



# Society of Plastics Engineers

BLOW MOLDING DIVISION

Vol 2015 Edition 3



## 31st Annual Blow Molding Conference

October 12<sup>th</sup> to 14<sup>th</sup>, 2015

INNOVATING, EDUCATING AND SUSTAINING THE FUTURE OF BLOW MOLDING

**Sheraton Station Square Hotel**  
300 West Station Square  
Pittsburgh, PA 15219

The Sheraton Station Square Hotel in Pittsburgh, PA will be the site of the 2015 Annual Blow Molding Conference. Pittsburgh has a state-of-the-art airport with non-stop service to hundreds of cities across the U.S. and around the world.

Many plastic related businesses and manufacturing sites are within driving distance of Pittsburgh making this an ideal location for the ABC.

Make plans now to attend this premier forum for the blow molding industry!

**Get Started Early. Oct. 12th from 1:00 - 4:30pm.**

Start your conference experience early by attending comprehensive mini-sessions featuring instruction focusing on the technology, processes, troubleshooting and methodologies of blow molding. Led by industry experts, these sessions will provide invaluable tips, suggestions and solutions!



### OFFICERS

*Chairperson*  
**Jamie Pace**

*Chairperson Elect*  
**Cal Becker**

*Past Chairperson*  
**Jeffrey Light**

*Secretary*  
**George Hurden**

*Treasurer*  
**Terry Glass**

*Councilor*  
**Scott Steele**

### COMMITTEE CHAIRPERSONS

*Education*  
**Geoff Ward**

*TPC Chairperson*  
**Surendra Agarwal**

*Marketing Co-Chairs*  
**Gary Carr**  
**George Rollend**  
**Brian Spence**

*ABC Conference  
Coordinator*  
**Deirdre Turner**

*Become  
a member*  
*Join the  
SPE  
Blow Molding  
Division*



# DISCOVER THE GLOBAL LEADER.

Yupo Corporation is the Western Hemisphere's largest manufacturer of a full spectrum of waterproof, 100% recyclable, tear-resistant synthetic papers. YUPO® Synthetic Papers cross industry borders and are known for their exceptional properties and durability. When you require a paper that's so much more than paper, do it on YUPO.

- 
- PRINT** – *Beautiful techniques and applications are right at home on smooth, versatile YUPO*
  - PACKAGE** – *Waterproof, tear- and chemical-resistant YUPO withstands wear and tear for packaging solutions that are always innovative*
  - LABEL** – *YUPO Synthetic IML Substrates are extremely tough, for label applications that stand out*
  - DESIGN** – *Available in a myriad of grades, weights and opacities, YUPO is favored for projects that call for a synthetic that's extraordinary*
- 



**YUPO®**

SYNTHETIC PAPER  
do it on yupo | [www.yupousa.com](http://www.yupousa.com)

PRINT • PACKAGE • LABEL • DESIGN



## ALL THE RIGHT RESINS.

FOR ALL THE RIGHT REASONS.

A capacity for leadership.  
In what matters most to you.

When it comes to PET Resin, DAK Americas® has just what you are looking for...Innovative PET Resins from pioneering research and development, state-of-the-art technologies and market know-how. All from one of the largest producers of PET Resins worldwide. DAK Americas' broad line of LASER+® PET Resins give you exceptional flexibility in meeting your design and production goals. From trade leading products and technical service to recycling, to sustainable raw materials, we continue to demonstrate not just our record of innovation, but our steadfast commitment to you and to the industry. Today, tomorrow, and well into the future...DAK Americas.

[dakamericas.com](http://dakamericas.com) | 1.888.738.2002

**Laser+**  
FAMILY OF PET RESINS

©2015 SPE Blow Molding Division

# PITTSBURGH



October 12<sup>th</sup> to 14<sup>th</sup>, 2015  
Pittsburgh, Pennsylvania

## ABC 2015 Blow Molded Parts Competition Entry Form

**Entry Deadline:** October 2, 2015

**Shipment Deadline:** Oct. 11, 2015

As the premier event for the blow molding industry, the Annual Blow Molding Conference showcases the latest advancements and innovations in blow molding design and applications. This year, the SPE Blow Molding Division invites all conference attendees, speakers and sponsors to participate in the **Third Annual Blow Molded Parts Competition**.

### Product Entry Submission Form

Submitter / Attendee\*: \_\_\_\_\_

Submitter Company Information\*: \_\_\_\_\_

Part Name\*: \_\_\_\_\_

Manufacturer / Blow Molder: \_\_\_\_\_

Designer / Other Contributors: \_\_\_\_\_

Mold Maker / Toolmaker: \_\_\_\_\_

Material Supplier / Resin Type: \_\_\_\_\_

Address\*: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Postal Code: \_\_\_\_\_ Country: \_\_\_\_\_

Telephone\*: \_\_\_\_\_ Mobile Phone\*: \_\_\_\_\_ Fax\*: \_\_\_\_\_

Email\*: \_\_\_\_\_

Submitter signature and Release of Liability\*: \_\_\_\_\_ Date: \_\_\_\_\_

**Product Category:** please check one

Packaging:  Food  Beverage  Pharmaceutical  Packaging Other

Industrial:  Automotive / Transportation  Consumer Goods  Industrial Other

### Shipping Information:

SPE Blow Mold Conference  
PART COMPETITION  
Sheraton Station Square Hotel  
300 West Station Square  
Pittsburgh, PA 15219  
Hotel Contact: Ms. Christine Engel  
Tel: (412) 803-3871

**Parts should be shipped no more than 2 business days in advance of event. Shipments will be delivered to the conference registration area outside of the exhibit hall. Each entry should be shipped with a completed return bill of lading form.**

### Submission Instructions:

Email the following to [parisonsblowmolding@gmail.com](mailto:parisonsblowmolding@gmail.com)

- Completed and signed entry and release form
- Display and judging information form
- Product image in a jpg format

**The image and description should be suitable for publication. A separate entry form, description and photo will be required for each submission.**

**Contact:** Lew Ferguson, Chair, Blow Molded Parts Competition  
Email: [parisonsblowmolding@gmail.com](mailto:parisonsblowmolding@gmail.com) Tel: 313-506-4637



ABC 2015



## BLOW MOLDED PARTS COMPETITION

**Part Name:**

Submitter / Company:

**Part Description**

[1 to 3 sentences]



**Part Features / Benefits:**

[include novel features of the part like, design, manufacturing, material application, parts consolidation, commercial implications, sustainability, safety, cost savings – up to 12 bullet points]



---



**Photo of the Part:**

▶ Please send a JPEG picture of the part as a separate file.



## ABC 2015 Blow Molded Parts Competition Guidelines

1. Parts may be entered by any conference attendee, speaker or sponsor (up to two parts per participant)
2. All entries must include a plastic form utilizing the blow molding process in some portion of the product.
3. All submissions must be new to the market starting commercial production within the last two years and made from production tooling.
4. Parts must be able to fit on display table. If you wish to display a part large than 48 inches, please contact Lew Ferguson, parts Competition Chair at [parisonsblowmolding@gmail.com](mailto:parisonsblowmolding@gmail.com) to discuss.
5. A completed entry form, display and judging information form and a photo for each part must be sent to the Parts Competition Chair by **Oct. 2, 2015**.
6. A Display Form will be provided by the Parts Competition Committee using information contained in the entry form.
7. The Judging Committee may consolidate parts in categories, if fewer than 4 parts are submitted in a category.
8. No electric power connections are provided. If needed, power may be arranged through the hotel by contacting meeting services at 773-693-4444.
9. No business cards, marketing materials, laptop presentations, etc. may accompany the part in the display area. The display is intended to be an exhibit to encourage discussions and technology exchange. No sales or marketing activities in this area will be permitted; however, there are conference sponsor opportunities to do so (visit [www.blowmoldingdivision.org](http://www.blowmoldingdivision.org))
10. All shipments must follow the mailing label format as indicated in Shipping Information on the application.
11. Submitters will be responsible for collecting, unpacking and setting up their parts in the Parts Competition area located outside the ABC 2015 Exhibit Hall. Set-up hours are Mon., Oct. 12<sup>th</sup> from 8:00-5:00 p.m. **All displays should be set-up by 5:00 p.m. on Oct. 12<sup>th</sup>**. For more information about shipping and retrieving your parts, please contact Ms. Christine Engel, Sheraton Station Square at (412) 803-3871.
12. Submitters will be required to pack and prepare their parts for outgoing shipment by 5:00 p.m., Wed., Oct. 14<sup>th</sup> which marks the conclusion of the Blow Molding Conference. The SPE Blow Molding Division is not responsible for any unclaimed parts after ABC 2015 concludes.
13. The Blow Molding Division winners will be announced at ABC 2015 Awards Reception and Program on Tues., Oct. 13<sup>th</sup> at the Sheraton Station Square Hotel.

### RELEASE OF LIABILITY

Submission of an entry releases from liability, indemnifies and holds harmless the Society of Plastics Engineers Blow Molding Division, Directors, volunteers, employees or agents representing or related to The Society in part or whole. This release is for any and all liability for property losses and/or damage occasioned by, or in connection with any activity or accommodations for this event. Submission of an entry further agrees to abide by all the rules and regulations promulgated by the SPE Blow Molding Division and/or its affiliate groups or vendors throughout this conference event.

### RELEASE OF PUBLISH

Submitters and individual category winners may receive publicity in trade journals or other publications. Submission of an entry constitutes acceptance of said publicity and confirms that the submitter has secured the necessary approvals to participate in the Blow Molded Parts Competition and to be featured in any subsequent publicity.



# YOUR EXPERIENCED PARTNER IN ONLINE PLASTIC CONTAINER INSPECTION



Speed-Glider Multi-Station Moving Head



SC Linear Indexing Conveyor



RS-S Moving Head



SST Linear Leak Tester with Integrated Takeout Conveyor



DB-100 Downed Bottle Ejector



NexGen Rotary Leak Tester

FOR MORE INFORMATION  
[WWW.ALPSLEAK.COM](http://WWW.ALPSLEAK.COM)

**ALPS**  
Leak Testing Equipment  
a TASI Group Company

The current population of **ALPS LEAK TESTING MACHINES** is assuring the **INTEGRITY** of more than **50 BILLION CONTAINERS A YEAR**



**BBM**  
Maschinenbau und Vertriebs GmbH



- ✓ FULLY ELECTRIC MACHINES up to 100t
- ✓ HYDRAULIC MACHINES up to 300t
- ✓ MULTI-CAVITY SHUTTLE MACHINES
- ✓ HIGH OUTPUT JERRY-CAN MACHINES
- ✓ OT / L-RING DRUM MACHINES
- ✓ SUCTION BLOW MACHINES
- ✓ TECHNICAL PART MACHINES
- ✓ ACCUMULATOR HEAD MACHINES
- ✓ COMPLETE MACHINE OVERHAULS INCL PARTS SUPPLY
- ✓ LARGE STOCK OF IN-HOUSE CHECKED AND VERIFIED 2ND HAND MACHINES

For more information, please contact us at +49 52 48 82 38 0 or [sales@bbm-germany.de](mailto:sales@bbm-germany.de) and visit our website [www.bbm-germany.de](http://www.bbm-germany.de)

polyclear<sup>™</sup>  
EBM

## AHEAD of the CURVE

- PET for extrusion blow molding
- Excellent clarity for high-gloss containers with handles
- APR recognized for recycling with clear PET

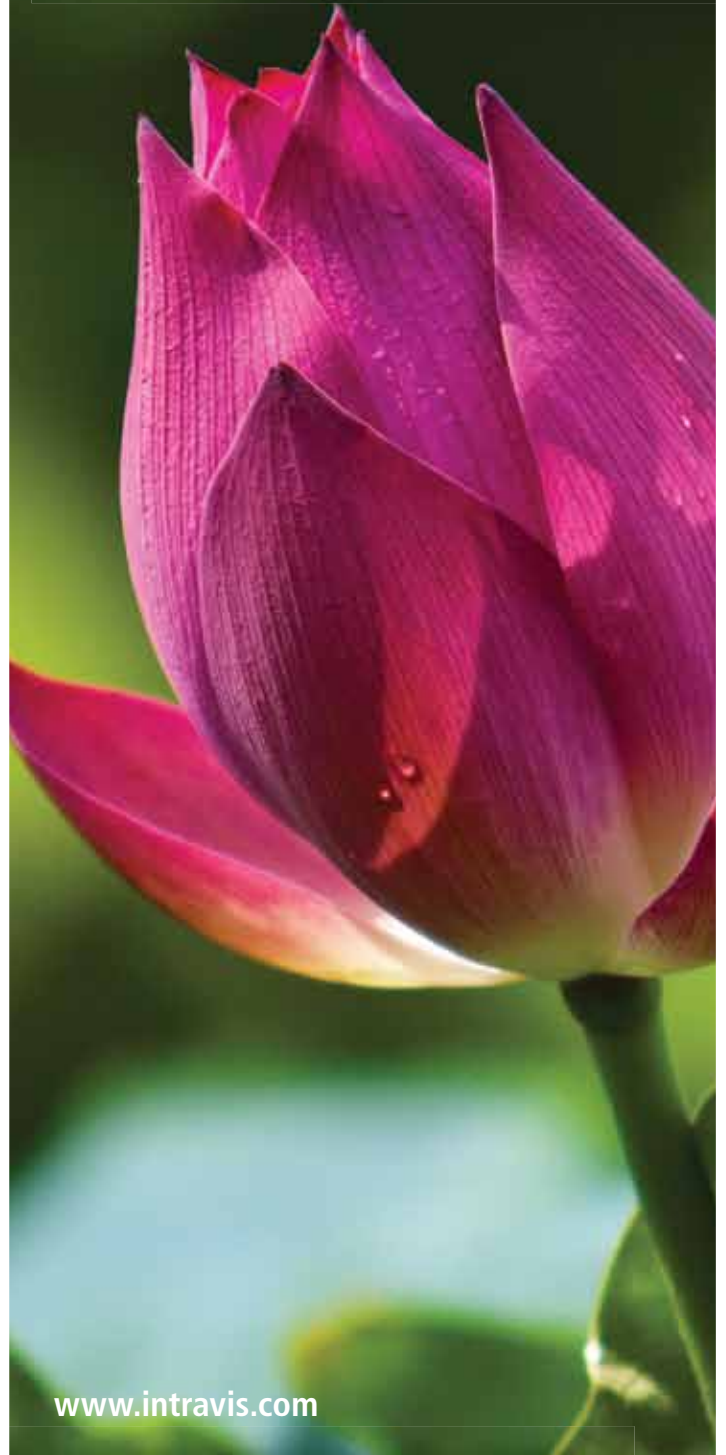


INDORAMA  
VENTURES

Indorama™ is a registered trademark of Indorama Polymers, Inc., an wholly owned subsidiary of Indorama Ventures, PCL.  
© Indorama Polymers, Inc., 2015. All rights reserved.

Protecting inner values.

We ensure a perfect process.



[www.intravis.com](http://www.intravis.com)

**INTRAVIS**  
VISION SYSTEMS

# SPE Blow Molding Division 2015 Scholarship Award

**Abigail Gilmore** has been awarded the SPE Blow Molding Division's 2015 Carrie Fox Solin Memorial Scholarship in the amount of \$3000. She was chosen for this award by the division's scholarship selection committee based on her outstanding record of academic and extracurricular achievements.



Abigail is a senior studying Plastics Engineering Technology at the Pennsylvania State University at Erie, The Behrend College, where she has been on the Dean's List every semester. During the past two summers, she interned as a Processing Engineer at Berry Plastics in Hot Springs, AR, and as a New Systems Development Engineer at GOJO Industries in Akron, OH. She is also a teaching assistant, working to help professors with students in the plastics engineering courses and assisting industry professionals at various Behrend training workshops.

Abigail was recently inducted as President of the Behrend Chapter of the Tau Alpha Pi National Honor Society, and is currently Treasurer of the Plastics Engineering Club. She is a very active member of the Northwest Pennsylvania Society of Plastics Engineers section. Her ANTEC 2015 poster received the 1<sup>st</sup> place Undergraduate award, and she submitted a project in the Blow Molding Division's 2015 Student Design Contest. As a member of the Behrend NCAA Cross Country, and Track and Field Teams, she earned the team's *Most Improved Athlete Award* for both the 2013 and 2014 seasons. In the future, she plans to obtain a job in the plastics field with a focus on sustainability through innovative solutions. Upon notification of her scholarship award, she replied "I am very grateful to my family, friends, peers, professors, and the Society of Plastics Engineers for their continued support."

*The Society of Plastics Engineers is an organization dedicated to promoting the scientific and educational aspects of the plastics engineering profession, and the Blow Molding Division provides a forum for the promotion and dissemination of information relating to blow molding technology.*

*The Blow Molding Division of the Society of Plastics Engineers awards its annual Memorial Scholarship(s) to selected students enrolled in plastics engineering programs. Since inception of the scholarship program, the SPE Blow Molding Division has awarded \$260,500 to 39 students enrolled in programs that include curriculum pertaining to blow molding. Abigail is the 10<sup>th</sup> Penn State Erie student to receive a SPE Blow Molding Division scholarship.*

*The Blow Molding Division's scholarships and other educational support programs are funded with the income from a \$218,000 Grant Fund endowment that has grown over time with the support of the division's sponsors. The value of the division's scholarships is up to \$6,000. Funds are distributed in two disbursements over a two year period, usually during the junior and senior terms. If the recipient is a senior, a \$3000 award is made. The award recipients are recognized at the SPE Annual Blow Molding Conference (ABC) or SPE Annual Technical Conference (ANTEC). A travel allowance is provided.*

### **Qualifications for the scholarship are as follows:**

1. The student must be enrolled full-time in a degreed undergraduate Plastics Engineering program.
2. The student should be completing the 2nd year of a four-year program.
3. The student must be a member of an SPE Student Chapter.
4. The applicant will submit a brief essay with their application describing the importance of blow molding to the technical parts and packaging industry.

*We seek students who plan to make a career in plastics engineering (a sincere interest in the Blow Molding industry is a plus). We request that qualifying students submit an application by following the instructions and completing the appropriate forms for the Blow Molding Division Memorial Scholarships at the SPE Foundation website.*

See our website for additional information. <http://www.blowmoldingdivision.org/scholarships/>



# wentworth mold

best value company



Industrial



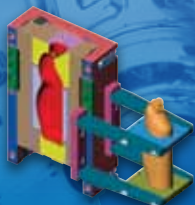
Packaging



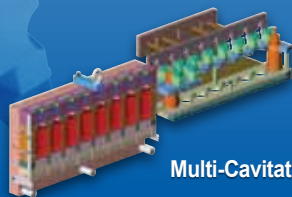
Extremcool



Consumer Products



Fast-to-Market®



Multi-Cavitation

Innovative Extrusion Blow Mold Solution  
[www.wentworthmold.com](http://www.wentworthmold.com)



Global Coverage

Wentworth Mold Ltd.  
566 Arvin Ave., Units 2&4  
Stoney Creek, ON, L3E 5P1 Canada  
1-800-233-0874

## Blow Molding *made easy*

Improve Machine Reliability  
with MACO Compact Full  
Machine Control System  
Retrofitting

Want Better Parison Control?  
Breeze IIc for Parison only  
control.

High Speed Updates  
EtherNet Communications  
Recipe Storage  
Online/Web Browser  
RLD Diagnostics  
Closed Loop Control <0.1ms  
Statistical Process Control

Ask about our MACO  
Customer First  
Program now  
With eWon.

Get the most from  
your process



# Eurotherm®

by Schneider Electric

[www.eurotherm.com/plastics](http://www.eurotherm.com/plastics)

Want the real secret to bottle light weighting?



**Process Pilot**® automated blowmolder control system can make the difference between a modest attempt at light weighting and a truly successful program. Process Pilot works with your blowmolder to **continually monitor** and **maintain material distribution** on every bottle to an unmatched degree of accuracy. Featuring **automatic adjustment** and **24/7 control**, Process Pilot can facilitate even the most aggressive light weighting program while ensuring the highest quality and performance!

**Not convinced? Contact us to set-up a trial and experience the difference.**



Measurement and process control systems for the packaging industry

www.agrintl.com  
Tel: +1.724.482.2163  
E-mail: sales@agrintl.com



MATERION

Keep Your Reputation Safe. Ask for MoldMAX® by Name.

Authentic MoldMAX® tooling alloys have been helping injection and blow molders for more than 30 years.



| Product Name | Alloy                        | Hardness | Typical Applications                       |
|--------------|------------------------------|----------|--|
| MoldMAX HH®  | Copper Beryllium             | 40 Rc    | Injection & blow molds                     |
| MoldMAX LH®  | Copper Beryllium             | 30 Rc    | Injection & blow molds                     |
| ProTherm™    | Copper Beryllium             | 20 Rc    | Injection & blow molds, hot runner systems |
| MoldMAX XL®  | Copper Nickel Tin            | 30 Rc    | Injection molds                            |
| MoldMAX V®   | Copper Nickel Silicon Chrome | 28 Rc    | Injection & blow molds                     |

| A Mold Must:            | Performance Mold Alloys Provide:                 | Benefits:   |
|-------------------------|--|---|
| Transfer heat rapidly   | The highest thermal conductivity available       | <ul style="list-style-type: none"> <li>• Rapid heat transfer</li> <li>• Faster cycle times</li> <li>• Lower processing costs</li> </ul>     |
| Transfer heat uniformly | Uniform cooling                                  | <ul style="list-style-type: none"> <li>• Dimensionally correct parts</li> <li>• Minimized warpage</li> <li>• Reduced scrap rates</li> </ul> |
| Be extremely durable    | Excellent hardness, wear resistance, non-galling | <ul style="list-style-type: none"> <li>• Higher cycle life with lower maintenance costs</li> <li>• Less downtime</li> </ul>                 |
| Be easily fabricated    | Faster machining rates than tool steels          | <ul style="list-style-type: none"> <li>• Lower mold fabrication costs</li> </ul>  |



Performance Alloys  
6070 Parkland Boulevard  
Mayfield Heights, OH 44124  
Sales Inquiries 800.321.2076  
Technical Inquiries 800.375.4205  
email: BrushAlloys-Sales@materion.com  
www.materion.com

All MoldMax® products are high performance alloys specifically designed for the plastic processing industry. These alloys offer a unique combination of thermal conductivity and strength that provides important benefits in the molding process. Play it safe. Specify MoldMAX® premium mold and tooling alloys from Materion Performance Alloys. Don't settle for inferior imposters.

Performance Alloys  
www.materion.com/  
PerformanceAlloys

## **Tax Savings in a Bottle: *The R&D Tax Credit***

Enacted in 1981 by the Economic Recovery Tax Act, the Credit for Increasing Research Activities [also known as the Research & Experimentation (R&E) or Research & Development (R&D) tax credit] rewards companies for the development or improvement of its products, processes, techniques, formulas, inventions, or software applications.

As a temporary provision of the Internal Revenue Code, the R&D tax credit enjoys bi-partisan support and is one of the most lobbied tax provisions of the Internal Revenue Code. The credit has expired over a dozen times and is regularly reinstated on a retro-active basis as part of various “tax extenders” packages.

The R&D tax credit is a dollar-for-dollar credit against the taxpayer’s federal income tax liability. Taxpayers benefit from the deduction in the year the expenditure is paid or incurred *and* by claiming the credit.

Approximately 35 states also have incentives for research and development, based upon the federal definition of qualified research. The various state R&D tax credits range from 1.5% to 40% of the eligible research expenditures, with some states requiring taxable income as a prerequisite for utilizing the credit and others refunding any unused credit to the taxpayer irrespective of the existence of taxable income. Each state has its own requirements, and state credits are only eligible for research conducted within the respective state.

In order to qualify, blowmolders’ activities must pass a four-part test. First, blowmolders must be developing or improving a product or a process, such as a new preform mold design, a blow mold design, part-specific manufacturing processes, or automating a manufacturing process. Second, the activities must be technological in nature, fundamentally relying upon the engineering disciplines. Taxpayers are not required to expand the knowledge in the industry. Rather, reliance upon existing sciences and engineering knowledge to eliminate uncertainty is permitted. Third, uncertainty with respect to the capability, method or appropriate design must exist at the outset of the research activity. While blowmolders are generally confident they can develop the necessary tooling and processing variables to meet their customer specifications, the appropriate design of the tooling and manufacturing process is uncertain at the outset of a project and must be solved. Finally, the design uncertainty must be eliminated using a process of experimentation, which is defined as modeling (including computer-aided modeling), simulation (such as moldflow), and systematic trial and error.

Based upon the aforementioned criteria, it would seem that many blowmolders engage in qualified research every day. Employees across numerous departments may be engaging in or supporting qualified research activities. For instance, the following activities may meet the definition of qualified research activities:

- New preform mold design using computer aided design (CAD) software
- New blow mold design using computer aided design (CAD) software
- Mold flow analysis on new blow molds
- Prototyping, using 3-D printing and/or SLAs
- Experimenting with part-specific PLC programming
- Improving manufacturing processes through automation
- Performing First Article or PPAP inspections on new parts

### ***New, Blowmolder-Friendly Treasury Regulations***

Moreover, recent treasury regulations clarified that if expenditures meet the definition of qualified research, it is irrelevant whether a resulting product is ultimately sold to a customer or used in the blowmolder’s business. This provision may have tremendous impact for blowmolders. For instance, taxpayers may be able to include labor and supplies (materials) used in the construction of a novel, unique, one-of-a-kind pilot model (preform or blow mold) if the design is still uncertain at the time of the mold construction.

### ***Documentation is Key***

Taxpayers claiming the credit must capture information necessary to prove that qualified research is taking place, while connecting the employees that perform qualified research to the activities themselves. Business

[Continued on next page](#)

documents that many blowmolders already prepare as part of the engineering or reporting systems are the best place to begin. Many times, these documents – including, but not limited to, drawings, iterative designs, sample results, pictures, notes, emails and meeting minutes – create nexus to the employees performing or supporting qualified research.

### Conclusion

The R&D tax credit may provide a competitive edge to blowmolders investing significant resources in the development or improvement of its products or processes. Taxpayers that have not claimed the credit in the past should review prior years' tax returns to determine whether amending its U.S. income tax returns is warranted. Taxpayers already claiming the credit should periodically review their credit methodology, documentation supporting the research expenditures, and the underlying activities to ensure they are claiming the proper amount of R&D tax credit. This approach is prudent to ensure that taxpayers are in line with the IRS' documentation requirements, recent court cases, and ever-changing treasury regulations.

### A Note about the Author



Michael J. Devereux II, CPA, CMP  
Partner and Director of Manufacturing,  
Distribution & Plastics Industry Services  
[mdevereux@muellerprost.com](mailto:mdevereux@muellerprost.com)  
314.862.2070 (office)  
314.406.8773 (cell)

Mike's primary focus is on the R&D tax credit and other tax incentives available to plastics manufacturers. He has spoken at the SPE's Annual Blowmolding Conference, ANTEC, *Plastics News* Executive and Financial Forums, SPI's Business of Plastics, and MAPP's Benchmarking Conference. He is speaking at the 2015 Annual Blowmolding Conference on Tuesday, October 13th. Mueller Prost's Tax Incentives Group is nationally recognized and has assisted hundreds of companies in the manufacturing sector identify and utilize these incentives.

# Are You A Blowmolder?

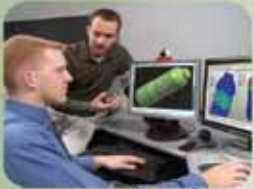
Then You **Need**  
**PLASTICS  
MACHINERY**  
Magazine  
**All machinery –  
all the time!**



[www.plasticsmachinerymagazine.com/pmmsubscribe](http://www.plasticsmachinerymagazine.com/pmmsubscribe)



**innovate**



**design**



**solve**



**test**



**educate**

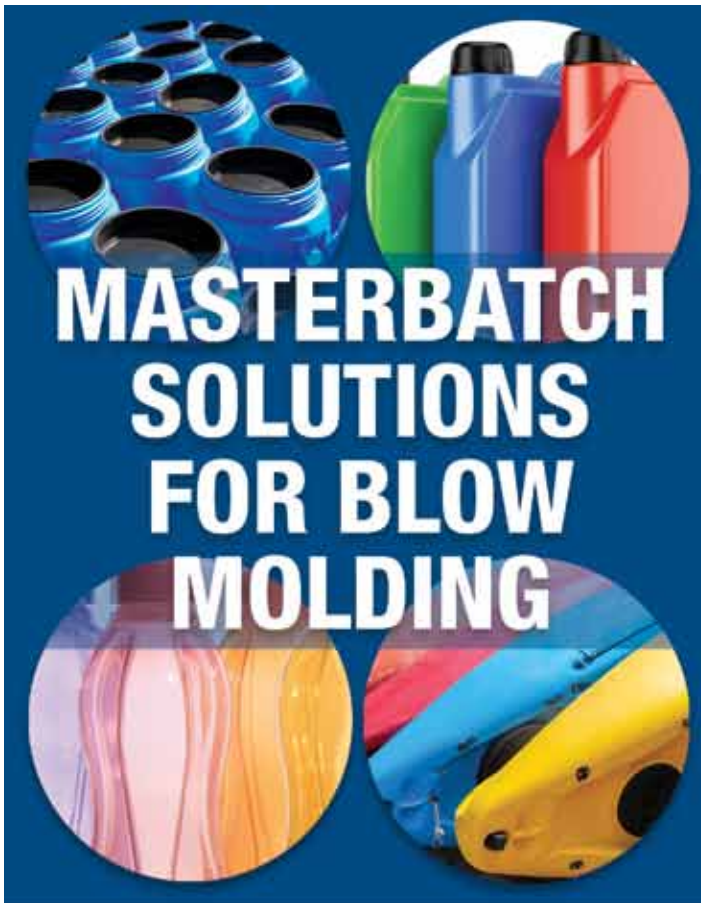
**Plastic Technologies, Inc. (PTI)** recognized worldwide as the preferred source for taking your projects from concept through commercialization for the plastic packaging industry.

- Complete package design
- Package development
- Rapid prototyping
- Pre-production prototyping
- Material evaluations
- Engineering support

[www.PlasticTechnologies.com](http://www.PlasticTechnologies.com)

The global thought and technology leader in plastic packaging™





Techmer PM's blow molding solutions address key challenges facing blow molders and OEM's such as surface imperfections, processing efficiency, and helping your product get noticed by the end consumer.

- Purge Compounds
- Multi-Layer Color Systems
  - Metallic, Pearlescent, and Other Special Effects
  - Scuff Reducer
  - Contents Protector
- Thermochromic Colorants

**VISIT US AT**

**BOOTH #26**

Learn More:  
[techmerpm.com/ABC](http://techmerpm.com/ABC)

**Graham Engineering Corporation**  
**Continuing Education**

# Grant Program

The Blow Molding Division of the Society of Plastics Engineers and Graham Engineering Corporation co-sponsor a program for continuing education of blow molding industry workers. By making financial resources available to Blow Molding Division member companies, this program will assist more people in obtaining continued education in blow molding and improve their job-related skills.

Up to \$600 per person is available to attend an SPE Blow Molding Conference, an SPE Seminar in Blow Molding, or other program applicable to blow molding.

**Eligibility Criteria:**

1. The employee must be a full-time employee of one of our member companies (having at least one current member of the SPE Blow Molding Division).
2. The employee's job function must be blow molding related.
3. The employee's academic training must not be higher than Associate Degree.
4. The employee must have company recommendation and support.
5. Costs exceeding \$500 will be the responsibility of the employee or employer.

**How to enroll:**

1. Submit a request to the Blow Molding Division at the following address:  
 Agri Industrial Plastics  
 Attn: Geoff Ward  
 301 N. 2nd St  
 Fairfield, IA 52556  
[geoff.ward@aipcompany.com](mailto:geoff.ward@aipcompany.com)
2. Include a letter of support from your company.
3. You will be notified of acceptance before the event that you wish to attend.



The Right Solution For Every Application

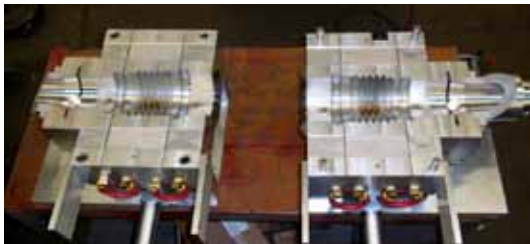


## SPE Blow Molding Conference 2015

[www.cmg-america.com](http://www.cmg-america.com)

[stephen@cmg-america.com](mailto:stephen@cmg-america.com)

### 'Blow Mold Manufacturing Specialists'



#### Plastics Capabilities

- Injection Mold Sampling: Up to 300 Ton
- Blow Mold Sampling: Up to 30lb Shot
- 3-D Blow Molding-Sampling and Development
- 5 Axis Robotic Trimming
- Resin Trials
- Prototypes

#### Tooling Capabilities

- Blow Molds
- Head Tooling
- Blow Stands
- Injection Molds
- Secondary Finishing Equipment
- In Mold Finishing

#### **Hawkeye Preferred Tooling Group**

2323 Old Highway Road  
 Charles City, IA 50616  
 Phone: 641-228-3099  
[sales@hawkeyemold.com](mailto:sales@hawkeyemold.com)  
[hawkeyepreferreddtoolinggroup.com](http://hawkeyepreferreddtoolinggroup.com)





The Society of Plastics Engineers Blow Molding Division, along with Calhoun Community College proudly presents:

# The Fundamentals of Blow Molding

## A TWO - DAY COURSE

Calhoun Community College - Aerospace Training Center

September 14 - 15, 2015

### DAY ONE

- SAFETY
- TYPES OF MACHINES USED
- MELTING AND SCREWS
- LEARN TO SPEAK HDPE
- STARTUP AND SHUTDOWN
- TROUBLESHOOTING
- MELT FRACTURE
- CONTROLLING OXIDATION/BURN
- PROGRAMMING
- TOOLING ADJUSTMENT

Optional Group Dinner

### DAY TWO

- TROUBLESHOOTING CONTINUED
- PARISON ADJUSTMENTS
- SAFETY FEATURES
- START-UP PROCEDURES  
(Specific to machine)
- TAIL LENGTH AND BOTTLE WEIGHT  
ADJUSTMENT WITH PROGRAMMER  
AND RPM
- CYCLE ADJUSTMENT AND EFFECT  
ON OVERFLOW VOLUME

**\$599**

For more information, contact  
**M. Brent Jacobs**  
at 256-306-2664 or  
[mbj@calhoun.edu](mailto:mbj@calhoun.edu)



CALHOUN  
COMMUNITY COLLEGE

[www.blowmoldingdivision.org/fundamentals-of-blow-molding-seminar](http://www.blowmoldingdivision.org/fundamentals-of-blow-molding-seminar)



David Calderone is president of Alternatives 4 Plastics, a common sense and hands-on consulting firm for the plastic blow molding industry. David has been in the blow mold industry for 45 years and was a plant manager by the age for 25. David's career began on the floor packing and over time, becoming an operations manager overseeing a 300 employee plant with three unions in the facility. Mauser Group, Consolidated Container, Clearglass Containers and Liqui-Box are just a few of the bigger corporations David has worked for. His career includes many start-to-finish projects with large companies such as J&J, Zimmer Patient Care, Corning, and several medical companies and cosmetic companies like Victoria's Secret, Bath & Body Works, and Crabtree & Evelyn.

As a co-owner in the fast growing business of personal care containers, David managed the operations. Later the company was purchased by one of the top 10 ranked blow molding companies in the country, and is still in operation today.

David interacted closely with the State's Industrial Development Boards while building two green field plants from start to finish. He even served on one of the Industrial Development Boards after building a plant in their area.

David presently serves on the Society of Plastics Engineers Blow Molding Division Board of Directors and is Chair of the Division's Training Sub-Committee.



Bob DeLong's career in plastics started in R&D at Hercules Powder in 1956, working on applications for the then-experimental Polypropylene. He blew the world's first PP bottles using a hand-operated machine built by Plax. In the 1960's, Bob led Celanese's (now Ineos) customers on processing techniques during the milk container's explosive growth period. Operator training was a key ingredient as the dairies moved to self manufacture, and this was the beginning of his teaching and consulting. Bob also taught semester courses in blow molding in Newark College of Engineering's associate degree program.

Bob spent 21 years as a senior consulting engineer at Solvay's Tech Center in Houston, active in all aspects of HDPE and PP blow molding. This included resin formulation, molds and tooling, field service, and training. End-uses ranged from household chemicals to multi-layer atmo gas tanks to extra large parts such as septic tanks.

A long time member of the SPE, he became a senior member in 1969, elected a Fellow of the Society in 2002, and received the Blow Molding Division's Lifetime Achievement Award in 2004. Bob served on Blow Molding Division's Board from 1995 until 2006, and is a frequent presenter at the Annual Blow Molding Conference. Bob is published in *Modern Plastics*, *Canadian Plastics*, *Plastics Technology*, as well as in several molding handbooks.

A member of the SPE since 1957, he became a Senior member in 1969, elected a Fellow of the Society in 2002, received the Blow Molding Division's Lifetime Achievement Award in 2004, and was inducted into the SPE's Plastics Hall of Fame in 2015.

This course has been initiated by the Society of Plastics Engineers Blow Molding Division in conjunction with Calhoun Community College. It is designed to give a better understanding of the Plastic Blow Molding process in North America. This course is designed for both students as well as those currently employed within or around a plastics blow molding business.

[calhoun.edu/workforcesolutions](http://calhoun.edu/workforcesolutions)



You can access  
past proceedings of the  
Annual Blowmolding  
Conferences at:

<http://www.4spe.org/pfn>  
user name: ABC Guest  
password: plastics



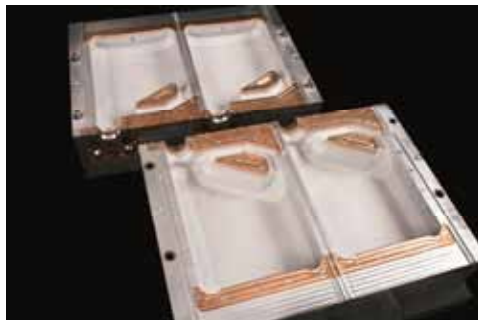
*From Idea to 3D Design Development...*



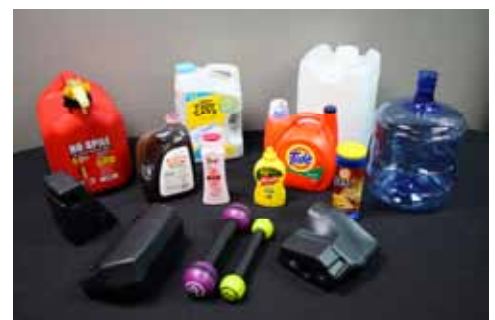
*...to Lean Mold Manufacturing...*



*...to High-Quality Precision Molds...*



*...to Superior Consumer Packaging*



**Results:**

- *31 Years of Experience*
- *Design efficiencies & Quality Assurance – Extended Mold Life*
- *Faster Time to Production*
- *Maximizing Return on Your Investment*
- *VALUE: We Build it Right... Every Time... On Time.*

**Contact Information:**

Jim Hensiek, Director of Business Development  
Mobile: 816-799-2534  
[jhensiek@creativeblowmold.com](mailto:jhensiek@creativeblowmold.com)

2350 NE Independence Avenue  
Lee's Summit, MO 64064  
Office: 816-525-4220 x 110  
[www.creativeblowmold.com](http://www.creativeblowmold.com)

## Healthy production, lower crude propel PE price drop

*By David Barry and Samantha Hartke  
Editors, PetroChem Wire*

Much like the crude oil market, US PE spot prices appear to have reached their 2015 peak in May – it has been downhill ever since. Lower energy and feedstock costs certainly factor into the PE market's slide, but there is also an element of improving supply. US and Canada PE production in July and August is outpacing the first half of the year by 5%, or about 150 million lbs/month, as a surplus of ethylene has emerged and PE units have generally run at high rates, with few unplanned disruptions.

As a result, US suppliers have relied more heavily on export channels to maintain a balanced market in recent months, even as domestic sales have remained fairly healthy.

Prices for HDPE BM exports have fallen from a May average of 58 cpp railcar FOB Houston to the mid-40s cpp in late August and early September, according to PetroChem Wire price data. The domestic spot market for wide spec material has seen a similar tumble, with offgrade HDPE frac melt resale prices in the non-pressure pipe sector falling from 62 cpp in May to mid-September levels around 50 cpp.

The US ethylene market has also seen its share of volatility over the last few months, especially in mid-August when spot ethylene prices hit a six-year low, first breaking below the 30 cpp mark and then sinking beneath 25 cpp, PCW prices show. Ethylene spent most of the year trading within a 2 cpp band but then shed more than 11 cpp, or nearly 34%, in August alone. Some are questioning whether the market can drop any further, given that cash costs for cracking heavy oil-based feedstocks into ethylene are at or near current ethylene spot prices in the low-mid 20s cpp.

A confluence of factors has kept the bearish pressure on ethylene. After a nearly two-year absence from the market, Williams' Geismar cracker began operating near full capacity in June, producing 4.63 million lbs of ethylene per day and helping balance the Louisiana market, which had been chronically short. Also, LyondellBasell fired up a 250 million lbs/year ethylene expansion at its Channelview plant.

Meanwhile, outages and rate cuts at downstream plants have meant there are fewer spot buyers in the ethylene market. No single incident has itself dramatically affected consumer demand for ethylene, but there have been downstream production outages this summer, such as Westlake Chemical in Longview and Formosa in Point Comfort. There is also anecdotal evidence of PE producers throttling back units to contend with shortages of empty hopper cars and to prevent a supply glut.

The month of September has brought signs of stabilization in the PE market, after strong August export sales cleared a surplus of material. Scheduled maintenance outages in September and October appear to be taking some pressure off the HDPE market in particular. The next North American capacity addition, Braskem-Idesa's 1.05 million tonnes/year HDPE and LDPE plant, is not expected to begin shipping prime material until early next year.

Think big. Go large.

New possibilities for multiserve  
handled containers



# Eastman **ASPIRA**™

family of resins

*To learn more, contact*

Cal Becker

301-606-2544

[cjbecker@eastman.com](mailto:cjbecker@eastman.com)

[www.eastman.com/Embrace](http://www.eastman.com/Embrace)

**EASTMAN**



COAST is a Computerized Maintenance Management System (CMMS) ideal for businesses of any size. Because COAST is hosted in the cloud as a "Software as a Service" (SaaS), we are able to scale to your needs as you grow your business. Competitively priced for small businesses, we offer unique features suitable for upper management of your global business. We pride ourselves in our easy to use interface and streamlined workflow so you can spend more time building your business rather than learn another clunky, unfriendly application. Contact us for more information by calling 1 (919) 802-0005 or by email at: [info@coast.net](mailto:info@coast.net) - Visit our website at: [www.coastms.com](http://www.coastms.com)

# GRANULATORS & DEDUSTING SYSTEMS



## Press Side Granulator with Dedusting System

- ▶ Economically recycle up to 20,000 lbs/hr
- ▶ Cross-Scissor-Cut & Double Angle Cut™ rotor
- ▶ Over 100 incredibly durable systems available



Clean & Uniform Regrind Guaranteed!



**HOSOKAWA POLYMER SYSTEMS**

www.PolySys.com • (860) 828-0541 • Berlin, Connecticut, USA

**HEISE**

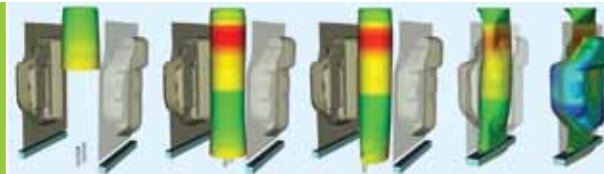
**INDUSTRIES INC**



**NRC-CNRC**

**BlowView**, the world's only software for twin-sheet blow molding from start to finish.

Major manufacturers all across the globe use BlowView to design and produce a wide variety of complex blow molded products, such as fuel tanks.



Join NRC experts at **booth 47** for a BlowView software demo.

### \* Contact

**Jason Pierosara**  
Business Management  
Tel.: 613-998-9378  
[jason.pierosara@nrc-cnrc.gc.ca](mailto:jason.pierosara@nrc-cnrc.gc.ca)  
[www.nrc-cnrc.gc.ca](http://www.nrc-cnrc.gc.ca)



National Research Council Canada  
Conseil national de recherches Canada

**Canada**



Learn more, visit [paulsontraining.com/blowmolding](http://paulsontraining.com/blowmolding)

## FAST, EFFECTIVE, PROVEN TRAINING FOR YOUR BLOW MOLDING PERSONNEL

With Paulson Training's *NEW* online course, *Extrusion Blow Molding Technology*, you'll learn the fundamentals of extrusion blow molding in seven comprehensive, interactive lessons totaling 10-12 hours. Course titles include:

- The Process and the Equipment
- Plastic Behavior
- Extrusion Blow Molding Operating and Controls
- Operating Procedures
- Part Quality and Problem Solving - Part 1
- Part Quality and Problem Solving - Part 2
- Parison Programming

For a **FREE** trial, call today 855-496-4800



## Container Development

Creating a packaging culture



## Technology

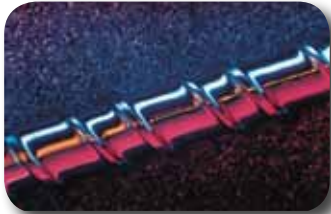
Aoki's creative molding technologies



## Creative Direct Heatcon molding technology

The Direct Heatcon molding technology was independently developed by Aoki. This biaxial stretch-blow container molding technology dramatically improves the characteristics of plastics, and this has made it an essential part of our modern lives. As the company name suggests, Aoki Technical Laboratory is a laboratory that places a great deal of importance on research and development. We will continue to create the future for containers using our creative technologies.

## The Global Advantage™ in Blow Molding



Whether your company makes automotive parts, packaging or consumer products, Davis-Standard's custom designed industrial blow molding machinery is built for productivity. Versatile accumulator head systems offer shot-to-shot consistency, cycle-to-cycle precision, and excellent parison control for both polyolefins and engineered thermoplastics.

As an added benefit, Davis-Standard's Extrusion Technical Service Group can upgrade and refurbish all makes and models of single screw continuous blow molding extruders. This includes replacement screws, process improvements, mechanical and electrical upgrades.



### How can we help you?

- Versatile, custom designed accumulator head blow molding systems
- Closed loop hydraulic and electronic controls
- State-of-the-art screw designs
- Retrofits and rebuilds
- Spiral head technology
- 24/7 customer service

Contact us today to learn how Davis-Standard's Global Advantage™ can support your blow molding objectives.

#1 Extrusion Drive Pawcatuck, CT 06379 | +860.599.1010 | [www.davis-standard.com](http://www.davis-standard.com) | [info@davis-standard.com](mailto:info@davis-standard.com)

# FOR YOU, IT'S ALL ABOUT CYCLE TIME



**TRIAD**  
Precision Products, Inc.

Time is money. That's why we offer quick delivery at a competitive price, all while maintaining high quality.

Triad has been servicing the Blow Molding Industry since 1991.

Send us a sample. We'll size it AND guarantee it.



**336-474-0980 • [triadpp.com](http://triadpp.com)**



#1 Team in Blow Molding



People Make the Difference!

517.655.4331

www.bekumamerica.com

# ProfileSolutions

Since 1993



- **Worlds Fastest Single head leak tester, > 14,500 tests/hr on a single head**
- Inline Multi head Up to 7 heads
- Feed Scroll Traveling heads to > 45,000/hr 8 head, Small bottle
- Multi Section traveling heads to > 30,000/hr 4 head, Small bottle
- Testers up to 1000L IBC's
- Drums testers.
- CNC Take-outs systems ( Nissei + Aoki) and automation.
- Profileflex conveyor system
- **High Value, save your capital**
- Email: [usa@profauto.com.au](mailto:usa@profauto.com.au)
- See YouTube channel: **PROFILE1963/videos**





Connections are identical  
to parison programmers of  
another well-known brand.  
An exchange will not take  
more than an hour.



## mini-WTC 19"

The easiest, elegant and most compact solution when it comes to replacing outdated or irreparable 19" parison programmers.

### Advantages of the mini-WTC 19":

- Two separate profile channels
- 100 set points (400 interpolated)
- 100 marker points
- Graphic display of actual positions
- Tolerance monitoring
- Parison length control
- Recipe management
- Language selectable



For more information call + 1 (413) 787-0664

[www.mullerheads.com](http://www.mullerheads.com)



AMERICAN TOOL & ENGINEERING, INC.

## American Tool & Engineering, Inc.

- Complete tool design from start to finish
- Machined & Cast aluminum molds
- On-time delivery
- Weekly progress reports

For more information  
contact us at..  
(641) 816-4921  
[sales@atemold.com](mailto:sales@atemold.com)



*Quality Molds by Design*

*Dedicated to building quality molds  
for the Blow Molding, Thermoforming &  
Pressure Forming Industries*



## Why Should You Become a Division Sponsor?

- Sponsorship provides educational grants to students—the next generation of blow molding professionals and provides support to attend the Annual Blow Molding Conferences.
- As a sponsor, you highlight your company's profile at the ABC while supporting the Division.
- Sponsors help recruit new members to the Division and support the Annual Blow Molding Conference.



## What's In It for You?

- You will increase exposure and brand awareness by showcasing your company's products and services.
- You will meet face-to-face and shake hands with your customers, decision makers, prospects and competitors.
- You will cultivate relationships and partnerships at the only event solely for the blow molding industry.
- You will have direct access to high profile industry leaders who are impacting the future of the industry.

Call or email Deirdre Turner, Conference Coordinator at (248) 505-5136 or [dcturner@earthlink.net](mailto:dcturner@earthlink.net) for information about sponsorship opportunities

# YES

## SEE WHAT YES BUILT.

There is no challenge we will say no to. Because we know that with the widest range of products, technologies, expertise and services, there is no solution we can't conceive. **Contact us** to see how our philosophy of Yes has reshaped the very fabric of our brand.

Explore all that's possible with injection, extrusion, blow molding, co-injection, hot runner systems, mold technologies, process control equipment and fluids.

Visit [www.milacron.com](http://www.milacron.com)



Uniloy UR70

Our Uniloy brand offers an exhaustive range of blow molding technologies supported by extensive design and production experience. Each one of our machines and molds is designed with the customer's needs in mind for the most efficient production of blow molded parts. Customers use our range of precision technologies to produce high quality containers in a wide variety of industries.



UNILOY

Mold Masters  
performance delivered

DME  
Every step of the way

CIMCOOL



**“DON'T just purge to purge, PURGE TO CLEAN using the original *CLEAN PLAST*<sup>®</sup> purging compound. Contact me today to arrange for a FREE purge trial at your plant and see the difference a *CLEAN PLAST PURGE* will make.”**

*~Rochelle Lemieux, President*

### **Don't be fooled by imitations, ask for Clean Plast Purging Products!**

- *CLEAN PLAST* is safe to Purge through Hot Runners including pre-form molds!
- *CLEAN PLAST* is safe for all resins including PET Bottle grade.
- *CLEAN PLAST* has no harmful abrasives or solvents!
- *CLEAN PLAST* is GRAS by the FDA.
- *CLEAN PLAST* cleans Screws, Barrels, Accumulators, Hot Runners and Heads.
- *CLEAN PLAST* can be used in Injection Molding, Extrusion, and Blow Molding.



## **PURGE FAST!!!**

Clean Plast<sup>®</sup> Purging Compounds

*“a 100% Woman Owned Business”*

PO Box 1503, Noblesville, IN 46061 • Phone: 317-770-3680 • Fax: 888-228-3865

Email: [sales@cleanplastpurge.com](mailto:sales@cleanplastpurge.com) • Website: [www.CLEANPLAST.com](http://www.CLEANPLAST.com)



The world leader in serving science



The world leader in serving science is also one of New York State's leading innovators.

Established in Rochester in 1949, Thermo Fisher Scientific has been manufacturing high-quality scientific products in the Upstate New York area for more than 65 years.

[www.thermofisher.com](http://www.thermofisher.com)

**ThermoFisher**  
SCIENTIFIC

Interested in joining our team? Visit [www.thermofisher.com/careers](http://www.thermofisher.com/careers)



## PLASTICS MACHINERY GROUP

THERMOFORMING | BLOWMOLDING | EXTRUSION | ROTATIONAL | AUXILIARY

- Machinery Sales • Sales • Appraisals • Liquidations
- Mergers & Acquisitions

*Providing the highest quality service and machinery*

31005 Bainbridge Road, Suite 6  
Solon, Ohio 44139

Phone: (440) 498-4000 - Fax: (440)498-4001

*www.plasticsmg.com*

### One-Stop Shopping – Molds, Tooling, & Machinery



- Full 3-D bottle and mold engineering
- Extrusion blow mold tool building, repairs, and refurbishing
- Head and blow pin tooling
- Trim and transfer tooling
- Rapid shuttle molds
- In-house rapid shuttle mold sampling

Monroe Mold 1402 W Seventh Monroe MI 48161  
734-241-6898 [www.monroemold.com](http://www.monroemold.com) [info@monroemold.com](mailto:info@monroemold.com)



- Rotary wheel, mechanical wheel, accumulator, & shuttle machines, single screw extruders, & trimmers/de-tabbers
- Rebuilds/upgrades for **all brands** of blow molding & extrusion equipment including PLC controls
- Service tech support with 18 experienced field-service specialists – **The best in the industry!**

R&B Plastics Machinery 1605 E Woodland Dr Saline MI 48176  
734-429-9421 [www.rblasticsmachinery.com](http://www.rblasticsmachinery.com)  
[info@rblasticsmachinery.com](mailto:info@rblasticsmachinery.com)





## RAO Design International

- Design, Engineering and Product Development
- In-house precision fabrication of custom molds



- OEM Parts: Striker Plates, Deflashers, Blow Pins, etc.



- Experience in many plastic molding applications



- **Blow Molds in 2 weeks:** Fast turn-around time



- We build Molding machinery and Turnkeys
- Automated custom designed machinery
- Custom cutting and trimming equipment



- Plastic Prototyping or Trials



“From its inception in 1960’s, Rao Design continues to deliver competitive custom molds and solutions made in our mold and machine shop. RAO provides high quality and local accountability, all within a short lead time.”



**RAO DESIGN INTERNATIONAL, INC.**

9451 W. Ainslie, Schiller Park/Chicago IL, 60176 USA Tel: (847) 671-6182  
 Fax: (847) 671-9276 www.raodesign.com e-mail: raodesign@aol.com



# GRAHAM ENGINEERING CORPORATION

## Innovation Taking Shape

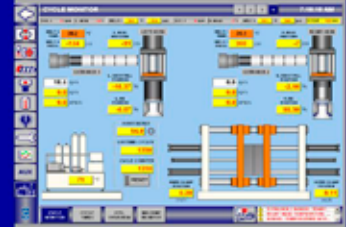


Single layer or multilayer. Low, medium or high volume. Shuttle or Wheel technology. Single machines to turn-key systems. Graham has the equipment and the expertise to help you meet your bottle making needs. We can help you create packaging with consumer appeal and product protection. Graham also supplies a full line of industrial accumulator head machines to meet your industrial molding requirements.

### Contact

Scott Howland, Sales Director, (717) 505-4813, showland@grahamengineering.com

Jaime Marrero, Aftermarket & Retrofit Sales Manager, (717) 505-4838, jmarrero@grahamengineering.com



### CONTROL RETROFITS

Graham offers PC control retrofits on our older machines and some competitive equipment with our award winning XBM Navigator System. From parison programmer replacements to complete electrical control systems we have the skill and experience to optimize your operation.

1203 Eden Road • York, PA 17402 • www.grahamengineering.com • (717) 848-3755

## TECHNOLOGY IN BLOW MOLD



- High speed machining 5 axes latest technologies
- Software capabilities: Catia V5
- 3D LASER SCAN and reverse-engineering technology
- Working on 3 shifts, 7 days/week
- ISO 9001 [2008] certified includes clauses of ISO 16949

#### Maximum Mold Capabilities:

Length: 3 300 mm [130"]  
Width: 2 800 mm [65"]  
Height: 1 600 mm [50"]



### New Manufacturing Site in Mexico



Rocand Molde y Plastico  
Av. Mina de Guadalupe 858, Manzana 3  
Parque Industrial Puerto Interior, Santa Fe IV  
Silao, GTO Mx CP 36275

#### Production Activity:

- Tool Manufacturing
- Injection Molding (presses up to 900t)



- Twin Sheet Blow Mold
- In mold cutting
- In mold punching
- Unscrewing device
- Insert overmolding



www.rocand.com



www.rocand.com

|  |  |  |  |  |
|--|--|--|--|--|
|  <p>PRIMATOP® PP - PE<br/>Amalloy® clear &amp; specialty polymers<br/>Color Concentrates<br/>Anti Microbial Compounds<br/>Anti Counterfeiting Compounds<br/>Track &amp; Trace Technology</p>   |  <p>Lustran® ABS<br/>Lustran® SAN<br/>Lustran® SMA<br/>Lustran® Elite ABS<br/>Triax® ABS Alloys</p>  <p>Polypropylene<br/>Polystyrene<br/>Polyethylene</p>   |  <p>Luran® SAN<br/>Luran S® ASA<br/>Luran SC® ASA/PC<br/>Novodur® ABS<br/>Styrolux® Clear SBS Copolymer<br/>Terblend N® ABS / Nylon Blend<br/>Terluran® ABS<br/>Terlux® Clear ABS (MABS)<br/>NAS® Acrylic Copolymer<br/>ZYLAR® Impact Modified NAS</p>  |  <p>DuraStar® Injection Copolyesters<br/>Ester® Injection/Extrusion Copolyesters<br/>Tritan® Copolyesters<br/>Provista® Flexible Extrusion Copolyesters<br/>Eastalloy®<br/>Cristal®</p>  <p>Enviroplas Compounds</p>   |  <p>SABIC® PPSCompound</p>  <p>Formolene® Polypropylene</p>  |
| <p>ECHO® Recycled Polypropylene<br/>ECHO® Recycled Polyethylene<br/>ECHO® Recycled Filled PP<br/>EnViramid® Post Consumer Nylon</p> <p>HYBRID PC Alloys<br/>HYLAC® ABS<br/>HYLEX Polycarbonate<br/>HYLON® Nylon 6<br/>HYLON® Nylon 66<br/>HYLOX PBT<br/>HYRILSAN<br/>HYSUN® ASA</p>  |  <p>CaCO3 Calcium Carbonate concentrates</p>  <p>HIFILL™ Compounds / Concentrates<br/>Elastoblend® Impact Modified Compound<br/>Electrblend® EMI/RFI Electrically Active<br/>Lubritblend® Lubricated Compounds<br/>Magnblend® Magnetic Compounds<br/>Pleasblend® Alloys &amp; Blends<br/>Stetblend® Static Dissipative Compounds</p> |  <p>Enflex S® SEBS<br/>EZprene V® TPV<br/>Enflex V® TPV<br/>Enflex EA® TPE<br/>Ensoft® SEBS - SBS</p>  <p>Apec® Heat Resistant PC<br/>Bayblend® PC/ABS<br/>Desmopan Polyurethane<br/>Makrolon® PC/PET<br/>Mekrolon® Polycarbonate<br/>Texin® TPU</p> |  <p>Avantre® Ignition Resistant HIPS, PP, ABS<br/>ZYNTAR® Ignition Resistant PS</p>  <p>Technyl® FR Polyamide<br/>Technyl A® Nylon 66 Polyamide<br/>Technyl B® Nylon 66/6 Polyamide<br/>Technyl C® Nylon 6 Polyamide<br/>Technyl Star® High Flow Nylon</p>   |  <p>Rigid PVC<br/>Flexible PVC</p>  <p>Emarex® Nylon 6 / 66<br/>Naxaloy® PC Blends<br/>Naxell® Polycarbonate</p> |
|  <p>Ultrason® Polysulfone / Ultrason® Polyethersulfone<br/>Ultramid® Nylon 6 &amp; 66<br/>Ultradur® PBT<br/>Ultraform® ACETAL</p>  <p>HPPP Copylene™<br/>CPPP Copylene™<br/>RPPP Copylene™</p> |  <p>Acrylite® Acrylic Compounds<br/>Acrylite Plus® Impact Acrylic Compounds<br/>Cyrex® Super Impact PC/Acrylic<br/>Cyrovu HP2® Acrylic Compounds<br/>XT Polymer® Medical Acrylic</p>  |  <p>Iupilon® Polycarbonate<br/>Iuplice® Modified PPE<br/>Reny®<br/>LEMALLOY®<br/>NOVAREX®<br/>XANTAR®</p>   |  <p>AMCEL® Acetal Copolymer (POM)<br/>CELCON® Acetal Copolymer (PCM)<br/>CELANEX® Thermoplastic Polyester (PBT)<br/>CELSTRAN® LFRT<br/>FORTRON® Polyphenylene Sulfide<br/>HOSTAFORM® Acetal<br/>IMPET® Thermoplastic Polyester (PET)<br/>RITEFLEX® Copolyester Elastomer (COPE)<br/>THERMX® Polycyclohexylenedimethylene Terephthalate (PCT)<br/>VANDAR® Thermoplastic Polyester Alloys<br/>VECTRA® Liquid Crystal Polymer (LCP)<br/>ZENITE® Liquid Crystal Polymer (LCP)</p> |  <p>Siloxane®<br/>Mesterbatch</p>   |
|  <p>Satoam®<br/>Foaming Agents</p>  |  <p>NOVAPOL® Polyethylene<br/>SCLAIR® Polyethylene</p>  |  <p>Marlex® PE<br/>MarFlex® PE<br/>mPact® mPE</p>   |  |  |

All logos and brand names are property of their respective trademark owners © 2015 Amco.

Proudly Servicing the Plastics Industry since 1955.

September 2015

Please Call Jeff Light at (401) 491-9523

## Contributions to the Blow Molding Division Education Committee

### Kautex Maschinenbau

contributed \$4000 to our general education fund

### ALPLA

contributed \$4000 to our general education fund

### Ineos O&P USA

contributed \$1400 to our general education fund

### CKS Packaging

contributed \$1000 to our general education fund

### Nissei ASB

contributed \$1000 to our general education fund

### W. Muller

contributed \$500 to our general education fund

### Agri-Industrial Plastics Company

contributed \$500 to our general education fund



# ASB-12M

Small | Versatile | Efficient

# ASB

Form Your Vision



NEW MACHINE

The new **ASB-12M** One-Step Injection Stretch Blow Molding Machine from Nissei ASB is capable of molding jars and small containers with excellent energy efficiency.

Small enough to fit in a laboratory... yet powerful enough to provide serious production output!

**Ideal for entry to PET blow molding.**



## NISSEI ASB COMPANY

125 Westlake Parkway, Suite 120 | Atlanta, GA 30336 | [www.nissei-asbus.com](http://www.nissei-asbus.com)  
Tel: +1 (404) 699-7755 | Fax: +1 (404) 696-9009 | [sales@nissei-asbus.com](mailto:sales@nissei-asbus.com)

Ask us how to reduce costs, improve properties, and improve sustainability of your bottles



### BOTTLES

- Natural calcium carbonate
- Specialty Chemicals



### SERVICE

- Technical customer service
- Expert skills
- Analytics



### LOGISTICS

- Optimized supply chain
- Flexibility
- Distribution network
- Warehouses



### R&D

- Interdisciplinary
- Targeted
- Cost-oriented
- Research clusters



### PRODUCTION

- Secure supply of raw materials
- State-of-the-art facilities
- ISO-certified quality control

Omya Inc. | 9987 Carver Rd, Suite 300 | Cincinnati, Ohio 45242 | USA  
Phone: 513 387 4600 | [www.omya-na.com](http://www.omya-na.com) | [kevin.krummel@omya.com](mailto:kevin.krummel@omya.com)



Attend comprehensive mini-sessions featuring instruction focusing on the technology, processes, troubleshooting and methodologies of blow molding at the [Annual Blow Molding Conference . . . . .](#)



## Total Tooling Package



**The Preferred Source for Superior  
Blow Molds and Tooling**

**11530 Brooklyn Rd.  
Brooklyn, MI 49230, 517.592.8988  
[www.mid-americanmachining.com](http://www.mid-americanmachining.com)**

# FIDELITY

## TOOL & MOLD LTD.

Leadership in Custom and Production Extrusion Blow Mold Tool  
Manufacturing and Maintenance

Fidelity Tool and Mold, Inc.  
1885 Suncoast Lane  
Batavia, IL 60510  
(630) 879-2300

[fidelitytool.com](http://fidelitytool.com)

### M.C. Molds, Inc



Extrusion Blow Molds, Spin Trimmer,  
Foam Molds, Vacuum Molds & Repair /  
Refurbishment.

125 Industrial Drive - Williamston, MI 48895

P. 517-655-5481

F. 517-655-4826

Email - [sales@mcmolds.com](mailto:sales@mcmolds.com)

Bill Simpson - Sales

P. 517-655-4734

F. 517-655-7400

Email - [johnp@jbjpam.com](mailto:johnp@jbjpam.com)

John Palazzolo - President

# JBJ

## Products & Machinery

Shuttle \ Long Stroke Molds



Mold Innovation



Inline Deflasher



Inline Neck Finishing



Stretch Blow Molds



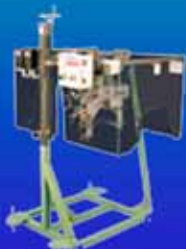
ABS Models & Unit Molds



Foam & Vacuum Molds



Inline Deflasher with Tail



Spin Trimmers



Transfer and Trim Tools



Recip Molds



Hydraulic Deflasher



Hand Load Deflasher



## "Technology That Pays For Itself"

BARR Inc., established in 1976, is well known for its ET® "Energy Transfer Technology" and VBET® feed screw designs.

The "Energy Transfer Technology" products have set the standard for **High Performance, Energy Efficient** feed screws for blow molding, extrusion and injection molding markets.

**E.T.®**  
**V.B.E.T.®**

P: 517-759-5050

[www.robertbarr.com](http://www.robertbarr.com)

# PROCO

MACHINERY INC

**Celebrating 30 years of excellence  
in container automation**



Proco Take out Systems  
Automatic Deflashers  
Robot Case-Packers  
Multipak Palletizers  
Leak Testers  
Flame Treaters  
Spout Insertion Machine



*Proco provides innovative cost effective automation solution.*

Call us today **905-602-6066**  
Visit us at [www.procomachinery.com](http://www.procomachinery.com)  
[info@procomachinery.com](mailto:info@procomachinery.com)

**PROCO**  
MACHINERY INC  
innovation in automation

BOOST PERFORMANCE WHILE INCREASING  
**SUSTAINABILITY**

**SEALED  
COLOR™**

**SEALED  
ADDITIVES™**



**Riverdale  
GLOBAL®**

*Changing the way you think about color*



[www.riverdaleglobal.com](http://www.riverdaleglobal.com) / Tel: 610-358-2900

**Wittmann**

**Battenfeld**

***Just Screw It!***

A Wittmann Battenfeld granulator with Auger Screw Ram can process those bulky scrap parts without pre-cutting with a band saw, or buying a larger granulator than needed for normal cycle scrap.



Save up to 50% on capital equipment cost by buying a smaller granulator to meet your cycle scrap needs and still be able to process the bulky thin wall scrap parts.

Other benefits of a smaller granulator than would normally be required:

- Reduced sound levels
- Reduced energy consumption
- Reduced footprint
- Reduced feed height
- Easier to cleanout and maintain

**Wittmann**  
EXTRUSION



Check out our screw in action at

<http://www.youtube.com/user/WittmannUSA>

world of innovation

[www.wittmann-group.com](http://www.wittmann-group.com)

[info.usa@wittmann-group.com](mailto:info.usa@wittmann-group.com)





The World of Blow Molding starts with Rocheleau Machinery

1938 Celebrating 75 Years 2013



RS-70



RS-25



SPB-3



R-4



CS-1

Cost effective blow molding systems from single up to 12 heads of production



RS-80



▶ Single Serve Bottles



▶ Non-Handled



▶ Wide Mouth Jars



▶ Dairy Bottles



▶ Industrial & Household



Rocheleau Tool & Die Co., Inc.

Rocheleau blow molding systems are designed with a modular format to accommodate a multitude of container sizes, shapes and packaging needs. Systems are designed to meet customer demands with consideration of productivity, space and capital investment.

17 Industrial Road, Fitchburg, MA 01420 USA • (978) 345-1723 • Fax (978) 345-5972 • www.rocheleautool.com

**Delta**  
ENGINEERING  
Solutions for the Blow Molding Industry



Packaging

Conveying

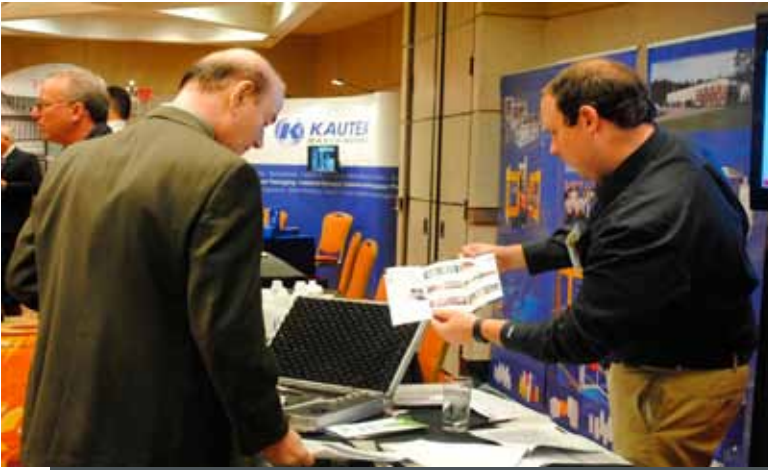
Finishing

Quality Control

Consulting

Take-out systems

Delta engineering Inc. - 1256 Oakbrook Drive Ste E, Norcross, GA 30093 - 678 250 6356  
www.delta-engineering-usa.com - sales@delta-engineering-usa.com



Simple, efficient, cost-effective

## PureFlo

Filterless receivers

Why PureFlo?

- No filter to clean
- Stainless steel construction
- Patented design
- Abrasion resistant
- No more clogged conveying lines
- No need of compressed air
- Highest conveying efficiency, no pressure drops
- 99.99% air to material separation efficiency
- 0.25, 0.75, 1.5, 3.0 and 6.0 cu. ft. chambers standard
- The simplest to install, access, clean and maintain



## Una-Dyn

A Pivon Company



[unadyn.pivon.com](http://unadyn.pivon.com)



**FGH SYSTEMS INC**

**10 Prospect Place**

**Denville, NJ 07834 USA**

Tel: (973) 625-8114 E-mail: [sales@fghsystems.com](mailto:sales@fghsystems.com)

Fax: (973) 625-1442 Website: [www.fghsystems.com](http://www.fghsystems.com)

TURKEY  
KEY  
PACKAGES

TECHNOLOGY

- **Extrusion blow mold manufacturing** and tooling for all brand machines.
  - Single cavity unit molds to high cavitation production long stroke molds.
- **Eight (8) extrusion blow molding machines** for sampling and development.
  - COEX, pre-production, clean room, and state-of-the-art all electric lab machine.
- **Blow molding machine representations** and turn-key packages:
  - MILACRON Extrusion blow molding shuttle machines (UNILOY - B&W).
  - OSSBERGER Pressblower injection blow molding machines.
  - AOKI Stretch blow molding machines (Northeast USA).
  - EISBAR Air cooling, drying, and dehumidification systems.



MOLD MANUFACTURING

COMPLETE PACKAGE

HIGH CAVITATION

TECHNICAL CENTER

Serving the blow molding industry since 1976



### Extrusion blow molding

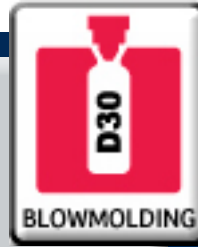
Kautex Maschinebau is your single source supplier of machines and turn-key systems - since 1935.

Find more at: [www.kautex-group.com](http://www.kautex-group.com)

The result after 80 years  
 More than 6,100 active machines – worldwide



Become a member...  
 Join the  
 SPE Blow Molding Division



Society of  
 Plastic Engineers



**Amsler Equipment Inc.**  
 Reduce your bottle costs!

**PET Stretch Blow Molders**



PET Technology

**All Your Stretch Blow Molding Needs**

- ◇ Bottle Development
- ◇ Pre-production Pilot Runs
- ◇ Stretch Blow Molders and Auxiliaries
- ◇ After-Sales Support
- ◇ Seven Support Offices Around North America

**Leak Testers & Spin Trimmers**



**Blow Molding Machine Capabilities**

- ◇ Wide-Mouth Jars
- ◇ Oval Bottles
- ◇ Use Your Existing Molds
- ◇ 15-Minute Changeovers



All Electric

**Made RIGHT in North America!**



[www.amslerequipment.net](http://www.amslerequipment.net)

## CHAIRPERSON



Jamie Pace  
Nissei ASB Company  
125 Westlake Pwky, Suite 120  
Atlanta, GA 30336  
Ph: 404/969-3105 Fax: 404/696-9009  
Cell: 404/502-4508  
E-mail: j.pace@nissei-asbus.com

## CHAIR-ELECT



Cal Becker  
Eastman Chemical Co.  
137 Regional Park Dr.  
Kingsport, TN 37660  
Ph: 301/606-2544  
E-mail: cjbecker@eastman.com

## PAST CHAIRPERSON



Jeffrey S. Light  
Amco Polymers LLC  
43 Forest Glen Drive  
Hope Valley, RI 02832  
Ph: 401/486-3250 Fax: 401/486-9523  
E-mail: JLight@AmcoPolymers.com

## FINANCE CHAIRPERSON, COUNCILOR



Scott Steele  
Plastic Technologies, Inc.  
1440 Timberwolf Drive  
P.O. Box 964  
Holland, OH 43528  
Ph: 419/867-5403 / 867-5400  
Fax: 419/867-7700 Cell: 419/392-2711  
Email: s.steele@plastictechnologies.com

## SECRETARY



George Hurden  
Kautex Machines Inc.  
01 Chambers Brook Road  
North Branch, NJ 08876  
Ph: 908/252-9350 Cell: 203/605-3305  
E-mail: George.Hurden@Kautex-Group.com

## TREASURER



Terry Glass  
Mars, PA 16046  
Cell: 979/236-3617  
E-mail: tglass002@hotmail.com

## TECHNICAL PROGRAM CHAIRPERSON



Surendra Agarwal  
Creative Group of Industries  
501, Embassy Center  
Nariman Pt., Mumbai 400005  
Ph: 91-22-4078-0000 FX: 91-22-4078-0023  
Cell: 91-98-2091-2457  
E-mail: surendra@creativeplasticindia.com

## EDUCATION CHAIRPERSON



Geoff Ward  
Agri Industrial Plastics  
301 N. 22nd Street  
Fairfield, IA 52556  
Ph: 641/472-4188 FX: 641/472-7120  
E-mail: geoff.ward@agriindustrialplastics.com

## MARKETING CO-CHAIRPERSONS



Brian Spence  
Cell: 919/475-0692  
E-mail: bspence@yahoo.com



Gary Carr  
Bekum America Corp.  
1140 W. Grand River  
Williamston, MI 48895-0567  
Ph: 517/655-7135 FX: 517/655-4121  
Cell: 517/881-5764  
E-mail: gcarr@bekumamerica.com



George Rollend  
DAK Americas, LLC  
38 Green Road, Amherst, NH 03031  
Ph: 603/672-6403 Cell: 302/547-1054  
E-mail: grollend@dakamericas.com

## MEMBERSHIP SUB-COMMITTEE CHAIR



Henry Vogel  
Heise Industries  
196 Commerce St.  
E. Berlin, CT 06023  
Ph: 860/828-6538 Cell: 610-349-0164  
E-mail: henryv@heiseindustries.com

## NEWSLETTER EDITOR



Ron Puvak  
Plastic Technologies Inc.  
1440 Timberwolf Drive  
Holland, OH 43528  
Ph: 419/725-5613 Cell: 419/708-1486  
E-mail: r.puvak@plastictechnologies.com

## AWARDS SUB-COMMITTEE CHAIR



John Rathman  
Chevron Phillips Chemical Co. LP  
Plastics Technical Center, Room 155  
Highways 60 & 123  
Bartlesville, OK 74003-6670  
Ph: 918/977-4879 Fx: 918/977-7599  
Cell: 918/327-9378  
E-mail: rathmjr@cpchem.com

## WEBSITE SUB-COMMITTEE CHAIR



John Sugden  
The Dow Chemical Company  
4333 Building Midland, MI 48667  
Ph: 989/636-9533 Cell: 989/245-0819  
E-mail: jlsugden@dow.com

## TRAINING SUB-COMMITTEE CHAIR



Dave Calderone  
Alternative 4 Plastics LLC  
2218 Kadyday Way, Murfreesboro, TN 37128  
Cell: 615/785-4226  
E-mail: david.calderone20@comcast.net

## STUDENT DESIGN COMPETITION SUB-COMMITTEE CHAIR



Ken Carter  
Deere & Company  
One John Deere Place, MTIC  
Moline, IL 61265  
Ph: 309/765-3765 Cell: 608/432-9457  
E-mail: CarterKennethJ@JohnDeere.com

**SCHOLARSHIPS SUB-COMMITTEE CHAIR**



Mark Heitker  
INEOS Olefins & Polymers, USA  
Technical Center  
1230 Independence Parkway South  
LaPorte, TX 77571  
Ph: 713/307-3702 FX: 713/307-3521  
Cell: 713/819-3702  
E-mail: mark.heitker@ineos.com



Gerald Hobson  
Hobson Consulting LTD  
21721 Wildwood Place  
Shell Rock, IA 50670  
Ph: 319/885-6564 Cell: 319/230-0994  
E-mail: ghobson@hobson.com



Randy Moynihan  
Chevron Phillips Chemical Co. LP  
205 PTC/BTC, Highways 60 & 123  
Bartlesville, OK 74004  
Ph: 918/661-0640 Fax: 918/661-0311  
Cell: 918/440-4090  
E-mail: MOYNIRH@cpchem.com



Mohammed Usman  
Ford Motor Co.  
20000 Rotunda Drive, Suite 24G23  
MD 1222  
Dearborn, MI 48124  
Ph: 313/805-9797 FX: 313/621-4707  
E-mail: musman@ford.com



Piaras de Cléir  
The Coca-Cola Company  
One Coca-Cola Plaza  
Atlanta, GA 30313  
PH 404-676-5429  
Cell: 404-353-0104  
E-mail: piadecleir@coca-cola.com



John Headrick  
NAMPAC  
4101 Lake Boone Trail, Suite 201  
Raleigh, NC 27607  
Ph: (905) 751-1828 FX: (905) 751-2390  
E-mail: john.headrick@nampac.com



Mike Hall  
Kyoda America Industries Co.  
850 Progress Center Ave.  
Lawrenceville, GA  
Ph: 770/237-0364 Cell: 706/799-1761  
E-mail: mike@kyodoamerica.com



David Hayward  
Silgan Plastics  
1858 Meca Way  
Norcross, GA 30098  
Ph: 770/243-5201 Cell: 678/772-9458  
E-mail: d.hayward@silganplastics.com

**PARTS COMPETITION COMMITTEE CHAIR**



Lewis Ferguson  
Parisons  
9900 Sunset Drive  
Stone Harbor, NJ 08247  
Ph: 609/368-7230 Cell: 313/506-4637  
E-mail: parisons@aol.com



Kathy Birchmeier  
Kraft Foods  
801 Waukegan Road  
Glenview, IL 60025  
Ph: 847/646-3699 Cell: 847/331-4148  
E-mail: kathryn.birchmeier@kraftfoods.com

**NOMINATIONS COMMITTEE CHAIRPERSON**



Benjamin Lopez  
Kautex Maschinenbau GmbH  
Kautexstrasse 54  
Bonn, Germany 53229  
Ph: 0049/170 7850887  
FX: 0049/228 489 404 Cell: 517/402-6346  
E-mail: benjamin.lopez@kautex-group.com



Donald Maines  
Triad Precision Products  
128 Sunrise Center Drive  
Thomasville, NC 27360  
Ph: 336/474-0980 FX: 336/474-0981  
Cell: 336/880-1526  
E-mail: donm@triadpp.com



Dale Klaus  
Quality Custom Molding  
209 W. Main  
Linn, MO 65051  
Ph: 573/897-4166 Fax: 573/897-3482  
Cell: 314-223-5483  
E-mail: dklaus@qualitycustommolding.com



Rama Etekallapalli  
Arch Plastics  
2010 Polymers Drive  
Chattanooga, TN 37921  
Ph: 423/553-7751 Cell: 765/404-9967  
E-mail: retekallapalli@archplasticsllc.com



Bob Jackson  
Jackson Machinery, Inc.  
3830 Highway H  
Port Washington, WI 53074  
Ph: 262/284-1066 FX: 262/284-5466  
Cell: 414/828-3830  
E-mail: bobJ@jackson-machinery.com

# Emeritus



Robert DeLong  
Blasformen Consulting  
4914 Maple Terrace  
Kingwood, TX 77345  
Ph: 281/360-5333  
E-mail: done7106@earthlink.net



Robert Slawska  
Proven Technology, Inc.  
5 Woodshire Way  
Hillsborough, NJ 08844  
Ph: 908/359-7888 or 908/759-2407  
Fax: 908-359-1006  
E-mail: rslawska@aol.com



Don Peters  
Phillips Chemical-Retired  
154 PTC, Highway 60 & 123  
Bartlesville, OK 74004  
Ph: 918/661-3117 FX: 918/662-2220  
E-mail: judopeters@aol.com

# Affiliated Members



Deirdre Turner  
42 Regal Drive  
Rochester Hills, MI 48037  
Ph: 248/505-5136  
E-mail: dcturner@earthlink.net



Jon Ratzlaff  
Chevron Phillips Chemical Co. LP  
Plastics Technical Center  
Highways 60 & 123  
Bartlesville, OK 74004  
Ph: 918/661-3127  
E-mail: RATZLJD@cpchem.com

# Active Members



Jonathan A. Meckley  
Penn State Erie  
Burke Center - School of Engineering  
5101 Jordan Road, Erie, PA 16563  
Ph: 814-898-6147 FX: 814-898-6006  
Cell: 814-572-2934  
E-mail: jmeckley@psu.edu



Mark Barger  
The Dow Chemical Company, Inc.  
200 Larkin Center  
1605 Joseph Drive  
Midland, MI 48674  
Ph: 989/636-1263 FX: 989/636-0194  
Cell: 989/906-2083  
E-mail: mabarger@dow.com



Mridula (Babli) Kapur  
The Dow Chemical Company  
Basic Plastics R&D  
2310 N. Brazosport Blvd, B-1470-D  
Freeport, TX 77541-3257  
Ph: 979/238-5684 Fax: 979/238-0488  
Cell: 979/665-1611  
E-mail: mkapur@dow.com



Daryle Damschroder  
D2 Blow Molded Solutions  
930 Ohio Ave.  
Elmore, OH 43416  
Ph: 419/862-3134 Cell: 419/680-4234  
E-mail: ddamschroder@woh.rr.com



Timothy W. Womer  
TW Womer and Associates, LLC  
262 East River Road  
Edinburg, PA 16116  
Ph: 724/355-3311  
E-mail: Tim@TWWomer.com

Jack McGarry  
MBK/Blow Molding Machinery, LLC  
6 Towpath Way  
New Hope, PA 18938  
Ph: 215/630-2892 FX: 215/862-4963  
E-mail: beige2@aol.com



SOCIETY OF  
PLASTICS ENGINEERS