

Industrial Hemp:

Oregon State University College of Forestry WSE 266 Industrial Hemp

Instructors:

Anndrea Hermann, MSc., BSc. P.Ag

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Co-Instructor Dr. John Simonsen

Department of Wood Science & Engineering

Welcome to the Department of Wood Science & Engineering

We are a multidisciplinary university program focused on science, technology, engineering and business practices that help society sustainably meet our needs for renewable materials, and help ensure the global competitiveness of American business.

Our mission includes:

- Educating new professionals for challenging careers
- Providing advanced learning for professionals in the work place,
- Discovering new knowledge and solving problems through innovative research,
- Transferring knowledge to users and practitioners

We are one of the largest and most diverse renewable materials programs in North America but pride ourselves on behaving like a small program when it comes to student success.

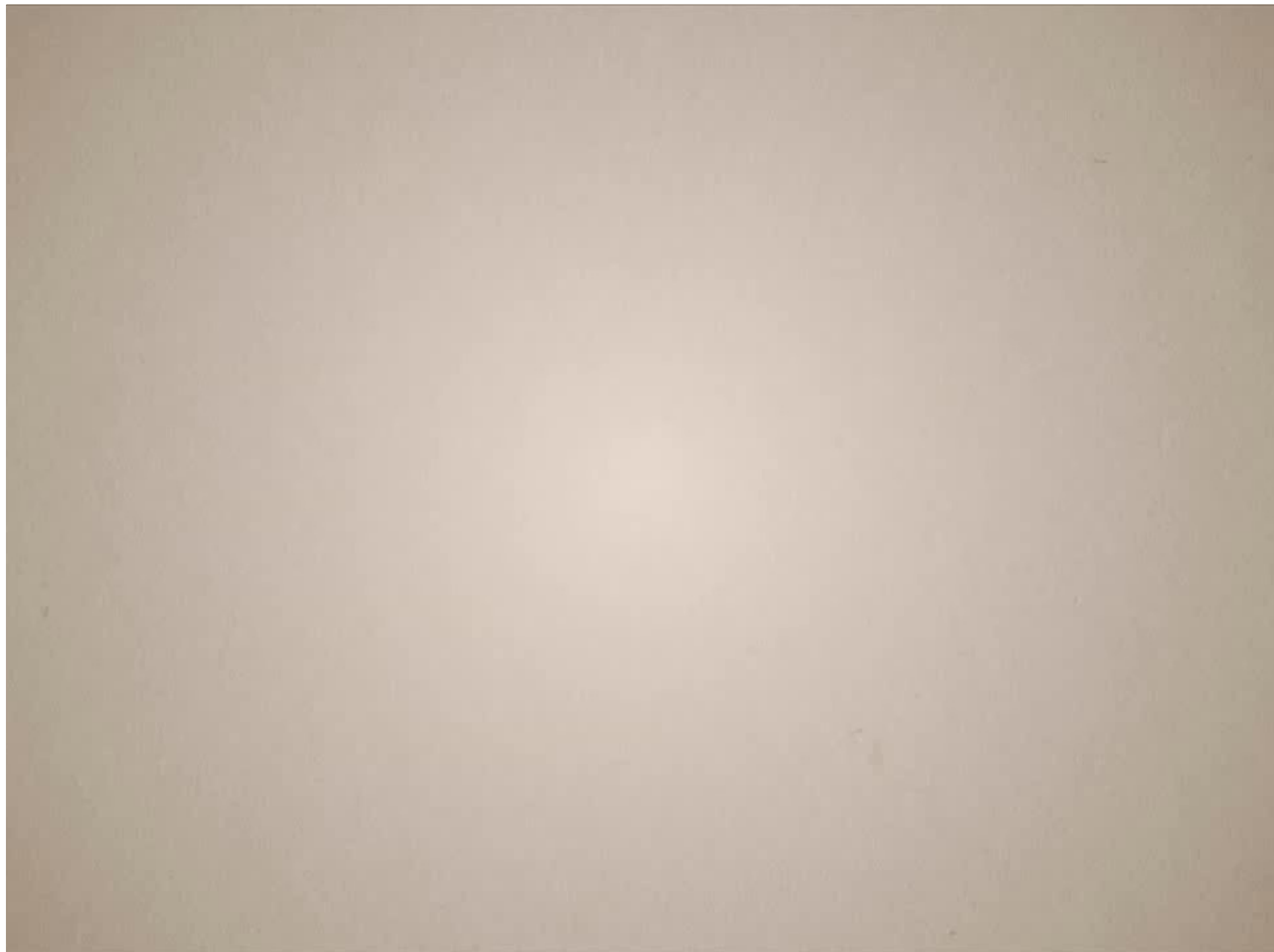
- Increasing demand for new materials and intensifying global competition demand innovation, new discovery and well-educated professionals. Our programs are at the forefront of that challenge.

Renewable Materials at Oregon State University

- <http://www.youtube.com/watch?v=KB4jQfyJMGo>
- **Find Jobs In...**

Architectural firms, Interior products companies, Non-government organizations, Green-building companies, Third-party environmental testing firms





- Renewable Materials
- Spring April 2013 Start -40 students Fall
- Fall Start Sept. 30th, 2013- 100 students
- Cost ~\$780 US\$
- <http://ecampus.oregonstate.edu/soc/ecatalog/ecoursdetail.htm?termcode=all&subject=WSE&coursenumber=266>
- Introduction to the botany, biology and agronomy of the hemp plant, and the origins, historical contexts and implications of contemporary legal and social issues surrounding its use for food, fiber, and building products.
- Taught via Ecampus only
- 3 credit Baccalaureate Core Course Attributes: Core, Pers, Soc Proc & Inst
- 10 weeks, 90 hours

Topics

- Ancient & Modern history
- Anatomy, Botany & Pharmacological properties
- Current status in the USA
- 3 E's of Hemp – Environment, Economics and Entrepreneurship
- Agronomy, Breeding Genetics, Field Inspections & Pedigree Seed Production
- Grain & fibre processing
- Research features & International case studies
- Food, Bodycare, Industrial Applications, Paper, Sealers, Textiles, Composites, Political Science, Business Development, Building, Plastics, Insulation & Nanotechnologies

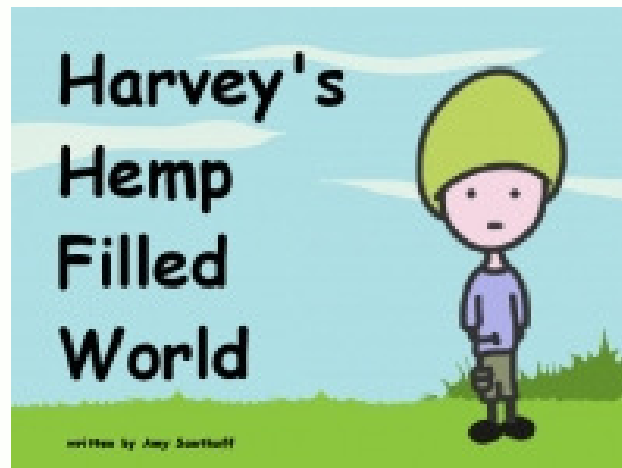
Contributors

- Oregon State Univ., USA
- Cannabis Curriculum, USA
- Vote Hemp, USA
- Univ. of Minnesota, USA
- Ohio Hempery, USA
- InAgro, Belgium
- Univ. of Manitoba, Canada
- Merry Hempsters, USA
- Hempshield & Forrest Paint, USA
- California State Univ. Northridge, USA
- Nautreflections, USA
- Latin American Hemp Trading
- Hemporium, South Africa
- Univ. of Connecticut, USA
- Action Circles, USA
- Acaida BioMaterials, USA
- International Hemp Building Association
- North Dakota State Univ., USA
- Alberta BioMaterial & Alberta Bio Development Centre, Canada
- Propaganda Productions, Slovakia

Student Featured Creativity Projects

- Harvey's Hemp Filled World by Amy Santhuff

<http://www.bookemon.com/book-profile/harvey-hemp-filled-world/279905>



- Healthy Hemp Recipes by Sjoukje Schoustra

<https://simplebooklet.com/publish.php?wpKey=SbrJDt3SRD5p1g9XbmRNkl#wpKey=SbrJDt3SRD5p1g9XbmRNkl#page=0>

Harvey's Hemp Filled World

Hi, will you help me
learn about the history
of industrial hemp?



Student Feedback

“Before taking this course, I really had no idea about industrial hemp. I am still amazed at how much I didn't know, so I am really enjoying this class and becoming educated about hemp. –F. Wilson”

“I enjoy you as a professor you are always there to help and reply in a timely manner which I love. – J. Vanderwerf”

“The Industrial Hemp class through Oregon State University has been a great learning experience for me. I am always eager to learn more and look forward to teaching others what I have learned. I am sure that this class will open the minds of many, who like me, really had no idea the incredible potential that Industrial Hemp provides. I hope that this class is able to inspire many more people to speak about hemp and bring it back into our daily lives. –A. Santhuf”

Instructors



Anndrea Hermann, M.Sc. P.Ag. is from Joplin, MO and is now based in Manitoba Canada. She is a Professional Agrologist, the owner of The Ridge International Cannabis Consulting, the President of the Hemp Industries Association, Authorized Hemp Sampler, Canada and assist in a range of interdisciplinary hemp related projects from regulations to production. She earned her M.Sc at University of Manitoba on Hemp Fibre Agronomy and her B.Gs at Missouri Southern State University.



John Simonsen received a Ph.D. in Physical Chemistry at University of Colorado in 1975. In 1990 he joined OSU Depart. of Forest Products (now the Department of Wood Science and Engineering). Dr. Simonsen is presently a Professor in the OSU Department of Wood Science and Engineering, the OSU Materials Science Program and holds graduate status in the Department of Chemical Engineering. He is also a member of ONAMI (the Oregon Nanoscience and Microtechnologies Institute) and the OSU Materials Institute

Guest Lecturers



Hempologist John Dvorak has been working to end Cannabis hemp prohibition for over 20 years. He's written numerous articles and serves as a source of hempformation for businesses, journalists, film producers and policy makers. His website, Hempology.Org, contains dozens of articles and images documenting hemp's history. In an attempt to increase the amount of research into the beneficial aspects of cannabis hemp and the negative effects of its prohibition, he developed the Cannabis Curriculum.



Dr. Barb Lachenbruch is an ecophysiologicalists in the Department of Forest Ecosystems and Society. Her research focuses on anatomical and physiological mechanisms of survival for plants in the face of stresses such as drought and wind. She also works with wood and fiber mechanical properties and in wood quality.

Guest Lecturers



Pharmacological properties of cannabis. Dr. Fred Stevens is an Associate Professor of Medicinal Chemistry, College of Pharmacy & Principal Investigator, Linus Pauling Institute, Oregon State University. His research is aimed at determining the role and function of vitamin C and dietary phytochemicals in human health and disease.



Associate in the School of Design and Human Environment at Oregon State University. Her teaching, research, and industry background have centered around apparel-related textiles.



Dr. Wei Cao associate professor at California State University Northridge. Her expertise is in Textile/Apparel Product Development, especially in comfort and barrier properties of textiles for functional/protective clothing; performance evaluation of textile materials, functional clothing design and gerontological aspects of clothing. Dr. Cao has developed the courses in textile science, textile product analysis, textile technology and apparel CAD design.

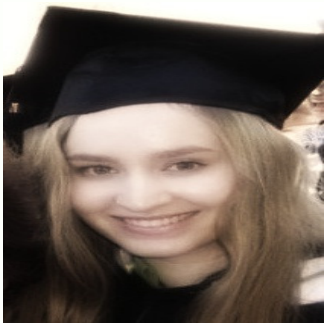
Guest Lecturers



Don E Wirtshafter was a pioneer of the modern hemp industry. Beginning in 1990, Don's Ohio Hempery created products from hemp seed, cloth, rope and paper and was the first to display hemp at national trade shows. Don has been involved in efforts to create methods of green decortication intended to bring hemp fiber production into the modern age. He is a practicing attorney in private practice in Athens, Ohio.



Dr. Naveen Gakhar is a research technician with the Department of Human Nutritional Sciences, University of Manitoba (Uof M) and is involved in the leading hemp for chicken feed project. He completed his Doctorate of Veterinary Medicine in India and a Masters of Animal Science at Uof M. He is keenly involved in research, veterinary medicine and enjoys spending time family.



Erin Goldberg, C. PhD., BSc. in Human Nutritional Sciences from the U of M in 2009. She started her MSc. program upon graduation and in April of 2012 she transitioned into the PhD program in the same Department, where her research centers around the deposition of omega-3 fatty acids in table eggs through designer diets, with an added sensory science component.

Guest Lecturers



David Seber has been a leading advocate in the use of industrial hemp in building materials for 20+ years. He has pioneered the development of hemp MDF and other format construction panels, hemp & resin fiberglass, hemp & lime blown insulation and other aggregate applications. His most recent application development is the co-creation of Hemp Shield Wood Finish & Deck Sealer-the world's first modern hemp oil containing industrial coating



Erwin Lloyd, Managing Director, Acadia BioMaterials Group, Bellingham, Washington. He holds a B.S. in Agricultural Engineering from Virginia Tech. His firm specializes in the research, process and product development, and commercialization of natural materials and their resulting value-added products.



Dr. Richard Parnas, Professor of Chemical Engineering, Institute of Materials Science, University of Connecticut. He earned his B.S. at MIT and his M.S and PhD at UCLA. His research interests are: Biofuels, Reactor Design, Flow in Porous Media, and Biodegradable Plastics.

Guest Lecturers



Elisheva Shalom is a photographer and owner of Naturereflections, manufacturer of fine art greeting cards printed on hemp/recycled paper. Her work is to inspire people to love and appreciate our beautiful Earth and educate the world on hemp's benefits and uses. She makes hemp paper near DC where she is currently based and is working on a new project called Artisan Hemp



Gerry Shapiro is the president and founder of the Merry Hempsters, Inc. in Eugene, Oregon. For 20 years he has promoted and sold hemp body-care and herbal medicinal products.

Guest Lecturers



Hempcrete & Hemp plaster/renders. Steve Allin has been pioneering the use and methods of Hemp Building materials since 1997. He has works as a Sustainable Hemp Consultant and as the director of the International Hemp Building Association.



Tony Budden is a partner in Hemporium, South Africa's premier hemp company. They recently completed the first hemp home in Africa and are busy with plans to build a hemp construction industry using locally grown hemp on the continent. Tony is committed to creating awareness around environmental and social issues and is passionate about promoting the hemp cause



Fabrizio Giamberini, Uruguayan entrepreneur, degree in Business Administration and master in Marketing, is leading the development of hemp agribusiness in South America, in 2006 founded the company The Latin America Hemp Trading (www.TheLAHT.com), is the pioneer for what is happening in Uruguay on development of hemp.

Guest Lecturers



Dr. Ulven is faculty member in the Mechanical Engineering Department at North Dakota State University. He has been involved in the research of polymer matrix composites (PMCs) for various commercial and defense applications for the past 12 years. He is currently the principal or co-principal investigator of 12 research projects related to composite material development totaling over \$1.4 million and involving 1 research associate, 8 graduate research assistants, and 3 undergraduate research assistants.



Emilie Snauwaert started her career at the agricultural research centre 'Inagro' in 2010 as project engineer within the Interreg IV A project 'Green resources, innovative use of agricultural crops'. This project focuses on the use of local cultivated biomass in a biobased economy. In this project the possibilities of local cultivation and use of hemp has been researched, whereby we have focused on the stimulation of the development of a hemp value chain in the region.

Guest Lecturers



Ruth DeSantis Business Dev. Officer, Alberta Agriculture & Rural Development and a Market Analyst, Alberta Biomaterial Development Centre (ABDC). ABDC is a collaborative network that promotes and aids in the commercialization of products using Alberta agriculture and forestry bioresources for green material alternatives. Ruth has worked in the Arctic where she developed relationships to support collaborative research to investigate the impact of climate change.



Laura McIlveen, P. Eng. Business Dev. Coordinator, Bioresource Technologies, Chemical Engineer Alberta Innovates Technology Futures (AITF). The team focuses on the area of green material alternatives for building products, pulp, textiles and automobiles. This includes a pilot scale fibre processing pilot plant that processes bast fibre materials like hemp and flax for use in composites, insulation, and other products.



Lori-Jo Graham, MEDES – Bio-Industry Development Officer – BioIndustrial Opportunities – Alberta Agriculture and Rural Dev. She is an Industry Development Officer with Alberta Agriculture and Rural Development and a Client Manager with the Alberta Biomaterial Development Centre.

Guest Lecturers



Tom Murphy Has been involved with hemp since 1999. He is the owner and webmaster for IndustrialHemp.net, partner and webmaster of The Hemp Report and is a key team member of Vote Hemp (Director and National Outreach Coordinator , the Hemp Industries Assoc. (Spokesperson) , and Hemp History Week. In 2009 he was instrumental in getting a Maine hemp farming bill introduced and pass. Tom is a recipient of a Vote Hemp lifetime hemp achievement award and he was awarded a Certification of Completion for the University of Maine Hutchinson Center's Nonprofit Certificate Management program.



Ben Droz is the Legislative Liaison, Vote Hemp, Washington, DC. He meets regularly with bipartisan staff on Capitol Hill, to educate about hemp and The Industrial Hemp Farming Act. He earned his B.S. in Sociology and Anthropology with a minor in Cognitive Science from Goucher College, Baltimore , M.D. In addition, he is a professional photographer.

Guest Lecturers



George Weiblen is a professor of Plant Biology at the University of Minnesota and curator of the herbarium at the Bell Museum of Natural History. His interests include the systematics, evolution, ecology and genetics of plants. He earned his PhD at Harvard University in 1999. He has maintained a research registration with the US Drug Enforcement Administration since 2002 for the study of Cannabis genetics.



Amy Shollenberger has more than 13 years of grassroots organizing in areas of: policy, political issue campaigning, campaign managing, press secretary and a as senior policy analyst. As Rural Vermont's executive director, she worked to help members successfully lobby for several bills including hemp. She currently serves multiple clients through her Action Circles firm, offering help with political strategy, organizational capacity building, and meeting facilitation. Amy is a member of Vermont Businesses for Social Responsibility, Women's Business Owners Network, and the Vermont Consultants Network and she serves on the board of Salvation Farms.

**Thanks for your time
Let's continue to cultivate our hemp education
together**

