

Advancing Commercialization of Nanocellulose:
Critical Challenges Workshop

May 7, 2019: Assessment, Challenges and Priorities		
TIME	TOPIC	OUTCOMES
7:00-8:00	Registration and Continental Breakfast	<i>Please arrive by 7:30 with a valid ID to get through security!</i>
8:00-8:30	Welcome & Introduction <i>Welcome and Overview – Lisa Friedersdorf, National Nanotechnology Coordination Office</i> <i>US Forest Service Interest in Cellulose Nanomaterials – Alexander Friend, Deputy Chief, US Forest Service</i>	Shared sense of purpose; understanding of workshop objectives
8:30-9:45	Session I: Emergence of the Nanocellulose in the Bioeconomy <i>Importance of Cellulosic Nanomaterials to the Bioeconomy and to Forests and Rural Communities – Jim Hubbard, Under Secretary for Natural Resources and Environment, U.S. Department of Agriculture</i> <i>Progress in Global Commercialization of Nanocellulose – Jack Miller, Market-Intell</i> <i>End-User Commercial Needs – Colleen Walker, University of Maine and Kim Nelson, GranBio</i>	Current economic impact of nanocellulose and its potential; status of the field
9:45-10:00	Break	
10:00-12:00	Session II: Critical Challenges <i>State-of-Science Review of Nanocellulose Drying and Dewatering</i> <i>Scott Sinquefield, Renewable Bioproducts Institute – Georgia Tech</i> <i>State-of-Science Review of Nanocellulose Compatibilization for Use in Plastics</i> <i>Greg Schuenemann, U.S. Forest Service – Forest Products Laboratory</i>	Understanding of State of Science on these two critical issues. Participants note any new KNOWLEDGE GAPS to add to existing list
12:00-1:00	Lunch and Networking	
1:00-4:30	Session III: Opportunities Participants review list of knowledge gaps and define research needs to address them	List of priority RESEARCH NEEDS that would have the greatest impact on closing the gaps.
1:00-3:00	Participants select gap area of most interest from a list to be provided. Breakout groups brainstorm RESEARCH NEEDS (specific issues and challenges), consolidate and prioritize for impact and time to implement. A participant agrees to report for the group.	
3:00-3:30	Break All participants review RESEARCH NEEDS rankings and priorities from all breakout groups; record their reactions to others' results	Sense of the RESEARCH NEEDS priorities of the group as a whole
3:30-4:30	Regroup and discuss (All workshop participants) Volunteer reporters from each group report results; participants share their reactions and suggestions	Consolidated list of priority RESEARCH NEEDS
4:30-5:00	Putting it Together Summary of Day One; charge for Day Two	
5:30-7:00	Offsite Reception The Brighton 949 Wharf Street, SW, Washington DC	

Advancing Commercialization of Nanocellulose:
Critical Challenges Workshop

May 8, 2019: Resources, Opportunities and Research Plan		
TIME	TOPIC	OUTCOMES
7:30	Continental Breakfast	Arrive by 7:30!
8:00-8:05	Introduction Recap of Day One results; plan and outcomes for Day Two	Understanding of the mission and plan of the day
8:05-9:45	Session IV: Researchers & Realizers Session Introduction Flash reports: Representatives of U.S.-based entities give five-minute reports, maximum three slides, sharing their areas of expertise and capabilities. Posters are displayed by presenters at lunch for audience members to review and discuss.	Shared understanding of U.S. nanocellulose capabilities and expertise--reports inform the breakout sessions in the afternoon
9:45-10:00	Break	
10:00 – 11:30	Session IV, Continued	
11:30-1:00	Session V: Lunch & Poster Session Participants enjoy lunch while reviewing posters of the morning's presentations and engage in further networking. Two 30-minute poster sessions.	Stronger nanocellulose community; shared knowledge about capabilities and where to find them
1:00-1:15	Introduction to Work Session Instructions for the afternoon	
1:15-3:30	Session VI: Making It Happen Participants return to their breakout groups and begin to frame R&D Approaches / Project Plans plans for addressing the RESEARCH NEEDS, using a template to be provided: identify expertise, experts, and capabilities needed; outline research targets; lay out preliminary research program Groups take a brief break midway as needed	Outlines to projects
3:30-4:00	Session VII: A Challenge to the Group <i>Innovation Is Challenging: Crossing the Valley of Death – Michael Goergen, Vice President – Innovation and Director, P3Nano, US Endowment for Forestry and Communities</i>	
4:00-4:30	Path Forward Summary; next steps; group discussion about accomplishment of workshop deliverables	Discussion of next steps and workshop report