

CMEC Alumni & Friends Newsletter

Tom Maloney, Editor

Suzanne Hamada, Associate Editor

Comments from the Editor



Tom Maloney

Hopefully, the Center can survive the terrible economic pressures coming from the present severe recession. The state of Washington is suffering from a shortfall of tax revenue, as are almost all states. Washington is particularly vulnerable because it is a sales tax state for much of its revenue. For those readers not familiar with how the state of Washington functions, according to the laws of the state, any budget short fall during a biennium (Washington budgets in two year cycles) is made up by cuts in higher education and social services (health etc.). So Washington State University has now suffered through several such cuts in state funding. Because of its pro-

ductivity, the Center has avoided some cuts but the severity of the crisis is causing problems. It is truly a difficult time.

Of interest to me and some of the "Old Hands" now retired from the Wood Materials and Engineering Laboratory, is the recent new Chinese interest concerning housing constructed of wood. Starting in 1981, I was able to establish cooperation with Chinese officials. This led to a UN assignment to China for me in 1982 and for later research cooperation for the WMEL and China in housing and nondestructive testing (Roy Pellerin).

It always takes time to open new markets locally, nationally, and internationally. The very successful International Marketing Program for Agricultural Commodities and Trade (IMPACT) effort at Washington State University led by the Director, Dr. Desmond O'Rourke, had as its focus assisting agricultural growers and manufacturers of products in the state of Washington export of their products. One part of its effort was "Developing Wood Housing in the People's Republic of China." The Wood Materials and Engineering Laboratory (WMEL, now the Composite Materials & Engineering Center) conducted this work. I signed a cooperative agreement in China (1988) for performing this project.

It was a successful project. The final part of the work was constructing a demonstration house in China under the leadership of Marty Lentz. Seminars on this construction were then presented by Marty and Bob Tichy in China after the house was completed. Bob took over the work upon my retirement and has worked with various agencies in China in promoting wood housing. Bob is the Faculty Focus person in this Newsletter and he provides great detail on his successful work. As he states, he believes his work will continue on as he is now well known in China.

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Alumni Spotlight: Joe Fyie



Photo of Joe Fyie and his wife, Leslie

When I got the letter from Tom asking for an update on Leslie and myself, I appropriately asked Les to "get on it" which she responded (without hand signs), "no way that's your task." I was over ruled again, consequently I am writing this solo with clear author rights and without edifications by you know who.

The 2008-2009 economy has decimated the building industry in many ways and taken several of us experienced folks out of action; hence, I am now retired. My mind is still functioning and I reflect on different research concepts, but it is not possible to expand upon them. This request by Tom has given me a chance to think of what I left to others as my legacy during my years of employment. I have conjured up some interesting thoughts of accomplishment and missed opportunities, however, I have no regrets and consider myself lucky to have worked during this time period.

When I started college at the University of Illinois, I had a vague idea of being a forester. The summer before I started at U of I, I was tested to assess my abilities and passion. A few weeks later, a letter suggested career paths. My letter did not have forestry listed, but computer programming was promoted. That was 1970 and I had little knowledge about computers other than they eat those cards and have hanging chads on them. Illinois was a great school for computer science (birthplace of HAL9000, the devious computer in the movie 2001: A Space Odyssey. Today Illinois is still a leading university for computer science. Did I go this route? No, I went one

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Alumni Spotlight: Joe Fyie, cont'd

year as forestry major and then I decided to transfer where trees grow big out in the west.

I migrated to Idaho in 1971 driving a rusty 1960 Valiant with holes in the trunk and floorboards allowing things to fall out and noxious gases to enter during the trip. The west captured my heart immediately along with that “dry feeling” from low humidity in the air starting in South Dakota. I changed my degree to Wood Utilization-Science and Engineering at the University of Idaho. My brothers were both engineers and I still loved math in my work, hence, the degree was the right blend in my mind. During my studies, I heard of Tom Maloney's symposium at WSU. Dr. John Howe at Idaho encouraged us to attend and I was highly impressed by the event (particularly the jokes at the banquet dinner). Dr. George Marra would make annual visits to the Forest Products Department in Moscow and also generated high interest in the concept of Materials Engineering.

I graduated in December 1974 and applied for graduate work at WSU and was accepted. At WSU, I had a wonderful experience because of the education Tom, John Talbott, Roy Pellerin, Bob Hoyle, Dee Strickler, Tony Nilson, and Marty Lentz provided me. We also had a substantial amount of fun along the way. All of these educators were at the top of their respective fields in my opinion and had been for many years. My fellow students were also great friends during that entire two years. We had a social connection that seemed to work well for a very diverse group of people. I felt privileged to have experienced that time and still reflect warmly on that chapter of my life. Tom was a father away from home to me. John inspired me to think differently about the world simply by observing his actions. Roy was a dedicated engineer building a new way to see lumber. And, Bob was a wood structural engineer second to none worldwide. Dee was methodical and focused on details and creative processing. Tony and Marty gave us living lessons on working skills and technical know-how that I use daily to survive. I thank you all for that time and being patient with my lack of abilities.

I met my future wife, Leslie, in Pullman who was working for Tom during my tenure. We married while I was working in New Zealand (another benefit of knowing Tom was his worldwide connections to

the industry). It was a tremendous opportunity to open the eyes of a mid-western farm boy to living in that country and the subsequent travels through Australia and Pacific Islands on our return to the US. If you can arrange it, send your children overseas to live and learn about the US from outside. I never gave much thought to trade, currency, and domestic law until I lived somewhere else. Then, the light went on that the world is different and how others viewed the Americans became a good and sometimes not so good “teachable event.” (Editor's note: Joe is still on my list as he stole Leslie away from me—she was another one of our great staff).

My first job in New Zealand was working for a particleboard company. I developed engineering data on their products for engineers. It also allowed me to work in research of another company having the full breadth of wood products supplying products around the world. Again, trade was lamb and lumber for gas and cars in NZ.

When I returned to the US, I worked for Morrison Knudsen Forest Products who had the IP rights for developing a electrostatic fiber/particle alignment process invented at WSU. I spent two and a half years working on that development before joining Trus Joist's Product Development Group. Trus Joist, a relatively small and young company, exposed me to a wide variety of engineering structural solutions by utilizing materials in new ways. Their product development efforts truly defined the term “engineered wood.” They were known for being an early adaptor of technology whether it was stress graded lumber, veneer, truss designs or manufacturing of wood materials such as laminated veneer lumber and I joists. It was a very exciting time for the fledging forest products company with sales of less than \$65 million struggling to survive the double dip recession of 1981 and 1983.

I worked on numerous products and processes to capitalize on the unique properties of Micro=Lam® LVL. Development required materials engineering, process engineering, quality assurance along with experimental design and testing to support new products. Much of this

Comments from the Editor, cont'd

(continued from Page 1) Further work in this arena will come if the Chinese really move forward with constructing wood houses. At present, not much construction lumber is being exported to China from the U.S. But this could change, and the work we performed could have a major impact in the export market for lumber from the state of Washington. Under the leadership of Bob Tichy, there should be much more to report on for years to come!

Alumni Spotlight: Joe Fyie, cont'd

utilizing broad codes, engineered wood stood on its own merits and performance to support structures in commercial and residential construction. Although I was involved in many efforts, I am especially proud of providing the initial engineering data for the use of Plystrand® (veneer face/strand core panel) in I-joist production. Until that time, plywood was the preferred web material. This change created confidence that another composite, namely OSB, could be utilized. Eventually, OSB became a web stock for residential I-joist in lieu of plywood that was suffering in quality.

Two of the key process changes required for OSB use was profiling of the panel edges and end profiling for shear strength. I machined webs by hand using a table profiler in some of our first trials to demonstrate the feasibility of this material.

The Engineered Wood industry was born and moving at a neck-break speed during the 1980's. Other companies entered providing competition to "scare development" forward. Residential construction eventually embraced EWP due to consistency and performance guarantees never offered by solid sawn lumber products. Some people felt Trus Joist had dropped lumber as inadequate, but in fact, high-grade stress-rated lumber was still highly utilized in their truss production. Again, combining lumber with steel tubing and pins for trusses created a new form of EWP.

Numerous other products were developed requiring post manufacturing and laminating to provide box beams, large I beams, pre-stressed laminated LVL beams, decking, and a variety of industrial products. Working with industrial sales opened new doors every day. Concrete forming products was one such product made from LVL in the shape of I beams. Door and window stock and various molded products shaped for unique end uses always demanded some engineering contribution that I was luckily involved in to some degree.

Later, when the company merged with a portion of MacMillan Bloedel company, Timberstrand LSL and Parallam PSL products came into the fold. Once again, composite process and product development was in full force moving these new materials into new construction applications. Again, I moved in and out of the various products lines during development efforts. A short time of my career was associated with our internal engineering and machine shop operations. There we designed, engineered, and built proprietary machines that made many of these new product ideas possible. It was always in the back of my mind that the new products depended mostly on new materials to make the dramatic leaps in utilization by industry. I still believe this is the fundamental link for wood advancement.

I was slowly moving across a broad technical field in my career, only to find myself now in management of other people. Never in my early years did I see me as a management leader to others, but only as a "doer" in the world. My hands and head were to be used for production, not the soft and tough world of people management. I had only had one class in management during my entire schooling. How was a

farm boy going to do that? My first role was managing a quality assurance group in an Oregon plant and then in a truss plant in Southern-California. I moved to manage a Machine Shop in Boise, Idaho and then changed to project management on some new product developments. Shortly into this work, I transferred back to Oregon to be the plant manager of the largest production plant. After about seven years there, I took on another project management role in Albany, Oregon before returning to Boise. My last role was managing a research group working on strand and veneer products. I found that managing people came without much stress to me. To me, managing meant, clearing obstacles and standing behind others you depended on to yield results and to promote their accomplishments while staying in the shadows.

My family endured all of these moves, six so far, and time away from home thanks to my wife's strength to collar two boys into young men when needed. I am a lucky person for having such a good family. No, none of us are president of anything, but we have managed to lead good lives without too much strife that comes so easily today without calling. My sons are educated and well read, yet soft spoken. Ken is living in Calgary seeking a second Masters in Community Health while working on grants through the University of Calgary at a hospital. He may seek dual citizenship having lived there now for six years. Nick, has studied at four universities without obtaining a degree, yet earned an honorary degree in reading and studying just about every subject available. He is now joining the Marines to serve our country. Neither of us would have predicted this five years ago.

Leslie, is still working to keep me in line and not drifting too far. She also reads a stack of books high enough to cover the windows every month while watching the "books" of our finances. I, on the other hand, am spending my time restoring a couple of old motorcycles, taking motorcycle adventure trips, working on minor inventions, and do some writing to release the soul. Maybe one day something will be published, but if not, my family will have some entertainment contributed by the son of a farmer who went to a three-room grade school of 65 students, later graduating from a high school of 125 students, and eventually obtaining a degree to help others development their own careers. I can't say I have left a solid legacy, but I sleep well at night if I haven't had too much wine or *chocolate ice cream*.

Editor's note: Joe felt this article might be too long. I obviously disagreed. This article is one that I feel should be published in its entirety as an inspiration to the present graduate students and the alumni who are already in the field.

Faculty Spotlight: Bob Tichy



Bob Tichy

Dr. Robert Tichy came to the Center (then the Wood Materials & Engineering Laboratory as well as the Department of Material Science and Engineering) in the late 1970's to pursue a Ph.D degree. Previously he had earned his B.S. degree in Wood Science at the University of Illinois and his M.S. degree in Wood

Engineering at Colorado State University. He then got his Ph.D degree in Materials Science and Engineering at Washington State University in 1981. His career path after graduation follows:

1992 to Present, Sr. Research Engineer, Composite Materials and Engineering Center, Washington State University, Pullman, WA

1991 to Present, President, Technology Management & Implementation, Inc., Federal Way, WA

1989 to 1991, Senior Engineer, Engineered Systems and Products, Weyerhaeuser Company, Tacoma, WA

1986 to 1989, Program Manager, Composites and Special Products R&D, Weyerhaeuser Company, Tacoma, WA

1979 to 1986, Manager, Engineering Research and Development, Western Wood Products Association, Portland, OR

Bob is now the Center's point person on international trade activities in Asia. He also is co-chairman along with Vik Vadama of the International Wood Composite Symposium. I asked Bob to highlight the activities now taking place in Asia and his comments follows:

Wood Frame Construction in Asia – implementing change

Shortly after President Nixon's historic visit to the Peoples Republic of China in the mid 1970s, Tom Maloney, Director of the Wood Materials and Engineering Laboratory (now the Composite Materials and Engineering Center, CMEC) visited China as well. Tom opened doors between our laboratory and Chinese forest products research organizations such as the Chinese Research Institute of Wood Industry, Chinese Academy of Forestry, and Nanjing Forestry University. As

China was beginning to emerge from its political obscurity, Tom saw an exciting opportunity to contribute to China's massive housing needs by sharing North American home building practices with these organizations.

As with most meaningful paradigm shifts; one could not expect things to change quickly in China. However, Tom never ceased to pursue the concept. Almost fifteen years later, real progress had been made.



Beijing demonstration home

In the early 1990's, it began with Chinese students conducting housing research at the CMEC. A home was designed and built by our Chinese colleagues inside the high-bay of CMEC. From this project a training video was developed and narrated in Chinese. This was later used in our demonstration home project in Beijing in 1992. This particular home was designed by a Chinese architect and constructed by a Chinese crew. The only involvement from CMEC was Marty Lentz who served as the project manager for the entire operation. The home was used to help convince China's Ministry of Construction that wood frame construction was not only appropriate for China, but also desirable. The home was a single-family residence for many years; its last known inhabitant was Dean Foods Company who was using it as their Beijing office.

Bob Tichy, cont'd

Prior to, during, and following construction of a two-story demonstration home in Beijing, a great deal of technology transfer was necessary. It was incumbent upon CMEC to convince Chinese research organizations, builders, and the Ministry of Construction that wood frame construction was durable, safe, and aesthetically pleasing. This is where I entered the project. I spent a great deal of time – spreading the word throughout the appropriate Chinese organizations – that wood frame construction made sense for China. I prepared a lecture series describing a wide range of North American building materials and building systems. This included stick-frame, SIPS, and metal plate connected trusses. In addition, background was provided on building codes, product standards, and how this process delivered safe and durable structures.

In China, government ministries rely heavily on their Universities for technical assistance when implementing new technology. Therefore, this mandated visits to various research organizations in China. For example, Nanjing Forestry University was actively developing composite panel products for building construction. By late 1997 they had completed their “OSB House”. This past October I visited Nanjing and the OSB House; and found the house to be performing well although the OSB siding was looking a bit weathered. Other visits took me to Chengdu, China where I lectured at the Sichuan Institute of Building Research and China Southwest Architectural Design and Research Institute. Here, performance standards, building systems, and structural resistance to extreme loading were described. I found it curious at that time that there was no real concern with earthquake – that has probably changed since the Chengdu disaster. (*Editor’s note: that was one of the major selling points in getting the original agreement-as Bob said, very strange*).

By that time there had already been similar efforts in Japan led by US trade associations and the CMEC. Many of those experiences were shared in China and found to be valuable examples of successful performance.

After almost eight years of travel in China, I believe I had convinced the Chinese Ministry of Construction (and their technical experts) that a wood frame building code needs to be developed to help address their housing demand. The model for this code was to be the National Design Specification for Wood Construction (by AF&PA, American Wood Council). By 2003 the wood frame code in China was in place.



Nanjing OSB house

Staff Focus: Robert W. Duncan



Bob Duncan

The Wood Materials and Engineering Laboratory (now part of the CMEC) is now 61 years old. All of our readers know of all the work that has been performed over the years and the international reputation that has been gained. This would not have been possible without the dedicated staff that did much of the “grunt” work in the Laboratory. They also made many original contributions—it was part of the team effort in conjunction with the faculty and graduate students. An important part of their function was to “educate” the graduate students on the whys and wherefores of operating the laboratory equipment and keeping proper records of all of the research project data.

We have highlighted some of the retired staff members and in this issue we are starting a series of recognizing the present Center staff members. The first up is **Robert W. Duncan** whose long title shows the importance of his contributions. Bob is the Scientific Laboratory Manager/Research Coordinator and ICC–IAS (International Code Council–International Accreditation Service) Quality Manager. I am afraid to ask Bob if he has to have this identification on all of the reports and letters he writes.

Bob is now in his eleventh year at the Center. He has a MA degree in Agricultural Business, a BS degree in Animal Science and a MS degree in Animal Science, all from Washington State University. Before joining the Center in 1999, Bob was an Agricultural Research Technologist at WSU’s Irrigated Agriculture Research and Extension Service in Prosser, Washington, a Powder Plant Operator for Darigold Inc. and the Research Technologist Supervisor at the WSU Feed Preparation Laboratory in Pullman.

His responsibilities at the Center include coordination and overseeing the activities of the CMEC’s 28,000 sq ft facility that houses instruments, equipment, and machinery for wood technology research and development. His ICC–IAS work covers performing accredited testing operations. He is also a principal investigator, enforces quality control guidelines, covers equipment maintenance and equipment purchases. This position also covers the guidelines and safety orientation of all new faculty, staff, and graduate students. As in the past, no one can operate the equipment in the Center without the approval of Bob. There are many more responsibilities but the above list shows the value of having an extremely dedicated and competent professional in the all-important position in the Center.

Bob and his wife Janet (who will be featured in a future Newsletter) have two children. Their daughter, Christina will graduate in Civil Engineering at WSU in December and will be getting married in April. Son, Burns, is in Denver, Colorado attending Johnson and Wales University School of Culinary Arts. He is studying to obtain a BS degree in this field. I joked with Bob that we all will expect a marvelous feed presented by Burns as soon as he finishes his degree.

All of us have had some out of the ordinary experimental research projects. One that we both have shared has been making board out of peanut shells. Mine was years ago for a company in Senegal and Bob recently had one for the Southeast part of the U.S. Both of us had some different experiences and were successful in making board. In my case, I blew up 50 in. sq boards all over the old Laboratory much to the chagrin of the sponser. We did finally make some good board. However, it is still not economical for such board to compete with wood as the base raw material.

As a closing note, the integrity of all of the staff workers we have had over the years has been critical to our success. We have always had cross checks to make sure our data was being recorded correctly. In all of my time and, I believe at the present, the old Laboratory and the new Center has not had any problem with a disgruntled staff member “adjusting” data to make the final conclusions of a project invalid. Bob Duncan has continued to be one of those valued staff members with a great integrity.

Where are they now? Robert J. Hoyle Jr.



Bob Doyle

I have been asked many times about **Bob Hoyle** in his retirement. Such questions as: Is he OK?, Is he still consulting?, Does he frequently come to the laboratory for visits?, and on-and-on. Everyone who has been receiving this Newsletter knows that one of the features is keeping everyone informed about our retirees. So here is an update on Bob.

Bob joined the staff in the old Wood Technology Section back in the 1960's coming up to us from Lewiston where he had been a leader in the Potlatch Corporation research and development center. Almost immediately, he also began teaching wood engineering type courses in the Civil Engineering Department. He continued this joint activity throughout his career at Washington State University until his retirement in 1985. Bob was well known in wood engineering circles through his many years of teaching and research. His many important research accomplishments are a subject for a long discourse at another time.

Now to Bob's recent activities. I know that he was extremely active in consulting work for many years after his retirement but the usual slowing of us old people has restricted his activities recently. Bob has reported some of what is going on in his life for passing on to all of his old students, friends, and colleagues. He does report that he has had many opportunities to see his former students for which he has enjoyed very much.

Bob has problems with getting around now and this has restricted his visits to Pullman and the Laboratory (Bob had kept his home in Lewiston after joining WSU making the round trip by car to Pullman every work day). He is still active in consulting reporting to me some of the jobs he has undertaken that keeps him enjoying his profession.

Shortly after retirement, he was employed in designing a "Utilidor" for the city of Point Barrow, Alaska. A "Utilidor" is a wood structure placed in the permafrost under the streets to house sewer, water, gas, and other domestic utilities. My interpretation would be that this is a wooden tunnel. Bob said there were some unique problems to solve but solve them he did. I remember a presentation that he made on this very interesting project.

One project was for an architect friend of his assisting on the design of a house in the Adirondack mountains in New York state. This is a high snow region and had a roof pitch of 45°. Another project was in Central Washington after a very heavy snowfall. In this one there was a concern about the heavy snowfall causing failure of bowstring trusses and glulam beams in some of the large apple storage buildings. Former students brought him on board as part of the team analyzing the potential problems and remedies that might have been needed. He also had many jobs involving forensic problems that also involved expert testimony in court cases. There has also been a lot of work advising attorneys. He says these kinds of jobs have kept him on his toes ever since retirement.

The development of non-destructive testing of lumber was a highlight of Bob's career. In his days at Potlatch the first true lumber NDT continuous lumber grading machine was developed - the CLT-I. Metriguard of Pullman has taken over the manufacture, promotion, and selling of this breakthrough grading machine. Something like 170 or so of them are in use in many countries. Sometimes the industry forgets those who have been instrumental in pioneering such developments and I hope that Bob Hoyle is not forgotten about his leadership.

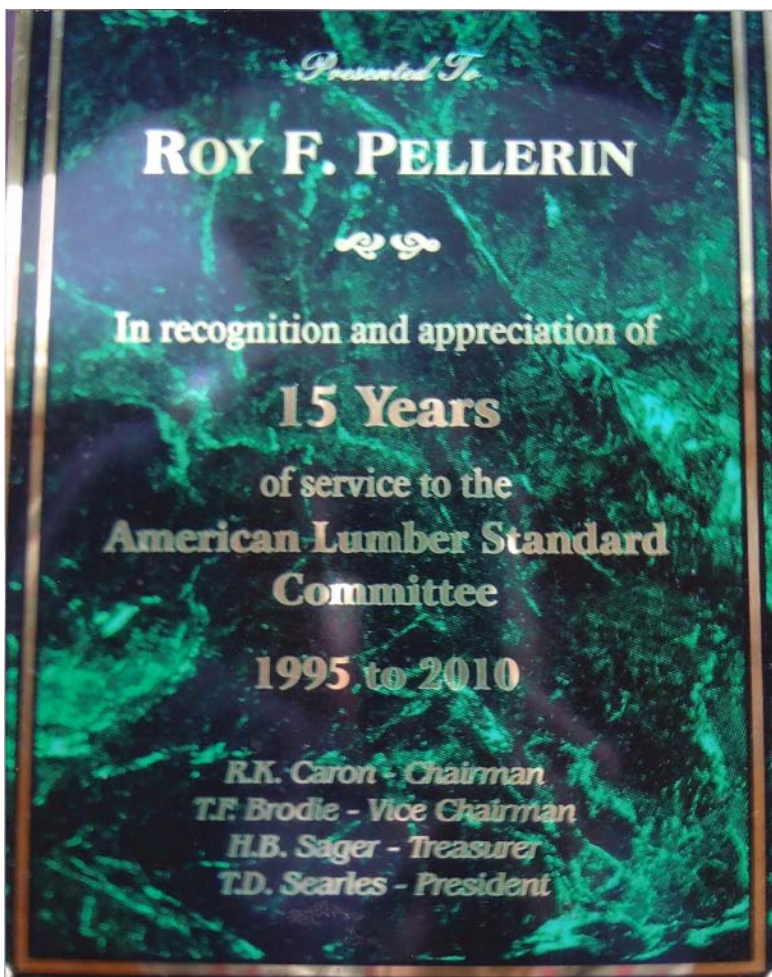
Speaking for myself and I believe for all of Bob's colleagues during his time at WSU, it was an honor to have him as a friend and valuable member of our faculty.



Alumni, Staff and Friends News

Roy Pellerin

Roy just announced his retirement as a member of the American Lumber Standard Committee serving from 1995 to 2010. A photo of the plaque awarded to him follows. He was a vital member of this committee and it was reported to me that other members pleaded with him to stay on because of his great value to the committee. But Roy told them it was time to move on as he is now one of our “Very Mature” retired staff.



Roy is pictured here on the left working with Marra.



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