

# Annual Report



**Center for Forest Products Business**

*Alfred P. Sloan Foundation Industry Studies Center*

**Department of**



**College of Natural Resources and Environment**



Reporting Period July 1, 2015 - June 30, 2016



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August 8, 2016

## Letter from Director:

*Hello from your Center,*

It is hard to believe that another year has passed and we will soon be welcoming 140 students back to our department. Many of you have hired them for summer internships and I want to thank you for helping us with their education. The department remains committed to have our students prepared to “hit the road running” when they graduate, and your internships are vital for them getting experience in the forest products industry. We currently have the largest undergraduate enrollment in the department’s 37 year history. We graduated over 25 students in May, with most of them finding employment within the industry.

As you are probably aware, the new generation of student (and future employee) is somewhat different than when I started in the industry in 1974. While the baby boomer generation was interested in finding a long-term career and moving up the ladder, students today have different goals (and maybe better). They are more concerned about social responsibility, sustainability, serving society, and participating in decision making, than the bottom line on the balance sheet. They tend to stay with companies for less time and are more mobile than my generation. On a side note, my thirty year old son has held more jobs (on his choice) in eight years with major companies, than I have had in my entire life. With the advent of social media, they want information quickly and struggle with processes that take a long time to develop and implement.

I share this with you to let you know we are adjusting our departments’ instructional techniques and classes to meet this new student. Our classes focus on hands-on learning techniques and team building skills so they know how to effectively work with others in a job environment. Repeatedly, when we ask employers what do students need to be successful, it is their social, leadership, communication, and organizational skills that rate higher than their technical skills to be successful in your organizations. So we have adapted many classes to let students better develop these important job characteristics.

I want to thank you for your continued support of our programs. I hope you will contact us with your needs for employees or summer interns. Many of our classes have projects and if you need a short specific project investigated, please contact me and I will see if we can work it into a class. Please feel free to contact me with any comments or suggestions to improve the program (rsmith4@vt.edu). Again, thanks for your support of our students and I wish you a successful year.

*Bob Smith*

*Education is not preparation for life; education is life itself.*

John Dewey



## Participating Faculty and Staff

<b>Smith, Robert</b>	<i>Director, Department Head and Professor</i>	<a href="mailto:rsmith4@vt.edu">rsmith4@vt.edu</a>
Bond, Brian	<i>Professor, Sustainable Biomaterials</i>	bbond@vt.edu
Buehlmann, Urs	<i>Professor, Sustainable Biomaterials</i>	buehlmann@gmail.com
Bush, Robert	<i>Professor, Sustainable Biomaterials</i>	rbush@vt.edu
Hammett Tom	<i>Professor, Sustainable Biomaterials</i>	himal@vt.edu
Kline, Earl	<i>Professor, Sustainable Biomaterials</i>	kline@vt.edu
Quesada, Henry	<i>Assistant Director and Associate Professor</i>	quesada@vt.edu
Riegel, Angela	<i>Program Specialist, Sustainable Biomaterials</i>	ariegel@vt.edu
Withers, Jeremy	<i>Communications Manager / G.R.A.</i>	jeremyw7@vt.edu

## Mission

*To assist the forest products industry by improving the management of their operations and the marketing of their products.*



## **Significant Accomplishments**

### **Urs Buehlmann**

- Presented at the Eurasian Timber Delegation Seminar organized by the U.S. Department of Commerce, International Trade Administration, SABIT program on improving operations, July 24, 2015.
- Organized and lead half day session "Guest country USA" at the 21<sup>st</sup> International Wood Construction Conference (IHF) 2015 with over 1,600 attendees at Garmisch-Partenkirchen, Germany in December 2015.
- Participated in Alabama Forest Owners Association (AFOA)'s "Capital Ideas - Live!" session and talked about U.S. hardwood lumber demand and the U.S. housing market.

### **Robert Bush**

- Department of Sustainable Biomaterials *Outstanding Teaching Award* 2015-2016.

### **Tom Hammett**

- Selected as a Distinguished Educator in teaching and learning at the Petroleum Institute in Abu Dhabi; invited presentations hosted by the Center of Excellence in Teaching and Learning (CELT).
- International advisory committee member, International Education Conference on Education, Research and Services, Banaras Hindu University, Varanasi, India January 27-30, 2016.
- Twenty-year service award presented by Virginia Tech, April 2016 (anniversary July 2015).

### **Earl Kline**

- Departmental enrollment has grown from 112 in Spring 2015 to 134 in Spring 2016 (based on April 4, 2016 Banner record).
- Acceptance offers for incoming freshman has grown from 4 in 2015 to 32 in 2016 indicating that SBIO promotional efforts and working with CNRE's Advising Center promotional programs has been a great success.



## Virginia Tech Students Active in the Center for Forest Products Business (11)



Michael Bauman (MS)	Enis Kucuk (MSc)
Sevtap Erdogan (MS)	Li Liang (PhD)
Danny Hazelwood (MF)	Maria Ines Placencia (PhD)
Gaurav Kakkar (MS)	Xiufang Sun (PhD)
Stephanie Smith (MS)	Chong Yen Yoon (PhD)
Jeremy Withers (MS)	

### Proposals Funded (14)

#### **Development of CLT Markets for Hardwood Lumber Producers to Promote Forest Health and Support of Rural Communities**

*Investigator(s): Henry Quesada Pineda, and Brian Bond.*

*Sponsor: USDA Wood Innovation Grants.*

*Amount: \$321,516.*

#### **Development of a knowledge management system to support the US cross laminated timber industry**

*Investigator(s): Omar Espinoza and Urs Buehlmann, and Ed Thomas*

*Sponsor: USDA Forest Service – Wood Education and Resource Center (WERC)*

*Amount: \$115,357, (2016 – 2018)*

#### **Development of Engineering and Manufacturing Guidelines for Improved Cross-Laminated Timber Buildings**

*Investigator(s): Earl Kline*

*Sponsor: McIntire-Stennis, USDA CSREES*

*Program support funding for 2013-2018*

#### **Donation of CAM Sample Cutting Table**

*Investigator(s): Robert Bush and Robert Mollenhauer*

*Sponsor: Gerber Technologies*

*Amount: \$55,000 estimated value, August 17, 2012 - August 1, 2017*



### **Health & Prevention Influencer Research**

**Investigator(s):** Omar Espinoza and Urs Buehlmann

**Sponsor:** Robert Bosch Corporation

**Amount:** \$18,743, 13 – 14 years' time frame

### **Increasing Exports of US Wooden Modular Homes to Developing Countries**

**Investigator(s):** Henry Quesada-Pineda and Robert Smith

**Sponsor:** USDA-FSMIP

**Amount:** \$143,360, September 2014 – September 2016

### **Research Experiences for Teachers: Innovation-based Manufacturing**

**Investigator(s):** C. Williams (PI), B. Brand, R. Hendricks, S. Subhash, R. Sturges, H. Quesada, J. Camelio, K. Ellis, and A. Druschitz

**Sponsor:** National Science Foundation

**Amount:** \$450,000, December 1, 2012 - November 30, 2016

### **Support for the Wood Enterprise Institute**

**Investigator:** Earl Kline

**Sponsors:** Various sponsors and donors

**Amount:** \$42,950, 2014 - 2015

### **Support for the Wood Enterprise Institute**

**Investigator:** Earl Kline

**Sponsor:** Various sponsors and donors

**Amount:** \$15,956, (2015 – 2016)

### **U.S.-India Joint Clean Energy Research and Development Center (JCERDC). Project 2, subtask 3: Sustainability and Marketing**

**Investigator(s):** Janaki Alavalapati, Henry Quesada, and Robert Smith

**Sponsor:** Department of Energy (DOE)

**Amount:** \$971,496 with \$485,748 from the DOE, October 17, 2012 - October 1, 2017

### **Various agency and industry contributions**

**Investigator:** Urs Buehlmann

**Sponsor:** Various sponsors,

**Amount:** \$6,500, (2015 – 2016)

### **Virginia Tech**

**Investigator:** Robert Bush

**Sponsor:** Virginia Tech Office of Assessment and Evaluation

**Amount:** \$600 (2015 – 2016)



## **WEI – Entrepreneurial Scholarship**

**Investigator:** Earl Kline

**Sponsor:** Brooks Whitehurst

**Amount:** \$8,000, (2015 – 2016)

## **Wood Industry Week at Wood Education and Resource Center**

**Investigator:** Urs Buehlmann

**Sponsor:** USDA Forest Service Wood Education and Resource

**Amount:** \$40,000, 2014-2016

## **Refereed Publications (11)**

Boley, B., McGehee, N., and Hammett, T. (2016). *Importance-performance analysis (IPA) of resident attitudes toward local sustainable tourism initiatives*, Journal of Tourism and Hospitality Management

Brenes-Angulo, O., Bond, B., Kline, E., and Quesada-Pineda, H. (2015). *The impact of vacuum-drying on efficiency of hardwood products manufacturing*. BioResources 10(3): 4588-4598.

Bond, B.H. and O. Espinoza, (2016). *A Decade of Improved Lumber Drying Technology*. *Current Forestry Reports*. 2(2): p. 106-118.

Gill, Tom, Jones, K., and Hammett, T. (2016). *AET capacity development for sub-Saharan African food security: the role of the innovate Program*. The Journal of Development and Communication Studies.

Khadka, C. B., Hammett, T., Singh, A., Balla, M., and Timilsina, Y. (2016). *Ecological status and diversity indices of Panchaule Dactylorhiza hatagirea and its associates in Lete village of Mustang district, Nepal*. Banko Janakari, Vol. 26, No. 1. P. 45-52.

Park, J., Horvath L., and Bush, R., (2016). *Process Methods and Levels of Automation of Wood Pallet Repair in the United States*. *BioResources*.

Park, J., Horvath, L., White, M., Phanthanousy, S., Araman, P, and Bush, R., (2016). *The Influence of Size and Flute Type of Corrugated Paperboard Boxes on Load-Bridging in Unit Loads*. *Journal of Packaging Technology and Science*.

Quesada-Pineda, H., Wiedenbeck, J., and Bond, B. (2015) *Analysis of electricity consumption: a study in the wood products industry*. *Energy Efficiency*, 2015: p. 1-14.





Severo, E., Calonego, F., Sansígolo, C., Bond, B. (2016). *Changes in the Chemical Composition and Decay Resistance of Thermally-Modified Hevea brasiliensis Wood*. PLoS ONE 11(3): e0151353.

Aragón-Garita, S., Moya R., Brian, B., Valaert, J., Tomazello, M., Filho. (2016). *Production and quality analysis of pellets manufactured from five potential energy crops in the Northern Region of Costa Rica*. Biomass and Bioenergy. Volume 87, April 2016, Pages 84–95.

Withers, J., Quesada-Pineda, H. J., and Smith, R. (2015). *Internal and external barriers impacting non-food cellulosic biofuel projects in the United States*. BioRes. 10(3), 3874-3889.

### **Submitted Publications (12):**

Arias, E., Quesada-Pineda, H.J., and Smith, R. (2015). *Creating Competitive Advantage in the International Hardwood Lumber Markets*. Bioresources.

Arias, E., Quesada-Pineda, H.J., and Smith, R. (2015). *Adding value in the international hardwood market: The US Exporter's perspective*. Forest Products Journal.

Brenes, O., Bond, B., Quesada-Pineda, H., and Kline, E. (2015) *Comparison of the Economic Feasibility between Conventional and Vacuum Drying for 4/4 Red Oak*. Forest Products Journal.

Barrett, S., Bond, B., Gagnon, J. (2016). *Comparing Forest Certification Perspectives in the Wood Products Supply Chain*. Forest Policy and Economics.

Cheikh, A., Mwaffak, Matini, Ghalia, and Hammett, T. (2016). *The Endemism in Syria's Flora: Applications for conservation and utilization*.

Dahal, Om, Hammett, T., Eves, H., and Sheffield, S. (2015). *Social-Ecological Resilience to Climate Change: Criteria and Nepal's Performance*.

Khadka, Chhatra B., Hammett, T. Singh, A., Balla, M., and Timilsina, Y. (2015). *Ecological Status and Diversity Indices of a Himalayan Medicinal Orchid *Dactylorhiza hatagirea* (D. Don) Soo and its Associates in Annapurna Conservation Area*.

Nepali, C., Pokarel, R., and Hammett, T. (2011). *Impact of Conflict on Local Livelihood: Social, Natural and Human Capital Linking to Natural Resources*.

Mohan, B., and Abadhesh S. (2015). *Natural Resources management: Reviews and Research in the Himlayan Watersheds II*. NUFU HUMUNET Project, Pokhara, Nepal. Editors p. 17 – 35.



Park, J., Horvath, L., and Bush, R. (2016). *Life Cycle Inventory Analysis of the Wood Pallet Repair Process in the United States*. *Journal of Industrial Ecology*.

Quesada-Pineda, H.J., Brenes, M. and Smith, R. (2016). *Assessing Geographic Information Systems Use In Marketing Applications For The Wood Products Industry*. Bioproducts Business.

Withers, J., Quesada-Pineda, H. J., and Smith, R. (2016). *Bioeconomy Survey Results Regarding Barriers to United States Advanced Biofuel – Part 2*.

Withers, J., Quesada-Pineda, H. J., and Smith, R. (2016). *Perceptions on Internal and External Factors Impacting the U.S. non-food advanced biofuel Industry – Part 3* (Currently attempting book chapter publication).

## **Trade Journal Publications Refereed (5)**

Thomas, R. E. and Buehlmann, U. (2016). *Potential for yield improvement in combined rip-first and crosscut-first rough mill processing*. *BioResources*. 11(1):1477-1493.

Espinoza, O., Trujillo, V., Laguarda-Mallo, M. and Buehlmann, U. (2016). *Cross-laminated timber: Status and research needs in Europe*. *BioResources*. 11(1),281-295.

Espinoza, O., Buehlmann, U., and Laguarda-Mallo, M. (2015). *Thermally modified wood: Marketing strategies of U.S. producers*. *BioResources*. 10(4), 6942-6952.

Buehlmann, U., Bumgardner, M., and Koenig, K. (July, 2015). *Housing Study: Woodworking and housing: Impacts and actions*. *Woodworking Network*. pp. 64-72.

Buehlmann, U. (2015). *Virginia extension hosts Eurasian timber delegation*. *Sustainable Biomaterials Newsletter*. Volume 10, pp. 17-18.

## **Reports (9)**

Buehlmann, U. and Schuler, A. (2015). *July 2015 housing notes*. *Virginia Tech research report*. September 2015, 55 pp.

Buehlmann, U. and Schuler, A. (2015). *August 2015 housing notes*. *Virginia Tech research report*. October 2015, 45 pp.



Buehlmann, U. and Schuler, A. (2015). September 2015 housing notes. Virginia Tech research report. November 2015, 49 pp.

Buehlmann, U and Schuler, A. (2015). October 2015 housing notes. Virginia Tech research report. December 2015, 51 pp.

Buehlmann, U and Schuler, A. (2016). November 2015 housing notes. Virginia Tech research report. January 2016, 50 pp.

Buehlmann, U, and Schule, A. (2016). December 2015 housing notes. Virginia Tech research report. February 2016, 48 pp.

Buehlmann, U, and Schuler, A. (2016). January 2016 housing notes. Virginia Tech research report. March 2016, 46 pp.

Buehlmann, U, and Schuler, A. (2016). February 2016 housing notes. Virginia Tech research report. April 2016, 45 pp.

Buehlmann, U, and Schuler, A. (2016). March 2016 housing notes. Virginia Tech research report. May 2016, 46 pp.

### **Extension Publications (23):**

Thomas, R. E., Grueneberg, T., and Buehlmann, U. (2014). ROMI-4 Users Manual. General Technical Report NRS-143. USDA Forest Service, Northern Research Station. Newtown Square, PA. 82 pp.

Buehlmann, U. and Alderman, D. (2015). August 2015 Housing Commentary; Part A: Current Data. Virginia Extension Publication ANR-166NP. October 2015, 55 pp.

Buehlmann, U. and Alderman, D. (2015). August 2015 Housing Commentary; Part B: Current Markets. Virginia Extension Publication ANR-167NP. October 2015, 47pp.

Buehlmann, U. and Alderman D., (2015). August 2015 Housing Commentary; Part C: Demographics/Economics. Virginia Extension Publication ANR-168NP. October 2015, 26 pp.

Buehlmann, U. and Alderman, D. (2015). August 2015 Housing Commentary; Part D: Forecasts. Virginia Extension Publication ANR-169NP. October 2015, 41 pp.

Buehlmann, U. and Alderman, D. (2015). September 2015 Housing Commentary; Part A: Current Data. Virginia Extension Publication ANR-170NP. November 2015, 56 pp.



Buehlmann, U. and Alderman, D. (2015). September 2015 Housing Commentary; Part B: Current Markets. Virginia Extension Publication ANR-171NP. November 2015, 46 pp.

Buehlmann, U. and Alderman D., (2015). October 2015 Housing Commentary; Section I. Virginia Extension Publication ANR-189NP. December 2015, 61 pp.

Buehlmann, U. and Alderman, D., (2015). October 2015 Housing Commentary; Section II. Virginia Extension Publication ANR-190NP. December 2015, 41 pp.

Buehlmann, U. and Alderman, D., (2016). November 2015 Housing Commentary; Part A. Virginia Extension Publication VCE-701NP. January 2016, 63 pp.

Buehlmann, U. and Alderman, D., (2016). November 2015 Housing Commentary; Part B. Virginia Extension Publication VCE-702NP. January 2016, 58 pp.

Buehlmann, U. and Alderman, D., (2016). December 2015 Housing Commentary: A. Virginia Extension Publication VCE-ANR 182NP. February 2016, 65 pp.

Buehlmann, U. and Alderman, D., (2016). December 2015 Housing Commentary: Part B. Virginia Extension Publication VCE-ANR 183NP. February 2016, 73 pp.

Buehlmann, U. and Alderman, D., (2016). January 2016 Housing Commentary: Section I. Virginia Extension Publication VCE-ANR189NP. March 2016, 67 pp.

Buehlmann, U. and Alderman, D., (2016). January 2016 Housing Commentary: Section II. Virginia Extension Publication VCE-ANR190NP. March 2016, 66 pp.

Buehlmann, U. and Alderman, D., (2016). February 2016 Housing Commentary: Section I. Virginia Extension Publication VCE-ANR196NP. April 2016, 78 pp.

Buehlmann, U. and Alderman. D., (2016). February 2016 Housing Commentary: Section II. Virginia Extension Publication VCE-ANR197NP. April 2016, 75 pp.

Buehlmann, U. and Alderman, D., (2016). March 2016 Housing Commentary: Section I. Virginia Extension Publication VCE-ANR 202NP. May 2016, 80 pp.

Buehlmann, U. and Alderman, D., (2016). March 2016 Housing Commentary: Section II. Virginia Extension Publication VCE-ANR 203NP. May 2016, 69 pp.



## Extension publications published through VCE, Henry Quesada-Pineda

Quesada-Pineda, H.J., and Arias, E. (2015). Statistical Process Control: Applications and Examples for Forest Products Industries. Virginia Cooperative Extension. ANR-140NP Editor and Publisher. Sustainable Innovation Management. [www.sim.sbio.vt.edu](http://www.sim.sbio.vt.edu). Published and edited 8 articles.

Editor and Publisher. Wood Products Community of Practice. [www.extension.org/woodproducts/](http://www.extension.org/woodproducts/)

Editor and Publisher. Center for Forest Products Business. [www.cfpb.vt.edu](http://www.cfpb.vt.edu)

## Other Publications (5)

Brenes-Angulo, O., Bond, B., Kline, E., and Quesada-Pineda, H. 2015. *The impact of vacuum-drying on efficiency of hardwood products manufacturing*. BioReources 10(3): 4588-4598.

Hindman, D, Loferski, J., Bond, B., Kline, E., and Quesada-Pineda, H. (2015). *Development of Low-Grade Hardwood Cross-Laminated Timbers*. Final report submitted to USDA NIFA.

Kline, E., and Loferski, J., (2015). *Development of Engineering and Manufacturing Guidelines for Improved Cross-Laminated Timber Buildings*. Annual progress report submitted to USDA CSREES.

Quesada-Pineda, H., Wiedenbeck, J., and Bond, B. (2015). *Analysis of Electricity Consumption: A study in the Wood Products Industry*. Energy Efficiency Journal. December. <http://dx.doi.org/10.1007/s12053-015-9417-4>

**Press release:** Winfrey, M. (Press release). (2015). *Studying Entrepreneurial, Place-Based Curriculum Success in Nicaragua*. Available at <http://www.oired.vt.edu/innovate/studying-entrepreneurial-place-based-curriculum-success-in-nicaragua/>.

## Websites (9):

Departmental extension webpage: [www.woodscience.vt.edu/about/extension/](http://www.woodscience.vt.edu/about/extension/)

Hardwood processing: <http://woodscience.vt.edu/woodcomponents/>

Housing reports: <http://woodproducts.sbio.vt.edu/housing-report/>



International Scientific Conference on Hardwood Processing (ISCHP):  
<http://sbio.vt.edu/workshops/ischp/>

Lean@Virginia Tech: <http://woodproducts.sbio.vt.edu/lean/>

Lightweight Materials Consortium: <http://woodproducts.sbio.vt.edu/lightweight/>

Sustainable Innovation Management (SIM team) <http://sim.sbio.vt.edu/>

Wood Industry Week at Wood Education and Resources Center  
(WIW@WERC): <http://woodproducts.sbio.vt.edu/wiwatwerc/>

Woodproducts: <http://woodproducts.sbio.vt.edu/>

### **Papers in Refereed Conference Proceedings (4):**

Buehlmann, U., Espinoza, O., Bumgardner, M., and Smith, R. (2015). *Certification and the U.S. hardwood lumber supply chain*. Proceedings of the 5th International Scientific Conference on Hardwood Processing 2015 (ISC HP15). Québec City, Canada. Pp. 58-63.

Espinoza, O., Buehlmann, U., and Laguarda, M. (2015). *Thermally modified wood: Marketing strategies of U.S. producers*. Proceedings of the 5<sup>th</sup> International Scientific Conference on Hardwood Processing 2015 (ISCHP15). Québec City, Canada. Pp. 72-77.

Buehlmann, U. and Espinoza, O. (2016). *Safety and Lean: Are they complementary?* Proceedings of the 26th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2014). Peer reviewed. Seoul, Korea.

Espinoza, O., Buehlmann, U., and Laguarda, M. (2016). *Attitudes and perceptions about health and safety in power tool use*. Proceedings of the 26th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2014). Peer reviewed. Seoul, Korea.

### **Papers in Conference Proceedings (5):**

Donzé, M., Uehlinger, U., Rellstab, C., and Buehlmann, U. (2015). *Structural Sealant Glazing (SSG) – reinventing the wooden window*. Proceedings of the 10<sup>th</sup> Energy Forum. Bern, Switzerland. pp. 1141-1148.



Uehlinger, U., Buehlmann, U., and Kümmin, P. (2015). *An ecological solution for wooden window frame enlargements*. Proceedings of the 10<sup>th</sup> Energy Forum. Bern, Switzerland. pp. 1156 – 1162.

Rädle, W., Letsch, B., Kümmin, P., Uehlinger, U., and Buehlmann, U. (2015). *Thermal properties of door and windows access systems*. Proceedings of the 10<sup>th</sup> Energy Forum. Bern, Switzerland. pp. 1149 – 1155.

Buehlmann, U. and Alderman, D. (2015). *The \$350•10<sup>9</sup> American housing market*. Proceedings of the 21<sup>st</sup> International Wood Construction Conference (IHF) 2015. Vol. II. Eds.: K. Rossel, S. Burri, and C. Stucki. Biel/Bienne, Switzerland pp. 1-8.

Espinoza, O., Buehlmann, U., and Laguarda, M. (2015). *Crosslaminated timber in the United States: Opportunities and challenges*. Proceedings of the 21<sup>st</sup> International Wood Construction Conference (IHF) 2015. Vol. II. Eds.: K. Rossel, S. Burri, and C. Stucki. Biel/Bienne, Switzerland pp. 1-8.

## **Conference Proceedings (5)**

Araman, P. and Bush, R. (2016). *History of U.S. Wood Pallet Disposal, Recovery, Reuse, and Recycling in the Last Twenty Years*. Presented at: 31<sup>st</sup> International Conference on Solid Waste Technology and Management. Philadelphia April 4.

Boley, B., McGehee, N., and Hammett, T. (2015). *Importance-performance analysis (IPA) of resident attitudes toward local sustainable tourism initiatives*. Presented at the annual conference of Tourism Travel and Research Association: Advancing Tourism Research Globally.

Erdogan, S. Quesada-Pineda, H., and Bond, B. (2016). *Measuring Effectiveness of Kaizen Events within the Wood Products Industry*. 58th Society of Wood Science and Technology Conference. Oral Presentation. Curitiba, Brasil.

Quesada-Pineda, H. (January 27-30, 2016) *Presentations at the International Education Conference on Education, Research and Services*, Banaras Hindu University, Varanasi, India.

Withers, J. Quesada-Pineda, H., and Smith, R. (March 6-10, 2016). *Sustainability Factors Impacting United States Advanced Biofuel Projects*. 58th Society of Wood Science and Technology Conference. Oral Presentation. Curitiba, Brasil.



## Graduate Thesis / Dissertations (3)

Sevtap Erdogan. MS., August 2015. Development of a Tool to Measure the Effectiveness of Kaizen Events within the Wood Products Industry.

Michael Bauman. MS., May 2016. Analysis of Energy Recommendations in the U.S. Wood Products Industry.

Jeremy Withers. MS., June 2016. Barriers Impacting the United States Advanced Biofuel Projects.

## Presentations (27)

### **Urs Buehlmann:**

Buehlmann, U., O. Espinoza, R. Smith, and M. Bumgardner. (June, 2015). *The U.S. hardwood supply chain*. Technical Forum Presentation. SWST 2015 International Convention. Grand Teton, WY.

Espinoza, O., Laguarda, M., Weitzenkamp, and Buehlmann, U. (June 2015). *Overcoming barriers to biomass cogeneration in the U.S. wood products industry*. Technical Session Presentation. SWST 2015 International Convention. Grand Teton, WY.

Donzé, M., Uehlinger, U., Rellstab, C., and Buehlmann, U. (November 2015). *Structural Sealant Glazing (SSG) – reinventing the wooden window*. 10th Energy Forum Conference. Bern, Switzerland.

Uehlinger, U., Buehlmann, U., and Kümmin, P., (November, 2015). *An ecological solution for wooden window frame enlargements*. 10th Energy Forum Conference. Bern, Switzerland.

Rädle, W., Letsch, B., Kümmin, P., Uehlinger, U., and Buehlmann, U. (November 2015). *Thermal properties of door and windows access systems*. 10th Energy Forum Conference. Bern, Switzerland.

Buehlmann, U. and Espinoza, O. (January, 2016). *Quality management. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U., and Leavengood, S. (January 2016). *Quality assurance. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.





Buehlmann, U. (January, 2016). *Manufacturing systems. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U. (January, 2016). *Department location. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U. (January, 2016). *Assembly line balancing. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U. (January, 2016). *Bottlenecks. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U. (January, 2016). *Value in manufacturing. Leadership and Skill Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U. (January, 2016). *Lean manufacturing tools. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U. (January, 2016). *Value stream mapping. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U. (January, 2016). *Future of manufacturing. Leadership and Skills Development Training - Module C*. Bern University of Applied Sciences, Center for Development and Cooperation (CDC). Sarajevo, Bosnia and Herzegovina.

Buehlmann, U., Alderman, D., and Bumgardner, M. (May, 2016). *International and Domestic Outlook for the Hardwood Industry*. Virginia Forest Products Association (VFPA). Richmond, VA.

Bumgardner, M., Buehlmann, U., and Koenig, K. (March, 2016). *Investment activities in the U.S. secondary woodworking industry*. 20th Central Hardwood Forest Conference. Columbia, MO.

### **Tom Hammett:**

Hammett, T. (October, 2015). *A Vision for International Programs*. Purdue University College of Agriculture, East Lafayette, Indiana.



Hammett, T. (October, 2015). *Life in Nepal: Forests, Climate Change and Culture*. Christ Church. Blacksburg.

Hammett, T., and Rechlin, M. (December 13, 2015). *Teaching Pedagogies: Increasing the Use of Technologies*. CELT, Petroleum Institute, Abu Dhabi. (two sessions)

Hammett, T., and Rechlin, M., (December, 2015). *Project Centered Learning and Team-based Learning: Making the Classroom more Experience Oriented*. CELT, Petroleum Institute, Abu Dhabi.

Rechlin, M., and Hammett, T., (December, 2015). *Using Technology in the Classroom: Simulations, Using the Internet in the Classroom*. CELT, Petroleum Institute, Abu Dhabi.

Rechlin, M., and Hammett, T., (December, 2015). *Using Technology in the Classroom: Using Platforms such as Blackboard*. CELT, Petroleum Institute, Abu Dhabi.

NR 1234– First Year Experience (FYE) course College of Natural Resources and the Environment “Where are sustainable biomaterials used? How big is the industry? What are the jobs/careers?” – October 15, 2015.

NR 1234 –(First Year Experience course College of Natural Resources and the Environment) – cases for service and international learning – a focus on International issues and how these issues will impact careers (and reflections on the VT Common Book) - November 2015.

SBIO 3324 – Green Building Systems “Certification and why is it important to us and our careers?” - November 2015.

BIO 2204 - Plants and Civilization “Wood, Cork and Bamboo, and People: Opportunities for Use and Conservation” - November 19, 2015.

SBIO 5004 - Graduate Seminar –Tom Hammett and Henry Quesada “Linking Study Abroad Courses with Career Objectives” (Opportunities and importance of International education in student’s careers) Brooks Forest Products Lab - February 29, 2016.

SBIO 5324 – Timber Engineering – “Designing for Relief: The earthquake in Nepal” SBIO – February 2016.

SBIO 5324 – Timber Engineering - final meeting with teams to evaluate their designs and recommendations – April 2016.



### **Earl Kline:**

Kline, E. (April 19, 2016). *Invited TED talk presentation: Success in Service: Life After Peace Corps*. Haymarket Theater, Squires Student Center, Virginia Tech.

Kline, E. (January 15, 2016). *Wood Enterprise Institute: Experiential Learning Laboratory for Future Business Leaders*. Invited presentation, CNRE Briefing Day, Virginia Tech.

Kline, E. (February 11, 2016). *Experiential Learning Experiences in the Wood Enterprise Institute*. Invited lecture, Wood Science & Engineering, Oregon State University, Corvallis, OR.

Kline, E. (February 11, 2016). *Curriculum development in the Department of Sustainable Biomaterials at Virginia Tech*. Invited presentation, Wood Science & Engineering, Oregon State University, Corvallis, OR.

## **Invited Lectures and Presentations (23)**

### **Urs Buehlmann:**

Buehlmann U. (July, 2015). *Improving your operation – Lean, TPM, and Six Sigma*. Eurasian Timber Delegation Seminar. Invited Presentation. Raphine, VA. July 2015.

Buehlmann U. (July, 2015). *Improving your operation – SMED*. Eurasian Timber Delegation Seminar. Invited Presentation. Raphine, VA.

Buehlmann, U. and Alderman, D. (December, 2015). *The \$350 109 American housing market*. 21st International Wood Construction Conference (IHF) 2015. Invited Presentation. Garmisch-Partenkirchen, Germany.

Buehlmann, U. and Alderman, D. (December, 2015). *The American housing market. Presentation to the Cochrane Fellows of Vietnam*. Blacksburg, VA.

Buehlmann, U., Alderman, D., and Bumgardner, M. (January 2016). *International and Domestic Outlook for the Hardwood Industry*. Lake State Lumber Association 2016 Winter Meeting. Invited Presentation. Green Bay, WI.

Buehlmann, U., Bumgardner, M., and Alderman, D. (March, 2016). *Outlook for the Hardwood Lumber Industry*. WERC webcast for state wood utilization and marketing specialists. Invited Presentation. Princeton, WV.



Espinoza, O., Buehlmann, U., and Laguarda-Mallo, M. (April, 2016). *Cross Laminated Timber in the United States: Opportunities and Challenges*. Great Lakes Kiln Drying Association's Spring Meeting. Invited Presentation. St. Croix Falls, WI.

Espinoza, O., Buehlmann, U., and Laguarda-Mallo, M. (December, 2015). *Cross-laminated timber in the United States: Opportunities and challenges*. 21<sup>st</sup> International Wood Construction Conference (IHF) 2015. Invited Presentation. Garmisch-Partenkirchen, Germany. December 2015.

### **Henry Quesada-Pineda:**

Withers, J., and Quesada-Pineda, H.J. (March 6-10, 2016). *Sustainability Factors Leading to Advanced Biofuel (cellulosic) Project Success*. 58th Society of Wood Science and Technology Conference. Oral Presentation. Curitiba, Brasil.

Withers, J., Quesada-Pineda, H.J., and Smith, R. (December, 2015). *Market Factors Impacting The United States Advanced Biofuel Projects*. Proceedings of the Cochran Fellows United States tour– Virginia Tech Brooks Forest Product Center, USA.

Withers, J., Quesada-Pineda, H.J., and Smith, R. (February, 2015). *Factors Impacting The United States Advanced Biofuel Projects*. Graduate seminar class for Sustainable Biomaterials, Virginia Tech Brooks Forest Product Center, USA.

Kakkar, G. and Quesada-Pineda, H. (March 6-10, 2016). *Assessment of pre-fabricated wooden homes as an affordable housing alternative for low income households*. 58th Society of Wood Science and Technology Conference. Oral Presentation. Curitiba, Brasil.

Quesada-Pineda, H., and Hammett, T. (February, 2016). *Linking Study Abroad Courses with Career Objectives*. SBIO 5004. Graduate Seminar. Room 116. Brooks Forest Products Center. Virginia Tech. February 29. Blacksburg, VA.

Quesada-Pineda, H.J. (February 18, 2016). Life Cycle Assessment Basics. SBIO 3454. *Society, Sustainable Biomaterials, and Energy*. Room 131. Cheatham Hall. Virginia Tech. Blacksburg, VA.

Quesada-Pineda, H.J. (September 17, 2015). *Payments for Environmental Services (PES): The Case of Costa Rica*. SBIO 2784. Global Forest Sustainability. Room 317B. Cheatham Hall. Virginia Tech. Blacksburg, VA.



## Short Courses & Continuing Education (29)

### **Brian Bond**

- Hardwood Lumber Drying. Bond, B. July 20-21, 2015. In Cooperation with Flooring Inspectors Guild of North America. Bond, B., J. Loferski, and D. Hindman. July 30-31, 2015. Denver, CO. Woodmark. Orange, VA.
- Introduction to Hardwood Lumber Drying. Bond, B. August 27, 2015. American NHLA. Salem, VA.
- Sawing For Grade. Paul Bunyan Show. Cambridge, OH. October 2, 2016.
- Basics of Hardwood Lumber Grading. Paul Bunyan Show, Cambridge, OH. October 2, 2016.
- Hardwood Manufacturing. Cochran Fellows
- Basics of Hardwood Lumber Grading. Cochran Fellows.
- Hardwood Lumber Drying. Cochran Fellows.
- Wood as a Raw Material for Cabinets. American Woodmark. Jan 27, 2016. Winchester, VA.
- Category-12 Recertification. April 7, 2016. Lexington, VA.
- Category-12 Recertification. April 7, 2016. Madison, VA.
- Richmond Expo Educational Session. May 12, 2016. Brian Bond, B. Quesada, H., D. Hindman, M. Snow, and P. Araman. Richmond, VA.
- Wood as a Raw Material for Staves and Cooperage. Bond, B. Independent Stave. Lexington, KY. May 20-21, 2016.
- Flooring Inspectors Guild of North America. Bond, B., J. Loferski, and D. Hindman. June 13-17, 2016. Blacksburg, VA.

### **Robert Bush**

Arranged student participation in *the International Corrugated Packaging Foundation* conference in East Lansing, Michigan (both in person and via videoconference).



- Completed short courses on *Canvas* to prepare from transition from *Scholar*.
- Spent a lot of time working with students in the laboratory helping them to develop *Hands on, Minds on* skills.
- Worked with Irish colleagues to plan a summer 2017 *Study Aboard* course in Galway, Ireland.

### **Tom Hammett**

- Evaluation of extension development and capacity development in the Republic of Georgia. Finalized during the Summer 2015.
- Elected member of Board of the Friends of the Blacksburg Farmers' Market (winter 2016); selected to serve on the marketing development team.
- Series of workshops presented to develop teaching and learning capacity at the Petroleum Institute, Abu Dhabi. December 13 and 14, 2015.

### **Henry Quesada-Pineda**

- Bond, B. (co-chair), Quesada-Pineda, H.J. (Co-chair), Hindman, D., Loferski, J., Parrot, K., and Ishida, A. 2016. Carr Symposium on Innovative Use of Wood. March 18-21, 2016. Blacksburg, VA.
- Haviarova, E. (co-organizer and presenter), and Quesada-Pineda, H.J. (co-organizer and presenter). 2016. Lunch and Learn Series: Sustainable Product Development and Lean Logistics. April 4, 2016. Jasper, IN58.
- Withers, J., and Quesada-Pineda, H.J., 2016. Earth Week: Biomass Power Plant Demonstration. April 18, 2016. Blacksburg, VA.
- Smith, B. (organizer and presenter), Quesada-Pineda, H.J. (presenter), Bond, B., Snow, M. Clark, C. and Withers, J. 2015. Secondary Processing in the Hardwood Industry: Cochran Fellows. December 8-December 11, 2015. Blacksburg, VA.
- Quesada-Pineda, H.J. (presenter and co-organizer), Bond, B. (presenter and co-organizer), Hindman, H. Araman, P., Buehlmann, U. and Snow, M. 2016. VFPA Educational Session. May 12, 2016. Richmond, VA.



- Quesada-Pineda, H.J. 2016. Vocational Training Modules in Agroforestry: A Case Study in Nicaragua. FNR- Graduate Student Seminar. Pfendler Hall, room 241. Purdue University. April 5. West Lafayette, IN.

## **Courses Taught (23)**

### **SBIO 1234. Introduction to Wood Design and Craftsmanship**

*Semester: Fall 2015                      Credit Hours: 3*

*Instructors: Earl Kline/Urs Buehlmann*

*Students: 16*

### **SBIO 2104. Principles of Packaging (Section 1, 2)**

*Semester: Fall 2015                      Credit Hours: 3*

*Instructor: Robert Bush*

*Students: 44*

### **SBIO 2614. Introduction to Forest Products Marketing**

*Semester: Spring 2016      Credit Hours: 3*

*Instructor: Robert Bush*

*Students: 49*

### **FOR 2784. Global Forests and Forest Products**

*Semester: Fall 2015      Credit Hours: 3*

*Instructor: Tom Hammett / Urs Buehlmann*

*Students: 36*

### **SBIO 2784. Global Forests and Forest Products**

*Semester: Fall 2015      Credit Hours: 3*

*Instructor: Tom Hammett / Urs Buehlmann*

*Students: 28*

### **SBIO 3004. Sustainable Nature-based Enterprises**

*Semester: Fall 2015      Credit Hours: 3*

*Instructor: Tom Hammett / Urs Buehlmann*

*Students: 25*

### **SBIO 3445. Wood Design and Innovation I**

*Semester: Fall 2015                      Credit Hours: 3*

*Instructor: Earl Kline / Urs Buehlmann*

*Students: 17*

### **SBIO 3446. Wood Design and Innovation II**

*Semester: Spring 2016      Credit hours: 3*

*Instructor: Earl Kline / Urs Buehlmann*

*Students: 17*



**SBIO 3454 Society, Sustainable Biomaterials and Bioenergy**

Semester: *Fall 2015* Credit Hours: 3

Instructor: *Tom Hammett*

Students: 32

**SBIO 3554. Sustainable Biomaterials Enterprises**

Semester: *Spring 2016* Credit Hours: 3

Instructor: *Urs Buehlmann*

Students: 9

**SBIO 3464. Forest Products Business Systems**

Semester: *Spring 2015* Credit Hours: 3

Instructor: *Henry Quesada-Pineda*

Students: 4

**GEOG 3954 Humans and the Environment**

Semester: *Fall 2015* Credit Hours: 3

Instructor: *Tom Hammett*

Students: 16

**GEOG 3954 Humans and the Environment**

Semester: *Fall 2015* Credit Hours: 3

Instructor: *Tom Hammett*

Students: 16

**SBIO 3954 Global Issues in Sustainability**

Semester: *Spring 2016* Credit Hours: 3

Instructor: *Henry Quesada-Pineda*

Students: 12

**SBIO 3954 Culture, Natural Resources, and Design in Ireland**

Semester: *Spring 2016* Credit Hours: *variable*

Instructor: *Robert Bush*

Students: 15

**SBIO 4054. Packaging Systems and Design Practicum**

Semester: *Spring 2016* Credit Hours: 3

Instructor: *Robert Bush/Laszlo Horvath/Young Kim*

Students: 4

**NR 4105. Leadership Institute**

Semester: *Fall 2015* Credit hours: 3

Instructor(s): *Brian Bond*

Students: 12





**NR 4106. Leadership Institute**

*Semester: Spring 2016                      Credit Hours: 3*  
*Instructor(s): Brian Bond*  
*Students: 12*

**SBIO 4715, Wood House I**

*Semester: Fall 2015                      Credit Hours: 3*  
*Instructor: Brian Bond*  
*Students: 20*

**SBIO 4974. Independent Study. Market analysis of White Oak from the VT Grove**

*Semester: Fall 2015                      Credit Hours: 1*  
*Instructor: Earl Kline*  
*Students: 1*

**SBIO 4974. Independent Study. Creating a digital tree**

*Semester: Spring 2016                      Credit Hours: 2*  
*Instructor: Earl Kline*  
*Students: 1*

**SBIO 5974. Independent Study. Enhancing market value of wood products using urban trees**

*Semester: Spring 2016                      Credit Hours: 3*  
*Instructor: Earl Kline*  
*Students: 1*

**SBIO 5984. Professional skills for SBIO Graduate Students**

*Semester: Spring 2016                      Credit Hours: 3*  
*Instructor: Robert Bush*  
*Students: 9*

**Center Engagement and Outreach**

***Brian Bond,***

**Engagement and Outreach:**

Carr Seminar and Wood Camper Competition. Lead Organizer. March, 15-21, 2016. Bond, B. H. Quesada, J. Loferski, D.E. Kline, D. Hindman, K. Parrott, and A. Asada.



### **Professional Service:**

#### **University**

- Participation in the Development of Areas
- Guest lecture in the department of Apparel, Housing and Resource Management

#### **College**

- Faculty Affairs Committee (College)

#### **Department**

- Futures Committee (SBIO)
- P & T Committee (SBIO)

#### **Professionally**

- Board member for the Woodwork Career alliance
- Board member to the Society of Wood Science and Technology
- Reviewer of scientific paper for FP, SWST and Journal of European Wood Science
- Treasurer and secretary of the Allegheny Kiln Club

### ***Urs Buehlmann,***

#### ***Engagement and Outreach:***

- Leadership and Skills Development Training - Module C. U. Buehlmann. Bern University of Applied Sciences, Center for Development and Cooperation, CDC. Sarajevo, Bosnia and Herzegovina. January 27 – 30, 2016. 25 participants.
- Participated in NLI event entitled "Introduction to the Windows 8.1 Tablet."
- Successfully concluded online cyber awareness training from the Virginia Tech IT Security Office.

#### ***University Service***

- Member Faculty Association Standing Committee: Research, Extension, and International Policy and Affairs, 2015 – present.
- Honor System Faculty Panelist/Counselor, 2011 – present.
- Member, College of Natural Resources and Environment Planning and Budget Committee, 2008 – present.



- Member, Department Curriculum Committee, 2008 – present.

### ***Service to students***

- Faculty Advisor. 2009 – present. Lean@Virginia Tech.

### **Professional Service:**

- **Scientific committee.** International Scientific Conference on Hardwood Processing (ISCHP 2015). Québec, Canada. October 2015.
- **Organizing committee.** International Scientific Conference on Hardwood Processing (ISCHP 2015). Québec, Canada. October 2015.
- **Buehlmann, U.** 2015. Session chair. Advanced Fenestration Session. 10th Energy Forum Conference. Bern, Switzerland. November 2015.
- **Buehlmann, U.** 2015. Organizer of session and session chair. United States of America (USA) as the IHF guest country. 21st International Wood Construction Conference (IHF) 2015. Garmisch-Partenkirchen, Germany. December 2015.

## **Robert J. Bush,**

### **Engagement and Outreach:**

- Served as primary advisor for *over 50* undergraduate students during 2015-16.
- Participating instructor in the *Sustainability Pathways Minor*.
- Helped to arrange and accompanied students attending *Pack Expo* (largest packaging trade show in U.S.; Las Vegas) and *Pack Jam* (student packaging conference and contest, Menomonie, WI).
- Mentored four students as they prepared and submitted entries in national packaging design competitions.
- Worked with packaging companies to develop internship, summer employment, and other experiential opportunities for undergraduate students.
- Worked with Associate Department Head to maintain and update check sheets for SBIO and PS&D programs.



- Worked with other VT departments to gain course access for PS&D students.
- Met with and advised students interested in *the Packaging Systems & Design* program. Helped transfer students plan their transitions to PS&D.
- Developed program and student assessment plans. Implemented plans and gained financial support for assessment activities. Attended assessment planning workshops.
- Worked with CNRE Development Officer to secure support for educational programs and students.
- Guest lecturer in *Seeking Sustainability* (NR 1115) and *Sustainable Nature-Based Enterprise* (SBIO 3004).
- Participated in Study Abroad Faculty Leader Training workshop.
- Hosted guest speakers in *Principles of Packaging* and *Introduction to Forest Products Marketing*.

My outreach and engagement efforts during the previous year have centered on developing new and continued support for the *Packaging Systems & Design* program. I have worked to develop/maintain relationships with the following and other organizations with the goal of advancing the packaging program and its students:

- American Forest and Paper Association/Paperboard Packaging Alliance (Obtained \$19,500 in student scholarships since 2001).
- Glass Packaging Institute (received donations of equipment and materials; guest speakers).
- Sustainable Packaging Alliance (received donation of software).
- International Corrugated Packaging Foundation (received support for student travel to conferences and student scholarships).
- Packaging Machinery Manufacturers Institute (support for student and faculty travel to conferences).
- Support from Gruppo Phoenix for the PS&D program (\$20,000).

### **Professional Service**

- Served on SBIO Student Policy and Curriculum Committee.



- Chair of SBIO Promotion and Tenure Committee.
- Served on Virginia Tech Faculty Senate.
- Served on Virginia Tech University Council.
- Served as panel member for Virginia Tech Undergraduate Honor System.
- Served on selection committee for Virginia Tech Global Education Grants program.
- Served on SBIO Space Committee.

***A.L. HAMMETT (Tom),***

**Engagement and Outreach:**

**Diversity efforts**

- Member of the newly organized Virginia Tech Appalachian Caucus; focused on seeking ways to involve local folk, from neglected groups, especially in the depressed mountain areas, in the region, in the mainstream of Virginia Tech.
- Recruited (6) female students to the department.
- Working with Syrian refugee (spouse of visiting scholar) at Virginia Tech.
- Worked with Asian student groups (especially Nepal) to garner support for their activities.

I participated in all recruiting events when possible, interacted with the EMC when needed, and advised students that were considering taking our study abroad courses.

- Recruiting activities included: Majors Fair set up and staffed booth, September 30, 2015; Participated in 2015-16 CNRE career Fair; Participated in Virginia Tech Business Career Fair, January 26, 2016; and Gobblerfest, September 2015.



## **Professional Service:**

### **University Service:**

- Taught courses for the NRI (FDI) program (on going – each year).
- Participated in NRI faculty focus group forum with other senior faculty on developing self-directed learning programs (April 2016).
- Nominated and accepted as member of the new ADVANCEVT and INCLUSIVEVT faculty committees.
- Helped organize and serve as member of steering committee for Virginia Tech's Appalachian Caucus.
- Service to international visitors. For instance, member of Research Collaborative team, Virginia Tech - Hosted Willy Chipteta, a visiting scientist from Malawi. July/August 2015.

### **Professional Service:**

- IUFRO Division 5: coordinator of Non-wood Forest Products Research Group.
- Board member and Chair, Tshampa Foundation (Blacksburg and Nepal).
- New River Land Trust, member of nominating committee.
- Reviewer for journals (Forest Products Journal, etc.).
- Society of American Forestry (member since 1974).
- Forest Products Society (member since 1986).
- North America Agricultural College and Teachers Association (NACTA) – member of the International Committee.
- Centre of Minor Forest Products (COMFORPTS), Advisory board member, Dehradun, India.



**Earl Kline,**

**Engagement and Outreach:**

- Youth Conservation Camp. Organized activities and hosted a group of over 60 students and teachers from the Youth Conservation Camp. Demonstrations included mechanical testing of wood, packaging, and Computer Manufacturing Technology. July 14, 2015, Brooks Forest Products Center, Virginia Tech.
- Gobblerfest. Organized student recruitment activities for SBIO and PSD majors in CNRE's "Sustainability Alley". September 4, 2015.
- Virginia Science Festival. Organized Booth and Display for SBIO and PSD activities at the science festival. Virginia Tech, Sept. 26, 2015.
- Governor's School Visit. Organized activities and hosted a visit of over 50 students and teachers. March 7, 2016. Brooks Forest Products Center, Virginia Tech.
- Kindergarten to College program. Organized activities and hosted a visit of over 25 students and teachers. April 1 and April 8, 2016. Cheatham Hall, Virginia Tech.
- Carr Symposium. On organizing committee to plan, organize and conduct a student wood camper competition and symposium on creative uses of wood in design. Virginia Tech, March 18-12, 2016.

**University Service:**

- Promotion and recruitment manager of the Department of Sustainable Biomaterials.
- CNRE representative to the University Undergraduate Curriculum Committee for Liberal Education.
- Member of the CNRE Student Policy and Affairs Committee.
- SBIO Student Policy and Curriculum Committee (substituting for Joe Loferski while on sabbatical)
- Peer teaching evaluation (with Brian Bond) of Dan Hindman's SBIO 3314 "Mechanical Properties of Wood"



- Peer teaching evaluation (with Dan Hindman) of Laszlo Horvath's SBIO 4014 "Packaging Design for Global Distribution".

### **Professional Service:**

As the SBIO recruitment and promotion manager I have developed and reviewed SBIO recruitment materials to promote diversity efforts. I have selected and worked with a diverse group of students to serve as departmental "ambassadors" to engage and recruit from a more diverse population of prospective students.

## **Henry Quesada-Pineda**

### **Engagement and Outreach:**

- Multivariate Statistical Analysis. PhD Business Program at Costa Rica Tech. October 12-December 12, 2015. Hybrid class.
- Lean Logistics. MS program in Industrial Engineering at Costa Rica Tech. June-August, 2015.
- Lean Management. Intras. Santo Domingo, Dominican Republic. July 2015.

### **University Service**

- Co-faculty advisor for Student Renewable Resources club. Since 2015.
- Sustainability Institute Fellow. CNRE. Virginia Tech. Since 2015.
- Future's Committee. Department of Sustainable Biomaterials. Since 2014.
- Tec Empresarial Journal. Member of the Editorial Board. Since 2010.
- Bioproducts Business Journal. Member of the Editorial Board. Since 2015.
- Associate Director of Center for Forest Products Business. Since 2010.
- Society of Wood Science and Technology. My Role: Member of the Accreditation Committee. Organization Type: Professional Society. Since 2014.
- IUFRO. My Role: Division 5, Research Party 5.04.13 leader. Since 2012.





## Members (34)

### **Askins Publishing / American Lumber and Pallet Magazine**

PO Box 1136  
Fayetteville, TN 37334

**Phone:** (931) 433-1010  
**Fax:** (931) 433-1081  
**Email:** [bill@amlumber.com](mailto:bill@amlumber.com)  
**Website:** <http://www.amlumber.com>

**Contact:**  
W.R. (Bill) Askins, Jr., President

American Lumber and Pallet is a monthly buy and sell publication which specializes to sawmills, pallet mills, woodworking/veneer mills and logging operations.

### **Anderson-Tully Lumber Company**

PO Box 38  
Vicksburg, MS 39180

**Phone:** (601) 636-3876  
**Fax:** (601) 636-4719  
**Email:** [richardw@andersontully.com](mailto:richardw@andersontully.com)  
**Website:** <http://www.Anderson-Tully.com>

**Contact:** Richard Wilkerson, Vice President of Lumber Sales

### **Appalachian Hardwood Manufacturers, Inc.**

PO Box 427  
High Point, NC 27261

**Phone:** (336) 885-8315  
**Fax:** (336) 886-8865  
**Email:** [tom@appalachianwood.org](mailto:tom@appalachianwood.org)  
**Website:** [www.appalachianwood.org](http://www.appalachianwood.org)

**Contact:**  
Tom Inman, President

AHMI is an association that promotes logs, lumber and products from the Appalachian region.

### **Atlanta Hardwood Corporation**

5596 Riverview Road  
Mableton, GA 30126-2914

**Phone:** (404) 792-2290  
**Fax:** (404) 792-2294  
**Email:** [ahc@hardwoodweb.com](mailto:ahc@hardwoodweb.com)  
**Website:** [www.hardwoodweb.com](http://www.hardwoodweb.com)

**Contacts:**  
James W. Howard, Jr., President  
Marty Payny, Sales Manager  
Patrick G. Altham, VP Export

**Products:**  
boards, common; boards, select; flooring;  
moulding

**Species:**  
alder, ash, basswood, beech, cherry, hickory,  
imported hardwoods, mahogany, hard maple, soft  
maple, white maple, red oak, white oak, poplar,  
walnut, eastern white pine



### **Baillie Lumber Company**

PO Box 6  
Hamburg, NY 14075

**Phone:** (716) 649-2850  
**Fax:** (716) 649-2811  
**Email:** [information@ballie.com](mailto:information@ballie.com)  
**Website:** [www.baillie.com](http://www.baillie.com)

#### **Contacts:**

Jeff Meyer, President  
Kenneth A. Philbrick, Yard Operations Manager

#### **Products:**

boards, common; boards, select

#### **Species:**

ash, basswood, beech, birch, cherry, red elm,  
hickory, hard maple, soft maple, red oak, white  
oak, poplar, walnut

### **Boehm-Madisen Lumber Co., Inc.**

PO Box 906  
Brookfield, WI 53008-0906

**Phone:** (262) 544-4660  
**Fax:** (262) 544-0795  
**Email:** [boehmmad@execpc.com](mailto:boehmmad@execpc.com)

#### **Contacts:**

Thomas J. Kestly, Sr.

#### **Products:**

boards, common; boards, select; flooring; timbers;  
cutstock; log cabin siding; glued-up stock; pattern  
stock; decking, laminated; decking, roof;  
dimension, furniture; dimension, precut; edge-  
glued products; fingerjointed; stepping; millwork,  
moulding & trim; plywood, hardwood; plywood,  
prefinished; shops & factory grades; siding,  
decking; treated products

**Species:** hardwoods, softwoods

### **Bingaman & Son Lumber, Inc.**

PO Box 247  
Kreamer, PA 17833

**Phone:** (570) 374-1108  
**Fax:** (570) 374-5342  
**Email:** [cbingaman@bingamanlumber.com](mailto:cbingaman@bingamanlumber.com)  
**Website:** [www.bingamanlumber.com](http://www.bingamanlumber.com)

#### **Contacts:**

Chris Bingaman, Vice President Operations/Sales  
Manager

#### **Products:**

boards, common; boards select; glued-up stock;  
furniture dimension

#### **Species:**

ash, basswood, birch, cherry, hickory,  
mahogany, hard maple, soft maple, red oak,  
white oak, poplar, black walnut, eastern white  
pine

### **Columbia Forest Products**

PO Box 1148  
Old Fort, NC 28762

**Phone:** (800) 637 – 1609,  
(828) 724 - 4191  
**Fax:** (828) 724-4066  
**Email:** [sfranklin@columbiaforestproducts.com](mailto:sfranklin@columbiaforestproducts.com)  
**Website:** [www.columbiaforestproducts.com](http://www.columbiaforestproducts.com)

#### **Contact:**

Don Carter, Human Resource Manager  
Ed Woods, VP Sales and Marketing

#### **Products:**

hardwood veneer; hardwood plywood; laminated  
products; flooring; veneer raised panels and door  
inserts

**Species:** red oak, birch, maple, cherry, ash, pine,  
mahogany, walnut, white oak, teak



**Conner Industries, Inc.**

3800 Sandshell Dr., Ste 235  
Fort Worth, TX 76137

**Phone:** (817) 847-0361  
**Fax:** (817) 232-9264  
**Email:** [info@connerindustries.com](mailto:info@connerindustries.com)  
**Website:** [www.connerindustries.com](http://www.connerindustries.com)

**Contacts:**

H. Grady Payne, III, Vice President

**Products:**

Dimension stock; boards; timbers; panel products; engineered wood products; pallet and crating lumber

**Species:**

SYP; SPF; and mixed hardwoods

**Danzer Group**

Danzer Veneer Americas  
PO Box 3455  
Williamsport, PA 17701

**Phone:** (570) 322-4400  
**Fax:** (570) 322-7213  
**Email:** [vijay\\_reddy@danzerveneer.com](mailto:vijay_reddy@danzerveneer.com)  
**Website:** [www.danzerveneer.com](http://www.danzerveneer.com)

**Contact:**

Dr. Vijay Reddy, Vice President  
(724)827-8366 Darlington, PA.

**Products:**

veneers for panel, furniture, door, cabinet, edge-banding and flooring, dimension, dry; cutstock; glued-up stock; moulding; fingerjoint stock; furniture dimension; window & sash stock

**Species:**

white ash, aspen, basswood, birch, cherry, black cypress, hickory, hard maple, poplar, red oak, soft maple, white maple, white oak, walnut ash

**Cotton-Hanlon, Inc.**

PO Box 65  
Cayuta, NY 28603

**Phone:** (607) 594-4600  
**Fax:** (607) 594-4604  
**Email:** [ch@onlineimage.com](mailto:ch@onlineimage.com)  
**Website:** [www.cottonhanlon.com](http://www.cottonhanlon.com)

**Contacts:**

Mike Hanlon, President

**Species:**

cherry, maple

Cotton-Hanlon, Inc. is a timberland management company. Tree species include Red Oak, Maple, Ash and Cherry.

**Fitzpatrick & Weller, Inc.**

PO Box 490  
Ellicottville, NY 14731-0490

**Phone:** (716) 699-2393  
**Fax:** (716) 699-2893  
**Email:** [sales@fitzweller.com](mailto:sales@fitzweller.com)  
**Website:** [www.fitzweller.com](http://www.fitzweller.com)

**Contacts:**

Dana Fitzpatrick, Executive Vice President

**Products:**

boards, common; boards, select; dimension, dry; glued-up stock; moulding; dimension, furniture

**Species:**

ash, white ash, basswood, beech, birch, cherry, hickory, maple, hard maple, soft maple, white maple, red oak, white oak, poplar, hemlock, eastern white pine



**Frank Miller Lumber Company, Inc.**

1690 Frank Miller Road  
Union City, IN 47390

**Phone:** (765)-964-3196  
**Fax:** (765)-964-6618  
**Email:** [clea@frankmiller.com](mailto:clea@frankmiller.com)  
**Website:** [www.frankmiller.com](http://www.frankmiller.com)

**Contacts:**

Martha Miller Mathias – President, CEO, COB

**Products:**

boards, common; boards, select; dimension, green, quarter rift lumber

**Species:**

white ash, basswood, beech, cherry, elm, hackberry, hard maple, soft maple, white maple, red oak, white oak, yellow poplar, black walnut

**Granite Hardwoods, Incorporated**

PO Box 226  
Granite Falls, NC 28630

**Phone:** (828)-396-3395  
**Fax:** (828)-396-8182  
**Email:** [sales@granitehardwoods.com](mailto:sales@granitehardwoods.com)  
**Website:** [www.granitehardwoods.com](http://www.granitehardwoods.com)

**Contact:**

Richard W Buchanan, III, President

**Products:**

boards, common; boards, select

**Species:**

ash, red oak, hard maple, poplar, elm, cherry, soft maple, hickory-pecan, walnut, white oak, basswood

**Godfrey Lumber Company, Inc.**

PO Box 615  
Statesville, NC 28677

**Phone:** (704) 872-6366  
**Fax:** (704) 872-2341  
**Email:** [barry@godfreylumber.com](mailto:barry@godfreylumber.com)  
**Website:** [www.godfreylumber.com](http://www.godfreylumber.com)

**Contact:**

Barry Godfrey, Vice President

**Products:**

boards, common; boards, select; log cabin siding; pattern stock

**Species:**

oak, poplar, yellow pine, white pine, eastern white pine

**Hardwood Distributors Association**

**C/O Heidler Hardwood Lumber Company**

2559 S Damen Ave  
Chicago, IL 60608

**Phone:** (773) 847-7444  
**Fax:** (773) 847-7833  
**Website:** [www.hardwooddistributors.org](http://www.hardwooddistributors.org)

**Contacts:**

Skip Heidler

Hardwood Distributors Association supports the wholesale distribution yards involved in the merchandising of hardwood lumber, plywood, and flooring, including additional items manufactured from same; or any additional lumber and forest products that custom and practice has, or may develop, in the represented marketing regions.



### **Hardwood Manufacturers Association**

665 Rodi Road, suite 305  
Pittsburgh, PA 15235

**Phone:** (412) 244-0440

**Fax:** (412) 244-9090

**Email:**

**Website:** info@[hardwood.org](http://hardwood.org)

**Contacts:**

Linda Jovanovich

HMA is an association that assists the furniture, flooring, kitchen and bath, and moulding and woodwork industries with hardwood information.

### **Hardwood Market Report**

PO Box 2633  
Memphis, TN 38088-2633

**Phone:** (901) 767-9126

**Fax:** (901) 767-7534

**Email:** [hmr@hmr.com](mailto:hmr@hmr.com)

**Website:** [www.hmr.com](http://www.hmr.com)

**Contact:**

Judd Johnson, Editor

Hardwood Market Report, established in 1922, is a weekly publication giving benchmark pricing information and marketing commentary on North American hardwood lumber and the hardwood products industry.

### **Hardwood Publishing Company, Inc.**

PO Box 471307  
Charlotte, NC 28274-1307

**Phone:** (704) 543-4408

**Fax:** (704) 543-4411

**Email:** [george@hardwoodreview.com](mailto:george@hardwoodreview.com)

**Website:** [www.hardwoodreview.com](http://www.hardwoodreview.com)

**Contact:**

George Barrett, Editor-Hardwood Review  
Andy Johnson, Associate Editor

Hardwood Publishing Company, Inc. are publishers of Weekly Hardwood Review and Hardwood Review Export. They also support Hardwood Search which allows companies to buy and sell lumber online.

### **Industrial Timber & Lumber Company**

23925 Commerce Park  
Beachwood, OH 44122

**Phone:** (216) 831-3140

**Fax:** (216) 831-4734

**Email:** [sales@itlcorp.com](mailto:sales@itlcorp.com)

**Website:** <http://www.itlcorp.com>

**Contacts:**

Larry Evans, President



### **ISK Biocides, IBC manufacturing**

416 E. Brooks Road  
Memphis, TN 38109-0158

**Phone:** (901) 344 5350

**Fax:** (901) 344 5387

**Email:** [info@ibio.com](mailto:info@ibio.com)

**Contact:**

Joe Ignatoski, President , COO  
Lance Johnson, District Sales Supervisor

**Products:**

sap stain and mold preventatives; industrial wood preservatives; WOODguard and Natural Home--wood protection for the homeowner.

### **Southeastern Lumber Manufacturers Association**

200 Greencastle Road  
Tyrone, GA 30290

**Phone:** (770) 631 - 6701

**Fax:**

**Email:** [alexis@slma.org](mailto:alexis@slma.org)

**Website:** [www.slma.org](http://www.slma.org)

**Contact:**

Brian Smalley, President

### **Jim C. Hamer Company**

PO Box 418  
Kenova, WV 25530

**Phone:** (304) 453-6381

**Fax:** (304) 453-6587

**Email:** [jdearing@jimchamer.com](mailto:jdearing@jimchamer.com)

**Website:** [www.jimchamer.com](http://www.jimchamer.com)

**Contacts:**

Steve Hamer, President

**Products:**

boards, common; boards, select; dimension, furniture

**Species:**

ash, beech, hard maple, soft maple, red oak, white oak, poplar

### **Structural Systems, Inc.**

201 Poplar Avenue  
Thurmont, MD 21788

**Phone:** (800) 800-7414

**Fax:** (301) 271-5252

**Email:** [jsteinbruck@ssi-midatl.com](mailto:jsteinbruck@ssi-midatl.com)

**Website:** <http://www.ssi-midatl.com>

**Contacts:**

John Steinbruck

**Products:**

Distributes building materials such as Trus Joist engineered wood, and USP connectors, and Jeld-Wen, Silverline, Therma-Tru, and Summit windows and doors. Manufacturer of trusses and wall panels from premium Southern Yellow Pine and SPF lumber.



**Spartanburg forest Products, Inc.**

1431 Highway 101 South  
Greer, SC 29651

**Phone:** (864) 699-3100

**Fax:** (864) 699-3101

**Email:** [smichael@gsponline.net](mailto:smichael@gsponline.net)

**Website:** [www.sfpinc.biz](http://www.sfpinc.biz)

**Contact:**

Stephan W. Michael, President/CEO

Spartanburg Forest Products, Inc. is a marketing and management organization, focusing in treated and engineered wood products.

**T & S Hardwoods, Inc.**

Harrisburg Road  
PO Box 1233  
Milledgeville, GA 31059

**Phone:** (478) 453-3492

**Fax:** (478) 453-9002

**Email:** [dsmith@tshardwoods.com](mailto:dsmith@tshardwoods.com)

**Website:** [www.tshardwoods.com](http://www.tshardwoods.com)

**Contacts:**

Larry N. Thompson III., President

**Products:**

boards, common; boards, select; dimension, green;  
railroad ties; timbers

**Species:**

brown ash, cherry, cottonwood, soft elm, sap gum,  
hickory, soft maple, red oak, white oak, pecan,  
yellow poplar, sycamore, black walnut, cedar,  
cypress



### **The Shannon Lumber Group**

PO Box 16929  
Memphis, TN 38186-0929

**Phone:** (662) 393-3765  
**Fax:** (662) 393-2063  
**Email:** [jbrown@jtshannon.com](mailto:jbrown@jtshannon.com)  
**Website:** [www.jtshannon.com](http://www.jtshannon.com)

#### **Contacts:**

Jack Shannon - President  
Jennie Brown, Administrative Officer

#### **Products:**

boards, common; boards, select; dimension, dry;  
dimension, green; fingerjoint stock; dimension,  
furniture; glued-up stock; pattern stock; moulding

#### **Species:**

white ash, cherry, cottonwood, mahogany, hard  
maple, soft maple, red oak, white oak, poplar,  
black walnut

### **USDA Forest Service**

Northern Research Station  
180 Canfield St.  
Morgantown, WV 26505

**Phone:** (304) 285 – 1500

#### **Contact:**

Ed Cesa, Research Scientist

### **USDA Forest Service**

Southern Research Station  
1650 Research Center Dr.  
Blacksburg, VA

**Phone:** (540) 231 – 1707

#### **Contact:**

Phil Araman, Senior Research Scientist

### **UC Coatings Corporation**

PO Box 1066  
Buffalo, NY 14215

**Phone:** (716) 833-9366  
**Fax:** (716) 833-0120  
**Email:** [tom@uccoatings.com](mailto:tom@uccoatings.com)  
**Website:** [www.uccoatings.com](http://www.uccoatings.com)

#### **Contact:**

Norman E. Murray, Chairman

#### **Products:**

ANCHORSEAL - End sealer for logs and  
lumber, is the best known brand name in  
the world for wax emulsion end sealers.  
GEMPAINT and GEMPAINT\*PLUS  
BATES Boothcoating / Glue Release makes it  
easy to clean dried glue off machines and  
equipment.

### **Virginia Forest Products Association**

220 East Williamsburg  
PO Box 160  
Sandston, VA 23150-0160

**Phone:** (804) 737-5625  
**Fax:** (804) 737-9437  
**Email:** [vfpa@att.net](mailto:vfpa@att.net)  
**Website:** [www.vfpa.net](http://www.vfpa.net)

#### **Contact:**

Susan Jennings, President

VFPA is an association active in promoting state  
and local codes and regulations developed to  
provide safety to life and property from the  
hazards of fire.





### **Weaber, Inc.**

1231 Mt Wilson Rd  
Lebanon, PA 17042

**Phone:** (717) 867-2212  
**Fax:** (717) 867-1711  
**Email:** [matt@weaberlumber.com](mailto:matt@weaberlumber.com)  
**Website:** [www.weaberlumber.com](http://www.weaberlumber.com)

**Contact:**  
Matt Weaber, President

#### **Products:**

S4S boards and moulding; finger jointed poplar; finger jointed and edge glued material; random width and ripped to width hardwoods; ties; pallet cants; logs; secondary hardwood products

**Species:**  
red oak, white oak, poplar, ash

### **Wood Component Manufacturers Association**

741 Butlers Gate, Suite 100  
Marietta, GA 30068

**Phone:** (770) 565-6660  
**Fax:** (770) 565-6663  
**Email:** [skelawser@aol.com](mailto:skelawser@aol.com)  
**Website:** [www.woodcomponents.org](http://www.woodcomponents.org)

**Contact:**  
Steven W. Lawser, CAE  
Executive Director

The WCMA represents U.S. and Canadian manufacturers of wood component products. Member companies produce a wide range of rough, semi- and fully machined hardwood, softwood and engineered wood components for the furniture, cabinet, millwork, building products, and related wood product industries

### **W. M. Cramer Lumber Company**

PO Box 2888  
Hickory, NC 28603

**Phone:** (828) 397-7481  
**Fax:** (828) 397-3763  
**Email:** [wmc@cramerlumber.com](mailto:wmc@cramerlumber.com)  
**Website:** [www.cramerlumber.com](http://www.cramerlumber.com)

**Contact:**  
Wendell Cramer, President

#### **Products:**

boards, common; boards, select

#### **Species:**

poplar, red oak, white oak, ash, hickory, beech, soft maple, cherry, hard maple, elm, basswood, chestnut, mahogany, white pine, ponderosa pine

### **Wood Preservers, Inc.**

PO Box 158  
Warsaw, VA 22572

**Phone:** (804) 333-4022  
**Fax:** (804) 333-9269  
**Email:** [mwright@woodpreservers.com](mailto:mwright@woodpreservers.com)  
**Website:** [www.woodpreservers.com](http://www.woodpreservers.com)

**Contact:**  
Morgan Wright, President

#### **Products:**

boards; softwood dimension; timbers; ties

#### **Species:**

loblolly pine, longleaf pine, shortleaf pine