**List of attendees at the annual meeting and their affiliation**

Bethany Pelletier (VT), Girl 2 (NY), Jason Londo (NY), Harlene Hatterman-Valenti (ND), Anne Fennell (SD), Soon-Li Teh (MN), Esmaeil Nasrollahiazar (MI), Aude Watrelot (IA), Suzanne Slack (IA), Brooke Dietsch (IA), Randal Vos (IA), Gail Nonnecke (IA), Horst Caspari (CO), Elsa Petit (MA), Stephan Sommer (MO), Dean Volenberg (MO), Anne Zwink (IA - industry), and Christie Jensen (IA - industry).

Virtual attendees: Andrej Svyantek (MT), Margaret Smith (NY)

Not Present:

MD, NE

Minutes taken by Suzanne Slack

**Business Meeting Minutes:**

**Colorado:**

* Reported cold injury on certain cultivars, especially Marquette, with significant trunk damage.
* Itasca consistently identified as the most cold-hardy cultivar. Supercooling variations noted across many cultivars.

**Iowa:**

* Reviewed Midwest Grape and Wine Institute’s weekly berry sampling reports for 2023 and 2024. Highlighted trends in Brix, TA, pH, and berry weight.
	+ Discussed grower access to live data folders and concluded the initiative was successful despite questions about Brix increases due to dehydration.
* Iowa Grape and Wine Association (IGWA) updates:
	+ Annual state conference includes ISCGA wine awards.
	+ Legislative victories:
		- $1.75/gallon tax for wholesale distribution.
		- Wineries can now sell wine at a second location, lobbying for a third.
		- New festival licenses allowing wine sales by the glass.
	+ Events:
		- Wine competition at state fair with 171 entries and Governor’s trophy.
		- Iowa Wine Month in May and fall wine trails.
* Research ongoing for use of plant growth regulators to improve wine quality, a germplasm screening vineyard (MN and ND cultivars), and enology projects.

**Kansas:**

* Vignole reported pH issues. North Dakota grapes (ND54 and ND213) performed well.
* Trunk splitting observed (desiccation damage, not freeze damage) in Marquette and LC.
* Advised irrigating immediately upon detecting drift damage.

**Massachusetts:**

* New cultivar trial focused on commercially available varieties. Verona not found compelling; cold hardiness concerns raised.
* Conducting spray trials for DM with Stargus and Regalia.
* Manzate use awaiting EPA decision.

**Michigan:**

* Severe freeze damage after early warmup in March 2024. Dry fall caused post-harvest vine stress.
* Bird damage significant (10% loss reduced to 5% with bird lasers). Working with ornithologists to identify species affected.
* Seeking funding for smart laser development.

**Minnesota:**

* Wet year until September. Evaluated new cultivars:
	+ MN1394: Hard to propagate, low tannins.
	+ MN1419: Promising, cold-hardy, low tannins.
	+ MN1421: High yielding but prone to berry cracking.
	+ MN1369: Minimal disease, highly flavorful, excellent cold hardiness.
	+ MN1325: Unique flavor, potential for mechanical harvesting.

**Missouri:**

* Researching cultivars lost during prohibition; restarted work on Cunningham.
* Collaboration on Merchette (-21°F hardy, high tannin).
* Stated Increased European interest in hybrids.
* $3 million state funding for a production facility.

**Montana:**

* Discussed small-scale vineyard challenges: short growing season, frost, and salt buildup.
* Interest in table grapes and piquettes. Evaluated ND cultivars for berry quality and irrigation impacts.
* January freeze events resulted in tertiary bud break only; minimal harvest.

**North Dakota:**

* Caterpillar tunnel trials on Marquette and Petite Pearl showed earlier ripening benefits.
* Potassium sulfate trials ongoing.
* Emphasized the need for collaborative projects to address extreme climate conditions.

**New York:**

* Evaluating DM resistance in low/no-spray vineyards.
* Winter physiology studies on ABA fall sprays: increased hardiness but expensive and heat-dependent.
* Discussed Traminette’s lack of cold hardiness and variability in weather stress impacts.

**South Dakota:**

* Continued trials on MN1280, MN1369, and MN1325. Highlighted differences in rooting ability and chlorosis issues.
* Focused on greenhouse studies and climate data protocols.

**Vermont:**

* Shift to cane pruning for disease management despite freeze injury risks.
* Advocated for Marquette (most planted), La Crescent, and Foch (herbal wine profile).
* Found Verona might be compelling afterall.
* Interest in no-pesticide programs despite severe botrytis in Marquette.

**Decisions:**

1. Approved Vermont to host the 2025 meeting. Colorado 2026, New York 2027.
2. Minutes from last year approved (motion by Jason Lando, seconded by Candace).

**Adjourned:** Meeting concluded with unanimous approvals.

**Narrative description of project accomplishments (max 30,000 characters – can be just a compilation of individual reports from the participants):**

The meeting highlighted significant progress in cold hardy grape and wine making research, including:

* Advancements in cold-hardy cultivar identification and evaluation, such as Itasca and MN1419.
* Successful implementation of weekly berry sampling reports in Iowa, providing real-time data for growers and contributing to enhanced decision-making.
* Collaborative efforts across states to address trunk splitting, climate challenges, and disease resistance.
* Integration of innovative bird control methods in Michigan, reducing crop losses and paving the way for further technological development.
* Exploration of historical cultivars in Missouri, fostering renewed interest in hybrid varieties internationally.
* Adaptive strategies in vineyard management, such as cane pruning in Vermont and caterpillar tunnel trials in North Dakota, showing promise for improved yield and quality. The diverse initiatives and collaborative projects underscore the collective commitment to advancing viticulture and addressing regional challenges effectively.

**NE2220 SAES-422: Impact Statements**

**Objectives Overview:** The NE2220 project focuses on a comprehensive evaluation of grapevine cultivars and clones to support sustainable production. Key areas of impact include viticultural performance, pest susceptibility, fruit and juice quality characteristics (enology), and local climate adaptation.

**Milestone Achievements:**

1. **Comprehensive Evaluation of Grapevine Cultivars and Clones:**
	* Conducted extensive evaluations across multiple states to assess the regional adaptability of promising cultivars and clones.
	* Generated data on cold hardiness, pest and disease resistance, and fruit quality characteristics tailored to regional conditions.
	* Identified cultivars like Itasca and MN1419 as highly cold-hardy with favorable viticultural traits, providing growers with new options for expanding production into colder climates.
2. **Screening Emerging Cultivars and Advanced Breeding Lines:**
	* Evaluated advanced breeding lines (pre-commercial) for viticultural traits, regional adaptation, and enological attributes.
	* Highlighted the performance of MN1369 for its disease resistance, unique flavor profile, and potential for extended storage and harvest windows.
	* Conducted trials on ND54 and ND213, noting their suitability for regions with extreme climate variability.
3. **Exploration of New Germplasm Resources:**
	* Introduced disease-resistant cultivars released in Europe and assessed their economic potential for U.S. grape production.
	* Initiated evaluations of less-known and underutilized cultivars, such as Harbinger and Hansansky Sladky, emphasizing unique flavor profiles and adaptation potential.
	* Collaborated with international breeding programs to explore Asian plant introductions, providing genetic diversity to enhance resilience against emerging pests and diseases.

**Stakeholder-Centric Impacts:**

* **Grower Adoption of Resilient Cultivars:** The project’s data-driven recommendations have guided growers in selecting cultivars with improved cold hardiness and pest resistance, reducing economic losses and enhancing sustainability. Recommendations for cultivar-specific management practices, such as canopy management and pest control, have been disseminated through extension efforts, improving vineyard productivity.
* **Economics:** Evaluations of underutilized and emerging grape cultivars have identified opportunities for market development, including work on hybrid grape cultivars that might appeal to both domestic and international wine markets.
* **Viticulture Long-Term Outcomes:** The NE2220 project aims to transform U.S. grape production by diversifying grape cultivars and enhancing resilience against climate and pest challenges while supporting sustainable practices. These efforts contribute to a healthy grape and wine industry, driving economic growth and long-term viability in a competitive global wine market.

**Grant funding leveraged:**

Anne Fennel:

Funding Source: South Dakota Specialty Crop Block Grant Project

Title: Mitigating freezing damage in emerging wine and seedless table grapes during

fall acclimation and spring deacclimation.

Total Amount: $105,057

Dean Volenburg and Stephan Sommer:

Funding Source: 2025 Missouri state budget, HB2006

Title: HB2006 University of Missouri Grape and Wine Institute Research Center and Viticulture Facility

Total Amount: $3,000,000

**List of publications from the past fiscal year (10/1/2023 through 9/30/2024)**

Abd El-Khalek, A.F., Mazrou, Y.S.A., Hatterman-Valenti, H.M., Awadeen, A.A., El-Mogy, S.M.M., El-Kenawy, M.A., et al. (2024). Improvement in physiochemical characteristics of ‘Prime Seedless’ grapes by basal defoliation with foliar-sprayed low-biuret urea and cyanocobalamin under Mediterranean climate. Agronomy, 14, 815. https://doi.org/10.3390/agronomy14040815

Cheng, Y., Wimalasiri, P.M., Tian, B., & Watrelot, A.A. (2024). Influence of grape flesh on the retention and composition of polyphenols from skins and seeds. Journal of Agricultural and Food Chemistry, 72(16), 9351-9364. https://doi.org/10.1021/acs.jafc.4c05123

Daler, S., Kaya, O., Korkmaz, N., Kılıç, T., Karadağ, A., & Hatterman-Valenti, H. (2024). Titanium nanoparticles (TiO₂-NPs) as catalysts for enhancing drought tolerance in grapevine saplings. Horticulturae, 10(10), 1103. https://doi.org/10.3390/horticulturae10101103

Daler, S., Korkmaz, N., Kılıç, T., Hatterman-Valenti, H., Karadağ, A., & Kaya, O. (2024). Modulatory effects of selenium nanoparticles against drought stress in some grapevine rootstock/scion combinations. Chemical and Biological Technologies in Agriculture, 11(1). <https://doi.org/10.1186/s40538-024-00609-6>

Gapinski, A.D., Delchier, N., & Watrelot, A.A. (2024). Tannin and iron-reactive phenolics contents in red, cold-hardy hybrid grape tissues throughout development and ripening. Foods, 13(7), 986. https://doi.org/10.3390/foods13070986

Gapinski, A.D., Slack, S.M., & Watrelot, A.A. (2024). Foliar applications of phenylalanine and prohexadione calcium for managing tannin content in cold-hardy hybrid grape cultivars. OenoOne, 58(3). https://doi.org/10.20870/oeno-one.2024

Hatterman-Valenti, H., Kaya, O., Yilmaz, T., Ates, F., & Turan, M. (2024). Phenolic, amino acid, mineral, and vitamin contents during berry development in ‘Italia’ and ‘Bronx Seedless’ grape cultivars. Horticulturae, 10, 429. https://doi.org/10.3390/horticulturae10050429

Kaya, O., Delavar, H., Ates, F., Sahin, M., Keskin, N., Yilmaz, T., Turan, M., & Hatterman-Valenti, H. (2024). Pollinator diversity and phenological interplay: Exploring mineral, hormonal, sugar, and vitamin contents in Vitis vinifera L. cv Bozcaada Çavuşu. Plants, 13(12), 1612. <https://doi.org/10.3390/plants13121612>

Kaya, O., Delavar, H., Shikanai, A., Auwarter, C., & Hatterman-Valenti, H. (2024). Assessing the influence of autumnal temperature fluctuations on cold hardiness in different grapevine cultivars: Variations across vine age and bud positions. Frontiers in Plant Science, 15, 1379328. <https://doi.org/10.3389/fpls.2024.1379328>

Kaya, O., Yilmaz, T., Ates, F., Kustutan, F., Hatterman-Valenti, H., Hajizadeh, H.S., & Turan, M. (2024). Improving organic grape production: The effects of soil management and organic fertilizers on biogenic amine levels in Vitis vinifera cv., 'Royal' grapes. Chemical and Biological Technologies in Agriculture, 11(1), 38. https://doi.org/10.1186/s40538-024-00564-2

Köse, B., Svyantek, A., Kadium, V.R., Brooke, M., Auwarter, C., & Hatterman-Valenti, H. (2024). Death and dying: Grapevine survival, cold-hardiness, and BLUPs and winter BLUEs in North Dakota vineyards. Life, 14(2), 183.

Kunter, B., Unal, O.B., Keskin, S., Hatterman-Valenti, H., & Kaya, O. (2024). Comparison of the sugar and organic acid components of seventeen table grape varieties produced in Ankara (Turkey): A study over two consecutive seasons. Frontiers in Plant Science, 15, 1321210. https://doi.org/10.3389/fpls.2024.1321210

Yilmaz, T., Ates, F., Turan, M., Hatterman-Valenti, H., & Kaya, O. (2024). Dynamics of sugars, organic acids, hormones, and antioxidants in grape varieties ‘Italia’ and ‘Bronx Seedless’ during berry development and ripening. Horticulturae, 10, 229.

Wang, Z., Svyantek, A., Bogenrief, S., Kadium, V.R., & Hatterman-Valenti, H. (2024). The influence of yeast strain on the chemical, chromatic, and sensory characteristics of "Wodarz" apple cider. Applied Sciences, 14(11). <https://doi.org/10.3390/app14114851>

Wang, Z., Svyantek, A., Miller, Z., Jarrett, B., Green, S., & Kapus, A. (2024). Postharvest treatment effects on ‘Somerset Seedless’ cold-hardy table grapes. International Journal of Fruit Science, 24(1), 142-155. <https://doi.org/10.1080/15538362.2024.2347916>

Wimmer, M.K., Horton, D., & Teh, S.L. (2024). The University of Minnesota grape breeding program: Decades of cultivation and adaptation to extreme climates. Wine Business Monthly, October 2024, 44-49