



## MAY MEETING NOTICE

**Where:** *Calgon Carbon Corporation*

2954 Neville Road  
Pittsburgh, PA 15225

**When:** *Wednesday, May 19<sup>th</sup>, 2004*

**Time:** 5:45pm Registration and Networking  
6:00pm Tour Begins  
7:45pm Drive to Restaurant  
8:00pm Dinner at Foggy Bottom Restaurant

**Menu:** Please select one of the entrees below. All meals include soup, salad, and beverage.

***Flat Iron Steak:*** Our 10-oz. steak prepared to your liking. Served with roasted red potatoes and fresh vegetables.

***Pistachio Salmon:*** Atlantic salmon filet encrusted with toasted pistachios and drizzled with a homemade citrus sauce. Served with truffle mashed potatoes and asparagus.

***Shrimp Arrabiata:*** Sauteed shrimp with a spicy fresh tomato garlic sauce, served over angel hair pasta.

***Chicken Bowtie:*** Marinated grilled chicken breast, served atop bowtie pasta, tossed in a sun-dried tomato basil brandy sauce and sprinkled with parmesan cheese.

**Cost:** \$25.00 Members  
\$20.00 Students / Unemployed Members  
\$30.00 Non-members

**RSVP NO LATER THAN MONDAY MAY 17<sup>TH</sup>, 2004**

TO: Dr. Jim Schneider, Vice-Chair  
Phone: 412-268-4394  
E-mail: [schneider@cmu.edu](mailto:schneider@cmu.edu)

Your RSVP must include: **Name, Company Name, Menu Choice, Email Address, and Phone Number.**

**PLEASE PAY AT DOOR**

**CANCELLATIONS:** If you must cancel your meeting reservation, please do so no later than 24 hours prior to the meeting. Otherwise, you will be invoiced for the cost of your meal.

**~ About the Site Tour ~**

Calgon Carbon Corporation, and its European operation Chemviron Carbon, is a global manufacturer and supplier of granular activated carbon, innovative treatment systems, value-added technologies and services for optimizing production processes and safely purifying the environment.

Calgon Carbon is the world's largest manufacturer of granular activated carbon with production and operations in North America, Europe, and Asia. The company has approximately 1,250 employees, 18 operational facilities, and 22 sales and service centers around the world. Calgon Carbon's Business Units are:

- **Activated Carbon:** Production and sale of various granular, powdered and extruded carbons
- **Engineered Systems:** Specialized system designs utilizing carbon adsorption, ultraviolet light and advanced ion exchange
- **Service Options:** Carbon Reactivation, leasing of mobile adsorption equipment and other related services
- **Consumer Products:** Carbon cloth sales, lump charcoal and briquettes and new consumer products

The company recently acquired the operating assets of Barnebey-Sutcliffe Corporation, to further strengthen its Activated Carbon and Service Options business units.

Our presentation will begin with a technical overview of the company by Neal Megonnell, Director of Sales, followed by a tour of Engineered Systems building led by Joseph McMahon, Plant Manager.

The tour will include a review of state of the art liquid-phase separations equipment and UV disinfection technology. We will conclude with a presentation on our Consumer Products by Eric Makar, Consumer Business Manager.

*CONTINUED ON PAGE 2*

**LETTER FROM THE CHAIR**

Dear Members,

At last the warm weather is upon us! I would like to take this opportunity to wish our members and their families a safe and memorable summer.

In addition to bringing May flowers, this month also brings us to the last meeting of the Program Year. I have truly enjoyed serving as your 2003-2004 Chair, and I look forward to continuing to see you at section meetings and events. I would like to thank all of our officers for their hard work this year. I really appreciate their efforts!

I would also like to thank Mr. Steven Frank for his presentation at our March Meeting on the new DOT Hazardous Materials Security Requirements. His talk was both timely and informative.

In the next few weeks, we will be electing a new Vice-Chair, and a new Counselor. I encourage you to contact myself or JoAnn Truchan if you are interested in volunteering.

In the next couple of months, Jim Schneider will take over as section chair, and I hope you will join me in wishing him well in his new position.

Finally, I'd like to invite you to come out for our last meeting of the year – a plant tour at Calgon Carbon, followed by dinner and conversation with other local chemical engineers.

Our section meetings are a great opportunity to grow professionally and interact socially. I look forward to seeing you on the 19th and I encourage everyone to come for an evening of stimulating conversation and good food!

Sincerely,

*Nathan Peters*

AICHE Pittsburgh Section- Chair

**HAVE A GREAT SUMMER!**

**WE'LL SEE YOU AGAIN IN SEPTEMBER!**

**MONTHLY MEETING – CONTINUED*****DRIVING DIRECTIONS TO THE MEETING LOCATION:******Calgon Carbon Corporation***

2954 Neville Road  
Pittsburgh, PA 15225

Directions To Calgon Carbon Engineered Systems Building:

Take I-79 to Exit 65. Proceed east on Grand Avenue and stay in the right lane.

As you pass Silver Fox Limousine on your left, follow the right lane as it gradually turns right. Neville Road begins at this point.

Proceed 1.4 miles on Neville Road to the brown Calgon Carbon building at 2954 Neville Rd. Turn right into the parking lot behind the building and report to the trailer in rear of building.

***DIRECTIONS TO THE RESTAURANT  
(FROM NEVILLE ISLAND):******Foggy Bottom Restaurant***

550 Cherrington Parkway  
Coraopolis PA 15108  
(412) 269-9070 x61

Foggy Bottom Restaurant is near the US Air Force Base at Pittsburgh International Airport, and is 6 miles from the Calgon Carbon plant on Neville Island.

Start out going southeast on Grand Ave toward the Yellow Belt. Stay straight to go onto PA-51 N/4th Ave. Turn Left onto Thorn Run Road.

Thorn Run Rd. becomes Cherrington Parkway. Foggy Bottom Restaurant is at 550 Cherrington Parkway in Coraopolis.

**VOTE FOR YOUR 2004-2005  
SECTION OFFICERS**

**Keep an eye out for your 2004-2005 Pittsburgh Section Officers Ballot!** The ballots will be coming out via e-mail at the end of May. If you receive the Catalyst via hardcopy, please contact JoAnn Truchan at (412) 578-7981 to obtain a ballot.



## MEMBERSHIP CORNER

Dear Members,

We are constantly updating our local membership database. Please send all change of address notifications to our Membership Chair:

**Holly Gray**  
**Michael Baker Jr., Inc.**  
**Airside Business Park**  
**100 Airside Drive**  
**Moon Township, PA 15108**

**[hgray@mbakercorp.com](mailto:hgray@mbakercorp.com)**

If you have not already done so, please verify your updated e-mail address with us so that you will continue to receive monthly newsletters!

Thank you!

### Please sign me up for the local Pittsburgh Section of AIChE

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Business Phone \_\_\_\_\_

Residence Phone \_\_\_\_\_

Email \_\_\_\_\_

Annual Dues are \$16.00. Make check payable to "AIChE Pittsburgh Section" and send to our Treasurer:

**Leigh Anne M. Wacker,**  
**AIChE Treasurer**  
**705 Chrysler Street**  
**Pittsburgh, PA 15226**

## AICHE PITTSBURGH SECTION SCHOLARSHIP WINNER!

***Congratulations to Mr. Steven H. Back, a junior from Carnegie Mellon University, who was awarded a \$750 scholarship from our section for the 2004-2005 academic year.***

## SPONSORSHIPS

*Interested in placing your company's information in future AIChE Newsletters?*

Full Page	\$300
Half Page	\$175
Quarter Page	\$95
Business Card Size	\$45
1/12 Page	\$30

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*Three consecutive ads – 10% off*  
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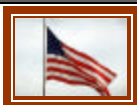
Please contact Mariangela Peters at  
[mariangela.peters@bayerpolymers.com](mailto:mariangela.peters@bayerpolymers.com)  
or 412-777-4195 for more information.

## 2004-2005 LOCAL SECTION EXECUTIVE BOARD NOMINATIONS

*There is still time to start thinking about joining the Pittsburgh AIChE Executive Board. The Section cannot run smoothly by itself. It's the commitment of volunteers like you that keeps the Section running.*

*Becoming an officer is a great way to become more involved in AIChE and the Section.*

*If you think you might be interested, please contact Past-Chair JoAnn Truchan at 412-578-7981 or [jtruchan@achd.net](mailto:jtruchan@achd.net).*



## NATIONAL AIChE NEWS

### *PROCESS DEVELOPMENT SYMPOSIUM*

AIChE's 2004 Process Development Symposium, "Working Right on the Right Thing," June 20-23, Chicago, will explore the fundamental components of cost-effective and successful process development. Registration for this Gordon-style conference is limited to 125. One price includes sessions, room, food, and conference CD. For program and registration information, see <http://www.aiche.org/conferences/processdev/>.

### *BE PREPARED: EMERGENCY PLANNING*

Get real-world solutions for emergency planning at the 19th Annual International Conference, "Emergency Planning: Preparedness, Prevention, Response," June 29-July 1 in Orlando, Florida. Highlights include: keynote address from the Department of Homeland Security and sessions on scenario development, Layer of Protection Analysis (LOPA), incident response, and lessons learned. Call 1-800-242-4363 or visit <http://www.aiche.org/ccps/icw>.

### *IT MAKES CENTS: SAVE 25% ON AIChE FINANCIAL SERVICES*

Act now and save 25% on new financial benefits for members: Grogan Financial Advisory Services and 529 College Saving Plan. Design a financial roadmap that meets your personal goals or learn how to grow college funds. Visit: <http://www.efs529.com/aichefinancial>.

### *SPRING CD-ROM-FIRST EVER*

The 2004 Spring Meeting CD-ROM contains all submitted papers from the Spring topical conferences plus unassigned/non-topical sessions. Order by calling AIChE Customer Service at 1-800-242-2463. The post-conference price is \$99.

### *NATIONAL BIOTECHNOLOGY CONFERENCE*

Learn how biotechnology is transforming the pharmaceutical sciences at the American Association of Pharmaceutical Scientists (AAPS) National Biotechnology Conference, May 16-19, Boston, MA. AIChE members will receive a member discount. For more information, visit <http://bio.aiche.org/>

## ENGINEERING VELCRO

Velcro is the invention of a Swiss engineer, George de Mestral who came up with the idea while walking with his dog in the woods. de Mestral observed that his wool socks and his dog's fur were covered with burs. When he got home he examined the burs under a microscope and saw that their barbed, hook like seed pods meshed with the looped fibers in his clothes. Here, he thought, is an ideal fastener. His idea met with resistance and even laughter, but de Mestral, with help from a weaver and a loom-maker, perfected his "hook and loop fastener." He worked to make a synthetic material that duplicated the burs clinging to his wool socks.

By trial and error, de Mestral realized that nylon, when sewn under infrared light, formed tough hooks for the bur side of the fastener. The difficulty of attaching hundreds of tiny hooks to cloth tape held up de Mestral's work for eight years, and then mechanizing the production process of weaving 300 hooks and loops per square inch was another hurdle. Finally, by 1955 his "hook and loop fastener" was patented under the name Velcro, which he formed from two French words *velour* and *crochet* - velvet and hooks. The sheer number of places that Velcro now appears is astonishing.

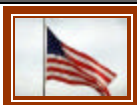
In medicine: The two pumping chambers of the Jarvik-7 artificial heart were fastened with Velcro, and how were blood pressure cuffs held together before Velcro?

The success of every Space Shuttle flight depends on it: Everything in the interior - food packets, tools, even astronauts at times - are held down by Velcro.

And, of course, it's held up David Letterman, the late night talk show host. He donned a pair of coveralls made of Velcro hooks, bounced from a trampoline into a wall covered with Velcro loops, where he stuck. Now that the Velcro company has covered everything from outer space to talk show hosts, what's next?

Maybe our stomachs. They've discussed edible Velcro: Think how useful this would be to keep closed a burrito...

Source: [www.engineerguy.com](http://www.engineerguy.com)

**"FIVE-A-DAY" FOOD CHEMISTRY**

As summer approaches, many of us look forward to the fresh foods of the season. Here's some food chemistry facts about some of your favorite fruits and veggies:

***What Big Muscles You Have***

Popeye was onto something in eating his spinach: This dark leafy vegetable has more iron per calorie than meat. Unfortunately, most of the iron in spinach is not usable because it is bound up by the oxalic acid also found in the spinach. To make the situation worse, spinach contains phytate, a compound that prevents iron from entering the bloodstream. But you can increase your iron intake by eating your spinach salad with citrus fruits because foods high in vitamin C enhance iron absorption.

If you are especially worried about getting enough iron, avoid tea and coffee with your meals. The calcium and tannins they contain interfere with iron absorption.

***Got the Blues?***

Eating blueberries may help you remember where you placed your car keys... really?

Jim Joseph, director of the neuroscience laboratory in the [Human Nutrition Research Center on Aging at Tufts University](#), fed blueberry extractions—the equivalent of a human eating one cup of blueberries a day—to mice and then ran them through a series of motor skills tests.

He found that the blueberry-fed mice performed better than their control group counterparts in motor behavioral learning and memory. When he examined their brains, he found a marked decrease in oxidative stress in two regions of the brain and better retention of signal-transmitting neurons compared with the control mice.

The chemical that appears responsible for this neuron protection, anthocyanins, also gives blueberries their color and might be the key component of the blueberry's antioxidant and anti-inflammatory properties. Blueberries, along with other colorful fruits and vegetables, test high in their ability to subdue oxygen free radicals. These oxygen radicals, which can damage cell membranes and DNA through a process known as oxidative stress, are blamed for many of the dysfunctions and diseases associated with aging.

These findings could become increasingly important as the U.S. population ages. Joseph is currently testing the effects of blueberries on humans.

***My, What Puffy Eyes You Have***

After a long night of studying, you wake with puffy, swollen eyes. You know you can't go out looking like that. You wander to your refrigerator looking for something to help. Ahhh. There it is, nature's remedy, the cucumber. Cucumbers have been used for years at spas to treat tired eyes. Cucumbers are more than 90% water and have astringent properties, which help constrict blood vessels. The cooling of the water, along with increased humidity, helps reduce the swelling in the skin.

***What's That Smell?***

As you find yourself drooling over the smell of fresh garlic bread, and you decide to grab a piece. It smells so wonderful. Even as you debate about it, you decide to take one small piece. No one will notice.

As you take that first bite, millions of little chemical reactions occur in your mouth, and the secret is out. What causes the smell? Garlic contains several sulfur compounds, including diallyl disulfide oxide, otherwise known as allicin. The bacteria that occur naturally in your mouth react with the oil in the garlic, causing the halitosis or "garlic breath" reaction. People who suffer from halitosis or gum disease already produce these bacteria, which can multiply when they come in contact with the oil in the food.

How do you deal with people who have garlic breath? You could move to Indiana, where you are prohibited to eat garlic within 4 hours of riding on public transport, or maybe just offer them a nice chew on some fresh parsley.

***Berry Good for You?***

Cranberry juice: it's long been associated with the prevention of urinary tract infections, and now it appears to have additional benefits.

Research by Professor Joe Vinson (University of Scranton) presented findings that drinking three glasses of cranberry juice day can significantly lower the risk of heart disease for individuals with high cholesterol. Although many researchers suspected the antioxidant-rich juice might help lower risk factors for heart disease, no human studies had established such a link until now.

"We know that cranberry juice has a lot of antioxidants. We basically did a dose-response [study] on people who had slightly high cholesterol levels. They had a risk of heart disease and we wanted to see if there was some





benefit or some harm to these subjects. Three glasses a day raised the good cholesterol by 10%. That decreased the risk of heart disease by 40%. We also had an antioxidant effect with one to two servings a day of cranberry juice. So at the lower dose you get an antioxidant effect and at higher dose you get a [good cholesterol] effect. At just one dose, cranberry juice gives you an antioxidant effect for seven hours."

Originally, his research group wanted to find out how much polyphenols we get in everything we consume—the per capita consumption. Polyphenols, like the flavonoids in cranberry juice, are the antioxidants suspected to play a role in the good cholesterol-raising effect. The level of polyphenols we ingest turns out to be very high. "We get a lot of polyphenols from fruits and vegetables," Vinson says, "but beverages, in fact, are a major source."

### *Pass the Grapes...*

In the past, a compound found in grapes and wine—resveratrol—was found to protect cells from the damage of cancer-causing agents in laboratory tests. A recent article in the *Journal of Agricultural and Food Chemistry* points to another compound found in grapes—pterostilbene—as a cancer-fighting agent. The authors of the study, researchers at the U.S. Department of Agriculture, chose to investigate pterostilbene because of its structural similarity to resveratrol.

Researchers treated mouse cells with a known cancer-causing agent. Some of these cells received pterostilbene, others did not. Those who received the grape-derived product showed less damage than those who had not received the protective treatment. They also performed a test that uses cucumber seedlings and found that pterostilbene and resveratrol have potent antioxidant characteristics.

Both pterostilbene and resveratrol are in a class of compounds called phytoalexins. Plants produce phytoalexins as an immune response to physical, chemical, or biological damage. The two compounds are also included in a larger chemical class: antioxidants. Antioxidants destroy free radicals. Free radicals cause cellular damage that has been linked to cancer.

Grapes contain more resveratrol than pterostilbene. Red grapes have more of both compounds than green grapes. Resveratrol is also found in wine, but pterostilbene is not. Resveratrol has also been found in other fruits such as cranberries and blueberries.

Previous studies have shown that pterostilbene can lower the plasma glucose levels in rats, indicating that it has

potential as a diabetes treatment. Not coincidentally, pterostilbene is also found in a plant used in Ayurvedic medicine to treat diabetes.

In addition to nutritional guidance, researchers study compounds in plants and bacteria to find drug "leads". Leads are compounds that have been shown to have a beneficial biological action. These leads may then be developed into therapeutic agents.

Source: [www.chemistry.org](http://www.chemistry.org)

## NEWSLETTER DEADLINE

THE DEADLINE FOR THE SEPTEMBER NEWSLETTER IS  
MONDAY, AUGUST 16, 2004.

Please submit information to:

**Mariangela Peters**  
**Bayer Polymers, LLC**  
**100 Bayer Road**  
**Pittsburgh, PA 15205**

Phone (412) 777-4195  
[mariangela.peters@bayerpolymers.com](mailto:mariangela.peters@bayerpolymers.com)



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**Marcella Manning**  
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724-775-5122

## 2003-2004 Monthly Meeting Schedule

Date	Topic	Location
January 14, 2004	Joint Meeting with AWMA	Penn Brewery
February 11, 2004	Annual Student Night	Univ of Pittsburgh - Oakland
March 17, 2004	Plant Tour	Seagate - Pittsburgh
April 21, 2004	Technical Presentation	D'Imperio's - Monroeville
May 19, 2004	Plant Tour / Last Meeting of the Year	Calgon Carbon - Neville Island

**Mark your calendars!**

For the Following Date:

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May 19, 2004

Monthly Meeting

Plant Tour – Calgon Carbon

We hope to see you this month, for the last meeting of the 2003 – 2004 Program Year.  
Have a great summer!

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***The Catalyst***

American Institute of Chemical Engineers  
337 Fourth Avenue  
Pittsburgh, PA 15222-2097



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