

The Chemical Bulletin

<http://chicagoacs.org>

November • 2017

CHICAGO SECTION AMERICAN CHEMICAL SOCIETY MONTHLY PROGRAM MEETING FRIDAY, NOVEMBER 17, 2017

MAIN LOCATION

College of DuPage
Health and Sciences Building
HSC-1234
425 Fawell Blvd.
Glen Ellyn, IL 60137

http://www.cod.edu/about/maps_and_directions/regional_map.aspx
http://www.cod.edu/about/maps_and_directions/full_campus_map.aspx

Parking: Free

Also Being Streamed to Satellite Locations:

College of Lake County
Southlake Campus
Room V336-340
1120 S. Milwaukee Ave
Vernon Hills, IL 60061

Purdue University Northwest
Gyte Building, Room 240
2200 169th St.
Hammond, IN 46323

Loyola University
Life Science Bldg.
Room 142
1050 W. Sheridan Rd.
Chicago, IL 60660

PARKING:
Free

Free

Enter the campus at Kenmore & Sheridan. Parking (P1) is next to Flanner Hall. Enter the garage at the entrance marked "Faculty, Students, Guests, and Visitors." (Cost: \$7.00)

<http://www.clcillinois.edu/aboutclc/locations/southlake/maps>
<https://www.pnw.edu/visitors-guide/maps/hammond-campus/>
<http://www.luc.edu/media/lucedu/pdfs-campusmaps/lsc.pdf>

REGISTRATION, POSTER SESSION
& NETWORKING 5:30 PM – 6:30 PM

DINNER 6:30 PM – 7:30 PM

INTRODUCTORY 7:30 PM – 7:40 PM

REMARKS BY FRAN KRAVITZ,
CHICAGO SECTION
CHAIR 7:30 PM – 7:40 PM

LECTURE BY DR. MAY
BERENBAUM 7:40 PM – 8:40 PM



Dr. May R. Berenbaum
University of Illinois, Urbana-Champaign
Swanlund Chair of Entomology
Department Chair of Entomology
"Honey Bees as Chemists"

IN THIS ISSUE

- 2 Dr. May R. Berenbaum Biography
- 2 Abstract
- 3 Chair's Column
- 3 ACS 2017 Election
- 3 **Micron Analytical Services**
- 4 Someone You Should Know
- 4 College Education Symposium

- 5 ChemShorts
- 5 Project Seed
- 6 Start Smart Workshop
- 6 Help The ACS Amazon Link
- 6 Calendar
- 6 **Mass-Vac Products**

MENU**College of DuPage**

Choice of:

Grilled Tuscan Chicken Breast Box Meal (Grilled Chicken Breast, Provolone, Leaf Lettuce, sliced Tomato and Pesto Mayo on Demi Asiago Roll). Served with potato chips, fruit and beverage)

OR

Einstein Veg Out Box Meal (Garden Veggie Shmear, Sun Dried Tomato Shmear, Red Onions, Cucumbers, Lettuce, Spinach and Tomatoes) Served with potato chips, fruit salad, cookie and beverage)

Loyola University

Dinner will be served cafeteria style at nearby de Nobili Cafeteria across Sheridan Road.

College of Lake County (Southlake Campus)

Choice of:

Panera Turkey Sandwich Box Lunch (Oven roasted turkey raised without antibiotics, lettuce, vine-ripened tomatoes, red onions, Basil Pesto, pure mayo, spicy mustard, salt and pepper on Asiago Cheese Focaccia. Served with potato chips, pickle, a cookie and beverage.)

OR

Panera Mediterranean Veggie Boxed Lunch (Zesty sweet Peppadew piquant peppers, feta cheese, cucumbers, lettuce, vine-ripened tomatoes, red onions and cilantro-jalapeño hummus with salt and pepper on thin sliced Tomato Basil. Served with potato chips, pickle, a cookie and beverage.)

Please note that if we do not meet the minimum amount for delivery at a location then your meal will be substituted with a similar meal from Jimmy Johns.

The cost for dinner at College of DuPage, Loyola University and College of Lake County (Southlake campus) is \$15 to Section members who have paid their local section dues, members' families, and visiting ACS members. The cost to members who have NOT paid their local section dues and to non-members is \$17.

Purdue University Northwest Campus

Choice of:

Italian Roast Beef with French Fries OR Mostaccioli with Marinara Sauce OR Vegetable Panini

The cost at Purdue University Northwest **ONLY** is \$10 to Section members who have paid their local section dues, members' families, and visiting ACS members. The cost to members who have NOT paid their local section dues and to non-members is \$12.

Dinner reservations are required and should be received in the Section Office via phone (847-391-9091), email (chicagoacs@ameritech.net) or website (<http://chicagoacs.org/meetinginfo.php?id=123&ts=1508448136>) by noon on Tuesday, November 14. **PLEASE HONOR YOUR RESERVATIONS. The Section must pay for all dinner orders. No-shows will be billed.**

ABSTRACT

For decades, nutritionists and bee scientists have dismissed honey as little more than sugar water. It's now clear, however, that honey contains a broad diversity of phytochemicals that vary with the nectar sources utilized by the bees in its production. These phytochemicals possess an extraordinary range of biological activities, which bees have adapted to meet their own physiological and behavioral requirements. They serve as attractants, deterrents, and intoxicants that determine rates of nectar intake, as antimicrobial agents for self-medication, as antioxidants to enhance longevity, and as physiological regulators of caste, memory, and detoxification. This dependence upon honey takes on new relevance for bee health in the context of decreasing availability of natural forage and the increasing use of sugar substitutes by beekeepers.

BIOGRAPHY

Dr. May R. Berenbaum is an entomologist whose research has focused on the chemical mechanisms underlying interactions between insects and their host plants. Her work has transformed the field of chemical ecology, fundamentally changing our understanding of the implications of the dealings between insects that eat plants and the plants they eat. Dr. Berenbaum's research also has provided a genetic basis for the theory of coevolution through elegant ecological experiments and chemical and genetic analyses. Dr. Berenbaum has taken leadership roles on major insect-related problems that are front and center issues today: insects and GM crops, pollinator declines, invasive species, pesticides and resistance, and insect conservation. She is one of the prominent researchers in the scientific response to Colony Collapse Disorder and other stresses involved in the escalating colony losses that beekeepers have been facing.

Since 1992, Dr. Berenbaum has been head of the Department of Entomology at the University of Illinois at Urbana-Champaign. She also has held the endowed Swanlund Chair of Entomology at U of I since 1996. President Barack Obama awarded Dr. Berenbaum the National Medal of Science, the nation's highest scientific honor, in 2014.

Among her many other honors and awards are National Associate, an honor reserved for National Academy of Sciences members who have made extraordinary contributions to the National Research Council; Fellow, American Association for the Advancement of Science; Fellow, American Academy of Arts and Sciences; Tyler Prize for Environmental Achievement; George Mercer Award, Ecological Society of America; Founder's Memorial Award, Entomological Society of America; and Public Understanding of Science and Technology Award, American Association for the Advancement of Science.

Advertise with us and be in good company. For information on advertising, call 847-391-9091 or email chicagoacs@ameritech.net

CHAIR'S COLUMN CAREER WORKSHOP OPPORTUNITIES

Have you wondered where the Job Club has gone this year? We are trying something new this year by having monthly workshops outside of program meetings on different topics. Each topic builds a new skill or strategy in managing your career. They are modified workshops based on the National ACS's Career Pathway series. The University of Illinois at Chicago has been our host this year. Past topics included Finding Your Path (Higher Education, Industry, and Government); Networking; Career Resources at a National ACS Meeting; and the Higher Education Pathway. The programs have been sponsored by the Employment and Younger Chemists Committees. Our goal is for our members to use their time at monthly meetings to network. Studies have shown that two thirds of employment opportunities are not posted and are obtained through networking.

It is not too late if you haven't had a chance to attend one of these workshops. The last three are coming up in the next two months. "Writing an Effective Resume" workshop is scheduled for Tuesday, November 7, which is followed by "Effective Interviewing Skills" on Thursday, November 30. The final workshop will be presented by Lisa Balbes, a National ACS Workshop presenter and author of "Nontraditional Careers for Chemists: New Formulas in Chemistry." Dr. Balbes is scheduled to speak on Thursday, December 7, and the topic is "New Technologies to Manage Your Career." All workshops start at 7:00 p.m. and are 45 minutes in length. Watch our website for further details on the building and room location. These workshops are free of charge and open to ACS and AIChE members and prospective members.

The Women Chemists Committee in conjunction with the Younger Chemists and Employment Committees has a Start Smart Workshop scheduled for Saturday, November 11 at Loyola University. Start Smart is a three-hour American Association of University Women's workshop that provides women with the knowledge and skills for negotiating salaries and benefits in order to receive fair and realistic compensation as they approach the job market. The workshop includes a light breakfast, lunch, panel of experts discussion on the employment outlook, and resume review by ACS Career Consultants. Further details can be found on our website at www.chicagoacs.org. The cost for this workshop is \$15 for advanced registration and \$20 at the door. All are welcome to attend.

I hope members are taking advantage of these workshops. Remember to check our website for job postings. We also welcome any employers that have employment opportunities to post on our website free of charge. We need to work together in helping members find employment especially in the Chicago area. Also, please drop me an email and let me know if you find networking at monthly meetings and the monthly workshops are helpful.

Fran Kravitz
2017 Chicago Section ACS Chair
fk1456@sbcglobal.net

November, 2017 Vol. 104, No. 9. Published by the Chicago Section of The American Chemical Society, Editorial Staff: Paul Brandt, Editor; Rebecca Sanders, Proofreader. Address: 1400 Renaissance Dr., Suite 312, Park Ridge, Illinois 60068; 847/391-9091. Subscription rates: \$15 per year. Frequency: monthly-September through June.

RESULTS FOR CHICAGO ACS 2017 ELECTION

Congratulations to the winners of the 2017 election of the Chicago Section of the ACS! The Tellers Committee met on Friday, October 27, 2017. 539 ballots were received as of noon on October 27, 2017. Of these, 497 ballots were counted. Thank you to all the candidates who ran, helping keep our Section a lively focal point of the Chicagoland chemistry community. The officers will assume their post in January 2018.

Office	Office Holder	Term
Chair-Elect	Tim Marin	2018-2020 (Chair-Elect, Chair, Past Chair)
Vice Chair	Ken Fivizzani	2018
Secretary	Rebecca Weiner	2018
Treasurer	Amber Arzadon	2018
Director	David Crumrine Doris Espiritu Carmen Marquez Barb Moriarty Sherri Rukes Rebecca Sanders Margaret Schott Linghong Zhang	2018-2019
Councilor	Charles Cannon Fran Kravitz Russ Johnson	2018-2020
Alternate Councilor	Amber Arzadon Paul Brandt Ilana Lemberger Tom Higgins	2018-2020

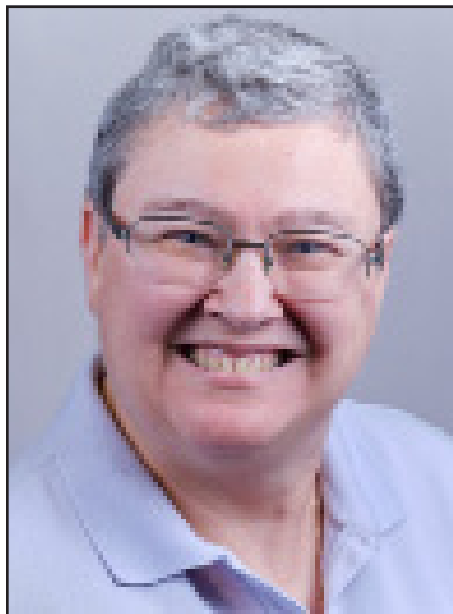


Micron Analytical Services

COMPLETE MATERIALS CHARACTERIZATION
MORPHOLOGY CHEMISTRY STRUCTURE

SEM/EDXA, TEM/SAED, EPA/WDXA, XRD,
XRF, ESCA, AUGER, FTIR, DSC/TGA
3815 Lancaster Pike Wilmington DE. 19805
Voice 302-998-1184, Fax 302-998-1836
E-Mail micronanalytical@compuserve.com
Web Page: www.micronanalytical.com

SOMEONE YOU SHOULD KNOW



This month's subject for "Someone You Should Know" is **Barb Moriarty**. Barb has been an active Chicago Section member ever since I introduced her to the Board several years ago. I first met Barb when I was working at Nalco Chemical Company (now known as Ecolab). Barb was a group leader in the Corporate Research group and was a very organized and to-the-point type of person. I felt she would be an ideal addition to the Chicago Section Board and my intuition was correct. Barb has been, and continues to be, a very valuable member of the Chicago Section and is a national councilor for the Section. Barb is a very quiet person but she is someone you can always count on. She is a past Chair of the Chicago Section and an ACS Fellow.

Barb was born in Taunton, Massachusetts to a professor of Geography and an English teacher. She has two brothers, but neither have a college science degree. Barb is the first in her family to go into hard science with the exception of her father. She told me that her father would always tell her that geography was a science. Barb feels that it may be science but not hard science. She chose chemistry since she enjoyed the subject and she didn't want to deal with people dying as she would have if she had gone into medicine. I asked her if she couldn't have been a chemist what would she have become and her answer was a mathematician.

Barb earned a Ph.D. in chemistry from the University of Minnesota. Dr. Moriarty worked under Dr. John Adams and the title of her thesis was "An Electrochemical Study of Ions Immobilized Within Nafion Polymer Films." After earning her PhD,

Barb went to work for Nalco Chemical Company. She left Nalco to teach at the community colleges of Chicago, DuPage, McHenry, and Elgin and Elmhurst College but then returned to do research in industry for Global Green Products. She developed new products for scale control and really never had a typical day in any of her positions. Her favorite position was at Global Green Products as a Senior Application Chemist. Dr. Moriarty liked this position because her project was to develop scale inhibitors based on polyaspartic acid. She liked this project because she was developing an environmentally friendly product. Currently, Barb is on the faculty of the College of Lake County.

Dr. Moriarty has been an ACS member for 37 years. She was convinced to join by her undergraduate research adviser. Barb is currently a director of the Section as well as a counselor and co-chair of the Great Lakes Regional Meeting in 2019. She has been vice chair of the Section; Secretary; chairs of the Public Affairs, the Membership Affairs, and the Employment Committees. Barb has also been editor of the Chemical Bulletin and has done demonstrations at Chemistry Week. Dr. Moriarty was chair of the ACS Division of Professional Relations and is currently on the National ACS Committee on Ethics. She has received the Chicago Section American Chemical Society Public Affairs Award in 2011, Presidential Green Chemistry Challenge Award in 2008, Chicago Section American Chemical Society Distinguished Service Award in 2007, and the Chicago Association of Technological Societies Merit Award in 1998.

Barb is married to Michelle Wiejacka, an attorney. She likes to read and take walks and they have three cats. One fact that most of us don't know about Barb is that she likes Italian food because she likes carbohydrates.

I asked Barb who she might want to have lunch with, dead or alive. She chose Albert Einstein because she felt that he was ahead of his time. She also felt that he had to battle with disappointment, especially at the beginning of his career.

Barb's final words of wisdom to all of us are "Don't give up on anything, instead do what you need to do to get ahead."

Fran Kravitz

COLLEGE EDUCATION COMMITTEE SYMPOSIUM

On Friday, December 15, the Chicago Section of the American Chemical Society (Chicago ACS) will host a one-day symposium on Chemistry Careers and the Future of Chemistry. The symposium is intended to attract college undergraduates and high-school seniors, and **you have an opportunity to help those students.**

During the day the students will be exposed to research being done by other undergraduates at a poster session. Keynote speakers from academia and industry will discuss cutting edge tools being used by chemists in laboratories and manufacturing. During the afternoon, students will have opportunities, in small groups, to discuss careers with chemistry professionals from business/government/NGOs/academia to learn more about what each professional does and what they enjoy about doing it. Attendees will also have the opportunity to remain for the Chicago ACS December meeting where they can network with ACS members from the entire Chicago area.

The Chicago ACS College Education Committee is asking you, as a fellow science professional, to please sponsor a student at the Symposium by supporting their \$5 Registration fee with a donation. We want to attract as many budding scientists as possible, and this simple gift may be the incentive one or more of them needs in deciding to attend.

To donate, simply go to the Chicago ACS Sponsorship and Donations webpage (http://chicagoacs.org/Sponsorship_and_Donations). Once there, click on the icon at the bottom of the Individual Donations item, and when you submit your donation amount (\$5 or any multiple of that) be sure to specify that it is for the Sponsor a Student - December 2017 Symposium fund. Thanks for your support.

If you have questions, feel free to contact the College Education Committee Co-Chairs, Gary Roby or Robert Chapman:

Gary Roby (robbywi@cod.edu) 630-942-2420

Robert Chapman, Ph.D. (rchapm@midwestern.edu) 630-515-6113

Follow us on Facebook and Twitter!



www.facebook.com/ChicagoACS



www.twitter.com/ChicagoACS



www.youtube.com/user/AmerChemSoc

"CHEM SHORTS" For Kids

Chasing Puddles

In the February 2017 edition of ChemShorts For Kids you investigated some unique properties of water like cohesion. I want to take a look at that again using a different experiment.

Materials:

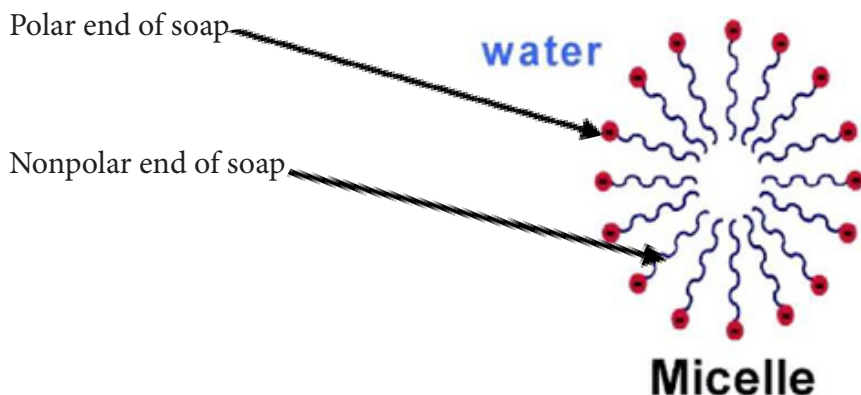
Wax paper
Water
Food coloring
Toothpicks
Dropper
Dish soap

Experiment:

Have different colors of water available and using a dropper, put a few drops of water in different places onto the wax paper. Stick the toothpick into the middle of one of the droplets and move it around on the wax paper. You can move the droplet around to wherever you like and even join your droplet with another to make a droplet twice as big. Try mixing different colors of droplets and see what happens. Once you finally tire of dragging around droplets, put your toothpick into some soap and then try dragging your droplet. What happened?

What's happening?

Just like last February's article, water is a polar molecule which means that there is a positive and negative end to the molecule – similar to a magnet. And what happens when magnets are put together? They stick together like water molecules stick together. Wax paper on the other hand is nonpolar and so water has a much greater attraction for other water molecules than it does for nonpolar wax paper. Therefore the water molecules would prefer to hang out together (cohesion) than to be associated with the wax paper. Once you add the soap however, the soap molecules have the effect of breaking down those attractive forces that the water molecules have for each other and create what is referred to as a micelle. In the diagram below you see the soap molecule has a nonpolar end and a polar end. The water (H_2O) is attracted to the polar end while all the nonpolar ends hang out together. This nonpolar end is going to be attracted to the wax paper so the water tends to have more attraction toward the wax paper now since it is associated with it through the soap molecule.



References:

<http://www.4cforkids.org/news/water-drops-on-wax-paper>

To view all past "ChemShorts for Kids," go to:

http://chicagoacs.org/articles.php?article_category=1

Paul Brandt

PROJECT SEED

Three of our Project SEED interns received ACS National Project SEED scholarships. These interns were high school seniors last year and had applied after working as Project SEED summer interns. Each intern paired up with a mentor from the Chemistry Department at Loyola University and received the \$5000 nonrenewable scholarship which is awarded to first-year college students. Selection is based on achievement in school, success in the Project SEED program, financial need, and intended chemical-related field of scientific study. They must be pursuing a chemical science or engineering degree to qualify for the scholarship.

Mir Faiz Rehman attended Senn High School in Chicago and interned with Dr. Chad Eichman working on a project investigating earth abundant catalysts. Faiz learned how to perform chemical reactions for organic molecule synthesis and determined product composition and efficiency through ^1H NMR spectroscopy. He went on to intern at Loyola a second summer, under the mentorship of Dr. Hee Yeon Cho. Faiz is currently studying at the University of Illinois-Chicago, majoring in Biochemistry.

Rooco Molinelli interned under Dr. Wei-Tsung Lee synthesizing a series of metal complexes to be used as insulin mimics for Type II Diabetes. He learned how to work in a glove box and to characterize his complexes with NMR spectroscopy techniques his second summer at Loyola. He graduated from Elmwood Park High School and plans to attend the University of Chicago in the Fall of 2018, studying Biochemistry in their pre-med program. During his gap year, he continues to work in Dr. Lee's lab.

Janiel Cortes worked under the mentorship of Dr. James Devery performing chemical reactions for organic and organometallic molecule synthesis and characterization. He attended high school in Barrington, so his dedication to travel many hours a day to Loyola is commendable. After two summers in the SEED program, he continues to work in Dr. Devery's lab as he attends college at Loyola University.

Congratulations to all of our SEED students!

Raelynn Miller

START \$MART WORKSHOP FOR WOMEN CHEMISTS

A Start \$mart workshop for women regarding negotiating salaries and benefits is scheduled for Saturday, November 11 from 8:30am-2pm at Loyola University. The event is cosponsored by the American Association of University Women and the Chicago Section of the American Chemical Society's Women Chemists, Younger Chemists, and the Employment Committees. The workshop will be facilitated by the AAUW and will include a light breakfast, lunch, panel discussion, and résumé review by ACS Career Consultants. This workshop is open to all women in science. The panelists will include Julie Ellefson from Harper College, Vivian Sullivan from Argonne National Laboratory, and Linda McGill Boasmond from Cedar Concepts Corporation. Cost for the event is \$15 in advance or \$20 at the door and registration is posted at www.chicagoacs.org. Please contact Kari Stone at kstone@ben.edu if you have questions about the workshop.

HELP THE CHICAGO ACS BY USING THIS AMAZON LINK

Bookmark this today! When you make purchases from Amazon.com, you can now give a free donation to the Chicago Section every time you shop on Amazon.com. Simply shop at Amazon using the following link: <http://smile.amazon.com/ch/36-2287522>

Whenever you start there to make a purchase, the Chicago Section will get a percentage of your purchase, with no additional cost to you. It's easy, free, and supports one of your favorite organizations, so why not use it?

CALENDAR

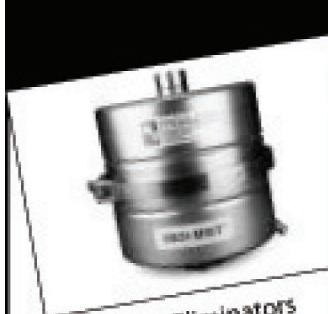
November 11: Start \$mart Workshop for Women at Loyola University, Cuneo Hall Room 103, from 8:30 am – 2:00 pm. Advanced registration is \$15 or \$20 at the door. **See details in this issue.**

November 17: Chicago Section Dinner Meeting with Dr. May Berenbaum, Professor of Entomology, University of Illinois – Urbana Champaign. **See details in this issue.**

December 15: Chemistry Careers and the Future of Chemistry Symposium, 8:30 am – 4:00 pm at North Central College. **See details in this issue.**

December 15: Chicago Section Dinner Meeting; Dr. Maria Bakalis' *Discovering Marie Curie* at North Central College.

Meet the Protectors of Vacuum Pumps, Systems and the Environment!



Oil Mist Eliminators



Vacuum Inlet Traps



Oil Filtration Systems

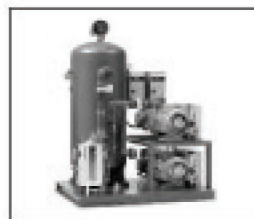
MV Products offer you a full line of oil mist eliminators, vacuum inlet traps, oil filtration systems and other quality vacuum products designed to assure your vacuum pumps a long life and you a clean and healthy environment.

- ☐ MV oil mist eliminators remove oily haze from vacuum pump exhaust, protect the surrounding areas and the room air you breath.
- ☐ MV vacuum inlet traps protect your vacuum pump from corrosive and abrasive elements and can be tailored to your specific application requirements.
- ☐ Oil filtration systems remove acids, corrosives, and contaminants from pump fluids thus reducing maintenance costs and prolonging pump life.

Other Quality Vacuum Products



Vacuum Degassing Chambers



Central Source Vacuum System



Filters

For more information on these and other fine vacuum products contact



PRODUCTS

A Division of Mass-Vac, Inc.

247 Rangeway Road • PO Box 359 • North Billerica, MA 01862-0359

TEL 978-667-2393 FAX 978-671-0014 E-MAIL sales@massvac.com WEB www.massvac.com