

# Montana Society of Engineers

*A state society of the National Society of Professional Engineers*



*Founded 1887*

## *President's Message:*

### ***Building a Personal Network***

*Sandra Anderson, PE, President*

"Spring is sprung, the grass is riz, I wonder where the birdies is?" In spring, the engineer's fancy turns not so much to thoughts of birds as to CONSTRUCTION SEASON. Even before the ground is all the way thawed, visions of progress dance across our computer screens. Holes are dug. Foundations are poured, power poles are set, irrigation systems are laid out, gas lines are run, and a myriad other things are put in those holes. Whether the project is residential, commercial, or industrial, for the public or private domain, new construction or maintenance, building is in full swing. And it's all about building bridges. Not just physical ones, although those can be fun projects, too, but economic, business, and social bridges.

No project happens in a vacuum. From conception through design, budgeting, redesign to fit the budget, construction, weather/labor/material delays, inspections, scope changes, ad nauseas, through completion, the engineer will work with a variety of people. And who do you prefer to work with? People you trust, that you've worked successfully with before, or had recommended to you by another reputable engineer. With time and experience, the bridges between you get more solid, and you build on each other's success.

Where did we start making these connections? For many of us, we started building our professional bridges in college. Former classmates, study partners, and drinking (soda pop, of course) buddies are now contractors, suppliers, customers, and co-workers. There are many ways to keep these people close to you, but one very effective way is through support of your alma mater. Alumni associations can help you stay in touch with the people you knew, and help you build new bridges to the rest of the alumni. A recent search of the alumni directory for members of my electrical engineering class netted me contacts at 3M, Intel, and several consulting firms. Many alumni opt to share their e-mail address, and you can click on the link right from the college site to send a message. Alumni groups also organize social events where you can network in person, and sponsor scholarship drives to support the

next generation of engineers. That can lead to partnering opportunities, research projects, and summer interns for your business. One caveat: each college is a little different in sharing their alumni info. Some publish a direct link to the directory that anyone can see. Others require you to fill out an online form to prove you are an alumni association member in good standing; they e-mail a user name and password to log into the directory.

The alumni websites for the major Montana institutions are:  
Carroll College: [www.carroll.edu/alumni](http://www.carroll.edu/alumni)  
MSU - Billings: [www.msbillings.edu/alumni](http://www.msbillings.edu/alumni)  
MSU - Bozeman: [www.montana.edu/alumni/](http://www.montana.edu/alumni/)  
MSU - Northern: [www.msun.edu/alumni](http://www.msun.edu/alumni)  
Montana Tech: [www.mtech.edu/alumni.htm](http://www.mtech.edu/alumni.htm)  
Rocky Mountain College: [www.rocky.edu](http://www.rocky.edu), click on 'Alumni and Parents'  
University of Great Falls: [www.ugf.edu/alumni](http://www.ugf.edu/alumni)  
U of M - Missoula: [www.umontanaalumni.org](http://www.umontanaalumni.org)  
U of M - Western: [www.umwestern.edu](http://www.umwestern.edu), click on 'Alumni & Friends'

(Fine print disclaimer: This list is neither exhaustive nor complete. If your college isn't on here, please Google them if you aren't already an active member of their alumni association (and shame on you!), or use Ask.com to find them like I did. The list is in alphabetical order on purpose. No endorsement of any particular school is either explicit or implied by its inclusion in or exclusion from this list. GO CATS!)

The other place to make connections on is your own MSE website: [www.mtengineers.org](http://www.mtengineers.org) Check out the latest addition, our partnership with Job Target. Information on the next Joint Engineers Conference, organized by Doug Brekke, past MSE president, and sponsored by MSE, will also be available soon.

*A reminder that MSE is a 501(c)(3) corporation, and any direct donations you would like to make to help us meet our budget and still meet our goals are TAX DEDUCTIBLE! Connie will be glad to receive and process your donation and send you a receipt for your tax records.*

*"Skill and confidence are an unconquered army."  
– George Herbert, English Orator, 1593 - 1633*

***March, 2007***

***With time and experience, the bridges between you get more solid, and you build on each other's success.***

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# ***A Sensitive Subject***

*By Jeff Ruffner, PE, President-Elect*

It's time for the newsletter and I am running late again as usual. Every newsletter I struggle with both a topic and the content. All of the other officers seem to be very good and prolific writers. I struggle. However, with this article there is an issue that I want to bring up and it is a rather sensitive issue. With the election quite a few months behind us I think it may be safe to bring it up for both education and discussion.

Many may not be aware, but we had quite a stir among the officers during the 2006 Senatorial election because of an action that NSPE - Political Action Committee (PAC) took in making a political contribution to former Senator Conrad Burns. The e-mails were really moving for a few days.

Given the political make-up of the country and our state, I would take a wild guess and say that the Montana Society of Engineers probably reflects the general electorate (51%/49%) with the balance tipping differently each election cycle based on the candidates and the issues. I would also suggest that any time the NSPE-PAC takes an action, roughly half of our members will be upset with that action.

As your representative to the House of Delegates I am somewhat familiar with the activities of the PAC, however I thought it worthwhile to visit the NSPE web page and get the exact information for the activities of the PAC. Listed below are the mission, objectives, and basis for political contributions. For more detailed information I would suggest you visit the NSPE home page.

## Mission

*NSPE-PAC, the nonpartisan political action committee of NSPE, is the only PAC aimed solely at representing the interests of professional engineers. It helps elect candidates for federal office who are responsive to the engineering profession's goals and objectives. It is critically important that all NSPE members be active participants in the political process, through either NSPE-PAC or related NSPE legislative programs.*

## Objectives

*The goal of NSPE-PAC is to ensure that the interests of engineering professionals are represented on Capitol Hill. Its specific objectives are to:*

*Identify and contribute to incumbent and challenger candidates for the U.S. Senate and House of Representatives who support positions of importance to engineering professionals.*

*Provide visibility, public relations, and credibility to the NSPE legislative and regulatory programs through a large and*

*vigorous fundraising program.*

## Membership

*Each year, NSPE-PAC solicits funds from NSPE members. All NSPE members that contribute to the PAC are NSPE-PAC members, while contributors at \$25 or more are voting members. NSPE-PAC has three additional levels of membership recognition:*

- Century Club -- \$100 or more*
- Engineers' Roundtable -- \$250 or more*
- President's Club -- \$500 or more*

*To continuously qualify for one of these levels, NSPE members must give the respective amount each year.*

## Candidate Contributions

*NSPE-PAC fulfills its mission by identifying and supporting incumbent and challenger candidates for federal office. These candidates must demonstrate their support for the positions of vital importance to the engineering profession. Contributions supporting the two-party political system are a guiding principle of NSPE-PAC, with the maximum percentage of contributions to any one party limited to 70%. NSPE-PAC does not make contributions to presidential campaigns.*

As you can see, the focus of the PAC is to support candidates who support issues of importance to Engineers in the political process. Based on the discussions we had last fall, many think the current system is broke and expressed frustration with the system. While you may agree or disagree with the system as it currently stands, it is the system in place and it is the mechanism that must be used to change the system.

Engineers in general seem to shy away from the political process. I contend that is exactly the opposite of what is needed at this time in our profession and in our country. Engineers bring a lot to the table and need to get involved. There are many things affecting the profession both at the State and National level. If you feel strongly about a candidate or an issue, get involved.

Why do I bring this issue up now and risk the chance of creating another stir. First, in July, I will be going to the National meeting to represent you, the members of the Montana Society of Engineers, and want and need to know where you stand on the many issues. I figured this would generate some discussion. Absent any feedback from the members, I will do my best but my actions will be reflective of what I personally think is best.

Secondly, now is the time to get involved. If you have strong feeling on how NSPE should act and use the PAC money on the national political scene, let them know. You can easily become a voting member of the PAC.

All of these things only happen if you get involved.

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# News from the Capital City

By Kenneth Phillips, PE, Secretary-Treasurer

The legislative session just passed its halfway point. In an average year this would mean that the bills would be transferred from the House to the Senate. The House of Representatives are the ones to tackle State spending first and then the spending bills move to the Senate. As you are probably aware this year is going a little differently as the spending bills are being looked at separately. The State has always kept its capital construction bill separate. The Long Range Planning bill "HB5" is the bill that funds all the Building and some of the Civil projects that are to be constructed in the next few years. This year HB5 is a fairly large bill it includes \$130,130,000 in State dollars, \$50,875,000 transferred in 2008 and \$50,875,000 transferred in 2009. The balance is a portion of the Coal Severance tax, cigarette tax and interest earnings. Besides general fund there are \$53,197,160 in State Special Revenue and \$48,178,978 in Federal dollars and last but not least \$68,978,000 other funding. The other funding is things like private donations and funds that may come available from unexpected sources outside of State funds. Every agency or university has to have authority to spend even a dollar so they like to have those special accounts so they can take advantage of donations and funds from say Alumni. The one thing about HB5 funds that make them different from the rest of State Government funds is that the funds do not go away or get reallocated after the bi-annum. This is because Capital Projects take many years to Design Bid & Build.

Projects like DEQ mine clean up and DNRC Dams and most of the Highway Transportation projects come from other bills, some of which were part of HB2 which was the funding bill that was split up on an agency by agency basis.

Design-build legislation here in Montana recently gained the attention of the National Society of Professional Engineers. NSPE wants to guarantee that all Engineering selection is based upon Qualifications only and not low bid. In reviewing **HB 334** MDT is now moving from a Design-Build pilot project that had a sunset date to an on-going project delivery option. MDT has a process to determine which projects are slated for design build, the Beartooth highway project was an example and in that case it did help get the highway opened quicker than the traditional design, bid build process. MDT has recognized qualification based selection as the first process is to short list the design-build team to a list of up to 5 most qualified. Only after the up to 5 qualified firms have been selected that they move to the next phase of selection and it is this phase that brings in the subject of pricing. As there are many differing opinions regarding design build the key is that if professional services are involved, qualifications not price must be used to at least establish the short list.

**HB138**, was a bill that dealt with water issues, it gained National attention by dropping the requirements that Hydrologic studies must be issued by a Professional Engineer or Hydrologist to a "qualified" person. The term qualified is always subjective thus we always will push that the person be licensed. Currently this bill is tabled and that probably means it has died. I will continue to watch and see if it recovers and if it does MSE may lobby to change that portion back to the "Professional" requirement.

There are 100s of bills out there if you hear of one that may affect licensure please feel free to contact any of the board members.

## The Continuing Saga of the Helena Chapter of MSE Revival:

I intended to have a February re-start to the Helena Chapter, but life sometimes guides you through other routes. But I do have a new email address that is non-work related to be able to send out notices to Helena area Engineers. I had been thinking of using a conference room at one of our local firms to hold a meeting but in talking to other chapters a luncheon at a local food establishment might work better. So albeit slowly I will be sending out some details, we need to make use of the Chapter dues that we all pay so we will start up with some funds for either helping Carrol College engineering students through a small scholarship or some type of award program. My Chapter related email is [kphillipsmse@hotmail.com](mailto:kphillipsmse@hotmail.com) so if this email comes into your mailbox I am not selling any enhancement drugs or get rich schemes so don't delete me please.

As always I work for the People of the State of Montana, if you ever have questions about something going on in State Government please contact me, I probably won't know the answer but I will know who to talk to.

*MDT has recognized qualification based selection as the first process is to short list the design-build team to a list of up to 5 most qualified.*

*Ken's Chapter related email is*

[kphillipsmse@hotmail.com](mailto:kphillipsmse@hotmail.com)

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# 2006 PE Hall of Fame Inductees

By Doug Brekke, PE, Chair of JEC & Hall of Fame

It was MSE's great pleasure to honor and induct the following professional engineers into the Professional Engineers Hall of Fame located in Roberts Hall at MSU-Bozeman at the 2006 Joint Engineers Conference in November.

## Dr. Eldon R. Dodge, PhD, P.E.

Eldon Dodge was born in Elan, Wisconsin in 1910. He earned B.S., M.S. and PhD degrees at the University of Wisconsin. After receiving his master's degree, he began teaching in 1933 at the Case Institute of Technology in Cleveland, Ohio. He returned to the University of Wisconsin and earned his doctorate in Civil Engineering in 1942 and was hired as the manager of research and development at the Fairbanks Morse Pump Company in Beloit, Wisconsin.

His first love was teaching. In 1946 he sought and was appointed professor and head of the Civil Engineering Department to Montana State College. He developed the faculty from two or three members teaching traditional civil engineering courses to a multi-disciplinary staff in Civil Engineering and Engineering Mechanics to expand and include masters and doctorate degrees. He initiated the Civil Engineering Undergraduate Scholarship Program which has grown to provide thousands of dollars every year in scholarships.

Dr. Dodge, along with John Morrison, Sr. and the dean of engineering at the School of Mines, now Montana Tech in Butte, was instrumental in promoting the law before the Montana Legislature in the late 1940's creating the board of professional engineers and land surveyors requiring licensure to protect the public health and welfare. He served as the secretary of the Board of Registration for six years.

Dr. Dodge was active in the American Water Works Association and reactivated the Annual Water and Sewage Operators School in 1947 following its 5 year suspension during World War II (1941-1945). The operator's school continues to this day for water and wastewater system operators with the requirement of continuing education in order to maintain their licenses. He was a past Chairman of the Montana Section AWWA and the Fuller Award recipient in 1963.

Dr. Dodge was active with the National Council of Engineering Examiners and served on the Engineers Council for Professional Development visiting and rating engineering programs throughout the country. He also served on the constitution and by-laws committee. He was awarded a Distinguished Service Award by NCEE in 1971.

Dr. Dodge served as head of the Department of Civil Engineering and Engineering Mechanics until he stepped down in 1969 to devote full time, as professor emeritus, to teaching and to continue his research and development work. Two of his favorite endeavors were a network analysis program for water distribution systems which he continued to work on until his death and a two-volume report, *Application of Hydrologic and Hydraulic Research to Culvert Selection in Montana* based on the peak flows from runoff in Montana for the Montana Highway Department and the Federal Highway Administration.

Dr. Dodge said, "My greatest satisfactions have come from teaching. They've come from learning that my students have become successful engineers. I really take pleasure in knowing how well some of them

are doing." Dr. Dodge retired from active teaching in 1977 but continued consulting work and to refine his network analyses program. Dr. Dodge passed away in 1989.

## Joseph A. Maierle, P.E. (Deceased)

Joe Maierle was born in 1905, the son of an immigrant smelter worker in East Helena. He always had a strong work ethic and at 15 went to work for three years to help the family. As a 21-year-old high school senior, he was not eligible to play high school football so he played for the local college, Mount St. Charles. He wanted to go to college but father told him it was too expensive (\$3 mo). He told the priest he couldn't afford to go to school anymore and the priest told him to forget about the tuition and stay in school. Someday, maybe, he could remember the school.

He attended Mount St. Charles School, now Carroll College, graduating with a two-year pre-engineering certificate. He would later earn his civil engineering degree through the International Correspondence School, working at night.

After graduation Joe began work as a structural draftsman in the Bridge Division of the Montana Highway Department and upon completion of his degree, he became a foundation engineer. He worked mostly on foundation investigations for bridges and put in time, on loan from the Highway Department, with the Montana Water board doing foundation testing on dams including the Toston Dam and others. In the 1930's he spent most of the time constructing the primary highway systems, U.S. 2 and U.S. 10 and as he said, "...getting the state out of the mud."

With the breakout of World War II, Joe applied for a commission in the Navy. Unsuccessful at getting a commission, he left and went to Iran with a civilian contractor to help build port facilities and roads to get supplies to Russia. He traveled to Russia upon occasion. He returned to the Highway Bridge Division after the war and again worked with his colleague, John Morrison, Sr. Within a year, in 1945, John left and started a consulting engineering company. Six months later his friend Joe joined him and in March of 1946 they formed Morrison-Maierle, Inc. and began a life-long partnership. The firm grew rapidly to become the nationally and internationally known firm it is today, employing over three hundred engineers, surveyors, planners, draftsmen, and support staff.

Joe, true to his word, remembered the priest and his old school. He served as the Chairman of the Carroll Foundation board of directors raising substantial amounts of money and it is with his personal contributions that Carroll College was able to build the Athletic Center. He also worked diligently to promote the 3-2 engineering program at Carroll wherein a student inclined towards engineering would complete three years of education at Carroll emphasizing math and the liberal arts and then complete their engineering degree at another institution of higher learning accredited by the American Board of Engineering Technologies (ABET). Since that time, Carroll has expanded its program and is not an ABET approved engineering school offering civil engineering degrees. Mr. Joseph Maierle passed away at the age of 96 in 2002.

The form to make your 2007 Professional Engineers Hall of Fame nomination is on page 5. Nominations are due June 1st to the MSE Office, PO Box 20996, Billings, MT 59104. Make your recommendation TODAY!

*Dr. Dodge, along with John Morrison, Sr. and the dean of engineering at the School of Mines, now Montana Tech in Butte, was instrumental in promoting the law before the Montana Legislature in the late 1940's creating the board of professional engineers and land surveyors requiring licensure to protect the public health and welfare.*

# Call for Nominations

## Montana Professional Engineers Hall of Fame

The Montana Society of Engineers (MSE) requests nominations for induction into the Montana Professional Engineers Hall of Fame. Plaques honoring the inductees will have a permanent home at the Montana State University College of Engineering.

The award was established in 2002 to recognize Montana professional engineers who have made outstanding contributions to the engineering profession and public welfare of Montana. This award is open to all professional engineers licensed in Montana.

### Qualifications/Method of Selection

The MSE Executive Board will consider nominees for induction into the Montana Professional Engineers Hall of Fame. Professional engineers licensed in the State of Montana and working on projects in the State of Montana are eligible. Retired and deceased professional engineers are eligible. Current Officers and directors of MSE are *ineligible*.

MSE Executive Board members will consider these aspects of the nominee's career: The candidate's professional integrity is beyond question; the professional reputation is more than local in character; the undertaking of services upon which the award is based are of high order; and there is more than an ordinary relationship between the undertaking of services and the public welfare. Preference is given to candidates who have consistently promoted the social and professional interests of the engineer. This criterion closely follows the yearly NSPE Award.

### Nomination Format

Please provide the following biographical information on each nominee:

- Personal information including current address and phone number. If nominee is deceased, so note and provide information of surviving family members.
- 500-word or less statement describing the nominee's education, professional achievements, professional and technical society membership, humanitarian and civic contributions, unusual consulting assignments, and family information.

### Presentation

The award(s) will be presented at the Joint Engineers Conference Annual Banquet on Friday - November 2, 2007.

### Deadline

Nominations must be postmarked no later than June 1, 2007 and sent to this address:

**Montana Society of Engineers**  
**Nomination for the MT PE Hall of Fame**  
**PO Box 20996**  
**Billings, MT 59104-0996**

*Entries postmarked after June 1, 2007 will not be considered.*

# MATHCOUNTS Update

By Dan Munson, State MathCounts Coordinator

Teams of 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade student Mathletes<sup>®</sup> from middle schools all across Montana competed in the State MATHCOUNTS contest on Monday, March 7<sup>th</sup> at MSU in Bozeman. A total of 90 students from 27 middle schools across the state participated. The top four individual Mathletes<sup>®</sup>, and the coach of the winning team, won an all-expense paid trip to the MATHCOUNTS National Competition.

Ryan Marcotte from Billings Will James Junior High, Sayre White and Jack Klempay from Missoula's Sussex School, and Erik Anderson from Missoula's Washington Middle School won the top honors at the State Competition this year. These four students, along with Missoula's Sussex School Math teacher Bente Winston, will represent Montana as our official state team at the National MATHCOUNTS Competition in Fort Worth, Texas on May 11<sup>th</sup>.

The top teams this year were Missoula's Sussex Middle, Missoula's Washington Middle, Bozeman's Sacajawea Middle, Billings' Will James, and Billings' Riverside Schools.

At the competition, three former 2003 MATHCOUNTS Mathletes<sup>®</sup> from Billings gave a presentation about a robot they built for a national robotics competition. Andrew Weins, Bryan Smith, and Steve Green showed the crowd of students and coaches how their custom built robot functioned and explained how they used math to help construct the machine for use in their own regional robotics competition. The robot was built to compete in a National High School Robotics Competition with First.org. The robot had to be designed and built to pick up small inner tubes and stack them on a pole in the center of a stage, while defensive robots attempted to block its progress. The MATHCOUNTS students could see first hand how essential and fun math and science can be in their future educational opportunities.

This year, MATHCOUNTS also acknowledged Jim Hamling, the math teacher from Lewistown Middle School. Jim has been involved in the Montana MATHCOUNTS program for 22 of the 23 years that we have held competitions in the state. He has coached hundreds of Mathletes<sup>®</sup> and prepared many students to compete neck-to-neck with the AA middle school students in the state. He has been a state president of the Montana Council of Teachers of Mathematics, and has been an avid supporter of Mathematic advancement in the state. Jim was honored in front of all his peer teachers and students, and given an opportunity to attend the National MATHCOUNTS competition this year in Texas.

This competition undoubtedly featured some of the brightest middle school students in our state. Teachers and students had been preparing for the competition since last September. The students trained within their schools before starting the formal competition.

The first level of the competition began in January and early February when over 750 student Mathletes<sup>®</sup> competed within their school to become a member of the "school team". From there, 407 students from 61 middle schools competed at the regional level in February. Winners at the regional level received prizes and advanced to the State competition. The winners of this State Competition advance to Fort Worth, Texas on May 11<sup>th</sup> to represent Montana in the National MATHCOUNTS Competition and compete for individual and team national titles against other top middle school math students representing the 50 states, the District of Columbia, U.S. Territories and schools from the Department of Defense and State Department.

MSE would like to thank all of our corporate sponsors and dozens of volunteer engineers who have helped make the chapter and state competitions so successful. We get a number of letters each year from students who really believe that MATHCOUNTS has made a difference in their entire study habits and their attitude towards school. It is rewarding to think that a number of these students will be our next generation of successful engineers. Thanks for helping make a difference.

## 2006-07 MathCounts Corporate Sponsors

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**Western Sugar Company**

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*A special thank you to our Corporate Sponsors, Chapter Coordinators and many, many volunteers for making Montana MathCounts happen!*



## **2007 MATHCOUNTS**

***Photo: Weins, Smith, and Green demonstrate their custom built robot at the 2007 State MATHCOUNTS Competition in Bozeman***

# Stray Thoughts

By Tom Abel, PE, Vice President

## More Power for your VW Bug

There is a California engineer who needed a little extra power for his VW bug. The photo left is the result of his ingenuity. For that little extra boost he mounted 1350 hp helicopter jet engine in the back. The original bug engine and drive-train are still functional so the car is essentially a hybrid. The engine can be lit on the while driving and the throttle eased forward for the desired amount of boost. The California cops have stopped him many times but can't find anything to charge him with. The latest angle the cops are working on is a threat to national security, just like trying to send a package at the Post Office in a beer box (a serious threat to our national security.)

## North Flathead Yacht Club Dock Update:

The lake level was kept high this year and now is only down about 4 feet from full pool. The usual winter drop is about 10 feet. The wave wall is half in the water and half out of water, with ice forming at the water surface. The cross bracing on the dock pilings is also captured in the ice. This is the worst ice scenario we imagined. So far there has been no damage to welds. A couple of bolts have fallen out of the bolted connections that can be easily replaced. There is something we did not anticipate that is helping to prevent damage to the dock pilings. The pilings are driven into the lake bottom about 20'. The earth mean temperature is around 45 deg, and this heat keeps the ends of the pilings warmer than freezing. There is 1" of open water surrounding each piling. If the ice moves up or down, the piling is not attached.

The lake level is maintained by the folks at Kerr Dam. Probably the demand for electricity in California determines when water is let out, then when the fish in the Columbia need more water, and who knows what else. The docks on Flathead Lake are way down on the list if on the list at all.

## Public Buildings:

There is an administrative rule in Montana requiring engineering for all public buildings. Public buildings are defined as publicly owned buildings—those buildings owned by the state, counties, cities. This means that any other building does not have to be engineered. A riding arena holding thousands of people, aircraft hangers, airports, grocery stores, banks, any building privately owned does not have to be engineered according to the administrative rule. The State Building Codes Bureau can require engineering on any building, but they do not always invoke the engineering requirement. Whether the building is engineered or not is up to the discretion of the state building official. The same is true for architecture. At our last board meeting we decided this is an issue we can work on jointly with architects.

On one perspective, it is kind of nice not to have all that state regulation for building projects. Getting away from excessive regulation is the reason many of us came to Montana, or for those who have always lived here lack of regulation is how it always was.

The other side of this is the protection of those who occupy buildings and expect them to be sound if there is 6 feet of snow on the roof or if there is a 90 mph windstorm roaring outside. Market forces eventually would cause the powers that be to take corrective action. When buildings fail due to lack of engineering, someone will take notice – maybe. Often coupled with building failure are people getting hurt or killed.

Lawyers and lawsuits are doing something to keep our buildings safe. Contractors or owners hire engineers and architects out of fear of being sued, and of course failed buildings are not the best form of word-of-mouth advertising for builders.

Lending institutions do not want to be left holding a building that does not meet code, when an owner defaults on a loan. We are seeing lenders requiring code compliance and some banks even have their own inspectors that visit building sites to monitor construction progress before releasing funds.

Changing the definition of public buildings to include all buildings probably does not make sense. Not every building needs to be engineered. Many structures are simply built, and most builders know from past experience what to do, and roof truss companies have their design software with basically built-in engineering. We on the board feel it is up to engineers and architects to suggest a reasonable definition of public building, then to convince our legislators the definition should be changed. We would welcome any input in this effort.

## Bio-Diesel:

There have been a few crops of camolina seed grown in Montana that have been converted to either diesel fuel of lubricating oil. We learned at MATE in Billings that there are people working on a cooperative for biofuels. The camolina seed is grown and harvested, then the oil is pressed out of it. The meal that is left after the pressing operation is great cattle feed, with 35% protein content, and some residual oil. A farmer not only makes money on the extracted oil but also on the feed. After the oil is extracted it must be refined like any other oil. There is a refinery in Billings that will do the refining. At today's prices the cost is about \$2.25 per gallon for 100% biodiesel. Biodiesel can be used in most diesel engines without any modification or harm to the engine. The lubricity of bio-diesel is better than that for petroleum products. The engine runs cleaner and parts do not wear as fast, fuel mileage improves, and the nitrous oxide count at the tailpipe is reduced.

There are advantages for growers. Camolina rotated with wheat results in a slightly better wheat yield, about 1 bushel per acre, with 25-30 bushels per acre an average crop. The camolina is planted early in the year, in February or March which is a bar stool time for many farmers. The crop matures and is ready for combining in late June early July. No fertilizer or spraying is required. There is no special equipment required for planting and harvesting. Pressing the oil may be done on a regional basis or maybe even with portable rigs.

There may be some engineering opportunities in this industry designing the filter presses or refining facilities, temporary oil storage and handling facilities. It is something to watch. If biodiesel takes off Bush will not have to worry about building any more "nookular" facilities in this country.

## WHAT CAN YOU TELL AN ENGINEER?

.....Nothing, he already knows it all.

When you lose a wheel on a 4 wheel trailer why does it pass you? The official Kalispell Stampfisch theory is the tire no longer has weight on it so it does not squish down (mechanical engineering technical term) as much as when it was loaded. The effective diameter of the tire is greater and since it is still rotating at the same rpm as when it was loaded, it now covers more distance per revolution than in the loaded state, and this is why you see the tire passing you in your rear view mirror.



*There is a California engineer who needed a little extra power for his VW bug.*



*Anyone interested in making a difference or has a desire to give something back to the profession of engineering should contact any of the current Board members — they would be happy to share their experiences on the Board with you!*

## **Call for MSE Board Nominations for 2007-08**

The current Board is sending out a 'Call for Nominations' for the position of Secretary/Treasurer on the MSE Executive Board. This is the entry level position on the Board and this endeavor will be a 5-year commitment as they move through the offices.

Anyone interested in making a difference or has a desire to give something back to the profession of engineering should contact any of the current Board members — they would be happy to share their experiences on the Board with you!

For those of you that would like to 'throw-your-hat-in-the-ring', please mail a letter stating your desire with a short bio for the ballot by May 1, 2007 to:

Nominating Committee for 07-08 Election  
Montana Society of Engineers  
PO Box 20996  
Billings, MT 59104-0996

Elections for the Executive Board Montana Society of Engineers Executive Board will be conducted shortly after May 1, 2007 for the fiscal year 2007-08.

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## **2006-2007 MSE Board**

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**Sandra Anderson, President**  
*sandra\_andersondavid@hotmail.com*

**Jeff Ruffner, President Elect**  
*jeff.ruffner@mse-ta.com*

**Tom Abel, Vice President**  
*tom@abelengineeringinc.com*

**Kenneth Phillips, Secretary/Treasurer**  
*kphillipsmse@hotmail.com*

**Dan Munson, Immediate Past President**  
*Dan.Munson@northwestern.com*

**Connie Dempster, Executive Secretary**  
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Deadline for the Next  
Issue of this Newsletter is  
June 10, 2007

Submit articles and advertising to  
[mse@assoc.mgt.com](mailto:mse@assoc.mgt.com)

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