

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, 2017 - June 30, 2018



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Letter from Director:

Dear Colleagues:

It is hard to believe that another year has gone by and I am here wondering again what to share with you about the Center. Three months ago, we graduated 40 students from our program and some of them are now working in your companies. Our department's undergraduate program has grown to nearly 200 students, and it is probably the largest in the country. We believe the changes we have made in recent years regarding our undergraduate degrees and our name change are starting to attract a broader range of students to our profession. I have often told students that our program is the applied field of business, engineering, physics, or chemistry to our natural resources and wood. Whether it is the student who has a business interest and wants to go into international marketing or the student who has an engineering interest and wants to lean up your mill, our undergraduate program allows students to apply these disciplines to wood products. We remain committed to providing the best marketing, manufacturing, and business education in forest products in North America. Our goal remains to attract and train good students who can help your companies compete in this changing world marketplace.

I have now completed six years as the department head. It is nice being back in the department with my colleagues and directing such a successful endeavor. We are fortunate to have some of the leading scientists in our field working in the department. I want to thank those of you who took time to visit us this past year and spend time with our students. Your interest and experience help us demonstrate the great opportunities that exist for careers in wood products. Students always comment on how they love to hear from our industry partners. Your internships, scholarships and job opportunities demonstrate the partnership that is needed to help us attract and train your future employees. If you would like to visit the department and speak with our students, please do not hesitate to contact me.

Your center has had a good year. Our faculty accomplishments are listed later in this report. We awarded over \$25,000 of scholarships in 2017 and will award nearly that amount again in 2018. Your donations make this possible and allow us to better train our students for this changing wood products industry. We have updated our website to provide more information, so please visit us at <http://www.cfpb.vt.edu>. I thank you for your continued support of our center. If there is anything I can do, please feel free to contact me at 540-231-7679 or rsmith4@vt.edu.

Sincerely,

Bob Smith

“Education is the passport to the future, for tomorrow belongs to those who prepare for it today.”

Malcolm X



Participating Faculty and Staff

Robert Smith	<i>Director, Department Head and Professor</i>	rsmith4@vt.edu
Henry Quesada	<i>Assistant Director and Associate Professor</i>	quesada@vt.edu
Bob Bush	<i>Professor, Sustainable Biomaterials</i>	rbush@vt.edu
Tom Hammett	<i>Professor, Sustainable Biomaterials</i>	himal@vt.edu
Earl Kline	<i>Professor, Sustainable Biomaterials</i>	kline@vt.edu
Angela Riegel	<i>Program Specialist, Sustainable Biomaterials</i>	ariegel@vt.edu

Mission

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



Significant accomplishments:

Hammett, Tom. Master Online Instructor, TLOS, Virginia Tech, Blacksburg, United States, Develop and train faculty and other instructors in on-line course development and presentation

Proposals Funded:

Hammett, A. L., E. Becker, D. Hindman, and K. Edge. 2018. Vertically-integrated building information modeling for prefabricated cross-laminated timber construction, ICTAS, 02/01/2018

Kline, Earl. Wood Enterprise Institute, Virginia Tech Foundation Inc., USD 63,404 (Active: 03/01/2010 - 02/28/2020).

Kline, Earl. VTF - Nettleton Professorship, Virginia Tech Foundation Inc., USD 12,165 (Active: 11/01/2016 - 06/30/2018).

Roman, M., J. Fike, A. L. Hammett and J. Barone. 2017. Integrative doctoral training in sustainable agricultural systems, USDA-NIFA, Department of Agriculture.

Chen, Z., M. S. White, H. J. Quesada, J. D. Eisenback Evaluation of vacuum and steam heat as a methyl bromide alternative for phytosanitary treatment of hardwood and softwood logs, USDA NIFA, Department of Agriculture, USD 393,049, Principal Investigators: Chen Zhangjing Chen (45%), Marshall S. White (45%), Jonathan D. Eisenback (5%) Henry J. Quesada (5%), 12/01/2017-11/30/2019.

Refereed Publications:

Quesada Pineda H. J., R. Smith, and G. Berger (n.d.). Drivers and Barriers of Cross laminated Timber (CLT) Production and Commercialization. *BioProducts Business*. Published

Quesada Pineda, H. J., M. Brenes, and J. Madrigal Sanchez. (2017). The Influence of Demographics on Continuous Improvement Strategic Planning. *Tecnologia en March*, 30(3), 12-23.

Submitted Publications:

Quesada Pineda, H. J., Smith, R., & Liang, L. (n.d.). Green Design of a Cellulosic Biobutanol Supply Chain Network: A Case Study of Sorghum Stem Bio-butanol in Missouri. *BioResources*.

Quesada Pineda, H. J., R. Smith, and L. Liang, L. (n.d.). Design of a Physical Supply Chain Network for Cellulosic Bio-Butanol. *BioResources*.



Quesada Pineda, H. J., R. Smith, and G. Kakkar. (n.d.). Assessment of U.S. manufactured system built wooden homes as an affordable housing alternative for low income households in developing countries. *BioProducts Business*.

Quesada Pineda, H. J., J. Madrigal Sanchez, and P. Fallas. (n.d.). Implementación De Principios De Manufactura Esbelta A Actividades Logísticas: Un Caso De Estudio En La Industria Maderera. *Tecnología en Marcha*.

Trade Journal Publications Refereed:

Ignosh, J. P., and H. J. Quesada. 2017. Using Geographic Information Systems to Assist in Exploring Opportunities with Ag/Forestry Technical and Vocational Education and Training (TVET) Schools in Central America. Retrieved from <https://innovate.oired.vt.edu/>

Quesada Pineda, H. J., and B. Chaille. 2017. Lean Manufacturing Begins with and Effective Plant Audit. *Pallet Enterprises*, (September).

Extension Publications:

SBIO extension newsletter, Editor of the SBIO extension newsletter, published three times per year, 2014-Present, Editor/curator

Sustainable Innovation Management (SIM) web page, Web manager and editor of the SIM web page, 2010-Present, Editor/curator.

Other Publications:

Quesada Pineda, H. J., R. Smith, and J. Withers (n.d.). Perceptions on Internal and External Factors Impacting the U.S. Nonfood Advanced Biofuel Industry. In *Biofuel*. Intech. Retrieved from <http://www.intechopen.com/>

Graduate Thesis/Dissertations:

Li Liang, 8/28/17, Optimization of Supply Chain for non-food Cellulosic Ethanol Plants, Henry Quesada, major professor.

Gaurav Kakkar, 09/04/17, Exports of Wooden Modular Homes to Developing Countries. Henry Quesada, major professor.

Nicolas Navarro, 12/15/17, A supplier selection framework for the wood fiber supply Chain. Henry Quesada, advisor.



Presentations:

Hammett A. L, and M. Deaton. 2018. Service Without Borders: Local Development, While Fostering Leadership and Management Skills, Rotary Club, The Inn at Virginia Tech, Blacksburg, VA, 24061, Rotary Club, Blacksburg, VA, January 31, 2018.

Smith, Robert. 2017. Wood Products: Past, Present and Future. Presented at the Virginia Loggers Association Meeting in Blacksburg, VA August.

Smith, Robert. 2017. Assessing the Impacts of a Changing Natural Resource Program. Presented at Auburn University faculty at Auburn, AL, October.

Smith, Robert. 2017. Forest Products Strategic Management. Presented at Salzburg University of Applied Science, Kuchl, Austria. November.

Smith, Robert. 2018. Capturing the Future of Wood Science and Forest Products Education in the United States. Presented at the annual meeting of the Forest Products Society in Madison Wisconsin, June.

Invited Lectures and Presentations:

Hammett, A. L. (2018). Making Projects Productive in Large Classes: Lessons Learned from Across Disciplines. The Inn at Virginia Tech, Blacksburg, VA.

Hammett, A. L. and M. Rechlin. 2018. Developing Project Skills Through Experiential Learning the Case of Making Maple Syrup with Bioenergy. In CHEP, Blacksburg, VA.

Hammett, A. L. 2018. Exploring Experiential Learning in Training Natural Resource Professionals: Challenges and Opportunities - Seminar. Auburn University, Auburn, AL.

Short Courses & Continuing Education:

Hammett, A. L. 2017. First Annual Hemp Day at Virginia Tech. Introduction to hempcrete including advantages, growing of hemp, history of policies. Students then had the opportunity to make hempcrete blocks. 26 Students. November.

Quesada, H. J. 2017. 101 Wood Basics/NAWLA. Organizer and presenter. 22 students. July 2017

Quesada, H. J. 2017. Wood Basics for American Woodmark. Co-organizer and presenter. 6 students. July 2017.

Quesada, H. J. 2017. Biomass Power Plant Demonstration/Governors School Students. Organizer. Presentation to High School senior students, 23 students. July 2017.



Quesada, H. J. 2017. Virginia Loggers Association, Invited speaker, 155 students. August 2017.

Quesada, H. J. 2017. Statistical Analysis for Maintenance Programs, 12 hour online class for students of the Master program in Industrial Engineering at Costa Rica Tech, 18 students. August 2017.

Quesada, H. J. 2017. 101 Wood Basics NAWLA, Co-organizer and instructor, 40 students, September 2017.

Quesada, H. J. 2017. Virginia Forest Products Association (VFPA), Education Session on CLT Co-organizer and instructor. Also presented in the same session Tom Chung and Judd, Charles, 100 students, August 2017.

Quesada, H. J. 2017. Financial Management: NextGen Leaders Learning Session for Hardwood Manufacturers Association (HMA), Presenter. Online course, 12 students, November 2017.

Courses Taught:

FREC 2784 Global Forest Sustainability

Fall 2017

Credit Hours: 3

Instructor: Tom Hammett

No. of Students: 22

SBIO 1234 Introduction to Wood Design and Craftsmanship

Semester: Fall 2017

Credit Hours: 3

Instructor: Earl Kline/Urs Buehlmann (each 50%)

No of students: 25

SBIO 1984 Special Study

Semester: Fall 2017

Credit Hours: 1

Instructor: Earl Kline

No of students: 9

SBIO 2784 Global Forest Sustainability

Fall 2017

Credit Hours: 3

Instructor: Tom Hammett

No. of Students: 59



SBIO 3004 Sustainable Nature-Based Enterprise
Fall 2017

Credit Hours: 3
Instructor: Tom Hammett
No. of Students: 31

SBIO 3445 Wood Design and Innovation I

Semester: Fall 2017
Credit Hours: 3
Instructor: Earl Kline
No of students: 18

SBIO 3445 Wood Design and Innovation II

Semester: Spring 2018
Credit Hours: 3
Instructor: Earl Kline
No of students: 18

SBIO 3454 Society, Sustainable Biomaterials, and Energy
Spring 2018

Credit Hours: 3
Instructor: Tom Hammett
No. of Students: 11

SBIO 3954 Study Abroad in Costa Rica

Semester: Winter 2018
Credit Hours: 3
Instructor(s): Henry Quesada/Earl Kline
No of students: 12

SBIO 3984 Researching Industrial Hemp Production

Spring 2018
Credit Hours: 3
Instructor: Tom Hammett
No. of Students: 7

SBIO 5004 Seminar

Semester: Spring 2018
Credit Hours: 1
Instructor(s): Robert Smith
No of students: 7



SBIO 5614 Forest Products Marketing and Management

Semester: Fall 2017

Credit Hours: 3

Instructor(s): Henry Quesada/Robert Smith

No of students: 7

Hammett: Faculty Advisor to Service Without Borders. Co-led service learning trip for seven undergrads, five from the College of Engineering and one each from the College of Natural Resources and General Studies, to address previously identified needs in a Village in the Mustang province in Nepal's highlands. Total students advised: 7

Center Engagement and Outreach:

Kline, D. E., and A. D. Rara. 2017. Laser Engraving Tutorial for the Brooks Forest Products Laser Engraving System. Virginia Tech: Department of Sustainable Biomaterials. (Labels: No Label)

Abstract: Step by step guide for programming and operating for the Brooks Forest Products Center laser engraver

Kline, D. E., and A. D. Rara. 2017. CNC Machining Tutorial. Virginia Tech: Department of Sustainable Biomaterials. (Labels: No Label)

Kline, D. E., and A. D. Rara. 2017. CNC Machining Tutorial. Virginia Tech: Department of Sustainable Biomaterials. (Labels: No Label)

Kline, D. E. Faculty Advisor (7/1/2017 - Present), Virginia Tech (United States) [Department] (Labels: No Label) Description: SBIO student organization (co-advisor with Henry Quesada).

Kline, D. E. 2017. CNC and Laser Engraving Training and Supervision (7/1/2017 - 9/1/2017), Virginia Tech (United States) [College] (Labels: No Label). Description: Trained and supervised students in using the CNC and Laser engraver in their fund raising project to provide coasters for the CNRE 25 year celebration.

Quesada, H. J. 2017. Statistical Analysis for Maintenance Programs, Master's, Production Industrial Engineering 08/15/2017, Course developed for MS program in Manufacturing Systems at Costa Rica Tech

Quesada, H., Co-Advisor of Society of Renewable Resources (SRR) Club, 2016-Present



Members

Appalachian Hardwood Manufacturers, Inc.

PO Box 427, High Point, NC 27261

Phone: (336) 885-8315; **Fax:** (336) 886-8865

Email: tom@appalachianwood.org; **Website:** 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; **Website:** www.hardwoodweb.com

Contacts: James W. Howard, Jr., President; Marty Payny, Sales Manager; and 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; **Website:** 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



Bingaman & Son Lumber, Inc.

PO Box 247, Kreamer, PA 17833

Phone: (570) 374-1108; **Fax:** (570) 374-5342

Email: cbingaman@bingamanlumber.com; **Website:** 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

Boehm-Madisen Lumber Co., Inc.

PO Box 906, Brookfield, WI 53008-0906

Phone: (262) 544-4660; **Fax:** (262) 544-0795

Email: 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;

Danzer Group

Danzer Veneer Americas, PO Box 3455, Williamsport, PA 17701

Phone: (570) 322-4400; **Fax:** (570) 322-7213

Email: vijay_reddy@danzerveveer.com; **Website:** www.danzerveveer.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



Fitzpatrick & Weller, Inc.

PO Box 490, Ellicottville, NY 14731-0490

Phone: (716) 699-2393; **Fax:** (716) 699-2893

Email: sales@fitzweller.com; **Website:** 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; **Website:** 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

Hardwood Manufacturers Association

665 Rodi Road, Suite 305, Pittsburgh, PA 15235

Phone: (412) 244-0440; **Fax:** (412) 244-9090

Website: info@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; **Website:** 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



Industrial Timber & Lumber Company

23925 Commerce Park, Beachwood, OH 44122

Phone: (216) 831-3140; **Fax:** (216) 831-4734

Email: 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

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.

Jim C. Hamer Company

PO Box 418, Kenova, WV 25530

Phone: (304) 453-6381; **Fax:** (304) 453-6587

Email: jdearing@jimchamer.com; **Website:** 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

Spartanburg forest Products, Inc.

1431 Highway 101 South, Greer, SC 29651

Phone: (864) 699-3100; **Fax:** (864) 699-3101

Email: smichael@gsponline.net; **Website:** 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; **Website:** 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

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 – 5341

Contact: Phil Araman, Senior Research Scientist

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; **Website:** www.vfpa.net

Contact: Susan Seward

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.



W. M. Cramer Lumber Company

PO Box 2888, Hickory, NC 28603

Phone: (828) 397-7481; **Fax:** (828) 397-3763

Email: wmc@cramerlumber.com; **Website:** 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; **Website:** www.woodpreservers.com

Contact: Morgan Wright, President

Products: boards; softwood dimension; timbers; ties

Species: loblolly pine, longleaf pine, shortleaf pine