



**SOUTH DAKOTA STATE  
UNIVERSITY EXTENSION**

## **2021 South Dakota Winter Wheat Variety Trial Results Regional Summaries**

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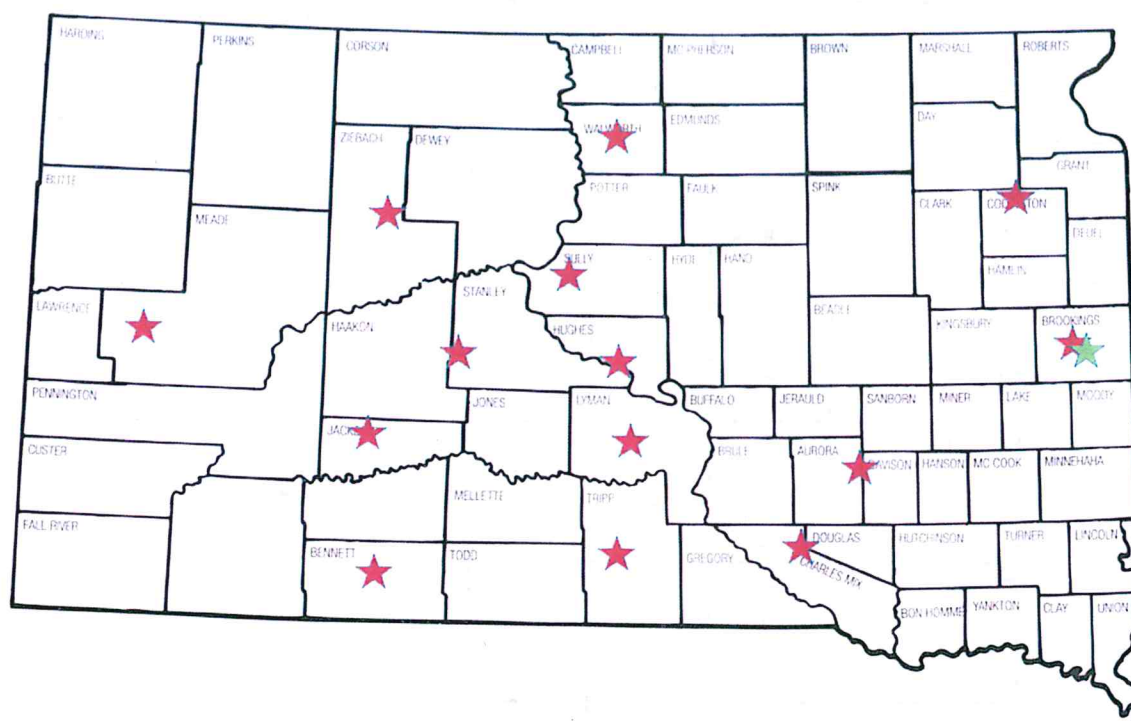
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### **Eastern trial locations:**

Brookings, Mt. Vernon, Platte, South Shore

### **Central trial locations:**

Hayes, Onida, Pierre, Selby, Vivian, Winner

### **Western trial locations:**

Lantry, Martin, Sturgis, Wall

Individual trial location results can be accessed online at:

<https://extension.sdstate.edu/winter-wheat-variety-trial-results>



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## 2021 South Dakota Winter Wheat Variety Trial Results Variety List

Table 1. List of winter wheat varieties tested in 2019-20 along with origin, agronomic, and grain quality characteristics.

Variety	Testing and Origin		Agronomic Characteristics				Grain Quality		
	Years tested in SD trials	Origin- Year	Relative Heading (days)‡	Height (inches)	Lodging Score (1-5)§	Winter Hrd.¶	2021 Test Wt. (lb/bu)#	2021 Protein (%)#	Baking Quality††
AP 18AX	2	AP-18	1	27	1.1	A	59.5	13.5	(A)
AP Bigfoot	new	AP-20	0	27	1.1	A	60.0	13.6	(A)
AP Clair	new	AP-18	4	26	0.9	G	60.4	13.5	(G)
Cowboy	5+	WY-12	4	28	1.3	G-E	60.5	12.7	(A)
CP7017AX	2	WU-20	1	27	1.2	A	59.9	12.8	(NR)
CP7050AX	2	WU-20	-1	27	0.9	G-E	61.3	14.2	(NR)
CP7869	new	WU-17	-2	27	1.3	A	60.0	13.0	(NR)
CP7909	2	WU-19	-2	27	1.6	G	60.0	13.2	(NR)
Crescent AX	2	PG-18	0	28	1.3	A	60.9	13.7	(G)
Draper	5+	SD-19	1	28	1.1	G-E	59.8	13.7	G
Expedition	5+	SD-02	<b>June 2</b>	29	1.4	G	60.7	14.1	G
Guardian	2	PG-19	2	29	1.7	G-E	61.0	13.4	(G)
Ideal	5+	SD-11	5	28	1.0	G-E	60.9	13.4	A
Langin	5+	PG-16	-1	26	1.6	G	60.2	12.8	(E)
LCS Chrome	new	LCS-16	3	29	1.0	G	60.3	14.2	(G)
LCS Helix AX	2	LCS-20	1	26	1.3	G	61.5	12.9	(E)
LCS Julep	new	LCS-20	1	27	1.1	G	62.5	14.1	(E)
LCS Photon AX	new	LCS-20	-1	27	0.8	A	61.2	14.2	(E)
LCS Steel AX	new	LCS-21	4	28	0.9	A	59.6	12.7	(NR)
MS Iceman	new	MS-21	2	26	0.9	A	61.6	14.7	(A)
ND Noreen	new	ND-20	6	30	0.9	E	61.3	14.1	(A)
Oahe	5+	SD-16	3	32	1.2	G-E	61.1	13.3	A
Overland	5+	NE-07	3	29	1.3	E	60.7	13.5	(A)
Redfield	5+	SD-13	4	27	0.9	A	60.5	14.1	G
SD Andes	4	SD-20	4	28	0.9	E	61.4	13.3	A
SY 517 CL2	5+	AP-17	2	26	1.0	A	61.7	14.0	(G)
SY Wolverine	3	AP-19	1	26	1.2	G-E	60.4	13.5	(G)
Thompson	5+	SD-17	4	30	1.2	G-E	60.5	13.5	A
WB4309	2	WB-19	1	28	1.3	G-E	59.9	13.6	(E)
WB4462	4	WB-16	-1	31	1.5	G-E	60.4	13.4	(G)
Whistler	new	PG-18	4	30	1.8	G	59.9	12.7	(G)
Winner	5+	SD-19	2	28	1.1	G-E	60.4	13.3	G
<b>Trial Average</b>	-	-	-	28	1.2	-	60.6	13.5	-

† AP, AgriPro; LCS, Limagrain Cereal Seeds; ND, North Dakota; NE, Nebraska (Husker Brand Genetics); MS, Meridian PG, PlainsGold; SD, South Dakota; WB, WestBred; WU, Winfield United; WY, Wyoming; and - (Year of Release).

‡ Relative heading compared to Expedition (153 days Julian) in 2021.

§ Lodging score: 1, perfectly standing; to 5, completely flat; ¶ Winter hardiness: E, excellent; G, good; A, average.

# Test weight (lbs/bu) and protein (%) as averaged from central and eastern SD testing sites.

†† Baking quality: E, excellent; G, good; A, acceptable; P, Poor. Note: SDSU does not perform baking quality analysis.

‡‡ Estimated ratings (X), based on information provided by entity that submitted the variety, NR - Not reported.





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**2021 South Dakota  
Winter Wheat Variety Trial Results  
Disease Ratings**

Table 2. Winter wheat variety disease ratings.

Variety	Disease Ratings†						
	Stripe Rust	Stem Rust	Leaf Rust	WSMV§	Tan Spot	Bacterial Leaf Streak	FHB¶ (Scab)
AP 18AX	2	(NR)	7	(4)	7	(5)	7
AP Bigfoot	(3)	(2)	6	(4)	7	(3)	5
AP Clair	(R)	(S)	5	(NR)	6	(NR)	6
Cowboy	S	(MR)	6	(S)	6	8	7
CP7017AX	(MR)	(R)	7	(NR)	7	(MR)	6
CP7050AX	(R)	(S)	8	(NR)	7	(MS)	5
CP7869	(R)	(R)	6	(NR)	5	(MS)	7
CP7909	(S)	(MS)	7	(NR)	6	(NR)	7
Crescent AX	(4)	(-)	7	(2)	6	(NR)	6
Draper	MR-MS	MR-MS	7	-	5	7	4
<b>Expedition</b>	S	R	6	S	8	7	5
Guardian	(3)	(2)	7	(1)	7	(NR)	6
Ideal	S	MR	5	S	7	5	5
Langin	(MR)	(S)	6	(MS)	4	4	5
LCS Chrome	(1)	(NR)	8	(NR)	5	(NR)	5
LCS Helix AX	(2)	(1)	8	(1)	7	(NR)	4
LCS Julep	(2)	(4)	7	(1)	8	(NR)	6
LCS Photon AX	(2)	(9)	8	(3)	8	(NR)	6
LCS Steel AX	(7)	(9)	8	(NR)	7	(NR)	7
MS Iceman	(7)	(5)	8	(NR)	8	(NR)	6
ND Noreen	(MR)	(MR)	7	NR‡‡	7	(R)	4
Oahe	MR	MR-MS	6	MR	5	5	4
Overland	S	MR	5	MS	7	5	5
Redfield	MR-MS	MR	7	S	7	6	4
SD Andes	R-MR	(NR)	6	(NR)	6	(NR)	5
SY 517 CL2	(6)	(3)	6	(5)	6	(5)	5
SY Wolverine	(6)	(2)	5	(4)	6	(3)	6
Thompson	MR-MS	MR-MS	5	MS	7	7	4
WB4309	(MR-MS)	(MR-MS)	6	(MS)	7	(MS)	7
WB4462	(S)	(NR)	5	(S)	8	(NR)	6
Whistler	(3)	(1)	5	(2)	6	(NR)	7
Winner	MS	MR	6	-	7	7	4

† Disease ratings: R, resistant; MR, moderately resistant; MS, moderately susceptible; S, susceptible; or 1, most resistant to 9, most susceptible. Note: SDSU does not perform nursery screenings for all listed pathogens in each growing season.

§ Wheat Streak Mosaic Virus; ¶ Fusarium Head Blight

‡ Italics denote estimated rankings (X) based on information provided by the program that submitted the variety.

‡‡ NR - not reported



## 2021 South Dakota Winter Wheat Variety Trial Results Eastern Summary

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Table 3. 2019-2021 winter wheat variety performance trial results for testing sites in eastern South Dakota.  
Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019	2020	2021			2-year			3-year		
	Yield (bu/a)	Yield (bu/a)	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
SD Andes	61.6	81.0	71.8	61.4	12.6	76.4	60.8	12.6	71.5	59.1	12.5
Ideal	61.8	78.3	71.4	61.7	12.7	74.8	60.3	12.6	70.5	58.4	12.5
Winner	59.9	81.2	69.7	60.7	12.8	75.5	60.2	12.6	70.3	58.4	12.7
Oahe	65.5	74.0	70.8	61.5	12.9	72.4	60.7	12.9	70.1	59.0	12.9
Redfield	59.9	78.0	67.9	60.8	13.6	72.9	60.1	13.3	68.6	58.3	13.3
WB4462	54.4	79.3	70.0	61.2	12.7	74.7	60.3	12.9	67.9	58.6	13.0
Cowboy	55.8	79.5	68.2	60.7	12.1	73.8	59.8	12.0	67.8	57.8	12.1
Thompson	60.8	73.5	68.6	60.6	12.9	71.0	60.2	12.8	67.6	58.4	12.8
Draper	54.3	79.5	66.9	60.5	13.3	73.2	59.5	13.0	66.9	57.8	13.0
Langin	50.5	78.2	66.5	60.7	12.5	72.3	60.0	12.4	65.1	58.0	12.5
Overland	52.8	74.7	66.7	61.3	13.1	70.7	60.7	13.0	64.7	58.9	13.1
SY Wolverine	31.2	79.8	69.0	60.5	13.1	74.4	59.7	13.1	60.0	57.9	13.1
SY 517 CL2	45.0	72.1	57.9	61.7	13.6	65.0	61.1	13.4	58.3	59.3	13.4
Expedition	39.7	70.2	59.5	61.2	13.7	64.9	60.4	13.4	56.5	58.6	13.5
WB4309	-	76.9	71.0	60.3	13.1	73.9	59.6	13.5	-	-	-
Guardian	-	77.7	68.7	61.8	12.7	73.2	61.1	12.6	-	-	-
LCS Helix AX	-	79.2	65.6	61.5	12.4	72.4	61.1	12.3	-	-	-
CP7017AX	-	77.5	66.8	60.2	12.4	72.1	59.2	12.3	-	-	-
CP7909	-	76.3	64.7	61.0	12.8	70.5	60.0	12.6	-	-	-
ND Noreen	-	72.0	68.5	61.1	13.4	70.2	61.2	13.2	-	-	-
AP 18AX	-	75.4	64.0	60.0	13.0	69.7	59.2	12.8	-	-	-
Crescent AX	-	77.9	60.8	60.9	13.3	69.3	60.5	13.1	-	-	-
CP7050AX	-	70.1	56.4	61.2	14.0	63.3	60.9	14.1	-	-	-
Whistler	-	-	72.6	61.0	12.0	-	-	-	-	-	-
AP Clair	-	-	71.4	60.5	13.0	-	-	-	-	-	-
LCS Steel AX	-	-	68.4	59.4	12.1	-	-	-	-	-	-
CP7869	-	-	67.5	60.4	12.3	-	-	-	-	-	-
AP Bigfoot	-	-	66.9	60.5	13.2	-	-	-	-	-	-
LCS Julep	-	-	64.1	62.6	13.6	-	-	-	-	-	-
LCS Chrome	-	-	61.4	60.3	13.8	-	-	-	-	-	-
MS Iceman	-	-	60.2	62.0	14.1	-	-	-	-	-	-
LCS Photon AX	-	-	57.2	61.0	13.9	-	-	-	-	-	-
<b>Trial Average#</b>	51.3	76.0	66.8	61.0	13.1	72.0	60.3	12.9	66.3	58.5	12.9
<b>LSD(0.05)†</b>	7.5	2.2	4.2	0.8	0.4	5.6	1.1	0.5	6.8	0.8	0.4
<b>C.V.%‡</b>	10.5	4.6	7.2	1.1	4.0	6.3	1.4	4.6	6.2	1.3	4.0

# Trial averages may include values from experimental lines that are not reported.

† Value required ( $\geq$ LSD) to determine if varieties are significantly different from one another.

‡ C.V. is a measure of variability or experimental error, 15% or less is considered acceptable.

Note: Eastern trial sites include Brookings, Mt. Vernon, Platte, and South Shore.





## 2021 South Dakota Winter Wheat Variety Trial Results Central Summary

### SOUTH DAKOTA STATE UNIVERSITY EXTENSION

Table 4. 2019-2021 winter wheat variety performance trial results for testing sites in central South Dakota.  
Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019	2020	2021			2-year			3-year		
	Yield (bu/a)	Yield (bu/a)	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
Winner	76.9	92.5	74.4	60.1	13.8	83.4	60.5	13.2	81.3	60.3	13.2
WB4462	71.3	90.7	75.3	59.7	14.1	83.0	60.3	13.3	79.1	59.9	13.2
SY Wolverine	72.2	88.3	76.3	60.4	13.8	82.3	60.5	13.3	78.9	60.1	13.1
Overland	75.1	87.4	73.3	60.1	13.9	80.4	60.6	13.3	78.6	60.3	13.3
Draper	73.5	88.8	72.3	59.0	14.1	80.6	59.5	13.5	78.2	59.4	13.3
Ideal	73.1	88.7	72.2	60.2	14.2	80.4	60.5	13.4	78.0	60.3	13.2
Langin	70.1	89.3	72.9	59.7	13.1	81.1	59.8	12.4	77.5	59.3	12.4
Oahe	74.1	86.4	70.1	60.7	13.7	78.2	60.9	13.2	76.9	60.9	13.2
SD Andes	72.8	85.1	71.8	61.4	14.0	78.4	61.2	13.3	76.6	60.9	13.2
Thompson	72.4	81.3	71.3	60.4	14.1	76.3	60.6	13.5	75.0	60.5	13.5
Cowboy	71.6	84.4	68.4	60.2	13.4	76.4	60.2	12.6	74.8	59.9	12.5
Redfield	71.1	86.0	64.1	60.3	14.7	75.1	60.7	13.8	73.7	60.2	13.6
Expedition	64.6	81.7	65.0	60.3	14.5	73.3	60.3	13.7	70.4	60.0	13.6
SY 517 CL2	65.1	82.3	62.4	61.8	14.4	72.3	61.8	13.6	69.9	61.4	13.6
CP7017AX	-	92.3	71.5	59.5	13.2	81.9	59.9	12.5	-	-	-
WB4309	-	89.6	73.4	59.6	14.1	81.5	60.0	13.5	-	-	-
Guardian	-	88.3	73.3	60.2	14.0	80.8	60.6	13.3	-	-	-
CP7909	-	88.3	69.3	59.1	13.6	78.8	60.2	12.7	-	-	-
LCS Helix AX	-	89.6	66.5	61.5	13.5	78.0	61.4	12.7	-	-	-
AP 18AX	-	88.2	67.8	59.1	13.9	78.0	59.5	13.0	-	-	-
Crescent AX	-	88.9	62.3	60.9	14.2	75.6	61.1	13.1	-	-	-
CP7050AX	-	81.9	62.6	61.5	14.4	72.3	61.8	13.7	-	-	-
ND Noreen	-	80.2	62.7	61.4	14.8	71.4	61.6	14.0	-	-	-
AP Clair	-	-	73.4	60.2	14.1	-	-	-	-	-	-
AP Bigfoot	-	-	72.9	59.5	14.1	-	-	-	-	-	-
LCS Steel AX	-	-	72.7	59.8	13.3	-	-	-	-	-	-
Whistler	-	-	72.7	58.8	13.5	-	-	-	-	-	-
LCS Julep	-	-	69.3	62.4	14.6	-	-	-	-	-	-
MS Iceman	-	-	69.2	61.2	15.2	-	-	-	-	-	-
CP7869	-	-	67.2	59.6	13.7	-	-	-	-	-	-
LCS Chrome	-	-	67.0	60.2	14.7	-	-	-	-	-	-
LCS Photon AX	-	-	62.0	61.5	14.5	-	-	-	-	-	-
<b>Trial Average#</b>	70.9	86.4	69.2	60.3	14.2	78.4	60.6	13.3	76.4	60.3	13.2
<b>LSD(0.05)†</b>	2.9	2.9	5.7	0.5	0.8	5.5	0.8	0.4	3.6	0.5	0.3
<b>C.V.%‡</b>	7.3	5.9	8.2	1.2	4.2	6.8	1.2	3.9	6.8	1.3	3.9

# Trial averages may include values from experimental lines that are not reported.

† Value required ( $\geq$ LSD) to determine if varieties are significantly different from one another.

‡ C.V. is a measure of variability or experimental error, 15% or less is considered acceptable.

Note: Central trial sites include Hayes, Onida, Pierre, Selby, Vivian, and Winner.



## 2021 South Dakota Winter Wheat Variety Trial Results Western Summary

### SOUTH DAKOTA STATE UNIVERSITY EXTENSION

Table 5. 2019-2021 winter wheat variety performance trial results for testing sites in western South Dakota.

Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019	2020	2021			2-year			3-year		
	Yield (bu/a)	Yield (bu/a)	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
Winner	66.7	68.6	66.6	58.3	12.8	67.6	58.1	12.6	67.3	57.3	12.7
WB4462	63.7	63.7	71.1	59.7	13.4	67.4	58.5	12.9	66.2	57.7	13.1
SD Andes	62.8	67.9	66.5	59.8	13.1	67.2	59.5	12.9	65.8	58.8	12.8
Oahe	59.5	72.1	64.0	60.1	12.9	68.0	58.3	12.6	65.2	58.0	12.8
Draper	64.0	63.2	63.2	58.5	13.5	63.2	58.1	13.1	63.5	57.6	13.1
Cowboy	57.5	66.9	65.8	58.5	12.6	66.4	58.0	12.6	63.4	56.8	12.5
Ideal	60.9	70.1	59.1	58.4	13.5	64.6	58.2	13.1	63.4	57.2	12.8
Redfield	62.8	59.2	64.5	58.7	14.0	61.9	57.9	13.5	62.2	57.3	13.3
Overland	57.4	62.6	65.5	59.4	13.3	64.0	59.3	13.1	61.8	58.0	12.5
SY Wolverine	61.3	57.4	61.5	57.9	13.5	59.5	57.2	13.1	60.1	55.3	13.0
Thompson	54.5	58.7	65.4	58.5	13.5	62.1	57.7	13.3	59.5	57.6	13.2
SY 517 CL2	52.6	61.0	64.6	60.4	13.8	62.8	58.9	13.6	59.4	58.5	13.5
Langin	51.0	59.0	61.6	55.4	12.7	60.3	56.8	12.5	57.2	55.8	12.4
Expedition	49.6	46.2	57.7	59.4	13.8	52.0	57.9	13.4	51.2	56.5	13.0
CP7909	-	62.2	67.1	59.5	12.8	64.7	57.6	12.8	-	-	-
WB4309	-	62.1	66.1	58.2	13.7	64.1	57.6	13.2	-	-	-
LCS Helix AX	-	62.9	64.8	59.6	12.7	63.8	58.1	12.5	-	-	-
Crescent AX	-	64.2	61.2	59.7	13.0	62.7	58.0	12.7	-	-	-
Guardian	-	68.2	55.2	58.0	13.7	61.7	58.1	13.1	-	-	-
AP 18AX	-	61.5	58.6	57.8	13.3	60.0	56.9	12.7	-	-	-
ND Noreen	-	59.4	58.6	60.6	13.4	59.0	60.1	13.2	-	-	-
CP7050AX	-	58.9	57.9	60.9	13.6	58.4	59.6	13.4	-	-	-
CP7017AX	-	61.3	54.1	58.2	12.9	57.7	56.4	12.5	-	-	-
AP Clair	-	-	62.9	58.2	13.7	-	-	-	-	-	-
LCS Steel AX	-	-	61.8	58.4	12.6	-	-	-	-	-	-
LCS Chrome	-	-	60.8	58.8	13.6	-	-	-	-	-	-
CP7869	-	-	59.6	58.4	13.7	-	-	-	-	-	-
Whistler	-	-	59.5	56.7	13.2	-	-	-	-	-	-
LCS Julep	-	-	58.8	60.4	13.8	-	-	-	-	-	-
LCS Photon AX	-	-	58.7	60.6	13.6	-	-	-	-	-	-
AP Bigfoot	-	-	58.7	58.4	13.3	-	-	-	-	-	-
MS Iceman	-	-	56.7	59.2	14.1	-	-	-	-	-	-
<b>Trial Average#</b>	57.7	63.6	61.4	58.8	13.4	63.0	58.2	12.9	62.0	57.2	12.9
<b>LSD(0.05)†</b>	4.0	4.7	7.4	1.6	0.5	7.5	1.4	0.4	7.0	1.5	0.8
<b>C.V.%‡</b>	9.9	9.4	9.6	2.8	3.7	8.9	2.2	3.2	9.4	3.0	4.4

# Trial averages may include values from experimental lines that are not reported.

† Value required ( $\geq$ LSD) to determine if varieties are significantly different from one another.

‡ C.V. is a measure of variability or experimental error, 15% or less is considered acceptable.

Note: Western trial sites include Lantry/Faith, Martin, Sturgis, and Wall.