

# The Newsletter of The Society of Wood Science and Technology •March-April 2012•

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SWST 55th International Conference - China

**IMPORTANT information for SWST Meeting-China** 

IUFRO All-Division5 Conference Lisbon,

Portugal July 8-13, 2012

The Sixth European Conference on Wood modification, 16-18 September 2012, Ljubljana, Slovenia

<u>12th International IUFRO Wood Drying Conference July 30</u> to August 03, 2012 - Belém, Para, Brazil

International Confernce on Future on Panel Industry-Challenges & Key Issues Sept. 26-28, 2012 Annual meeting of IAWS Wood the Best Material for Mankind

World Conference on Timber Engineering July 15-19, 2012

66th International Convention of the Forest Products Society, June 3-5, 2012

**Positions Available** 

Professorship (W2) in "Wood Technology and Wood Composites"

M.S. Research Assistantship Available Virginia Tech

Bridging length scales in structural timber from molecules to moisture-induced warping

<u>Timber distortion revisited – tracing the microstructural</u> <u>origin by multiscale modelling</u>

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## From the Editor

Spring is here (in the Northern Hemisphere) and Summer will be here before we know it. Have you made your plans for the meeting in China? As always, any news, announcements, or editorials can be sent to <u>pdjones@cfr.msstate.edu</u>.

Cheers,

VAVIT JONES

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# **Election Results**

Here are the results from the recent election for Vice President and Directors:

Vice President- Michael Wolcott

Directors- Sudipta Dasmohapatra Terrance Conners

Congratulations to all!

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Wilfred A. Cote Jr.



March 8, 2012 Wilfred A. Cote Jr. died on March 8, 2012, in Syracuse. He was born in Willimantic, Connecticut, on May 27, 1924, and lived there until 1950 with absences for the University of Maine (1942-43), World War II (1943-46) and the U. of Maine (1946-49). He served in the Army Signal Corps as a cryptographic and signal center chief in the European Theater of Operations. During the summer of 1945, he attended Sorbonne University in Paris, in French language and Area Studies. He is survived by his wife of 64 years, Irene Campbell Cote; five children, Wilfred III (Judith) of Milford, OH, Peter

(Gayle) of Ephrata, PA, Aline Kawaler (Michael) of St. Louis, MO, Denise Cote-Arsenault (Peter) of Greensboro, NC, and Matthew (Jennifer Koviach-Cote) of Hebron, ME; 13 grandchildren; and 16 great-grandchildren. Besides a B.S. in forestry from the U. of Maine, he received an M.S. from Duke University and a Ph.D. from SUNY College of Environmental Science and Forestry and Syracuse University. He taught wood science and technology at ESF and served three years as chairman of the faculty and five years as dean of the School of Engineering. He established the first electron microscopy laboratory in Central N.Y. and served as director of the Center for Ultrastructure Studies. He was author and co-author of 92 technical papers and books and editor of a series of Wood Science books published by Syracuse University Press. Dr. Cote retired a Distinguished Services Professor in 1991. In addition to a distinguished professional career, Dr. Cote was also a leader in many community and church related organizations in Syracuse. A funeral Mass will be celebrated at St. Thomas More Catholic Center on the Syracuse University campus on March 26 at 10:30 a.m. This will be followed at

the same location by a reception at 11:30 a.m. and a Celebration of Life from 12:30 to 2:30 p.m. Contributions in Dr. Cote's memory may be made to the ESF Foundation, 214 Bray Hall, One Forestry Drive, Syracuse, NY 13210 for a scholarship fund to be established in his name or to the St. Thomas More Foundation, 110 Walnut Place, Syracuse, NY 13210. Please visit taitfuneralhome.com to send the family condolences. Tait Funeral Home, Inc.

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*Robert L. "Bob" Geimer, age 80, of Springdale Township, died on Thursday, April 5, 2012, at his home with his family at his side.* 

He was born in Superior on Jan. 9, 1932, the son of Leo and Leonore (Kuehlthau) Geimer. He attended Cathedral High School and received a bachelor of science degree in liberal arts and a R.O.T.C. commission for Superior State College.

Bob was a U.S. Air Force veteran with the rank of First Lieutenant. After serving three years during the Korean conflict as a nuclear weapons officer, Bob married

Jacquelyn Ann Frisbie on Dec. 28, 1957, at St. Adalbert's Catholic Church in Superior, and attended the University of Washington, Seattle, receiving a bachelor of science degree in logging engineering and a master of science degree in wood technology at the College of Forestry.

Bob worked as a logging engineer for Weyerhauser and the State of Washington on the West coast for five years. He then worked in composite board manufacturing plants for U.S. Plywood, Champion Paper and Permaneer. Bob accepted a position with the U. S. Forest Service at the Forest Products Laboratory in Madison in 1970. He retired 27 years later following an active period of research in the adhesive and composite wood fields. He is credited with more than 50 scientific publications and holds patents on several wood products and processes.

Bob's passion for wood also dominated his private life using the material functionally to build houses and furniture and artistically in woodcarvings and bowl turnings. Always fond of the great outdoors, Bob spent as much time as he could fishing, hunting, camping, canoeing, skiing and gardening. His interest in prairie restoration was furthered as a founding director of the Friends of Donald Park.

He was a member of St. Mary's Pine Bluff Catholic Church, and many organizations including Badger Woodturners, Madison Area Radio Control Society, and Madison Area Repeater Association.

Survivors include his wife of 54 years, Jacquelyn A.; his children, Clifford and Thomas Geimer, Rebecca (Douglas) Duchon of Chanhassen, Minn.; eight grandchildren, Hannah, Marlesha, Dana, Cameron and Megan Geimer, Aaron, Amanda, and Adam Duchon; his sister, Mary Ribich of Hibbing, Minn.; and other relatives and friends. He was preceded in death by his parents; and a brother, Russell Geimer.

A memorial Mass will be at 11 a.m. on Tuesday, April 10, 2012, at ST. MARY'S PINE BLUFF CATHOLIC CHURCH with Father Rick Heilman officiating. Inurnment will be at Oak Hill Cemetery in Springdale Township. A visitation will be held from 9:30 a.m. until 10:50 a.m. on Tuesday at ST. MARY'S PINE BLUFF CATHOLIC CHURCH. Inurnment will be at Oak Hill Cemetery in Springdale Township with full military honors.

In lieu of other expressions of sympathy, memorial preferred to the Friends of Donald Park, c/o Ellestad Camacho Funeral Home, 500 N. 8th St., Mount Horeb, WI 53572.

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# WOOD AND FIBER SCIENCE The Sustainable Natural Materials Journal

### RESEARCH OF INTERNATIONAL INTEREST

### SCIENTIFIC ARTICLES ON:

- Wood and Lignocellulosic
  Materials
- Biomaterials
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- Biology
- Nano-technology
- Natural Fiber Composites
- Timber Treatment and Harvesting
- Botany
- Mycology
- Adhesives and Bioresins
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SWST Visiting Scientist Program

# April 1-4, 2012 visit to West Virginia University, Morgantown, WV by Dr. Jerrold E. Winandy

# Visit Summary:

I was invited to visit the staff and students of the WVU Division of Forestry & Natural Resources in Morgantown from April 1-4, 2012 under the SWST Visiting Scientist Program. During the visit I gave 6 lectures to a variety of graduate and undergraduate students in a variety of classes and seminars ranging from College-wide freshman and sophomores to upper classmen in the Wood Science series to graduate students. The students were quite attentive and seemed very receptive to the current issues in sustainable use of wood and other bioresources. They also seemed interested in the mission of SWST. One final note is that WVU has done an excellent job of recruiting a relatively young, vibrant and enthusiastic faculty with a broad range of interests and knowledge. Prof. James Armstrong, who will be retiring in May 2012, and two other key leaders (Prof. Jingxin Wang and James McNeel) in the WVU Division Forestry & Natural Resources should be applauded for rebuilding, refocusing and expanding a vibrant academic program in Wood Science and Biomaterials at WVU. Their success may provide model for struggling programs.

# Sunday April 1<sup>st</sup>

Flew from Minneapolis MN to Pittsburgh, PA. Prof. James Armstrong of WVU met me at airport and drove me back to WVU-Morgantown.

## Monday, April 2

Breakfast with Profs. Jim Armstrong & Dave DeVallance

10:00-10:50: Presentation:

### Wood and Biocomposite Science as a Tool for Sustainability in a Bio-based Economy

WDSC 465 Wood-based Composite Materials, (Prof. Gloria Oporto)

11:00-11:50: Presentation:

### Wood and Biocomposite for Sustainable Construction Materials

WDSC 320 Sustainable Construction (Mr. Jody Gray)

12:00-1:30: Lunch with Prof. Joseph McNeel, Division Director & J.Armstrong,

WVU Division of Forestry & Natural Resources

- 3:00-4:00: Informal discussion with WVU graduate students on research in wood and biomaterials science and the benefits of membership in SWST and related professional activities.
- 6:00 PM: Dinner with Prof. Jingxin Wang (Program Leader, Wood Science) & J. Armstrong (Assoc. Div. Dir. Academics)

# Tuesday, April 3

9:30-10:45: Meeting with Profs. Ben Dawson-Andoh and Dave DeVallance on development of new methods to attract and retain new student and industrial members to SWST.

11:00-11:50: Informal discussion on Integration of Wood Science and Biomass Utilization

WDSC 340 Physical Properties of Wood (Prof. Kaushlendra Singh and J.Armstrong)

12:00-1:30: Lunch with Dr. Shawn Grushecky, Director of the WVU Appalachian Hardwood Center.

Discussed new method(s) for disseminating more-practical technical information to commercial/industrial members of SWST who may require the more practical applications of research knowledge rather than the more theoretical implications of such knowledge.

# 3:30-4:45: Departmental Seminar on the Role of wood in the sustainability equation

WDSC 100 Forest Resources in U.S. History (Prof. James Armstrong) and WVU WDSC Graduate Students

6:00 PM: Dinner with Wood Science faculty (Armstrong, Oporto, DeVallance)

# Wednesday, April 4

9:30-10:30: Meeting with Prof. Joseph McNeel, Division Director, WVU College of For. & N. Res.

discussing how SWST might network with NAUFPR to reintroduce wood science research as a tool for sustainability and forest management. Discussions also focused on the need for SWST to also reintroduce itself and its mission to NASF who are keenly interested in promoting WUR.

# 11:00-11:50: Presentation on Predicting the Effects of Decay on Wood Properties and Chemical

**Composition: A Means to a Residual Service Life Model**. WDSC 351 "Forest Products Protection" (Prof. Ben Dawson-Andoh)

# 12:00-12:50: Seminar on Internationalization of SWST and Bio-based Materials Science Profession

WDSC 493 Strategic Forest Products Marketing and engineering undergraduate and wood science graduate students (Prof. Dave DeVallance)

3:00-5:00pm Drive to the Pittsburgh airport (3-5pm) and return home to Minneapolis (7:00-10:00pm)

# Important Meetings/Discussions:

# **Tuesday April 3:**

Meeting with Profs. Ben Dawson-Andoh and Dave DeVallance (both on SWST Membership Committee) on development of new methods to attract and retain new student and industrial members. Prof. DeVallance will conduct a survey of SWST Student members on what SWST does for you, what it could do to help you, and explore for new ways to reach out and help/enlist new student members.

# **Tuesday April 3:**

Meeting with Shawn Grushecky, Director of the WVU Appalachian Hardwood Center to discuss potential new method(s) for disseminating practical technical information to commercial/industrial members of SWST who may be more in need of practical application of new research knowledge rather than the pure theoretical implications of such knowledge.

# Wednesday April 4:

Meeting with Prof. Joseph McNeel, Division Director, WVU College of For. & N. Res. discussing how SWST might network with NAUFPR to reintroduce wood science research as a tool for sustainability

and forest management. Discussions also focused on the need for SWST to also reintroduce itself and its mission to NASF who are keenly interested in promoting WUR.

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# **Identifying Wood Cultures**

# in the United States March 24, 2012

# **TO:** Forestry and Forest Products Professionals

# FROM: Hank Kashdan, Howard Rosen, Steve Ambrose (Forest Service Retirees)

**SUBJECT:** Request for suggestions regarding a planned "Wood Culture Tour" in the United States under the auspices of the International Wood Culture Society (IWCS).

**OVERVIEW:** This memo solicits your suggestions on potential sites in the United States that will be part of a Wood Culture Tour, sponsored by the IWCS. The IWCS is a non-profit and nongovernmental international network of wood enthusiasts, dedicated to the research, education and promotion of wood culture. The IWCS was incorporated in California in 2007. Since that time, IWCS has joined IUFRO (International Union of Forest Research Organizations) of which the Forest Service is an active and leading participant, and which was a major contributor to the formation of the Wood Culture Working Party 5.10.01. A principle aspect of the IWCS operation is to conduct "Wood Culture Tours" throughout the world to develop interactive knowledge and experiential web-based information regarding wood cultures. Additional information can be found at www.iwcs.com. A primary focus of the tours is to collect information (video, photographic, and written) about existing cultures that are directly connected to wood. A specific objective is to develop this information permanently as a way of documenting wood cultures that could potentially disappear as a result of modernization, infrastructure improvements, and human attrition from historically multi-generational cultures. At present, Howard, who retired in 2006, is active with the IWCS serving as one of the organization's Vice Presidents and is also the Coordinator of IUFRO Wood Culture Working Party 5.10.01. Hank, who retired in 2010, recently returned from a Wood Culture Tour in Northeastern China. Steve, who retired in 2009, is on the FS Reunion Planning Committee to be held in Vail this September.

**DISCUSSION:** The IWCS is planning its first wood culture tour in the United States in September, 2012. This paper is intended to be distributed widely among forestry and forest products professionals who can offer perspectives on potential wood culture sites to be visited by a team of IWCS members. To better explain the types of "cultures" the team has in mind, the following brief discussion of a recent wood culture tour in Northeastern China is provided for information:

<u>Wood Culture Tour – Changbai Mountain Area, Jilin Province, China, March 3-7, 2012</u> Hank recently participated in this wood culture tour with the objective of understanding how the IWCS conducts itself in developing information about various wood cultures. During the tour, IWCS members visited the Gudingzi Village located near Fusong, Jilin Province, China (picture at right). This village has relied on forests and wood to provide a sustainable lifestyle over multiple generations. However, this livelihood is threatened by China's rapid modernization, including a growing and efficient infrastructure and the spread of new values that are disrupting the social fabric of this specific



culture that has existed over the course of centuries. The IWCS effort involves documenting this culture from an experiential standpoint through the use of video, photographic, and written research documentation.

In addition to the tour noted above, another tour in India, for example, specifically focused on wood handicraft traditions. (See web links on page 3.)

# UNITED STATES WOOD CULTURE TOUR:

This tour is currently planned for September 2012 (specific dates to be determined). It will be led by

IWCS Director, Mike WenPin Hou. Mr. Hou has requested that a small team of Forest Service retirees including Hank, Howard, and Steve assemble potential sites for visiting during the tour. This memo solicits your suggestions on the potential sites to be visited. Clear examples of USA wood cultures would include such activities as traditional maple syrup collection (although not necessarily a threatened wood culture), horse logging, mushroom/botanicals collection, and/or traditional handicrafts. Here are some guidelines:

• Suggested sites should predominantly include the following attributes:

involve an activity that is multi-generational in nature

involve an activity that is potentially threatened by social, environmental, or infrastructure modernization

involve an activity where wood is a primary component

- handicrafts
- supporting harvest of food and botanicals from within the forest
- traditional forest product harvesting methodology

• The IWCS would welcome participation in the tour by individuals who suggest wood culture activities.

• Although, not a given, it is assumed that the Pacific Northwest, from Northern California to the Canadian border would offer a good opportunity to examine multiple cultures over a reasonable geography that can be navigated efficiently. Since this is only an assumption, the IWCS would appreciate suggestions for sites throughout the United States.

• Mr. Hou will tentatively plan to overlap with the Forest Service Retiree Reunion in Vail, Colorado September 17-21, 2012, as another way of soliciting information about nationwide wood cultures and, if possible, to sponsor a small wood culture activity that could include having poets share their wood and forest culture poetry. The IWCS would welcome those who wish to share their poems (wood, forest, life experience, etc.).

**CONCLUSION:** The IWCS would very much appreciate suggestions regarding potential wood culture sites in the United States that can be documented by this worldwide organization. <u>Please</u> <u>submit any suggestions you have to hkashdan@gmail.com by approximately April 30</u>. Hank would happily entertain phone calls to help clarify questions or discuss the viability of potential sites: 703-598-8067. (Note: Hank will not be available from March 29 through April 10.)

# IWCS Web Links

Here are some links to past IWCS activities that are representative of the type of work being accomplished:

IWCS home page: <u>www.iwcs.com</u>

Specific information on the wood culture tours can be found at: <u>http://www.woodculturetour.org/ItineraryContent.cfm?tour=7&y=2011</u>

China:

http://www.woodculturetour.org/DestinationContent.cfm?spots=16&vid=13 Tour http://www.woodculturetour.org/DestinationContent.cfm?spots=13&vid=39 Tour

India:

http://www.wood.info/artjoywood/ AJW http://www.iwcs.com/?p=knowledge&sp=video&catID=136&pid=cn1111220003 AJW

<u>Taiwan</u>:

http://www.iwcs.com/?p=knowledge&sp=video&catID=150&pid=cn1110180001 Wood Education in Taiwan http://www.iwcs.com/?p=knowledge&sp=video&catID=136&pid=cn1203110001 Sedan Chair

<u>Japan</u>:

http://www.iwcs.com/?p=knowledge&sp=video&catID=136&pid=cn1111230001 A Chessboard Master in Nagoya http://www.iwcs.com/?p=knowledge&sp=video&catID=153&pid=cn1112190001 Japanese precious wood market

Africa:

http://www.iwcs.com/?p=knowledge&sp=video&catID=136&pid=cn1111210006 Cameroonian Traditional Dancing Mask

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# 北京欢迎你

SWST/ICBR International Convention August 27–31, 2012 International Centre for Bamboo and Rattan, Beijing, China

Sustainable Development of Wood and Biomass in our New Global Economy



# 北京欢迎你

### Monday, August 27, 2012

Opening Ceremony: 8:00-11:30 a.m.

Keynotes

Lunch: 11:30 a.m.-1:30 p.m.

Global Trade Session: 1:30-5:00 p.m.

Topic areas: Availability of wood around the world; Trade options between China and other parts of the world (specifically the United States, Africa, Europe, Russia, etc); International product standards; Trade barriers

#### Tuesday, August 28, 2012

Energy and Carbon Issues Session: 8:00–11:30 a.m. *Topic areas*: Emissions; Reduced energy use; Bioenergy; Carbon sequestration by wood and by forests; Production of energy from biomass

Lunch: 11:30 a.m.-1:30 p.m.

Development and Research in Bamboo and other Agri Fibers Session: 1:30–5:00 p.m. *Topic areas:* Housing; Structural applications; Benefits to use bamboo and other agri fibers; Uses around the world

Tour of Bamboo and Rattan Show Room at ICBR

#### Wednesday, August 29, 2012

Sustainable Resources for the Future Session: 8:00–11:30 a.m. *Topic areas:* Sustainability of wood; Plantations; Characteristics of wood from plantations and from typical forests; Engineered wood; Testing facilities

Lunch: 11:30 a.m.-1:30 p.m.

Tour of ICBR Laboratories: 1:30-2:30 p.m.

Poster Session and Student Poster Competition: 2:30-4:00 p.m.

Advanced Wood Processing Session 1: 4:00-5:00 p.m. *Topic areas:* Housing and structural use of wood around the world

#### Thursday, August 30, 2012

Advanced Wood Processing Session 2: 8:00-11:30 a.m. *Topic areas:* Nanotechnology; Properties of wood; Wood modification; Basic sciences of wood

Lunch: 11:30 a.m.-1:30 p.m.

Wood Culture Session: 1:30–5:00 p.m. *Topic areas:* Sculptures; Paintings; Wood furniture and carving; Musical instruments (especially Chinese ones); Species used for instruments; "Woods of Net" by Toshiko Horiuchi - The Hakone Open Air Museum; Wooden masks around the workl; Chinese wooden abacus; Chinese wood umbrella (3,500 years okl); The Museum for wood culture in Kami, Hyogo, Japan and other wood museums around the workl; Wood as it relates to religion (Buddha); Wood clocks and wood sports equipment

Display of wood culture items at back of room

End session: 4:30-5:00 p.m. with Bamboo Band

Closing Ceremony and Banquet: 7:00-10:00 p.m.

### Friday, August 31, 2012

#### All-day Tours

Chinese Academy of Forestry 1/2 day tour of flooring plant 1/2 day tour of furniture plant Lunch

### 星期一,2012年八月二十七日

开幕式:8:00-11:30 a.m. 主讲人:

午餐: 11:30 a.m.-1:30 p.m.

全球贸易议题:1:30-5:00 p.m. 主要议题:世界范围内木材资源的可用性。 中国和世界其他国家的贸易选择(特别指

美国,非洲,欧洲,俄罗斯等等);国际

产品标准;贸易壁垒

### 星期二,2012年八月二十八日

能调与碳议题会议:8:00-11:30 a.m. 主要议题:排放;降低能调的使用; 生物能源;木材和森林的碳儲量; 生物质能调的生产;

午餐: 11:30 a.m.-1:30 p.m.

竹材和其他农业纤维质材料的研究和发展会议:1:30-5:00 p.m. 主要议题: 房屋;建筑构造材的利用; 使用竹材和其他农业纤维材料的优势; 竹叢在世界各地的利用。 ICBR 展厅参观

### 星期三,2012年八月二十九日

未来可持续利用的资源议题组:8:00-11:30 a.m. 主要议题:木材的可持续利用性;植树造林; 速生材树种和常见森林树种的特性; 工程本;检测设备;

午餐: 11:30 a.m.-1:30 p.m.

参观ICBR 实验室: 1:30-2:30 p.m.

海报会议和学生海报竞赛:2:30-4:30 p.m.

先进木材加工技术会议 1:4:00-5:00 p.m. 主要议题:世界各国木材在建筑和构造材上的 应用;

### 星期四,2012年八月三十日

先进木村加工技术会议 2:8:00-11:30 a.m. 主要议题:纳米技术;木材特性; 木材改性;木材基础科学; 午餐:11:30 a.m.-1:30 p.m.

12: 11:50 a.m.= 1:50 p.m.

木材文化议题:1:30-5:00 p.m. 主要议题:木雕技术:油漆技术:木案具 和雕饰技术:乐器(特別为中国乐器):乐器所使用的材种; "木质网蓬"由Hoshiko Horiuchi创建,在Hakone 濡天博物馆展示 的"木质网蓬";世界各地的木质画具;中国木质算盘; 中国木质雨伞(约3500 年历史):日本的Kami, Hyogo木文化博物馆 和世界各地的木材博物馆;木材与宗教(佛教)的联系; 木质特表和木材体育器械; 木文化物品的展示;

总结会议:4:30-5:00 p.m. 竹材乐队参与 闭幕式和晚宴:7:00-10:00 p.m.

### 星期五,2012年八月三十一日

全天参观: 中国林业科学院; 半天木地板车间的参观; 半天木制家具车间的参观; 午餐

# Visa Information

Passport & Visa: L-Visas for single or multiple entry for tourists are valid for 30 to 60 days.

\*An L-Visa for tourist is what most people should use. It is much simpler and does not require anything from the Chinese government.

SWST recommends this unless your country or institution requires a business visa.

**Registration Information** 

Register now to secure your attendance at the upcoming convention. You can do so at

http://swst.org/meetings/AM12/registration.html

Hotel Accommodation - IBR Tower

You can now reserve your hotel room online by filling out the "Registration Form" on the Accommodation page and emailing to <a href="mailto:ztxiaoshoubu@sina.cn">ztxiaoshoubu@sina.cn</a>

http://eng.icbr.ac.cn/IBRT/english/OnlineReservation.html

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GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN

The University of Göttingen invites applications for the position of a **Professorship (W2) in "Wood Technology and Wood Composites"** (salary level W2) at the Faculty of Forest Sciences and Forest Ecology.

The position will strengthen the research area of forest products. Applicants should have a research record in the interface between sustainable forestry concepts and the wood industry. The research focus should be on wood technology and wood composites. In particular, the research should cover one or several of the following areas:

- Innovative wood composites
- Wood chemistry
- Wood adhesives/adhesive technology
- Biopolymeres
- Biorefinery

The teaching of the position will be mainly within the Bachelor and Master programmes of the faculty (as the master in Wood Biology and Wood Technology). Because of the international orientation of the study program and the number of international students, teaching will be in English (besides to German).

Conditions for appointment are laid down in § 25 of the Higher Education Law of Lower Saxony of 26.02.2007 (Official Law Gazette of Lower Saxony, Nds. GVBl. 5/2007 p. 69). As a Public Law Foundation, the University of Göttingen holds the right of appointment. Further details will be explained on request.

We explicitly welcome applications from abroad. Under certain circumstances, relating to care and/or family responsibilities, part-time employment is possible. The University of Göttingen intends to increase the proportion of women in research and teaching, and hence strongly encourages female

scientists to apply. Priority will be given to disabled persons with equivalent qualifications. Applications including the pertinent documents (CV, list of publications, teaching and research track records) are requested by June 21th, 2012 and should be sent to the Dean of the Faculty of Forest Sciences and Forest Ecology at the following address: Dekan der Fakultät für Forstwissenschaften und Waldökologie der Georg-August-Universität Göttingen, Büsgenweg 5, 37077 Göttingen, Germany. If you have any questions, please contact Dr. Wolfgang Hiltscher at <u>dekanat.forst@uni-goettingen.de</u>. *Back* 

# M.S. Research Assistantship Available Department of Sustainable Biomaterials, Virginia Tech, Blacksburg

Starting Date: Summer or Fall 2012, either one will be acceptable

Project Focus: Impact of wood cell structure in adhesive bonding dissimilarities

Summary: This project is designed to search out the influence of cell structure on the fundamental bonding characteristics and adhesive penetration properties of two types of wood, Douglas-fir (Pseudotsuga menzesii L.) and southern yellow pine(s) (Pinus spp.). Douglas-fir and southern yellow pine are used extensively in creation of structural and specialty composite applications however there is very little knowledge about why adhesive interactions are so different for these two somewhat similar wood types. Our project will focus on selected wood and bonding characteristics, resin and wood interactions, and forensic failure analyses. Evaluation of small specimens extracted from individual growth rings within juvenile, transitional, and mature wood regions will provide information on natural variability, growth rates, and the influence of select anatomical and chemical features. Block shear testing is planned to evaluate bonding performance for ambient and multi-cycle pressure soak conditions. Adhesive penetration will be evaluated with light and electron microscopy following shear block strength analyses. Bondline chemistry will be evaluated using dispersive Raman imaging.

This project would be ideal for someone who is interested in subjects such as quantitative microscopy, plant cell architecture, vibrational spectroscopy, and structure - properties relationships. For those that are inclined toward performance and product testing, adhesive bonding potential and durability are also investigative pathways included this project.

Funding: A twenty-four month M.S. stipend, a 100% tuition waiver, and thesis research funding will be provided to the successful applicant. In addition, all project-related travel expenses will be covered for presentation at a national conference.

Application Procedure: If you would like more information, please contact Professor Audrey Zink-Sharp, 230 Cheatham Hall, Dept. of Sustainable Biomaterials, Virginia Tech, Blacksburg; agzink@vt.edu

Applicants need to apply for admittance to the Graduate School at Virginia Tech by completing the online application process found here: http://graduateschool.vt.edu/admissions/applying/index.html

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# Bridging length scales in structural timber from molecules to moisture-induced warping

Kelvin Smith-Scholarship (PhD), School of Engineering, Glasgow University Earliest start date: October 1, 2012 Karin de Borst (Main Supervisor, School of Engineering) Mike Jarvis (Co-Supervisor, School of Chemistry) René de Borst (Co-Supervisor, School of Engineering)

# **Background and Project Aim**

When wood is exposed to changing environmental humidity, it adsorbs or desorbs moisture and warps. This moisture-induced distortion has been identified by the UK timber processors as the main barrier to enhanced use of UK-grown wood in the construction industry. Recent advances in micro-characterization techniques have delivered enhanced insight into the interactions between wood and moisture at the molecular scale. However, the link between these nanoscale observations and the macroscopically observed, industrially relevant behaviour of timber is missing. The project will fill this gap by an integrated approach drawing on chemical as well as mechanical expertise. A multiscale model for moisture-induced deformations of wood will be developed, enabling the prediction of the behaviour of construction timber from microstructural

information. This is pivotal for better selecting, drying and sawing of timber to produce distortion-free boards, thus improving quality and value of UK-grown construction timber and enhancing its market potential.

# Qualification

The Scholar should have an engineering background (first-degree qualification in suitable field, such as civil engineering, aerospace engineering, mechanical engineering, material science, etc.) and interest in multi-disciplinary work. He/she will participate in microstructural investigations in order to establish profound knowledge about the molecular structure of wood and the effects of moisture on it. However, chemical method development and the assembling of large chemical data sets are not intended in the framework of the scholarship. The scholarship is limited to UK students.

# **Tasks and Environment**

The scholar's work will focus on multiscale modelling of wood hygro-expansion in a thermodynamical framework. The scholar will obtain a broad education in the field of mechanics of materials and structures and develop comprehensive modelling skills in an engineering context. Moreover, the bridge to chemistry will allow him/her to develop a basic understanding of micro-characterization techniques, physical chemistry, and thermodynamics. The embedding of the project in SIRT (Strategic Integrated Research in Timber), an industry-driven

platform of Scottish foresters, timber companies, and wood researchers, will encourage direct contact with timber growers and processors. This results in a broad training portfolio perfectly qualifying the scholar for further research activities in the field of mechanical material science as well as for engineering-oriented tasks.

# **Enquiries/Application**

Applications are invited from suitably qualified. Informal enquiries to Karin de Borst – karin.deborst@glasgow.ac.uk

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# Timber distortion revisited – tracing the microstructural origin by multiscale modelling

Industrial PhD Project, School of Engineering, Glasgow University in cooperation with Forestry Commission, Scotland Earliest start date: October 1, 2012 Karin de Borst (Main Supervisor, School of Engineering) Mike Jarvis (Co-Supervisor, School of Chemistry)

# **Background and Project Aim**

The distortion of wood upon moisture changes is a main concern in timber engineering. Therefore, its investigation is a focal topic in the current research programme of SIRT (Strategic Integrated Research in Timber), an industry-driven platform of Scottish foresters, timber companies, and wood researchers. The proposed project aims at complementing ongoing, mainly

experimental research activities in SIRT and at establishing a quantitative relation between the microstructural characteristics of wood and the dimensional changes in timber at the macroscopic scale. Such a relation will enable to predict the influence of microstructural parameters, such as the density, the moisture content, but also the microfibril angle and the

spiral grain separately. Currently, only their cumulative effects can be quantified by direct testing. The model will start from existing multiscale models for the hygro-expansion behaviour and for the moisture transport behaviour of wood developed by the main supervisor. The implementation of these models in simulation software will make the gathered knowledge accessible at the structural scale, which is relevant for assessing timber quality and for timber engineering practice. Indeed, it will encompass the prediction of deformations of arbitrarily shaped and sized timber members upon changes of the environmental humidity

# Qualification

The scholar should have an engineering background (first-degree qualification in suitable field, such as civil engineering, aerospace engineering, mechanical engineering, material science, etc.) and interest in multi-disciplinary work. Prior experience in the field of finite element simulations is welcome. The scholarship is limited to UK students.

# **Tasks and Environment**

The scholar's work will focus on the implementation and further developing of existing models for the mechanical and the hygric behaviour of wood in finite element software under consideration of their couplings. The scholar will obtain a broad education in the field of mechanics of materials and structures and develop comprehensive modelling skills in an

# engineering context.

The work will benefit from close interaction with other PhD students at University of Glasgow cofinanced by SIRT whose test data on dimensional changes and moisture distributions will be indispensable for model validation at material and structural scale. The project will be backed up by fundamental research into the molecular origin of hygro-expansion and its mathematical description in a thermodynamical framework to be carried out in a Kelvin-Smith studentship held jointly by the two supervisors, starting in autumn 2012.

# Enquiries/Application

Applications are invited from suitably qualified. Informal enquiries to Karin de Borst – karin.deborst@glasgow.ac.uk

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# **ABOUT SWST**

The SWST Newsletter is published six times a year by the Society of Wood Science and Technology, SWST, P.O. Box 6155 Monona, WI 53716-6155 PH: 608-577-1342 Fax: 608-467-8979.

Items for the Newsletter may be sent to David Jones, at: pdjones@cfr.msstate.edu

The Society of Wood Science and Technology is a technical and professional organization for scientists and engineers working in academia, government, consulting and the forest-products industries and is dedicated to providing education and expertise regarding better ways to use and produce wood products.

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# SWST Visiting Scientist Program

The Society of Wood Science and Technology invites you to participate in the SWST Visiting Scientist Program as a "host Institution". Please fill out a "<u>Request to Participate Form</u>" (PDF) and send it to the Executive Office. A list of available visiting scientists is available at: <u>http://www.swst.org/vsp/vsplist.pdf</u>

The procedure to participate as a host institution is as follows:

1. Fill out the request to participate form and return to the address on the bottom of the form. In selecting a Visiting Scientist, please consider the cost associated with cross-country travel since the Program has a limited budget. Note that the form has a convenient entry in which you can offer to contribute the the Visiting Scientist Program to permit us to cover more visits.

2. The request will be reviewed by the Visiting Scientist Program Committee, who will contact both the institution and the Visiting Scientist. This is a very important step, since we are many times able to coordinate multiple visits by the same Scientist.

3. Once the visit has been approved, the institution and scientist will be asked to arrange the details of the visit (dates, subject, etc).

4. The host institutions are to provide lodging, meals, and local transportation for the Visiting Scientist. The normal visit is one to two days. The host institution will also be expected to

arrange for appropriate "PR" to maximize the value of the visit.

5. Following the visit, the requesting member at the host institution will be asked to provide a report on the visit. This will be published in the bimonthly SWST Newsletter. The Visiting Scientist Program will reimburse the scientist for travel expenses.

The SWST Visiting Scientist list includes only SWST members in good standing. If you are interested in a visit by someone not listed, please be sure to note that on the request form. Since the Program is supported through SWST member dues, the policy is to approve visits by SWST members only. If you have any special programs or questions, please do not hesitate to contact us. Visiting Scientist Program Society of Wood Science and Technology P.O. Box 6155 Monona, WI 53716 PHONE: 608-577-1342 FAX: 608-467-8979 E-mail: vicki@swst.org For more information: http://www.swst.org/vsp/ Back