

Short Rotation Crops International Conference:  
Biofuels, Bioenergy, and Bioproducts from Sustainable Agricultural and Forest Crops

**Monday, August 18, 2008**

**Pre-conference tour to the Ames, Iowa area to view riparian and field border conservation practices with biomass and wildlife habitat improvement, as well as agricultural and forestry energy crop production systems (all day).**

**Tuesday, August 19, 2008**

**7:30 am – 5:00 pm** Registration in the Ballroom Foyer

**9:00 am** Welcome

*Bryce Stokes, USFS*

*Al Levine, Dean, UMN*

*Alan Ek, Department of Forest Resources, UMN*

*Ian Nicholas, IEA*

(5 min. each)

**9:20 am** Plenary Session I – Putting Energy in Perspective in Ballroom

*Marilyn Buford, Moderator*

9:20 *John Ferrell, DOE*

9:40 *Ann Bartuska, USFS*

(20 min. each followed by  
15 min. Q & A)

**10:15 am** Break in Ballroom Foyer

**10:45 am** Concurrent Session I: Implications of Sustainable Biofuels

A. Breeding and Genetics (*Larry Smart, Moderator*) in Empire

B. Woody Production Systems (*Jake Eaton, Moderator*) in Jonathan

C. Production System Logistics (*Richard Hess, Moderator*) in Beacon/Duchess

D. Ecosystem Services (*Dean Current, Moderator*) in Fireside

E. Bioenergy Production Systems I (*Tim Volk, Moderator*) in Cortland

Volunteered Papers, (5  
speakers, 20 min. each)

**12:45 pm** Lunch (on site) in Harvest Café (First floor)

**2:00 pm** Concurrent Session II: Implications of Sustainable Biofuels

A. Social Factors and Policy Issues (*Michele Schoeneberger, Moderator*) in  
Jonathan

B. Costs and Operational Feasibility (*Tim Rials, Moderator*) in Fireside

C. Phytotechnologies (*Larry Abrahamson, Moderator*) in Empire

D. Bioenergy Production Systems II (*Mark Downing, Moderator*) in Cortland

Volunteered Papers, (5  
speakers, 20 min. each)

**4:00 pm** Break in Ballroom Foyer

**4:30 pm** Poster Session & Mixer in Apple Terrace – Authors Present until  
**6:30 pm**

Complimentary hors d'oeuvres, refreshments and cash bar

30 Posters

**6:30 pm** Adjourn – Dinner on your own

**Wednesday, August 20, 2008**

**7:30 am – 5:00 pm** Registration in the Ballroom Foyer

**7:55 am** Welcome and Overview in Ballroom

**8:00 am** Plenary Session II – Putting Energy in Perspective in Ballroom

*Rob Mitchell, Moderator*

8:00 *Gale Buchanan, USDA*

(20 min. followed by 5  
min. Q & A)

**8:25 am** Special Session I: Herbaceous Biomass: State of the Art in Ballroom

*Rob Mitchell, Moderator*

8:25 Herbaceous Biomass: State of the Art – *Ken Moore*

8:55 Development of Switchgrass into a Biomass Energy Crop – *Ken Vogel*

9:25 Sugar/Energy Canes as Feedstocks for the Biofuels Industry – *Ed Richard*

Invited Papers (30 min.)

**9:55 am** Break in Ballroom Foyer

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**Wednesday, August 20, 2008**

**10:15 am Resume Special Session I: Herbaceous Biomass: State of the Art in Ballroom**

*Hans Jung, Moderator*

- 10:15 Canadian Agricultural Biomass Inventory – *Lawrence Townley-Smith* Invited Papers (30 min.)  
10:45 Bioenergy: Agricultural Crop Residues – *Jane Johnson*  
11:15 Illinois Studies of *Miscanthus x giganteus* for Biomass Feedstock Production – *Tom Voigt*  
11:45 Alfalfa – *JoAnn Lamb*

**12:15 pm Lunch in Harvest Café (First floor)**

**1:30 pm Special Session II: Woody Biomass: State of the Art in Ballroom**

*Ron Zalesny, Moderator*

- 1:30 Commercializing Willow Biomass Crops in the Northeastern and Midwestern United States – *Tim Volk* Invited Papers (30 min.)  
2:00 Genetic Improvement of Hybrid Poplar for the Renewable Fuels Industry: A Pacific Northwest Perspective – *Brian Stanton*  
2:30 Agroforestry and Cellulosic Ethanol from Sustainable Poplar Tree Farms – *Jake Eaton*

**3:00 pm Break in Ballroom Foyer**

**3:30 pm Resume Special Session II: Woody Biomass: State of the Art in Ballroom**

*Rick Hall, Moderator*

- 3:30 Woody Biomass Crops in the Midwestern United States – *Bill Berguson*  
4:00 Purpose-grown Trees as a Sustainable Renewable Energy Source – *Michael Cunningham* Invited Papers (30 min.)  
4:30 Poplar and Willow Short Rotation Intensive Culture in Western Canada – *Cees van Oosten*  
5:00 Production of Biomass for Energy from Sustainable Forestry Systems: Canada and Europe – *Jim Richardson*

**5:30 pm Adjourn – Dinner on your own**

**Thursday, August 21, 2008**

**7:30 am – 12:00 pm Registration in the Ballroom Foyer**

**8:00 am Welcome and Overview in Ballroom**

**8:15 am Special Session III – Panel Discussion – Sustainable Bioenergy Production Systems: Feast, Famine, or Folly for the Producer in Ballroom**

*John Doornbos, Moderator*

- 8:15 Impacts of Biofuel Production on Grassland Birds in Wisconsin – *David Sample* (10 min. each followed by 45 min. Q & A)  
8:25 Herbaceous Crops – *Rob Mitchell*  
8:35 Woody Bioenergy Systems in Canada – *Ken van Rees*  
8:45 Woody Bioenergy Systems in the U.S. – *Rick Hall*  
8:55 Economic and Social Aspects of Bioenergy Systems – *Mark Downing*  
9:05 Putting it all Together – *Ron Zalesny & Rob Mitchell*

**10:00 am Break in Ballroom foyer**

**10:30 am Plenary Session III – A Global Perspective on Bioenergy in Ballroom**

*Jim Richardson, Moderator*

- 10:30 Socially Responsible Expansion of Brazilian Ethanol – *Gerd Sparovek* (30 min. each)  
11:00 Water Perspectives on Large Scale Bioenergy – *Göran Berndes*  
11:30 *Speaker to be announced*

**12:00 pm Student Poster Awards – Jill Zalesny in Ballroom  
Closing Remarks – Bryce Stokes in Ballroom**

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**1:00 pm** Depart for Tour (Pick up lunches in lobby-First Floor)

**6:30 pm** Return from Tour – Dinner on your own

**Friday, August 22, 2008**

**Post-conference tour to the Alexandria, Minnesota area to view agricultural and forest biomass plantations (all day).**

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**Concurrent Session I: Implications of Sustainable Biofuels – Tuesday, 19 August, 2008 (10:45am-12:45pm)**

**A. Breeding and Genetics**

- 10:45 Short rotation forestry in Germany: lessons from the past, present research activities and future perspectives  
*Holger Gruenewald and G. von Wuehlisch*
- 11:05 Genetics of yield and biomass composition of shrub willow bioenergy crops bred and selected in North America  
*Lawrence Smart, M. Serapiglia, K. Cameron, A. Stipanovic, T. Volk, and L. Abrahamson*
- 11:25 A Minnesota-based *Populus* breeding and hybrid poplar development program  
*Bernard McMahon, W. Berguson, D. Buchman, T. Levar, C. Maly, and T. O'Brien*
- 11:45 Biomass potential of *Populus* in the Midwestern United States  
*Ronald Zalesny Jr., R. Hall, J. Zalesny, W. Berguson, B. McMahon, and G. Stanosz*
- 12:05 Growth and yield of poplar and willow hybrids in the central Upper Peninsula of Michigan  
*Raymond Miller and B. Bender*

**B. Woody Production Systems**

- 10:45 Prolonged planting season in willow short rotation forestry: effects on initial plant growth and plant survival  
*Nils-Erik Nordh, P. Aronsson, and T. Verwijst*
- 11:05 Important developments for short rotation intensive culture (SRIC) of willow in different regions of Eastern Canada  
*Michel Labrecque and T. Teodorescu*
- 11:25 Development of a willow biomass crop harvester based on a New Holland forage harvester and specially designed willow cutting head  
*Lawrence Abrahamson, T. Volk, E. Priepke, J. Posselius, D. Aneshansley, and L. Smart*
- 11:45 Woody biomass production: the Saskatchewan Forest Centre experience  
*Shannon Poppy*
- 12:05 Woody biomass harvest from willow rings  
*William Schroeder, J. Kort, and P. Savoie*

**C. Production System Logistics**

- 10:45 Use of selected hybrid poplars in short rotation woody crops production: the European experience from the field to the final transformer  
*Fabrizio Nardin and F. Alasia*
- 11:05 Biofuels are pest food too!  
*John Brown, A. Rodstrom, E. Hannon, N. Kittelson, and D. Walsh*
- 11:25 Evaluating effluent and canal water irrigation for woody biomass production and phytotechnology  
*N. Larry White*
- 11:45 High throughput analysis methods for short rotation crops  
*Timothy Riels and N. Labbe*
- 12:05 Open slot  
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**D. Ecosystem Services**

- 10:45 Agroforest management systems can produce biofuel feedstocks and improve key environmental services on retired agricultural lands in the Western Gulf region  
*Michael Blazier, H. Liechty, M. Pelkki, W. Pitman, P. Tappe, and C. West*
- 11:05 Sustainable Bioenergy production in agroforestry systems  
*Andrew Gordon, D. Current, M. Schoeneberger, and G. Bentrup*
- 11:25 The council for sustainable biomass production  
*John Heissenbuttel*
- 11:45 Hybrid aspen growth response to shearing in Minnesota: implications for biomass production and carbon sequestration  
*Grant Domke, A. D'Amato, A. David, and A. Ek*
- 12:05 Carbon sequestration in short rotation forestry and traditional poplar plantation  
*Terenzio Zenone, M. Migliavacca, L. Montagnani, G. Seufert, and R. Valentini*

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**E. Bioenergy Production Systems I**

- 10:45 Regional Feedstock Partnership: A joint Sun Grant and DOE effort  
*Timothy Riels*
- 11:05 DOE biorefinery investment  
*Mark Downing*
- 11:25 Productivity of three willow species at Taupo, New Zealand  
*Ian Nicholas, I. McIvor, K. Snowdon, and C. Low*
- 11:45 Integrating energy, agriculture and environmental issues: some considerations for successful implementation of short rotation crops  
*Brendan H. George*
- 12:05 Loblolly pine: a clear choice for biomass production in the southeastern U.S.  
*Steve McKeand, R. Whetten, F. Isik, and D. Hazel*

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**Concurrent Session II: Implications of Sustainable Biofuels – Tuesday, 19 August, 2008 (2:00-4:00)**

**A. Social Factors and Policy Issues**

- 2:00 R&D and adoption issues for four short-rotation afforestation/agroforestry technologies: results of focus groups conducted in Quebec and the Canadian Prairies  
*Sylvain Masse and P. Marchand*
- 2:20 Economics of willow biomass production and policy to enhance market penetration  
*Thomas Buchholz, T. Volk, M. Kelleher, and L. Abrahamson*
- 2:40 25x'25: America's Energy Future  
*R. Bruce Arnold*
- 3:00 Conservation management strategies in ethanol crop production: a Brazil-U.S. comparison  
*Hazen Kazaks*
- 3:20 Ecological services payments enhance the economics of sustainably-grown feedstocks  
*Linda Meschke*

**B. Costs and Operational Feasibility of Renewable Energy Production**

- 2:00 Wood-to-Wheels: A multi-disciplinary research initiative in sustainable transportation utilizing fuels and co-products from forest resources  
*David Shonnard, J. Naber, Q. Zhang, A. Maclean, K. Halvorsen, and J. Sutherland*
- 2:20 Intensive utilization of harvest residues in southern pine plantations: Quantities available and implications for nutrient budgets and sustainable site productivity  
*Mark Eisenbies, E. Vance, W. Aust, and J. Seiler*
- 2:40 Building a cellulosic biofuels industry from the ground up: Tennessee biofuels initiative  
*Kelly Tiller*
- 3:00 Open Slot  
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- 3:20 Strategic assessment of biofuels potential for the western U.S.  
*Marcia Patton-Mallory, R. Nelson, K. Skog, B. Jenkins, N. Parker, P. Tittmann, Q. Hart, E. Gray, A. Schmidt, and G. Gordon*

**C. Phytotechnologies**

- 2:00 Swedish experiences from applications of municipal and industrial residues on large-scale short-rotation coppice plantations  
*Ioannis Dimitriou and P. Aronsson*
- 2:20 *Populus* root system morphology during phytoremediation of landfill leachate  
*Jill Zalesny, R. Zalesny Jr., D. Coyle, R. Hall, and E. Bauer*
- 2:40 Multiple criteria deciding on phytoremediation of a heavy metal contaminated agricultural area case: the Campine, Belgium  
*Nele Witters, A. Ruttens, and T. Thewys*
- 3:00 Response of three *Salix* varieties to irrigation with different concentrations of Solvay storm water  
*Jaconette Mirck and T. Volk*
- 3:20 Impacts of paper sludge, manure, and fertilizer application on soil properties and biomass production in a short rotation willow cropping system in central New York  
*Amos Quaye, T. Volk, S. Hafner, D. Leopold, and C. Schirmer*

**D. Bioenergy Production Systems II**

- 2:00 Biomass production from native warm-season grass monocultures and polycultures managed for bioenergy  
*Rob Mitchell and K. Vogel*
- 2:20 Impact of growth environment variability on alfalfa yield, cellulosic ethanol traits, and paper pulp characteristics  
*Katie Petersen, R. Thelemann, H. Jung, U. Tschirner, C. Sheaffer, and G. Johnson*
- 2:40 Productivity and energy content of native perennial grassland species  
*Margaret Mangan, C. Sheaffer, D. Wyse, P. Graham, U. Tschirner, and S. Weisberg*
- 3:00 Use of marginal land and water to maximize biofuel production  
*Gayathri Gopalakrishnan, C. Negri, M. Wang, M. Wu, and S. Snyder*
- 3:20 Open slot  
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**Poster Session – Tuesday, 19 August, 2008 4:30-6:30)**

**A. Breeding and Genetics**

- 1 Breeding *Salix* for Bio-Energy and Agroforestry  
*William Schroeder, D. Walker and G. Inouye*
- 2 New Poplar Clones Selected for Short Rotation Coppice in Italy  
*Gianni Facciotto, G. Nervo, S. Bergante, and T. Zenone*
- 3 Loblolly Pine Ideotypes for Feedstock Production under Short Rotation  
*C. Dana Nelson, K. Johnsen, C. Maier, J. Butnor, S. McKeand, F. Isik, P. Dougherty, M. Cunningham, J. Stovall, and T. Fox*

**B. Production Systems**

- 1 Assessing Hybrid Poplar Biomass Feedstock Quality using Near Infrared Spectroscopy and Multivariate Data Analysis  
*Jeff Kallestad and J. Johnson*
- 2 Irrigation Effects in a Cottonwood Plantation in the Lower Mississippi River Alluvial Valley  
*H. Christoph Stuhlinger, P. Doruska, and M. Pelkki*
- 3 Challenges Associated with Short Rotation Biofuel Plantation Establishment in the Lower Mississippi Alluvial Valley  
*Jamie Schuler, M. Pelkki, and C. Stuhlinger*
- 4 Canopy Structure, Light Interception, and Light-Use Efficiency in Willow  
*P. Tharakan, T. Volk, C. Nowak, and G. Ofezu*
- 5 Regional Site-Selection Models for Hybrid Poplars  
*Robert Venette, M. Ostry, and K. Ward*
- 6 Effects of a Winter Rye Double Crop after Corn Silage on Biomass Production, Water Quality, and Soil Nutrient Status  
*Erik Krueger, T. Ochsner, P. Porter, D. Reicosky, and J. Baker*
- 7 Rye in a Cellulosic Corn System  
*Michael Kantar and P. Porter*
- 8 Effect of Landscape Positions and their Associated Soil and Terrain Attributes on Biomass Crop Yield and Growth Rates  
*Gregg Johnson, R. Thelemann, H. Cai, S. Banerjee, C. Sheaffer, H. Jung, K. Petersen, and U. Tschirner*
- 9 Economics and Energy of Ethanol Production from Alfalfa, Corn, and Switchgrass in the Upper Midwest, USA  
*Peter Vadas, K. Barnett, and D. Undersander*
- 10 Pacific Northwest Poplars: A Resilient Arthropod Community and the Distribution of Insect-Caused Mortality in Cuttings  
*R. Andrew Rodstrom, J. Brown, and J. Rodstrom*
- 11 Evaluation of the Potential of Hybrid Willow as a Sustainable Biomass Energy Alternative Crop in Northern and West-Central Minnesota  
*Diomides Zamora, D. Current, and M. Demchik*
- 12 Predicting Hybrid Poplar Growth with a Simple Process-Based Model (3PG)  
*Beyhan Amichev and K. Van Rees*
- 13 Life Cycle Assessment of Wood Pellets and Ethanol from Wood Residues and Willow  
*Julie Sandilands, D. Kellenberger, I. Nicholas, and P. Nielsen*
- 14 The Capacity to Provide Feedstock Material to Energy Markets in South-eastern Australia: The Potential for Short Rotation Crops  
*Brendan George, T. Hobbs, and M. Bennell*

**C. Ecosystem Services**

- 1 Environmental Services from Agroforest Systems: Sustainable Biofuel Feedstock Production in the Gulf South Region of the United States  
*Hal Liechty, M. Blazier, P. Tappe, and M. Pelkki*
- 2 Ecological Aspects of Cellulosic Biomass Supply from Whole-Tree Chipping and Slash Removal  
*Philip Tappe, M. Pelkki, R. Ficklin, and H. Liechty*
- 3 Pulling It All Together – Planning Guidelines and Design Tools for Creating Multi-Purpose Landscapes to Support Energy Objectives  
*Gary Bentrup, G. Wells, M. Schoeneberger, and M. Dosskey*

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**Poster Session – Tuesday, 19 August, 2008 (5:00-7:00) (continued)**

**D. Phytotechnologies**

- 1 Characterization of Arsenic Uptake under Phosphorus Sufficient and Deficient Conditions in Shrub Willow (*Salix* spp.) Clones of Differing As Sensitivities  
*Emily Pulley and L. Smart*
- 2 Potential Chloride and Sodium Uptake for 2- to 11-Year-Old *Populus* Irrigated with Landfill Leachate in the North Central United States  
*Jill Zalesny and R. Zalesny Jr.*
- 3 Variation in Lateral and Basal Adventitious Rooting of *Populus* Irrigated with Landfill Leachate: Selection of Favorable Genotypes for Environmental Benefits  
*Ronald Zalesny Jr. and J. Zalesny*
- 4 Production of Short Rotation Willow Biomass With and Without Irrigation Using Treated Effluent Water from a Municipal Sewage Treatment Plant  
*Richard F. Krygier*

**E. Physiology and Anatomy**

- 1 RootViz FS: A New Tool for Non-Invasive Imaging of Rhizosphere Dynamics  
*Daniel McDonald, R. Michaels, C. Mawata, and R. Kodrzycki*
- 2 Rapid Biomass Estimation of Short Rotation Woody Crops via Optical Stem Density: A Trial Using Willow (*Salix* spp.)  
*Joel Ens, R. Farrell, and N. Bélanger*

**F. Costs and Operational Feasibility**

- 1 A Comparative Cost Analysis of Logistics for Herbaceous Energy Crops and Short-Rotation Woody Crops  
*Erin Wilkerson, R. Perlack, and A. Turhollow*
- 2 A National Assessment of Current and Future State of Technology for Woody Crops in Meeting Mandated Biofuel Requirements  
*Anna Shamey, R. Perlack, and L. Wright*

**G. Environmental Impacts and Review**

- 1 Lifecycle Analysis of Small Scale Energy Systems Utilizing Oilseeds Grown in the Midwest  
*Seth Fore, P. Porter, and W. Lazarus*

**H. Social Factors and Policy Issues**

- 1 Land Size and Tenure and Conservation Activities on Farms in Paraná and Iowa  
*Hazen Kazaks*

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\*\*\* INVITED SPEAKERS \*\*\*

**Special Session I: Herbaceous Biomass: State of the Art – Wednesday, 20 August, 2008 (8:15-12:15)**

- 8:25 Herbaceous Biomass: State of the Art  
*Kenneth Moore*
- 8:55 Development of Switchgrass into a Biomass Energy Crop  
*Kenneth Vogel, R. Mitchell, and G. Sarath*
- 9:25 Sugar/Energy Canes as Feedstocks for the Biofuels Industry  
*Ed Richard Jr., T. Tew, R. Cobill, and A. Hale*

Break

- 10:15 Canadian Agricultural Biomass Inventory  
*Lawrence Townley-Smith*
- 10:45 Bioenergy: Agricultural Crop Residues  
*Jane Johnson*
- 11:15 Illinois Studies of *Miscanthus* × *giganteus* for Biomass Feedstock Production  
*Tom Voigt*
- 11:45 Alfalfa  
*JoAnn Lamb*

**Special Session II: Woody Biomass: State of the Art – Wednesday, 20 August, 2008 (1:30-5:30)**

- 1:30 Commercializing Willow Biomass Crops for Bioenergy and Bioproducts in the Northeastern and Midwestern United States  
*Timothy Volk, L. Abahamson, T. Amidon, D. Aneshansley, K. Cameron, G. Johnson, J. Posselius, D. Rak, L. Smart, E. Spomer, and E. White*
- 2:00 Genetic Improvement of Hybrid Poplar for the Renewable Fuels Industry: A Pacific Northwest Perspective  
*Brian Stanton, J. Johnson, and D. Neale*
- 2:30 Agroforestry and Cellulosic Ethanol from Sustainable Poplar Tree Farms  
*Jake Eaton*

Break

- 3:30 Woody Biomass Crops in the Midwestern United States: Past, Present and Future  
*William Berguson*
- 4:00 Purpose-Grown Trees as a Sustainable Renewable Energy Source  
*Michael Cunningham*
- 4:30 Poplar and Willow Short Rotation Intensive Culture (SRIC) Crops in Western Canada  
*Cees van Oosten*
- 5:00 Production of Biomass for Energy from Sustainable Forestry Systems: Canada and Europe  
*Jim Richardson*

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\*\*\* INVITED SPEAKERS \*\*\*

**Special Session III (Panel Discussion): Sustainable Bioenergy Production Systems: Feast, Famine, or Folly for the Producer – Thursday, 21 August, 2008 (8:15-10:00)**

- 8:15 Impacts of Biofuel Production on Grassland Birds in Wisconsin  
*David Sample and C. Ribic*
- 8:25 Herbaceous Crops  
*Rob Mitchell*
- 8:35 Woody Bioenergy Systems in Canada  
*Ken Van Rees*
- 8:45 Woody Bioenergy Systems in the U.S.  
*Richard Hall*
- 8:55 Economic and Social Aspects of Bioenergy Systems  
*Mark Downing*
- 9:05 Putting it all Together  
*Ronald Zalesny Jr. and R. Mitchell*
- 9:15 Question and answer period