

## WMEL Alumni & Friends Newsletter

Tom Maloney, Editor  
Judy Edmister, Associate Editor

### Comments from the Editor



**Tom Maloney**

sent information probably have new and exciting stuff that you can share with all of your friends.

The basic structure of the Newsletter will have some comments from the Editor and others, highlight a WMEL program area, provide a faculty spotlight, a student spotlight, an alumni spotlight or news, and awards recognitions/highlights. And I know that some of you out there in the readership will "highlight" where I have screwed up but what else is new.

Last year I received the Bronson J. Lewis Award from APA-The Engineered Wood Association and this was reported in Issue No. 1 of the Newsletter. A news story was developed for the university but it was never published for some reason. I consider this the most important award ever given the Laboratory during my many years of involvement. Following is a statement from the news story that I want to share with you as everyone involved over the years are the ones being recognized by this award. All of us share in this recognition and I want to congratulate and thank everyone for their great work in making WMEL the leading laboratory that it has become.

This award recognizes the Laboratory for its work in reinventing the entire engineered wood industry from the days of plywood and laminated beams only. Nowadays, almost every single-family house or low-rise multiple unit building has one of the new engineered wood products as part of the construction. In other words, the Laboratory was in the forefront of a massive restructuring of the forest products industry worldwide. The Laboratory has a footprint in almost every house built in the U.S. and Canada for the last 30 years or so.

Don't forget to get up-to-date news of the Laboratory from the website: [www.wmel.wsu.edu](http://www.wmel.wsu.edu).

From what I gather from feedback, the first issue of the WMEL Alumni & Friends Newsletter was well received. We still need your help. For those of you receiving the letter by regular mail please let us have your E-mail address if at all possible. This saves Judy's time and an expense by the Laboratory. The saved funds can be put to better use supporting research and the graduate program. Send your address to: [edmister@wsu.edu](mailto:edmister@wsu.edu).

And while you are at it, send us information about yourself, work, family, fun, etc. Many of you have already done so but many have not. And those who have sent information probably have new and exciting stuff that you can share with all of your friends.

### Faculty Focus

#### Marie Laborie, Associate Professor

We are making an effort to introduce the newer faculty and staff to all that have left the friendly environs of Pullman. Some of the "newer people" have been here for awhile but since this newsletter is of very recent origin, we have a bit of catching up to do, particularly for our alumni and friends who left Pullman quite awhile back.

Dr. Laborie has been in the Laboratory for several years and has already been granted tenure. She is the second Marie that we have had join us from France. The first Marie, Marie Helene (Petit), earned her master's degree with us in 1986.



**Marie Laborie**

Dr. Laborie earned her PhD in Wood Science and Forest Products at Virginia Tech and her Engineering Diploma, Wood Science and Technology E.N.S.T.I.B at the University of Nancy in France. She joined the faculty at WSU in 2002. I asked her what attracted her here and she said, "The high energy level of everyone

in the Laboratory." I, at first, thought that it would have been the many beautiful lakes and the heavy forest around Pullman. But Marie told me that she has grown to like Pullman and its people and the beautiful Palouse countryside.

She has had an amazing great career already at a young age. A full presentation of her CV can be found on the WMEL web page. Part of the curriculum at the University of Nancy is the requirement for an internship in some appropriate organization for each student. One has to fund this internship independently and hopefully get one that has some financial help but, if not, as Marie said, "You get a loan." She did quite well with internships in France, the Czech Republic and Chile. In addition she was a Visiting Scientist in Sweden.

Her technical interests are in the physical chemistry of polymers and composites, adhesion, and nano-biomaterials. Several industrial companies are funding work in her part of the laboratory. She is working on green, lighter and better performing adhesives, surface treatments for improved adhesion to wood plastic composites or any other substrates (for example, examining fluorine gas treatments), and has worked on "tricking" plantation poplars into growing into raw material for either energy, pulp, or wood products. She has helped developed an outstanding analytical

(Continued on page 2)

## Faculty Focus, cont'd

laboratory at WMEL with grants for new equipments for characterizing the structure of polymers and composites on a very fine scale (nanometer!).

Marie's parents are very happy with her being in Pullman. I joked perhaps it was that she was far away from them but the truth is that her parents like her to have assignments in many parts of the world so that they can visit. She returned to France in July on sabbatical where she will be researching nano-composites, materials for biomedical applications, as well as developing proposals for research. Marie will be visiting and working in a number of leading research laboratories with the top scientists and experts in these laboratories.

It is the humble opinion of the Editor and Director Emeritus that WMEL struck gold when Dr. Laborie agreed to become part of what is a world class staff.  
(Continued on page 4)

## Graduate Student Spotlight



**Elvie Brown**

The Laboratory has many outstanding graduate students performing their research under the guidance of faculty. It is the intention of this newsletter to highlight or spotlight one of these students in each issue. So with great pleasure we present Elvie E. Brown, a PhD candidate in Chemical Engineering.

Elvie is a native of The Philippines. She comes from a family that emphasized education. Her father works for Del Monte Philippines, her brother is a computer technician and her sister is an accounting staff member (both university graduates). Elvie received her bachelor's degree in computer science from Xavier University in The Philippines (her brother and sister earned their degrees there also). Xavier is about the size of Washington State University but is located in a crowded urban area. WSU is a garden spot for Elvie.

Elvie came to the Tri-Cities in Washington in 2001 to join her husband, Alan (who was born and raised in Kennewick). He works at AREVA (producer of nuclear fuel). Because of the dot.com stock market crash, computer science positions were scarce at that time for Elvie. In conference with a WSU professor, she decided to work on a M.S. degree in Chemical Engineering. She is interested in taking her knowledge to work in the biomedical field.

These interests lead her to her PhD program after she obtained her M.S. degree. Her program is under the guidance of Marie Laborie and Jinwen Zhanq, Assistant Professor, bio-based composites and polymer blends. Her research is in the area of combining cellulose and cellulose compatible nanofibers using bacteria as the medium for such combinations.

(Continued on Page 3)



**Roy Pellerin's Peace Pole**  
Ocean Park Lutheran Church, Ocean Park WA

## Where is Roy Pellerin?

Roy and Patti (who celebrated their fiftieth wedding anniversary in 2008) live in Ocean Park, Washington on the Long Beach Peninsula. They live in a house designed to incorporate many of the wood products and construction techniques that were developed over the years in the Wood Materials and Engineering Laboratory.

Since Roy retired from Washington State University in 1996 he has also gradually retired from professional involvement. However, retirement has provided the time needed to co-author a book with Dr. Robert Ross (see story page 3) entitled *Nondestructive Evaluation of Wood*, published by the Forest Products Society in 2002. Also, a *Wood and Timber Condition Assessment Manual* co-authored by Robert J. Ross, Brian K. Brashaw, Xiping Wang, Robert H. White and Roy F. Pellerin was published by the Forest Products Society in 2004. In addition, 23 publications and 4 foreign patents that were issued and licensed to Coe Manufacturing, Portland, Oregon have been added to his biographical data.

Roy's teaching of the Wood Section of the Structural Condition Assessment by the American Society of Civil Engineering Continuing Education Program for practicing engineers has been turned over to Dr. Robert Ross, U.S. Forest Products Laboratory, Madison, Wisconsin; Brian Brashaw (WSU Graduate, 1991), Director of the Wood Materials and Engineering Program with the University of Minnesota Duluth, Natural Resources Research Institute; and Dr. Xiping Wang, Research Scientist of the Structural Condition Assessment and Rehabilitation Research Unit at USDA Forest Products Laboratory in Madison, Wisconsin.

Roy will continue to serve on the International Advisory Committee for the International Nondestructive Testing and Evaluation of Wood Symposia. He also will serve out his current appointment as a consumer to the American Lumber Standards Committee (ALSC), that will culminate in fifteen years of service in June 2010. Dr. Donald Bender, current Director of WSU's Wood Materials and Engineering Laboratory, is Roy's alternate on the ALSC Board and will likely replace Roy.

(Continued on Page 3)

## Graduate Student Spotlight: Elvie Brown, cont'd

While this is fundamental research (and I never subscribed to differentiating between fundamental and applied research—research is research), such knowledge could lead to developing artificial blood vessels (flexible tubes) from the new materials resulting from this research. So she is back to her interest in the medical field.

Elvie summarized her research effort as follows: “Heart disease is one of the major causes of death in the U.S. Treatment of heart disease includes bypass surgery or stent placement, which necessitates artificial or replacement blood vessels. Many synthetic blood vessels have already been utilized and have high success rates but those with diameters less than 6 mm have failed significantly. My research aims to produce replacement blood vessels with diameters less than 6 mm from bacterial cellulose. The properties of cellulose, such as mechanical and physical properties, will be manipulated to mimic the properties of the real blood vessel. Manipulation of properties will be done by producing the bacterial cellulose with another polymer, producing a cellulose nanocomposite. Bacterial cellulose is a biocompatible material, thus a biocompatible additive polymer will be chosen to diminish the challenge of biocompatibility. To tailor the properties of the replacement blood vessels, a range of compositions of cellulose and the additive polymer will be prepared. Mechanical, physical and chemical characterization will

be implemented to compare the produced replacement blood vessels to the real ones. Characterizations will utilize mechanical testers, TGA, TEM, SEM, AFM and other nanotechnology instruments.”

Elvie also has a National Science Foundation fellowship that entails her bringing engineering activities to a high school. Hopefully, this will show the students what careers are available in the fields of engineering and science. She travels every two weeks to the Sunnyside, Washington High School and presents an activity to the students. She has found that giving activities to the students are challenging but an activity in the field of engineering gets them excited and they get right to work on the activity. Her base for her research is at the WSU Tri-Cities campus in the BSEL (Biotechnologies, Science, and Engineering Laboratory). She is an extremely busy young lady with all of her activities, which include taking care of her eight-month-old baby, Reed.

## Alumni, Staff and Friends News

### Where is Roy Pellerin? , cont'd

Recognitions received after retirement include:

- (1) Presented Keynote Address, "Bridging the Gap" at the 13th International Symposium on Nondestructive Testing of Wood. The Symposium was held in August 2002 at the University of California Berkley Campus.
- (2) Recipient of the 2003 Washington State University Alumni Achievement Award for the Superb and Creative Research and Development of Wood Technology at Washington State University enhancing the Engineering uses of wood materials.
- (3) Recipient of the 2007 Wood Engineering Achievement Award for lifetime achievements in the field of wood engineering. This award was presented by the Wood Engineering Division of the Forest Products Society and the AF and PA American Wood Council at the annual meeting held in Knoxville, Tennessee.

Roy continues to do wood working projects and recently designed and constructed a peace pole for the Ocean Park Lutheran Church. As seen in the accompanying photograph (top of page 2), the peace pole park consists of three cedar 12-foot tall 10 by 10 in. square poles that have had the corners sawn off to create octagons. Each face of the octagons has the prayer “MAY PEACE PREVAIL ON EARTH” routed into them in 24 languages from around the world. The base of each pole is surrounded with oyster shells and gardens of heather and lavender. Concrete walkways through a bed of red rock tie everything together. The bench in the center has the inscription “WORLD PRAYERS FOR PEACE.” (Editor’s note: Roy got the translations for the 24 languages from the internet. I have questioned whether all the languages actually say what he intended. Perhaps there may be unknown changes such as “Go Cougs.”)

### Dr. Robert J. Ross

Dr. Robert J. Ross was recently promoted to the Senior Scientist level at the Forest Products Laboratory (FPL), U.S. Forest Service. Bob is one of the many outstanding graduates who did their graduate work in the Wood Materials and Engineering Laboratory at Washington State University. Bob graduated with his PhD. in Engineering Science in 1985. He was presented the First Place Wood Award by the Forest Products Society in 1985. This award is given for the most outstanding graduate research during that year.

### Following is the Forest Service announcement of Bob’s promotion:

Congratulations to Bob Ross, who was recently promoted to a senior level scientist within the Forest Service. Senior level assignments are made based on recommendations of a panel of peers, reviewers, and the Forest Service Deputy Chief of Research and Development. Assignment requires USDA and Office of Personnel Management approval. Less than two percent of Forest Service Scientists achieve this stature.

In 1988 Bob joined the Forest Service, stationed at the Forest Products Laboratory (FPL) in Madison, Wisconsin. He is an extremely productive researcher. He has authored or co-authored over 200 scientific papers and technical reports, most of which deal with nondestructive testing and evaluation of wood and wood-based materials. He jointly holds twenty-four patents in the United States, Australia, New Zealand, Canada, and Europe. He has led or been co-principal investigator of research grants totaling over \$6.0 million. He has received numerous awards for his research and technology transfer efforts from a variety of organizations including the Forest Service, USDA, Forest Products Society, Society for Experimental Mechanics, and Federal Laboratory Consortium for Technology Transfer. His efforts have been noted in the popular press, including feature articles in local newspapers, publications such as “Historic Preservation”, “Christian Science Monitor”, “Wood Technology”, “Fine Homebuilding”, and “National Geographic”. His work has been highlighted on CNN news, CBS news,

(Continued on Page 4)

## Alumni, Staff and Friends News, cont'd

PBS and in the Wall Street Journal.

He has co-authored several widely used reference documents: "Nondestructive Evaluation of Wood" with Roy F. Pellerin, published by the Forest Products Society; "Wood and Timber Condition Assessment Manual" with Brian K. Brashaw, Xiping Wang, Roy F. Pellerin and Robert H. White, published by the Forest Products Society; "Undervalued Hardwoods for Engineered Materials and Components", with John R. Erickson, published by the Forest Products Society. Bob has contributed chapters or sections to: "Inspection and Monitoring Techniques for Bridges and Civil Structures" with Brian K. Brashaw and Xiping Wang, published by Woodhead Publishing Limited, Cambridge, England; "Marks' Standard Handbook for Mechanical Engineers", 10<sup>th</sup> and 11<sup>th</sup> Editions, with FPL staff, published by McGraw-Hill. He was recently assigned the lead to prepare a Special Edition of the Wood Handbook (FPL celebrates 100 years of service in 2010).

Bob, in recognition for his efforts to integrate developmentally disabled individuals into the workplace, has received awards from the Dane County Madison Area Rehabilitation Centers and Greater Madison Federal Agency Association.

He holds adjunct faculty and research positions at Michigan Technological University, University of Minnesota Duluth, and Northeast Forestry University, Harbin, Peoples Republic of China.

Bob and his wife, Nancy (both WSU grads) live in Madison.

### Editor's Note

The appointment as a U.S. Forest Service Senior Scientist is a great honor and recognition as there are very few such positions. I have been able to learn a few things about this appointment as found on the Forest Service websites.

The Forest Service employs approximately 30,000 people. In Forest Service Research and Development, there are over 550 scientists doing work in the biological, physical, engineering, and social sciences in all 50 states, U.S. territories, and commonwealths. Senior level employees are highly valued by the agency. They include senior level managers (Chief of the Forest Service, Deputy Chiefs, Station Directors, Regional Foresters) and senior level scientists. Senior Level scientists are highly valued for their management, leadership, and technical skills.

It seems that there are approximately 5-10 Senior Level scientists in the Forest Service at any one time. This is the first Senior Level scientist in the history of the Forest Products Laboratory in engineering research.

### Following is a statement from Dr. Ross

"I am honored to be rated at such a high level and being promoted to a Senior Level scientist. I believe this in recognition of the impact and quality of the collaborative efforts of many, including colleagues, cooperators and friends I have had the pleasure of working with and those who have supported our

work. You are too numerous to list! I would like to thank all of you for contributing to our numerous technical accomplishments and the continued success of the Forest Products Laboratory and the Forest Service. I look forward to future cooperative efforts.

A special thanks to Roy Pellerin, Tom Maloney and the staff/family of the Wood Materials and Engineering Laboratory, Washington State University, for providing a creative, positive learning environment. The Wood Materials and Engineering Laboratory has a long history of producing high impact technical innovations. I am fortunate to have had the opportunity to learn from, and work with, the best!"

Bob closed his remarks in his usual humorous way, saying, "Nancy is doing great--I still have the same responsibilities at home--trash pickup, doggie poop patrol, dishes, etc. She always said this was possible. I guess she was right and maybe I should listen to her more often!"

## Faculty Focus, cont'd

### Dr. Hwa Hyong Lee, Visiting Professor



For those of you who were in the Laboratory in 1990-91, Dr. Lee is a very familiar person. At that time he was a Visiting Professor from Korea. Now, he has returned as a Visiting Professor for a second tour of duty. When he was here earlier he had his wife, Hae Ryun Chon, and his two children with him.

At that time, his daughter Ju Mi was in the second grade. Now she has completed her studies and internship and is a full-fledged medical doctor. She has joined her parents here in Pullman for a short stay where she is polishing her English skills and learning to golf along with her mother. She told me that she loves Pullman and it is her second home.

Ju Young (using the English name James) came with his parents last year and finished his secondary education at Pullman High School. He is now a freshman at the University of Idaho and is interested in Pharmacy. He came to Pullman as a small baby in 1990. Donna and I scrambled for several days to find a crib for him and were successful in getting one just before the Lee family arrived. After they left, the crib was stored in our Laboratory balcony and was used by several young families over the years. Maybe that crib is still in the balcony waiting for another use.

Professor Lee is one of the most outstanding forest products professors in Korea and perhaps is the most outstanding. His credentials are very impressive heading up many important departments, being the Director of numerous societies and committees, Dean of Academic Affairs at his university, and president of the Korean Society of Wood Science and Technology. This is just a brief overview of his many activities and

## Faculty Focus, cont'd

there are many more. He has received numerous awards for his work, and has some 170 publications. He has obtained seven patents just in the last five years, a very accomplished and distinguished professor indeed. In American vernacular, he is a superstar.

At the Wood Materials and Engineering Laboratory his research has been on the Far Infrared (FIR) properties of wood. There are no data about wood radiation emissivity in the U.S. Forest Products Laboratory (FPL) Wood Handbook or in other countries' wood handbooks until now. The FPL Wood Handbook has only presented thermal properties of wood such as thermal conductivity, specific heat, thermal diffusivity and thermal expansion coefficient.

Modes of heat transfer from one body to another differs greatly with temperature. The phenomena of conduction and convection are affected primarily by temperature difference and less by temperature level, whereas radiation energy increases rapidly with increase in temperature level. It follows that, at very low temperature, conduction and convection are the major contributors to the total heat transfer: at very high temperatures, however, radiation is the controlling factor for roughly one-half of the total heat transmission. Generally, at/above ambient temperature, radiation is ignored

compared to conduction and /or convection; however, Dr. Lee's study showed convincingly that radiation is an important factor in heat transfer at very high temperatures.

We are all aware of the natural beauty of wood—now Dr. Lee seeks to capitalize on intrinsic health benefits too. FIR heaters are used in infrared saunas to warm the occupants and by medical practitioners for therapy to improve circulation and to remove toxins from the body. This study on the FIR properties of wood perhaps will provide information to enhance the use of wood in house construction such as in floors, wooden radiator cabinets or in interior decoration with wood materials and even in parts of the heating systems. Activated by heat of conventional heating, the FIR material, wood, emits FIR energy like FIR heat in a dry sauna that is preferentially absorbed by human cells.

## Photo Opportunities



WSU solar decathlon house, on site in Washington DC, constructed with wood plastic composites fabricated at WMEL (2005)



Grad Research Asst. Elena Ten and Research Experience for Undergraduates (REU) student Joel Turtle in WMEL's biodegradation lab (2008)

## WMEL Grad Student Wins Best Poster Award



Isabela Reiniati, a graduate student in chemical engineering working with civil engineering professor Marie Laborie, received the best poster award at the Eco-wood 2008 conference, held in Portugal this fall.

Reiniati's poster, entitled *Viscoelastic Properties of Hybrid Poplar*, describes her research on the effect of hot-pressing on the structural, chemical and viscoelastic properties of the hybrid poplar. Hybrid poplar trees are a fast-growing plantation species and have been used for decades to supply the pulp and paper industries. Recently, they are being considered as a possible alternative for wood-based composite manufacturing. Fundamental knowledge of

how the wood behaves after hot-pressing, which is an important step in the wood-composite manufacturing process, is important for future development of composites.

Reiniati, a native of Indonesia, came to the U.S. to attend college, first in California and then at Washington State University. She received her undergraduate degree in chemical engineering in May, 2007, and is now pursuing a master's degree. She conducts her research at the Wood Materials and Engineering Laboratory. She plans to graduate in the spring and hopes to work as a process engineer.

(reprinted with permission from the Fall 2008 CEA Newsletter)

## Alumni, Staff, and Friends News

Not much new for this issue as we covered a lot of ground in Issue No. 1. As stated earlier, please send us everything of interest including family news. For example, I learned in talking to **John Wasniewski** (1991) that one of his sons (Johnny) is in his second year at the U.S. Military Academy at West Point, New York. He is also a football player and his position is linebacker. For all you football buffs, his uniform number is 32.

John reported on his other two children. Jessica is a senior at Oregon State University majoring in teaching and Adam is a freshman at Oregon State planning on engineering. John has remarried and has inherited two additional children, Emily age 14, and Cameron, age 12. John is still the General Manager at Timber Products in Medford, Oregon. He sees fellow alums Rick Rammon and Bill Motter periodically to keep up with the Laboratory activities. John states that, "The WMEL was and remains a critical part of my professional career and background."

Professor **Dan Dolan** is on sabbatical leave fall semester at the Universidad de Concepcion in Chile. He is collaborating on a number of research projects. One relates to replacing the decks on five existing bridges and repairing the superstructure for the bridges at the same time. These five bridges will have the decks designed and constructed of stress-laminated wood decks. Dan is helping organize the drilling and construction planning process to make it efficient and cost effective.

He is also working on rationalizing Chile's seismic design parameters. Currently, designers in Chile design wood structures for forces that are over three times as high as is done in the United States for the same level of earthquake. The project Dan is working on will develop a set of earthquakes that is based on historic Chilean earthquakes and a set of archetypical buildings for Chile. These will be used to perform a time-history analysis and develop a rational set of seismic design parameters for all types of construction used in

Chile. The results should change the relative force levels for design to be more in line with those in the rest of the world, where wood structures can be designed for forces lower than concrete and masonry.

Finally, Dan is developing a proposal for a joint graduate program between the Universidad de Concepción, Universidad de Bio-Bio, and Washington State University. The program proposal will be for two specializations, Timber Engineering and Structural Engineering. The program will take advantage of the expertise of each institution and provide a well rounded graduate in these specializations, and allow the students and institutions to both benefit respectively for lower cost than current programs. The Chilean government has recently announced that it is making \$650 million USD available for scholarships for people from Chile to study abroad. If the graduate program is developed, WSU will be able to have graduate students from Chile that are almost fully supported by the Chilean government.

### Newly graduated alumni include:

**Mark Hatch**, MS Civil Engineering. Mark is an EIT at Beaudette Consulting Engineers, Kalispell MT.

**Jason O'Dell**, MS Civil Engineering. Jason is a Structural Engineer at AHBL Engineering, Tacoma WA.

**Nels Petersen**, MS Civil Engineering. Nels is a Design Engineer at PCS Structural Solutions, Tacoma WA.

**Zach Rininger**, MS Civil Engineering. Zach works at GeoDatum, a structural, civil and surveying firm located in Issaquah WA.

**Loren Ross**, MS Civil Engineering. Loren is a Design Engineer at PCS Structural Solutions, Tacoma WA.

## Scholarship News

As all of you know, we have had a number of great scholarships offered to graduate students in the Laboratory. Recent scholarships awarded are:

**The Weyerhaeuser Wood Materials & Engineering Graduate Fellowship**, \$2500, to Jason W. O'Dell, Fall 2007. Jason graduated in August 2008 with an MS in Civil and Environmental Engineering and is now a structural engineer at AHBL Engineering in Tacoma, Washington.

**The John W. Talbott Memorial Scholarship** paid travel expenses for MS degree candidates Steve Michael and Leanne Campbell to attend the 9<sup>th</sup> World Conference on Timber Engineering in Portland, Oregon, August 2006.

Ph.D. candidate Feng (Amy) Chen was awarded a \$2500 **Steven K. Nickolls Memorial Scholarship**, Fall 2006. Amy is working on a project to develop soy-protein-based bioplastics. These types of bioplastics are one way to develop sustainable building materials with less reliance on petroleum-based polymers.

## Closing Comments by Don Bender

First, I would like to thank Tom Maloney for taking the lead on this newsletter. Because of his gifts as a communicator, he makes it look easy – but it takes a lot of time and energy. Tom, we all appreciate the many ways you continue to support and encourage the people and programs of the WMEL.

In future newsletters, we will highlight people and programs at the WMEL. There is not enough space to properly introduce all of the new initiatives, but I would like to mention a few.

You all know about the need to find profitable ways to utilize forest biomass from restoration treatments, etc. Vikram Yadama and Karl Englund are leading efforts to develop new manufacturing technologies to process wood strands into a wide range of shapes. Central to their work is to keep the capital costs and processing energy low enough to encourage commercialization.

Many of the polymer resins used in wood composites are petroleum-based. Jinwen Zhang is leading our efforts to develop biopolymers



**Don Bender**  
Director, WMEL

from a range of plant feedstocks. Mike Wolcott and Jinwen are also working to develop biopolymers from bacteria used to treat the effluent from paper mills. In addition to building products, this work has many potential applications in packaging materials.

Another exciting initiative is the launching of the *WSU Institute for Sustainable Design*—a collaboration between the WMEL, architecture, construction management and civil engineering programs. The idea sprung forth from some successful projects between our programs, such as the DOE Solar Decathlon design competition. The ISD will be a cross-discipline program that will target sustainable design, from site development to materials engineering to building design and construction, as well as codes and standards. We will be using new metrics, such as net carbon and embodied energy, to guide our designs. Mike Wolcott was named the Director of the ISD and we

will dedicate a future newsletter to share more details and progress.

As I reflect on the 11+ years I have been at WSU, I sure feel lucky to be a part of this program. We have enjoyed remarkable success in attracting high-quality faculty, students and staff. WSU administration loves our program and holds us up as a model for innovation and entrepreneurship on campus. In terms of publications, grants, students and faculty, our growth over the past decade has been nearly tenfold. For over 50 years, the WMEL has established a tradition of excellence. On behalf of the current WMEL group, please know that we are doing our best to build on this tradition and bring even more value to your association with WSU.

## Do you know where these people are??

If so, please contact Judy Edmister at [edmister@wsu.edu](mailto:edmister@wsu.edu)

Zachary Davidson  
Lee French  
Shannon Emerick  
Stephanie Hetrick  
Danielle Imboden  
Monique Paynter  
Glenn Madden

Scott Peterson  
Sudarshan Rangaraj  
Frans/Judya Wospakrik



Elvie Brown and Mike Wolcott



Wood Materials and Engineering Laboratory

PO Box 641806  
Pullman WA 99164-1806

Phone: 509.335.2262  
Fax: 509.335.5077  
[wmel.wsu.edu](http://wmel.wsu.edu)