

# Forward Focus

Montana Manufacturing Extension Center

FALL 2002

## Power of Observation Pays Off

By Deborah Nash

As a manufacturing manager, you are juggling many activities every day. Keeping your employees busy may be a big part of that. If you are hearing the refrain, "What do you want me to do next?" a little too often, it may be time to think about making changes on your production floor and adopt lean manufacturing.



Joe Pavlovick

Managers can learn a lot by observing processes and workers -- not just the occasional, quick walk through, but rather planned, critical observation time. By observing and recording where things go, how often they move, what methods each worker uses for a specific task, time spent on tasks by each person, and other detail, a framework or baseline for making changes emerges. Applying lean manufacturing concepts to the changes can greatly increase productivity. It might even end the repetitive, never ending question about what to do next.

A simple diagram of what is happening can be very revealing, according

to Professor Durward Sobek, who teaches industrial engineering courses at Montana State University in the College of Engineering. What can be uncovered are bottlenecks, significant variation in time expended by each worker on the same task, materials problems that slow production down, and the amazing number of feet traveled to get product from start to finish. Addressing these findings can create beneficial changes to the work environment and processes. This diagramming process is Value Stream Mapping.

Process improvements need not be expensive but can be achieved by eliminating wasted steps that can be identified in the mapping process. Batch sizes can be reduced to cut the cycle time that often delays shipping individual orders. Personnel may be reassigned to better fit tasks. The methods of efficient workers can be standardized and taught to new hires. Even a simple realigning of work stations, sequencing each step in the process can do a lot.

Taking the time to observe the manufacturing processes in detail has been a real eye opener for Joe Pavlovick, Production Supervisor at Dynojet Research in Belgrade ([www.dynojet.com](http://www.dynojet.com)). He credits Dr. Sobek for coaching him to really "see" what was happening in production of the Power Commander, an electronic module made at the plant and sold in the U.S. and Europe. The Power Commander modifies the fuel mix on motorcycles for performance gains. It was developed to work with today's fuel injection systems.

Sobek has a doctorate and M.S. from Michigan State University and worked on his doctorate in Japan where he was able to observe a number of plants using the Toyota Production System that we know in America as Lean Manufacturing. Sobek studied product development in the Toyota production system but became very familiar with the concepts of Lean during his stay.

Today, amidst teaching coursework to  
(continued on page six)

### HOME OFFICE:

313 Roberts Hall  
P.O. Box 173800  
Montana State University  
Bozeman, MT 59717  
(800) MEP-4MFG  
(406) 994-3812  
Fax: (406) 994-3391  
[mmec@coe.montana.edu](mailto:mmec@coe.montana.edu)

### BILLINGS

Dale Detrick  
Big Sky Economic  
Development Authority  
Billings, MT 59101  
(406) 256-6871  
Fax: (406) 256-6877  
[ddetrick@coe.montana.edu](mailto:ddetrick@coe.montana.edu)

### BOZEMAN

Mark Shyne  
UTAP-MSU  
Bozeman, MT 59717  
(406) 994-3812  
Fax: (406) 994-3391  
[marks@coe.montana.edu](mailto:marks@coe.montana.edu)  
Al Deibert  
MSU TechLink  
(406) 994-7732  
[aldeibert@coe.montana.edu](mailto:aldeibert@coe.montana.edu)

### HELENA

Todd Daniels  
MMEC Engineer  
MT Dept. of Commerce  
Helena, MT 59620  
(406) 841-2745  
Fax: (406) 841-2731  
[tdaniels@state.mt.us](mailto:tdaniels@state.mt.us)

### KALISPELL

Paddy Fleming  
The Northwest  
Business Center  
Kalispell, MT 59901  
(406) 758-5478  
Fax: (406) 257-7283  
[pfleming@coe.montana.edu](mailto:pfleming@coe.montana.edu)

### MISSOULA

Kreg Worrest  
School of Business  
Administration  
University of Montana  
Missoula, MT 59812  
(406) 243-6615  
Fax: (406) 243-4030  
[kreg@selway.umt.edu](mailto:kreg@selway.umt.edu)

## Meet Greg Long

**COMPETE**  
SMART  
Montana Manufacturing Conference

You will meet a member of the 2001 Junkyard Wars World Championship team this fall at Montana's Compete Smart manufacturing conference. Greg Long, of the Long Brothers victory team, will give the keynote address during the Oct. 3 luncheon that launches the two-day event at the DoubleTree Hotel in Missoula.

He and his brothers, Brian and Terry,  
(continued on page six)



ADVISORY BOARD  
MEMBERS

**MIKE BAUGH**  
President  
Dragon Mfg./Darcova  
Billings, MT

**AL BEUTE**  
Manager  
General Electric Co.  
Havre, MT

**ROY BROWN**  
State Representative  
Billings, MT

**ANDRE GILES**  
President  
Montana Flour & Grain  
Fort Benton, MT

**KIM GILLAN**  
State Representative  
Billings, MT

**LARRY HALL**  
President  
S&K Industries  
Ronan, MT

**BRAD HECKERMAN**  
CEO  
American Eagle Inst.  
Missoula, MT

**CHUCK KEEGAN**  
Director of Forest  
Industry Research  
BBER/School of  
Business  
Administration  
Missoula, MT

**STEVE MASSEY**  
Production Manager  
Wheat Montana  
Three Forks, MT

**JOE MCCLURE**  
Executive Director  
Big Sky Economic  
Development  
Authority  
Billings, MT

**WALTER McNUTT**  
State Senator  
Sidney, MT

## Director's Comment...

## Make Your Voice Heard



The good news is MMEC state funding remained intact after the August Special Session. The bad news is that our funding was at risk in early deliberations of HB10 along with other economic development programs.

A lot of people worked on our behalf testifying, e-mailing, and phoning to help legislators understand the Center role and its impacts. We owe them a debt of gratitude for their time and support, for in the end, the Senate restored funding for most programs.

As you can guess, I was concerned about the surprise amendment to HB10. The Center's measures show substantial impacts for the dollars invested. We operate on funding from several sources, federal funds from NIST Manufacturing Extension Partnership being the largest

component at \$500,000/year, Montana's matching contribution of \$200,000/year, plus client fees, small grants, and support from MSU and other host partners.

Cutting state support would reduce the federal dollars into the state. But an even bigger loss would be the cutting in half of MMEC's delivery capability. The entire program's effectiveness would be compromised. Like it or not, our complement of technical, managerial and engineering assistance is otherwise not available to most companies. Montana companies are just too small and too spread out.

One Representative, quoted in session news, said: "We do not have good evidence that these economic development programs have provided much benefit to the state." But, in fact, the Manufacturing Center has extensive empirical evidence of benefits, gathered directly from MMEC clients through independent survey by Montana's Bureau of Business and Economics (BBER). For instance, our direct services created 304 jobs during the last two years, generating \$278,871 in new tax revenue to the state. Production by manufacturers using Center assistance increased by \$18.9 million annually. And there is

more. Overall, the return on investment in MMEC is \$1.81 for every \$1 invested, which means cutting the program would create a greater deficit in the state budget.

I have another concern, and that is about losing economic development funding for other organizations. Collectively, we work to provide support for business and job creation. We work hard to ensure that services don't overlap but complement each other in various sectors of the economy. Take one piece away, and the foundation for sustainability and growth begin to crumble. I think it will be a sad day for Montana when economic development is not valued as an integrated program.

Services you value need your continued help and support to make certain that funding continues for building a stronger Montana economy. You can help by contacting your local legislative delegation to express support, particularly with the 2003 Legislature just around the corner. Economic development is just too important.

**Steve Holland**  
MMEC Director



## Financial Management Seminar for Manufacturers

Montana manufacturers are encouraged to participate in a two-day financial management training event, entitled "Financial Analysis and Modeling for Improved Decision Making," on Sept. 10-11 at the Bozeman Comfort Inn. Designed specifically for manufacturers, it will provide valuable, hands-on, take-home tools to enhance financial management for any company, large or small.

The course will take the mystery out of how to use financial measures and

how financial results can be measured and tracked to help determine the appropriate actions in order to compete in today's ever-changing market place.

The course will be taught by MMEC field engineers, Al Deibert and Paddy Fleming. Participants will hear real-world company examples to illustrate how these financial tools and tactics can be applied effectively for measurable results and long-term financial success. Participants from all skill levels will find valuable information to take back to their

own operations.

The course fee is \$195 per person or \$145 each for more than one attendee from the same company. It includes course materials, light refreshment and lunches. Credit card payment (VISA or Mastercard) is available via online registration at [www.mtmanufacturingcenter.com](http://www.mtmanufacturingcenter.com) (Under Seminars & Events) or by calling 406-994-3812. To request a faxed or emailed course agenda, contact Kate Bryan at 406-994-3812 or [kbryan@coe.montana.edu](mailto:kbryan@coe.montana.edu).

## CHANGE: Motivated Employees can MAKE you...Or BREAK you!

We've all been there...a change of managers, a merger, a major loss of market share; strong recommendations from a consultant...change is imminent. You have a plan that can help.

Your idea is fully baked and ready for serving. You know your employees or work team are going to love it and embrace it. You're pumped up and proud of your innovative idea to help refocus or overcome growth obstacles.

You rush to the Monday morning employee meeting and launch your idea with enthusiasm and gusto. The idea falls flat, and you are met with blank stares, folded-arms and defensive body language. You're getting those "you want us to do

what?" looks? Or everyone gets on board early but the change never happens.

So what happened? What went wrong? It was such a great idea with long term benefits!

Do these questions sound familiar?...

These are classic scenarios, experienced by companies, large and small, when significant change is proposed. Nowhere is it more prevalent than in organizations not used to gaining "buy-in" or so busy with day to day operations that taking time to develop and fully understand the impact of a "great idea" seems impossible.

Ideas come from many quarters, and

the changes that succeed are the ones with good planning and the support of the employees impacted by the change.

*"Employees are in a perfect position to make positive change happen or to derail change efforts that add up to lost money,"* according to Jackie Lemieux, human performance professional at TechHelp in Boise, Idaho, and breakout seminar presenter at this year's Compete Smart Conference.

Without an understanding of how to manage for change in a positive way, change will manage you, creating more resistance than necessary, stifling good suggestions from those in the trenches, or even losing good people. *(continued on page seven)*

DAVID GIBSON  
Chief Business  
Officer  
Governor's Office of  
Econ. Opportunity

DAVID OIEN  
President  
Timeless Seeds  
Conrad, MT

JOHN PICKERING, SR.  
Telecommunications  
Missoula, MT

ANDY POOLE  
Deputy Director  
Montana Department  
of Commerce  
Helena, MT

LAMAR RASE  
VP Operations  
Imperial Meats  
Missoula, MT

DOUG RAUTHE  
Director  
NW Human  
Resource Council  
Kalispell, MT

NICK SAVKO  
President  
Tele-Tech Corp.  
Bozeman, MT

JON TESTER  
State Senator  
Big Sandy, MT

WILL WEAVER  
MSU-Great Falls  
College of  
Technology  
Great Falls, MT

SPENCER WILLIAMS  
President  
West Paw Design  
Bozeman, MT

MIKE "WOODY"  
WOODARD  
President  
R.L. Winston Rods  
Twin Bridges, MT

LARRY YUNG  
Manufacturer  
Billings, MT

## Opportunity to Learn About R.E.A.L Selling

"Successful selling is not about **WHAT** you do, but rather **HOW** you do it," according to Cynthia "Cindy" Taylor, whose accomplished track record in direct to indirect sales, channel, OEM, and telesales speaks for itself. Her career milestones over 27 years include senior executive positions with IBM, Oracle, Ingres, and various Silicon Valley start-up ventures where she masterfully built successful sales organizations.

She will teach you how to sell using relevant, effective, applied learning techniques during the breakout session "R.E.A.L. Selling with Cindy Taylor," at the statewide Compete Smart Manufacturing Conference in Missoula in October. A talented consultant with Improved Performance Group (IPG), she will help you explore both the **WHAT** as well as the **HOW** of selling so you can tune your approach for 2002.

This class can also help you as a business owner or manager to identify quality sales skills in your sales force.



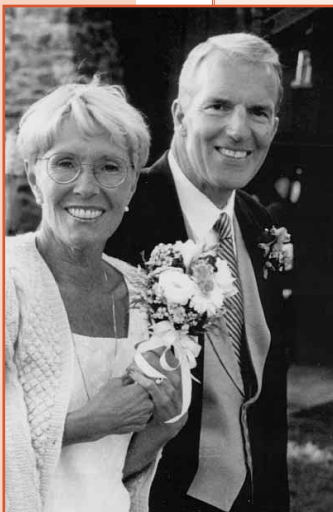
Without exception, Cindy delivers a finely crafted message when working with sales teams where her repertoire of real world experience showcases the impacts of mastering sales skills. She is well versed in the challenges of established companies and start-up businesses and provides mind-opening insights

to address both. Don't miss this opportunity.

Cindy is a graduate of Georgia Southern University where she earned both her Bachelor's and Master's Degree in Mathematics. In addition to her IPG interests, Cindy is an active force in her community and serves on several boards: the Burns Telecommunications Center at Montana State University; TechRanch, a technology incubator; and several high-tech startups. She actively works to recruit new high-tech businesses to the Gallatin Valley, recently appearing in a recruitment video produced by the Gallatin Development Corporation.

To register for the Compete Smart Conference and this breakout session, contact MMEC at 406-994-3812 or check out [www.mtmanufacturingcenter.com](http://www.mtmanufacturingcenter.com).





## Board Member to Offer Expertise at Conference

Meet MMEC Advisory Board member Mike "Woody" Woodward. He is President & CEO of R.L. Winston Rod Company, recognized as the world's finest manufacturer of bamboo and graphite fly

rods. He is also President and CEO of Showcase Carvers, LLC, manufacturer of hand carved fish, decoys, bears and furnishings that showcase some of these. The companies are in Twin Bridges and Whitehall respectively.

He and other Montana manufacturers make up a large portion of the 22-member MMEC Advisory Board. Their role in this admittedly large board is to help keep the Center

focused on doing what it does best – helping manufacturers to succeed and be competitive today. Manufacturing members provide real-world insights into issues and interests from the manufacturer's point of view, especially doing business in Montana.

Woody not only brings value to the advisory board. He will share years of marketing savvy with participants at the October Compete Smart manufacturing Conference in Missoula in a breakout session entitled "Adding Sales & Distribution Channels for Growth." He holds an MBA from Dartmouth College, Amos Tuck School of Business, and an MS and B.S. in Mechanical Engineering from University of Vermont. He held leadership roles during successful company turnarounds for General Electric's Medical Monitoring and Nuclear Diagnostic Imaging Equipment

departments; Litton Industries, Datamedix Department, and Health Imaging Centers; SmithKline-Beckman, Branson Sonic Power Company, leading manufacturer of ultrasonic plastic welding equipment; and for Ransburg Electrostatic Equipment, manufacturer of robotic spray painting equipment. He cultivated his marketing expertise while at GE and is a former manufacturing firm owner.

Prior to joining R.L. Winston Rod and moving to Dillon, Woody and his wife Lois lived in Denver for 13 years where he was an owner of CEI Automation, manufacturer of custom automatic assembly lines for automotive, medical, and computer component manufacturers.

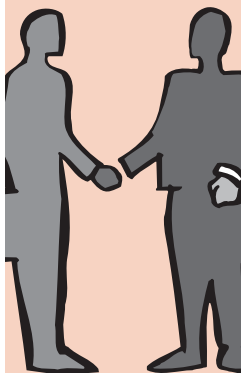
Come visit with Woody during Compete Smart, Oct. 3 & 4 in Missoula.

### Think About It...

*If you think you can differentiate solely on price, you may want to think again.*

*Service, speed, quality, & other non-monetary attributes more often are motivators.*

*Jay Levinson  
/ Seth Godwin*



## Special 2 for 1 Conference Offer

A special, limited opportunity for Montana manufacturers to send two people for the price of one to the October Compete Smart Manufacturing Conference in Missoula is now available through the Montana Manufacturing Extension Center. These discounts will be offered to 20 qualified Montana companies on a first-come, first-served basis. An additional 20 seats will be available at a reduced rate to qualified companies sending a single individual to the conference. The deadline for applying for the discounts is September 15. The cost of attendance at the pre-session training and conference fees will be discounts to manufacturing firms that reside in communities of

fewer than 50,000 people and that have either fewer than 50 employees or less than \$1 million in gross revenue. Under this offer, registration for two will total \$210 including two seats at Oct. 3 pre-session training. Cost for single registration will be \$120 at the reduced rate and includes a seat at the pre-session of choice. (Regular registration for one with a pre-session is \$210.) This opportunity cannot be used in conjunction with regular early bird or Manufacturing Council discount offers.

If you have any questions or if your company qualifies and is interested in attending the Compete Smart Manufacturing Conference using

this special offer, call MMEC 406-994-3812 or email [dnash@coe.montana.edu](mailto:dnash@coe.montana.edu). Regular and early bird registrants can also call or register online at [www.mtmanufacturingcenter.com](http://www.mtmanufacturingcenter.com) under Events.



### **Manufacturing Strategist for Wrap-Up**

Special Guest Joe DeFrancisci, founder of Pasta Montana and Senior Partner of Highwood Group, LLP, a management consulting firm focusing on marketing and strategy, will wrap-up conference events at Compete Smart's closing luncheon on Oct. 4. He will offer insights into successful manufacturing from 10 years of successful senior level experience in front line operations, sales, and marketing and a proven record of implementing world class manufacturing methods and driving long-term business growth. Pasta Montana received gold medals from the American Culinary Institute and American Tasting Institute and earned the title "Fabulous Food Plant of the Year." It grew from start-up to a sales rate of \$18 million in 18 months under DeFrancisci's leadership.



# Montana's Premier Manufacturing Conference - October 3 & 4, 2002 -

## MISSOULA DoubleTree Edgewater Hotel

Registration Fee \$175 per person.  
EARLY BIRD registration savings  
of \$25 extended through Sept 15.  
Online Registration Available at  
[www.mtmanufacturingcenter.com](http://www.mtmanufacturingcenter.com)

### DAY 1

THURSDAY – OCT 3

**8:30-11:30**

**Pre-session I** - Effective Cash Flow  
Management (\$35.00 fee)  
Kelly O'Connor, presenter

**8:30-11:30**

**Pre-session II** - Unlocking the Key  
Elements to Lean Manufacturing with  
Lego™ (\$35.00 fee) Dale Detrick &  
Kate Bryan

**8:00-12:30 pm**

**Registration in Lobby;** Corvallis  
Robotics Team demo

**11:00-12:20**

Tour exhibitors  
(Lewis-Clark-Bitterroot rooms)

**12:30-2:10**

Luncheon/**KEYNOTE** – GREG  
LONG, Featured Team Member

### Building & High Energy Environments

**2:10-2:30**

Network/Visit Exhibitors/Break

**2:30-4:00**

#### Concurrent Breakouts

- A:1** Your Customers Cost Money:  
Explore Costs & Most  
Valuable Customer w/ Al  
Deibert & Al Jones
- A:2** Adding Sales & Distribution  
Channels for Growth w/  
Woody Woodard
- A:3** Panel Discussion: Growth  
through Technology Transfer  
(Moderator – Jack Guns;  
Todd Johnson-Federal  
Technology Group; Barry  
Roose – American Eagle;  
Marti Elder LLC,  
Management & Marketing  
Consultant)

**4:10-5:30**

**Hosted Exhibitor Reception/No-  
host bar.** Exhibit Booths - Door  
prizes - drawings for great prizes!

**6:30-**

**Dinner Buffet/No-host bar**  
w/ light entertainment

**9:00 – Day Ends**

### DAY 2

FRIDAY— Oct. 4

**7:00-8:00**

Lite Breakfast/Visit Exhibitors

**8:15 - 10:15**

**Growing Your Business in  
Montana** – Presentation in Ballroom,  
3 Montana Company Leaders

- LARRY HALL – S&K Electronics –  
Mission Valley
- LAURA RYDBERG – Gibson Guitar  
– Bozeman
- JERRY McCONNELL – Jore  
Corporation – Ronan

**10:15-10:30**

Networking/Exhibitors/Break

**10:30-12:00**

#### Concurrent Breakouts:

- B:1** R.E.A.L. Selling with Cindy  
Taylor: Learn to Recognize &  
Develop Behaviors for  
Highly Successful Sales
- B:2** Managing Energy Costs &  
Efficiency -- Deborah Singer,  
NorthWestern Energy
- B:3** Creating Positive Change:  
Your People Make the  
Difference – Jackie Lemieux,  
Idaho TechHelp

**12:30 –2:00**

#### Closing Luncheon/Conference

**Wrap-up** with special guest Joe  
DeFrancisci, founder of Pasta  
Montana. Policy makers will review  
progress toward Montana as a more  
business friendly place.

**2:00 – CONFERENCE ENDS**

Conference registration includes all  
general sessions, your choice of  
workshops, 2 lunches, reception/din-  
ner buffet, 1 breakfast and refresh-  
ments during breaks, conference  
materials. For pre-conference session,  
add \$35. If you have any questions  
or special needs, please call (406)  
994-3812 or email [dnash@coe.montana.edu](mailto:dnash@coe.montana.edu).

A block of rooms has been reserved  
at special conference rates through  
Sept. 10 at the DoubleTree Hotel for  
the nights of Oct. 2 & 3. Please call  
the hotel, 406-728-3100, directly to  
make your reservations.

of TLC Junkyard Wars 2001  
Championship Team – Team

Attend the  
Vendor-Hosted  
Reception  
during  
Compete Smart

be eligible  
to win  
prizes.

DOOR PRIZE  
a  
Palm  
organizer

Sign up for  
Exciting  
Booth  
drawings  
to win

Sporting goods  
Gift certificates  
Food baskets  
& More...

# FORWARD FOCUS IS A NEWSLETTER FOR MONTANA MANUFACTURERS

PUBLISHED  
QUARTERLY

CHECK IT  
OUT

Feel free to call  
MMEC about  
manufacturing  
topics or  
issues that  
concern you.

Call us at:  
1-800-MEP-  
4MFG

## MMEC HOME OFFICE STAFF:

STEVE HOLLAND  
Director

MARGIE JENSEN  
Administrative Asst.

DEBORAH NASH  
Writer

KATE BRYAN  
Training Development  
Engineer

GLORIA ZIMMER  
Business Manager

## Power of Observation..... (continued from page one)

graduate students and introductory courses to incoming freshmen, he occasionally helps companies with process improvements and makes it a point to take students out into real-world manufacturing environments. He became involved helping Dynojet after a former student put him in touch with managers to help solve a problem.

He has helped the company on several occasions since and was called for advice when demand for the Power Commander increased dramatically two years ago, growing from just over 1000 to 4000 units per month. Space needs had put production onto two floors of the facility, using a total of 1865 square feet. Producing in large batches, each batch had to be toted up a flight of stairs for part of the process and then down again before shipping, Joe recalled. Sobek taught him to map the processes and what to look for in planning improvements.

"The redesign was Joe's work," Sobek said. "He is the one who took the initiative and made comprehensive changes."

At one point, that initiative was taxed when Joe's plan to go to one-piece flow was stymied by several potting compounds (epoxy-like substances) being used in the process. From his

observations, he had found that one compound used to seal holes in the casings took over a half day to dry. The drying time was responsible for a large part of the product's long cycle time, and it was impeding the move to one-piece flow. The need for it was designed out of the product, cutting cycle time by more than four hours. Another, used to hold components securely, dried too fast, so units still had to be batched to use a mix before it would get to dry to use. Determined to find a solution, Joe located a compound that meets specs and dries in a time that better fits the cycle time goal he had set and one-piece flow. And it is less expensive.

Many other improvements have been implemented as well as future goals set using the mapping process as a guide to change.

When Joe began gathering data and planning for improvements in August 2001, 14 people worked in production. Work in process (WIP) each day numbered 400 units with a lead time of 21.5 hours. The company stocked lots of inventory. Similar products were produced in separate lines. In the fall, Dynojet sent several people to the Montana Manufacturing Extension Center Lean Manufacturing course, "Play the Lean Game" to help build an understanding of what Joe was trying to accomplish and why.

By spring 2002, Joe had refined the processes into one line where similar products can also be built using one-piece flow. He put processes into a more orderly sequence and tightened the line to use only 800 square feet on one floor of the building. WIP was cut in half to 200 units and lead time reduced to just 2.5 hours. Production costs are down 40 percent.

During the change to Lean techniques, Sept. 11 and the economic downturn that followed forced Dynojet to lay off staff, Joe said. Today, the line is back into full production, now with 7-8 employees working on that line to produce 4000 units per month. Under normal circumstances, the company would have moved workers from the line into different jobs at the plant and let normal turnover and attrition adjust staffing needs. The downturn changed all that. But Lean Manufacturing has impacted staffing in a positive way. "Before the Lean changes, I had lots of turnover. Now, I don't. I am very lucky to have the people I do. They helped me meet my goals with Lean Manufacturing," Joe said. He has plans to continue the mapping process and work toward future goals. Best of all, Joe said of the process improvements he's been making, "Each day, everyone knows what they have to do. I no longer hear, 'What do you want me to do next?'"

## Meet Greg Long (continued from page one)

took the season championship by conquering a series of competitors during the Learning Channel program's fourth season. Greg also manages daily operations and P&L responsibilities as General Manager for a leading manufacturer of unfinished furniture in the United States, Woodcraft Industries of Bellefonte, Pennsylvania.

During the conference keynote address, he will share how the winning attributes for TLC Junkyard Wars were learned during

his 20 years in manufacturing and how those same strengths will work to help you be a winner in your business.

"I have found that companies with the right culture not only survive, but also thrive, in this environment," says Long, who will also share what he has learned about improving conventional team concepts to create high-energy teams that help a business thrive.

Professionally, he has demonstrated that amazing results are gained by implementing high performance teams that have well defined goals.

He speaks from a proven record of driving double-digit growth rates as a manager of industry-leading companies ranging from satellite communications equipment to computer control systems.

His spends his spare time tractor pulling, racing, and with his latest project, putting a jet turbine in a garden tractor. He is also active in his community, Tyrone, Penn., and speaks to engineering and physics classes at Penn State University and Juniata College. He will accompany MMEC to Missoula high schools to talk with students during his stay.



## New Searchable Database for Manufacturers

Spread out over the state, Montana manufacturers often don't know of each other's existence. Without contact with other businesses, this group is often unable to build the beneficial relationships enjoyed by manufacturers and industrial service providers in more urban settings, according to Bob Campbell of Montana Business Connections at the University of Montana.

While manufacturing in Montana is critical to the state's future economy with production approaching \$5 billion in output annually and directly employing almost 30,000 workers, the sector has yet to reach its full potential. Only six percent of the state's labor income is generated in manufacturing vs. 15 percent for the nation as a whole. A major reason for this disparity is Montana's vast geography and sparse population, Campbell noted.

Using today's telecommunications technology, a system in under development to address these geographic disadvantages. It is called the **Montana Manufacturers Information System (MMIS)**. You may view this developing tool at [www.mmis.umont.edu](http://www.mmis.umont.edu).

The MMIS will help Montana manufacturers locate potential new

customers by linking them with worldwide markets. It will also identify suppliers that are Montana firms, allowing money to stay in the state. The specific and complete information on products and services could lead to new or expanded Montana businesses. Manufacturers and decision-makers can use the MMIS to:

- ◆ identify new markets, new sources of materials, supplies, and services;
- ◆ pursue opportunities to supply products and services now being purchased out of state;
- ◆ locate potential partners for cooperative production, marketing, buying, and shipping;
- ◆ analyze the condition and outlook of Montana's manufacturing industries.

This tool is a collaboration by the University of Montana's Bureau of Business and Economic Research and Montana Business Connections, along with Montana State University's Montana Manufacturing Extension Center and the Montana Department of Commerce. It is funded by the U. S. Department of Commerce's Telecommunications Opportunities Program and Economic Development Administration.

Currently the developing MMIS contains information on Montana

wood product manufacturers and a growing number of firms that manufacture machinery, equipment, instruments and fabricated metal products.

"We hope to be adding manufacturers in other sectors soon, Campbell said. "We are currently developing more search/browse features and will soon have a secure method by which manufacturers can edit and add to their profiles, as well as have manufacturers not currently listed add themselves to the system."

Campbell will be on hand at the Compete Smart Manufacturing Conference on October 3 and 4 in Missoula to explain more about this valuable information system. Manufacturers, industrial service providers and others are encouraged to inquire about the MMIS at any time or simply send information about themselves to:



### MONTANA MANUFACTURERS INFORMATION SYSTEM

- The University of Montana-Missoula  
32 Campus Drive #6828  
Missoula, MT 59812-6828
- Phone: Bob Campbell or  
Chuck Keegan 406-243-5113
- Email: [mmis@business.umont.edu](mailto:mmis@business.umont.edu)

## COMPETE SMART MANUFACTURING CONFERENCE

### 2002

◆  
Network w/ other  
manufacturers

◆  
Hear what  
world class  
companies do

◆  
Choose tools  
that work

◆  
Get energized

◆  
Compete more  
effectively

October 3 & 4  
in Missoula

800-MEP-4MFG

### Management

(continued from page 3)

Jackie's presentation will explore the subtle and not-so-subtle dynamics (and challenges) encountered when "change" is on the horizon. She will offer interesting examples to illustrate the stages of organizational change – Denial, Resistance, Commitment and Experimentation.

In addition, Jackie will present valuable tools and practical ideas on how companies can successfully navigate from their current state to desired changes, or future state.

She will delve into the critical steps and success factors necessary to ensure that your destination is reached, with specific emphasis on understanding company culture, creating sponsorship, developing winning teams and how to get the most out of people in a manufacturing environment.

Jackie has extensive expertise in organizational culture, change management, leadership and recruitment. Her topic will be featured as a breakout session on Friday, October 4, Day 2 of the conference.

## "Change Tension" Humor

- The only light I see at the end of the tunnel is the train coming the other way!
- I've got one nerve left. How'd they find it?
- It's nature's law... the other line moves faster.
- Keep the razor blades away from me for a minute please...
- Some day you're the bugs, someday you're the windshield
- This is a test. It is only a test. If it had been a real life, I would have been given instructions on where to go and what to do!
- Is this Candid Camera?
- Like gas, this too shall pass!

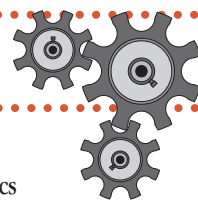




Proud Co-Sponsor of  
Compete Smart

First Interstate Bank

## Just What is Junkyard Wars?



Haven't tuned in to TLC's Junkyard Wars? You're missing the competitive spirit, humor, hard work and ingenuity of real teams trying to meet creative engineering

challenges. They perform their feats in a junkyard, scrounging materials from a towering junk heap and applying problem solving skills and tools to the challenge of the day. The teams compete in a series of elimination contests aired on Wednesdays on the Learning Channel, with repeats on Sunday.

In eight seasons, the show has developed quite a following by young and old, male and female, all over the world.

The team challenge is revealed the morning of the contest and must be completed in 10 hours. Teams come from all walks of life but share the belief that their welding and mechanical skills, ingenuity, and teamwork will beat out the competition. Meanwhile, the other team is trying to find the best bits of junk first to build what might be a water-to-shore salvage vehicle that cannot have wheels or an egg launching skyrocket where the eggs must stay intact.

Teachers love the show for its engineering, mathematical and physics lessons brought out during the episode to

illustrate design problems as each team hammers out extraordinary machines. Lessons range from lift and drag to air-velocity and trajectories. Solutions are explained and diagrammed by team members and hosts in simple, straightforward terms so viewers get insight into the basics of how complex machines work. Each team is assigned one specialist with expertise in that day's challenge to help get them started.



*Greg Long and Championship Junkyard Wars team, The Long Bros. Greg is a manufacturer who knows how to work hard and play hard. Come to Montana's Compete Smart Manufacturing Conference Oct 3 & 4 and bear how skills learned in manufacturing helped win in the 2001 Junkyard Wars and how those skills can help you win in manufacturing.*

You can learn more about some of the science in this series at web site <http://tlc.discovery.com/fansites/junkyard/science/interactive.html>. Or check out what's coming up in Season 8 at [http://tlc.discovery.com/fansites/junkyard/episode/season\\_08.html](http://tlc.discovery.com/fansites/junkyard/episode/season_08.html).



P A G E 8



Montana State University  
313 Roberts Hall  
P.O. Box 173800  
Bozeman, MT 59717-3800

RETURN SERVICE REQUESTED

Nonprofit Organization  
U.S. Postage  
PAID  
Permit No. 69  
Bozeman, MT 59715

### PLEASE ROUTE TO:

- ☐ CEO
- ☐ Owner
- ☐ Production Manager
- ☐ Development Officer
- ☐ Safety Officer
- ☐ Sales Manager
- ☐ Office Supervisor
- ☐
- ☐

a NIST | Network  
MEP | Affiliate