

Agenda as of May 5, 2025

Event contact	Natalie Griffiths; 574-252-9853 (Cell); griffithsna@ornl.gov		
Administrative Assistants	Alexis Hoy; 865-724-5105 (Cell); hoyab@ornl.gov Amber Bristow; 859-797-9616 (Cell); bristowan@ornl.gov		
SPRUCE All Hands Meeting			
Time	Event	Lead	Place
May 13, 2025 – Hilton Minneapolis			
8:00 – 9:00 a.m. CDT	Breakfast Available		
8:30 – 8:45 a.m. CDT	Working breakfast: Welcome, introductions, meeting overview and objectives, and charge to SPRUCE SAB	Natalie Griffiths	Symphony Ballroom 3
8:45 – 9:00 a.m. CDT	DOE Program Manager feedback	Dan Stover (virtual)	Symphony Ballroom 3
9:00 – 9:15 a.m. CDT	Science talk: SPRUCE carbon budget	Natalie Griffiths	Symphony Ballroom 3
9:15 – 9:30 a.m. CDT	Science talk: SPRUCE nutrient budget	Verity Salmon	Symphony Ballroom 3
9:30 – 9:45 a.m. CDT	Science talk: An overview of ELM-SPRUCE modeling efforts	Daniel Ricciuto	Symphony Ballroom 3
9:45 – 10:00 a.m. CDT	Science talk: The fate of peatland carbon interactively determined by elevated carbon dioxide and warming	Jian Zhou	Symphony Ballroom 3
10:00 – 10:30 a.m. CDT	Break		
10:30 – 10:45 a.m. CDT	Science talk: Greenhouse gas response to eCO ₂ and increased temperatures	Jonathan Stelling	Symphony Ballroom 3
10:45 – 11:00 a.m. CDT	Science talk: Methane production in response to rising temperature	Rachel Younge	Symphony Ballroom 3

11:00 – 11:15 a.m. CDT	<i>Science talk:</i> Interactive impacts of drought and warming on CH ₄ cycling in a temperate bog	Xiaofeng Xu	Symphony Ballroom 3
11:15 a.m. – 12:00 p.m. CDT	<i>Flash talks:</i> Poster introductions	Natalie Griffiths	Symphony Ballroom 3
12:00 – 1:00 p.m. CDT	<i>Working lunch: SPRUCE Awards and Reflection</i>	Natalie Griffiths	Symphony Ballroom 3
1:00 – 2:45 p.m. CDT	Poster Session	SPRUCE Team	Symphony Ballroom 3 and Symphony Promenade
2:45 – 3:00 p.m. CDT	<i>Break</i>		
3:00 – 3:45 p.m. CDT	<i>Breakout Discussions: Choose one discussion group (40 min discussion, 5 min rotation)</i>		
	Peat (elemental pools and elevation)	Colin McCarter & Melanie Mayes	Symphony Ballroom 1
	Water relations	Jeff Warren & Jonathan Stelling	Symphony Ballroom 2
	Plant functional types	Dave Weston & Xiaoying Shi	Symphony Ballroom 3
	Biogeochemical processes	Caitlin Petro & Yaoping Wang	Symphony Ballroom 4
3:45 – 4:30 p.m. CDT	<i>Breakout Discussions: Choose one discussion group (40 min discussion, 5 min rotation)</i>		
	Peat (elemental pools and elevation)	Colin McCarter & Melanie Mayes	Symphony Ballroom 1
	Water relations	Jeff Warren & Jonathan Stelling	Symphony Ballroom 2
	Plant functional types	Dave Weston & Xiaoying Shi	Symphony Ballroom 3

	Biogeochemical processes	Caitlin Petro & Yaoping Wang	Symphony Ballroom 4
4:30 – 4:50 p.m. CDT	Discussion debrief (5 min per group)	Natalie Griffiths	Symphony Ballroom 3
4:50 – 5:00 p.m. CDT	Summary of Day 1, Plans for Day 2	Natalie Griffiths	Symphony Ballroom 3
5:00 p.m. CDT	Adjourn		

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SPRUCE All Hands Meeting			
Time	Event	Lead	Place
May 14, 2025 – Hilton Minneapolis			
7:30 – 8:00 a.m. CDT	Breakfast Available		
8:00 – 8:15 a.m. CDT	Working breakfast: Welcome to Day 2, objectives	Natalie Griffiths	Symphony Ballroom 3
8:15 – 8:30 a.m. CDT	Science talk: Ecosystem warming may increase or decrease probability of low-temperature damage depending on tree species	Francisco Campos Arguedas	Symphony Ballroom 3
8:30 – 8:45 a.m. CDT	Science talk: Fine-root production in a boreal bog responds to experimental warming and elevated CO ₂ differentially among plant functional types	Sören Weber	Symphony Ballroom 3
8:45 – 9:00 a.m. CDT	Science talk: Lidar and Lidar-derived products: microtopography, surface, and vegetation datasets, 2015-2025	Josh Enterkine	Symphony Ballroom 3
9:00 – 9:15 a.m. CDT	Science talk: Diazotrophy and methane oxidation in the <i>Sphagnum</i> phytobiome	Caitlin Petro	Symphony Ballroom 3
9:15 – 9:30 a.m. CDT	Science talk: Implementing direct and fungi-mediated nutrient uptake in a land surface model: insights from a boreal peatland ecosystem	Yaoping Wang	Symphony Ballroom 3
9:30 – 10:00 a.m. CDT	Science talk: SPRUCE-MIP results and insights	Xiaoying Shi	Symphony Ballroom 3

10:00 – 10:15 a.m. CDT	Break		
10:15 – 11:00 a.m CDT	Breakout Discussions: Choose one discussion group (40 min discussion, 5 min rotation)		
	Vegetation composition changes	Sören Weber & Jalene LaMontagne	Symphony Ballroom 1
	Regional-scale modeling/upscaling/applicability	Dan Ricciuto & Avni Malhotra	Symphony Ballroom 2
	Acute vs chronic responses (freeze events, heat waves, drought, vs. long-term warming)	Francisco Campos Arguedas & Perry Giambuzzi	Symphony Ballroom 3
	Warming x eCO₂ interactions	Verity Salmon & Weinan Chen	Symphony Ballroom 4
11:00 – 11:45 a.m. CDT	Breakout Discussions: Choose one discussion group (40 min discussion, 5 min rotation)		
	Vegetation composition changes	Sören Weber & Jalene LaMontagne	Symphony Ballroom 1
	Regional-scale modeling/upscaling/applicability	Dan Ricciuto & Avni Malhotra	Symphony Ballroom 2
	Acute vs chronic responses (freeze events, heat waves, drought, vs. long-term warming)	Francisco Campos Arguedas & Perry Giambuzzi	Symphony Ballroom 3
	Warming x eCO₂ interactions	Verity Salmon & Weinan Chen	Symphony Ballroom 4

11:45 a.m. – 12:05 p.m. CDT	Discussion debrief (5 min each group)	Natalie Griffiths	Symphony Ballroom 3
12:05 – 1:15 p.m. CDT	<i>Working lunch: Introduction to breakout discussions (upcoming plans for SPRUCE), update on planned International Peat Workshop</i>	Natalie Griffiths	Symphony Ballroom 3
1:15 – 1:30 p.m. CDT	Group photo	Natalie Griffiths	Symphony Ballroom 3
1:30 p.m. CDT	Start of SPRUCE Science Advisory Board Breakout	SPRUCE SAB	Symphony Ballroom 1
1:30 – 2:00 p.m. CDT	<i>Full Team Breakout Discussion:</i> <u>SPRUCE 2025 and post-treatment sampling</u>	Joshua Birkebak & Natalie Griffiths	Symphony Ballroom 3
2:00 – 2:30 p.m. CDT	<i>Full Team Breakout Discussion:</i> <u>SPRUCE operations/decommissioning</u>	Kyle Pearson & Melanie Mayes	Symphony Ballroom 3
2:30 – 2:45 p.m. CDT	<i>Break</i>		
2:45 – 3:15 p.m. CDT	<i>Full Team Breakout Discussion:</i> <u>Environmental data synthesis and data and sample archiving</u>	Terri Velliquette, Tom Ruggles, & Joshua Birkebak	Symphony Ballroom 3
3:15 – 4:00 p.m. CDT	<i>Full Team Breakout Discussion:</i> <u>Planned manuscripts and synthesis activities</u>	Verity Salmon & Dan Ricciuto	Symphony Ballroom 3
4:00 p.m. CDT	End of SPRUCE Science Advisory Board Breakout	SPRUCE SAB	Symphony Ballroom 1
4:00 – 4:30 p.m. CDT	SPRUCE Science Advisory Board report out	SPRUCE SAB	Symphony Ballroom 3

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4:30 – 5:00 p.m. CDT	Final discussion	Natalie Griffiths	Symphony Ballroom 3
5:00 p.m. CDT	Adjourn		

Posters:

#	Poster Title	Presenter
1	The SPRUCE Sample Archive - Organization, Availability, and Citation	Joshua Birkebak
2	Still better than a warehouse: A SPRUCE operations retrospective	Kyle Pearson
3	Field performance of the SPRUCE whole-ecosystem warming facility for tall-stature peatland vegetation	Mark Guilliams
4	Data management snapshot: Dataset statistics, SPRUCE closeout, and data provider resources	Tom Ruggles
5	A physical theory of eddy covariance for measuring Earth-atmosphere mass and energy exchanges	Lianhong Gu
6	How climate change impacts peatland water table feedbacks	Colin McCarter
7	Phenological responses to warming: SPRUCE results through 2024	Perry Giambuzzi
8	Impacts of temperature and CO ₂ on root traits and ergosterol from SPRUCE ingrowth cores (2023-2024)	Kathleen Coffman
9	Peatland shrub roots increase resource acquisition with warming	Avni Malhotra
10	Warming and CO ₂ effects on conifer reproduction	Jalene LaMontagne
11	Characterizing relationships between conifer growth metrics and microtopography in a whole ecosystem peatland warming experiment	James Hada
12	Modelling hydraulics of boreal peatland conifer species	Yanjun Song
13	Woody physiology updates	Jeff Warren
14	Moss uncovered: Discoveries to date and the road ahead	David Weston
15	Inferring C and N dynamics from foliar isotopes	Erik Hobbie
16	Dark fenton reactive oxygen species generation in an experimentally warmed bog	Maricia Pacheco
17	Simulated climate change alters sulfur speciation in peatlands: Soil becomes more oxidized while outflow becomes more chemically reduced	Brandy Toner
18	Impacts of filtration on mercury analysis of porewaters	Cole Stenberg

19	^{14}C and ^{13}C of emitted CO_2 and CH_4 and peat at SPRUCE	Karis McFarlane
20	Exploring the role of phenolic compounds in the inhibition of peat respiration	Alexis Slentz
21	Response of redox-active organic matter reduction to long-term climate change manipulations in a boreal peatland	Jessica Rush (virtual) & Jason Keller
22	Bacterial and fungal responses to warming and elevated CO_2	Xiaofeng Xu
23	Microbial decomposition dynamics in a northern peatland under combined climate stressors: Warming and drought	Katherine Duchesneau
24	Drought-induced peatland carbon loss exacerbated by elevated CO_2 and warming	Lifen Jiang
25	Elevated CO_2 alleviates positive feedback between warming and methane emissions in a peatland	Weinan Chen

Attendees:

SPRUCE Science Advisory Board

1. Heidi Asbjornsen – University of New Hampshire
2. Scott Bridgham – University of Oregon
3. Serita Frey – University of New Hampshire
4. Jason Keller – Claremont McKenna College
5. Nate McDowell – Pacific Northwest National Laboratory

DOE ESS Program Managers

1. Brian Benscoter
2. Dan Stover

SPRUCE Team

1. Joshua Birkebak – Oak Ridge National Laboratory
2. Amber Bristow – Oak Ridge National Laboratory
3. Skylar Calkins – Oak Ridge National Laboratory
4. Francisco Campos-Arguedas – University of Wisconsin-Madison
5. Kelsey Carter – Oak Ridge National Laboratory
6. Jeff Chanton – Florida State University
7. Weinan Chen – Cornell University
8. Kathleen Coffman – University of Tennessee / Oak Ridge National Laboratory
9. Meghan Drake – Oak Ridge National Laboratory
10. Katherine Duchesneau – Georgia Institute of Technology
11. Sue Eggert – USDA Forest Service, Northern Research Station
12. Josh Enterkine – Boise State University
13. Perry Giambuzzi – Northern Arizona University
14. Nancy Glenn – Boise State University
15. Natalie Griffiths – Oak Ridge National Laboratory
16. Lianhong Gu – Oak Ridge National Laboratory
17. Mark Guilliams – Oak Ridge National Laboratory
18. Jessica Gutknecht – University of Minnesota
19. James Hada – Boise State University
20. Paul Hanson – Oak Ridge National Laboratory Retiree
21. Alexandra Hedgpeth – Stanford
22. Erik Hobbie – University of New Hampshire
23. Alexis Hoy – Oak Ridge National Laboratory
24. Akihiko Ito – University of Tokyo
25. Colleen Iversen – Oak Ridge National Laboratory
26. Lifen Jiang – Cornell University
27. Terri Jicha – United States Environmental Protection Agency
28. Randy Kolka – USDA Forest Service Northern Research Station
29. Joel Kostka – Georgia Institute of Technology
30. Al Kovaleski – University of Wisconsin-Madison
31. Misha Krassovski – Oak Ridge National Laboratory
32. Jalene LaMontagne – University of Missouri-St. Louis / Missouri Botanical Garden
33. John Latimer – Oak Ridge National Laboratory
34. Nate Looker – Stanford University
35. Avni Malhotra – Pacific Northwest National Laboratory and University of Zurich
36. Jiafu Mao – Oak Ridge National Laboratory
37. Melanie Mayes – Oak Ridge National Laboratory
38. Colin McCarter – Nipissing University
39. Regan McDearis – Oak Ridge National Laboratory
40. Karis McFarlane – Lawrence Livermore National Laboratory

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41. Teddy Nikitin – The Morton Arboretum
42. Keith Oleheiser – Oak Ridge National Laboratory
43. Maricia Pacheco – University of Minnesota
44. Kyle Pearson – Oak Ridge National Laboratory
45. Caitlin Petro – Georgia Institute of Technology
46. Daniel Ricciuto – Oak Ridge National Laboratory
47. Lila Roach – University of Minnesota
48. Tom Ruggles – Oak Ridge National Laboratory
49. Verity Salmon – Oak Ridge National Laboratory
50. Chris Schadt – Oak Ridge National Laboratory
51. Stephen Sebestyen – USDA Forest Service Northern Research Station
52. Xiaoying Shi – Oak Ridge National Laboratory
53. Alexis Slentz – Florida State University
54. Yanjun Song – Washington State University
55. Jonathan Stelling – Oak Ridge National Laboratory
56. Cole Stenberg – University of Minnesota
57. Tinsley Stewart – Oak Ridge National Laboratory
58. Brandy Toner – University of Minnesota-Twin Cities
59. Terri Velliquette – Oak Ridge National Laboratory
60. Yaoping Wang – Oak Ridge National Laboratory
61. Jeff Warren – Oak Ridge National Laboratory
62. Sören Weber – Oak Ridge National Laboratory
63. David Weston – Oak Ridge National Laboratory
64. Guido Wiesenberger – University of Zurich
65. Xiaofeng Xu – San Diego State University
66. Xiaojuan Yang – Oak Ridge National Laboratory
67. Rachel Younge – Florida State University
68. Fenghui Yuan – University of Minnesota
69. Jian Zhou – Cornell University
70. Qianlai Zhuang – Purdue University

Important Links:

[2025 SPRUCE All-Hands Meeting Zoom Link](#)

[SPRUCE All-Hands Meeting Google Drive Folder \(Presentations, Posters, Breakout Discussion Notes, etc.\)](#)