

ANACHEM / ACS Meeting and Tour: National Sanitation Foundation Headquarters

Place: NSF International
789 Dixboro Road
Ann Arbor, Michigan (see page 15 for map and directions)

Date: Thursday, September 21, 2006

Time: 6:00 PM

Southeast Michigan is the home of NSF International, an independent, not-for-profit organization that helps protect the public by certifying products and writing standards. NSF is best known for the development of standards, product testing and certification services in the areas of public health, safety and protection of the environment. Two members of the School of Public Health, The University of Michigan, Ann Arbor, Michigan and a Toledo public health official founded NSF International, formerly known as The National Sanitation Foundation (NSF), in 1944. In 1952 the NSF Testing Laboratory was officially chartered. Today, NSF International is widely recognized for its scientific and technical expertise in the health and environmental sciences.

NSF has a unique area of expertise. Its technical professionals include engineers, chemists, toxicologists, and environmental health professionals with broad experience both in the public and private sectors. While focusing on food, water, and the environment, NSF develops national standards, provides learning opportunities through its Center for Public Health Education, and provides third-party conformity assessment services.

Dr. Kurtis Kneen has made arrangements for us to learn more about the work of NSF International by meeting at the world headquarters in Ann Arbor, MI, and by touring some of the laboratory facilities. We invite you to join us for an interesting evening. Tentative plans include dinner afterward at Ann Arbor restaurant.

Reservations: Please make your reservation for this event by calling Ed Havlena at 313-393-3685. Leave your name and number. Alternatively, email to Havlena@detroitsection-ac.s.org. Please indicate if you are interested in joining us for dinner after the meeting.



An Update from the Detroit ACS Kids & Chemistry Program

Since our last report we have had two very successful programs and some good news to share.

Rouge Water Festival - On May 4, Kids & Chemistry participated in the annual Rouge Water Festival held at the University of Michigan-Dearborn. Sixteen volunteers help put on a great program which was organized by Felix Schneider. We did a hands-on experiment on acid-rain with classes of 5th-graders. Altogether 8 classes with more than 200 kids participated – with lots of positive responses from kids and teachers. Our thanks to: Felix Schneider (US FDA-ret'd), Angela Allen (UofM-D), Irina Pala (UofM-D), Don Ray (Ford/Visteon-ret'd), Walt Meiers (DTE-ret'd), Zora Djuric (UofM medical school), Walter Siegl (Ford-ret'd), Lisa Marcolina (BASF-Wyandotte), Christine Utter (GE Plastics), Mary Kay Heidtke (Magni Ind.), Gina Ludwig (Henkel), Pete Warner (WSU), Vauhini Telikapalli (Dow Chemical), Kelly Dager (Amcor PET Packaging), Joan Liebeck (Amcor PET Packaging), and Emily Backos (GE Infrastructure).

Detroit (Comerica) TasteFest – On July 1st we made our 8th annual appearance at the Comerica TasteFest. We had great weather and one of the best turn outs of kids that we've ever had. We had a steady stream of kids engaged in our hands-on experiments for the entire six hours. A rough estimate puts the number of kids at 330 for each of the three experiments that we ran, for a total of about 1,000 experiments. As always, we get a great deal of enthusiasm from the kids, as well as the parents and grandparents. Walter Siegl, Mary Kay Heidtke and Denise Grimsley did the organizing. Our thanks go to all of our volunteers: Mary Kay Heidtke (Magni Ind.), Felix Schneider (USFDA, ret), Walter Siegl (Ford, ret.), Denise Grimsley (BASF Wyandotte), Kesho Leach (Henkel), Walt Meiers (DTE, ret), Mark Benvenuto (U of D-M), Angela Allen (U of M-D), Bridgette Allen, Emil Lozanov (WSU), John Heidtke, Jeanne Heidtke, Tom Ott (Oakland CC), Ron Schroeder (WSU), Christine Utter (GE Plastics), Meghann Mouyianis (U of D-M), Matt Mio (UofD-M), and Jim Landis (Henkel).

National Recognition - Once again the Detroit Kids & Chemistry program has been recognized by the National ACS as one of the top three

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Kids & Chemistry Programs in the country. Our thanks go to all of last years organizers and volunteers who made this recognition possible.

Coming Up - Our first program in the fall will be on Thursday, September 14 at Cranbrook Science Institute. This is another Rouge Water Festival – this one targeting students from Oakland county. The format will be similar to that of the May program. Our organizer for the event will be Christine Utter. A call for volunteers will be going out to all of those on the Kids & Chemistry e-mail list (or you can just e-mail Christine at christine@utterlyunique.com). There will also be two programs in October, both on a weekend. There will be a repeat of last year's highly successful program with the girl scouts and also our annual National Chemistry Week program at Cranbrook. If you are interested in joining us for any of these programs or if you would just like to be added to our e-mail list for notification of future happenings, send your name and e-mail address to Walter Siegl at wsiegl@sbcglobal.net. We are always looking for new participants.

2006 National Chemistry Week Celebration



National Chemistry Week runs from October 22 through October 28. The theme for this year's National Chemistry Week is "Your Home – It's All Built on Chemistry." Our Detroit section will be setting up a program at Cranbrook Science Museum on Sunday, October 22 from noon to 4:00 PM. The student affiliate group from University of Detroit-Mercy will be putting on chemistry demon-

strations in the museum auditorium. We will also have several hands-on experiments to show children how chemistry is involved in building homes, home safety, and conservation. Parents will also learn the benefits that chemistry has brought to their homes. This program is a great way to educate the public and have a fun time, too.

Every year we recruit chemists and chemistry students from the Detroit area to volunteer their time. If you are interested in participating, please contact Denise Grimsley by phone at (734) 324-6539 or E-mail at:

denise.grimsley@basf.com.

From the Recognition Chair...

I have always enjoyed the May CIC meeting; getting together with colleagues from the Windsor CIC and the Detroit Local Section. A spring evening on the Detroit River offers a beautiful backdrop to this enjoyable banquet. This year the program was held at the Beach Grove Golf and Country Club, located outside of Windsor, Ontario. The events of the evening included dinner, awards banquet, and the featured speaker.

The featured speaker for this year was Dr. Heinz Plaumann from BASF Corporation. His presentation titled, "DESIGNING A BETTER BOWLING BALL - FUN WITH STRUCTURE-PROPERTY RELATIONSHIPS", gave us an inside look into the elements that effect bowling ball design and performance. Dr. Plaumann described the tendency for different materials to absorb the oil used to lubricate the lane as well as other surface effects such as polishing and surface wear. All of these factors may lead to a better bowling score. Unfortunately, he claimed at the end of the discussion that there were no guarantees that my score would improve! I guess, in my case anyway, that a little talent wouldn't hurt.

In the May edition of *The Chemist*, the following awardees were mentioned for their achievements. However, I would like to take this opportunity to let you know why these individuals were honored at the meeting.

Distinguished Service Award:

Mary Kay Heidtke, Magni Industries, Inc.

Mary Kay Heidtke has been a member of the Detroit Local Section American Chemical Society since 1998. Since 1999 she has served as a Co-Chair for the Kids & Chemistry Outreach Program. In this capacity she has helped to organize both large and small events in the Metropolitan Detroit Area. In 2006 Mary Kay was Treasurer of the Detroit Section. With ACS she has also been an Alternate Councilor and heads the Recognition Committee. Mary Kay received her Bachelor of Science in Chemical En-

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gineering from Michigan Technological University in 1993. She is currently employed as an Environmental, Health, and Safety Engineer for Magni Industries in Detroit. She is also a member of Anachem.

Salutes to Excellence Award:

Steve Chambreau, Chemists Without Borders

Steve Chambreau is currently a Research Scientist in the Propellants Branch at the Air Force Research Laboratory at Edwards Air Force Base. He grew up in California, attended school at UC Berkeley (BS 1993), San Diego State University (MS 1997), and UC Riverside (PhD 2002). He spent 2 years working as an NRC Associate at the Air Force Research Laboratory at Hanscom AFB near Boston, and 2 years as a postdoc with Professor Arthur Suits at Wayne State University. Besides his interest in Chemists Without Borders, he studies chemical reaction dynamics, is a consultant for hydrogen technologies, and is a tutor for high school chemistry students. His other interests include playing harmonica, karate, and brewing beer.

Salutes to Excellence Award:

Angela Allen, University of Michigan – Dearborn

Dr. Allen is a faculty member at The University of Michigan – Dearborn. She is a Lecturer in Chemistry in the Department of Natural Sciences at UoM-D. In this capacity, she is a role model for undergraduate students, helping seniors to prepare for life in the “real world”.

She dedicates a majority of her personal time assisting students of all ages including, but not limited to being a key volunteer in several Kids and Chemistry programs. Her energy and enthusiasm for teaching these young students chemistry fills the room with a tangible excitement. The children respond to her positive outlook on the subject and really want to learn.

Dr. Allen is also involved with Detroit Area Pre-College Engineering Program (DAPCEP).

Portrait of a volunteer – Angela Allen

With this issue of the Detroit Chemist, we continue a feature begun several



years ago. As space and contributions allow, we will occasionally run portraits of some of the Section's many volunteers. In each of the last several years, the Detroit Section has been a finalist for the Outstanding Local Section Award – largely on strength the Section's many public outreach programs.

We thought that you, our readers, might enjoy meeting the volunteers who drive these programs; perhaps you in turn might be inspired to come and join the us (if you haven't already done so). In May of 2006, the Executive Committee of the Detroit Section ACS voted to honor Angela Allen with an ACS Salutes to Excellence Award for her volunteer efforts, please allow us to introduce you to Angela.

Since the early days of Kids & Chemistry, Angela has been one of its strongest supporters. You will usually find her at the Rouge Water Festival in May where she frequently assumes the responsibility of a main presenter and most years you will also find Angela at the TasteFest where she has been known to enlist the help of her two teen-age daughters. In addition to her Kids & Chemistry activities, Angela loves to take every opportunity to expose young minds to chemistry; she will routinely visit local schools to do workshops with students and work with community extended education programs to teach general science to elementary-age students.

In her professional life, Angela teaches organic chemistry as a lecturer IV in the Natural Sciences Department at the University of Michigan-Dearborn, where she has been since 1995. Her teaching is focused on organic lecture and lab. She reports that her teaching is modeled after two influential instructors: Mrs. Viele (AP chemistry teacher in high school) and the late Dr. Normal Lebel (at Wayne State). She also advises students who are in the chemistry education track and is the faculty advisor for the Students National Medical Association. She received her BS degree from North Carolina State University and a MS degree from Wayne State University.

In her other life she is the mother of two teenage daughters and loves being their number-one cheerleader at basketball games, track tournaments, and orchestra concerts. She is also very active as a leader in her church as a deacon, catechism teacher, and 1st communion teacher as well as the worship coordinator. Angela is a native of Greensboro, NC and lives in Harrison TWP.

The Detroit ACS is proud to have Angela as one of its volunteers

Professional Development Conference: Tailored For You

Our Detroit Local Section is teaming up with the Toledo Local Section to hold a Professional Development Conference on Saturday, March 31, 2007 at the University of Detroit Mercy. This conference is aimed at all ACS members in the various stages of their careers. As we are building it from the ground up, we would like to have member feedback regarding programming. What topics would be helpful to you during this Saturday conference (ones listed here or alternative ideas)?

Possible ideas for Student/YCC/ Early-Career Chemist programs include:

- Panel discussion on pursuing positions in academia, government or industry
- Resume Preparation
- YCC (Younger Chemists Committee) Mentoring Discussion/ Overview
- Panel discussion on large companies vs small companies

Possible ideas for Mid-Career/Advanced Career/Silver Circle Chemist programs include:

- Changing Economy
- Career Transitions
- WCC (Women Chemist Committee)
- Industrial Relations
- Minority Affairs
- Interested in being a Mentor? Please contact Megan Klein (e-mail below).

Possible ideas for Career Seeker programs include:

- Resume Preparation
- Interview Techniques (including Targeted Interviewing Technique?)
- Coping with job loss
- Representatives to talk about what they are looking for in a candidate
- One on One mock interviews
- One on One resume reviews

A great deal of interest was expressed for our March workshop held in Livonia on Job Fit and Career Planning. Carole DePetro may be available for a second session—she especially enjoyed our fun, interactive group earlier this year! Is there continued interest in a career program similar to this one?

In addition, if you are interested in volunteering or sharing your expertise with other chemists during this conference, please contact Megan (e-mail below). Your experience is a valuable resource to our members.

Please feel free to e-mail Megan at KleinMegan@comcast.net to voice your ideas on presentations/workshops/sessions for our upcoming Professional Development Conference.

Volunteers Needed for Chemistry Day

What: Chemistry Day at Belle Isle!
When: Saturday, November 18, 2006
Where: Belle Isle "Casino" Detroit, Michigan
Time: 8:00 AM – 1:00 PM

The Detroit Section of the American Chemical Society's Minority Affairs Committee is partnering with the Girl Scouts of Metro Detroit for Chemistry Day at Belle Isle. The Girl Scouts will be participating in a community service activity while learning about the fun of chemistry. They will learn about chemistry by doing hands-on experiments and participating in a career game contest with prizes. Through these activities, the scouts will each earn a National Chemistry Week patch. Registration will be handled directly with the Girl Scouts of Metro Detroit (contact Caroline Feathers at 800-326-0309 Ext. 258). This will be a large program both in terms of Girl Scouts (200 expected) and in terms of volunteers participating (25+).

The chemistry aspect of the day includes hands-on experiments. We will have 5 experiments set up on tables in the Casino. They will include polymer cross-linking (making Gloop), Slime!, and hair gel experiment. Our audience will consist of the Junior Girl Scouts of Metro Detroit.

Megan Klein, Denise Grimsley, and Mary Kay Heidtke will take responsibility for preparing the supplies and setting up the experiments. The community service project will be coordinated by Liz Roberts-Kirchhoff. The career game contest will be developed and organized by Yolanda Watts and Meghann Mouyianis. Charlene Hayden will serve as the overall coordinator for the event. We will need ~20 - 25 additional volunteers to participate in demonstrating the experiments and overseeing the community service project. Our participation is scheduled for Saturday, November 18 from 8:00 AM to 1:00 PM. We would especially welcome women and minority chemists who could help serve as role models for the girls. Your help will be greatly appreciated!

If you are interested in joining some of your fellow chemical professionals in a fun morning of community service, please contact Mary Kay Heidtke at mkheidtke@aol.com or 313-843-7855. A continental breakfast and lunch (pizza) will be provided.

Detroit Chemical Company in the News

Recently, Ash Stevens, a Detroit Chemical company was featured in Chemical and Engineering News:

“Beat The Clock: Millennium and Ash Stevens worked together in a race to get a cancer drug to market one year early

When a company's lead drug candidate sails through the regulatory approval process in record time, the focus tends to be on how many more patients will be helped or how much money the drug will make. Little attention is paid to the elbow grease that went into getting the product on pharmacy shelves early.

Partner Power ASI was able to get a robust manufacturing process in place at its Detroit plant in time for the launch of Velcade. That kind of behind-the-scenes dash can be a burden, albeit a happy one. In 2002, Millennium Pharmaceuticals discovered that its cancer drug Velcade was so effective in Phase II trials that regulatory authorities were willing to let the drug onto the market before Phase III trials were completed—a year ahead of the company's launch projections.

The new deadline meant Millennium had to reset its timelines for preparing a regulatory filing and a market launch. With the clock ticking, Millennium turned to Detroit-based contract manufacturer Ash Stevens Inc. (ASI) to help get the manufacturing piece of the puzzle in order. According to Mark Rolfe, Millennium's vice president of oncology discovery, Velcade was invented by MyoGenics, a start-up firm founded by a handful of scientists from Harvard University who set out to explore the potential of boronic acid dipeptides as proteasome inhibitors. The drug represented an entirely new way to combat cancer, attacking from several angles: inducing cell death, inhibiting the cell cycle, and overcoming cell-survival pathways.

ASI became involved with Velcade's active ingredient, bortezomib, at this early stage. It made the first small batches of the drug when ProScript, as MyoGenics eventually came to be called, was preparing for a Phase I clinical trial that was initiated in October 1998.

ProScript was acquired by Leukosite in July 1999, and despite encouraging results in that Phase I trial, the project lost momentum in the transition. Development eventually got back on track after Millennium acquired Leukosite in December 1999. ASI was brought along as the active-ingredient supplier.

"In life, you're often presented with 'me-too' choices; there is rarely the opportunity to do something truly unique."

The following year, Millennium initiated a Phase II trial in patients with multiple myeloma, a kind of blood cancer, with the original intention of enrolling

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about 70 patients. As that patient pool grew to 200, it became clear that the company had found a compelling drug, Rolfe says. In 2002, early data showed that Velcade had stabilized or reduced M-protein, the marker for cancer burden in myeloma, in 77% of patients in that trial.

With such a potent drug on its hands, and fast-track status granted by the Food & Drug Administration, the company swiftly moved to prepare for filing a New Drug Application (NDA). But that Phase II trial "was never designed as a registration trial," Rolfe says. The situation left Millennium scrambling to sort out how it would bring the drug to market almost a year ahead of schedule.

Pulling together the manufacturing component of its NDA was one of the bigger hurdles to meeting that accelerated timeline, says John Nystrom, vice president of pharmaceutical operations at Millennium. Until that stage, ASI had been manufacturing the drug on a fairly small scale. It would need to ramp up its process significantly to prepare for a commercial launch.

"Though we had the process developed almost two years before the drug was launched, there was still a tremendous amount of work to do," says Stephen A. Munk, ASI's president and chief executive officer.

Millennium charged ASI with improving the existing process and generating enough material to support the launch of Velcade. In the meantime, Millennium enlisted Boehringer Ingelheim to conduct parametric studies to help optimize and improve its understanding of the process.

"Ash Stevens was able to deliver a better process, even under this accelerated program, and get Millennium enough material to gather all the necessary data," Nystrom says. FDA accepted Millennium's NDA for Velcade in March 2003. The drug was approved in May and launched just six days after its approval.

That success was in no small part due to the nimbleness of a small company such as ASI, Munk maintains. In the end, ASI was able to cut the number of process steps in half, reduce the solvent volume by a factor of 100, and significantly reduce the cost of making the cytotoxic drug, he notes.

Another critical factor that enabled the team to come together and push the drug to market was a shared belief in its potential, Nystrom says. "It's tough in the biotech world because sometimes it's the marriage of the poor," he notes. Though profit margins are slender for fine chemicals companies such as ASI, they sometimes have to take a risk and sink money into a project years before it will come to market—and years before they see any returns.

The willingness to take that risk is an important quality in a contract manufacturing partner such as ASI, Nystrom says. "They had the same faith in the molecule that we did," he says.

That faith stems in part from Munk's diverse background. Before taking the

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reins at ASI, Munk spent six years as a medicinal chemist at Allergan, where he helped lead the $\alpha 2$ -adrenergic drug discovery team. He says the experience enabled him to "understand intimately what our clients have gone through to get a potent agent." Perhaps more important, that time spent developing drugs has shaped his willingness to take a gamble on a manufacturing project that other people would view as risky, as is often the case with a first-in-class product such as Velcade.

"As I read the literature, it seemed like a unique concept scientifically and something others weren't working on," Munk says. "In life, you're often presented with 'me-too' choices; there is rarely the opportunity to do something truly unique."

Taking those risks has paid off for both companies: U.S. sales of the drug totaled \$192 million in 2005. Millennium licensed the rights to Velcade outside of the U.S. to Johnson & Johnson and is now working with J&J to bring on an additional manufacturer to ensure future supply.

Millennium also continues to expand the market for Velcade, pursuing approval for additional patient populations with multiple myeloma, planning a Phase III trial to see whether combining Velcade with the monoclonal antibody Rituxan can treat non-Hodgkins lymphoma, and initiating earlier-phase trials in lung cancer and other types of tumors. Although the market for the drug is constantly expanding, Munk says the process that came out of that push to market in 2002 is sufficiently robust and economical to be "scalable to any batch size Millennium should want."

Taken from:

Lisa Jarvis, C&EN, April 10, 2006, Volume 84, Number 15, pp. 24-25

Successful Industrial Women's Networking Dinner

The Industrial Relations and Women Chemists Committees hosted an Industrial networking dinner on June 6th. Women working in the chemical industry in the Detroit metropolitan area attended the meeting. Companies represented were GM, BASF, Ash Stevens, Freudenberg-NOK Inc and Exatec LLC. It was an enriching experience for everyone. Participants from various educational backgrounds, different experiences and different cultural backgrounds, were comfortable discussing issues relating to career balance, dual career couples, dealing with the tough Michigan climate and finding alternatives, focusing on their individual

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strengths. Women, who have been in the industry for a longer time, shared personal stories on how they managed their careers, while still finding time for family and personal time. Setting goals and clarity of goals was another topic that caught the interest of the group. Women need to know what they want out of their career. They also need to decide reasonably early on what kind of things are important to them from a career perspective and then pursue them. Another topic of discussion centered on Mentoring; to look for a mentor who can support your goals. Flexibility - being willing to move jobs to work for different people was considered hugely important and discussion was about encouraging young professionals in industry to get a bunch of different supervisors. Women also need to be willing to "own" their careers. "The company can help one make career moves, but one has to think about and explore what you want." Overall, all the participants enjoyed the meeting and looked forward to the next meeting.

Welcome to New Section Members

The following people have recently joined the Detroit Section. Please welcome them to the Section:

Rose M Ackermann

Tristan Chidley

Paritala Hanumantharao

Anne E Labut

E Maeva

Sherry Pulcher

Chamila N Rupasinghe

Nicole Webb

Yezi You

Richard L Barger

Dennis M Bloom

Ayan Chakraborty

Mary A Gilliam

Kishore K Kotta

Edmund Joseph Madaj

James Scott Mc Queen

Jinkui Niu

Kirk Olson

Ronald L Williams

NEW ON THE WEB SITE

There are several new categories on the Section web site linked to the Section intro page.

- Section Annual Reports

Copies of Parts 1 & 2 of the 2004 and 2005 annual report to the National in pdf format

- “WHAT I DON'T (DIDN'T) LIKE ABOUT CHEMISTRY” survey

The purpose of the survey is to try to find out what chemistry topics give students the most trouble or what parts they find the hardest. Although meant for students who have taken or are now taking a beginning chemistry courses, the opinions of teachers, or other interested persons are welcome. The data produced should be helpful in guiding future program decisions. It will take 5 minutes to fill out.

- A Download Section

Currently available is a pdf file that will allow users to produce flash cards with names of elements on one side and atomic number and symbols on the other. Coming later this year (probably in late September or early October) are a word puzzle with names of elements, and a small computer program that quizzes on element names and symbols. In zip form to conserve space, they are free public domain programs, intended for personal use.

Check out the site at:

<http://www.detroitsection-acis.org>

Submitted by Ed Havlena, Webmaster

Calendar of Upcoming Events

- September 21, 2006 NSF, International Tour (See pages 1 and 15 for details)
- October, 2006 YCC/Anachem brewery tour event in October at the Royal Oak Brewery (See October Chemist for details)
- November 18, 2006 Chemistry Day at Belle Isle (See page 8 for details)
- November, 2006 Anachem symposium (See November Chemist for details)
- March 2007 Professional Development Conference: (See page 7 for details)

Detroit ACS Section and ANACHEM on the Web

A Website for the Detroit ACS Section and ANACHEM, maintained by Ed Havlena can be found at: <http://www.detroitsection-acs.org>

The Detroit Chemist is now also available via email in text-only form. The email version is distributed at the same the issue goes to press (much sooner than the printed and bulk mailed edition). To subscribe send an email to: majordomo@angus.mystery.com with

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end

in the body of the message.

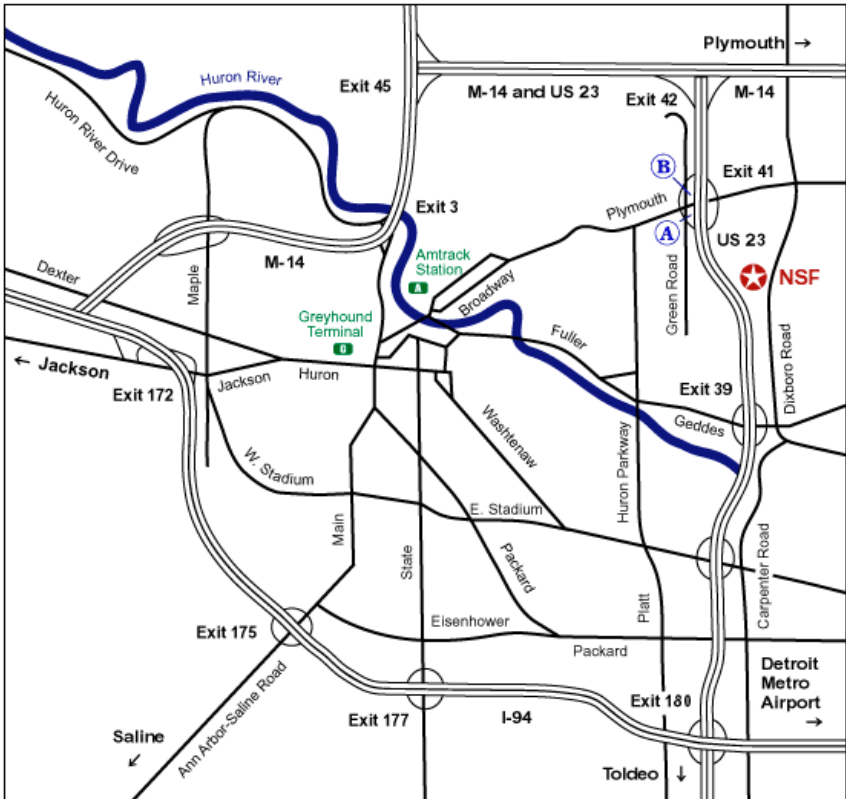


NSF International

SITE LOCATION MAP AND DIRECTIONS

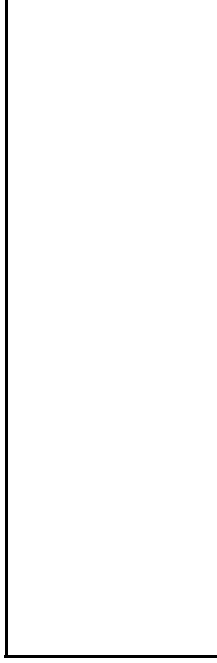
Directions from Detroit Metropolitan Airport to NSF International World Headquarters, 789 N. Dixboro Rd., Ann Arbor, MI 48105, 734.769.8010:

- * Depart Detroit Metro to I-94
- * When exiting airport, stay in the second lane from right until you go under viaduct. Then move to right lane.
- * Follow signs to Chicago west on I-94 to US 23 (Exit 180B)
- * US 23 North to Geddes Road (Exit 39)
- * Right turn on Geddes (1st stop light top of ramp)
- * Left on Dixboro Rd. (1st cross road, 2nd light about 500 yards)
- * Approximately 1/2 mile on left side - NSF building up on hill (2 story brick)
- * Visitor parking first row, closest to front door



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Here's your copy of the September Detroit Chemist