NH Society of Professional Engineers
Board of Directors Meeting Minutes

DATE: November 18, 2009 6:00 p.m. to 8:00 p.m. Location: Terracon Consultants, Inc. Hesser Bldg Manchester, NH **Voting Board Member*		Larry Dwyer, PE (Pres)*		
		Matthew Low, PE (Past Pres)*		
		Paul Schmidt, PE (Hse. of Delegates)*		
		Peter King (Vice Pres)*		
		John DiGenova, PE (Sec)*		
		Dan Hudson, PE (Treas)*		
		Ted Setas, PE (Dir)*		
		Gregg Comstock, PE (Dir)*		

OLD BUSINESS

- Oct 21, 2009 BOD minutes approval – The group reviewed the previous months meeting minutes. Dan and Matt L. forwarded changes to John for revisions. Larry suggested earlier drafting of the meeting minutes so that the content could be reviewed sooner, John concurred. Dan motioned to approve the meeting minutes as modified, Matt L. seconded and the motion was approved by the group.

NEW BUSINESS

1. ***PETAC Presentation –***Guest speakers at the meeting included Kevin Shyne, Dr. Bob Henry, and Michele Munson from PETAC (Pre-Engineering Technology Advisory Council). PETAC was established by the New Hampshire Legislature and consists of representatives from the Legislature, Education, Industry and the Public. See Chapter 188-E:16 on details on Membership and Terms.

   PETAC's role is to advise the Department of Education in the implementation and expansion of the pre-engineering technology curriculum, to assist the Department of Education in the implementation, evaluation, and expansion of the pre-engineering technology curriculum, to assist the department of education in pursuing public and private funds in order to ensure statewide access to pre-engineering technology curriculum coursework for public school students in grades 6 through 12. 188-E:15.

   PETAC Duties Include
   - Curriculum expansion and revision.
   - Curriculum eligibility requirements.
   - Curriculum quality.
   - Fund raising from private and other sources.
   - Allocation of funds necessary for the curriculum.
   - Evaluation of performance of pre-engineering technology program sites

   The guest speakers presented their work on two programs: Project Lead The Way (PLTW) and Engineering by Design. The details of these programs are attached (Attachment Nos. 1 and 2). Currently PLTW has been adopted by 29 schools and Engineering by Design has been adopted by 10 schools (Attachment No. 3).

   What can NHSPE do to help:
   - Awareness of the need for new engineers (students) in the pipeline.
   - Look for media opportunities concerning the need for new engineers
   - Legislative opportunities awareness

2. ***Treasurer's Report)***
   - Brief update – Dan reviewed the Treasurer's report with the group.

   - Income Tax Return - Dan indicated that the accountant has the paperwork to complete the taxes and is currently filing for an extension.

3. ***Society Governance***

   - Next Observer Issue – Ted reports that the next Observer issue will be in January. The transition from Erin Wood to Ted is complete. Erin may still assist with the transition.

   - NHSPE and NHSPE-EF Bylaws – Matt L. indicated that By-Laws had been created. Matt L. will complete and send to the BOD for review. After review the By-Laws will be put to a vote by the membership. Dan suggests sending out with the ballots for next years BOD. Matt L. indicated that the By-Laws would be completed by the next BOD Meeting in December.

4. ***Professional Development and Continuing Education***
   - ***November 5*** – UNH Stormwater Seminar – Larry reports that the Stormwater Seminar and Field Trip was a success with over 35 people attending this year. The event made a profit. Letters are going out to the attendees who are not current members of NHSPE.

   - ***November 17*** - Combined NHSPE and SENH Dinner Meeting – Larry reports that over 70 people signed-up and attended the meeting. The roster for the meeting will be distributed shortly.

- ***December15 –*** DES Alteration of Terrain Update. – Gregg reports that speakers are lined up. Prices to attend the event have been set at $25 for member and $35 for non-members.

- ***February18, 2010 –*** E-Week Dinner. – Details forthcoming.

- ***March (date to be determined) –*** Possible LEED topic – John to follow-up with speaker from local Architectural firm.

- ***April14, 2010 –*** New PE Luncheon and Order of the Engineer ceremony – Details forthcoming.

- ***May 12, 2010 –*** *P*ossible wind farm topic with Lempster as the focal point. Action: Larry to make some calls. – Details forthcoming.

- ***June16, 17, 23, or 24 -*** Annual Meeting w/neighboring SPE (Maine or Vermont). Request into NSPE for participation – Details forthcoming.

5. ***Public Image and Student Outreach***
   - NHSPE John Alger Memorial Scholarship – Larry reports that letters will go out this week.

   - Teacher's Award – Matt L. reports that several of the other societies (IEEE, ASCE, and UNH) are on-board with contributions to the Teachers award for this year. About $1,100 on contributions have been received thus far with more expected. No applications have been sent out yet, awaiting ASCE logo to go in before finalizing.

   - MATHCOUNTS – Gregg indicated that he spoke with Ben concerning the proposal for the Joint Society funding. Larry indicated that he will make a pitch for volunteers at all NHSPE events.

   - Order of the Engineer - Need to apply for a NH link – Larry indicated that he downloaded the application for the Order of the Engineer.

6. ***Government Affairs***

   - ACEC Summary – Larry suggested referring to the November ACEC Summary reported recently sent to members. – No other update at this time.

7. ***State Society Collaboration***

   - October 2010 JES Conf Planning – Larry indicated that the next conference will be on 7 October 2010.

8. ***Membership***

   - Membership Report – No membership report this month.

   - New Application on Web Site – The new application for membership was reviewed. Dan motions to set our state fees at $45 for licensed members, $45 for members, eliminate the recent graduate category, student members $0, standard membership graduated with NSPE dues system, Matt L. seconds and motion is approved by the group.

   - Fellow membership submittal for Paul Schmidt - Larry indicated that he is waiting for Matt P. recommendation.

   - YEOY and EOY Submittals – Larry indicated that he will talk with Joe Ducharme to obtain a sample application from last year. Matt L. motions to nominate Veronica Thibodeau-Carter for YEOY, Dan seconds and the motion is approved by the group.

9. National/Regional & Other Issues
   - State Delegate Report - No report this month

   - Northeast Regional Manager Report – No report this month

   - Continuing Dialogue with UNH – Larry reports that he had conversations with Dr. Henry of UNH. Dr. Henry is looking for 7 to 9 projects for students to work on. This approach will relieve him of the task of seeking out "real" public works projects. Ted suggests existing completed "cleansed" projects that the students could work on. Matt L. was excited about the idea and has a few in mind that the students could work on.

Matt L. motions to end the meeting, Dan seconds and motion is carried by the group.

Meeting ended at 9:00 PM

Respectfully Submitted,

John G. DiGenova, P.E.

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idged introduction for schools

verview rograms enefits

network of schools
the United States,
Lead The Way gives
s the tools to
d in engineering,
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ATTACHMENT 1

project lead the way®

U.S. industry is looking to America's schools to help solve the country's high-tech staffing crisis. Project Lead The Way's pre-engineering curriculum, software, and professional development programs can help schools forge new generations of engineers.

PLTW Sweeps Across the Country

At Galway Middle School, in Galway, New York—one of more than 1,700 PLTW schools in 46 states and the District of Columbia—JoAnne Donnan challenges the students in her Gateway To Technology class. Students pictured from left: Harry Chriss, 12, Bryan Wood, 12, Eric Clark, 13, and David Thomas, 13.

The Simple Solution

Project Lead The Way (PLTW) is a national non-profit organization established to help schools give students the knowledge they need to excel in high-tech fields. Studies of PLTW's curriculum have proven that PLTW students become the kind of prepared, competent, high-tech employees U.S. industry needs to stay competitive in the global market.

A growing number of schools across the country are finding that PLTW's pre-engineering curriculum for middle and high school is a simple solution. With its strong partnership concept, PLTW leverages the collective knowledge and efforts of secondary schools, colleges and universities, and industry to give students rigorous, relevant, reality-based knowledge to better prepare them for college.

PLTW's goal is to increase the number, quality, and diversity of engineers graduating from our educational system. This program also offers students the chance to find out if engineering is the career for them before they spend thousands of dollars on college courses.

PLTW is centered around the idea of bringing pre-engineering curriculum and concepts to students through practical application while their opinions about careers and interests are still forming.

l theory and two-thirds application, gives students
'ving, teamwork, and project-based learning.

Pathway To Engineering

An 8-course high school program

A M

Eight challenging high school courses use project-based, hands-on experience to teach students the key elements and skills of engineering and technology-based careers by immersing them in rigorous engineering problems.

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, analyze, and create product models.

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find out how math, science, and
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computer simulation to learn about the
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ials and processes that directly measure,
nprove systems in different environments.

5. Biotechnical Engineering

Students apply biological and engineering concepts related to biomechanics, genetic engineering, and forensics.

6. Civil Engineering and Architecture

Teams of students collaborate on the development of community-based building projects and conceptual design for project presentations.

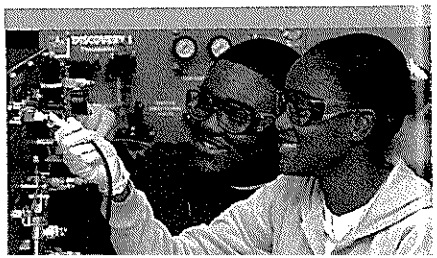
7. Computer Integrated Manufacturing

Students learn concepts of robotics and automated manufacturing by creating three-dimensional designs with modeling software and producing models of their designs.

CAPSTONE

8. Engineering Design and Development

Teams of students, guided by community mentors, work together to research, design, and construct solutions to engineering problems.



Hands-on Learning

Tramier Brown, 15, and Jesika Garner, 15, explore technology systems and engineering processes in their Principles Of Engineering class at W.J. Keenan High School in Columbia, South Carolina, while learning how math, science, and technology can help people.

The benefits of PLTW are endless.

According to PLTW research, students who go on to be successful engineers and technical workers are not necessarily the best math or science students, nor do they have a consuming passion for computers and all things technological. The "formula" is much more basic, with the keys to success including early exposure and practical pre-college application of concepts.

In PLTW's ongoing evaluation, students continue to point out many benefits. They include feeling better prepared for their college education and expressing greater confidence in all academic areas.

PLTW's proven "formula" provides students the skills they need to succeed in tomorrow's technical fields and the confidence to believe in themselves.

"Project Lead The Way gave me a good grasp of engineering principles and computer-aided design that has made several of my college classes easier to understand and succeed in."

—PLTW alumnus
Stephen Lee

"I saw engineering as a way to try something new and discover new things and new classes."

— Christopher Moultrie,
14, Saratoga High School,
Saratoga Springs, New York

ATTACAMENT 2

ENGINEERING byDesign™

A National Standards-Based Solution for delivering Technology, Innovation, Design, & Engineering




ITEA

International Technology Education Association
Center to Advance the Teaching of Technology and Science

ENGINEERING byDesign™

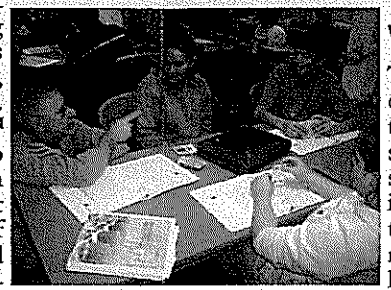
A Standards-Based Model Program

The International Technology Education Association's Center to Advance the Teaching of Technology and Science (ITEA-CATTS) has developed the only standards-based national model for Grades K-12 that delivers technological literacy. The model, *Engineering byDesign*™, is built on *Standards for Technological Literacy* (ITEA); *Principles and Standards for School Mathematics* (NCTM); and *Project 2061, Benchmarks for Science Literacy* (AAAS).

Built on the constructivist model, students participating in the program learn concepts and principles in an authentic, problem-based environment. A network of teachers (*EbD*™ *Network*) has been selected to collaborate and conduct action research in order to better understand the complexities of student learning and to help all students succeed and be prepared for the global society in which they will grow up.

Mission

We live in a technological world. Living in the twenty-first century requires much more from every individual than a basic ability to read, write, and perform simple mathematics. Technology affects every aspect of our lives, from enabling citizens to perform routine tasks to requiring that they be able to make responsible, informed decisions that affect individuals, our society, and the environment. Citizens of today must have a basic understanding of how technology affects their world and how they exist both within and around technology. Technological literacy is fundamentally important to all students. Technological processes have become so complex that the community and schools collaborate to provide a quality technology program that prepares students for a changing technological world that is progressively more dependent on an informed, technologically literate citizenry.



Vision

The ITEA model technology program is committed to providing technological study in facilities that are safe and facilitate creativity, enabling all students to meet local, state, and national technological literacy standards. Students are prepared to engage in additional technological study in the high school years and beyond. Students will be prepared with knowledge and abilities to help them become informed, successful citizens who are able to make sense of the world in which they live. The technology program also enables students to take advantage of the technological resources in their own community.

"The Engineering byDesign™ Program is built on the belief that the ingenuity of children is untapped, unrealized potential that, when properly motivated, will lead to the next generation of technologists, innovators, designers, and engineers."

ENGINEERING byDesign™

A K-16 Standards-Based National Model Program

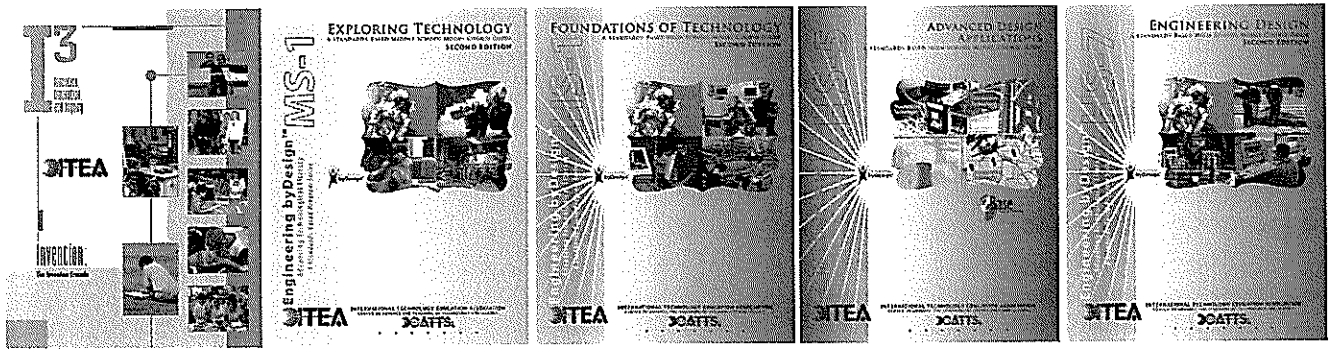
K-2	1	Integrated concepts and lessons	
3-5	2	Integrated concepts and lessons **	
6	MS-1	Exploring Technology	18 weeks
7	MS-2	Invention and Innovation	18 weeks
8	MS-3	Technological Systems	18 weeks
9	HS-1	Foundations of Technology	36 weeks
10-12	HS-2/3	Technological Issues and Impacts	36 weeks
10-12	HS-4	Technological Design	36 weeks
11-12	HS-5	Advanced Design Applications/ProBase *	36 weeks
11-12	HS-6	Advanced Technological Applications/ProBase *	36 weeks
11-12	HS-7	Engineering Design (Capstone)	36 weeks
13-16	CL	Engineering Design	Semester

* ProBase—developed through NSF grant at Illinois State University **I3—developed through NSF grant at California University of Pennsylvania

"Somewhere, something incredible is waiting to be known."

- Carl Sagan

www.engineeringbydesign.org



STEM and IT Pathways

The EbD™ Program is a model used by schools developing themes in the STEM and IT Clusters that are seeking to increase all students' achievement in technology, science, mathematics, and English through authentic learning. The program is built on constructivist models and creates awareness and competence over time as it builds on learned knowledge and skills—aligning closely with the Cluster Knowledge and Skills in both the STEM and IT Clusters.

The EbD™ Program was designed to maintain integrity through two delivery scenarios.

1. Pathway program, where schools adopt the articulated sequence of courses in a STEM- and/or an IT-themed academy.
2. Modularizing the components and adapting the design themes to support the STEM, IT, or other academy models. In this scenario, as in many career-themed academy models, some modification is required to ensure themes are aligned with the Cluster Knowledge and Skills.

International Technology Education Association
Center to Advance the Teaching of Technology and Science

For More Information Contact
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Reston, VA 20191
Phone: 703-860-2100 FAX: 301-482-1978
ebd@iteaconnect.org

CATTS

NH PRE-ENGINEERING SCHOOLS

ATTACHMENT 3

PLTW Schools

SCHOOL	DISTRICT	SCHOOL TYPE	CITY	STATE
Alvirne HS Wilbur H. Palmer Voc. and Tech. Center	Hudson School District SAU 81	High School	Hudson	NH
Berlin High School - NH	Berlin School District	High School	Berlin	NH
Bow High School	Bow School District	High School	Bow	NH
Campbell High School	Litchfield School District	High School	Litchfield	NH
Dover High School and Regional Career Technical Ce	Dover School District SAU 11	High School	Dover	NH
Hillsboro-Deering High School	Hillsboro-Deering School District	High School	Hillsboro	NH
Hollis Brookline High School	Hollis Brookline School District	High School	Hollis	NH
Hopkinton High School	Hopkinton School District	High School	Contoocook	NH
Hugh J Gallen Regional Vocational Center	Littleton School District	High School	Littleton	NH
John Stark Regional High School	John Stark School District	High School	Weare	NH
Kearsarge Regional High School	Kearsarge Regional School District	High School	North Sutton	NH
Lisbon Regional High School	Lisbon Regional School District	High School	Lisbon	NH
Londonderry High School	Londonderry School District	High School	Londonderry	NH
Manchester Central High School	Manchester School District	High School	Manchester	NH
Manchester School of Technology	Manchester School District	High School	Manchester	NH
Manchester West High School	Manchester School District	High School	Manchester	NH
Merrimack Valley High School	Merrimack Valley Central School District	High School	Penacook	NH
Merrimack Valley Middle School	Merrimack Valley Central School District	Middle School	Penacook	NH
Milford High School and Applied Technology Center	Milford School District	High School	Milford	NH
Nashua Senior High School	Nashua School District	High School	Nashua	NH
Newport MiddleSchool	Newport School District	Middle School	Newport	NH
Pinkerton Academy	Pinkerton Academy	High School	Derry	NH
Salem High School (Regional CTE Center)	Salem New Hampshire School District	High School	Salem	NH
Seacoast School of Technology	Exeter Regional Cooperative School District	High School	Exeter	NH
Somersworth High School and Regional Vocational Ce	Somersworth School District, SAU No.56	High School	Somersworth	NH
Sugar River Valley Regional Technical Center	Claremont School District	High School	Claremont	NH
Sugar River Valley Tech Center	Newport School District	High School	Newport	NH
Timberlane Regional High School	Timberlane Regional School District	High School	Plaistow	NH
Winnacunnet Cooperative High School	Winnacunnet Cooperative High School District	High School	Hampton	NH

ENGINEERING by DESIGN Schools

Gorham High School	SAU 20	High School	Gorham	NH
Gorham Middle School	SAU 20	Middle School	Gorham	NH
Plymouth Middle School	Pemi Baker School District	Middle School	Plymouth	NH
Spaulding High School CTE	Rochester School Dist	High School	Rochester	NH
Cononnecticut Valley High School CTE	Peterborough School District	High School	Peterbourough	NH
Laconia High School. CTE	Laconia School District	High School	Laconia	NH

NH PRE-ENGINEERING SCHOOLS

Daisy Bronson Middle School	Littleton School District	Middle School	Littleton	NH
White Mountains Regional High School CTE	White Mountain Regional School District	High School	Whitefield	NH
Profile High School	SAU 35	High School	Bethlehem	NH
Kingswood High School CTE	Governor Wentworth School District	High School	Wolfboro	NH

Pre-Engineering New Hampshire - Mission

Pre-Engineering New Hampshire is a Business / Education partnership created to promote careers in the widely diverse field of Engineering. New Hampshire has a rich diversity of opportunities in the field of Engineering ranging from Electrical, Mechanical and Civil Engineering to Software, Biomedical and Quality Engineering. Engineering is part of the Science, Technology, Engineering and Mathematics (STEM) Career Cluster. The focus of the partnership is the preparation of the emerging workforce for the high skill, high wage jobs of the future. Pre - Engineering-New Hampshire is a Tech Prep Partnership, supported by the NH Dept of Education and funded by the US Dept of Education.

PETAC: Pre-Engineering Technology Advisory Council

PETAC has been established by the New Hampshire Legislature and consists of representatives from Legislature, Education, Industry and the Public.(Chapter 188-E: 16)

PETAC's role is to advise the Department of Education in the implementation and expansion of pre-engineering technology curriculum used in the New Hampshire's public schools. It is also to assist the Department of Education in pursuing public and private funds in order to ensure statewide access for all public high school students to pre-engineering technology curriculum coursework.

The NH Statute Title XV Education states: "The Department of Education shall develop and implement a pre-engineering technology curriculum in the public high schools to provide statewide opportunities for high school students interested in careers in engineering, or allied engineering fields, to enroll in a high quality engineering technology curriculum."

Project Lead The Way

Project Lead The Way® (PLTW) is a not-for-profit organization that promotes pre-engineering courses for middle and high school students. PLTW forms partnerships with public schools, higher education institutions and the private sector to increase the quantity and quality of engineers and engineering

technologists graduating from our educational system. Approximately 1,000 schools in 42 states and the District of Columbia have adopted PLTW's curriculum. PLTW is addressing the issue that there is a critical shortage of engineers and engineering technologists entering the field, at a time when technology is reinventing itself every few years. Project Lead The Way seeks to create dynamic partnerships with our nation's schools and businesses to prepare an increasing and more diverse group of students to be successful in engineering and engineering technology programs.

PLTW Goals

- Increase the number of young people who pursue engineering and engineering technology programs requiring a four or two - year college degree.
- Provide equitable and inclusive opportunities for all academically qualified students without regard to gender or ethnic origin.
- Provide clear standards and expectations for student success in the program.
- Reduce the future college attrition rate with four and two-year engineering and engineering technology programs.
- Provide leadership and support that will produce continuous improvement and innovation in the program.
- Contribute to the continuance of America's national prosperity.

Engineering by Design

The EbD™ Program is a model used by schools developing themes in the STEM and IT Clusters that are seeking to increase all students' achievement in technology, science, mathematics, and English through authentic learning. The program is built on specific models and creates awareness and competence over time as it builds on learned knowledge and skills—aligning closely with the Cluster Knowledge and Skills in both the STEM and IT Clusters. EbD provides a broad standards-based K-12 program that ensures that all students are technologically literate, as well as providing clear standards and expectations for increasing student achievement in math, science, and technology.

EbD emphasizes that we live in a technological world. Living in the twenty-first century requires much more from every individual than a basic ability to read, write, and perform simple mathematics. Technology affects every aspect of our lives, from enabling citizens to perform routine tasks to requiring that they be able to make responsible, informed decisions that affect individuals, our society, and the environment. EbD provides a program that constructs learning from a very early age and culminates in a capstone experience that leads students to become the next generation of technologists, innovators, designers, and engineers

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The Seven Organizing Principles

International Technology Education Association Center to Advance the Teaching of Technology and Science. The program is organized around seven principles. These principles are very large concepts that identify major content organizers for the program. In order of importance, the seven organizing principles are:

- Engineering through design improves life.
- Technology has and continues to affect everyday life.
- Technology drives invention and innovation, and is thinking and doing process.
- Technologies are combined to make technological systems.
- Technology creates issues that change the way people live and interact.
- Technology impacts society and must be assessed to determine if it is good or bad.
- Technology is the basis for improving on the past and creating the future.