



AACT^{ion} News & Announcements

Volume 22, Number 1 March 2012
American Academy of Clinical Toxicology

Message from the President:

Alan Woolf, MD, MPH, FAACT, FACMT

The AACT and Global Toxicology

The specialty of clinical toxicology is growing worldwide in the changing and exciting times in which we live. There is a growing awareness of the fact that environmental hazards, chemicals, and toxicants affect the health of people everywhere in harmful ways and how such devastating effects of poisoning are preventable. The American Academy of Clinical Toxicology has embraced as part of its educational mission the idea of communications and interactions with our professional colleagues in other countries. We have enjoyed a long-standing working partnership with the European Association of Clinical Toxicologists and Poison Centres (EAPCCT), with whom we co-sponsor our professional journal (along with the American Association of Poison Control Centers). We also share faculty and sponsorship of both the North American Congress of Clinical Toxicology (NACCT) held every autumn and the EAPCCT Congress held each spring. The EAPCCT also appoints an AACT representative (usually the sitting president) to its Scientific Committee that is in charge of the educational content of its congress. The



EAPCCT's Scientific Committee also relies on AACT to perform the administrative tasks necessary so that congress attendees can earn CME credit from the U.S. accrediting agency. The AACT also collaborates with the Canadian Association of Poison Control Centres (CAPCC), sharing faculty for the NACCT and collaborating in many scientific and educational ventures. Many members of both CAPCC and EAPCCT are also members of AACT and we are very grateful for their support and participation.

There are some exciting emerging opportunities to amplify our efforts. The International Union of Toxicology (IUTOX) is an international collaboration dedicated to encouraging global opportunities to learn from each other. The AACT is an active member organization of IUTOX. AACT along with the leadership of the EAPCCT and the Asian Pacific Association of Medical Toxicologists (APAMT) have recently submitted more than a dozen proposals for educational symposia to be delivered at the next IUTOX Congress, an event held every 5 years. The next Congress is due to be held in Seoul, South Korea, in

Inside this Edition

President's Message	1-2	Hoffman Appointment.....	7
New Senior Editorial Board Members	3	Position Available.....	7
Call for New Fellows	4	AACT Co-Sponsors Meeting with NIH	8
Spring EAPCCT Congress	5	Dr. Benjamin Chairs Workshop.....	9
In the News.....	5	Crossword Puzzle.....	10
Awardees Announced	6	Call for Abstracts.....	11

AACT^{ion}

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THE PRESIDENT'S MESSAGE CONTINUED

July 2013. Also as noted elsewhere in this issue of AACTion, the AACT was able to nominate our president-elect, Dr. Robert Hoffman, as a representative on the IUTOX coordinating and advisory committees for the 2013 Congress, and he was subsequently approved as a new appointee. Bob deserves both our congratulation and appreciation for his willingness to serve in this role. I want to especially point out the efforts of Drs. CC Yang, Andrew Dawson, and Michael Eddleston among the leadership of APAMT, who have provided a conduit of information about APAMT and have invited reciprocity in the sharing of faculty both at the NACCT and the annual APAMT meeting. Many APAMT members are also members of AACT and contributed their knowledge and research findings as abstracts presented at our annual meeting and original research papers published in our journal.

The AACT maintains a committee on international relations to continue to look for ways to collaborate with toxicology professionals and societies elsewhere. The co-chairs of this committee are Drs. Jeffrey Brent and Donna Seger. Under their leadership, we continue to generate momentum towards greater involvement of AACT in global toxicology. I recently sent a letter of encouragement to Mohammad Abdollahi, PharmD, PhD, the current president of IranTox, the Iranian Society of Toxicology. The AACT has welcomed the membership of Iranian toxicologists in the Academy and they have attended and participated in the NACCT on a regular basis, and Dr. Abdollahi has signaled his desire to work closely with AACT going forward. We want to extend our offer to explore new ways of collaboration to other professional organizations with similar interests, such as the Indian Society of Toxicology and similar organizations in Mexico, other Central American countries, South America, the Middle East, Eastern Europe, Africa, and others across the globe.

We are very proud of these ongoing initiatives and efforts which have been so productive in encouraging progress in clinical toxicology. We anticipate creative new ways to leverage our ability to effect improvements in patient care, public health policies, and health promotion and prevention worldwide. The non-profit, non-government professional societies have a key role to play in the future, and there is much work to be done. The AACT must sharpen its focus and redouble our efforts to learn from other toxicologists and contribute to their life-long learning as well. While we also 'think global, act local', we will continue to reach out to others to fulfill the promise of such collaborations in improving the lives of others.

AACT Selects New Senior Editorial Board Members

The Academy has selected its new representatives to the Senior Editorial Board (SEB) of its journal, Clinical Toxicology, under its new Editor in Chief, Dr. Martin Caravati.



Dr. Michael Greenberg has agreed to return for a second term on the SEB. He is the Chief of the Division of Medical Toxicology at the Drexel University College of Medicine (DUCOM), a Professor of Emergency Medicine and Professor of Public Health at DUCOM, and the Immediate Past-President of the AACT.



Dr. Alison Jones assumes this editorial leadership position for the first time. She is an active member of AACT and a conjoint Professor of Medicine and Clinical Toxicology on the Faculty of Health and in the School of Public Health at the University of Newcastle in Australia. Since her arrival at Newcastle in 2006, she has carried out clinical and research strategy in

toxicology, and teaches medicine at the University. Prior to this, she had 8 years of experience at the National Poisons Information Service (London) providing consultant level advice in poisoning/ chemical incidents and actively managing poisoned patients on behalf of the largest poisons center world-wide.



Dr. Kenneth McMartin is also new to the Senior Editorial Board. He is Professor in the Department of Pharmacology, Toxicology and Neuroscience at Louisiana State University in Shreveport and a current member of the AACT's Board of Trustees. Dr. McMartin's research interests include the mechanisms of toxicity of alcohols and glycols, renal toxicology, regulation of folate metabolism, tissue culture, and folate transport.

Outgoing SEB representatives from AACT include Dr. David Juurlink and Jeffrey Brent. Both have performed outstanding and diligent service to the journal and have helped to secure the excellent reputation that the journal enjoys within the toxicology profession. Please join us in thanking Drs. Brent and Juurlink for their service and congratulating Drs. Jones, McMartin, and Greenberg on their new positions.

AACT Calls for New 'FAACT' Fellow Applicants

Anthony Scalzo, MD, FAACT, Chair, AACT Fellowship Committee

Alan Woolf, MD, MPH, FAACT, President, AACT

The AACT Board of Trustees and its Fellowship Committee announce the call for applications from active AACT members to be considered for election to the honorary designation of 'Fellow' of the Academy. The mission of the AACT is to foster interdisciplinary research, education, prevention and treatment of poisonings by chemicals, drugs and environmental substances in humans and animals. The Trustees wish to recognize Academy members whose contributions are important to the Academy and to the field of clinical toxicology. Consequently the Board has created the designation of Fellow of the American Academy of Clinical Toxicology (FAACT) to honor those members whose contributions have been of significant benefit to the Academy, and have advanced the field of clinical toxicology. Applications for FAACT status are reviewed by the AACT Fellowship Committee. The following criteria are used by the Committee in the evaluation of applications:

- Applicants shall be active or honorary Academy members in good standing for a minimum of four years.
- Applicants must document service to the AACT Board, Committees, SIGs or AACT symposia for a minimum of two years.
- Applicants must demonstrate sufficient activity within the Academy and field of clinical toxicol-

ogy to meet minimum criteria set forth in the application guidelines.

- Applicants must be nominated by an Academy Fellow whose membership in the Academy is in good standing.
- Board certification in clinical or medical toxicology is encouraged but not mandatory.

The deadline for receipt of the completed application and all letters of nomination and recommendation is May 1, 2012. Applications and more information about achieving fellowship status can be found at the AACT website: www.clintox.org. Completed applications and letters should be addressed to Dr. Anthony Scalzo, Chair, AACT Fellowship Committee. They can be sent via email to:

Anthony_Scalzo@ssmhc.com

Alternatively they can be sent via regular paper mail to:

Anthony Scalzo MD, FAACT
Missouri Regional Poison Center
Cardinal Glennon Children's Hospital
7980 Clayton Rd Ste 200
Saint Louis, MO 63117-1354

For questions or additional information, please contact Dr. Scalzo by email at: **Anthony_Scalzo@ssmhc.com**



London Is Calling...EAPCCT Scientific Committee Plans Spring EAPCCT Congress

The Scientific Committee of the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT) met in Zurich on January 12 & 13 to discuss final plans for the next EAPCCT Congress in London, Great Britain, from Tuesday, May 29th, to Friday, June 1, 2012. The Congress will be held at the magnificent Lancaster London Hotel in an historic section of Hyde Park in downtown London. Dr. Bruno Megarbane is the Chair of the Scientific Committee and is in charge of coordinating the learning objectives of the meeting. AACT is a proud co-sponsor of this annual event; an exciting educational offering is planned for this year. A Pre-Congress entitled "Emergency Department Management and Assessment of the Poisoned Patient" will be held on Tuesday, May 29th, with interactive case presentations and state-of-the-art discussions.

The educational themes for the 3-day main congress include: exposure biomarkers for the assessment of toxic risks, pulmonary toxicants, drugs & doping agents – medico-legal issues for toxicologists, mechanisms of toxicity, CBRN disasters, poison centres

developments for the future, and envenomation. The Young Investigator's Award competition will be held again this year. This Congress includes a pro-con debate session on controversial topics in clinical toxicology. The Congress Dinner will be held this year at The Great Hall of "The Honourable Society of Lincoln's Inn", the oldest of London's four Inns of Court, located in the heart of London's historic 'Legal District.'

All AACT members are encouraged to attend this outstanding international meeting. AACT provides the category 1 continuing medical education credit as the co-sponsor of the Congress. For more information and to register for this year's EAPCCT meeting, go to www.eapcct.org.



In the News...



Allison Muller, PharmD, DABAT has joined Vox Medica's Institute for Continuing Healthcare Education in Philadelphia as their Medical Director. The Institute is an independent medical education company that has provided more than 25 years of certified education for physicians, pharmacists and nurses. As Medical Director, Allison will develop strategy and manage development of clinical materials, establish publication plans and metrics in multiple medical disciplines, and assist with business development and marketing. Prior to joining The Institute in February 2012, she was with The Poison Control Center at The Children's Hospital of Philadelphia since 1993, and the Managing Director of the center since 2002.

Awardees Announced

Not Just for Digoxin Anymore: Lampe-Kunkel Memorial Award for Research Awarded for Studies on Lily of the Valley toxicity



Dr. Tarabar



Dr. Robey

The American Academy of Clinical Toxicology is excited to announce this year's winner of the Lampe-Kunkel Memorial Award for Research on Natural Products of Toxicology. Asim Tarabar, MD, MS, and Thomas Robey, MD, PhD, of the Yale University Department of Emergency Medicine, were awarded \$3,750 for their project entitled "Lily of the Valley Ingestion: Epidemiology, Laboratory Diagnosis, and Treatment of Convallaria toxicity." The project's goals are to adapt digoxin diagnostic tests for detection of convallatoxin and other common botanical cardiac glycosides, to describe the extent of botanical cardiac glycoside exposures and to evaluate digoxin immune Fab for binding to convallatoxin. Their initial studies demonstrate good detection abilities for the toxin derived from lily of the valley when compared to another botanical cardiac glycoside, oleandrin. If the digoxin assays detect toxin from Nerium oleander, Convallaria, Digitalis, and Thevetia peruviana (yellow oleander), 85% of all botanical cardiac glycoside exposures listed in the NPDS database since 2000 would be assayable. Dr. Robey noted that "this collaborative effort between the emergency physicians

and the clinical laboratory has opened the door for new diagnostic abilities."

Robey is a PGY3 emergency medicine resident at Yale. He sees this project "as an excellent opportunity to combine my bench research skills with a problem in emergency medicine, but also to fold a gardening and plant identification hobby into my professional career!" The project took roots when Robey's wife (a clinical pathology resident) introduced him to one of the clinical chemistry attending, both of whom became collaborators on the project. Dr. Tarabar is the Director of Medical Toxicology at Yale and is Robey's faculty mentor.

The AACT offers three different research awards, the Junior Investigator Research Grant (up to \$30,000 for two year projects), the AACT Research Award (up to \$5,750 to support clinical research that encourages the development of new therapies and treatment) and the Lampe-Kunkel Memorial Award (up to \$3,750 to investigate some aspect of toxicity due to naturally occurring phenomenon (i.e., plants, mushrooms, algae, insects, snakes). The latter two awards may be part of a larger project, but must have a specific hypothesis and aims to produce distinct results. The Lampe-Kunkel award is given out in odd numbered years, while the other two awards are offered in even years. Announcements of these awards for the current year, along with the all important deadline date for submission (November 1), is posted on the AACT website. We hope to have many submissions – you can do it and we hope to help.

Dr. Kenneth McMartin, LSU Health Sciences Center, Department of Pharmacology, Toxicology and Neuroscience

Hoffman Appointed to IUTOX Committees

AACT leadership nominated its president-elect, Dr. Robert Hoffman, to serve in an international leadership role within the International Union of Toxicologists (IUTOX). The AACT is a long-standing member supporting IUTOX, an influential international coalition of toxicology groups which is headquartered in Reston, Virginia. Dr. Dan Acosta is the president of IUTOX and Donna Breskin is its executive director.

Upcoming IUTOX meetings are:

8th Congress of Toxicology in Developing Countries (CTDC8)
Bangkok, Thailand
September 10 - 14, 2012
www.thaitox.org/8ctdc

13th International Congress of Toxicology (ICTXIII)
Seoul, Korea
June 30 - July 4, 2013
www.ict2013seoul.org

IUTOX recently announced that Bob has been appointed to both the ICTXIII International Advisory Board and the International Scientific Program Committee of ICTXIII. These two are the principal committees in charge of organizing the educational content for the International Union of Toxicology (IUTOX) which presents an outstanding international toxicology meeting every 5 years. Congratulations to Bob in this exciting new position!

Position Available

Central Ohio Poison Center: Managing Director Position

The Central Ohio Poison Center (COPC) located in Columbus, Ohio, provides 24-hour, toll-free poison information for all individuals in its coverage region. The COPC started operation in 1958 and has remained certified since 1983. Nurses and pharmacists directly handle telephone inquiries and have 24-hour access to physician toxicologists. Sponsored by Nationwide Children's Hospital and affiliated with The Ohio State University, the COPC has a Medical Toxicology Fellowship and teaches a graduate level Toxicology course. Columbus is affordable and family-friendly; though we're the 15th largest city, we have the #1 zoo, library, children's museum, and poison center in the US.

GENERAL SUMMARY

The Managing Director is responsible for planning, organizing, and managing the activities of the COPC. The manager will be competent in all areas of poisoning treatment, prevention and education. The manager should demonstrate expertise in providing age appropriate care and services to patients of

all ages and all levels of education. In conjunction with the Medical Director, the Managing Director is responsible for the development of all protocols and procedures related to patient care.

MINIMUM QUALIFICATIONS

1. Must be a registered nurse, pharmacist, or hold a degree in a health science discipline.
2. Should be certified or eligible for certification by the American Board of Applied Toxicology.
3. Must possess excellent interpersonal, written and verbal communication skills.
4. Must have good computer skills.

MINIMUM PHYSICAL REQUIREMENTS

Ability to stand for more than 1 hour at a time, sit for more than 1 hour at a time. Good auditory acuity and ability to speak clearly.

Nationwide Children's Hospital is an Equal Opportunity Employer | Tobacco-Free Environment.

Contact Dr. Marcel Casavant, MD, 614-355-0459
Marcel.Casavant@NationwideChildrens.org

AACT Co-Sponsors Upcoming Isocyanates Conference

The AACT is pleased to co-sponsor a multidisciplinary international conference that will be of interest to members. The conference, "Isocyanates and Health: Past, Present & Future", will be held on November 1st and 2nd, 2012, at the Natcher Center of the National Institutes of Health in Bethesda, Maryland. The program will identify and discuss the latest knowledge and important issues on the health effects of isocyanates, including current best evidence about exposure monitoring, environmental controls and clinical management. Conference themes include environmental exposure and monitoring, worker and consumer exposure, toxicity testing and biomarkers, animal testing, cancer risk, occupational surveillance & management issues, respiratory epidemiology and disease, and research to practice and health communication considerations.

A call for scientific abstracts closes on July 15th, with a deadline for 'late-breakers' on September 7th.

The following US and Canadian Government agencies are participating in the program planning: NIH- National Institute of Environmental Health Sciences, NIH-National Cancer Institute, National Institute for Occupational Safety and Health, Occupational Safety & Health Administration, US Environmental Protection Agency, Agency for Toxic Substances and Disease Registry, Health Canada, and the Canadian Institutes of Health Research. AACT is a co-sponsor along with other professional organizations including :American Academy of Clinical Toxicologists, American Conference of Governmental Industrial Hygienists, American College of Occupational and Environmental Medicine, American Industrial Hygiene Association, American Thoracic Society, Canadian Thoracic Society, the Society for Risk Analysis and the Society of Toxicology.

Active AACT members will receive a discount on their registration fees for this event. Members can learn more about the conference and registration details at the conference website: **www.isocyanates2012.org**

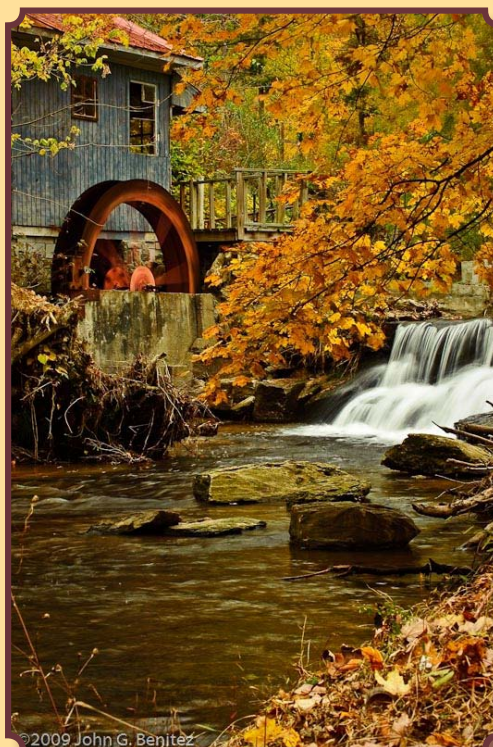


Photo credit: John Benitez, MD

Member Spotlight

Questions for: Marty Caravati, MD, MPH

1. So there is some exciting news in the world of Clinical Toxicology; you are the new Editor-in-Chief as of January 2012. Clearly an incredibly important role. Can you tell us a little about it?

First, I am honored that the sponsoring organizations (AACT, EAPCCT and AAPCC) and the publisher (Informa) selected me for the position upon the retirement of Nick Bateman. I learned many things from Nick as Associate Editor and from Michael Callahan while serving as an Associate Editor of the Annals of Emergency Medicine prior to Clin Tox. It will be my job to make sure that the content of the journal is of high academic standards, unbiased, covers important topics in our field, educates and occasionally entertains our readers. The ultimate aim is to advance the science of clinical toxicology and improve the care of the poisoned patient. I am fortunate to have a strong Editorial Board and Peer-Reviewers to accomplish that goal.

2. You started with the journal on the Editorial Board in 2007. Have you seen many changes in the type of work submitted for publication over the past 5 years?

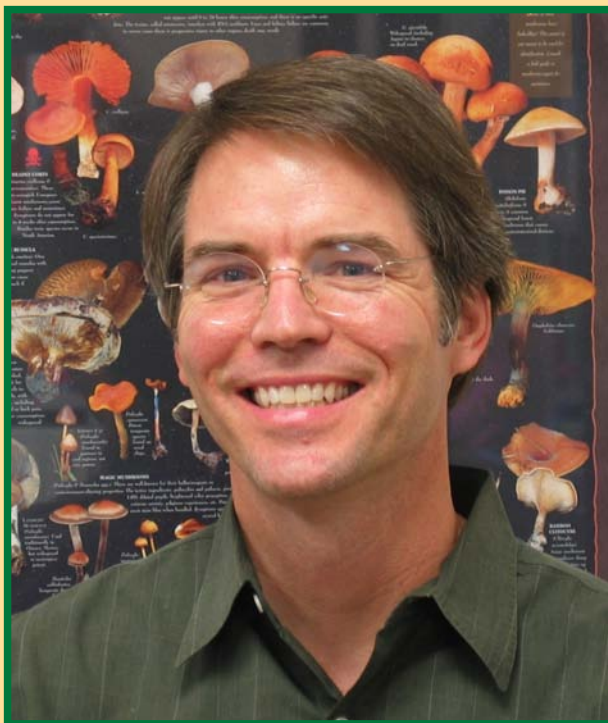
There has been a definite trend to more submissions from outside of North America, which reflects the international focus of the journal and its editorial board. Submissions concerning emerging drugs of abuse, chemicals, and pesticides have particularly picked up over the last couple of years. I think that reading about what is happening outside your own backyard makes for a more interesting journal and offers potential collaboration with international researchers.

3. Everyone really enjoys reading Clin Tox, and would like it to remain a distinguished scientific resource for years to come. Other than featuring important scholarly work, what are other secrets to keeping the journal running strong?

The key to continued success of the journal is an active clinical toxicology research community that submits their work for publication. We try to balance the content with articles that are also of practical use, such as Reviews, Image articles and teaching cases that can be applied in daily practice. One of my goals will be to increase the number of commentaries from experts within our specialty and promote debate through letters to the editor that will keep the journal lively and topical for the readership.

4. Tell us a little about what it is like living in gorgeous Utah. Are you big into outdoor activities?

I moved to Utah over 25 years ago from North Carolina and was struck by the awesome variety of outdoor environments and recreational opportunities readily available here. Alpine mountains, slot canyons, trout streams, lakes and deserts, just about everything except the ocean can be found in Utah. My family and I enjoy hiking, fishing, skiing, snowshoeing and camping. We try to get out whenever we can. However, it's sad that every year there seems to be more advisories about mercury in local fish, water contamination and air pollution. I'm sure Edward Abbey is turning over in his grave.... but we still love it here and look forward to hitting the trails this summer.



Dr. Benjamin Chairs Workshop at AAFS Meeting in Atlanta, GA

Dr. Benjamin Chairs Workshop on the Application of Pharmacokinetics to the Interpretation of Forensic Cases

David M. Benjamin, PhD, a member of AACT and Fellow of the American Academy of Forensic Sciences (AAFS) chaired a workshop on the application of pharmacokinetics to the interpretation of forensic cases at the recent meeting of the AAFS in Atlanta, GA.

The interpretation of drug blood concentrations is an essential component of determining the cause of adverse effects and death in both clinical and forensic toxicology. However, in the forensic setting, blood samples are often taken after death, and may be taken from different sampling sites like the heart, femoral or subclavian vein. Because of postmortem redistribution (PMR), the site of sampling and the time after death can lead to grossly different quantitative results, confounding the interpretation of the results. Recognizing these differences, and correctly interpreting the reliability of the results is a complex and difficult process requiring great care and experience on behalf of the toxicologist.

In the forensic setting, the correct interpretation of the drug concentrations can mean the difference between labeling the death as a homicide, or a drug interaction which led to an inadvertent accumulation of drug due to the inhibition of the enzyme(s) of metabolism of a drug with a narrow therapeutic index.

In general, drugs with a large volume of distribution are subject to PMR, when drugs sequestered in body fat stores, or bound in organs are released back into the central pharmacokinetic compartment, after death. Only a familiarity with the drugs subject to this very interesting phenomenon, and a great deal of experience can alert the astute reviewer to the problem.

Developing a chronology and trying to determine when the drugs were taken, by what route, and whether or not there was enough time for a complete distribution of the drug before death is very helpful, but those data are not always available.

In general, cardiac drug concentrations are higher than peripheral levels, but right heart blood may be a better indicator than left heart blood, because it is supplied by the vena cavae, rather than the pulmonary veins, and sometimes, the blood sample is not adequately marked for its site of sampling, or bears a designation of "chest blood," which could have come from a variety of anatomical sites.

When dealing with the results of postmortem blood samples, the bottom line is, what you see may not be what you got!

Dr. Benjamin is a clinical pharmacologist and forensic toxicologist in Chestnut Hill, MA.

medlaw@doctorbenjamin.com
www.doctorbenjamin.com



Dr. Benjamin received a plaque from the Toxicology Section of the AAFS for his work as chairman of the recent workshop at the AAFS.

Call for Abstracts

2012 Annual Meeting of the North American Congress of Clinical Toxicology

October 1-6

The Cosmopolitan of Las Vegas
Las Vegas, NV

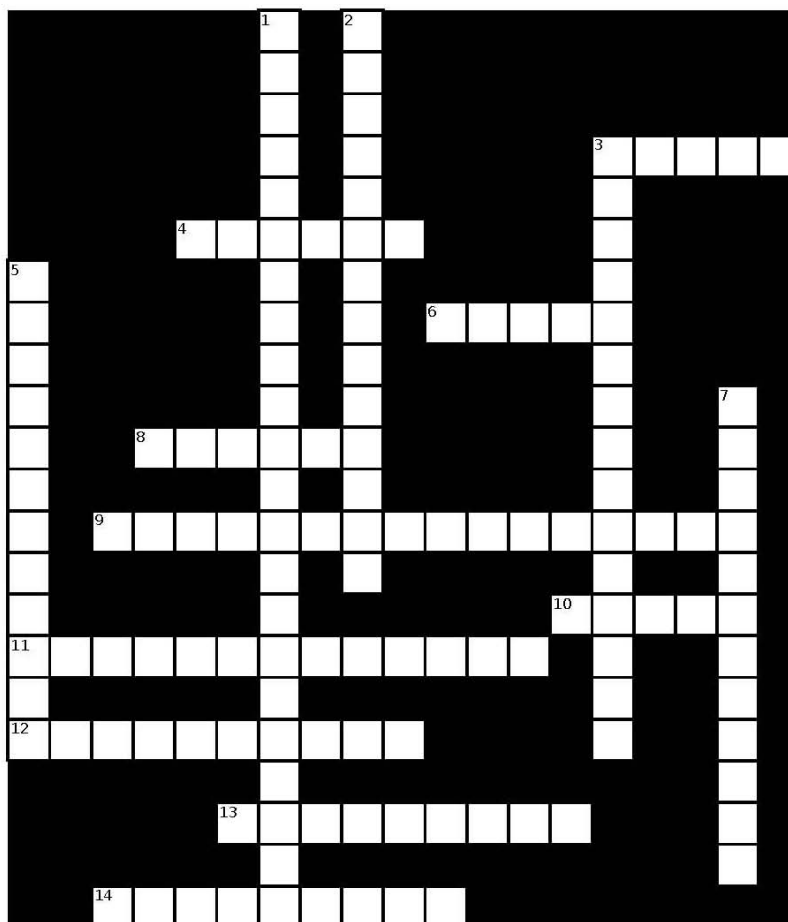
NACCT is an excellent forum for the presentation of original research or novel case series/reports in the field of toxicology.

Abstract Submission Instructions

1. Only data not presented at other national or international meetings may be submitted. Abstracts presented at local or regional meetings may be submitted.
2. Abstracts are to be submitted online at www.prolibraries.com/nacct. This is the same site that manages the conference CME and lecture handouts. If you have one, you may use the same login and password you have used in the past or you can establish a new account. The web site is accepting submissions from now until midnight EDT on 16 April, 2012. Ensure a smooth submission process by not waiting until the last minute. Notification emails will be sent around the middle of May.
3. On the ProLibraries website:
 - a. Redeem the conference code NACCT2012
 - b. Click on My Abstracts (located under Your Account)
 - c. Follow the instructions throughout the system
4. Abstracts must include the following sub-categories:
 - a. Studies: Title; background or objectives; methods; results; conclusions
 - b. Case series/reports: Title; background; case report/s; case discussion; conclusions
5. The abstract should be written in complete sentences using grammatically correct English. Spell out all abbreviations on first usage.
6. Abstracts are limited to 2400 characters, not including spaces, author/s and affiliations. Only one institution or affiliation will be allowed per author.
7. Small tables may be accepted using the tool provided by the website. Graphs and illustrations cannot be accommodated.
8. All abstracts must be blinded. Authors, including, for example, names of poison centers, should not be identified in any way on the page containing the abstract. Author names, contact information and affiliations will not be included in the material sent to reviewers.
9. Abstracts will be reviewed for oral or poster presentations. Oral presentations ("platforms") will be allowed 10 minutes followed by discussion. Posters will generally be grouped by topic and presented during one of 4 sessions. If you would prefer not to be considered for an oral presentation and only want to present in poster form, please indicate this in the appropriate section of the submission program.
10. All abstracts that are accepted will be published as received. No copy editing will be performed.
11. All presenters of accepted abstracts must register for NACCT 2012.
12. We hope to have selection notices sent to you via email by mid to late May.
13. We look forward to your submissions!

Crossword Puzzle

Drug Side Effects



- | Across | Down |
|---|---|
| 3 Stools become this color after ingestion of bismuth subsalicylate | 1 Titration of lamotrigine decreases risk of |
| 4 Fluroquinolones can cause rupture of _____ | 2 Statins |
| 6 Tetracyclines can cause _____ discoloration | 3 Class that increases risk of atypical fractures |
| 8 NSAIDs (abbrev.) may cause injury specifically to this organ | 5 Acyclovir |
| 9 Cause of gynecomastia, testicular atrophy, and alopecia | 7 Opioid users build tolerance to side effects except |
| 10 Major toxic metabolite of acetaminophen (abbrev.) | |
| 11 Pediatric side effect of aspirin | |
| 12 Side effect of ACE Inhibitors | |
| 13 Albuterol can lower serum _____ levels | |
| 14 Smooth muscle relaxation, can be used in Torsades and asthma | |

Did you Know?

The Philadelphia PCC was among the first to use electronic devices to help with clinical consultations. In the 1960's a switch box, a precursor to today's computers, would light up to aid in a diagnosis when patient data was entered. For example, if the signs/symptoms of a patient presenting with an unknown ingestion exhibited dilated pupils, flushed face and dry mouth, these would be "entered" and the switch box would respond by activating lights next to "atropine".



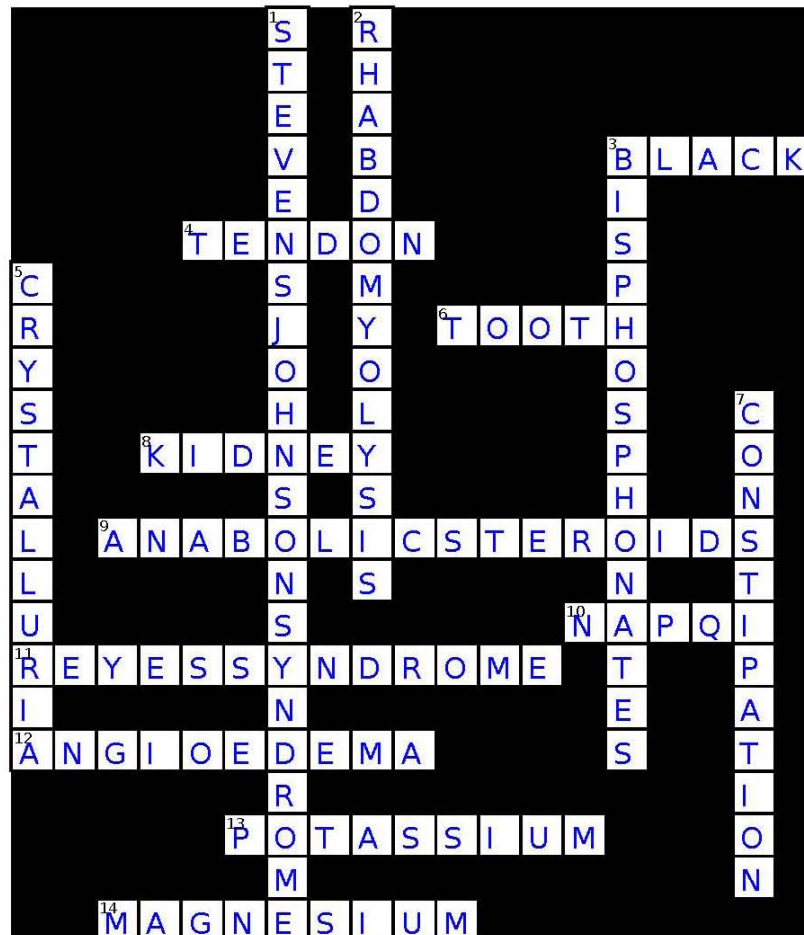
We welcome your Feedback!

Please send us your articles, announcements, ideas, research articles, and contributions. We cannot do this without you!

Editor: Barbara Kirrane, MD, FAACT
bmkirrane@gmail.com

Crossword Puzzle Answer Key

Drug Side Effects



- Across
- 3 Stools become this color after ingestion of bismuth subsalicylate
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 - 6 Tetracyclines can cause _____ discoloration
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 - 13 Albuterol can lower serum _____ levels
 - 14 Smooth muscle relaxation, can be used in Torsades and asthma

- Down
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