

## The Success Story that launched so many more



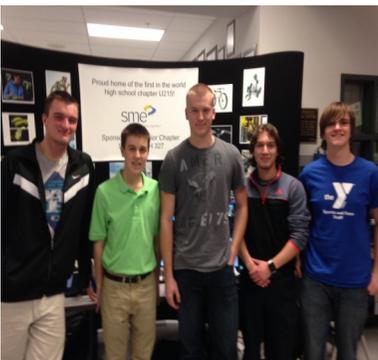
As many of you may know it has been a busy year for the New Hampshire Machining Association's Collaborative Partnership with SME's Chapter 327. We set out on an aggressive program of engagement with the expectation of bridging the gaps between middle, secondary and onward to post secondary programs. We believed sequencing events to build a solid foundation of accessible STEM related programming would provide an incubator for growth. We wanted to develop a program which would provide vision of the future to those who aspire to develop a career in STEM. Key to all activities was connecting academia to industry. Before we begin to share our story we need to thank the Gene Haas Foundation for their support. It was their support that made this year possible.

### So how did we do it?

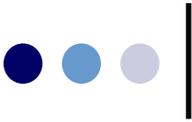
Simply put, we went to the source. We engaged at Open Houses, Adv. Manufacturing Week Events, Robotic Events, Membership Meetings, Career Development Days and Trade shows. We even created a few drop by and network events at the community college campuses.

## Middle and Secondary Programming

From the very beginning, the results were impressive. We stood by the theory that it was not that the public was not interested or did not have any idea what manufacturing is about, **but they did not know how to engage it**. One of our very first open house events was supported by *e-stem solutions*, who provided a 3D printer that was producing samples. The exciting news was the response from the families who walked by the table and saw the demonstration. Brenda Quinn, provided a fabulous demonstration that engaged the entire family and connected the application to the lab on site. Not only were students wide-eyed to see an operational 3D printer but their families began to realize this was a reality within the own community.



Our first ever student driven open house was one of our greatest successes. The students determined their own set up of equipment and demonstration piece that tied together all of the advanced manufacturing classes housed within the school. Respectfully students from machine tool, engineering and CADD programs worked together to produce a CIM cell. Students provided insight to their peers by talking about taking the concept from design to production.



## Middle and Secondary Programming—Continued from page 1

Participating in a student driven career day event that rolled into a night time open house was sensational. Under classmen were afforded an opportunity to explore the career and technical educational opportunities housed within the school. Each discipline had their own “booth” that was staffed by students and tech advisory board members. At night parents were able to see what their children had seen earlier in the day!



We were proud to be a part of the Fairgrounds Middle School Advanced Manufacturing Video Project. Again, it was a great collaborative project made up of members of the tech advisory board of Nashua High School, Nashua Community College, and assistance from AET Labs. In the middle of this whole project was a student member of both the NHMA and SME. His name is Cameron. He stepped up to become the lead student mentor and interface. Students at the middle school designed a house layout and learned about 3D printing by producing their house on a printer. Not only had they printed their house but they also produced some furniture as well.

**We are delighted to report they won 1<sup>st</sup> place in the competition!**

## Girls Technology Day 2015— Developed by NH Department of Education

This past winter we were able to help sponsor Girls Technology Days. Day One was in Concord NH at New Hampshire Technical Institute and the second day was at Manchester Community College. It was an impressive event that allowed girls in NH explore the various career paths and technologies used in the STEM related industries. It was great to see such a collaborative effort to present such a detail event that allow the girls not only to learn but to encourage them to seek additional opportunities which they may be interested in. Although, we think there was one “little guy” who stole the whole show, it was a robot that was interactive. The girls just loved him and his amazing skills.



## Job Postings Page

We encourage our members to submit their job postings. Students are using the resource and connecting to those who post. To submit any job posting please contact Sally Monroe in the office.



## **Our general membership activities grow!**

As we continued to grow our membership base and collaborative partners, so did our night time general membership activities. As students came on board as members they quickly developed an understanding to the value of touring various manufacturing facilities. We quickly saw a 5% growth in participation to ramp up to 100%. Precision Tool and Die, HaydonKerk Motion, the Mazak Presentation and iRobot were perhaps the largest groups ever for either organization. Steve Wilkson provided a great presentation about their new machine, INTEGRIX i-400AM and the lecture hall was full to capacity. However perhaps our greatest achievement to date was a full lecture hall for the iRobot Presentation at Nashua High School CTE. We were able to merge our middle school, secondary and post-secondary students along with members at large from both the NHMA and SME. WE did it! We built it and they came. The middle school FAMILIES who attended were very interested in learning about more opportunity for their children whether it be a night time tour, camps or robotics programs! Families were interested in learning from mentors how to best position their children who have an interest in STEM related fields. Their comments and feed back proved the theory they only need to be informed about what to do to engage and learn more. We have a long list of companies to thank for their time, effort and support.

**Photo Machine**

**Solid Works**

**Access Manufacturing Systems**

**Precision Tool and Die**

**ASME/NNE, IEEE Collaborative Holiday Networking Event**

**Haydon Kerk Motion**

**Mazak**

**iRobot**

**Watts**

**Sturm Ruger Co., Inc.**

**Nashua High School CTE**

**Nashua Community College- Advanced Manufacturing Program**



## Middle School Programming

As we explore our middle school options of engagement one thing is certain. Students love STEM engagements. We have already learned that many middle schools are teaching parts of STEM education here in NH. We feel the key is providing opportunity to connect the dots to the manufacturing community. We have also learned that many teachers are enthusiastic to become involved and are challenged to keep up with demand. Many schools have forms of design classes that translate to engineering, some even have programs where students are learning to write code, and some even have robotics. We believe that the need to bridge the gaps between middle and secondary programming is at a critical stage so the energy and aspiration to achieve a successful career in the STEM arena is not lost. We hope to continue to ramp up our activities with middle schools so that more students and families can participate.

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When will we will ever use this  
in the REAL World?

## Kearsarge Community Math Night

Last year the NHMA had the unique opportunity of meeting a great lady by the name of Lisa Bell from Kearsarge Regional Middle School. Lisa developed Kearsarge Community Math Night where members of the business community were invited to teach their applied math in a fun and educational forum. On that evening they will have a different business in each classroom.

They have a Vet that has families use weight of animals and a formula to determine the dose of medication needed. A Delta Airline Pilot that has posters of cockpit instruments around the room, explains what he does, and has the kids figure out some of the math he uses. Vernondale's Store has the kids do simple math and hands out penny candy to the kids. They have an elementary teacher using a fraction unit to make playdough in the cooking room. NH State Police send the TAR (Tactical Accident Reconstruction) Team to show how they rebuild an accident scene. NASCAR has come in the past to explain the geometry angles in the turns of the track. Lisa believes that any way business uses math is usually educational. Families go through the rooms at their own pace. Some stay in a room for a few minutes and some stay for an hour. It is an opportunity for businesses to play educator, educators to be students, and families to experience a new way to see why they need to know the math. It is the "who", "what", "when", "where", "why" and "how" in math. If you or your company would like to get involved this is an annual event, it is usually scheduled in March. For more information please contact us so we can connect you.



## **We encourage the engagement of MyTurn**

The MyTurn program is an excellent program for individuals who wish to enter the workforce upon graduation and still need a little support. MyTurn starts with entry level job skills training making sure the students are ready to build their own success story. Once the students are ready they complete a 50 hour “internship/job shadow” to ensure they are interested in the chosen career path. The host location for the “internship/job shadow” program can elect to hire the student full time or they do have the option to pass which really doesn’t happen all that often. Once the student is working full time the MyTurn Program is still there to support the student and also help them navigate the post secondary level to earn a certificate in their chosen field of interest. What a way to grow a company workforce! If you are interested in learning more please contact Tara Gorski at [tgorski@my-turn.org](mailto:tgorski@my-turn.org)

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## **Connecting the sequence to the collaborative resources**

We already knew in order to be successful this project would have to be a truly collaborative effort representing manufacturing base, education and social resources. This was about blending and augmenting the existing programs that have the foundation and connecting the dots to the much larger picture for the students and their families. We already understood that we can carry the message but we wanted to be able to take the next step in the process. We wanted to be ready to hand off those that were interested to ensure their successful transition. It was about meeting a student who for the first time in their life felt like, “Wow this might be it; this might be the thing that I am good at and maybe have a career.” It was about meeting our former secondary students on the post secondary level and finding them overwhelmed, and frustrated not understanding how to connect to industry. We reached out and built a network for resources from scholarships opportunities from SME to New Hampshire Charitable Foundation to programming at MyTurn. We in turn shared that information with our partners at Community Colleges and secondary programs. The amazing result was it worked! We are glad that we were able to connect and be a part of the solution. This past year has been the shining example of collaborative team efforts! We would not have had the success we have had without such shining examples of best practices and team work.

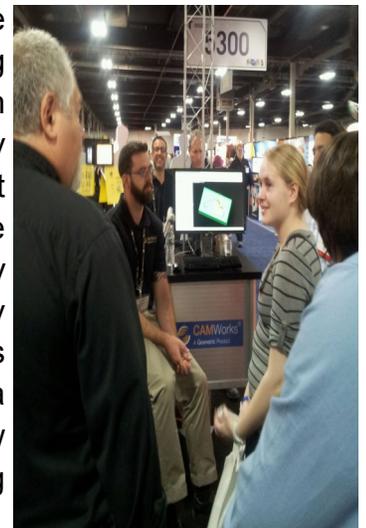


## Eastec, more than just A Success Story?



Two months prior to Eastec we started our programming. The partnership saw the tradeshow as a real opportunity for students from any program to meet, know and grow their career in “advanced manufacturing”. We provided programming designed to set the students for success based on their individual program. Each group of students set upon their journey to learn about specific equipment, software, and consumables. They were taught how to best prepare for the event, learning to virtually navigate the tradeshow show floor, mapping out specific vendors to meet and talk with and put their professional foot forward. The students were prepared for the show and had an idea what to expect, but upon arrival most of those ideas went out the door, in a good way.

During the show most students we worked with were able to stop by the Access Manufacturing and Solid Works Booths. At Access Manufacturing they were able to speak with Eli Raymond who started in a CTE program in Claremont NH. He was able to share his life experiences and reasons why he chose this career path. During our tour wrap up, students expressed that their expectations were so much more different. They were amazed at the variety of vendors, equipment, and information they could access. They knew it was a large show but they clearly didn’t realize how big until they experienced it. It was a fabulous day seeing our post secondary students who drove down to see the show as well. Many of them found the show a great learning tool to expand their understanding of manufacturing and view the emerging technologies on display. We would like to thank the following individuals for their support and efforts to making the event a huge success.



Steve Prahalis and Natalie Lowell of SME, Access Manufacturing System, GTI Spindle, Bill Rigg of Micromatics Machine Shop Co., Inc, Solid Works, and Cary Rosenberg of Chapter 327.

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## Up and Coming Events

Our Joint Golf Outing scheduled for June was postponed due to weather. It is never too late to join the field that day. If you are interested, registration forms can be found on the NHMA Newsletter page of the website. Our rescheduled date is August 11,2015. We will have our General Membership activities calendar sorted out soon. Details of meetings and events will come through our Eventbrite announcement system. Our first event will be in September. The on boarding process for student members will start at the end of August through September. We expect student members to start joining us at our October event.

More Details to come on Advanced Manufacturing Week Events, the Collaborative Community Relations Road Tour Event; Bringing Community Leaders and Guidance Councilors to the Manufacturing Floor.