A New York Minute

CASA Newsletter

NY Conference
Central Atlantic States Association of Food and Drug Officials

Issue 2, Volume 06
June, 2006

President's Message

I would like to thank the members of our conference who were present at the quarterly meeting on March 13, 2006 and took part in the ratification of the NY Conference's first Constitution and By-Laws. This was a historic moment for our conference and will help ensure our continued existence as a viable organization of public health professionals.

2006 is a landmark year for our fellow members from the FDA. This year the FDA celebrates its centennial, 100 years of protecting the health of Americans. It was 1906 when congress passed the Food and Drug Act, the first federal law to regulate food and drugs in interstate commerce. Since then the FDA's regulatory role has expanded to include ensuring that human and animal medications, blood products, tissues for transplantation, and medical devices are safe and effective; that food and dietary supplements are safe and truthfully labeled; and that animal feed, cosmetics, and radiation emitting equipment do no harm.

I was honored to represent our conference at the Centennial Celebration that took place at the NY Hall of Science on April 6th. The FDA put on an informative and entertaining program that showcased each of the major areas with which the FDA is involved. I was especially happy to hear CASA mentioned during the presentation. One of the guest speakers talked about the importance of CASA and the benefits it has on regulators and industry.

In consideration of these positive benefits, CASA must continue to grow as an organization. In the process, we will strengthen the relationships we have developed with our colleagues and familiarize each other with the jobs and expertise we each possess. By accomplishing these things, we will improve the efficiency of our individual programs and increase the job satisfaction of each of our members.

Christopher Sortino
President
NY Conference CASA

Dr. Scott Campbell discusses Bed Bugs.


Dr. Lewis Nelson discusses chemical agents of opportunity for terrorism.

Steve Natrass discusses HACCP procedures.

Little Green Molecules

Chemists have invented a new class of catalysts that can destroy some of the worst pollutants before they get into the environment

by Terrence Collins and Chip Walter (Scientific American, March 2006)

A fundamental cause of our escalating environmental plight is that people perform chemistry in different ways than Mother Nature does. For eons, biochemical processes have evolved by drawing primarily on elements that are abundant and close at hand-such as carbon, hydrogen, oxygen, nitrogen, sulfur, calcium and iron. Our industries, in contrast, gather elements from nearly every corner of the planet and distribute them in ways natural processes never could.

Starting from our factories, farms and sewers, persistent pollutants can journey intact by air, water and up the food chain, often right back to us. To confront this challenge, green chemists are investigating the feasibility of replacing some of the most toxic products and manufacturing processes with more environmentally-friendly alternatives.

The work of Terrence Collins' team from Carnegie Mellon originates back in the 1980's when public health concerns about chlorine were intensifying. Chlorine was then, and still is, often used for large scale cleaning and disinfection in manufacturing as well as for the treatment of drinking water. Although chorine treatment is inexpensive and effective, it can create some dangerous pollutants. The bleaching of wood pulp in paper mills with elemental chlorine had been a major source of cancer-causing dioxins until the EPA banned the process in 2001. (the process now uses chlorine dioxide, which reduces the dioxins, but does not eliminate them).

Rather then relying on chlorine, the team wondered if they could put nature's own cleansing agents-hydrogen peroxide and oxygen-to work purifying the water and reducing industrial waste. These cleansers can safely and powerfully obliterate many pollutants, but in nature the process usually requires an enzyme-a biological catalyst that vastly increases the rate of reaction.

For decades, chemists have been struggling to build small synthetic molecules that could emulate the enzymes used in nature. Any chemistry involving oxygen can be destructive because the bonds it makes with other elements (especially hydrogen) are so strong. And because each molecule of hydrogen peroxide is halfway between water and molecular oxygen, this compound is also strongly oxidizing, which made it difficult to come up with a synthetic enzyme that that not destroyed by the hydrogen peroxide reaction.

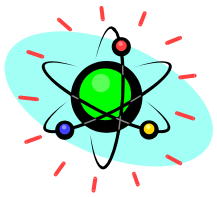
After 15 years of experimentation, Collins' team came up the the TAML (tetra-amido macrocyclic ligand) that was tough enough to endure the violent reactions that it assists in triggering. Since then, they have created more than 20 different TAML activators by reapplying the same design process. Each TAML has its own reaction rate and lifetime, allowing them to tailor the catalysts to match the task that they are to perform. Most of the catalysts incorporate elements such as carbon, hydrogen, oxygen, nitrogen and iron, all chosen for their low toxicity. Some of the molecules are called "hunter TAMLs" because they are designed to seek out and lock onto specific pollutants and pathogens, in much the same way that a magnetized mine seeks out the metal hull of a ship. Other TAMLs act as blowtorches that aggressively burn most of the oxidizable chemicals with which they come into contact. Still others are less aggressive and more selective so that they will, for example, attack only certain parts of molecules. Although more toxicity testing must be done, the results so far indicate that TAMLs breakdown pollutants to their nontoxic constituents, leaving no detectable contamination behind.

Of course, building TAMLs in the laboratory is one thing, scaling them up for commercial use is another. So far, the lab tests and field trials have been promising. Tests funded by the NSF demonstrated that Fe-TAML plus peroxidases could deactivate 99.99 percent of the spores of *Bacillus atrophaeus,* a bacterial species very similar to anthrax, in 15 minutes.

In other trials, TAMLs were used to alleviate the pollution created when paper is manufactured. Every year, the paper industry produces more than 100 million tons of bleached pulp, which is turned into white paper. Besides generating dioxins, chlorophenols and other hazardous organochlorides, many pulp mills discharge a coffee colored effluent that stains rivers and streams and blocks light from penetrating the water, interfering with photosynthesis in aquatic plants. The sources of the staining are large colored fragments of lignin that are to large to be destroyed by the bacteria in the treatment pools. Fe-TAMLs were tested for effectiveness in decolorizing these fragments at two US pulp mills. Overall, the Fe-TAMLs reduced the staining of the water by 78 percent, and eliminated 29 percent of the organochlorides.

Other TAMLs may be useful in laundry applications; a small amount added to your household wash may eliminate the need for separating white and colored clothing. They prevent staining by attacking dyes after they detach from one fabric, but before they can attach to another. The newest TAML being worked on by the team can break the stable molecular bonds that allow drugs and agricultural chemicals to pass intact into drinking water.

Despite the success of these trials, all of the questions about the TAML activators have not yet been resolved. More testing on the industrial scale remains to be done, and it is important to ensure that TAMLs do not create some form of pollution not yet observed. Too often chemical technologies have seemed completely benign when first commercialized, and the devastating negative consequences did not become clear until decades later.



Quarterly Meeting

Our second quarterly meeting of the 2006 calendar year will be held on June 7th, at the FDA building located at 158 Liberty Ave in Jamaica. Proper ID is required to gain entrance to the building. Pre-registration is requested, so that we may give your name to the security guard at the front gate.

Please join us beginning at 9am for registration and continental breakfast

9:30-11:00	ICS Dr. Kristine Qureshi Assistant Professor Adelphi University School of Nursing
11:00-11:15	Coffee Break
11:45-12:30	Food Allergies and Anaphylaxis Terence Furlong Chief Operating Officer Food Allergy & Anaphylaxis Network
12:30-1:30	Lunch Hot Buffet Lunch will be provided
1:30-2:30	Sous-Vide Stanislas Vilgrain Chief Operating Officer Cuisine Solutions
2:30-2:45	Election and Member Information Session
2:45-3:15	ICS Table-Top Exercise
3:15-4:00	CASA Business Meeting

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Registration Form
2006 June Meeting

Name _____

Agency/Firm _____

E-mail Address _____

Phone Number _____

Meeting Registration: $20 (member)

$30 (non-member)

CASA Membership:

Regulatory Agency- $15

Academic & Retired Regulatory Member- $10

Associate Member- $35

Please make checks payable to NY Conference CASA
Fax Registration form to Alice Peltz (631) 852-5871
Or, mail registration form to:
Alice J. Peltz
Suffolk County Department of Health
360 Yaphank Ave, Suite 2A
Yaphank, New York 11980

Directions to FDA facility :

The FDA building is easily accessible from the Van Wyck Expressway (678) from either north or south. Exit at Liberty Ave. and proceed east for approximately 1 mile. The building will be located on the north side of Liberty Ave. just beyond the Long Island Railroad trestle. Enter through the main gate, identify yourself and announce that you are attending the NY CASA meeting. You will be directed where to park. Enter through the main entrance and proceed to the main floor conference room.