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From the President

Collaboration and exchange has been the focus of HOT for the last few months and probably will still be in the foreseeable future. In past issues of this newsletter, we reported on our participation at IUTOX and the SOT SIG Collaboration Group, and here we report on our participation at the ATA Jornadas (page 2). We have received several invitations to attend conferences sponsored by our sister organizations. Please check the calendar on page 5 to see if you should attend any of them.

HOT has also agreed to mutually collaborate with more and more international organizations. In this issue, we welcome one more: Sociedad Cubana de Toxicología (see page 2). And we are very happy to announce that Toxenlaces now has a sponsor for 2011 (see below).

I would like to remind all members to pledge your contributions. Very much appreciated.

Sincerely,

Pedro Del Valle, President

THANK YOU

To HOT members who have donated to our organization (in alphabetical order):

Fanny Casado-Peña
Betina Lew
Jose Manautou
Alvaro Puga

Welcome Toxenlaces
2010-2011 Sponsor

The HOT Executive Board would like to thank Clorox for being the 2010-2011 Toxenlaces sponsor.
Welcome HOT New Sister Organization: Sociedad Cubana de Toxicología

The HOT Executive Board is pleased to welcome our Sister Organization Sociedad Cubana de Toxicología, SOCTox, and its President Dra. Maria Antonia Torres Aleman.

SOCTOX was established in 1993 and currently has 200 members from different areas such as clinical toxicology, genetic toxicology, regulatory, ecotoxicology, nanotoxicology and experimental and alternative methods in toxicology.

Dra. Torres Alemán is the director of the Pharmacology and Toxicology department of the Institute of Pharmacy and Food in the University of Habana. She is also part of the executive board of the Latin American Association of Toxicology – ALATOX.

Featured Trainee: Biotechnology and the AhR

After undergraduate internships in Spain and Germany, Fanny Casado-Pena obtained a B.Sc. degree and her license as a Chemist from Pontificia Universidad Católica del Perú in 2003. She received a M.Sc. in Forest Molecular Genetics and Biotechnology from Michigan Technological University and another M.Sc. in Toxicology from University of Rochester. Her research in Forest Biotech involved developing plant cell culture protocols, and characterizing the metabolome and genome of hybrids of poplar and willow. Here, she developed an appreciation about the importance of toxicological methodologies for safety assessment of biotechnological products.

Casado-Pena is now close to complete her Ph.D. in toxicology from the University of Rochester. As a doctoral candidate in Dr. Thomas A. Gasiewicz Lab, she studied the cellular and molecular mechanisms of hematopoietic stem cell regulation by the Aryl Hydrocarbon Receptor (AhR). She coauthored several basic research and review papers about the role of AhR in blood cell development, and has presented her work in the past-three SOT annual meetings. HOT and Battelle (Dr. Carol L Sabourin) honored Casado-Pena with a Student Travel Award in 2010, allowing her to present her poster “The Aryl Hydrocarbon Receptor Regulates Interactions between Hematopoietic Stem Cells and their Microenvironment” at the Salt Lake City meeting.

Casado-Pena is also the current Student Representative of the new SOT Biotechnology Specialty Section (BTSS), as well as a member of their newsletter committee. Can you find her in the photo below from the BTSS inaugural reception at Salt Lake City (light-yellow sweater)? She is in the very center of it all! She is currently looking at different opportunities to pursue her interests in toxicology and biotechnology after completing her Ph.D.

Special Acknowledgement

The HOT Executive Board would like to recognize Ms. Andrea Acosta Duarte for her contribution to the refinement of the HOT logo. Andrea is a designer and developer with poet’s personality and works as freelancer in Front-End Development and Web Design with growing, creative and respected web marketing companies.
A group of HOT members attended the "XXVIII Jornadas Interdisciplinarias de Toxicología: Toxicología su aporte a la ética y la sustentabilidad" [XXVIII Interdisciplinary Toxicology Meeting: Toxicology’s Contribution to Ethics and Sustainability], organized by the Asociación Toxicológica Argentina. The program included three plenary lectures, fourteen symposia and a workshop was held on the last day. There were two poster sessions involving a total of 97 presentations, in areas such as ecotoxicology, Clinical, Forensic Analytical, Mechanisms of toxicity, Genotoxicity and Environmental Toxicology and a total of 250 participants. The meeting took place in Buenos Aires on September 22-24, 2010.

The members from SOT-HOT and Mechanisms Specialty Section attending – José Manautou, Alvaro Puga, Julio Dávila, Braulio Jiménez and Ofelia Olivero – were supported by the Mechanisms Specialty Section of SOT and the Asociación Toxicológica Argentina. They presented their research at a Symposium entitled: "Mecanismos de acción en toxicología" [Mechanisms of Action in Toxicology] on September 22nd. This event was one of the many outreach activities SOT plans as part of its Global Outreach Initiative. Many interactions were developed during the meeting, with emphasis in collaborations in areas of common interest.

After the meeting, HOT Vice-President Ofelia Olivero took advantage of this trip to Argentina to lead a Mentoring Workshop for scientists supervising trainees, at Viña del Mar, Chile.

Featured Award: Mixtures SS/John Wiley Trainee Award

The Mixtures Specialty Section (MixSS), with the sponsorship of John Wiley publishers, provides awards targeted toward graduate students and post-doctoral fellows involved in research related to the toxicology of mixtures. At SOT 2011, the MixSS will recognize the outstanding Student and Post-doc abstracts. Two separate awards may be conferred. The winner of each will receive an achievement plaque and $500 cash award. To be eligible, the student or postdoctoral fellow must be first author and the abstract must have been accepted by the Program Committee and must advance the field of mixtures research.

To apply please send the following to kwallace@d.umn.edu by January 14, 2011:
1) an electronic copy of the accepted abstract;
2) a synopsis not to exceed 3 pages of the work on mixtures covered in the abstract. The synopsis can contain figures, tables and/or text; and a letter from their major advisor addressed to the Vice President-elect (kwallace@d.umn.edu) confirming the trainee status (graduate student or post doc) in good standing at the time of abstract submission.
3) a letter from their major advisor addressed to the Vice President-elect (kwallace@d.umn.edu) confirming the trainee status (graduate student or post doc) in good standing at the time of abstract submission.
Diabetes in Hispanic Americans
Part I: Current Therapies for Type 2 Diabetes

Type 2 Diabetes mellitus in Hispanics
Type 2 diabetes (T2D) is a chronic disease that develops when the body becomes resistant to insulin or when the pancreas reduces or stops the production of insulin. T2D may develop slowly and in many cases, the disease is not recognized for years. Symptoms include increased hunger, thirst and frequent urination, weight loss, fatigue, blurred vision, slow-healing sores or frequent infections, and appearance of areas of darkened skin called acanthosis nigricans that may be a sign of insulin resistance. Genetics, lifestyle and medical conditions are common risk factors associated with T2D in all populations. Hispanic Americans are recognized to be at high risk in developing T2D because of the prevalence of these risk factors.

Hispanics have three main groups of ancestors, Spaniards, American Indians and/or Africans, in which the latter two groups have high rates of T2D. (1) A family history of T2D is one of the strongest risk factors for getting the disease, which combined with the current obesity trend in the US population, including Hispanics, makes it more susceptible to develop T2D. Mexican-American and non-Hispanic black adolescents accounted for more than 23% of overweight adolescents in 1999-2000. (2) According to the Center for Disease Control and Prevention (3), diabetes was more than doubled for Hispanics who were obese (body mass index of 30 or more). Consumption of one or two sugar-sweetened beverages per day was associated with a 26% greater risk of developing T2D and 20% increased of developing metabolic syndrome in a new meta-analysis. (4) Older age is also associated with T2D although the disease is increasing dramatically among children, adolescents and younger adults mainly due to the same factors as in the adult population: ancestry, diet and obesity. (5) Insulin resistance usually develops as comorbidity of obesity and it is a characteristic of obesity in childhood. (5) Physical activity uses glucose as energy, helps to control weight, and makes cells sensitive to insulin; however, lack of physical activity is an increasing trend in the US population.

Some Hispanic patients suffer of prediabetes, a condition characterized for high fasting glucose levels (100 to 125 mg/dL) or impaired glucose tolerance (140 to 199 mg/dL plasma glucose after a 2-hour oral glucose challenge). (6) These glucose levels are higher than normal, but not high enough to be classified as diabetes. These patients have an increased risk of developing T2D, although they can prevent, in most cases, its progression by adopting healthy eating habits, being physically active and managing their weight. Monitoring fasting plasma glucose levels and the glycosylated hemoglobin A1c (HbA1c) levels are key to understand the disease progress and control. Complications of diabetes include heart disease, high blood pressure, blindness, amputations, and/or kidney, nervous system, and dental disease. (6)

Hispanic Americans accounted for 16% of the US population (48.4 million) in the 2009 census (7), and according to the American Diabetes Association, more than 10% (approximately 5 million) of Hispanics aged 20 years or older were diagnosed with T2D and a significant figure is still undiagnosed. (8) Rates of T2D among Hispanics in the US were 8.2% for Cubans, 11.9% for Mexican Americans, and 12.6% for Puerto Ricans. (8) Diabetes is the leading cause of heart and kidney disease, stroke, blindness and amputations and the fifth leading cause of death among Hispanics in the US. (3)

Current marketed therapies for T2D
More than 100 brand-therapies are available for single or combination therapy. Metformin, a biguanide, is usually the first-line medication prescribed for T2D in children, teenagers and adults and it is recommended in conjunction with exercise. This drug has been widely used since the 1960s but it was approved for use in the US in 1995. Metformin seems to work by disrupting the respiratory oxidation chain in the hepatocyte mitochondria. (9) It is effective in the presence of insulin, decreasing the amount of glucose produced by the liver. In addition, metformin decreases glucose intestinal absorption, increases uptake of glucose by muscles, does not produce weight gain, helps in reduction of HbA1c levels (1.5 to 2.0%) and it has a modest lipid-lowering activity. (9, 10, 11) Metformin is not metabolized and is used in fixed therapy combinations with sulphonylureas, meglitinides, thiazolidinediones, and DPP-4 inhibitors. Metformin is not associated with hypoglycemic events because it does not affect insulin secretion but it can potentiate hypoglycemic events when used in combination. Common side effects include gastrointestinal complications and the potential for producing lactic acidosis, a serious but rare metabolic complication that is characterized by elevated blood lactate levels (>5 mmol/L), decreased blood pH, electrolyte disturbances with an increased anion gap, and an increased lactate/pyruvate ratio. (10)

Sulphonylureas and meglitinides are drugs that stimulate insulin secretion (secretagogues) by binding regulatory sulphonylurea receptors (SUR) in the potassium channels. Sulphonylureas block the potassium channel in pancreatic β cells with subsequent increase in calcium cellular concentration, which in turn, triggers more insulin secretion from each β cell. (12, 13) In addition, sulphonylureas decrease glucose production in the liver and enhance the body’s ability to dispose of excess of glucose into fat and muscle tissue with subsequent weight gain. (12) They also help in reduction of HbA1c levels (0.8 to 2.0%). (11) Most of the first and second generation of sulphonylureas are mainly metabolized by CYP2C9 and bind to blood proteins producing hypoglycemia when they are unbound by other drugs. (10, 12, 13) The hypoglycemic effect may be potentiated by certain drugs including metformin, nonsteroidal anti-inflammatory agents, some amines, and other drugs that are highly protein bound, coumarins, chloramphenicol, salicylates, sulfonamides, probenecid, monoamine oxidase

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inhibitors, and beta adrenergic blocking agents. (11, 14) Sulphonylureas of the second generation act in a similar way but are more effective and less side effects than the first generation. Common side effects include dizziness, headache, nausea, and/or heartburn. Even though the sulphonylureas lose effectiveness for almost half of the patients within 6 years of beginning their use, other medicines seem to work better in combination therapy with sulphonylureas. (11) The interaction with the potassium channel may occur in cardiac tissue with the possibility to make heart disease worse, although many years of surveillance do not sustain this possible outcome. (15)

<table>
<thead>
<tr>
<th>Mechanism of Action</th>
<th>Therapy Class</th>
<th>Generic Name (Brand)</th>
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<tbody>
<tr>
<td>Decrease Hepatic Glucose Output</td>
<td>Biguanides</td>
<td>Metmorfin (Glucophage®)</td>
</tr>
<tr>
<td>Sulphonylureas</td>
<td>Biagunides</td>
<td>Acetoheaxamide (Dymelor®)</td>
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<tr>
<td>First generation</td>
<td></td>
<td>Tolbutamide (Orinase®)</td>
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<td></td>
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<td>Chlorpropamide (Diabinese®)</td>
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<td></td>
<td></td>
<td>Tolazamide (Tolinase®)</td>
</tr>
<tr>
<td>Stimulates Insulin Secretion</td>
<td>Meglitinides</td>
<td>Glyburide (Micronase®)</td>
</tr>
<tr>
<td>Second generation</td>
<td></td>
<td>Glipizide (Glucof®)</td>
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<tr>
<td></td>
<td></td>
<td>Glimepiride (Amaryl®)</td>
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<tr>
<td>Insulin Sensitizers</td>
<td>Thiazaolidinediones</td>
<td>Troglitazone (Rezulin®)</td>
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<tr>
<td></td>
<td></td>
<td>Rosiglitazone (Avandia®)</td>
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<tr>
<td></td>
<td></td>
<td>Pioglitazone (Actos®)</td>
</tr>
<tr>
<td>Starch Blockers</td>
<td>Alpha glucoside</td>
<td>Acarbose (Precose®)</td>
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<tr>
<td>inhibitors</td>
<td></td>
<td>Miglitol (Glycet®)</td>
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<tr>
<td>Incretin Pathway Agents</td>
<td>GLP-1 Mimetics</td>
<td>Exenatide (Byetta®)</td>
</tr>
<tr>
<td></td>
<td>DPP-IV Inhibitors</td>
<td>Sitagliptin (Januvia®)</td>
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<td></td>
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<td>Saxagliptin (Onglyza®)</td>
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<td></td>
<td></td>
<td>Vildagliptin (Galvus®)</td>
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<tr>
<td>Insulin Replacement</td>
<td>Insulin / Insulin</td>
<td>As monotherapy or in combination with others above</td>
</tr>
<tr>
<td></td>
<td>analogs</td>
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Meglitinides stimulates insulin secretion like sulphonylureas but they act at different binding site in the SUR of pancreatic β cells potassium channels. (11, 13) Repaglinide and nateglinide have a short onset of action and a short half-life with effective reduction of HbA1c levels (0.5 to 2.0%) and a decreased risk of hypoglycemia. (10, 11, 13)

Thiazolidinediones (TZD or glitazones) are insulin sensitizers that activate the peroxisome proliferator-activated receptor (PPAR)-γ involved in the expression and modulation of insulin-responsive genes, fat metabolism and other genes acting in intermediary metabolism. The glitazones enhance insulin sensitivity in both muscle and fat tissue with a modest reduction in hepatic glucose production and are used for improving insulin resistance. (9, 11)

Troglitazone (Rezulin®) was removed from the market in 2000 after the review of safety data on rezulin and two similar drugs, rosiglitazone (Avandia®) and pioglitazone (Actos®) by the Food and Drug Administration (FDA). (16) Data showed that rosiglitazone and pioglitazone, both approved in 1999, offered the same benefits as troglitazone without the risk of liver toxicity. Rosiglitazone is now associated with increased risk of cardiovascular effects and the FDA conditioned its continued marketing on September 22, 2010. (17) The FDA is currently reviewing data from an ongoing, 10-year epidemiological study to understand if pioglitazone is associated with an increased risk of bladder cancer. (18)

Combination therapies include the use of sulphonylureas, insulin and metformin for significant improvements in HbA1c levels (0.5 to1.5%). (11)

Starch blockers like acarbose and miglitol act by inhibiting the alpha-glucosidase enzyme present in the brush border of enterocytes in the small intestine, which cleaves complex carbohydrates into sugars. (11, 19) Alpha-glucosidase inhibitors are not hypoglycemic agents because they do not directly lower blood sugar levels nor stimulate the pancreas to produce more insulin. They produce a modest fasting plasma glucose level, moderate reduction of HbA1c levels (0.7 to 1.0%) and notorious control on postprandial (after any meal) hyperglycemia. (9, 19) Side effects of abdominal discomfort, flatulence, bloating and diarrhea are often severe but reversible with discontinuation. (11, 19) The use of starch blockers in patients with inflammatory bowel disease or renal dysfunction is contraindicated, and patients with liver cirrhosis should not take acarbose because the potential to increase serum transaminase levels. Starch blockers are mainly used outside the US.

Incretins (glucagon-like peptide [GLP]-1 and glucose-dependent insulintropic polypeptide [GIP]) are intestinal hormones involved in blood glucose homeostasis and reduction of postprandial blood plasma.
levels with a dual action of potentiating insulin secretion by pancreatic beta cells and inhibiting glucagon secretion by pancreatic alpha cells. (19, 20) Healthy individuals respond to a meal by releasing the glucagon-like peptide (GLP)-1 that binds GLP-1 receptors on pancreatic beta cells and triggers insulin secretion. The response in T2D and prediabetic patients is defective leading to a reduced insulin secretion in response to a meal. Peptides like GLP-1 and GIP are rapidly degraded (less than 5 minutes) by dipeptidyl peptidase-IV (DPP-IV). (19, 20) Therefore, GLP-1 receptor agonists like exenatide aim to enhance the defective response to a meal and the DPP-IV inhibitors delay the degradation of the GLP-1 agonists extending their bioactivity.

Exenatide (Byetta® and Bydureon®) is derived from the saliva of the giant glia lizard displaying only 53% homology with GLP-1, which confers increased resistance to degradation by DPP-IV. (19) Subcutaneous injection (10 µg) of Exenatide (Byetta®) twice daily achieves moderate reduction in HbA1c levels (0.5 to 1.0%) and it is used in conjunction with other T2D therapies. (10, 19, 20) Common side effects include drowsiness, confusion, mood changes, increase thirst, diarrhea, swelling and others less severe like nausea. (10, 19, 20) A once-weekly exenatide 2 mg injection (Bydureon®) was shown more effective than the 10 µg twice daily formulation achieving reduction in HbA1c levels (0.9-1.6%) and significant weight loss was observed in both treatment groups by the end of the study. (21) The FDA has recently requested a thorough QT study evaluating the effects of elevated exenatide plasma levels on heart rate. (22) Renal impairment, for example, may cause elevated plasma levels of medicines with high renal clearance.

DPP-IV inhibitors like sitagliptin and saxagliptin significantly reduce fasting plasma and postprandial glucose and increase the percentage of patients reaching a reduction in HbA1c (<7 or 6.5%). (20) Sitagliptin and saxagliptin in combination with metformin have shown sustained reductions of HbA1c levels (0.7 to 2.1%) for up to 2 years. Vildagliptin is another DPP-IV inhibitor commercially available outside the US. Common side effects include headache and mild infections (urinary and upper respiratory tract). (20)

**Issues with T2D risk factors and current marketed therapies**

T2D is not an easily managed disease. Drugs aiming at different targets are currently available, and they all have limitations and side effects ranging from mild to severe. Therapy combinations continue emerging to overcome the individual therapy limitations and patients complex clinical cases. Patient commitment to follow exercise and healthy diet habits are critical to control the disease progress and increase drug efficacy; however, patient lack of compliance to these habits is inevitable and the leading cause for failure in preventing further complications with T2D, such heart disease, high blood pressure, blindness, amputations, and/or kidney, nervous system, and dental disease.

Obesity is one of the risk factors for developing T2D. Pharmacological intervention to manage obesity is not yet available because the development of medicines for weight management (weight loss and maintenance of weight loss) has failed in the past. In 2008, the manufacturers of rimonabant (Zimulti® previously known as Acomplia®) decided to discontinue the ongoing clinical development program for all indications. Rimonabant was approved for use in several other countries and many studies had shown obese patients can lose up to 10% of their body weight in a year. However, the FDA found a significant incidence of suicidal behavior, psychiatric and neurological events when compared to placebo. (23) Just recently, on October 8, 2010, the FDA asked the manufacturers to remove their weight-loss drug sibutramine (Meridia®) from the US market. (24) Sibutramine was approved in the US in 1997 for weight management, but clinical data for cardiovascular outcomes indicated this drug increases the relative risk for major adverse cardiac events. Also, in October 2010, the FDA did not approve lorcaserin (Lorqess®) for weight management because the efficacy is marginal in obese individuals without T2D. (25) In addition, nonclinical data showed several issues that included uncertain diagnostic in the classification of mammary masses in female rats, unresolved exposure-response relationship for lorcaserin-emergent mammary adenocarcinoma, and unidentified mode of action and unclear safety margin for lorcaserin-emergent brain astrocytoma.

Currently, orlistat (Xenical® and Alli®) is the only marketed drug for obesity control. The FDA approved orlistat-120 mg as prescription product (Xenical®) in 1999 and orlistat-60 mg (Alli®) as the over-the-counter product in 2007. Both strengths are marketed for obesity management and for reducing the risk of regaining weight after prior weight loss in overweight adults, 18 years and older and both products should be used in conjunction with a reduced-calorie and low-fat diet. (26) The FDA added new safety information to the labels of both orlistat medications to educate the public about reported cases of severe liver injury and to prompt the attention of physicians in cases symptoms of liver injury occur. (26) Also, the FDA is scheduled to review the new-drug application for naltrexone HCl/bupropion HCl (CONTRAVE®) extended-release tablets. (10) This drug targets activated pro-opiomelanocortin neurons that activate the melanocortin system, which it is believed to regulate appetite and energy expenditure. These neurons also produce opioids as negative-feedback on their own. Bupropion and naltrexone are marketed generic drugs and have established safety profiles. (10) Bupropion will activate pro-opiomelanocortin neurons by increasing dopamine levels and naltrexone, an opioid-antagonist, will provide the negative feedback to these neurons. If approved, these two will be the only available drugs for obesity control.

Even though the current marketed medicines for T2D are helpful to control fasting plasma and postprandial glucose levels, none has been proven to prevent the sequel of
diabetes like neuropathies and retinopathies. In Part II of this series, the future therapies for T2D will be explored. These include inhibitors of sodium glucose co-transporters, glucokinase activators, and 11 beta-hydroxysteroid dehydrogenase inhibitors.

Pedro L. Del Valle, PhD.

To reference this article use the following citation:


References


HOT invites all members and sister organizations to write short articles of scientific interest that highlight toxicological issues of relevance for our community in US, Latin America, Brazil, Spain and Portugal. Please send your contributions to Dr. Minerva Mercado-Feliciano, Editor Toxenlaces.

Visit our webpage http://www.toxicology.org/isot/sig/hot/ to find more news and updated information about national e international meetings in Latin America countries.
New HOT Logo

After much consideration, the HOT board is pleased to approve our new logo. We started with the logo that won the contest and made minor modifications based on constructive criticism from our membership. The Ibero-America region and the US area are now in blue, a request made during voting.

If you maintain a website that links to the HOT website, please replace the art you have used in your webpage with this new logo. Members are also welcome to use the logo as appropriate in other SOT informational materials and publications, for example in websites and newsletters from other Special Interest Groups and Specialty Sections. If you need a clean JPEG (*.jpg) file please ask anyone in the HOT board (emails listed in page one of this newsletter).

<table>
<thead>
<tr>
<th>Upcoming Events</th>
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<tbody>
<tr>
<td><strong>2010</strong></td>
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<td>Nov 2</td>
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<td>Nov 4</td>
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<td><strong>2011</strong></td>
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Ruth L. Kirschstein National Research Service Awards

Dr. Kirschstein worked in the development of the polio vaccine, was the first woman director of an NIH Institute, and a champion of research training and a strong advocate for the inclusion of underrepresented individuals in the scientific workforce. Many of us are familiar and have benefitted from these awards named in her honor, and here is a reminder for our younger colleagues of this great funding resource. Candidates must be citizens or noncitizen nationals of the United States, or must have been lawfully admitted to the United States for Permanent Residence. Please note there is one award for postdoctoral research, and one for students working on their Ph.D. degrees. Due dates for application are April 8, August 8 and December 8.

**Individual Postdoctoral Fellowships** (F32): Provides up to three years of support for promising postdoctorals who have the potential to become productive, independent investigators within the broad scope of biomedical, behavioral, or clinical research. Awards provide a stipend, tuition and fees, and an institutional allowance. Application due dates: April 8, August 8 and December 8. More information at [http://www.niehs.nih.gov/careers/research/trainingfrom/fellowships/f32.cfm](http://www.niehs.nih.gov/careers/research/trainingfrom/fellowships/f32.cfm)

**Individual Predoctoral Fellowships to Promote Diversity in Health-Related Research** (F31): Provides up to five years of support for research training leading to the Ph.D. or equivalent research degree; the combined MD/Ph.D. degree; or other combined professional degree and research doctoral degree in the biomedical, behavioral, health services, or clinical sciences. More information at [http://www.niehs.nih.gov/careers/research/trainingfrom/fellowships/f31.cfm](http://www.niehs.nih.gov/careers/research/trainingfrom/fellowships/f31.cfm)
2011 HOT-SOT Annual Meeting Sponsors

The Hispanic Organization for Toxicologists (HOT) is a Special Interest Group (SIG) within the Society of Toxicology integrated by professionals of Hispanic origin with expertise in scientific areas associated with Toxicology. HOT membership is diverse representing industrial, academic, governmental, and commercial organizations from the USA and Ibero-America countries. It serves as a focal point for interaction, fellowship, networking, and professional development among Hispanic Toxicologists in the United States and the international Spanish and Portuguese-speaking scientific communities with emphasis in outreach to the Hispanic population and it operates in compliance with Section 501(c)(3) of the Internal Revenue Code. Please visit our web site at http://www.toxicology.org/isot/sig/hot.

Corporate sponsorship will help HOT bring together Hispanic Toxicologists in the United States and international Spanish and Portuguese-speaking Toxicologists attending the 2010 SOT Annual Meeting in Washington, DC, March 6-10th for interaction, networking, mentoring, and expanding the SOT outreach efforts in global toxicology. Your organization’s sponsorship will help sustain HOT’s effort to promote scientific excellence in toxicology. HOT offers Travel Awards to support Students and Postdocs in the United States and other countries to offset the cost for presenting their research at the SOT Annual Meeting. HOT activities also include the evening reception and dinner sponsorship and bimonthly publication of our newsletter Toxenlaces. Your sponsorship also helps increase your organization visibility to SOT and HOT members, annual meeting attendees, and the international Spanish and Portuguese-speaking scientific communities, and provides opportunities for recruiting young scientist and experienced toxicologists to your company.

There are four levels of sponsorship available, as follows:

**HOT Distinction Level 1: Evening Reception Sponsorship, $1,700 or more**
- Prize drawing box in your booth for a HOT drawing – two prizes awarded. Attendees will drop their business cards at your booth
- Special front-page sponsorship acknowledgement in the February-March 2011 HOT newsletter, Toxenlaces, copies available at the Annual Meeting HOT stand
- Acknowledgment of your sponsorship and participation in the HOT Reception Night in a special report about the event in the April-May 2011 Toxenlaces, including pictures
- Special sponsorship acknowledgement in the HOT Web site (http://www.toxicology.org/isot/sig/hot) and Toxenlaces newsletter (June 2010 through May 2011)
- Five invitations to the HOT Reception Night at the SOT 50th Annual Meeting in Washington, DC, March 2011

**HOT Distinction Level 2: Distinguished Hispanic Toxicologist Lecture or Luncheon & Learn Sponsorship, $1,200**
- Special sponsorship acknowledgement in the February-March 2011 HOT newsletter, Toxenlaces, copies available at the Annual Meeting HOT stand
- Acknowledgment of your sponsorship and participation in the HOT Reception Night in a special report about the event in the April-May 2011 Toxenlaces, including pictures
- Special sponsorship acknowledgement in the HOT Web site (http://www.toxicology.org/isot/sig/hot) and Toxenlaces newsletter (June 2010 through May 2011)
- Four invitations to the HOT Reception Night at the SOT 50th Annual Meeting in Washington, DC, March 2011

**HOT Distinction Level 3: Student & Postdoctoral Travel Awards Benefits ($800)**
- Recognition in the February-March 2011 HOT newsletter, Toxenlaces, copies available at the Annual Meeting HOT stand
- Acknowledgment of your sponsorship and participation in the HOT Reception Night in a special report about the event in the April-May 2011 Toxenlaces, including pictures
- Special sponsorship acknowledgement in the HOT Web site (http://www.toxicology.org/isot/sig/hot) and Toxenlaces newsletter (June 2010 through May 2011)
- Three invitations to the HOT Reception Night at the SOT 50th Annual Meeting in Washington, DC, March 2011

**HOT Distinction Level 4: Toxenlaces Sponsorship Acknowledgement Benefits ($500)**
- Special sponsorship acknowledgement in the HOT Web site (http://www.toxicology.org/isot/sig/hot)
- Special sponsorship acknowledgement in the HOT Web site and Toxenlaces newsletter (June 2010 through May 2011)
- Two invitations to the HOT Reception Night at the SOT 50th Annual Meeting in Washington, DC, March 2011

If you would like to sponsor any of these events of HOT at the 2010 SOT meeting, please send your check payable to “Society of Toxicology Fund for HOT-SIG” and mail to Society of Toxicology Fund, 1821 Michael Faraday Drive, Suite 300, Reston, VA 20190. If you have any further questions or need clarification, please email your inquiries to Sergio Villalobos, Ph.D. Treasurer, svillalobos@nalco.com