>
<td>Wolinsly, Toni</td>
<td>170</td>
</tr>
<tr>
<td>Xing, Dezhi</td>
<td>138</td>
</tr>
<tr>
<td>Yasuda, Kenji</td>
<td>088</td>
</tr>
<tr>
<td>Youngblood, BL</td>
<td>149</td>
</tr>
<tr>
<td>Zhang, Xiaoyu</td>
<td>032</td>
</tr>
</tbody>
</table>
Participate in the newest SPS Exhibit Hall activity, the Treasure Hunt!
Use the Exhibit Hall Treasure Hunt Map to visit participating exhibitors and you could win one of several prizes being given away Wednesday, October 3, in the Exhibit Hall.

Exhibit Hall Treasure Hunt Maps are provided in your SPS Registration Packet.

HOW TO PARTICIPATE

**Step 1:** Carry your Exhibit Hall Treasure Hunt Map with you AT ALL TIMES!

**Step 2:** Visit all participating exhibitors (indicated in Gold on the map found in your Registration Packet) and get your map stamped.

**Step 3:** Once you’ve collected a stamp from all participating exhibitors, drop off your map at the SPS Registration Desk (you must have a stamp from all participating exhibitors to qualify for the prize drawing).

**Step 4:** Gather in the Exhibit Area, Wednesday, October 3, at 2:15 pm for the prize drawings!

FABULOUS PRIZES!*

- Apple iPad
- Bose Noise Cancelling Headphones
- Jambox Wireless Speakers
- Visa Gift Card

*Prizes subject to change

Treasure Maps can be found in your Registration Packet.
Treasure Hunt—Participating Exhibitors
(As of September 5, 2012)

Exhibit Hall
Check your Registration Packet for the Treasure Hunt Map to collect your stamps.

Alpha Order
Biopha LTD 427
Biotrial International 229
Buxco Research Systems 225
Charles River 400
Data Sciences International (DSI) 301
EMD Millipore 411
EMKA Technologies Inc 319
Konigsberg Instruments, Inc. 310
Lomir Biomedical 416
Marshall BioResources 110
Millar Instruments 328
PhysioStim 213
Ricerca Biosciences 429
Star-Oddi.com 104
Strategic Applications, Inc. (SAI) 220

By Booth Number
104 Star-Oddi.com
110 Marshall BioResources
213 PhysioStim
220 Strategic Applications, Inc. (SAI)
225 Buxco Research Systems
229 Biotrial International
301 Data Sciences International (DSI)
310 Konigsberg Instruments, Inc.
319 EMKA Technologies Inc
328 Millar Instruments
400 Charles River
411 EMD Millipore
416 Lomir Biomedical
427 Biopha LTD
429 Ricerca Biosciences

Check your Registration Packet for the Treasure Hunt Map to collect your stamps.

Name___________________________
(please print legibly)
Company________________________
Sponsored Presentations

Each year SPS invites all exhibitors and annual meeting sponsors to host sponsored presentations during the meeting. Sponsored presentations are promoted on the SPS website, via email blasts to registrants, and in the Program and Exhibitor Directory.

While they are not a part of the official SPS scientific program, sponsored presentations are permitted by the Society.

Epigenetic Target Specificity and the Discovery of Epigenetic-Related In Vivo Adverse Drug Reactions

Tuesday, October 2
12:30 PM–1:30 PM
Room 154

Sponsored by: CEREP Inc

Screening of 1,000 compounds from the BioPrint® database for activity against “writers,” “erasers,” and “readers” of the epigenetic code was performed resulting in the identification of epigenetic-altering compounds, as well as the establishment of relationships between the exhibition of specific epigenetic target and known adverse drug reactions associated with these compounds.

Facilitating Comprehensive Safety Pharmacology in Repeat-Dose Studies

Tuesday, October 2
12:30 PM–1:30 PM
Room 156*

Sponsored by: Charles River

Safety pharmacology endpoints are being integrated in repeat-dose toxicity studies as fast as technology is being developed to collect it. Historically, emphasis has been on cardiovascular assessment. This workshop will focus on the technology, logistics and scientific considerations of integrating assessment of cardiovascular, central nervous, and respiratory system function in toxicity studies.

Education Is a Blast! DSI’s 5th Annual Scientific Data Blast

Tuesday, October 2
6:00 PM–7:00 PM
Room 154

Sponsored by: Data Sciences International

Back by popular demand, DSI’s annual blast will include presentations from your peers that are educational and entertaining. Focused on the latest advancements in physiologic monitoring for pharmacology and safety pharmacology, you will have the opportunity to engage in conversations in a relaxed and informal setting. Refreshments and beverages will be served.

The Application of xCELLigence RTCA Cardio System for Preclinical Safety Assessment Using Human IPS-Derived Cardiomyocytes

Tuesday, October 2
6:00 PM–7:00 PM
Room 156*

Sponsored by: ACEA Biosciences, Inc.

Cardiac toxicity is a major concern in drug development. In this presentation the utility of xCELLigence Cardio System with stem cell-derived cardiomyocytes for assessment of compound risk will be discussed. This cardio system provides a high-throughput, quantitative, and predictive assay that can be used earlier in drug discovery process.

Introducing an Innovative Telemetry Solution for Preclinical Research: Get More, with Less!

Wednesday, October 3
1:00 PM–2:00 PM
Room 157

Sponsored by: EMKA Technologies

Monitor 16 freely roaming subjects with only one receiver and a single Ethernet cable; that’s a lot of data with much less clutter! Wait, it gets even better: 32 to 48 subjects/room, Minimally Invasive BP, etc…Attend our presentation to discover the full list of features and how this new technology could benefit your studies.

Saving Time and Money: Assessing Drug-Induced Changes in Cardiac Function

Wednesday, October 3
1:00 PM–2:00 PM
Room 153*

Sponsored by: Battelle

Battelle’s Brian Roche and Zenas Technologies’ Bill Crumb will discuss new methods and approaches to predicting drug-induced changes in cardiac function for early de-risking. The presentation will also include ways to rapidly assess drug effects on metabolic pathways, dynamically measure changes in electrophysiology and contractility and better research models.

*Room Change
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Booth Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACEA Biosciences, Inc.</td>
<td>120</td>
</tr>
<tr>
<td>ADInstruments, Inc.</td>
<td>204</td>
</tr>
<tr>
<td>Alpha MED Scientific Inc.</td>
<td>404</td>
</tr>
<tr>
<td>Aptuit LLC</td>
<td>105</td>
</tr>
<tr>
<td>Axiogenesis AG</td>
<td>119</td>
</tr>
<tr>
<td>Axion Biosystems, Inc.</td>
<td>121</td>
</tr>
<tr>
<td>Battelle</td>
<td>512</td>
</tr>
<tr>
<td>BASi</td>
<td>529</td>
</tr>
<tr>
<td>Bioptra LTD</td>
<td>427</td>
</tr>
<tr>
<td>Biotrial International</td>
<td>229</td>
</tr>
<tr>
<td>Buxco Research Systems</td>
<td>225</td>
</tr>
<tr>
<td>Calvert Laboratories, Inc.</td>
<td>117</td>
</tr>
<tr>
<td>Cambridge Healthtech Associates (CHA)</td>
<td>112</td>
</tr>
<tr>
<td>Cellectis Stem Cells</td>
<td>126</td>
</tr>
<tr>
<td>Cellular Dynamics International, Inc. (CDI)</td>
<td>108</td>
</tr>
<tr>
<td>CEREP</td>
<td>103</td>
</tr>
<tr>
<td>ChanTest Corporation</td>
<td>216</td>
</tr>
<tr>
<td>Charles River</td>
<td>400</td>
</tr>
<tr>
<td>CToxLAB</td>
<td>209</td>
</tr>
<tr>
<td>CorDynamics</td>
<td>200</td>
</tr>
<tr>
<td>Curiox Biosystems</td>
<td>124</td>
</tr>
<tr>
<td>Data Sciences International (DSI)</td>
<td>301</td>
</tr>
<tr>
<td>EBSCO Publishing</td>
<td>211</td>
</tr>
<tr>
<td>Ellegaard Göttingen Minipigs</td>
<td>101</td>
</tr>
<tr>
<td>Elsevier Inc.</td>
<td>118</td>
</tr>
<tr>
<td>EMD Millipore</td>
<td>411</td>
</tr>
<tr>
<td>EMKA Technologies Inc</td>
<td>319</td>
</tr>
<tr>
<td>Harlan Laboratories Ltd.</td>
<td>531</td>
</tr>
<tr>
<td>IPS Therapeutique Inc.</td>
<td>528</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Booth Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Konigsberg Instruments, Inc.</td>
<td>310</td>
</tr>
<tr>
<td>Leadscope</td>
<td>524</td>
</tr>
<tr>
<td>Lomir Biomedical, Inc.</td>
<td>416</td>
</tr>
<tr>
<td>Lovelace Respiratory Research Institute</td>
<td>418</td>
</tr>
<tr>
<td>Marshall BioResources</td>
<td>110</td>
</tr>
<tr>
<td>Michigan State University—Pharm/Tox—in Vivo</td>
<td>202</td>
</tr>
<tr>
<td>Millar Instruments</td>
<td>328</td>
</tr>
<tr>
<td>MPI Research</td>
<td>100</td>
</tr>
<tr>
<td>Multi Channel Systems</td>
<td>413</td>
</tr>
<tr>
<td>Nanion Technologies Inc.</td>
<td>526</td>
</tr>
<tr>
<td>Noesy Data</td>
<td>326</td>
</tr>
<tr>
<td>Notocord, Inc.</td>
<td>308</td>
</tr>
<tr>
<td>Pharmaron, Inc.</td>
<td>425</td>
</tr>
<tr>
<td>PhysioStim</td>
<td>213</td>
</tr>
<tr>
<td>Porsolt</td>
<td>128</td>
</tr>
<tr>
<td>QTest Labs</td>
<td>420</td>
</tr>
<tr>
<td>Ricerca Biosciences</td>
<td>429</td>
</tr>
<tr>
<td>S + B medvet GmbH</td>
<td>409</td>
</tr>
<tr>
<td>SCIREQ USA Inc</td>
<td>218</td>
</tr>
<tr>
<td>SNBL USA</td>
<td>324</td>
</tr>
<tr>
<td>Sophion Bioscience A/S</td>
<td>116</td>
</tr>
<tr>
<td>Star-Oddi. com</td>
<td>104</td>
</tr>
<tr>
<td>Strategic Applications, Inc. (SAI)</td>
<td>220</td>
</tr>
<tr>
<td>Transonic</td>
<td>508</td>
</tr>
<tr>
<td>Vala Sciences INC.</td>
<td>527</td>
</tr>
<tr>
<td>VivaQuant</td>
<td>312</td>
</tr>
<tr>
<td>WIL Research</td>
<td>317</td>
</tr>
<tr>
<td>Xenometrics, LLC</td>
<td>227</td>
</tr>
<tr>
<td>Zenas Technologies</td>
<td>510</td>
</tr>
</tbody>
</table>
### Exhibit Listing by Booth Number

**Exhibitor Directory**

(Updated September 27, 2012)

<table>
<thead>
<tr>
<th>Booth Number</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>MPI Research</td>
</tr>
<tr>
<td>101</td>
<td>Ellegard Göttingen Minipigs</td>
</tr>
<tr>
<td>103</td>
<td>CEREP</td>
</tr>
<tr>
<td>104</td>
<td>Star-Oddi.com</td>
</tr>
<tr>
<td>105</td>
<td>Aptuit LLC</td>
</tr>
<tr>
<td>108</td>
<td>Cellular Dynamics International, Inc. (CDI)</td>
</tr>
<tr>
<td>110</td>
<td>Marshall BioResources</td>
</tr>
<tr>
<td>112</td>
<td>Cambridge Healthtech Associates (CHA)</td>
</tr>
<tr>
<td>116</td>
<td>Sophion Bioscience A/S</td>
</tr>
<tr>
<td>117</td>
<td>Calvert Laboratories, Inc.</td>
</tr>
<tr>
<td>118</td>
<td>Elsevier Inc.</td>
</tr>
<tr>
<td>119</td>
<td>Axiogenesis AG</td>
</tr>
<tr>
<td>120</td>
<td>ACEA Biosciences, Inc.</td>
</tr>
<tr>
<td>121</td>
<td>Axion Biosystems, Inc.</td>
</tr>
<tr>
<td>124</td>
<td>Curiox Biosystems</td>
</tr>
<tr>
<td>126</td>
<td>Collectis Stem Cells</td>
</tr>
<tr>
<td>128</td>
<td>Porsolt</td>
</tr>
<tr>
<td>200</td>
<td>CorDynamics</td>
</tr>
<tr>
<td>202</td>
<td>Michigan State University—Pharm/Tox—In Vivo</td>
</tr>
<tr>
<td>204</td>
<td>ADInstruments, Inc.</td>
</tr>
<tr>
<td>209</td>
<td>CItoLAB</td>
</tr>
<tr>
<td>211</td>
<td>EBSCO Publishing</td>
</tr>
<tr>
<td>213</td>
<td>PhysioStim</td>
</tr>
<tr>
<td>216</td>
<td>ChanTest Corporation</td>
</tr>
<tr>
<td>218</td>
<td>SCIREQ USA Inc</td>
</tr>
<tr>
<td>220</td>
<td>Strategic Applications, Inc. (SAI)</td>
</tr>
<tr>
<td>225</td>
<td>Buxco Research Systems</td>
</tr>
<tr>
<td>227</td>
<td>Xenometrics, LLC</td>
</tr>
<tr>
<td>229</td>
<td>Biotrial International</td>
</tr>
<tr>
<td>301</td>
<td>Data Sciences International (DSI)</td>
</tr>
<tr>
<td>308</td>
<td>Notocord, Inc.</td>
</tr>
<tr>
<td>310</td>
<td>Konigsberg Instruments, Inc.</td>
</tr>
<tr>
<td>312</td>
<td>VivaQuant</td>
</tr>
<tr>
<td>317</td>
<td>WIL Research</td>
</tr>
<tr>
<td>319</td>
<td>EMKA Technologies Inc</td>
</tr>
<tr>
<td>324</td>
<td>SNBL USA</td>
</tr>
<tr>
<td>326</td>
<td>Noesys Data</td>
</tr>
<tr>
<td>328</td>
<td>Millar Instruments</td>
</tr>
<tr>
<td>400</td>
<td>Charles River</td>
</tr>
<tr>
<td>404</td>
<td>Alpha MED Scientific Inc.</td>
</tr>
<tr>
<td>409</td>
<td>S + B medvet GmbH</td>
</tr>
<tr>
<td>411</td>
<td>EMD Millipore</td>
</tr>
<tr>
<td>413</td>
<td>Multi Channel Systems</td>
</tr>
<tr>
<td>416</td>
<td>Lomir Biomedical, Inc.</td>
</tr>
<tr>
<td>418</td>
<td>Lovelace Respiratory Research Institute</td>
</tr>
<tr>
<td>420</td>
<td>QTest Labs</td>
</tr>
<tr>
<td>425</td>
<td>Pharmaron, Inc.</td>
</tr>
<tr>
<td>427</td>
<td>Biopt Ltd</td>
</tr>
<tr>
<td>429</td>
<td>Ricerca Biosciences</td>
</tr>
<tr>
<td>508</td>
<td>Transonic</td>
</tr>
<tr>
<td>510</td>
<td>Zenas Technologies</td>
</tr>
<tr>
<td>512</td>
<td>Battelle</td>
</tr>
<tr>
<td>524</td>
<td>Leadscope</td>
</tr>
<tr>
<td>526</td>
<td>Nanion Technologies Inc.</td>
</tr>
<tr>
<td>527</td>
<td>Vala Sciences INC.</td>
</tr>
<tr>
<td>528</td>
<td>IPS Therapeutique Inc.</td>
</tr>
<tr>
<td>529</td>
<td>BASi</td>
</tr>
<tr>
<td>531</td>
<td>Harlan Laboratories Ltd.</td>
</tr>
</tbody>
</table>
Photography/Recording Policy and Protocols for Attendees

Out of courtesy for the scientific presenters and exhibitors, we appreciate your compliance with the following policies:

- Cell phones and other electronic devices should be set on mute.
- Cameras and recording devices are prohibited in the Exhibit Hall.
- Children under the age of 15 are prohibited from accessing the Exhibit Hall at any time.

If you have any questions regarding these polices, please contact the SPS Headquarters staff at the Registration Desk.
# Exhibit Hours

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, October 1</td>
<td>6:00 PM–7:30 PM</td>
</tr>
<tr>
<td>Tuesday, October 2</td>
<td>9:00 AM–5:00 PM</td>
</tr>
<tr>
<td>Wednesday, October 3</td>
<td>9:00 AM–4:00 PM</td>
</tr>
<tr>
<td>and 6:00 PM–7:30 PM</td>
<td></td>
</tr>
</tbody>
</table>

# Exhibitor Access Online

Access the latest information on all annual meeting exhibitors through our exhibitor section on the Annual Meeting website, by visiting [www.safetypharmacology.org/am2012](http://www.safetypharmacology.org/am2012), then choose Exhibitors. Here you will find up-to-the-minute information on each company, including contact information and company descriptions.

# Exhibitors as of August 28, 2012

Visit [www.safetypharmacology.org](http://www.safetypharmacology.org), 2012 Annual Meeting website, then choose Exhibitors, for a complete listing.

# 2012 Annual Meeting Sponsors

Sponsors (as of August 28, 2012) are noted within the company descriptions. See complete listing of sponsors on back cover.

---

**ADInstruments, Inc.**

<table>
<thead>
<tr>
<th>Booth</th>
<th>Address</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>2205 Executive Circle</td>
<td>Matthew Dilworth</td>
</tr>
<tr>
<td></td>
<td>Colorado Springs, CO 80906</td>
<td></td>
</tr>
<tr>
<td></td>
<td>United States</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tel: 719.576.3970</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fax: 719.576.3971</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Email: <a href="mailto:info.na@adinstruments.com">info.na@adinstruments.com</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Website: <a href="http://www.adinstruments.com">www.adinstruments.com</a></td>
<td></td>
</tr>
</tbody>
</table>

Visit ADInstruments’ booth to see the new Powerlab 35 series—our most powerful and flexible data acquisition solution yet—and experience LabChart software’s latest enhancements, such as support for 32 channels and specialized analysis tools. You can also learn more about our range of Powerlab-compatible instruments (including tissue baths, isolated organ systems and telemetry systems) and the comprehensive training and support provided by our network of North American Application Scientists.

---

**ACEA Biosciences, Inc.**

<table>
<thead>
<tr>
<th>Booth</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>6779 Mesa Ridge Road #100</td>
</tr>
<tr>
<td></td>
<td>San Diego, CA 92121 United States</td>
</tr>
<tr>
<td></td>
<td>Tel: 858.724.0928</td>
</tr>
<tr>
<td></td>
<td>Fax: 858.724.0927</td>
</tr>
<tr>
<td></td>
<td>Toll-Free: 1.866.308.ACEA (2232)</td>
</tr>
<tr>
<td></td>
<td>Email: <a href="mailto:yabassi@aceabio.com">yabassi@aceabio.com</a></td>
</tr>
<tr>
<td></td>
<td>Website: <a href="http://www.aceabio.com">www.aceabio.com</a></td>
</tr>
<tr>
<td></td>
<td>Contact: Yama Abassi</td>
</tr>
</tbody>
</table>

ACEA Biosciences, Inc. is a pioneer in the development and commercialization of high-performance microelectronic systems for cell-based assays. ACEA’s proprietary real-time, label-free assay technology is marketed globally under the xCELLigence brand in partnership with Roche Applied Science. The recently launched xCELLigence RTCA Cardio Instrument monitors the beating function of cardiomyocytes in real time, providing a high-throughput, quantitative and predictive assay system that can be used for assessment of cardiac liability early in the drug discovery process.

---

**Alpha MED Scientific Inc.**

<table>
<thead>
<tr>
<th>Booth</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>404</td>
<td>209, 7-7-15, Saito-asagi</td>
</tr>
<tr>
<td></td>
<td>Ibaraki Osaka 567-0085 Japan</td>
</tr>
<tr>
<td></td>
<td>Tel: 81.72.648.7973</td>
</tr>
<tr>
<td></td>
<td>Fax: 81.72.648.7974</td>
</tr>
<tr>
<td></td>
<td>Email: <a href="mailto:info@med64.com">info@med64.com</a></td>
</tr>
<tr>
<td></td>
<td>Website: <a href="http://www.med64.com">www.med64.com</a></td>
</tr>
<tr>
<td></td>
<td>Contact: Rika Yamazaki</td>
</tr>
</tbody>
</table>

Our MED64 microelectrode array (MEA) system is a powerful solution for safety pharmacology studies. Biological samples are placed on a grid of 64 planar microelectrodes, which serve a dual purpose of extracellular recording and stimulus-delivery. Its industry’s lowest-impedance and highest-capacitance electrodes enable to achieve low-noise and high signal-to-noise ratio. The new middle-throughput system will allow you to test with up to eight samples simultaneously.
**Aptuit LLC**

105

Two Greenwich Office Park  
Greenwich, CT 06831 United States  
Tel: 203.660.6016  
Fax: 203.422.0266  
Toll Free: 855.506.6360  
Email: jennifer.demaree@aptuit.com  
Website: www.aptuit.com  
Contact: Jennifer Demaree

Aptuit is a pharmaceutical services company that delivers early to midphase drug development solutions by applying scientific excellence, outstanding service, and a team of some of the foremost scientific professionals in the industry. From the Aptuit Center for Drug Discovery and Development in Verona, Italy, our safety pharmacology experts assist in the prediction of potential adverse effects of new chemical entities and biotherapeutics prior to first administration to man.

**Axion Biosystems, Inc.**

121

311 Ferst Drive NW  
ATDC Bioscience Center L-1324  
Atlanta, GA 30332-0390 United States  
Tel: 404.477.2557  
Email: upiedra@axionbio.com  
Website: www.axionbiosystems.com  
Contact: Uran Piedra

Axion’s Maestro multiwell MEA (Microelectrode Array) system elevates MEA technology to the high-throughput arena. Noninvasive electrodes in each well directly measure electrical activity from intact networks of neurons or cardiomyocytes, enabling comprehensive assessment of toxicity and efficacy early in the drug development process. This systems-level approach provides an *in vitro* alternative to animal testing, a key objective of the Tox21 and REACH initiatives.

**Axiogenesis AG**

119

Nattermannallee 1/520  
Cologne, NRW 50829 Germany  
Tel: 491728819816  
Email: felix.haniel@axiogenesis.com  
Website: www.axiogenesis.com  
Contact: Felix Haniel

Axiogenesis’ core business is pharmaceutical biotechnology in the production of stem cell-based assays and customized cell lines that enable drug development. We have developed a proprietary platform to identify drug candidates in Hypertrophic Cardiomyopathy (HCM). Our assays are based on pure, *in vitro* differentiated, stem cell-derived cell types. Our main products are cardiomyocytes, smooth muscle cells, and endothelial cells. Axiogenesis CRO services include cardiac toxicity, cytotoxicity, embryotoxicity, and human cardiac electrophysiology (MEA and Patch Clamp analysis). These innovative and proprietary assays accelerate and improve drug candidate selection, lower costs, and increase overall drug development efficiency.

**Battelle**

512

Emerald Level Sponsor

505 King Avenue  
Columbus, OH 43201 United States  
Toll-Free: 800.201.2011  
Email: robbp@battelle.org  
Website: www.battelle.org  
Contact: Patricia Robb

Battelle provides GLP-compliant, nonclinical services to pharma, biotech, medical device, agrochemical companies, and government agencies. Capabilities include safety and efficacy testing, specializing in cardiovascular and pulmonary safety pharmacology, inhalation, and toxicology studies, pathology, analytical/bioanalytical chemistry, and biomarkers. Battelle is the world’s largest nonprofit R&D organization, focusing on health and life sciences, national security, energy technology, and lab management.
Bioptia LTD 427
Weipers Centre, Garscube Estate
Bearsden Road
Glasgow, United Kingdom
Tel: 44 141 330 8225
Fax: 44 141 330 2166
Email: keithbowers@bioptia.com
Contact: Keith Bowers

Bioptia Ltd is the leading CRO focused on the use of fresh functional human tissues to better predict drug activity prior to clinical trials. Bioptia’s expertise in all areas of human tissue research allows us to act as your human tissue research department. We offer assays in many areas including inflammation, cardiac safety respiratory disease, urology, and gastrointestinal disease as well as an inhouse research and development group who can custom develop human tissue assays for your needs.

Biotrial International 229
Temple Chambers
3-7 Temple Avenue
London, EC4Y 0HP United Kingdom
Tel: 0033(0)299599191
Email: smarin@biotrial.com
Website: www.biotrial.com
Contact: Stephane Marin

Founded in 1989, Biotrial is a leading full-service provider specialized in early development. Biotrial offers tailor-made solutions to pharma and biotech companies. Biotrial’s GLP preclinical services include: in vivo safety pharmacology studies (core battery, supplemental, and follow-up studies), therapeutic efficacy tests and tailor-made models. This year Biotrial will open its new extension, introducing nonhuman primates and doubling its research capabilities.

Buxco Research Systems 225
2033 Corporate Drive
Wilmington, NC 28405 United States
Tel: 910.794.6980
Fax: 910.794.6981
Email: sales@buxco.com
Website: www.buxco.com
Contact: Richard Shafer

Buxco offers a broad range of invasive and noninvasive solutions for preclinical investigation. See tower systems for inhalation exposure; whole body, head out, nose only, and double chamber systems for conscious animals. Also invasive resistance and compliance. Featuring our novel Allay restraint system and our Halcyon pneumotach for the most quiet, stable signals. Complete smoke and aerosol delivery options. Also experience our FinePointe software platform, unmatched for productive research.

Calvert Laboratories, Inc. 117
130 Discovery Drive
Scott Technology Park
Scott Township, PA 18447 United States
Tel: 570.586.2411
Fax: 570.586.3480
Email: leslie.maas@calvertlabs.com
Website: www.calvertlabs.com
Contact: Leslie Maas

Calvert is a highly-respected and experienced CRO providing a complete spectrum of nonclinical safety studies for over forty years to the pharmaceutical, biotechnology, and chemical industries. Services include toxicology, general and safety pharmacology, telemetry, discovery services, immunotoxicology, and pharmacokinetic/ADME. If you are looking for a highly personalized level of flexible, highly-communicative and responsive service, then Calvert is your laboratory of choice.
**Cambridge Healthtech Associates (CHA)**

250 First Avenue, Suite 300
Needham, MA 02494 United States
Tel: 781.972.5482
Fax: 781.972.5425
Email: aserrano@chacorporate.com
Website: www.chacorporate.com
Contact: Alison K. Serrano

Cambridge Healthtech Associates™ (CHA™) uses its collaborative model to improve the speed, economics and effectiveness of life science R&D, leveraging its consulting, technology evaluations, and communities to help clients in the industry penetrate the marketplace and increase revenue. CHA also manages the Drug Safety Executive Council™ (DSEC™), an online community focused on the development of better and safer medicines. Learn more at www.chacorporate.com and www.drugsafetycouncil.org.

**Cellular Dynamics International, Inc. (CDI)**

525 Science Drive
Madison, WI 53711 United States
Tel: 608.310.5100
Email: mstafford@cellulardynamics.com
Website: www.cellulardynamics.com
Contact: Marissa Stafford

Cellular Dynamics International is the world’s largest producer of fully functional human cells derived from induced pluripotent stem (iPS) cells. Our iCell™ product lines provide industrialized quantities of pure, homogenous, terminally differentiated human cells enabling basic research, efficient drug discovery programs, and reliably predictive toxicity and efficacy screening through in vitro clinical trials.

**Cellectis Stem Cells**

Arvid Wallgrens backe 20
Goteborg, 413 46 Sweden
Tel: 46 31 7580957
Fax: 46 31 7580910
Email: mia.emgard@cellartis.com
Contact: Mia Emgard

Cellectis Stem Cells is focused on pluripotent stem cells and technologies for drug discovery research, toxicity testing and regenerative medicine. The company leverages a deep experience in stem cell handling, scale up, and differentiation into mature and functional human cells, derived from embryonic- and induced Pluripotent Stem (iPS) cells. Cellectis Stem Cells recently launched the world’s first hepatocyte-like cells derived from feeder-free human iPS cells.

**CEREP**

15318 NE 95th Street
Redmond, WA 98052 United States
Tel: 425.895.8666
Fax: 425.895.8668
Email: jthouvenin@cerep.com
Website: www.cerep.com
Contact: Jenny Thouvenin

As a pre-eminent CRO, Cerep serves the preclinical in vitro pharmacology, in vitro ADME-TOX, and in vivo PK needs of over 460 clients worldwide. The catalog offers more than 1,100 pharmacology assays for GPCRs, kinases, ion channels, epigenetics, transporter targets. Over 175 assays in ADME-Tox and early stage in vivo PK areas are proposed, as well as custom assays, specific to client needs. Cerep also offers BioPrint® profiling and interpretative services thanks to its proprietary database.
**CorDynamics** 200

2242 West Harrison Street  
Suite 108  
Chicago, IL 60612 United States  
Tel: 312.421.8876  
Fax: 312.873.3710  
Toll-Free: 877.644.3142  
Email: pbs@cordynamics.com  
Website: www.cordynamics.com  
Contact: Peter B. Senese

CorDynamics is a preclinical CRO focused on examining the cardiac effects of drug candidates. Our models help optimize these candidates early during drug development. Focusing on this critical phase improves the attrition of compounds selected for further testing, thereby reducing overall costs and time lines associated with your projects. Our validated GLP models include the isolated heart, anesthetized preparations, telemetry in five species, complex in vivo electrophysiology and many other preps.

---

**ChanTest Corporation** 216

14656 Neo Parkway  
Cleveland, OH 44128 United States  
Tel: 216.584.0551  
Email: reputationspr@cox.net  
Website: www.chantest.com/  
Contact: Reese Nank

ChanTest provides in vitro preclinical cardiac safety testing services (GLP and non-GLP) for hERG and other cardiac ion channels, action potential assays on stem cell-derived human cardiomyocytes and rabbit or canine Purkinje fibers, and isolated heart QT prolongation assays. The company offers the largest panel of ion channel targets for drug discovery and cardiac safety screening, and has been recognized as “the most trusted and most used ion channel services company” in independent surveys.

---

**CiToxLAB** 209

445 Armand-Frappier Boulevard  
Laval, QC H7V 4B3 Canada  
Tel: 450.973.2240  
Fax: 450.973.2259  
Email: duguayf@ca.citoxlab.com  
Website: www.citoxlab.com  
Contact: Francois Duguay

CiToxLAB, created through the merger of CIT and LAB Research, offers a comprehensive range of preclinical and safety pharmacology services from four facilities in France, Canada, Denmark, and Hungary. We offer flexibility, direct contact to scientists, easy access to management and local, smart-sized facilities. Aggressive scheduling, increased size and capacity, turnkey solutions of global packages supported by project managers and broader geographic proximity are our core values.

---

**Charles River** 400

251 Ballardvale Street  
Wilmington, MA 01887 United States  
Tel: 877.274.8371  
Email: askcharlesriver@crl.com  
Website: www.criver.com  
Contact: Jessica Janiak

The safety pharmacology program at Charles River can help you further the development and safe use of your product by investigating its potential undesirable effects on physiological functions with regards to exposure in the clinical therapeutic dose and above. Our scientific and technical experts offer a comprehensive, global and harmonized range of services which meet the ICH guideline’s on the core battery and supplementary safety tests. Learn more at [www.criver.com](http://www.criver.com).
**Win Big!**

**Prizes include**:  
Apple iPad  
Bose Noise Cancelling Headphones  
Jambox Wireless Speakers  
Visa Gift Card

See pages 41–42 for details!  
A Treasure Hunt Map showing participating exhibitors is included in your Registration Packet. You must have a stamp from each participating exhibitor to be entered in the prize drawing!

*Prizes subject to change*
DSI PhysioTel™ Digital Large Animal Telemetry

Simplify.
Enhance.
Improve.

View the PhysioTel Digital Animation Here:

Now Available!

www.datasci.com
Ellegaard Göttingen Minipigs A/S [EGM] is the exclusive breeder of Göttingen Minipigs. Göttingen Minipigs are fully recognized by regulatory authorities worldwide—including EMA and US FDA. Göttingen Minipigs should always be considered when choosing your nonrodent model for pharmacology, toxicology, and safety pharmacology as they are often a relevant research model. EGM also offers courses in husbandry, handling, dosing, and sampling techniques as well as surgical procedures in Göttingen Minipigs.

Ellegaard Göttingen Minipigs
Soroe Landevej 302
Dalmose, DK-4261 Denmark
Tel: 455 818 5818
Email: ncg@minipigs.dk
Website: www.minipigs.dk
Contact: Niels-Christian Ganderup

Ellegaard Göttingen Minipigs A/S [EGM] is the exclusive breeder of Göttingen Minipigs. Göttingen Minipigs are fully recognized by regulatory authorities worldwide—including EMA and US FDA. Göttingen Minipigs should always be considered when choosing your nonrodent model for pharmacology, toxicology, and safety pharmacology as they are often a relevant research model. EGM also offers courses in husbandry, handling, dosing, and sampling techniques as well as surgical procedures in Göttingen Minipigs.

Elsevier Inc.
360 Park Avenue South
7th Floor
New York, NY 10010 United States
Tel: 212.633.3716
Email: k.patterson@elsevier.com
Website: www.elsevierpharma.com
Contact: Kristopher Patterson

Elsevier is, world-class information, publishing leading-edge scientific, technical, and medical information. Global, disseminating and preserving STM literature to the world’s present and future scientists and clinicians. Innovative—developing electronic tools that improve the productivity and outcomes of those we serve. PharmaPendium, the only online resource searching all FDA/CDER/FOI archived FDA drug approval review and correspondence documentation since 1938, and EMA EPAR approval document database.

The minipig in
Cardiovascular Safety Pharmacology

Visit us at **booth 101** to request your pdf-copy of this essential reference document.
EMD Millipore

290 Concord Road
Billerica, MA 01821 United States
Toll-Free: 800.225.3384
Fax: 978.715.1393
Website: www.emdmillipore.com
Contact: Diane Naquin

EMD Millipore is the Life Science division of Merck KGaA of Germany, supporting research, development, and production of biotech and pharmaceutical drug therapies. We support the creation of physiologically-predictive models of safety pharmacology, including novel uses of membrane technology for transdermal diffusion testing, functional assays for ion channels and ubiquitination modulators, and accurate in vitro models of hepatocyte function.

Harlan Laboratories Ltd.

Shardlow Business Park
London Road, Shardlow
Derbyshire DE722GD United Kingdom
Tel: 441332216791
Email: crs.ch@harlan.com
Website: www.harlan.com/crs
Contact: Sarah Meier

Harlan Laboratories is a global leading provider of essential, nonclinical contract research, research models, animal diets, and services to the pharmaceutical, biotech, medical device, agrochemical and chemical industries, as well as to academic and government research organizations. Our focus is on providing customers with products and services to optimize the discovery and safety of new medicines and compounds.

EMKA Technologies Inc

307 Annandale Road, Suite 203
Falls Church, VA 22042 United States
Tel: 703.237.9001
Fax: 703.237.9006
Email: emkatech@emkatech.com
Website: www.emkatech.com
Contact: Virginie Brechet

EMKA Technologies specializes in software and hardware products for preclinical research. We offer a complete range of products for CNS, cardiovascular, and pulmonary research, as well as dedicated services to assist clients with data analysis and system validation. New and featured products at this year’s SPS include:

- easyMATRIX, a direct hardware bridge to implantable telemetry
- emkaPACK 4G, a smaller yet more capable version of our renowned noninvasive telemetry

Visit Booth #319 for more!

IPS Therapeutique Inc.

2630 King Ouest, Suite 140
Sherbrooke, QC J1J 2H1 Canada
Tel: 819.820.1515
Fax: 819.820.1516
Email: info@ipstherapeutique.com
Website: www.ipstherapeutique.com
Contact: Dany Salvail

IPS Therapeutique Inc. specializes in preclinical efficacy, and safety testing. IPS Therapeutique Inc. assists specializes in cardiovascular models for drug development extending to CNS, respiratory, and metabolic disorders. Services include safety assays such as: hERG inhibition, (Purkinje) AP recordings, isolated heart preparations, manual patch-clamp screens or full assays, tissue contraction/relaxation. Efficacy testing includes pulmonary arterial hypertension, thrombogenicity testing (Wessler), antipathogenicity testing.
Lovelace Respiratory Research Institute

Sapphire Level Sponsor

2425 Ridgecrest Drive SE
Albuquerque, NM 87108 United States
Tel: 505.348.9534
Fax: 505.348.4983
Email: aholley@lrri.org
Contact: William Bechtold

The Lovelace Respiratory Research Institute (LRRI) is a private nonprofit biomedical research organization. LRRI offers internationally recognized expertise in aerosol science, inhalation exposure technology, inhalation toxicology, safety pharmacology, and pharmacokinetics. Regulatory SP and early safety/efficacy is routinely done to identify adverse effects of preclinical compounds as well as perform basic research on disease models such as pulmonary hypertension, asthma, or COPD.
A stronger and smarter system now available with
minimally invasive batteryless and reusable blood pressure implant

Smaller than before

- Transmitter size reduced by 25%
- One compact receiver for 16 transmitters

Remarkably stronger

- Up to 17 signals per subject
  - 9 lead ECG
  - 2 respiration belts
  - 1 blood pressure from 1 of 3 methods:
    - NIBP (oscillometry from cuff)
    - VAP (vascular access port)
    - MIBP (minimally invasive implant)
  - 3-axis + total acceleration, temperature

And even smarter

- Receiver connected to single Ethernet cable for data and power transmission
- User adjustable sampling frequencies
- 48 to 72 hours of battery life
- Information on lost electrode & low battery

Visit booth #319
to learn about our full product range,
including the brand new easyMATRIX
emka’s most reliable hardware bridge
to your telemetry data!
Marshall BioResources

5800 Lake Bluff Road
North Rose, NY 14516 United States
Tel: 315.587.2295
Fax: 315.587.2109
Email: nnavratil@marshallbio.com
Website: www.marshallbio.com
Contact: Nicole Navratil

Marshall BioResources is committed to being the world’s premier supplier of beagles, mongrels, ferrets, and Göttingen Minipigs for biomedical research. We also provide a wide range of biological products and diagnostic services. Our sales and service maintain the highest level of integrity and quality expected by our customers.

Michigan State University—Pharm/Tox—In Vivo

1355 Bogue Street, B-430
Life Sciences Building
East Lansing, MI 48824 United States
Tel: 517.432.7763
Fax: 517.353.8915
Email: phm@msu.edu
Website: www.phmtox.msu.edu
Contact: Erica Goodwin

Michigan State University provides premier educational opportunities in pharmacology and toxicology including PhD programs, online MS degrees in pharmacology and toxicology and a certificate program in safety pharmacology. MSU also provides in vivo pharmacology assays, investigative, and drug development services, and medical device testing through the in vivo facility with minimized turnaround, competitive prices, and seamless interactions with scientists.

Millar Instruments

328

6001-A Gulf Freeway
Houston, TX 77023 United States
Tel: 832.667.7000
Fax: 832.667.7015
Email: sales@millar.com
Website: www.millar.com
Contact: Michelle Sanders

Millar provides innovative physiological monitoring solutions for safety pharmacology, toxicology and cardiovascular studies, using our Telemetry System, PV Loop System and Pressure and PV Catheters. Millar’s telemetry system offers the first, fully implantable telemeters to deliver high-fidelity LVP, dP/dt, ECG, EMG, SNA, BP and tissue oxygen measurement data. The complete, wireless telemetry system includes a rechargeable battery for continuous, long-term, free-roaming monitoring.
MPI Research

54943 North Main Street
Mattawan, MI 49071 United States
Tel: 269.668.3336
Fax: 269.668.4151
Email: info@mpiresearch.com
Website: www.mpiresearch.com
Contact: Katie Stuut

MPI Research is a preclinical CRO that provides discovery, safety evaluation, bioanalytical, and analytical services. Scientific knowledge and experience, teamwork, dedication, and strong, enduring sponsor relationships characterize MPI Research as a high-performance, high-quality organization. Learn more about how we can exceed your expectations at www.mpiresearch.com.

Nanion Technologies Inc.

675 US Highway One
North Brunswick, NJ, 08902 United States
Toll-Free: 1.888.9NANION
Fax: 732-745.7270
Email:info@naniontech.com
Website: www.naniontech.com
Contact: Joerg Oestreich

Nanion provides premier instrumentation for high throughput ion channel and transporter research such as the Port-A-Patch®, Patchliner®, and SyncroPatch®. A leader in innovation, this year Nanion successfully launched the Orbit 16® for multichannel bilayer recordings and acquired the SURFE2R® Technology for transporter research. Our workstations are an integral part of ion channel drug discovery and safety pharmacology and have been highly ranked in customer surveys such as the HTStec report.

Multi Channel Systems

Aspenhastrasse 21
Reutlingen 72770 Germany
Tel: 631.393.6401
Fax: 631.393.6407
Email: sales@alascience.com
Website: www.multichannelsystems.com
Contact: Margaret Badon

Multi Channel Systems focuses on the development of precision scientific measuring instrumentation and equipment in the field of electrophysiology for research groups at universities and for the pharmaceutical industry. We provide solutions for extra-cellular recordings with microelectrode arrays in vitro and in vivo as well as for electrical stimulation. Over 600 publications and 15 years of experience make us the market leader in the field of nonclinical microelectrode array electrophysiology.

Noesys Data

800 Raymond Stotzer Parkway, Suite 2109
College Station, TX 77845 United States
Tel: 919.749.8480
Fax: 866.521.6330
Email:mark.vanderhoff@noesysdata.com
Website: www.noesysdata.com
Contact: Mark Vander Hoff

Noesys Data has developed a service to evaluate ECG data sets and provide expert reports. Full data sets are reviewed on a beat by beat basis. The signal data (telemetry, tethered, or anesthetized) is used to identify irregularities in the recorded ECG. Rhythm characterization includes but is not limited to the type of arrhythmia, timing, origin, and morphology. Torsade will be reported if observed. Reports are generated, reviewed and issued by a Board Certified Veterinary Cardiologist.
Exhibitor Directory

Notocord, Inc.  
PO Box 10188 # 72648  
Newark, NJ 07101 United States  
Tel: 888.204.7770  
Email: event@notocord.com  
Website: www.notocord.com  
Contact: Philippe Zitoun

NOTOCORD® is a leading software publisher, specializing in data acquisition and analysis for experimental drug research. Our solutions are fit for safety pharmacology, toxicology, academic research and preclinical R&D. Our expertise lays in the analysis of cardiovascular, respiratory, electrophysiology, and nervous system signals. NOTOCORD® licenses are installed worldwide in the major pharmaceutical companies, CROs, public and academic research centers.

Pharmaron, Inc.  
201 East Jefferson Street, Suite 304  
Louisville, KY 40202 United States  
Tel: 949.788.0586  
Email: sasha.meinhardt@pharmaron.com  
Contact: Allison Perkins

Pharmaron is the leading integrated drug R&D service provider in China offering services in chemistry, biology, DMPK, in vivo pharmacology, GLP safety pharmacology, GLP toxicology, and GMP manufacturing. Pharmaron’s AAALAC-accredited, US GLP-compliant toxicology and safety pharmacology facilities are the most advanced in China with an unparalleled track record in support of global regulatory filings. Pharmaron conducts acute, subchronic and chronic general toxicology and safety pharmacology studies for United States, European, and Asian clients.

PhysioStim  
Zi de Brénas  
Lautrec, 81440 France  
Tel: 33 5 63 70 89 92  
Fax: 33 5 63 70 81 08  
Email: marie.legrand@physiostim.com  
Contact: Marie Le Grand

Specialized in cardiac electrophysiology, PhysioStim put forward GLP safety pharmacology studies to evaluate your compounds on the risk of QT interval prolongation. In accordance with ICH S7A, S7B guidelines, we propose to pharmaceutical and biotech companies in vitro models on:

- Ion channel assays (hERG, hNav1.5, hCav1.2, hKv4.3, hKvLQT1/MinK, hKv1.5)
- Action potential recordings (Purkinje fibre, papillary muscles)
- ECG recordings: Isolated Langendorff perfused heart
- Isolated cardiomyocytes

Porsolt  
9 bis rue Henri Martin  
Boulogne-Billancourt, 92100 France  
Tel: 33 1 46 10 99 90  
Fax: 33 1 46 10 99 99  
Email: contact@porsolt.com  
Website: www.porsolt.com  
Contact: Martine Lemaire

A privately owned CRO specializing in the preclinical evaluation of novel substances for their potential therapeutic activity (efficacy pharmacology) and adverse effects (safety pharmacology, including GLP studies). We provide a wide range of in vivo pathophysiological models and in vitro assays across a variety of disease areas (CNS, pain, inflammation, metabolic and CV diseases, GI, renal/urogenital and respiratory indications, as well as evaluation of CV risk, drug abuse, and dependence liability).
**SCIREQ USA Inc**  
40 West Baseline Road, Suite 204  
Tempe, AZ 85283-1260 United States  
Tel: 877.572.4737  
Fax: 480.559.9885  
Email: exhibits@scireq.com  
Website: www.scireq.com  
Contact: Mary Vipond  

SCIREQ Scientific Respiratory Equipment Inc. specializes in the design of advanced equipment for preclinical pulmonary research. The inExpose is a compact, fully computer-controlled benchtop inhalation exposure system offering turnkey solutions for aerosols, cigarette smoke and other toxins. The flexiVent is a unique, integrated platform that combines a programmable ventilator with accurate, detailed measurements of respiratory mechanics.

**QTest Labs**  
6456 Fiesta Drive  
Columbus, OH 43235 United States  
Tel: 614.581.9256  
Email: dhamlin@qtestlabs.com  
Website: www.qtestlabs.com  
Contact: Dave Hamlin  

QTest Labs is a CRO that specializes in efficacy, cardiovascular safety and risk assessment of a pharmaceutical or medical device. Our studies include a wide range of species in both normal and diseased models, (e.g., heart failure, hypertrophy, diabetes, systemic and pulmonary hypertension, orthostatic hypotension, hemorrhagic shock) that occur commonly in man. Our aim is to minimize lead-time, and cardiovascular risk, while increasing mechanistic understanding of the test article or device.

**S + B medvet GmbH**  
Neuer Weg 4  
Babenhausen, 64832 Germany  
Tel: 496073725835  
Fax: 496073725831  
Email: medvet@t-online.de  
Website: www.submedvet.de  
Contact: Wolfgang Egner  

High Definition Oscillometry (HDO) provides US FDA and GLP-compliant noninvasive blood pressure monitoring in different species. HDO further offers real-time on-screen visualization of pulse waves and thus PWA (pulse wave analysis), adding information on stress related influences, arterial compliance and CO/SV/SVV/SVR as well as rhythm and arrhythmias including hemodynamic information. Newest generation: blue-tooth holter HDO to also allow measurements in freely roaming animals.

**Ricerca Biosciences**  
7528 Auburn Road  
Concord, OH 44077 United States  
Tel: 440.359.3300  
Email: bart.reitter@ricerca.com  
Website: www.ricerca.com  
Contact: Bart Reitter  

Ricerca offers a comprehensive suite of preclinical services to support drug candidates from discovery through IND on a global scale. Specialties include DMPK, In Vivo and In Vitro ADME, general toxicology from short-term to chronic studies, reproductive and developmental toxicology, genetic toxicology, safety pharmacology, and bioanalytical services. Additional areas of expertise include NCE/NBE, nonhuman primates, minipigs, IV infusion, immunotoxicology, and noninvasive telemetry.
<table>
<thead>
<tr>
<th>Exhibitor</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNBL USA</td>
<td>324</td>
</tr>
<tr>
<td>Star-Oddi.com</td>
<td>104</td>
</tr>
<tr>
<td>Sophion Bioscience A/S</td>
<td>116</td>
</tr>
<tr>
<td>Strategic Applications, Inc. (SAI)</td>
<td>220</td>
</tr>
</tbody>
</table>

**SNBL USA**

6605 Merrill Creek Parkway  
Everett, WA 98203 United States  
Tel: 425.322.1950  
Fax: 425.407.8601  
Email: mtaylor@snblusa.com  
Contact: Michelle Taylor  

SNBL USA offers unique services to support drug development. Managed and operated by a team known for its extensive NHP experience and expertise, we facilitate programs ranging from regulatory toxicology to customized study designs. Specialized capabilities include safety assessment of biologics, repro tox, safety pharmacology, immunotoxicology, and carcinogenicity studies. SNBL USA can assure a quick study start with its in house colony and state-of-the-art facility that can house approx 4000 NHPs.

**Star-Oddi.com**

Skeidarás 12  
Gardabaer 210  
Iceland  
Tel: 3545336060  
Email: berglind@star-odd.com  
Website: www.star-odd.com  
Contact: Berglind Helgadottir  

Star-Oddi develops and manufactures small, biocompatible data loggers that can be implanted in laboratory animals. Star-Oddi’s Data Storage Tags offer a reliable continuous and telemetry measurements throughout the research.

**Sophion Bioscience A/S**

Baltorpej 154  
Ballerup, 2750 Denmark  
Tel: 4544608800  
Email: jlu@sophion.dk  
Contact: Jane Lucas  

Sophion’s products, the QPatch 16, the QPatch HT and QPatch HTX provide high-quality automated patch clamp data on a truly industrial basis and are the first systems with integrated cell preparation and QPlate exchange facilities enabling several hours of unattended operation. The unique microfluidic flow channel system implemented in the consumable QPlates enables fast liquid exchange around the cell and provides the option to test multiple compounds or increasing concentrations on the same cell.

**Strategic Applications, Inc. (SAI)**

278 Park Avenue  
Lake Villa, IL 60046 United States  
Tel: 847.356.0321  
Email: dlebeau@sai-infusion.com  
Website: www.sai-infusion.com  
Contact: Diane LeBeau  

SAI is your complete infusion support and supply company. Our goal is to identify and provide the best possible tools and services to fit your scientific and budgetary needs. Our products include: Ambulatory Bluetooth-enabled infusion pumps and software, Quick-Connect infusion systems, catheters, access ports, and customized systems to suit any research requirement.
Transonic

34 Dutch Mill Road
Ithaca, NY 14850 United States
Tel: 607.257.5300
Fax: 607.257.7256
Email: margo.sosa@transonic.com
Website: www.transonic.com/home
Contact: Margo Sosa

Transonic is the global leader in blood flow measurement technology and now offers scisense pressure volume loops to assess cardiac function. Implantable ultrasonic transit-time probes measure cardiac output, renal, coronary, mesenteric, or carotid blood flow. Flow telemetry is available for large animal models. Flow-through tubing sensors measure buffer, saline, or blood in isolated organ studies. Transonic provides support and calibration services with headquarters in the United States, Europe, Asia, and Japan.

VivaQuant

4339 Nancy Place
St. Paul, MN 55126 United States
Tel: 651.217.2176
Email: bbrockway@vivaquant.com
Website: www.vivaquant.com
Contact: Brian Brockway

VivaQuant is committed to improving the productivity of researchers through our innovative technology and products for extracting information from ECGs. Our In Line Filter (ILF) has been shown to increase analyzable beats in telemetered subcutaneous NHP ECGs by up to 98% (expert operator using emkaECG auto) and reduce review labor by more than 50%.

Vala Sciences INC.

6370 Nancy Ridge Drive, Suite 106
San Diego, CA 92121 United States
Tel: 858.461.6861
Toll-Free: 888.742.VALA
Fax: 888.742.1230
Email: echo@valasciences.com
Website: www.valasciences.com
Contact: Eugene Cho

Vala Sciences Inc. is an industry leader in high content analysis, providing cutting edge technology and services for academic, pharmaceutical, and biotechnology researchers. Vala’s integrated product line, which includes the class leading IC200 Image Cytometer, the Kinetic Image Cytometer (KIC) for high content analysis of dynamic biological events, CyteSeer® automated image analysis software, validated reagents, and HCA screening services, provides complete solutions to empower your research.

WIL Research

1407 George Road
Ashland, OH 44805 United States
Tel: 419.289.8700
Email: patterson@wilresearch.com
Website: www.wilresearch.com
Contact: Philip Atterson

WIL Research Company provides comprehensive safety pharmacology services designed to provide the necessary information for filing IND applications and completion of worldwide registration of new therapeutic agents; inclusive of cardiovascular, central nervous system, and respiratory studies. These services, along with our interdisciplinary approach and comprehensive array of pharmacological, toxicological and analytical research services make WIL the CRO of choice to pharma and biotech industries.
Xenas Technologies

4609 Fairfield Street
Merairie, LA 70006 United States
Tel: 504.885.0585
Email: bkovach@zenasonline.com
Contact: Brent Kovach

Zenas Technologies is a Contract Research Organization providing predictive cardiac and central nervous system assays as well as expert analysis and consulting services. Zenas focuses on customized client care, offering comprehensive protocol design, proprietary models, and technical oversight.

Xenometrics, LLC

Sapphire Level Sponsor

17745 S Metcalf
Stilwell, KS 66085 United States
Tel: 913.850.5051
Email: lboyle@xenometricsllc.com
Website: www.xenometricsllc.com
Contact: Lyric Boyle

Xenometrics, of Stilwell, Kansas, is a GLP-compliant, USDA registered, AAALAC accredited contract research organization, providing services to the pharmaceutical, biotech, companion animal health, and industrial- and agro-chemical industries. Xenometrics’ research species includes rodents, rabbits, minipigs, dogs, cats, nonhuman primates, and other research species. Xenometrics’ study services include: safety pharmacology, DMPK, general toxicology, and development and reproductive toxicology.

(Addition—As of September 27, 2012)

BASi

529

2701 Kent Avenue
West Lafayette, IN 47909 United States
Tel: 765.497.5866
Fax: 765.497.1102
Email: fleath@basinc.com
Website: www.basinc.com
Contact: Frances Leath

BASi is a drug discovery and development services company providing contract research services and instrumentation to the world’s leading pharmaceutical companies and medical research organizations. BASi is the creator and manufacturer of the Culex® family of blood sampling instruments for timely, reliable, automated sampling in small and large animal models. Culex® because better data leads to better decisions.

Prizes include*:

Apple iPad
Bose Noise Cancelling Headphones
Jambox Wireless Speakers
Visa Gift Card

See pages 41–42 for details!

*A prize subject to change

Win Big!

SPS Treasure Hunt
SPS is pleased to offer online learning opportunities throughout the year on current topics of relevance to the safety pharmacologist.

**Webinars (recordings currently offered free of charge):**
- Is ICH E14 Cost-Effective? The Use of Modeling to Assess the Impact of Regulatory Guidance
- Safety Pharmacology Endpoints in Toxicology Series
- Disease Models in Safety Pharmacology
- Arrhythmia Detection in Canine and NHP Safety Models
- Computational Modeling for Cardiac Safety Assessment Webinar
- The Göttingen Minipig in Cardiovascular Safety Pharmacology
- Novel In Vivo Approaches for Integrative Pharmacology and Toxicology Studies: Combining Radio Telemetry with Automated Sampling/Delivery Systems
- LVP: The Assessment of Cardiac Function in Nonclinical Safety Studies

*More information can be found at [www.safetypharmacology.org/webinars.asp](http://www.safetypharmacology.org/webinars.asp).*

**Online CE Courses—Coming This Fall**

The following recorded Continuing Education Courses are available to SPS members and nonmembers. If you attended the course during the annual meeting, you may access it online free of charge. For those who did not participate in the course at the annual meeting there is a registration fee of $75.

- 2011 Supplemental Safety Pharmacology Studies Course (AM3)
- 2011 Microsampling Techniques and Novel Applications in Exposure Assessment Course (AM4)
- 2011 Drug Abuse Liability Testing Course (PM5)
- More Coming Soon!

*More information can be found at [www.safetypharmacology.org/onlinece.asp](http://www.safetypharmacology.org/onlinece.asp).*
SPShare

....a collaborative tool to connect you with your professional world:

• Search
• Communicate
• Collaborate
• Connect …and Share!

Safety Pharmacologists from around the globe now have an online community of their very own.

SPShare…Your Community!

Visit www.safetypharmacology.org and start SPSHaring today!

SPShare is hosted on a safe, secure networking platform.
Mark Your Calendar!

SAFETY PHARMACOLOGY SOCIETY
13th Annual Meeting

SEPTEMBER 16–19, 2013
Rotterdam, the Netherlands
DE DOELEN CONGRESS CENTRE

Abstract Deadline: June 15, 2013
Visit www.safetypharmacology.org for more information.

Download your ROTTERDAM app here.

All text and graphics are © 2012 by the Safety Pharmacology Society unless noted. Photographs are courtesy of the Rotterdam Convention Bureau and Tourism Office. Photo by Marc Heeman.
xCELLigence RTCA Cardio Instrument

Fail faster – Avoid launching the next drug with unforeseen cardiotoxic effects.

- Rule out cardiotoxic compounds earlier in drug development.
- Obtain physiologically relevant data through non-invasive, label-free monitoring of cardiomyocyte beating.
- Use a 96-well format to analyze both acute and long-term effects on a cell population.

Visit [www.xcelligence.roche.com](http://www.xcelligence.roche.com) or call 800 262 4911 to learn more.

Evaluate compounds for hERG modulation.
Diamond: ($15,000+)

Charles River

Emerald: ($10,000—$14,999)

Battelle
Merck Research Laboratories

MPI Research
Pfizer, Inc.

Opal: ($3,000—$5,999)

Amgen Inc.
Boehringer Ingelheim Pharmaceuticals, Inc.
Elsevier Inc.

PhysioStim
Porstol
Ricerca Biosciences

Sapphire: (up to $2,999)

Abbott Laboratories
Braintree Scientific, Inc
Calvert Laboratories, Inc.
Data Sciences International (DSI)
Johnson & Johnson Pharmaceutical Research and Development

Lewis B. Kinter and Terry Timberlake-Kinter
Lovelace Respiratory Research Institute
Novartis
WIL Research
Xenometrics

Special Mention and Thanks to:

Braintree Scientific, Inc.—Committee Shirts
Porstol—Bags