Interface

Journal of the WTEA

Generating Innovation

Winter 2010 - 2011
Volume 50 Number 2

WTEA

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Be Prepared WTEA!

by Pete McConnell, WTEA President

It is an important honor to compose the President's message in this journal. I take that responsibility very seriously. In considering the varied topics that may be appropriate at this time, I have been moved by the Christmas Spirit of "Being Prepared." I know that can mean many things to different people, but being prepared in today's climate is a crucial focus. The forecast of things to come in Technology Education is exciting and challenging. I believe that our preparation and dedication is an important decision.

Are we prepared to deliver a quality and recognized curriculum? The quality can be viewed and evaluated by different entities. The students, parents, administration, and the community might have a varied perception of the quality of what it is that we deliver in the classroom each day. Are we connected to the realization of what that is? I think I know what the students think. I can measure their reactions in how they engage in the learning process and measure what they do and what they learn. Do I share that measure with others? Do they really know what happens in the learning process? I should be prepared to communicate this process precisely and with enthusiasm.

Are we prepared to demonstrate the pride and importance of Technology Education? We often discuss the relevance of what we do in how it serves others. Do we deliver a curriculum that engages all learners in such a manner that they are able to make connections with multiple subject areas? Does Technology Education make sense in STEM and other area classrooms? Do our students utilize the tools and resources they collect from their experiences in Technology Education and share them with others around them? Are these skills evident and effective in our communities? It is important to know how Technology Education impacts our learners and the communities they serve. It is necessary that this message is communicated to all of the shareholders in the process.

I witness greatness in what happens in Technology Education. I see it at our conference and many other venues. The richness of the presentations and workshops makes me proud to be a #220 license holder in the state of Wisconsin. I know that the training and dedication we experience is vital to what we teach and how it is learned. I walked through the student showcase at our conference last spring and was amazed by what transpires in your labs and instructional areas. Our SkillsUSA competitions and regional activity sites will knock your socks off if you take the opportunity to participate and get involved! I am proud to know Wisconsin Technology Education students that go out into the world as they exit our schools and perform beautifully with what they know and do. Who else knows about my experience and passion? Is it only me? Have I shared these realities with the right people?

I am quickly learning that we need to share these passions and experiences. Bring your parents, administrators, political leaders, and school board members to the table! Show them what you do! Enlist your students to be powerful ambassadors to communicate with these observers and convince them about the necessity of what they learn! Change the observer into a participant. Engage them with showcases and demonstrations. Post articles in your local tabloids. Have your students host websites that document and share their daily experiences and show off the evidence of what they learn. Involve your local business and industry leaders and have them share with the observers how talented and important our students are to their success!

It is important to be prepared for what the future of Technology Education has to offer this proud state of Wisconsin. It is time for all of us to embrace the challenges and opportunities that lie ahead of us. Invite the discussions and entertain the solutions that will make Technology Education strong, vital, and necessary for ALL learners. Bring all of the necessary share holders to the table and demand their involvement and enthusiasm in the process! Our time to be prepared is more important today than any other day in our rich past. Share with others what I know to be true! Wisconsin Technology Education is proud and dedicated to the future of our students and the communities they serve!

I look forward to this continued discussion and I can't wait to be with all of you again at our spring conference in the Dells. Bring your stories and share with everyone how Technology Education thrives in your lives and communities!

WTEA BOARD NEWS

Fall 2010 Board of Directors Meeting Highlights & Summary

The WTEA Board met at the Gateway Technical College – Horizon Center on Saturday, Sept. 25th. Below is a summary of the Board's activities. Members can receive a full copy of the meeting minutes by sending your request to Joe Ciontea, Executive Director.

- Kyle Novak resigned his position as association secretary/treasurer; the executive committee will appoint a temporary replacement for Kyle until spring elections.
- President's Report: Pete reviewed the association activities and meetings that took place since the conference; he also reflected on our efforts to support SkillsUSA & other student organizations; a discussion followed regarding establishing a mentor program.
- The Board toured the Horizon Center facilities and met with DuWayne Jennnings from Snap-On who shared the company's education partnership programs.
- There was a discussion about STEM activities and connecting with other STEM teacher associations.
- The Marketing Committee proposed creating a Community Service Award; setting up an association booth at SkillsUSA and ITEEA (Minneapolis).
- There was a discussion about the need to revise some of the dated language in the constitution. The Executive Committee will research this.
- The Executive Director provided a Foundation update, a financial report, membership update, and a professional calendar for 2010-2011.
- The Board set the theme for the 2011 conference: Building Wisconsin Strong.
- A conference update was provided by the Program Coordinator.
- A motion was passed to donate the finds from the Career Skills Expo to the WTEA Foundation.
- Brent Kindred provided an update on DPI Activities. Board members were assigned to represent the association at the fall DPI TEE workshops.

The winter board meting will be held on Jan. 14/15, 2011 at Chula Vista.

DISTRICT NEWS

District #2

Tom Martin

While the snow reminds of when time stands still, Technology & Engineering teachers here are deep into coursework, student challenges and state problem solving activities.

First, I would like to update you. Darla Burton, who many of you have known for her leadership at WALEW (Wisconsin Association for Leadership in Education and Work), Project Lead the Way and other initiatives, has joined her husband and his company, Immuno-Dynamics in a consulting role. We lose a valued colleague, a passionate leader for Career and Technical Education and a great friend. Should you wish to send an email or card, please send them to my attention and I'll be sure that she gets them.

We are anxious to welcome most of you to Southwest Wisconsin for the 3rd Annual Southwest Wisconsin Technical College Wisconsin SkillsUSA Regional. We will have over 20 contests including the State Culinary Arts contest offering Thursday, January 27 & Friday January 28. New contests include Carpentry and Auto Tech, so come and join us!

Better yet, if you don't have a chapter and have wondered about SkillsUSA, come and join us! Contact me if you would like a parking pass!

We will be hosting our winter WTEA meeting at UW-Platteville with future professionals as well as with UW-P faculty, February 8 (snow date – February 9). One of the highlights will be a presentation by Dr. Charlie Knox on his innovations in Green technology. Past meetings with UW-Platteville students have been very dynamic for both our colleagues and future colleagues.

From a CESA standpoint, we are working with professionals to mine down into a pathway's essential knowledges and skills as well as introductory conversations on the common core standards.

See you all at the Conference!

District #7

Ryan Ubersox

On November 17th at Sun Prairie High School, the first District 7 meeting of the school year took place. About 30 area TE teachers attended receiving updates on area schools, MATC, SkillsUSA, and DPI. All attendees received a tour of the new Sun Prairie facility and a presentation on the "green" construction methods and heating/cooling system.

Our next meeting will be in February. Watch your email for further information.

Check out the WTEA Home Page www.wtea-wis.org

- Official Notice -

The membership of the Wisconsin Technology Education Association. Inc. will vote on amendments (revisions) to the association's constitution on March 10, 2011. A majority of all votes cast is required for passage of the amendment.

It's time to make some changes . . .

by Joe Ciontea, WTEA Executive director

Most of you remember the 2009 conference when we celebrated our 40th annual conference. A lot has changed in the past 42 or so years since our association became a corporation and began holding annual conferences. During the past two years the association's Board of Directors has been working to create a separate foundation, the WTEA Foundation, Inc. The Board continues to work with legal counsel to complete the final paperwork for the foundation's tax free status. Although the process is not completely finalized, the WTEA Foundation, Inc. is a reality and continues to move forward to help fund scholarships and other educational opportunities.

As we worked through this process a thorough review of the language in the WTEA Articles of Incorporation and Constitution took place. The Board decided that it is time to clean up language statements that duplicate or conflict with each other and in some cases are not required. To that end, the Board has developed language for a constitutional amendment that will need to be approved by the membership at our annual meeting on March 10, 2011. While the Executive Committee worked on the language changes, we identified some other changes that will help our association to remain strong and continue to serve the members for many years to come. The language and rationale for the final proposal will be accessible from the homepage of our website in mid-January. A printed copy will also be also distributed at the Conference Registration Desk in March. If you have any questions you should contact Pete McConnell, Al Gomez, Greg Groom, or Joe Ciontea.

Official Notice

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CANDIDATE

Candidate for WTEA President-Elect

Greg Groom

6652 Lakeside Rd.
Lake Geneva, WI 53147
Home (262) 348-9642, School (262) 348-2000 Ex 2320
greg.groom@badger.k12.wi.us

Military: United States Marines Corps, 1974 –1976, Honorably Discharged
United States Army Reserve, 1st Sergeant, Honorably Discharged

Education: Mineral Point High School, Graduated 1974
University of Wisconsin – Platteville, B. S. Industrial Education, 1980
University of Wisconsin – Stout, M. S. Vocational Education, 1982

Awards: WTEA Program of the Year 2001
ITEA Program of the Year 2002
SkillsUSA (VICA) Wisconsin State Officer 1973-1974

Professional Experience: Technology Education & Engineering Instructor Badger High School, Lake Geneva, WI 1999 – Present. Teaching Electronics, Digital Electronics, Computer Repair A+, Principles of Engineering and Video Production

Committee Experience: WTEA Vice-President 2 yrs.
WTEA District 10 Director 9 yrs.
Gateway Technical College Electronics Advisory Committee 11Yrs
Gateway Technical College Information Technology Advs. Com. 3 yrs
SkillsUSA Wisconsin Electronics Contest Chair 10 yrs
SkillsUSA Wisconsin Opening and Closing Contest Chair 8 yrs.
SkillsUSA Wisconsin Advisor Committee Member 3yrs
Wisconsin Project Lead The Way Leadership Committee
Church Council 11yrs.
Badger High School Leadership Team 2yrs
Lake Geneva Area School Strategic Planning Committee
National Engineering Alliance Committee SkillsUSA/PLTW

Post Degree Course Work: Project Lead the Way Instructor Training, DE, DE II, POE
CISCO Network Instructor Training, Level I, II
Ohmeda Anesthesia Machine Service Training Course 360 hrs
DePaul Student Assistance Program Training 63 hrs
Electronics Industries Association Training 180 hrs
General Motors Automotive Electronics Training 43 hrs

I would like to thank the WTEA Board for allowing me to serve as your Vice-President. This year I am again asking for your support, in the upcoming elections, to become your President-Elect. One thing that I have done in the past is to propose the addition of Deputy Directors to the Board of Directors. As our work places change, our professional organization must also change. We have changing commitments at school, extra-curricular, co-curricular and family. We find ourselves running out of time. By adding Deputy Directors, we share the workload without losing important input from our members and interested parties throughout the state.

Candidate for WTEA Secretary/Treasurer

Blake Greisinger

2710 Lineville Rd. • Green Bay, WI 54313 • blakgrei@hssd.k12.wi.us

Blake Greisinger is currently a technology and engineering teacher at Bay Port High School in Howard, Wisconsin. He received his B.S. In Technology Education from the University of Wisconsin-Platteville in 2007 and is currently earning an M.S. in Industrial/Technology Education from the University of Wisconsin-Stout.

He is an ADDA certified architectural and mechanical drafter in addition to having been certified an International Baccalaurate instructor in the area of Design Technology at Oxford University.

Goal Statement: I look forward to serving on the Board of Directors and hope to make the association an even more effective group through my participation and service.

The 42nd Annual WTEA Conference and Trade Show
"Generating Innovation"
March 10 & 11, 2011 at Chula Vista Resort, Wisconsin Dells

SkillsUSA Chapters Getting Ready for Competitions

by Ian Crammond, Baraboo High School

The SkillsUSA chapters around the state are gearing up for the busy contest season. Many district competitions have now passed us, and three districts stepped up to host the competitions. Contests were held in District 4 hosted by Sun Prairie High School, District 5 competitions were held at Slinger High School, and District 6 competitions were held at Western Tech College hosted by Holmen High School. A big thank you goes out to all those who worked to set up these very successful competitions.

The three regional competitions are in January and February. The first Regional is being held at Southwest Tech College in Fennimore, January 27-28th, 2011. We welcome and thank Gateway Technology College in Burlington for hosting their 1st Regional competition. The Gateway competition will be held on February 18th, 2011. The final regional opportunity will be at UW-Stout on February 24th and 25th, 2011. If you have any questions in regards to SkillsUSA Wisconsin and the many opportunities available, please check out the official Wisconsin SkillsUSA website: http://www.skillsusa-wi.org/ or contact myself icrammond@baraboo.k12.wi.us.

The State SkillsUSA officer team

ANNOUNCEMENTS

- Official Notice -

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Ken Bremer

Ken Bremer returns to the Board of Directors as WTEA Secretary/Treasurer. Ken was appointed in October to fill the vacant position. He will serve until a new Secretary/Treasurer is elected this spring.

- Conference Logo -

The 2011 Conference logo was designed by Randall Davis, a student at Slinger HS. His design will be used on materials for this year's conference. First place in the adult division was awarded to Greg Staerzl, a teacher at Fond du Lac HS. The WTEA Board of Directors would like to thank all who participated.

- Dates to Remember -

January 27 - 28, 2011	**SkillsUSA Southwest Regional**	Southwest Tech. College
February 18, 2011	**SkillsUSA Gateway Regional**	Gateway Tech. College
February 24 - 25, 2011	**UW-Stout SkillsUSA Conference**	Menomonie, WI
March 10 - 11, 2011	**42nd WTEA Conference**	Wisconsin Dells, WI
March 24 - 26, 2011	**ITEEA Conference**	Minneapolis, MN
April 12 - 13, 2011	**SkillsUSA State Conference**	Wisconsin Dells, WI
April 14 - 16, 2011	**Engineering Expo**	UW-Madison
June 19 - 25, 2011	**SkillsUSA National Conference**	Kansas City, MO

Check your mailing label now!

Check the first line of the mailing label on the back cover of this magazine to see when your membership expires.
You will not receive the next important issue of the *Interface* unless your dues are paid beyond 2010.

WTEA 42nd Annual Spring Conference and Trade Show

Generating Innovation

The WTEA invites you to participate at the 42nd Annual Spring Conference to be hosted at Chula Vista Resort in Wisconsin Dells. The conference program is packed with two days of excellent presenters offering a variety of topics to help inspire and motivate each of us. Attend the WTEA conference with a fellow art or science teacher or administrator and your guest will be charged the same WTEA member rate, if they are currently a member of their respective state professional organization. All they have to do is present their current membership card at the time of registration.

Our first general session will be given by Tim Johnson who is the CEO of The Tim Johnson Consulting Group out of Baton Rouge, Louisiana. His presentation will cover the following major themes:1) Overview of the National Center for Construction Education and Research, 2) Overview of Construction Industry Employment in the United States, 3) Overview of the National Choose Construction Initiative, 4) Conclusion - Why Technical Careers Like Construction are Critical to Our Economy. Tim serves in a consulting role as the Director of Governmental Affairs for the National Center for Construction Education and Research (NCCER) and is a national spokesperson promoting construction craft training and careers in the construction industry.

Thursday is also the key time to visit the trade show. Our vendors are extremely important to our association and our programs. The WTEA Trade Show features numerous vendor booths with professionals exhibiting up-to-date products and services for our field. This is the best "one stop" to bring an administrator or board member looking for input to update a program. Closing out the afternoon will be the WTEA membership meeting, and at conclusion, the popular vendor sponsored SHIPS program of door prizes. Will you be one of the lucky winners this year?

Later on Thursday evening, the WTEA recognizes all of our outstanding award winners during the Awards Banquet at 6:30 p.m. We honor our colleagues for their outstanding contribution to technology education. The banquet cost is $28.00. This is a great way to show appreciation and support for your peers. Immediately following the banquet will be the President's Reception in the Grand Ballroom.

On Friday following the traditional UW-Stout, UW-Platteville and Viterbo University sponsored breakfast, we will begin the day with diverse sectionals and vendor sponsored workshops.

At mid-day, we will have a luncheon sponsored by Madison Area Technical College. Our luncheon keynote will be stress management humorist Kay Frances mixing humor, reality and sound advice in her keynote titled: If You Can't Run with the Big Dogs, Get Back on the Porch with the Puppies! Kay has presented in 38 states and Canada for over 25 years. Kay believes that people who manage their stress and embrace change are happier, healthier and more productive. In this energetic, upbeat and hilarious presentation, you'll laugh while you learn without straining your brain. In our frenzied world we need to be reminded of the importance of managing our stress, keeping our sense of humor and looking at change as an adventure. Kay does this in a way that is second to none!

This year's conference will again feature some of the top technology and engineering educators throughout Wisconsin sharing their expertise on topics such as: Aeronautics Pilot Training, Dealing with Larger Class Sizes, The Common Core (impacts on TE&E), Energy Education Resource Grants, Construction Careers, Dealing with Change & Stress, The Future of Electric/Hybrid Electric Vehicles, Wisconsin's Career Pathways, STEM Scholars Program, Hand Tool Sharpening Clinic, New Teacher Boot Camp, and much more!

Put March 10-11, 2011 on your calendars, get your release days approved, and fill out and send in your registration form today if you have not already done so. The convention fee is $105 for members and $135 for non-members. As a final reminder, please contact Chula Vista Resort early to reserve your room; often we are not the only event taking place at this busy resort. We hope to see you there!

Chula Vista Resort, 4031 River Road, Wisconsin Dells, 1-800-388-4782

Online registration at: www.wtea-wis.org

42nd Annual Technology Education Conference and Trade Show

Tentative Conference Overview

Wednesday, March 9th, 2011
7:30 p.m. Pre-registration
Evening Workshops (Tentative)

Thursday, March 10th, 2011
7:30 a.m. – 3:30 p.m. Conference Registration
8:00 a.m. – 3:30 p.m. Trade Show
8:55 a.m. – 9:03 a.m. General Welcome
9:05 a.m. – 10:00 a.m. 1st General Session
10:15 a.m. – 3:45 p.m. Concurrent Sessions
10:15 a.m. – 2:30 p.m. Curriculum Exchange
4:00 p.m. – 5:00 p.m. WTEA Membership Meeting

Thursday, March 10th (evening)
7:00 p.m. – 9:00 p.m. Awards Banquet
9:00 p.m. (following banquet) President's Reception

Friday, March 11th, 2011
7:30 a.m. Conference Registration
7:00 a.m. – 8:15 a.m. Alumni Breakfast
8:45 a.m. – 12:15 p.m. Concurrent Sessions and Vendor Demonstrations
12:30 p.m. – 1:45 p.m. 2nd General Session/Luncheon
2:00 p.m. – 3:00 p.m. Concurrent Sessions/WTEA Board Meeting

Thursday Keynote Speaker:

Tim Johnson, Director of Governmental Affairs for the National Center for Construction Education and Research (NCCER)

Friday Keynote Speaker:

Kay Frances, Motivational Humorist and Stress Management Specialist

Session Topics Include: Building Construction, Robotics, Invention and Innovation, Digital Electronics, Manufacturing at The High School Level, Projects Designed to Teach Concepts, Automotive Technologies, Alternate Energy Sources, Standards & Technology, Promoting Technology and Engineering Politically, Building High Mileage Vehicles, Project Lead the Way, Skills USA, Middle School Roundtable, Middle School Engineering, Communication Technologies, New Teacher Boot Camp, and much more!

WTEA Membership Application & 2011 Conference Registration Form

Membership year runs from September 1st through August 31st

Last Name_____ First Name_____

Home Phone (_____) _____ Local Tech College District _____ # years teaching _____

School Dist. _____ School Name _____

School Address _____

School City _____ State _____ Zip _____ E-mail: _____

Check the appropriate boxes below and total amount due.

Membership Fees: [ ] 3 year membership - $75.00 [ ] 1 year membership - $30.00 $_____

Spring Conference Registration:

[ ] $105 members [ ] $135 non-members $_____

WTEA Awards Banquet (Thursday, March 10, 2011) [ ] $28 $_____

[ ] Bill my school district - purchase order is attached [ ] payment enclosed **Total $** _____

Send completed form with payment or school purchase order to: **WTEA, P.O. Box 1312, Fond du Lac, WI 54936-1312**
Phone (920)-904-2747 • Fax (920) 922-0779 • E-mail joe.ciontea@wtea-wis.org

Project Showcase WTEA 2011

Pistol Pete says . . .

I Want Your Projects!!!

With the success of last year's event, we will be holding the second annual *Project Showcase* again this year at the WTEA conference. As Technology and Engineering Teachers, we all love projects. So….we are asking that you bring projects that we can display. Bring projects such as cribbage boards, Vex Robots, student poster board displays, electronic circuits, graphic arts and printing projects, CO2 cars, airplanes, 3D CAD drawings, machining projects, welding samples, or even digital pictures of projects. These can be student made projects or samples made by instructors. You are welcome to include supporting curriculum, but it is not required. This is different than the annual Curriculum Exchange. WE WANT TANGIBLE PROJECTS. *Drop off the projects Friday morning by 7:00 AM in the Grand Ballroom*. They will be displayed throughout breakfast and should be picked up after the luncheon. Please email Steve Meyer at smeyer@brillion.k12.wi.us if you have any questions.

Bring a project to display and be entered to win a prize!

Curriculum Exchange to be Digital Files Only

Beginning this year the WTEA will be accepting only digital files for the Curriculum Exchange. Submitted activities will be loaded on to a computer at the conference and will be posted on the WTEA website. Participants, upon dropping off their curriculum activity, will be given a gift from the WTEA. Files will be available to members on the association website within 7 days of the conference completion.

What is the curriculum exchange?

It is the best practices in the form of activities or other curriculum items that teachers have to offer. During the conference on Thursday, curriculum activities will be collected from teachers. The drop off location will be announced at the conference.

What to bring?

Everyone has something that works well in the classroom. We ask if you have submitted to the curriculum exchange in the past that you not re-submit the same activity. Please continue to make the exchange a success by sharing new ideas. Bring a CD or flash drive with the activity saved on it to submit to the WTEA for Association use.

Organization of materials:

1. Materials should include the activity with your address and school phone number for the purpose of future questions & amount of class time needed.
2. Include cost of supplies and an address for the purchase of special materials if needed.
3. The WTEA has developed a Curriculum Exchange Template. Please download your choice of document and prepare your lesson within this format. A link has been provided for you on the WTEA website http://www.wtea-wis.org/curexch.html. Our hope is this form will help you streamline your activities into a consistent format for all the Curriculum Exchange participants.

Collection of materials:

On Thursday at the convention, activities will be collected until 11:30 AM. (Note: This time is subject to change pending final program approval. Any time change as well as drop off location will be announced previous to the keynote address on Thursday).

Questions?

E-mail Ryan Ubersox at rubersox@waunakee.k12.wi.us.

ARTICLE

Google Apps Education Edition

Take Your School District to the Next Level of 21st Century Learning for FREE!!!

by Steve Meyer, Brillion School District

If you have not heard of the digital trend sweeping the world called Google Apps, you need to check it out. Google Apps is a group of web-based applications that you and your students can use to communicate and collaborate in real time. Google Apps is being used more and more by business and industry and has also hit the education market strong. The best part is that you can get Google Apps Education Edition set up for every student in your school for free. Google Apps Education includes a suite of programs including CHAT, Email, Calendar, Sites, and Google Docs, a word processor, presentation, and spreadsheet program. It is a lot like having a G-mail account; however, Google Apps for Education can be completely customized, controlled, and monitored by your school. Once you set up your school, each student will have a Google Apps login and email address. They can use any of the functions listed above anywhere there is Internet access.

Students in your school can now safely email and chat, as email and chat can be limited to just members within the domain of your school. Student email accounts receive no SPAM.....I mean ZERO. I have had an account now for over two years and have not received one SPAM email, not one!!! Google's SPAM control is impeccable. No more dealing with Hotmail, Yahoo, or any other email accounts that have lots of SPAM and are usually blocked at school. Now I send most of my assignments to students as email attachments. If a student loses his/her assignment, I just email them another one. If I want to share a graphic, CAD file, or document with all students, I can do it with the press of a button. No more printing off another copy, running to the copy machine, etc. It has saved me hours upon hours of work. Plus, it teaches students real world skills of communicating in a digital world.

Google Apps for Education also has a shared Calendar application. I can post a due date for an assignment and share it with a class group. It automatically syncs to every student's calendar and will even email them a reminder the night before it is due. Along with Calendar, students and teachers can also design websites using Google Sites. These sites pages can be posted to the true Internet or kept local in you school's domain. Google Sites is a great way for students to start to develop online portfolios to organize and showcase their work.

One of the neatest functions of Google Apps is the Docs program. This program is very similar to scaled-down Microsoft products such as WORD, PowerPoint, Excel, etc. However, due to the nature of Google Docs, it has some features you cannot do with Microsoft products. The ability to collaborate in real time is what makes Google Docs special. Students can work in groups on the same document in real time using a chat function to communicate back and forth while they work. They can do this at school, at home, or anywhere, as long as they have Internet access. No longer do students have to worry about working on a program at home and getting it to open up at school (i.e. flash drives, different programs, etc.). Students are now working in real time on projects, much like businesses concurrently work on projects around the world.

Incorporating Google Apps into the Brillion School District curriculum has changed the way many teachers communicate with students and develop and assess student activities. Over 600 students from 5th – 12th grade have accounts. They love working with the applications and find it so convenient to work from home and school seamlessly. Students are now more engaged and organized with their studies and are learning how to collaborate with 21st century communication tools. Google Apps has made a huge positive impact on the educational process in the Brillion School District. If you would like to learn more about Google Apps for Education....*Google it!*

ARTICLE

Project Lead the Way Certification at UW-Stout

by Matt Hansen, Junior at UW-Stout, Technology Education Undergrad

University of Wisconsin-Stout has been a leader in pumping out technology education teachers since the early years of its creation. In the summer I work for Cedar Community, a retirement village, and two of its residents are former Stout Alumni. Both taught technology education in high schools in the state. I had the privilege to have long conversations with them about how privileged I am to be going into this profession. It is people like that who make technology education so great. Technology is not the same as it used to be 50 years ago and teaching technology is ever changing as well. The same is true with the degree from UW-Stout. In the last couple of years Project Lead the Way (PLTW) and UW-Stout have agreed to team up to involve PLTW training in the program. This enables the students to leave UW-Stout with the training to teach at a school that has Project Lead the Way. UW-Stout is offering a total of six areas of training. They are: Gateway to Technology, Introduction to Engineering Design, Principles of Engineering, Digital Electronics, Civil Engineering & Architecture, and Computer Integrated Manufacturing.

Project Lead the Way is a curriculum that is designed to serve middle school and high school students around the country. This program focuses on students who are interested in science, technology, engineering and math. PLTW instructors receive extensive training before they are able to teach the curriclum and, when teaching, recieve great support from the program in the courses they teach. "While the STEM subject matter is rigorous, the approach is never rigid. That's because the PLTW program provides a flexible curriculum platform schools can customize to meet the specific needs of their academic environments." (2010)

Coming to UW-Stout as a freshman in the fall of 2008 I received the "Technology Education Preparing to Teach Pre-Engineering Scholarship." This scholarship is funded by the Kern Family Foundation and given out to freshmen who are going into the Technology Education program who would like, when they graduate, to be Project lead the Way trained. I will not be certified in all Project Lead the Way Classes, but, with having the scholarship, I am entitled to complete four of them. The four certifications that I will be completing are Gateway to Technology, Introduction to Engineering Design, Principles of Engineering, and Computer Integrated Manufacturing. If there is enough time, I hope to also get trained in Civil Engineering & Architecture.

I am in my junior year at Stout and plan on graduating in the spring of 2012. This year I am in the process of starting to get my training completed on the Gateway to Technology and Intro to Engineering Design. With the scholarship I am required to complete these two trainings. Gateway is a middle school curriculum and IED is a more common curriculum seen in high schools.

Thirty percent of school districts in Wisconsin already have PLTW in their schools. That number is going to grow in the coming years. When asked how PLTW imbedded in the curriculum helps the program, Dr. Stricker, Program Director for Technology Education, says that "having tech ed. students know about and do this curriculum before they get into the schools help them to know how to teach in an organized fashion and hopes that having these trainings will help make a student be more marketable to districts."Being trained helps districts in a way that they do not need to spend the money to go and pay to get a current teacher trained. When a graduate gets hired on, they can hit the ground running and start teaching the curriculum on day one.

"PLTW is going to change, and so will all of technology education as years go on. Trends come and go, but curriculums like these always present core ideas that have always and will always be in what we teach," Stricker said after being asked about the future of PLTW.

Technology Education at UW-Stout is making students more marketable to school districts and strives to create the best educators year in and year out. To get more information on Project Lead the Way visit the website at www.pltw.org.

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Works Cited

Dr. Stricker, D. (2010, December 14). PLTW at UW-Stout. (M. Hansen, Interviewer)

Project Lead the Way. (n.d.). Educators and Administrators Overview. Retrieved December 16, 2010, from PLTW: http://www.pltw.org/educators-administrators/educators-administrators-overview

ARTICLE

Project Lead The Way Thriving in Tomahawk

120 Students at Tomahawk High School Improving in Science and Technology

by Ryan Huseby, Tomahawk High School

Wisconsin students' participation in the Project Lead The Way (PLTW) series of science, technology, engineering and mathematics (STEM) courses has more than doubled in less than three years. More than 30,000 students in 39 counties are participating. They represent more than 250 schools—the fourth largest count in the nation.

Federal data suggests job openings requiring STEM expertise will increase by 18.3 percent through 2014. Many of Wisconsin's fastest-growing industries and highest-demand jobs are in fields that require a background in STEM. PLTW provides students with a rigorous pre-engineering program using the latest in high-tech computer software.

PLTW is a series of eight engineering courses. All courses are based on freshman level engineering courses that students would take in college. Three of them are considered Foundation Courses, while the 5 remaining courses specialize in specific engineering fields such as: civil engineering, aerospace engineering, biotechnical engineering and computer integrated manufacturing. Tomahawk High School began the 2009 school year with a course titled Introduction to Engineering Design and an enrollment of 35 students. Principles of Engineering and Civil Engineering have been implemented in 2010. Students are enthusiastic about the program and enrollment has grown to 120.

PLTW is a national program that sets high standards for its members. Each state has an affiliate university that oversees the quality of the program. Milwaukee School of Engineering (MSOE) is responsible for the state of Wisconsin. School districts must meet a vast set of criteria prior to being eligible to offer the program. Implementation plans must show how districts will support the program through curriculum, student enrollment, sustainability, and community involvement. Teachers must earn additional certifications to teach the courses. This involves attending a rigorous 200+ hour training session offered at the state affiliate university. During this time, staff is taught by university professors on the intricacies of the curriculum. School administrators and counselors must also attend training to ensure students are aware of the program benefits and receive proper academic advising. Community involvement is also an initiative of the program. PLTW schools are required to have a Partnership Team consisting of school administrators, staff and counselors, as well as community business leaders. The goal of the team is to promote student awareness of engineering related careers, to enhance the PLTW curriculum by providing real world experience for students, and to implement sustainability initiatives.

Tomahawk PLTW recently achieved a major accomplishment in its first year of implementation. THS earned the rights to be a PLTW Certified School, which states the overall program and instructional practices meet the highest standards of implementation. One of the primary benefits of the achievement is that Tomahawk students are eligible to receive 3 college credits for each PLTW course that they successfully complete. Students must score a minimum of 85% in the course, pass a national exam and complete a portfolio of work. Students receive a transcript fom MSOE. These credits are transferable to all University of Wisconsin schools, the UW Technical College System, Marquette University and schools across the

country. In addition, some schools offer scholarships for these student accomplishments.

PLTW Meeting a Need at State and National Levels

Experience in STEM fields is vital to students as they enter college and the workforce. With more than half of the engineers and scientists in the United States nearing retirement, technical industries are in desperate need of workers to fill the positions responsible for innovation and economic growth. According to U.S. government data, job openings requiring expertise in STEM will increase by 18.3 percent through 2014.

Thirty-nine Wisconsin counties feature PLTW curriculum. Current student enrollment is twice the number who participated in 2007. Business and state education leaders plan to continue expanding the program in coming years, as enrollment, since the program's start in 1999, has steadily increased, due to the collaborative efforts of schools, public and private organizations and the business community.

The Wisconsin State Legislature approved state funding in its most-recent budget. The program's growth can also be traced, in part, to the support provided by the state's colleges and universities. The University of Wisconsin (UW) System allows students who complete certain PLTW high school classes to earn advanced standing credit at UW System schools. Additionally, program credit and/or scholarships are available through Marquette University, the Milwaukee School of Engineering and many of the UW System and Wisconsin Technical College System campuses.

About Project Lead The Way

Created in response to the expected 15 million engineer and technical worker shortage (according to U.S. Government estimates) in the U.S. by the year 2015, PLTW helps students apply academic engineering and technology concepts in compelling, real-world ways. The program has established partnerships with schools in all 50 states and the District of Columbia.

General information about PLTW can be found at www.pltw.org, while state-specific information is located at www.pltwwi.org.

PLTW Class Activities at Tomahawk High School

Students from our PLTW course titled Civil Engineering & Architecture took related field trips. Some of the units in the class require students to design and calculate fresh and wastewater management systems. Thus, the trips to those two facilities.

The Civil Engineering & Architecture curriculum will also take students through the process of designing structures to accommodate loads. They will focus primarily on steel structures. The bridge project is a great opportunity for the kids to see some of this first hand. It is a major undertaking in our community because it affects basically everyone in the town. There is only one bridge inside the city limits that allows passage from between the north and south sides of the Wisconsin River. This bridge is being completely removed and replaced with a new bridge. The project is very complex due to the fact that major utilities had to be redesigned and rebuilt as a part of the project. We have already made two visits to the project and will be making more in the spring when construction resumes. We have been working primarily with our city Director of Public Works, Mike Tolvstad. We have also been speaking with engineers and many other technicians and workers as a part of the process.

We started the day at the water tower where students learned about the tower itself and its function in the system.

We walked to the bridge project where we learned what was currently going on and some of the things that were planned for the near future.

ARTICLE

Made In America? What the Public Thinks About Manufacturing Today

by Craig A. Giffi, Vice Chairman, Deloitte LLP & Emily Stover DeRocco, President, The Manufacturing Institute

Economists, business and government leaders all keep a close eye on the fortunes of the U.S. manufacturing sector, knowing the impact it has on the broader business environment. But what about the public? After all, their views of the manufacturing sector help shape public policy and have a direct impact on the talent pool. If you have a dim view of manufacturing, you're not likely to pursue a manufacturing job or support the construction of a new plant in your community.

Our recent survey of the American public's opinions on the manufacturing industry and its future show a nation that is surprisingly bullish on the skills and abilities of our workforce in the face of global competition. They believe manufacturing is vital to our nation's economy, and believe U.S. workers bring the right mix of skills and motivation to the table. Plus, they think the strength of the workforce is one of the most important factors in our success. Respondents identified workforce related issues as more important factors than non-workforce attributes.

But at the same time, Americans are concerned about U.S. government policies and leadership in the area of manufacturing – respondents singled out state and federal government leadership, tax rates on individuals, and government business policies as their three top areas of concern. In short, they believe we have what it takes – but they're not seeing the type of leadership and policies required to keep the manufacturing industry healthy and successful in the long run. So, it should come as no surprise that they are less likely to pursue jobs in manufacturing or encourage their children to consider these jobs in the future.

All of this occurs at a moment in which keeping the U.S. manufacturing industry on the right track is of vital importance because the industry has taken some serious blows in the wake of the global recession. The U.S. has lost 2 million manufacturing jobs as a direct result of the recession.[1] States that used to compete with one another for new factories and manufacturing jobs are now going head-to-head with foreign governments all over the world. These countries are creating aggressive tax and trade policies and negotiating trade agreements to position themselves to win in the new global economy.

Meanwhile, skills shortages persist. Even at the height of the global recession, companies reported shortages in skilled production workers, scientists and engineers.[2] The advanced manufacturing industry of today requires a technical workforce with math and science skills. And so-called "lean" manufacturing approaches require production workers who bring sharp team-building, problem-solving and numeracy abilities to the job.[3]

These are not threats to take lightly. Manufacturing supports an estimated 18.6 million jobs in the U.S.[4] — roughly one in six private sector jobs. According to 2008 data from the United Nations Statistical Division, the U.S. still leads the world in manufacturing value added to GDP at $1.83 billion, but China is now a close second at $1.79 billion.[5]

Annual public view on manufacturing study background

Our annual research initiative was created to provide a running view of the U.S. public's perspectives on manufacturing. Taken together, they are an important bellwether for public policy and shifting attitudes regarding the manufacturing industry. Our research focused on three main areas:

- Manufacturing importance and image.
- Future outlook for manufacturing and the talent pool.
- Competitiveness environment and areas for improvement.

Key findings

Here's a closer look at some of the most important takeaways from our study.

Americans continue to believe manufacturing is vitally important

Americans have a strong view of the importance of manufacturing, with 78% saying it's very important to our economic prosperity, and 76% indicating that it is very important to our standard of living. In fact, in this year's survey it ranked second in its importance to a strong national economy, behind the energy industry, but ahead of technology, financial services, healthcare, communications and retail. It's also important to note that these findings are remarkably consistent from year to year, even in light of (or because of) recent economic volatility.

They think we have the skills and resources to compete globally

Sixty percent of respondents indicated that the U.S. manufacturing industry can effectively compete in global markets. Why? They believe we have significant advan-

tages in key areas: technology use and availability, a skilled workforce, and strong R&D capabilities. They consider the strength of U.S workers to be a key component of our competitiveness. When asked to select from a list of 21 attributes that could contribute to creating a competitive advantage or disadvantage for American manufacturing globally, respondents identified the top three most important as work ethic, a skilled workforce, and worker productivity – well ahead of non-workforce related attributes such as infrastructure and natural resources.

Americans want to strengthen the manufacturing industry

Seventy-five percent of respondents believe that the U.S. needs a more strategic approach to developing its manufacturing base. Roughly the same percentage believe the country should invest more in the manufacturing industry. And 68% believe developing a strong manufacturing base should be a national priority.

While they believe our workforce has the right stuff, Americans are concerned about the future of the industry

Today, only 30% of respondents would encourage their children to pursue a manufacturing career, despite encouraging improvements in their perceptions about the jobs. For instance, 44% believe the jobs offer a safe, clean environment — an improvement over past years. And 63% strongly agree that manufacturing is high-tech, requiring well-educated, highly skilled workers. Why the discrepancy between the importance they place on manufacturing and the high tech image of manufacturing they now share — and their interest for their children or themselves to pursue careers in the manufacturing industry? Certainly the struggling economy plays into this issue, with nearly one-third of respondents indicating that manufacturing activity will weaken over the next year. More telling, however, is that over half (55%) believe the long term outlook for manufacturing in the U.S. will weaken, and only 8% of respondents believe the manufacturing sector will become stronger over the long run. And this is despite the fact that the majority of Americans believe we can compete globally in the manufacturing industry and the many strengths Americans believe this country has to offer around technology capabilities, R&D capabilities and the strong faith they have in the American worker. This issue appears to be wrapped up in something other than the economy — the government.

Americans are concerned that government policies are putting the manufacturing sector at a disadvantage

Respondents were asked to rate the contribution of a long list of factors that could be creating either a competitive advantage or a competitive disadvantage to America's manufacturing industry - everything from natural resources to the workforce to our education system to tax policies and government leadership. When viewed together, the results are striking. For the most part, the public believes we have all the "raw materials" to succeed in manufacturing: Technology. Workforce. R&D. Energy. Natural resources. All of these received high marks. But at the other end of the spectrum, a cluster of disadvantages told another story. Government business policies, corporate and individual tax rates, federal and state-level government leadership, and trade policies were viewed as the most significant disadvantages or concerns when it comes to the success of the manufacturing industry in the U.S.

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[1] National Association of Manufacturers, "Manufacturing Strategy – For Jobs and a Competitive America," June 2010.

[2] Deloitte, Oracle and The Manufacturing Institute, "People and Profitability Study: A Time for Change," 2009.

[3] U.S. Center for Education Statistics, 2006.

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[5] United Nations Statistical Division, National Accounts Main Database

ARTICLE

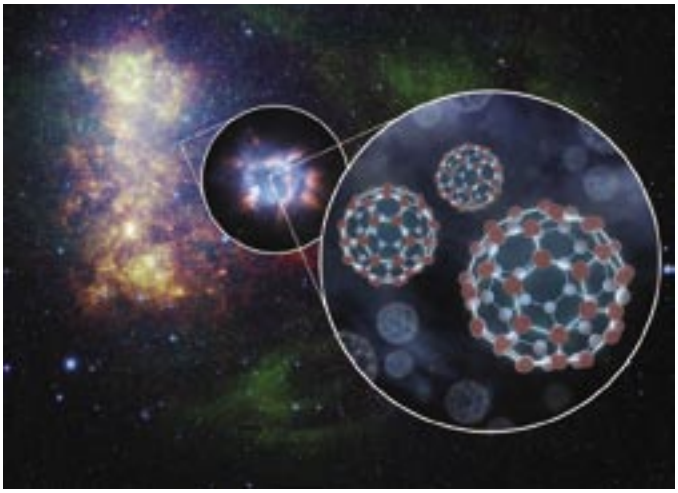
Astronomers Stumble onto Huge Space Molecules

by Trudy E. Bell and Tony Phillips

Deep in interstellar space, in a the swirling gaseous envelope of a planetary nebula, hosts of carbon atoms have joined together to form large three-dimensional molecules of a special type previously seen only on Earth. Astronomers discovered them almost accidentally using NASA's Spitzer Space Telescope.

"They are the largest molecules known in space," declared Jan Cami of the University of Western Ontario, lead author of a paper with three colleagues published in Science online on July 22, 2010, and in print on Sept. 3.

Not only are the molecules big: they are of a special class of carbon molecules known as "fullerenes" because their structure resembles the geodesic domes popularized by architect Buckminster Fuller. Spitzer found evidence of two types of fullerenes. The smaller type, nicknamed the "buckyball," is chemical formula C60, made of 60 carbon atoms joined in a series of hexagons and pentagons to form a spherical closed cage exactly like a black-and-white soccer ball. Spitzer also found a larger fullerene, chemical formula C70, consisting of 70 carbon atoms in an elongated closed cage resembling an oval rugby ball.



Superimposed on a Spitzer infrared photo of the Small Magellanic Cloud is an artist's illustration depicting a magnified view of a planetary nebula and an even further magnified view of buckyballs, which consist of 60 carbon atoms arranged like soccer balls.

Neither type of fullerene is rigid; instead, their carbon atoms vibrate in and out, rather like the surface of a large soap bubble changes shape as it floats through the air. "Those vibrations correspond to wavelengths of infrared light emitted or absorbed - and that infrared emission is what Spitzer recorded," Cami explained.

Although fullerenes have been sought in space for the last 25 years, ever since they were first identified in the laboratory, the astronomers practically stumbled into the discovery. Co-author Jeronimo Bernard-Salas of Cornell University, an expert in gas and dust in planetary nebulae, was doing routine research with Spitzer's infrared observations of planetary nebulae with its spectroscopy instrument. When he studied the spectrum (infrared signature) of a dim planetary nebula called Tc 1 in the southern hemisphere constellation of Ara, he noticed several clear peaks he had not seen before in the spectra of other planetary nebulae.

"When he came to me," recounted Cami, an astrophysicist who specializes in molecular chemistry, "I immediately and intuitively knew it, I was looking at buckyballs in space. I've never been that excited!" The authors confirmed his hunch by carefully comparing the Tc 1 spectrum to laboratory experiments described in the literature.

"This discovery shows that it is possible - even easy - for complex carbonaceous molecules to form spontaneously in space," Cami said. "Now that we know fullerenes are out there, we can figure out their roles in the physics and chemistry of deep space. Who knows what other complex chemical compounds exist - maybe even some relevant to the formation of life in the universe!"

Learn more about this discovery at http://www.spitzer.caltech.edu. For kids, there are lots of beautiful Spitzer images to match up in the Spitzer Concentration game at http://spaceplace.nasa.gov/en/kids/spitzer/concentration.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

INTERFACE EDITOR

The Realities of the Teaching Profession

Note: Someone sent this to me a few years ago. It still seems appropriate today.

After being interviewed by the school administrator, the teaching applicant said, "Let me see if I've got this right: You want me to go into that room with all those kids and do the following:

1. Correct their disruptive behavior.
2. Observe them for signs of abuse.
3. Monitor their dress habits.
4. Censor their T-shirt messages.
5. Instill in them a love for learning.
6. Check their backpacks for weapons.
7. Wage war on drugs and sexually transmitted diseases.
8. Raise their sense of self esteem and personal pride.
9. Teach them patriotism and good citizenship, sportsmanship and fair play.
10. Make sure they know how to register to vote.
11. Show them how to balance a checkbook.
12. Teach them how to apply for a job.
13. Check their heads for lice.
14. Recognize signs of anti-social behavior.
15. Make sure that they all pass the state exams.
16. Provide them with an equal education regardless of their handicaps.
17. Communicate regularly with their parents in English and Spanish by letter, telephone, email, conferences, homework hotline, web-page, midterm newsletters, and report card.

You want me to do all this with a piece of chalk, a blackboard, a bulletin board, a few books, a big smile, and a starting salary that qualifies me for food stamps. You want me to do all this and then you tell me **I CAN'T PRAY?** Are you nuts?"

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