

STEM Volunteer Opportunities at MCC & Milford High School Pre-Engineering Program

The IEEE NH Section has been a partner of the Milford High School Pre-Engineering Program for the past dozen or so years. Over that period the section has provided support through Pre-U grant awards, mentors for student projects, participation in numerous STEM activities and membership on the advisory committee. Frank Xydias is the Director. Through his efforts enrollment has steadily increased to where today it is at near maximum capacity, attracting students from Milford and the surrounding area. Frank is a strong advocate of promoting STEM awareness to elementary and middle school grade students. He organizes a number of events throughout the year that are specifically designed to introduce students to STEM fields in a relaxed and non-intimidating environment.

Frank is also an adjunct faculty member at the Manchester Community College. In addition to his teaching duties, he helps run the "Summer Camps @ MCC" Program. For the past five years this program has raised funds through grants and industry donations to provide all interested students entering 5th through 8th grades an opportunity to attend one of the sessions at a very reasonable cost. Full and half day classes are available and geared toward a variety of STEM topics.



Both Milford and MCC Programs rely on volunteers to bring their expertise and excitement to the students. Frank recently sent the following notice asking for our assistance in finding volunteers to help out in a few areas

Good Morning All,

I have a couple of projects to share as we wrap up the school year. I also have some future requests.

Adaptive Device:

My students are working on a adaptive device for a student that has a limb deficiency. During one of the STEM nights the students parent asked if we could design a product that she could use while riding her bike. She explained that to compensate her daughter would lean forward, as a result would experience soreness and become uncomfortable on long rides. A team was developed that included the student. The student has come in weekly to learn the engineering design process, measuring, fabrication techniques, as well as be part of the process. We had our first successful bike ride last week and will be testing again this week (after some design changes).

We plan to share this at the next school board meeting on June 19th. Hopefully we will be able to go to the parking lot to see the student ride her bike with ease and comfort.

The students are possibly interested in seeking a patent for this idea. Does anyone have a contact that would help us with the legal paperwork? Someone that would do this pro bono?

Fidget Spinners & Bookmarks:

The Advanced Engineering students have been working with 6th, 7th, and 8th grade students at our middle school to design fidget spinners or bookmarks. The students are with Mrs. Bourchard's Art class and arrive with a design. My students help them with reverse engineering and drawing with solid modeling software. The files are then place on the 3D printer or laser engraver.

This has been a great way to attract students to the program. In total I have visited with over 60 middle school students.

SUMMER STEM Camps at MCC:

I am in need of camp presenters. I have attached a spreadsheet to let me know if you can support this event. There are a couple of dates filled and some of you are checking your calendars. Please let me know if you can support this effort. I am also looking for tour sites. There is one day of the camps that we tour two manufacturing companies, let me know if you are willing to be a site for students.

2017/2018 STEM NIGHTS

The next dates for the STEM nights include October 19th and April 12th. These dates coincide with Manufacturing Week and STEM Week. The projection for these events will include both middle and elementary students, and non-traditional (female pathways) grouping for labs. We will also be adding other Career and Technical areas. I need your support by being present and representing the engineering career pathways. We expect to grow the night from 80 to 160 students. Right now it will be Milford only but my vision is to open this to our surrounding schools.

All of my projects and successes are because of your help and support. You have helped and continue to help me build an excellent program. I sincerely appreciate each and everyone of you!

Have a great summer!

Frank

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Frank M. Xydias M.Ed

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Please consider giving a few hours of your time this summer to participate in the MCC Summer Camp Program or to arrange for a student company tour of your facility during one of the July or August session. Frank is also looking to arrange company tours for the upcoming school year as part of the Milford's Advanced Manufacturing class. If interested in either of these opportunities, or for additional information, please contact either:

Frank Xydias: fxydias@milfordk12.org, (603)673-4201 X3608 or

Kristine Dudley: kdudley@ccsnh.edu , Director of Workforce Development, Manchester Community College, Ph. [603-206-8161](tel:603-206-8161)

SUMMER CAMPS @ MCC

Summer Camps @ MCC					
Youth Entering 5th - 8th Grade					
Full-Day Summer Camps					
CRN	Camp	Dates	Days	Times	Cost
32818	Nuts, Bolts and Thingamajigs	July 10-14	M T W R F	8:45am - 2:30pm	\$150
32819	STEM (Science, Technology, Engineering and Math) Camp	July 17-20	M T W R	8:45am - 2:30pm	\$150
32827	Solid Modeling (New!)	July 24-27	M T W R	8:45am - 2:30pm	\$150
32820	Robotics Camp	July 31-Aug 3	M T W R	8:45am - 2:30pm	\$150
32821	Girl's Career Camp	Aug 7-10	M T W R	8:45am - 2:30pm	\$150
To register, start by filling out the WDC Summer Camp Registration Form today.					
Half-Day Summer Camps					
CRN	Camp	Dates	Days	Times	Cost
32829	Star Wars® Stop Animation	July 10-14	M T W R F	9am - Noon	\$150
32822	App Attack!	July 10-14	M T W R F	1pm - 4pm	\$150
32830	Game Labs	July 17-21	M T W R F	9am - Noon	\$150
32823	Minecraft® Designers	July 17-21	M T W R F	1pm - 4pm	\$150
32824	Make Your First 3D Video Game	July 24-28	M T W R F	9am - Noon	\$150
32825	Minecraft® Modders	July 24-28	M T W R F	1pm - 4pm	\$150
32828	Toy Designers: Make Your First Toy	July 31-Aug 4	M T W R F	9am - Noon	\$150
32826	Video Game Animation	July 31-Aug 4	M T W R F	1pm - 4pm	\$150
To register, start by filling out the WDC Summer Camp Registration Form today.					